



NAPLAN 2015 Technical Report

December 2015

National Assessment Program – Literacy and Numeracy (NAPLAN) 2015: Technical Report

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CHAPTER 1. INTRODUCTION AND OVERVIEW

Best practice for educational assessment programs dictates public reporting of results and the statistical and psychometric analyses that led to these results. Commonly, these analyses are summarised in an annual Technical Report. A well-documented technical report provides the transparency that measurement professionals, educators, and the general public expect and builds confidence that the results of such assessments are reliable, valid, and fair. To satisfy this important expectation, the Australian Curriculum, Assessment and Reporting Authority (ACARA) has commissioned this technical report for National Assessment Program – Literacy and Numeracy (NAPLAN) 2015.

Pearson and the University of Western Australia (UWA), ACARA's primary psychometric contractors for NAPLAN, were appointed to undertake the central analyses of data for the 2015 NAPLAN administration. The NAPLAN 2015 tests were administered nationally to all students in Years 3, 5, 7 and 9 in May 2015. Students in each year level were assessed using the same test items presented across five domains: reading, writing, spelling, grammar and punctuation and numeracy. The language conventions test includes the spelling domain and the grammar and punctuation domain.

NAPLAN results are reported using five national achievement scales, one for each of the assessed aspects of literacy – reading, persuasive 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.

As in previous years, the central analyses were carried out in two stages. The first stage involved item and test analyses and the construction of reporting scales and score-equivalence tables for the 2015 tests. The vertical reporting scales in the five domains were equated onto the historic NAPLAN reporting scales to ensure that NAPLAN results were comparable from 2008 to 2015. The equating was achieved using data collected by administering the secure equating tests and the 2015 NAPLAN tests to a sample of Australian students. The equating forms for each domain and year level had already been scaled onto the historical NAPLAN scale in 2009. The equated reporting scale information with score-equivalence tables for the tests and cut points for proficiency bands provided the necessary information for the jurisdictions to report back to parents and schools.

The second stage involved analyses of the full cohort data that informed national reporting. The analyses provided performance results for the preparation of the NAPLAN 2015 summary information, the NAPLAN 2015 National Report, and for other reporting.

Over one million students in Years 3, 5, 7 and 9 in all states and territories of Australia participated in NAPLAN 2015. Test data based on student responses were delivered to the Pearson/UWA analysis team from the jurisdictional Test Administration Authorities. There were eight sources of data from the national testing corresponding to the eight states and territories of Australia.

The main aim of this report is to describe and document the methodology used to produce the NAPLAN 2015 assessment scales and the methodology used to report on the performance of the 2015 student cohort. It includes descriptions of test calibration, equating and scale construction processes, and outlines the steps in the analysis. The NAPLAN 2015 test design

is described in Chapter 2. This chapter describes each test in terms of the number and type of items used for each domain and strand level. Chapter 3 summarizes the methodology used in sampling for equating and calibration and presents the participation rates. Chapter 4 is the analysis procedure and methodology chapter, which describes the scaling and equating procedures. Chapter 5 describes the data preparation process, test calibration outcomes and differential item functioning (DIF) analysis outcomes. Test reliabilities, average item discrimination and illustrative tables and figures showing item location, fit and DIF are included in this chapter. Chapter 6 describes the NAPLAN vertical, horizontal and pair-wise equating processes. Graphs showing the equating process, including link reviews, and the shift factors are included in that chapter. Translation constants and equating error calculations are also presented. Finally, Chapter 7 describes the generation of student proficiency estimates, scale transformation procedures and the methodology used for reporting student performance on NAPLAN in 2015. Many of these procedures are similar, if not identical, to those used in the Programme for International Student Assessment (PISA). The first appendix is an equating and calibration sampling report from a sub-contractor. The remaining appendices contain classical item analyses, Rasch-based item analyses, item characteristic curves, variable maps and DIF analysis graphs.

This report does not include student performance results. The results are included in the 2015 NAPLAN National Report. The NAPLAN national reports can be found at <http://www.nap.edu.au/results-and-reports/national-reports.html>.

ACARA is pleased to present this technical report to all interested organisations and individuals. We anticipate expanding the analyses presented herein as part of our ongoing review of all practices. We invite users of this document to provide feedback on its value and welcome any suggestions to improve both this document specifically and NAPLAN procedures in general.

CHAPTER 2. NAPLAN TEST DESIGN

Four tests were administered at each of Years 3, 5, 7 and 9. The four tests were reading, writing, language conventions (spelling and grammar and punctuation) and numeracy. The test results were reported in five domains: reading, writing, spelling, grammar and punctuation and numeracy.

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).

Each of the Year 7 and Year 9 numeracy tests consisted of two forms. The use of calculators was permitted in the first form (calculator form) but not in the second form (non-calculator form). For Years 7 and 9, both the calculator form and the non-calculator form consisted of 32 items, resulting in a total of 64 items across the two forms for each year level. Year 3 and Year 5 numeracy tests were non-calculator forms that consisted of 35 and 40 items, respectively.

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

Table 2.1. Structure of Year 3 Test Domains, NAPLAN 2015

Domain	Strand	Number of MC Items	Number of CR Items	Total for Strand	Total in Test
Numeracy	Measurement, Chance and Data	9	2	11	35
	Space	7	1	8	
	Number	10	3	13	
	Algebra, Function and Pattern	2	1	3	
Reading	Text Location and Interpretation	28	0	28	39
	Text and Language Knowledge	5	0	5	
	Contextual Understanding	6	0	6	
Spelling	Mistake not identified	2	11	13	25
	Mistake identified	0	12	12	
Grammar & Punctuation	Grammar	18	0	18	26
	Punctuation	8	0	8	

Table 2.2. Structure of Year 5 Test Domains, NAPLAN 2015

Domain	Strand	Number of MC Items	Number of CR Items	Total for Strand	Total in Test
Numeracy	Measurement, Chance and Data	11	2	13	40
	Space	8	2	10	
	Number	9	3	12	
	Algebra, Function and Pattern	3	2	5	
Reading	Text Location and Interpretation	21	2	23	39
	Text and Language Knowledge	7	0	7	
	Contextual Understanding	9	0	9	
Spelling	Mistake not identified	0	12	12	25
	Mistake identified	0	13	13	
Grammar & Punctuation	Grammar	17	0	17	26
	Punctuation	9	0	9	

Table 2.3. Structure of Year 7 Test Domains, NAPLAN 2015

Domain	Strand	Number of MC Items	Number of CR Items	Total for Strand	Total in Test
Numeracy (Non-calculator)	Measurement, Chance and Data	9	0	9	64
	Space	5	2	7	
	Number	6	4	10	
	Algebra, Function and Pattern	5	1	6	
Numeracy (Calculator)	Measurement, Chance and Data	8	0	8	28
	Space	6	2	8	
	Number	7	2	9	
	Algebra, Function and Pattern	5	2	7	
Reading	Text Location and Interpretation	35	1	36	49
	Text and Language Knowledge	8	0	8	
	Contextual Understanding	5	0	5	
Spelling	Mistake not identified	0	14	14	30
	Mistake identified	0	16	16	
Grammar & Punctuation	Grammar	17	0	17	28
	Punctuation	11	0	11	

Table 2.4. Structure of Year 9 Test Domains, NAPLAN 2015

Domain	Strand	Number of MC Items	Number of CR Items	Total for Strand	Total in Test
Numeracy (Non-calculator)	Measurement, Chance and Data	7	1	8	64
	Space	6	1	7	
	Number	5	2	7	
	Algebra, Function and Pattern	9	1	10	
Numeracy (Calculator)	Measurement, Chance and Data	5	3	8	50
	Space	6	2	8	
	Number	5	3	8	
	Algebra, Function and Pattern	7	1	8	
Reading	Text Location and Interpretation	29	3	32	50
	Text and Language Knowledge	12	1	13	
	Contextual Understanding	5	0	5	
Spelling	Mistake not identified	0	14	14	30
	Mistake identified	0	16	16	
Grammar & Punctuation	Grammar	18	0	18	28
	Punctuation	10	0	10	

For writing, all students were required to write a persuasive text, students from Years 3 and 5 responding to one writing prompt, while students in Years 7 and 9 responded to a different 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 data on ten different items each with their own score category. 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, Years 3 to 9, NAPLAN 2015

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
Score Range		0-48

CHAPTER 3. SAMPLING DESIGN FOR STAGE-1 ANALYSES

3.1 Overview

As with earlier NAPLAN administrations, sample databases were drawn from states and territories 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. This approach enabled results to be delivered to jurisdictions in time for reporting to schools and parents. It also provided jurisdictions with preliminary estimates of the final national outcomes some time before the full census data were made available.

There were three sampling activities associated with the NAPLAN 2015:

- 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 placing the 2015 NAPLAN results on the existing NAPLAN scale. It should be noted that plausible values (PVs) for the 2015 NAPLAN administration were obtained using a new procedure that combined MLDR analyses of stratified random samples from the census data together with analyses of the complete census data. Detailed sampling and MDLR procedures can be found in Chapter 4.
- The Item Calibration Sample – This was a sub-sample of the National Calibration Sample that was used for test calibrations and scaling.
- The Equating Sample – This sample was required to equate the 2015 tests onto the established NAPLAN reporting scales. As in earlier administrations, a common-person equating method was used. Secure equating forms, which had been previously equated onto the NAPLAN reporting scale, were administered to a sample of students in addition to the NAPLAN 2015 tests.

As a contractor for the Australian Curriculum, Assessment and Reporting Authority (ACARA), Educational Measurement Solutions (EMS) worked with documentation from the previous technical vendor (Australian Council for Educational Research (ACER)) and information from ACARA to create the sampling procedures used for the 2015 NAPLAN administration. Documentation for calculating the sampling weights 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 Calibration Sample file.
- The procedure for calculating the response rates.

Appendix A provides the 2015 NAPLAN EMS report and describes:

- The development of the sample frames for the National Calibration and Equating Samples including the steps used in data preparation and the creation of primary and secondary samples based on grade levels.
- The details of the explicit and implicit stratification used and the selection of schools.
- The procedures employed for using replacement schools when the schools originally selected for the sample did not participate.

The appendix also provides details on the sample frame and sampling parameters used in the 2015 NAPLAN administration.

The remainder of this chapter presents tables describing salient aspects of the National Calibration Sample and the Equating Sample as they were realised during the 2015 administration. 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 Calibration 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 2015 NAPLAN tests.

Table 3.1. Numbers of Schools and Students included in the National Calibration Sample by State/Territory and Year Level (2015)

Year Level	Source	NSW	VIC	QLD	WA	SA	TAS	ACT	NT	Total
Year 3	Schools	46	48	47	45	43	30	20	24	303
	Students (N)	1924	1933	2288	1783	1771	940	1182	516	12337
	Students (Weighted N)	95482	75341	69736	34258	21642	6608	5384	4323	312775
Year 5	Schools	46	47	48	45	44	30	20	25	305
	Students (N)	1837	1739	2098	1674	1671	929	1055	540	11543
	Students (Weighted N)	95058	72603	65387	31900	20915	6213	5251	4145	301472
Year 7	Schools	48	44	48	45	42	30	16	16	289
	Students (N)	5319	5238	5769	5142	1726	2383	2119	628	28324
	Students (Weighted N)	89419	69615	66580	31686	20435	6495	5051	4785	294065
Year 9	Schools	47	44	48	45	45	30	15	15	289
	Students (N)	5318	5620	6213	5338	3731	2451	2127	548	31346
	Students (Weighted N)	92294	73498	69712	32203	22135	7298	5511	4832	307484
Total	Schools	140	94	96	90	88	58	34	38	638
	Students (N)	14398	14530	16368	13937	8899	6703	6483	2232	83550
	Students (Weighted N)	372252	291057	271415	130048	85127	26614	21198	18084	1215796

The remainder of this section presents summary tables showing school and student participation in the sample and the distribution of the National Calibration 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 Calibration 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

$$RRs = P_s / (P_s + NP) \quad (3.1)$$

where RRs is the response rate using sampled schools only, P_s 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

$$RRsr = P_{sr} / (P_{sr} + NP) \quad (3.2)$$

where $RRsr$ is the response rate using sampled schools and replacement schools, P_{sr} 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 Calibration Sample (2015)

Year Level	School Type	NSW	VIC	QLD	WA	SA	TAS	ACT	NT
Year 3	Sampled Schools	96	100	100	100	98	100	90	96
	Sampled and Replaced Schools	96	100	100	100	98	100	100	96
Year 5	Sampled Schools	98	100	100	100	100	100	90	100
	Sampled and Replaced Schools	98	100	100	100	100	100	100	100
Year 7	Sampled Schools	100	100	100	100	100	100	100	88
	Sampled and Replaced Schools	100	100	100	100	100	100	100	94
Year 9	Sampled Schools	100	100	100	98	94	100	100	82
	Sampled and Replaced Schools	100	100	100	98	96	100	100	88

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 Calibration 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, 2013a, p. 11);
- 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, 2013a, p. 10);
- Students may be *withdrawn* from the testing program by their parent/carer for such reasons as religious beliefs or philosophical objections to testing (ACARA, 2013a, p. 12);
- The *other* category includes sanctioned abandonment of the test due to injury and illness and verified by the Test Administration Authority (TAA).

Table 3.3. Year 3 Sample: Overall Participation Category Rates (%) by State/Territory by Domain (2015)

Domain	Participation Code	NSW	VIC	QLD	WA	SA	TAS	ACT	NT	AUS
Reading	Absent	1.6	2.6	2.1	2.4	3.4	2.3	2.1	15.7	2.9
	Exempt	1.5	1.5	1.2	1.3	1.9	0.7	1.1	1.2	1.4
	Withdrawn	0.6	3.1	4.8	2.2	3.6	1.8	3.5	1.2	2.8
	Other	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
	Present	96.2	92.8	91.8	94.1	91.1	95.1	93.3	82.0	92.9
Writing	Absent	1.4	2.7	2.1	2.5	3.5	2.1	2.7	14.5	2.9
	Exempt	1.5	1.5	1.1	1.3	1.8	0.7	1.1	1.2	1.3
	Withdrawn	0.6	3.1	4.9	2.2	3.8	1.8	3.5	1.2	2.9
	Other	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.2	0.0
	Present	96.5	92.8	91.9	93.9	90.9	95.3	92.7	82.9	92.9
Spelling	Absent	1.5	2.6	2.1	2.4	3.3	2.1	2.5	15.1	2.9
	Exempt	1.5	1.5	1.0	1.3	1.9	0.7	1.1	1.2	1.3
	Withdrawn	0.6	2.9	4.9	2.2	3.7	1.8	3.2	1.2	2.8
	Other	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
	Present	96.4	93.0	91.9	94.1	91.1	95.3	93.2	82.6	93.0
Grammar & Punctuation	Absent	1.5	2.6	2.1	2.4	3.3	2.1	2.5	15.1	2.9
	Exempt	1.5	1.5	1.0	1.3	1.9	0.7	1.1	1.2	1.3
	Withdrawn	0.6	2.9	4.9	2.2	3.7	1.8	3.2	1.2	2.8
	Other	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
	Present	96.4	93.0	91.9	94.1	91.1	95.3	93.2	82.6	93.0
Numeracy	Absent	2.3	3.1	2.6	3.3	3.6	2.9	2.5	16.1	3.5
	Exempt	1.5	1.4	1.1	1.3	1.6	0.7	1.2	1.2	1.3
	Withdrawn	0.6	2.6	4.8	2.0	3.4	1.6	3.2	1.2	2.6
	Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0
	Present	95.6	92.9	91.6	93.4	91.4	94.8	93.1	81.4	92.6

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 (2015)

Domain	Participation Code	NSW	VIC	QLD	WA	SA	TAS	ACT	NT	AUS
Reading	Absent	1.7	2.1	1.6	2.5	3.8	2.3	3.3	17.8	3.1
	Exempt	1.9	2.9	0.8	1.2	1.6	1.1	1.2	1.7	1.6
	Withdrawn	1.5	2.3	5.4	1.3	2.7	1.3	2.4	0.0	2.5
	Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Present	94.9	92.7	92.1	95.0	91.9	95.4	93.1	80.6	92.8
Writing	Absent	1.7	2.5	1.5	3.6	3.7	1.7	4.0	15.7	3.2
	Exempt	1.9	2.8	0.8	1.3	1.6	1.1	1.3	1.7	1.6
	Withdrawn	1.5	2.4	5.5	1.3	2.8	1.2	2.4	0.0	2.5
	Other	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
	Present	94.9	92.2	92.1	93.7	92.0	96.0	92.3	82.6	92.7
Spelling	Absent	1.7	2.4	1.4	2.8	3.4	1.9	3.5	16.5	3.0
	Exempt	1.9	2.8	0.8	1.3	1.6	1.1	1.3	1.7	1.6
	Withdrawn	1.5	2.3	5.4	1.3	2.7	1.2	2.4	0.0	2.5
	Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0
	Present	94.9	92.5	92.4	94.7	92.3	95.8	92.8	81.5	92.9
Grammar & Punctuation	Absent	1.7	2.4	1.4	2.8	3.4	1.9	3.5	16.5	3.0
	Exempt	1.9	2.8	0.8	1.3	1.6	1.1	1.3	1.7	1.6
	Withdrawn	1.5	2.3	5.4	1.3	2.7	1.2	2.4	0.0	2.5
	Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0
	Present	94.9	92.5	92.4	94.7	92.3	95.8	92.8	81.5	92.9
Numeracy	Absent	2.1	2.4	2.0	3.4	4.7	2.8	4.0	19.1	3.7
	Exempt	1.9	2.8	0.9	1.2	1.6	1.1	1.2	1.7	1.6
	Withdrawn	1.4	2.4	5.1	1.3	2.8	1.3	2.4	0.0	2.4
	Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Present	94.7	92.4	92.0	94.1	91.0	94.8	92.4	79.3	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 (2015)

Domain	Participation Code	NSW	VIC	QLD	WA	SA	TAS	ACT	NT	AUS
Reading	Absent	2.8	4.5	3.1	3.2	3.7	5.3	2.8	23.6	4.0
	Exempt	0.9	0.9	1.0	0.6	1.7	1.0	1.0	1.1	0.9
	Withdrawn	0.6	1.2	5.0	0.4	2.7	0.4	1.9	0.8	1.8
	Other	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.2	0.0
	Present	95.7	93.4	90.9	95.8	91.9	93.2	94.3	74.4	93.3
Writing	Absent	2.6	4.4	3.2	2.8	3.2	4.6	2.1	21.8	3.7
	Exempt	0.9	0.9	0.7	0.6	1.7	1.0	1.0	1.4	0.9
	Withdrawn	0.5	1.2	5.0	0.4	2.7	0.4	2.0	0.6	1.8
	Other	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.2	0.0
	Present	96.0	93.5	91.1	96.2	92.5	94.0	94.7	76.0	93.6
Spelling	Absent	2.5	4.0	2.8	2.7	3.0	4.5	2.2	22.8	3.5
	Exempt	0.9	0.9	0.9	0.6	1.7	1.0	1.0	1.1	0.9
	Withdrawn	0.5	1.2	5.0	0.4	2.7	0.4	2.0	0.6	1.8
	Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Present	96.1	93.9	91.2	96.4	92.6	94.1	94.7	75.5	93.8
Grammar & Punctuation	Absent	2.5	4.0	2.8	2.7	3.0	4.5	2.2	22.8	3.5
	Exempt	0.9	0.9	0.9	0.6	1.7	1.0	1.0	1.1	0.9
	Withdrawn	0.5	1.2	5.0	0.4	2.7	0.4	2.0	0.6	1.8
	Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Present	96.1	93.9	91.2	96.4	92.6	94.1	94.7	75.5	93.8
Numeracy (Calculator)	Absent	3.3	4.5	3.9	3.4	4.2	5.6	3.4	25.8	4.4
	Exempt	0.9	0.9	1.0	0.5	1.6	1.0	1.0	1.1	0.9
	Withdrawn	0.5	1.2	4.9	0.5	2.8	0.4	2.0	0.8	1.8
	Other	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
	Present	95.2	93.4	90.2	95.5	91.3	93.0	93.5	72.3	92.8
Numeracy (Non-calculator)	Absent	3.4	4.5	3.8	3.5	4.2	5.5	3.3	25.6	4.4
	Exempt	0.9	0.9	1.0	0.5	1.6	1.0	1.0	1.1	0.9
	Withdrawn	0.5	1.2	4.9	0.5	2.8	0.4	2.0	0.6	1.8
	Other	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0
	Present	95.2	93.4	90.2	95.4	91.4	93.1	93.7	72.6	92.9

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 (2015)

Domain	Participation Code	NSW	VIC	QLD	WA	SA	TAS	ACT	NT	AUS
Reading	Absent	4.6	7.3	5.9	4.4	6.6	8.7	4.9	23.0	6.2
	Exempt	0.8	1.0	0.8	0.6	1.1	1.2	1.8	0.9	0.9
	Withdrawn	0.7	1.1	6.0	0.4	3.3	0.8	3.2	3.6	2.3
	Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Present	93.9	90.6	87.2	94.6	89.0	89.3	90.1	72.4	90.5
Writing	Absent	4.0	6.7	6.3	4.2	6.2	8.1	4.6	22.1	5.9
	Exempt	0.8	0.9	0.8	0.6	1.1	1.2	1.8	1.1	0.9
	Withdrawn	0.7	1.1	5.9	0.4	3.3	0.9	3.3	3.1	2.3
	Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0
	Present	94.5	91.2	87.0	94.7	89.4	89.8	90.4	73.4	90.8
Spelling	Absent	4.0	6.4	6.3	4.0	5.8	8.0	4.6	22.6	5.8
	Exempt	0.8	0.9	0.8	0.6	1.1	1.2	1.8	1.3	0.9
	Withdrawn	0.7	1.0	5.9	0.4	3.3	0.9	3.3	2.7	2.3
	Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0
	Present	94.5	91.6	86.9	95.0	89.8	90.0	90.4	73.0	91.0
Grammar & Punctuation	Absent	4.0	6.4	6.3	4.0	5.8	8.0	4.6	22.6	5.8
	Exempt	0.8	0.9	0.8	0.6	1.1	1.2	1.8	1.3	0.9
	Withdrawn	0.7	1.0	5.9	0.4	3.3	0.9	3.3	2.7	2.3
	Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0
	Present	94.5	91.6	86.9	95.0	89.8	90.0	90.4	73.0	91.0
Numeracy (Calculator)	Absent	5.2	7.6	6.5	4.8	7.7	9.4	5.5	24.3	6.8
	Exempt	0.8	0.9	0.8	0.6	1.1	1.1	1.7	0.9	0.9
	Withdrawn	0.7	1.2	6.0	0.4	3.4	0.8	3.2	3.8	2.3
	Other	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.2	0.0
	Present	93.3	90.3	86.6	94.2	87.8	88.7	89.6	70.8	89.9
Numeracy (Non-calculator)	Absent	5.2	7.5	6.4	4.7	8.0	9.4	5.5	23.7	6.8
	Exempt	0.8	0.9	0.8	0.6	1.1	1.1	1.7	0.9	0.9
	Withdrawn	0.7	1.2	6.1	0.4	3.4	0.8	3.2	3.8	2.3
	Other	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.2	0.0
	Present	93.3	90.4	86.7	94.2	87.5	88.7	89.6	71.4	89.9

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 shows the overall distributions of the National Calibration 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, Persuasive Writing, Language Conventions and Numeracy: National Report for 2013* (ACARA, 2013b):

- *Gender* is the distinction ‘male’ and ‘female’ as reported on a student’s enrolment record (Table 3.7).
- 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 (Table 3.8).
- 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 (Table 3.9).
- The *geolocation* of a school uses the MCEECDYA Schools Geographic Location Classification System which is based on the locality of individual schools and is used to disaggregate data according to Metropolitan, Provincial, Remote and Very Remote (Table 3.10).

Table 3.7. Calibration Sample: Distribution (%) by Gender by Year Level (2013)

Year Level	Gender	NSW	VIC	QLD	WA	SA	TAS	ACT	NT	AUS
Year 3	Male	50.2	48.5	52.8	57.5	50.9	53.4	47.0	49.4	51.5
	Female	49.8	51.5	47.2	42.5	49.1	46.6	53.0	50.6	48.5
Year 5	Male	50.9	50.7	49.6	49.2	52.6	53.7	45.7	53.1	50.5
	Female	49.1	49.3	50.4	50.8	47.4	46.3	54.3	46.9	49.5
Year 7	Male	62.4	53.0	48.4	51.6	50.5	49.6	50.3	51.3	52.9
	Female	37.6	47.0	51.6	48.4	49.5	50.4	49.7	48.7	47.1
Year 9	Male	61.9	55.8	48.5	51.3	54.5	51.8	50.4	50.5	53.7
	Female	38.1	44.2	51.5	48.7	45.5	48.2	49.6	49.5	46.3

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

Table 3.8. Calibration Sample: Distribution (%) by Language Background by Year Level (2015)

Year Level	Language Background	NSW	VIC	QLD	WA	SA	TAS	ACT	NT	AUS
Year 3	Non-LBOTE	67.4	75.0	90.7	65.6	80.3	94.1	71.2	51.6	76.2
	LBOTE	30.2	25.0	9.3	18.0	11.1	5.0	27.7	39.1	19.2
	Not Stated	2.4	0.0	0.0	16.4	8.6	0.9	1.2	9.3	4.5
Year 5	Non-LBOTE	67.5	74.9	92.3	67.1	77.3	94.4	74.4	50.9	76.5
	LBOTE	29.1	25.1	7.7	17.5	12.3	4.6	25.4	40.2	18.7
	Not Stated	3.4	0.0	0.0	15.4	10.4	1.0	0.2	8.9	4.8
Year 7	Non-LBOTE	70.1	76.2	94.6	61.3	77.2	94.0	80.5	42.7	77.2
	LBOTE	27.6	23.8	5.4	16.8	10.3	4.7	19.4	34.1	17.0
	Not Stated	2.3	0.0	0.0	21.8	12.5	1.4	0.1	23.2	5.8
Year 9	Non-LBOTE	68.8	75.9	94.2	62.6	75.5	92.9	80.6	50.9	77.2
	LBOTE	28.8	24.1	5.8	18.5	12.6	4.9	18.5	32.5	17.2
	Not Stated	2.4	0.0	0.0	18.9	11.9	2.2	0.8	16.6	5.6

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

Table 3.9. Calibration Sample: Distribution (%) by Indigenous Status by Year Level (2015)

Year Level	Indigenous Status	NSW	VIC	QLD	WA	SA	TAS	ACT	NT	AUS
Year 3	Aboriginal and/or Torre Strait Isl.	6.1	1.4	4.7	6.8	3.8	9.9	2.6	42.4	6.4
	Non-Aboriginal and/or Torre Strait Isl.	92.6	98.2	92.7	92.9	94.5	87.7	88.9	57.0	91.6
	Not Stated	1.3	0.3	2.6	0.2	1.7	2.4	8.5	0.6	2.0
Year 5	Aboriginal and/or Torre Strait Isl.	6.5	2.4	4.8	7.4	4.3	8.6	1.8	48.1	7.1
	Non-Aboriginal and/or Torre Strait Isl.	91.3	97.4	91.9	92.4	94.2	86.5	89.2	50.9	90.4
	Not Stated	2.2	0.2	3.3	0.2	1.5	4.8	9.0	0.9	2.5
Year 7	Aboriginal and/or Torre Strait Isl.	5.0	1.4	6.9	4.9	4.3	8.9	2.5	49.5	5.8
	Non-Aboriginal and/or Torre Strait Isl.	92.5	98.6	90.4	93.3	94.6	88.9	96.1	49.8	92.5
	Not Stated	2.5	0.0	2.7	1.8	1.1	2.1	1.5	0.6	1.7
Year 9	Aboriginal and/or Torre Strait Isl.	4.9	1.2	6.9	5.1	3.5	9.0	2.6	44.2	5.3
	Non-Aboriginal and/or Torre Strait Isl.	93.1	98.8	88.9	92.8	94.8	87.7	95.6	54.9	92.5
	Not Stated	2.0	0.0	4.2	2.1	1.7	3.3	1.8	0.9	2.1

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

Table 3.10. Calibration Sample: Distribution (%) by Geolocation by Year Level (2015)

Year Level	Geolocation	NSW	VIC	QLD	WA	SA	TAS	ACT	NT	AUS
Year 3	Metro	72.9	70.2	71.5	79.8	66.0	48.6	100.0	0.0	69.9
	Provincial	27.1	29.8	25.0	13.9	22.9	50.5	0.0	53.7	24.9
	Remote	0.0	0.0	3.3	6.3	9.5	0.9	0.0	16.3	3.6
	Very Remote	0.0	0.0	0.2	0.0	1.7	0.0	0.0	30.0	1.5
Year 5	Metro	73.3	69.2	70.4	79.7	66.5	49.0	100.0	0.0	69.2
	Provincial	26.7	30.8	26.8	13.6	21.9	49.8	0.0	48.9	25.2
	Remote	0.0	0.0	2.6	6.8	10.5	1.2	0.0	17.6	3.9
	Very Remote	0.0	0.0	0.3	0.0	1.1	0.0	0.0	33.5	1.8
Year 7	Metro	77.1	76.5	71.5	74.9	64.3	44.2	100.0	0.0	71.9
	Provincial	22.8	23.5	27.2	23.5	24.9	55.1	0.0	44.3	25.6
	Remote	0.1	0.0	0.5	1.6	10.0	0.0	0.0	17.2	1.4
	Very Remote	0.0	0.0	0.8	0.0	0.9	0.6	0.0	38.5	1.1
Year 9	Metro	75.8	76.1	70.2	76.9	77.1	43.2	100.0	0.0	72.9
	Provincial	24.1	23.9	28.7	22.0	20.8	56.5	0.0	50.9	25.6
	Remote	0.1	0.0	0.5	1.1	1.7	0.0	0.0	19.0	0.8
	Very Remote	0.0	0.0	0.6	0.0	0.4	0.3	0.0	30.1	0.7

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 content domain, year level, and state/territory.

Table 3.11 Numbers of Schools and Students for the Equating Forms (2015)

Domain	Year		NSW	VIC	QLD	WA	SA	TAS	ACT	NT	AUS	
Reading	Year 3	School	10	8	6	4	2	2	2	2	36	
		Student	261	190	152	95	51	55	42	51	897	
	Year 5	School	10	8	6	4	2	2	2	2	36	
		Student	256	186	149	100	56	54	46	50	897	
	Year 7	School	12	10	10	5	2	2	2	1	44	
		Student	253	245	220	124	38	47	49	21	997	
	Year 9	School	12	9	9	5	3	2	2	1	43	
		Student	261	211	207	119	62	41	46	23	970	
	All	School	44	35	31	18	9	8	8	6	159	
		Student	1031	832	728	438	207	197	183	145	3761	
	Language Conventions (Spelling, Grammar and Punctuation)	Year 3	School	11	8	5	4	3	2	2	2	37
			Student	272	206	127	103	61	46	45	44	904
Year 5		School	11	8	5	4	3	2	2	2	37	
		Student	291	198	124	104	69	48	47	44	925	
Year 7		School	13	10	8	5	3	2	2	2	45	
		Student	282	237	189	112	66	47	40	49	1022	
Year 9		School	13	10	8	5	4	2	2	2	46	
		Student	296	244	176	124	83	48	45	49	1065	
All		School	48	36	26	18	13	8	8	8	165	
		Student	1141	885	616	443	279	189	177	186	3916	
Numeracy		Year 3	School	9	8	6	3	3	2	2	2	35
			Student	244	202	138	69	74	43	38	53	861
	Year 5	School	9	8	6	3	3	2	2	2	35	
		Student	224	210	158	74	61	39	42	53	861	
	Year 7	School	13	10	8	4	3	2	2	2	44	
		Student	305	231	168	104	64	47	38	42	999	
	Year 9	School	13	10	8	4	4	2	2	2	45	
		Student	298	249	170	98	89	48	38	43	1033	
	All	School	44	36	28	14	13	8	8	8	159	
		Student	1071	892	634	345	288	177	156	191	3754	
	All	Total	School	136	107	85	50	35	24	24	22	483
		Student	3243	2609	1978	1226	774	563	516	522	11431	

CHAPTER 4. ANALYSIS PROCEDURES AND METHODOLOGY

This chapter describes the processes and methodologies used in the 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 2015 test calibrations were based on the Item Calibration Sample. The equating to the NAPLAN scale was based on the Equating Sample. The NAPLAN program uses multidimensional 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 are estimated using the *ACER ConQuest* Rasch modelling software. In previous NAPLAN administrations, these calibration analyses for national reporting made use of complete census data. However, due to the extensive computer time required to complete these calibrations and the tighter timeline for the release of the results, estimating PVs for the 2015 administration was achieved using a new procedure that combined analyses of stratified random samples from the census data together with analyses of the complete census data. Detailed steps to obtain the PVs can be found in section 4.6, *Stratified Random Sampling and Multidimensional Linear Regression*.

4.1 Data Collection and Data Delivery

Data collection was undertaken by the Test Administration Authorities (TAAs) in the jurisdictions. There were three rounds of data delivery. The first round involved delivery of data from the equating samples and the second round involved the delivery of the calibration samples, both described in Chapter 3. The third round involved delivery of nearly complete full cohort NAPLAN test data of Years 3, 5, 7 and 9 students in late July 2015. These data were used for the generation of the NAPLAN 2015 national summary information. The complete set of full cohort data used in the production of the national report was delivered in October 2015. 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 codeframes and data dictionaries.

4.2 Scaling Model

Test calibration and scaling was performed based on the Rasch model, as was the case in previous administrations.

For multiple-choice items and constructed-response items with a category scored 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

$$P_i(1|\theta) = \frac{\exp(\theta_n - \delta_i)}{1 + \exp(\theta_n - \delta_i)} \quad (4.1)$$

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 the writing criteria that are scored using more than two categories, this model can be generalised to the so-called Partial Credit model as

$$P_i(x|\theta) = \frac{\exp \sum_{j=0}^x (\theta_n - \delta_i + \tau_{ij})}{\sum_{h=0}^{m_i} \exp \sum_{j=0}^h (\theta_n - \delta_i + \tau_{ij})} \quad x = 0, 1, \dots, m_i \quad (4.2)$$

where $P_i(x|\theta)$ 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 threshold 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 (θ_n) with just two categories (correct and incorrect), for students who have the same ability 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 and data analysis the statistical software packages SPSS and SAS were used. For the Rasch scaling analysis, the software *ACER ConQuest* (Wu, Adams, Wilson, and Haldane, 2007) was used. *ACER ConQuest* 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) for the score-equivalence tables and for drawing plausible values based on a multidimensional item response model with latent regression. In addition, *RUMM2030's* (Andrich, Sheridan and Luo, 2011) person and item estimates, obtained through independent data recoding and calibration, were compared with the results from *ACER ConQuest* to confirm the accuracy of the calibration results.

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

Sequence of analyses

Analyses 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.
- A check of item characteristics using classical statistics such as item facilities (p -values) and distractor analysis, a check of test characteristics using descriptive statistics and frequency distributions, 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 to construct the NAPLAN 2015 domain scales.
- The generation of student weighted likelihood estimates (WLE) to obtain score equivalence tables.
- The transformation of logit scores into NAPLAN reporting scale scores.
- The analysis to obtain preliminary results based on the calibration sample data (i.e., the full set data from which the item calibration sample was a sub-sample). 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.

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 7s and treated as missing. Multiple responses (8s) 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 2015 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 the overall differences in knowledge of the subject tested are 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

A vertical reporting scale was constructed for each of the five domains spanning Years 3, 5, 7 and 9. Each of the scales was equated onto the NAPLAN scales. The scales were used by jurisdictions to report to parents and schools and for national reporting of student performance on the NAPLAN tests.

Reading, Spelling, Grammar and Punctuation, and Numeracy

Each of the reading, spelling, grammar and punctuation, and numeracy vertical 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 2015 tests of adjacent year levels (Year 3 and Year 5, Year 5 and Year 7, Year 7 and Year 9), based on the 2015 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 2015, while students in Years 3 and 5 responded to one prompt for the writing assessment, students in Years 7 and 9 responded to another. The resulting scripts were rated using 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 2015 persuasive writing scale to the 2011 persuasive writing scale was conducted using the pairwise-comparison method. The details of this method are shown in section 6.5. The results were checked against those from the common-item equating method. The results of the equating are discussed in Chapter 6.

Scoring

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 established 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 plausible values 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 were gender, LBOTE status, Indigenous status, school sector, geolocation, parents' education and occupation and school WLE reading mean. For the calibration sample, jurisdiction was also included as a conditioning variable. The plausible values 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. Plausible values were drawn 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 and scale factors 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 established for NAPLAN 2008 were used in 2009 through 2015 to ensure comparability of results across time.

Preliminary performance information based on the calibration 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 2015 calibration 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 and their respective standard errors (which included sampling, measurement, and equating error) were calculated. The multiple sets of plausible values were used to obtain an estimation of measurement error. Estimates of sampling and measurement error were combined to obtain final standard errors for the performance statistics reported for the sample.

4.4 Stage Two Analyses Based on Census Data

Using item parameters and scaling information as described in the stage one analyses, five sets of plausible values were drawn for each jurisdiction, based on a multidimensional item response model with conditioning on background variables for students in each of the year levels in each of the domains. The conditioning variables used were as described in section 4.3. Census data were analysed to produce national and jurisdiction results, on the full cohort and on subgroups, for national reporting.

4.5 The Estimation of Standard Errors

The estimation of standard errors for sample data

The NAPLAN student calibration samples were obtained through a random selection of schools: at the first stage, schools in each jurisdiction were sampled from a sampling frame (stratified by sector) with equal probability; at the second stage, all students from the sampled schools were selected into the sample. By using a cluster sampling technique, these samples are not simple random samples and the usual formulae to obtain standard errors for population estimates are not appropriate.

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:

$$\theta = \frac{1}{M} \sum_{i=1}^M \theta_i \quad (4.3)$$

with M being the number 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 zero and the M sets of statistics from the plausible values would be identical. Since no test is perfect, the M sets of statistics would not be identical. The *measurement variance* (also called the *imputation variance*) is equal to:

$$B_M = \frac{1}{M-1} \sum_{i=1}^M (\theta_i - \theta)^2 \quad (4.4)$$

It corresponds to the variance of the M plausible value statistics of interest. The final stage is to combine the sampling variance and the measurement variance to get the final variance V as follows:

$$V = U + \left(1 + \frac{1}{M}\right) B_M \quad (4.5)$$

with U being the *sampling variance* (the estimation of which is described below).

When combining the estimation of sampling and measurement error, the statistics have to be computed with full sample weight for each plausible value. To achieve this, SAS macros were used to analyse with the five sets of plausible values with properly weighted statistics.

The estimation of standard errors for census data

NAPLAN results from census data were reported with standard errors that included both sampling and measurement 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 the educational systems each year and not about the specific student cohorts in 2015. In addition, even in census assessments there is a certain amount of non-response that must be taken into account.

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.

However, as Levy and Lemeshow (1999) state:

In complex sample surveys, estimation of the variances of estimated population characteristics can be difficult either because of the way the sample was taken or because of the way the estimates of population characteristics were constructed. ... In such situations, the technique of linearization can be 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. (p. 366)

This 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, and in the case of NAPLAN 2015, was implemented using the procedure PROC SURVEYMEANS in the SAS software package. SAS macros were written to combine the estimates of sampling error with the estimates of measurement error in the same way as was done for the sample data, and 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 2015 performance in the reports.

Two additional sets of standard errors were calculated, one set for the comparisons of means across 2008 (the baseline year) and 2015, and one set for the comparisons of means across 2014 and 2015. These took into consideration, in addition to sampling and measurement errors, the errors due to the equating of measurement scales across 2008, 2014 and 2015. See section 6.8 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 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:

$$g = \frac{m_2 - m_1}{s_p} \quad (4.6)$$

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

$$s_p = \sqrt{\frac{(n_1 - 1)s_1^2 + (n_2 - 1)s_2^2}{n_1 + n_2 - 2}} \quad (4.7)$$

where n_1 and n_2 are the number of cases in groups 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:

$$g_{unbiased} = g_{biased} \left[1 - \frac{3}{4(n_1 + n_2 - 2)} \right] \quad (4.7)$$

4.6 Stratified Random Sampling and Multidimensional Linear Regression

As mentioned earlier, plausible values for the 2015 NAPLAN administration were obtained using a new procedure that combined MLDR analyses of stratified random samples from the census data together with analyses of the complete census data. This procedure is described below, and Figure 4.1 below is for a flowchart showing non-writing MDLR analysis.

Stratified random sampling Non-Writing MDLR

1. Separate the complete census data files by TAA.
2. Determine the number of cases for each TAA
 - a. If there are fewer than 7,200 cases in a TAA, then go to step 3 conducting the MDLR analysis on the complete census data for that TAA.
 - b. If there are 7,200 or more cases in a TAA, then, for each TAA, create a sample of 300 cases per level using the three stratification variables of *gender*, *geolocation* and *sector*.
 - c. Sort cases within a data file by the remaining background variables, and sample 300 cases via systematic sampling (every k^{th} case). If a particular stratum has 300 or fewer cases, then select all cases from that stratum.
3. Run MDLR analysis on stratified samples separately for each TAA, anchoring on the item difficulties from calibration sample, and estimate (output) regression coefficients for each demographic variable
 - a. Prior to these runs, evaluate each background regressor for each TAA to determine which ones can be included for the TAA in question.
 - b. Begin MDLR analysis with 2,000 nodes.
4. If convergence occurs, then output the estimation of the regression coefficients and go to step 6.
5. If convergence does not occur, then rerun MDLR, using the first results as starting values for regression coefficients, but increase the number of nodes to 2,500.
 - a. If convergence occurs, then output the estimation of the regression coefficients and go to step 6.
 - b. If convergence does not occur, then test to determine whether the ratio of the standard deviations of the PVs from consecutive runs is close to 1.00.
 - i. If it is, then output the estimation of the regression coefficients and go to step 6.
 - ii. If not, then consult with ACARA about the analysis results and next steps.
6. Anchor the item difficulties from the calibration sample and the regression coefficients from the final MDLR analysis based on the stratified samples. Now compute the PVs for the complete census data for each TAA separately. Begin MDLR analysis with 2,000 nodes.
7. If convergence occurs, output final PVs.
8. If convergence does not occur, then re-run MDLR analysis with 2,500 nodes.
 - a. If convergence occurs at 2,500 nodes, output final PVs.
 - b. If convergence does not occur, then test to determine whether the ratio of the standard deviations of the PVs from consecutive runs is close to 1.00.
 - i. If it is, then output the final PVs.
 - ii. If not, then consult with ACARA about the analysis results and next steps.

Writing MDLR Analysis

1. Writing responses are first combined and then divided into each TAA (i.e., total 8 data files).

2. MDLR analysis is run for each TAA, anchoring on the item difficulties from 2011 persuasive writing, and regression coefficients for each demographic variable are estimated. It should be noted that the categorical variables used in the model were gender, LBOTE status, Indigenous status, parental education, parental occupation, school geolocation and school sector, and the continuous variable was a measure of average school ability, specifically the school writing WLE average score. Regressing variables for each TAA can be found in Appendix M (see Table M.5)
3. Convergence criterion was set to 0.0001 and the minimum and maximum node values ranged from – 15 to + 15 logits.

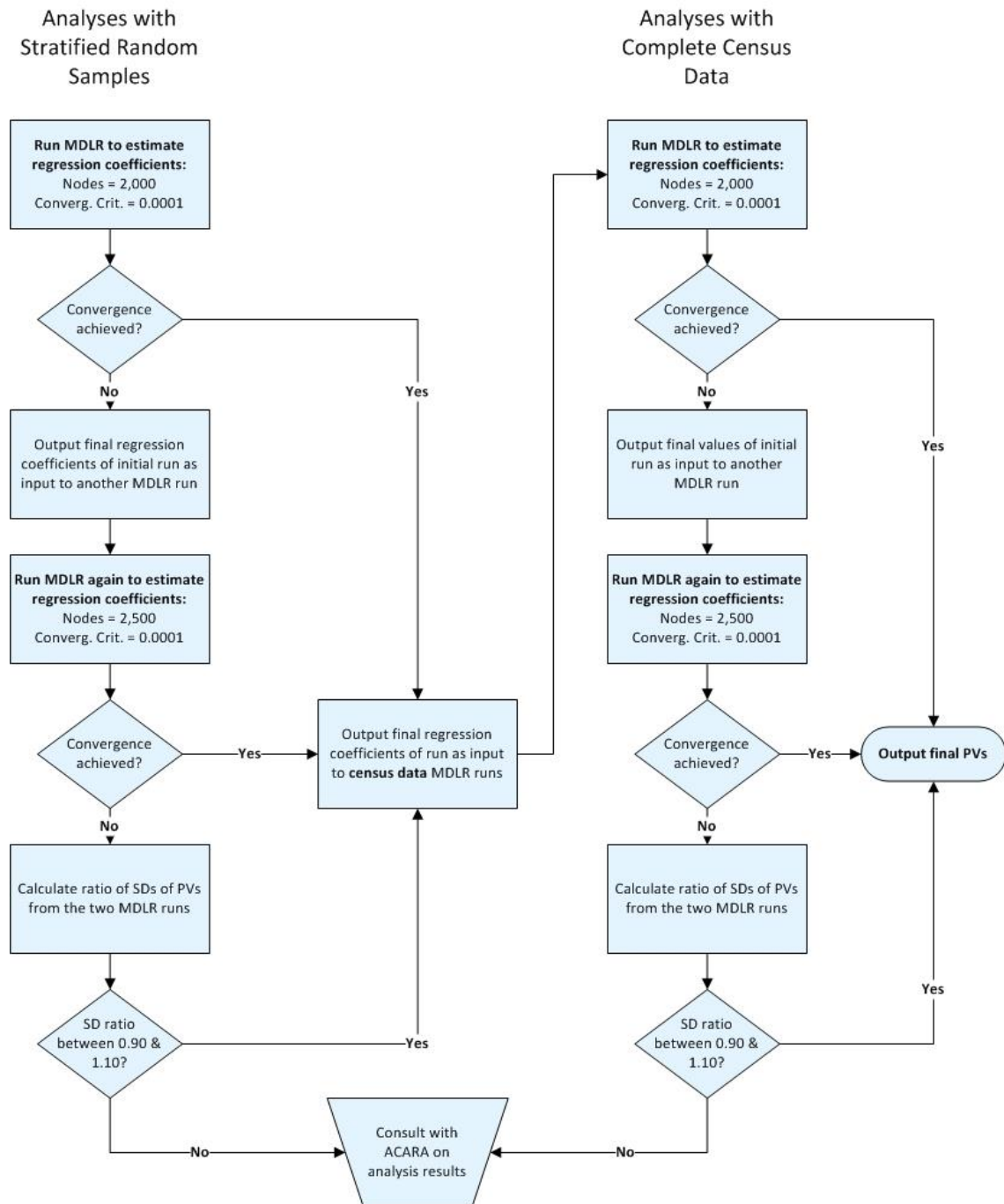


Figure 4.1. Non-writing MDLR process with TAA (using stratified random sample).

CHAPTER 5. TEST CALIBRATIONS

This chapter describes the data preparation process, test calibration outcomes and differential item functioning (DIF) analysis outcomes.

5.1 Data Preparation

As in previous years, each TAA prepared its jurisdiction data 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 secure File Transfer Protocol (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 for the data analysis contractor to calculate the weights for each school and for each jurisdiction. The calibration sample data and student weights were then verified by an independent auditor.

Data Checking

All data files were checked for invalid codes and inconsistencies. Data were cleaned and recoded at UWA using specifically designed software. Any concerns about data were communicated to the TAA and rectified as necessary. Recoded data files were generated and verified in preparation for data analysis.

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.

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 8s. 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 M. 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.
A – Absent	A data string of all 9s for that test was expected from the TAA. Item data are recoded as a string of 7s.
S – Sanctioned Abandonment	This is specifically used to indicate students who unexpectedly abandon the test due to illness or injury. (Indicated as Partial Completion in 2008) There may be data, but these students will be treated as absent. All item data are recoded as a string of 7s.
W – Withdrawn	A data string of all 9s for that test was expected from the TAA. See National protocols for Test Administration section 1.6, 1.7. These students are treated as absent. Item data are recoded as a string of 7s.
E – Exempt	A data string of all 9s for that test was expected from the TAA. See National protocols for Test Administration section 1.2, 1.3 These students are not included in the calibration or in the calculation of means. Item data are recoded as a string of 7s.

A student in Year 7 or Year 9 who was absent or withdrawn for one of the two numeracy tests (calculator-allowed form and non-calculator form) was treated as an absent student only

for that particular test. Item data in the absent test were coded as a string of 7s. In recoding unreached missing responses, the two numeracy forms were treated separately. For students who were present for only one of the forms, their numeracy performance was based on only that form.

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.

5.2 Test Calibrations

The reading, spelling, grammar and punctuation and numeracy tests were calibrated separately by domain and year level, resulting in 16 separate calibrations. In the estimation of parameters, all responses from a non-participating student (absent, withdrawn and exempt) were treated as missing, and the embedded missing response (9), the first trailing missing response (9) and the invalid response (8) were treated as wrong. Trailing missing responses beyond the first (M) were treated as missing. 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 calibration sample to match the sample size of the smallest state/territory (Northern Territory).

In 2015, while students in Years 3 and 5 responded to one prompt for the writing assessment, students in Years 7 and 9 responded to another. The writing test from Years 3, 5, 7 and 9 were analysed concurrently, based on the partial credit model. The latent distribution was conditioned on year level.

All calibrations were conducted using *ACER ConQuest*. In addition, calibrations were conducted independently using *RUMM2030* as a method of checking the accuracy of the calibration process.

The *ACER ConQuest* item analysis results are in Appendix B. This is an item-by-item tabular display of classical item statistics: item facility, discrimination and point-biserial statistics, counts and percentages of each response option (for multiple-choice items), score-points (for scored items), Rasch item parameters and Infit mean square. The item parameters shown on these tables are delta-centred (i.e., the mean of item difficulties is set to zero) within each domain and year level, except for writing, where Years 3, 5, 7 and 9 are combined. Traditional test reliability, Coefficient Alpha, is presented at the end of the item analysis results for each test.

The Rasch item parameter estimates and statistics are summarised in Appendix C for each of the 17 tests. The item parameters shown in these tables are delta-centred for each test. The 95% confidence interval for the expected value of the Infit mean square is also provided for each item.

Item Characteristic Curves (ICCs) for all items are shown in Appendix D. The ICC plot shows a comparison of the empirical ICC based on observations from ten equal-size ability groupings (broken line joining ten dots) and the expected model-based ICC (smooth line). The two curves should display small or no disparities for an item that has good fit to the model. Since the ICC for a multiple-choice item also shows the proportion of students in each of the ten groups who responded to each distractor in the distractor response curves, the performance of distractors can be examined using the item analysis results and the behaviours of the response curves in the ICC plots.

5.3 Test Reliability and Average Item Discrimination

Test Reliability

Table 5.2 shows the coefficient alpha of each 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 23-30 items each. While spelling items are in a constructed response format, grammar and punctuation items are in a multiple-choice format.

The coefficient alphas are between 0.85 and 0.91 for the reading tests, between 0.91 and 0.92 for the spelling tests, between 0.79 and 0.82 for the grammar and punctuation tests and between 0.83 and 0.92 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 2015 Tests

Year Level	Reading	Spelling	Grammar and Punctuation	Numeracy	Writing
3	0.85	0.91	0.82	0.83	
5	0.88	0.91	0.82	0.89	
7	0.88	0.92	0.81	0.92	0.96*
9	0.91	0.92	0.79	0.92	

*For all grades

Average Item Discrimination

Table 5.3 shows the average item discriminations for the reading, spelling, grammar and punctuation and numeracy tests. The average item discriminations for the reading tests range from 0.39 to 0.43, with the Year 7 test having the lowest average item discrimination. The spelling tests have the highest average item discriminations, ranging from 0.55 to 0.58. The averages for the grammar and punctuation tests are between 0.40 and 0.45, and those for the numeracy tests are between 0.39 and 0.43. The average item discriminations are also shown separately for the non-calculator (NC) and calculator (C) forms for Year 7 and Year 9 tests.

The unusually high average item discrimination (i.e., 0.85) for the writing test is likely due to the small number of highly correlated, polytomously scored criteria used in scoring across the span of grade levels.

Table 5.3. Average Item Discrimination for NAPLAN 2015 Tests

Year Level	Reading	Spelling	Grammar and Punctuation	Numeracy (ALL)	Numeracy (NC)	Numeracy (C)	Writing
3	0.41	0.58	0.45	0.39			
5	0.42	0.57	0.43	0.43			
7	0.39	0.56	0.42	0.41	0.40	0.42	0.85*
9	0.43	0.55	0.40	0.42	0.41	0.43	

*For all grades

5.4 Test Targeting and Item Spread

The purpose of the Wright map (or variable map) is to compare the locations of the students (on the left side of the map) and the item thresholds (on the right side of the map). Item, step and person parameters are most efficiently and meaningfully displayed in a Wright map, which plots the parameters on their common scale (Bond & Fox, 2001). Appendix E provides the Wright maps for the domains and year levels.

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 Wright map for Year 3 numeracy. That Wright map indicates that this sample's numeracy achievement level has been well targeted by the current test. The distribution of persons (each X represents approximately 24 persons) matches up well with the distribution of item thresholds, which indicates that the ability levels of the population were well represented at all levels of the test.

For the polytomously scored tests (e.g., writing), on the other hand, 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. Each criterion is polytomously scored. The right-hand panel of Figure E.5 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.

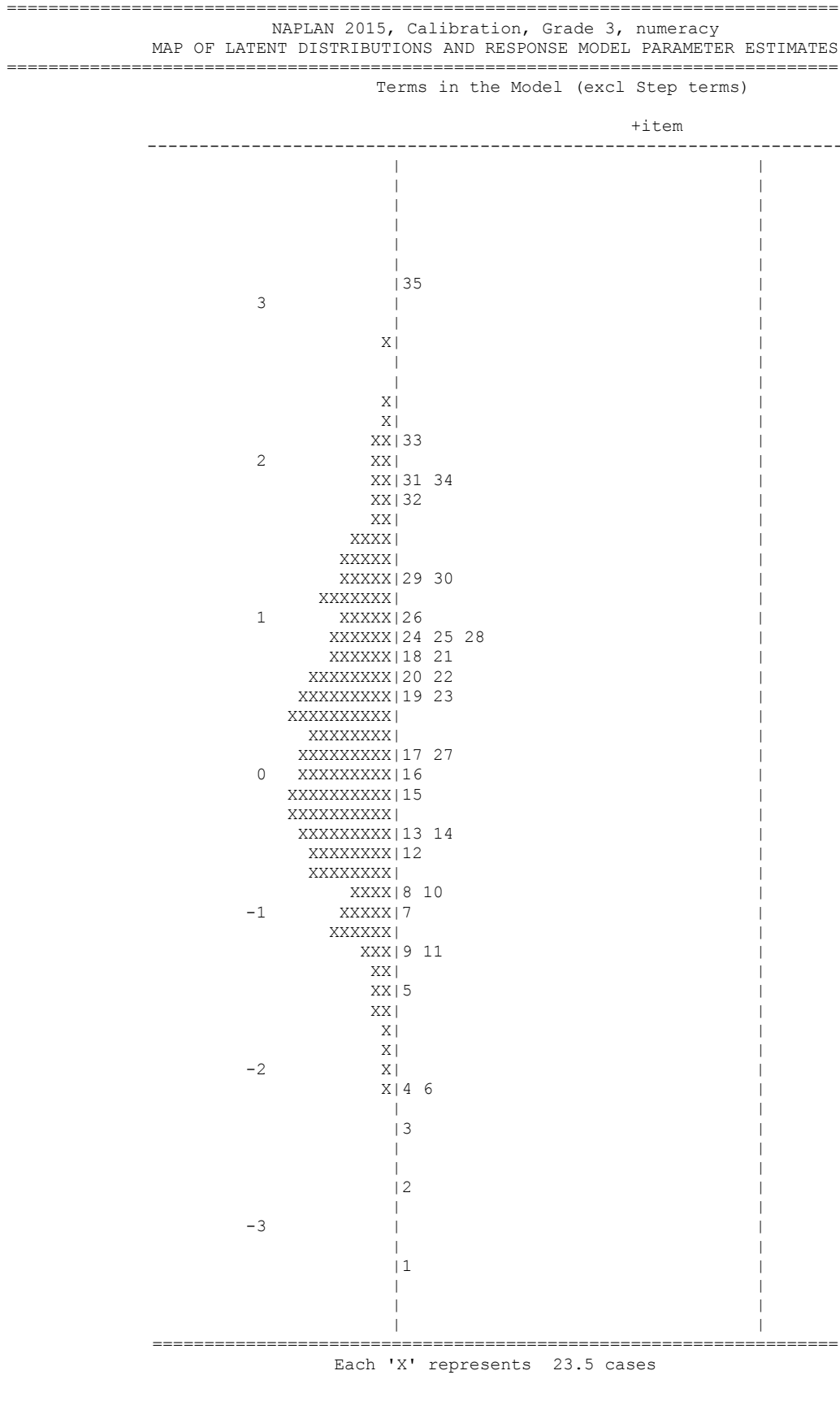


Figure 5.1. Example of a Wright map for Year 3 Numeracy.

5.5 Item Fit

The evaluation of goodness of fit to the Rasch model for individual items was based on the weighted mean square (i.e., Infit mean square) statistics. Infit compares the actual residuals to how much of the variation is expected if the data fit the model (Wilson, 2005). 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 (i.e., item-total 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.

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 good fit to the model. The ICCs for all items can be found in Appendix D.

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.

Table 5.4 presents the number of items falling into two Infit mean square ranges: 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 only three items having Infit greater than 1.20. Regarding classical test statistics, there was a total of 28 items across the 16 tests with discrimination less than 0.25. There was a total of 22 items with facility higher than 0.90 and 4 items with facility less than 0.10 (all in spelling). Figure 5.2 shows the ICC of one reading item (i.e., Item r3q20) with an Infit statistic close to 1.01. In contrast, Figure 5.3 shows the ICC of one reading item (i.e., Item r3q37) with an Infit statistic (i.e., 1.24) higher than the criterion value (i.e., 1.20) for evaluating the goodness of fit of each item.

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., 1.38 and 1.22, respectively). Regarding the ICCs, there were not large differences between the empirical and the expected curves for each of the ten criteria. The ICCs of the ten writing criteria are also included in Appendix D.

Table 5.4. Summary of Item Statistics in NAPLAN 2015 Tests

Domain	Year	Total Number of Items	Number of Items with Discrimination < 0.25	Number of Items with		Number of Items with	
				Infit ≤ 1.20	Infit > 1.20	Facility > 0.90	Facility < 0.10
Reading	3	39	4	38	1	3	0
	5	39	3	39	0	4	0
	7	49	5	49	1	2	0
	9	50	0	50	0	4	0
Spelling	3	25	0	25	0	2	1
	5	25	0	25	0	1	1
	7	30	0	30	0	0	1
	9	30	0	30	0	0	1
Grammar and Punctuation	3	26	0	26	0	1	0
	5	26	2	25	1	1	0
	7	28	1	26	0	1	0
	9	28	0	28	0	3	0
Numeracy	3	35	1	35	0	2	1
	5	40	1	39	1	2	1
	7	64	6	63	1	0	2
	9	64	5	63	1	1	4

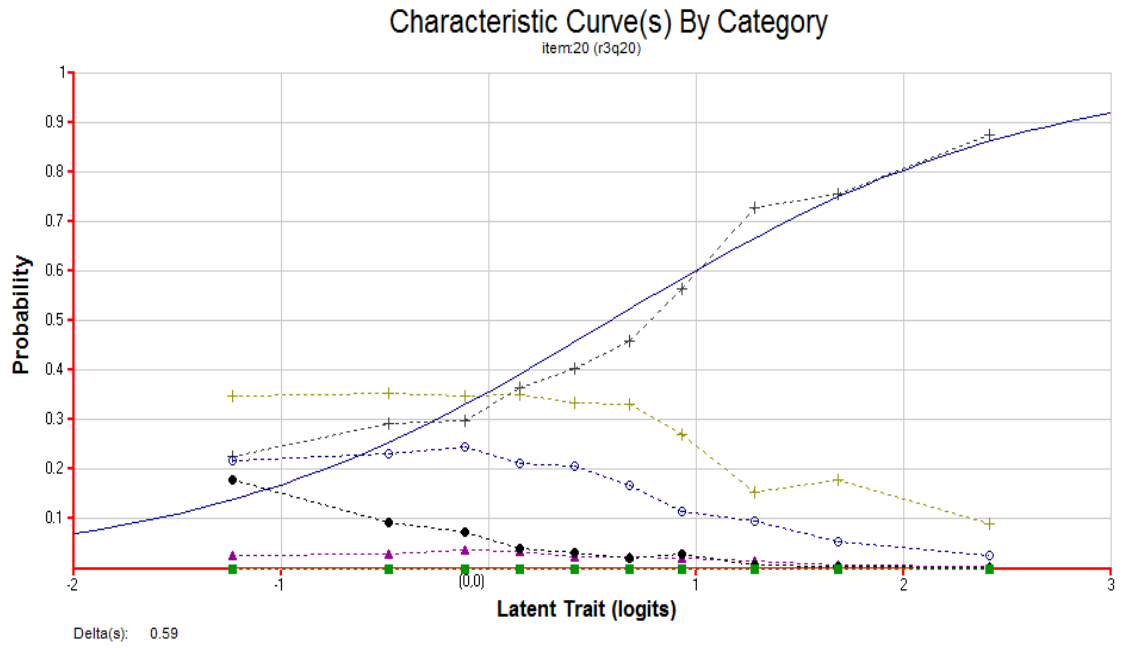


Figure 5.2. Item characteristic curves for an item with Infit = 1.01

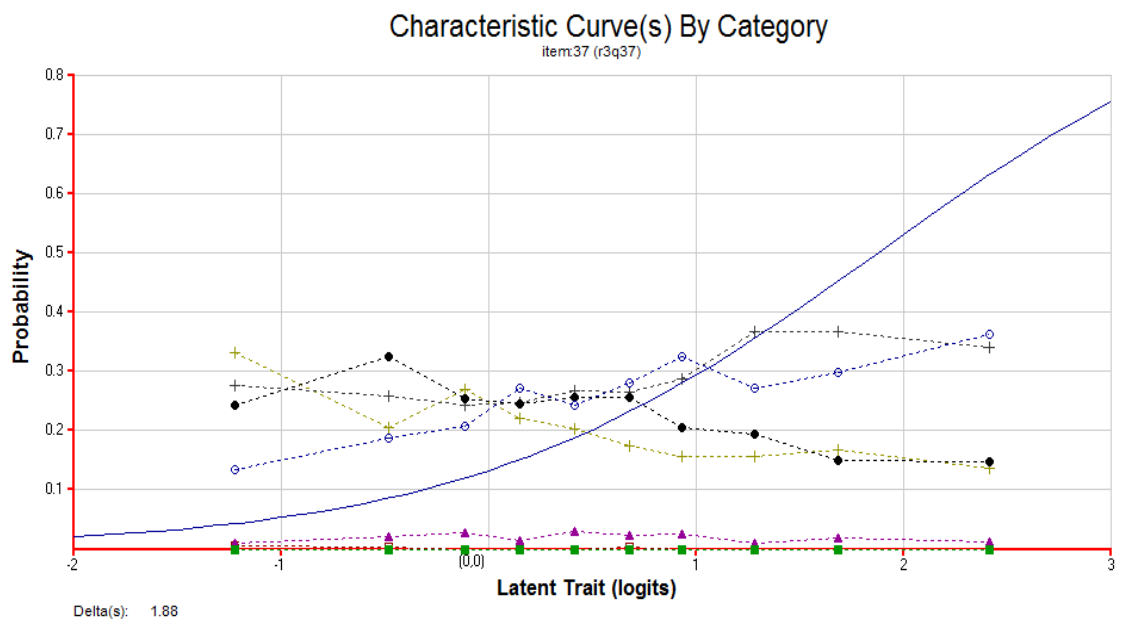


Figure 5.3. Item characteristic curves for an item with Infit > 1.24

5.6 Differential Item Functioning (DIF) Analyses

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, Tables 5.5, 5.6, and 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. Figures 5.3, 5.4, and 5.5 are examples of the potential DIF items. DIF values of individual items for gender, LBOTE, and Indigenous status are presented in Appendix I.

Gender DIF

Appendix F presents the scatter plots for examining gender DIF in the five domains by the four year levels except for the writing test. Writing gender DIF was performed by combining all four grades. 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, and Figure 5.3, for example, shows one spelling item (Item lc9q08) with an absolute adjusted difference of 0.50 or greater. An item with a positive adjusted difference indicates that the item was relatively easier (i.e., 0.56) for female students. Appendix F includes DIF plots that show for each of the items the observed curves by gender group compared to the expected ICC.

LBOTE DIF

Appendix G 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 a total of items that show potential DIF with an absolute adjusted difference of 0.50 or greater. Figure 5.4 depicts one reading item (Item r7q01) with an absolute adjusted difference of 0.50 or greater. This item was relatively easier (i.e., 0.72) for non-LBOTE students.

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

Indigenous Status DIF

Appendix H includes scatter plots for examining Indigenous DIF in the five domains by four year levels. 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 a total of items that show potential Indigenous DIF with an absolute adjusted difference of 0.60 or greater. The larger value (i.e., 0.60 instead of 0.50) was used in order to identify only the items that showed larger DIF. Figure 5.5 depicts one numeracy item (Item n5q02) with an absolute adjusted difference of 0.60 or greater. This item was relatively easier (i.e., 1.28) for non-Indigenous students.

Appendix H 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).

State/Territory DIF

The number of items showing state/territory related DIF with an absolute adjusted difference of 0.50 or greater in reading, spelling, grammar and punctuation and numeracy are listed in Table 5.8. In the heading 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 31 items in reading, 9 items in spelling, 23 items in grammar and punctuation and 33 items in numeracy across all four year levels that showed potential DIF for some jurisdictions. The total number of items showing state/territory DIF may not match with the sum of the cells in each domain because the same items may be flagged in multiple jurisdictions. Table 5.8 can be read in conjunction with Appendix I, from which the items showing state/territory related DIF can be identified. For example, from Table 5.8, there were five items in Year 7 reading showing DIF in NT when compared to the national level, with all five items being harder (i.e., r7q01, r7q02, r7q03, r7q04, and r7q05), respectively, as seen from Appendix I.

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 J. None of the criteria showed notable differences across states/territories.

Table 5.5. Number of Items Showing Gender 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	39	0	25	0	26	0	35	1
5	39	0	25	4	26	1	40	0
7	49	1	30	2	28	2	64	2
9	50	2	30	2	28	1	64	3

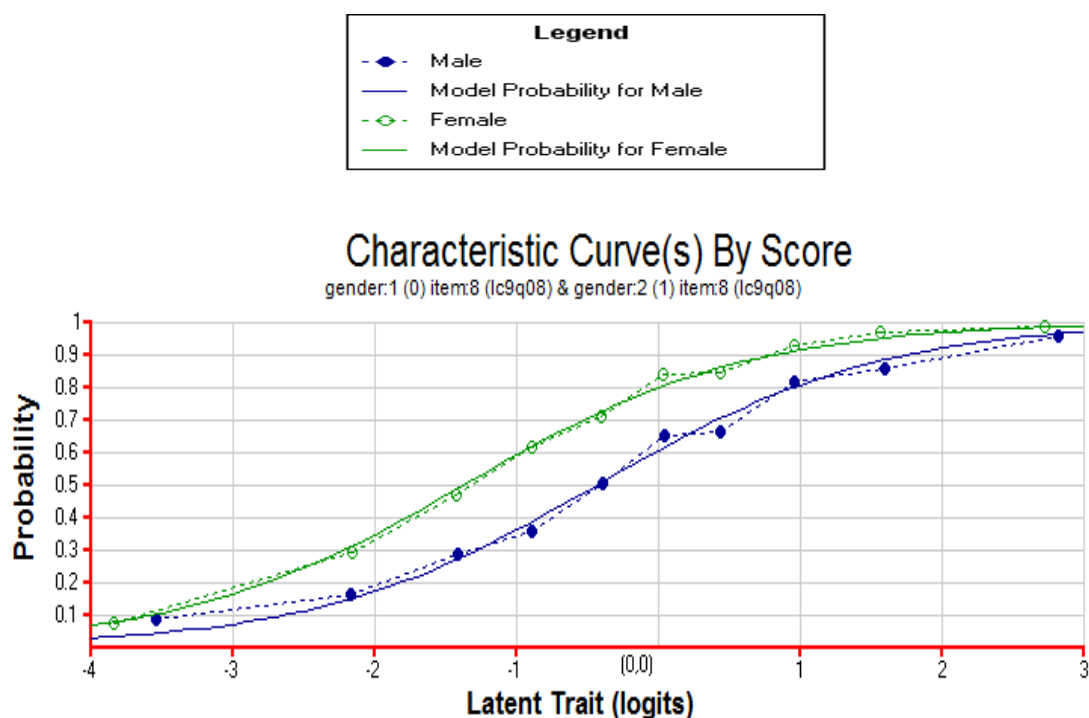


Figure 5.3. Example of item characteristic curves displaying gender DIF.

Table 5.6. Number of Items Showing LBOTE 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	39	2	25	3	26	2	35	2
5	39	4	25	0	26	2	40	4
7	49	5	30	2	28	3	64	6
9	50	5	30	0	28	3	64	3

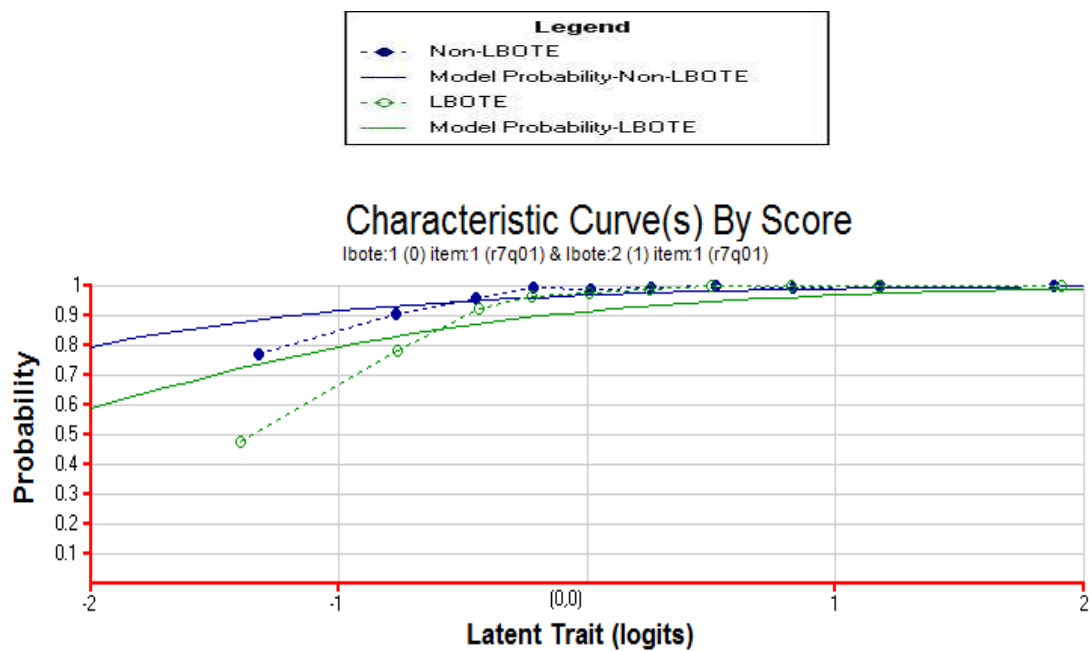
**Figure 5.4. Example of item characteristic curves displaying LBOTE DIF**

Table 5.7. Number 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	39	14	25	3	26	11	35	8
5	39	12	25	2	26	9	40	15
7	49	18	30	0	28	10	64	13
9	50	10	30	2	28	8	64	14

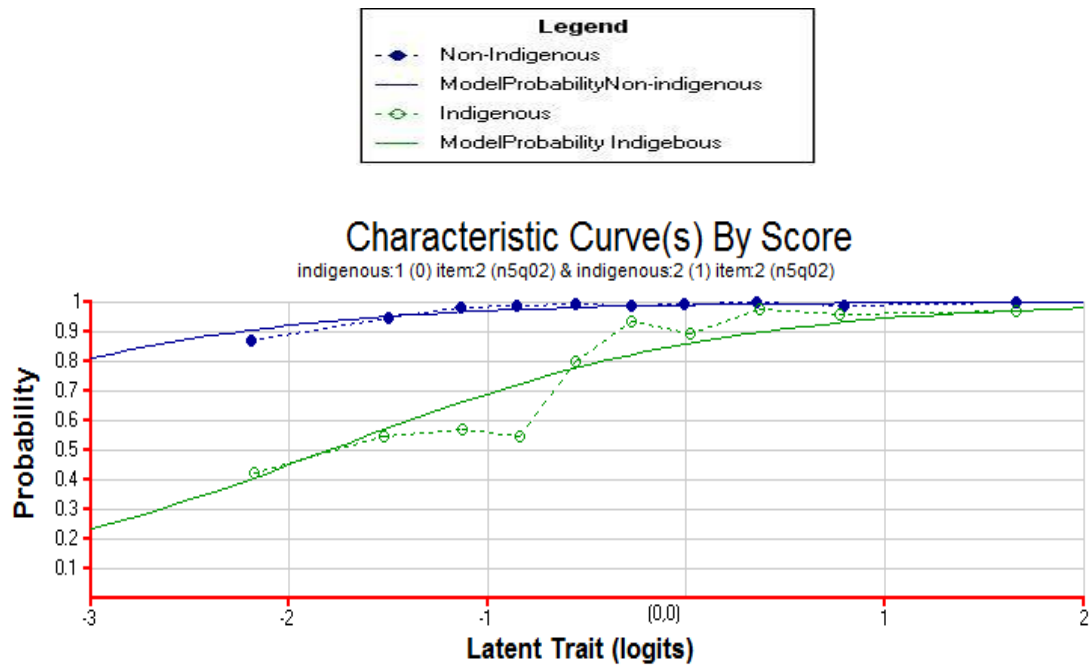
**Figure 5.5. Example of item characteristic curves displaying Indigenous DIF**

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		
Reading	3	0	0	1	0	2	4	0	0	0	0	0	0	2	1	0	0
	5	1	0	0	0	2	4	1	0	0	0	0	0	3	0	0	0
	7	0	0	0	0	0	5	0	0	0	0	0	0	1	0	0	0
	9	0	0	1	0	0	4	0	0	0	0	0	0	0	0	0	0
Spelling	3	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0
	5	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
	7	1	0	1	0	0	1	0	1	0	0	0	0	0	0	0	0
	9	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0
GP	3	0	0	0	0	0	3	0	0	1	0	0	0	0	0	0	0
	5	1	0	0	0	2	2	0	0	1	0	0	0	2	0	0	0
	7	0	0	0	1	2	2	0	0	1	0	0	0	0	0	0	0
	9	1	0	0	0	0	2	1	0	0	0	1	0	0	0	0	0
Numeracy	3	0	0	0	0	2	2	1	0	1	0	0	0	1	0	0	0
	5	0	0	0	0	3	3	0	1	0	0	0	0	0	0	0	0
	7	0	0	1	0	1	1	0	0	0	1	0	1	0	0	0	1
	9	0	0	3	0	1	2	0	2	0	2	1	1	0	1	0	0

Note. 'E' indicates that the item is relatively easier for the jurisdiction, and 'H' indicates that the item is relatively harder for the jurisdiction. Because the same items may be flagged in multiple jurisdictions, the total number of items showing state/territory DIF may not match with the sum of the cells in each domain.

CHAPTER 6. EQUATING PROCESS

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 is represented schematically in terms of the data matrix in Figure 6.1. Each year in NAPLAN, 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 are vertically equated by including common items in tests administered to adjacent year levels; i.e., Year 3/5, Year 5/7 and Year 7/9. 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 2015 NAPLAN scale for each domain needs to be horizontally equated to the historic NAPLAN reporting scale.

Because NAPLAN test materials are considered in the public domain after the tests are administered, it is not possible to use common items to horizontally equate the tests over time. Instead, common-person equating is used. The secure equating test forms used for horizontal equating in 2009 through 2014 were used for common-person equating again in 2015, 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 in addition to the 2015 main NAPLAN test forms. The equating data were used to equate the 2015 tests onto the existing NAPLAN reporting scales.

The horizontal equating provides one basis for placing the 2015 NAPLAN Year 3, Year 5, Year 7 and Year 9 tests on the vertical NAPLAN scale for each domain because item locations for the secure forms are on the NAPLAN scale. The common items in the tests administered to adjacent year levels also provide a basis for vertically equating the scales. As in previous years, the results of common person equating were checked against the results of 2015 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.

In 2011, a persuasive writing scale, separate from the narrative scale, was introduced. In 2015 a persuasive writing task was administered in NAPLAN and the resulting scale was equated to the 2011 persuasive writing scale. In 2015, one task was administered to Year 3 and 5 students and a different task was administered to Year 7 and 9 students. The process of equating writing is described in section 6.6.

6.1 Horizontal Equating for Reading, Spelling, Grammar and Punctuation and Numeracy

The horizontal equating design for all 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 2015 tests for reading, spelling, grammar and punctuation and numeracy. Each student in the equating sample completed an equating form in addition to the NAPLAN 2015 tests that the full cohort to which they belong completed. 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 2015 test and the equating form on the same scale, for each domain at each year level, using the common-person equating data. The

second step was to equate each of the NAPLAN tests onto the historic NAPLAN domain scale using the relevant equating form through the process of common-item equating.

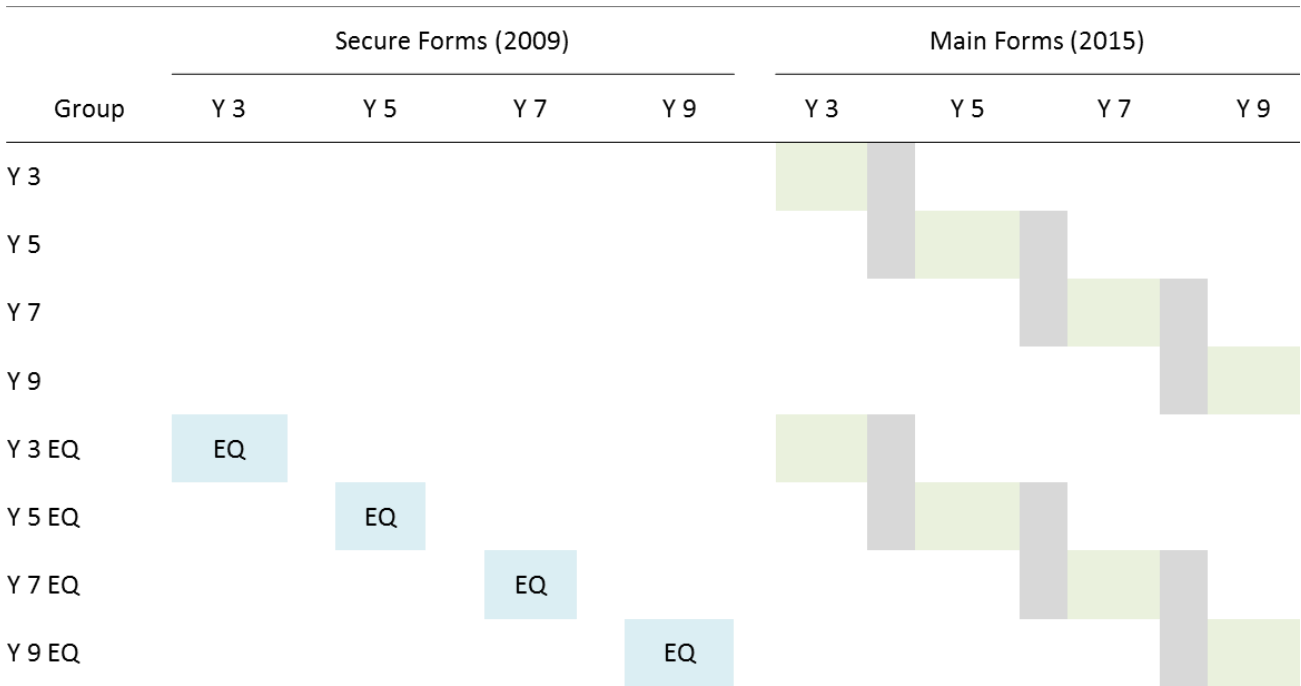


Figure 6.1. Equating design for each assessment domain.

The vertical scales were originally established in 2008. In each new calendar year, link items are included in the tests for adjacent year levels and new vertical equating is conducted. This provides the basis for obtaining new estimates of vertical shift constants to equate vertical tests. The tests are equated back using the secure forms. The secure forms are on the original scale. Consequently, there are two ways of vertically equating. First, the tests have direct vertical links. Second, the horizontal equating through equating forms places the items on the original scale, which had vertical links. Therefore, the horizontal equating provides indirect vertical links that ideally will agree with the direct links. In most cases, there was a reasonable level of agreement between the horizontal and vertical links.

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 2015 test were jointly calibrated for each domain and each year level using the combined common-person equating data.

The analyses of the equating data described above provided a set of item parameters on the preliminary NAPLAN 2015 scale for each of the equating forms. The set of 2015 equating form item estimates was then compared with the item estimates on the historic NAPLAN scale from 2009 equating for each equating form. Items were considered for deletion as links if they functioned poorly (based on MnSq 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.

Figures 6.2 to 6.17 show the comparisons of the 2009 item parameters and 2015 item parameters for items on each of the 16 equating tests. Each figure shows a pair of parameter 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 solid line.

Some equating items were slightly modified to improve the links over time. These items are omitted from the plots because they cannot be expected to have comparable locations.

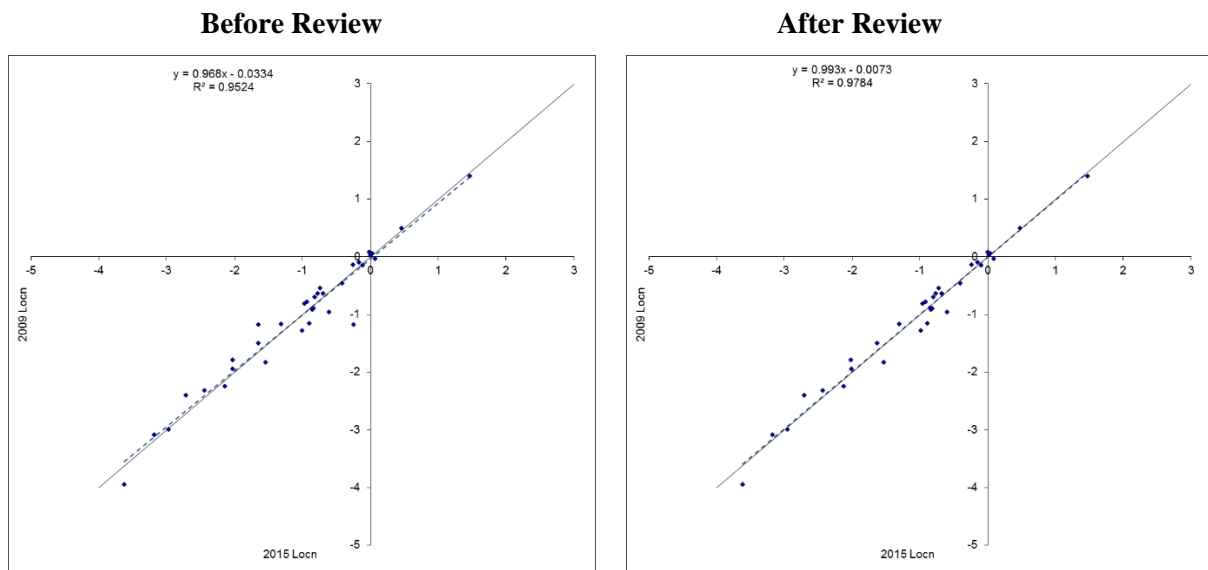


Figure 6.2. Links review for Reading equating form Year 3 (2015 vs. 2009).

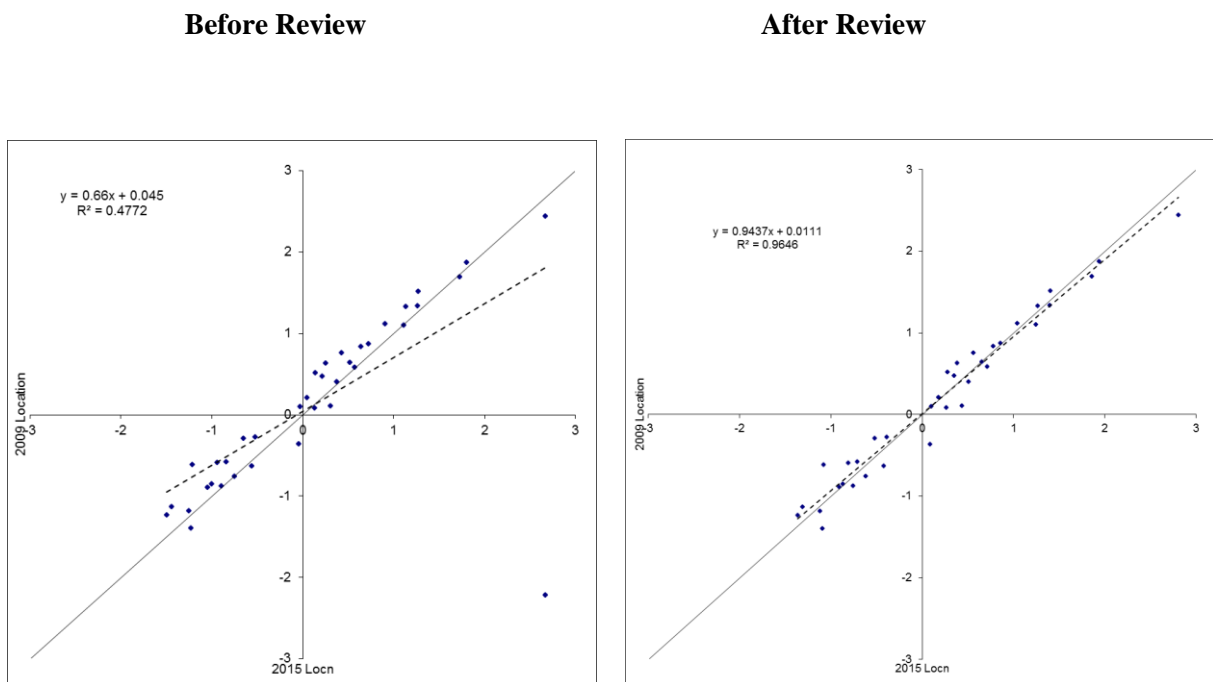


Figure 6.3. Links Review for Reading equating form Year 5 (2015 vs. 2009).

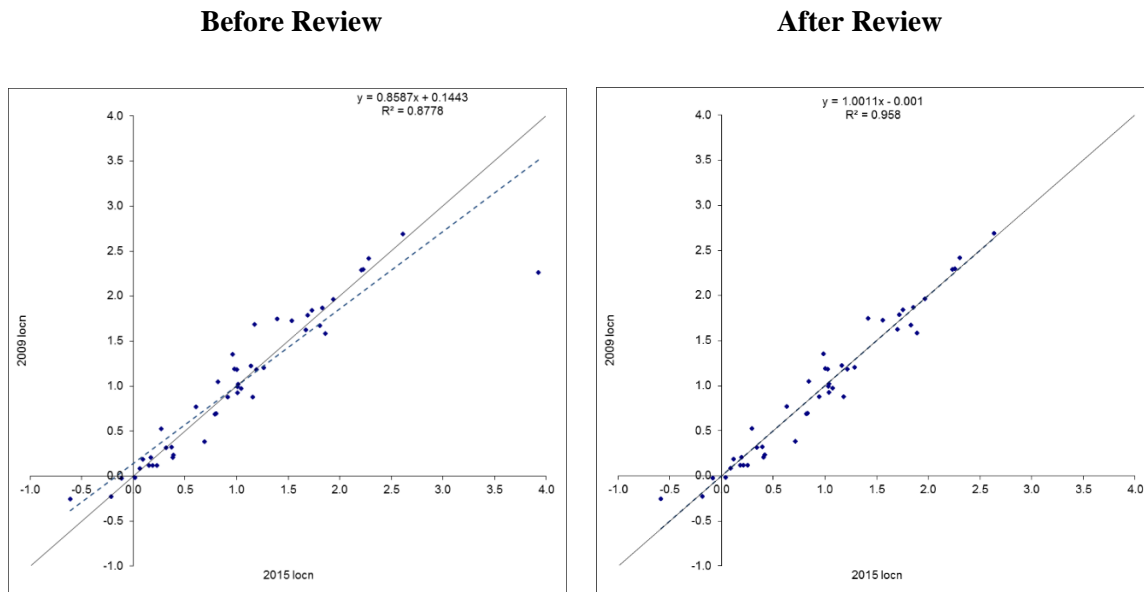


Figure 6.4. Links Review for Reading equating form Year 7 (2015 vs. 2009).

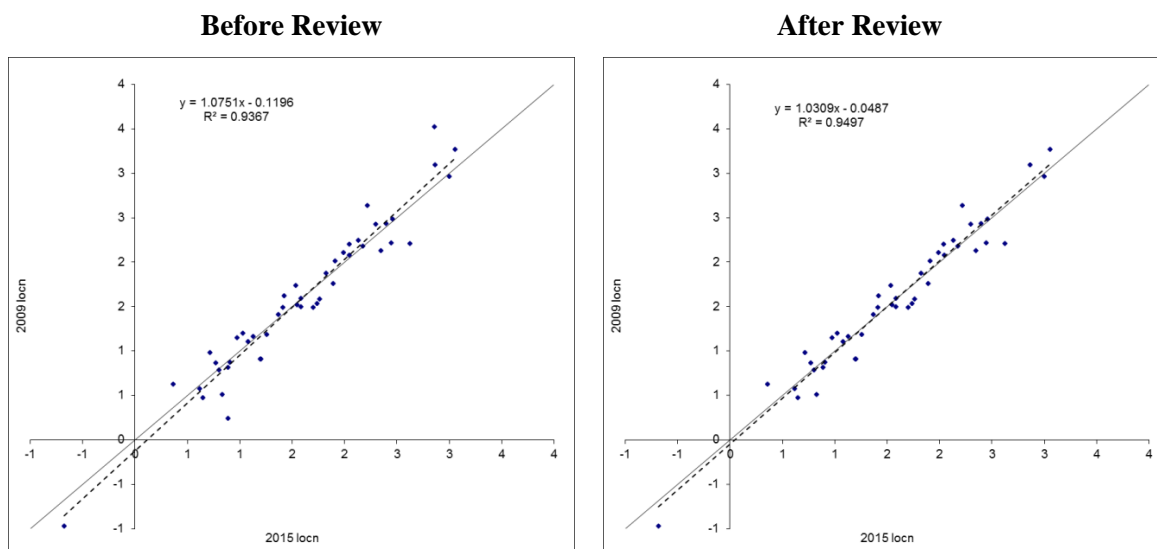


Figure 6.5. Links review for Reading equating form Year 9 (2015 vs. 2009).

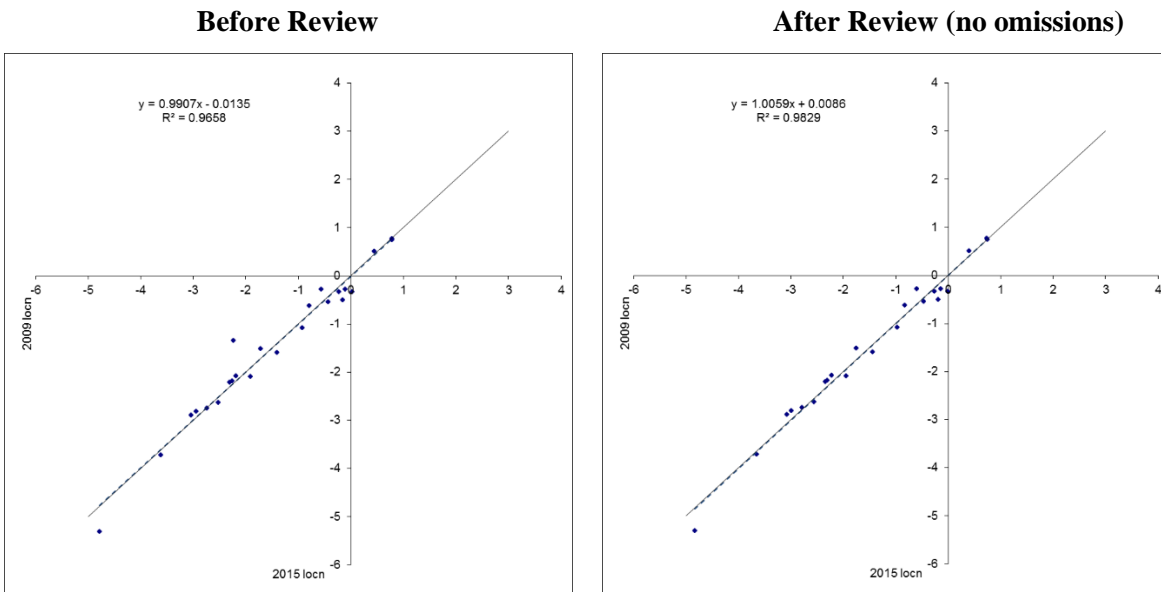


Figure 6.6. Links review for Spelling equating form Year 3 (2015 vs. 2009).

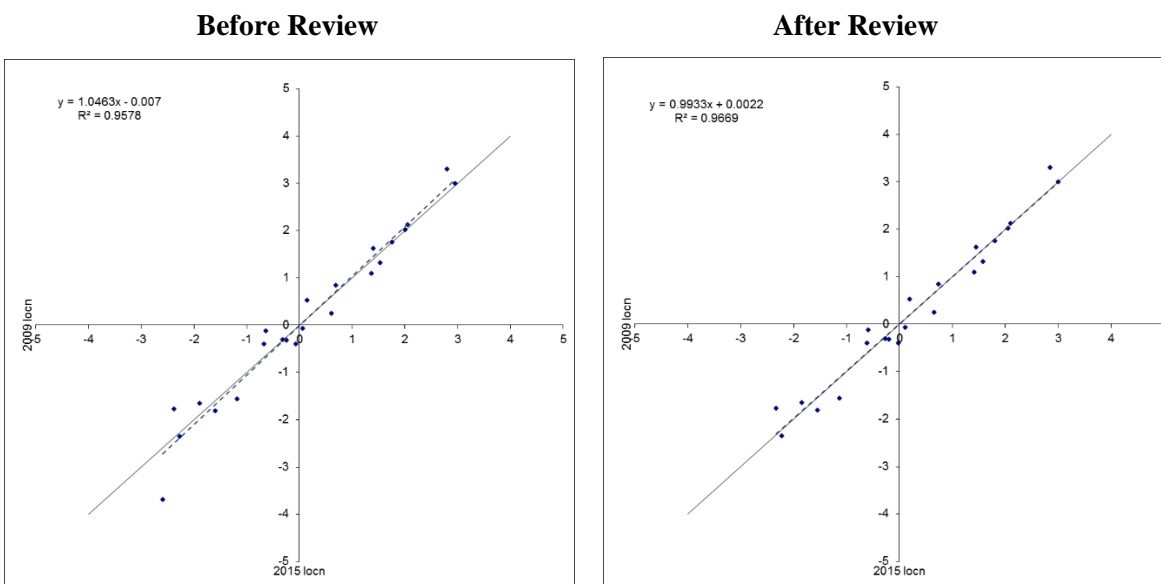


Figure 6.7. Links review for Spelling equating form Year 5 (2015 vs. 2009).

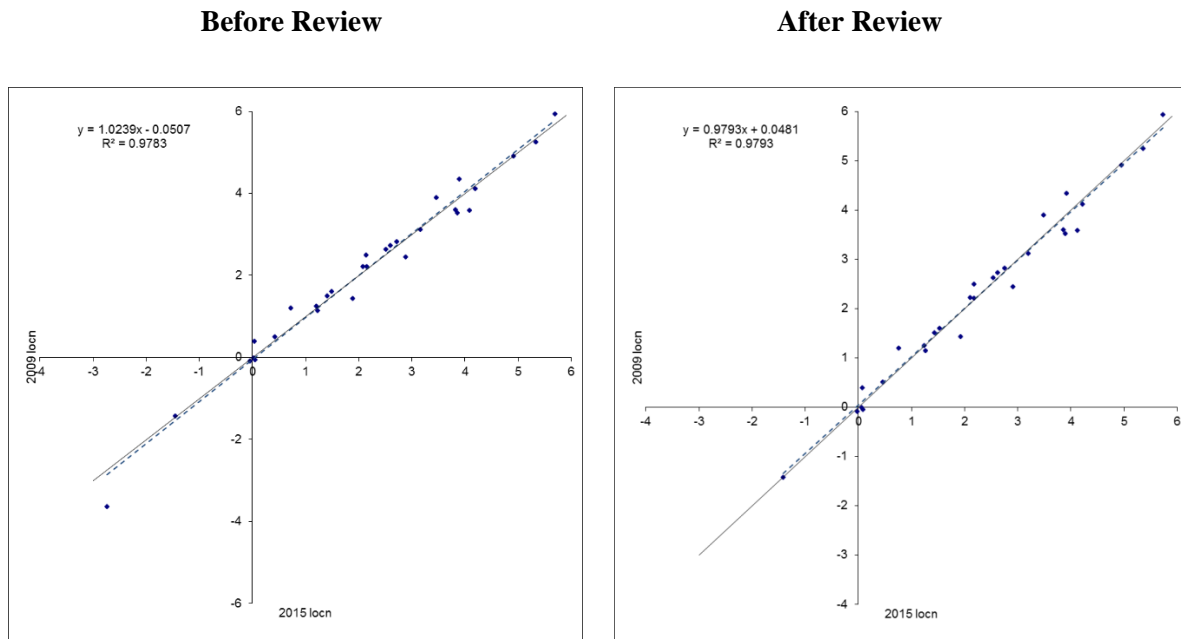


Figure 6.8. Links Review for Spelling equating form Year 7 (2015 vs. 2009).

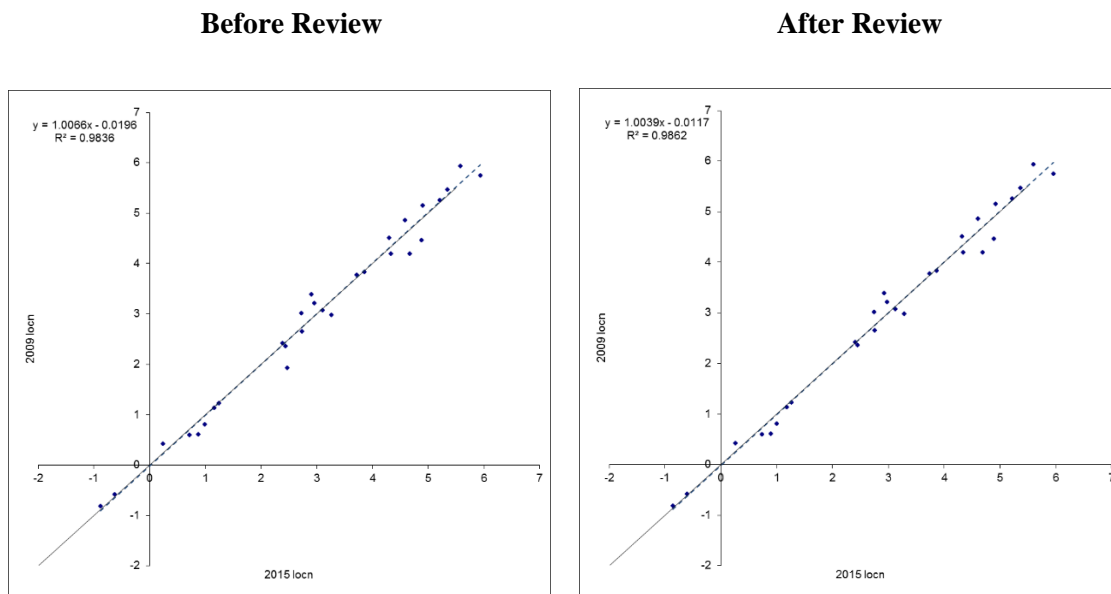
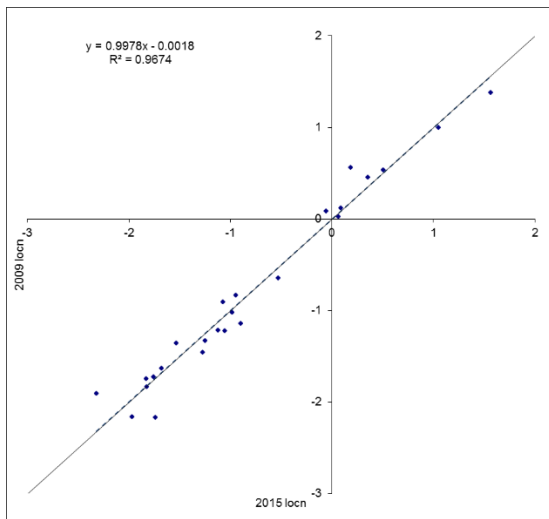


Figure 6.9. Links Review for Spelling equating form Year 9 (2015 vs. 2009).

Before Review



After Review (no omissions)

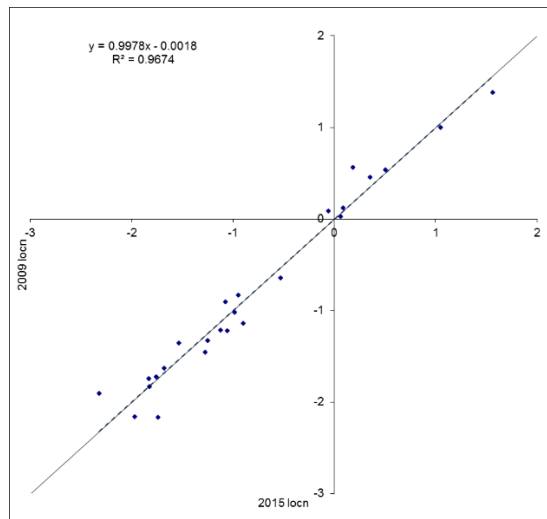
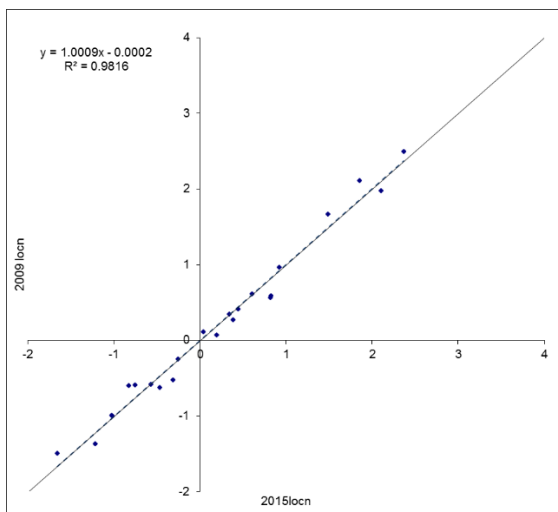


Figure 6.10. Links review for Grammar and Punctuation equating form Year 3 (2015 vs. 2009).

Before Review



After Review (no omissions)

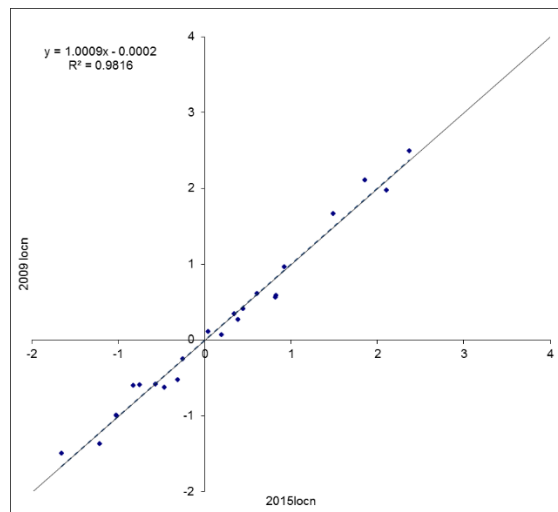


Figure 6.11. Links Review for Grammar and Punctuation equating form Year 5 (2015 vs. 2009).

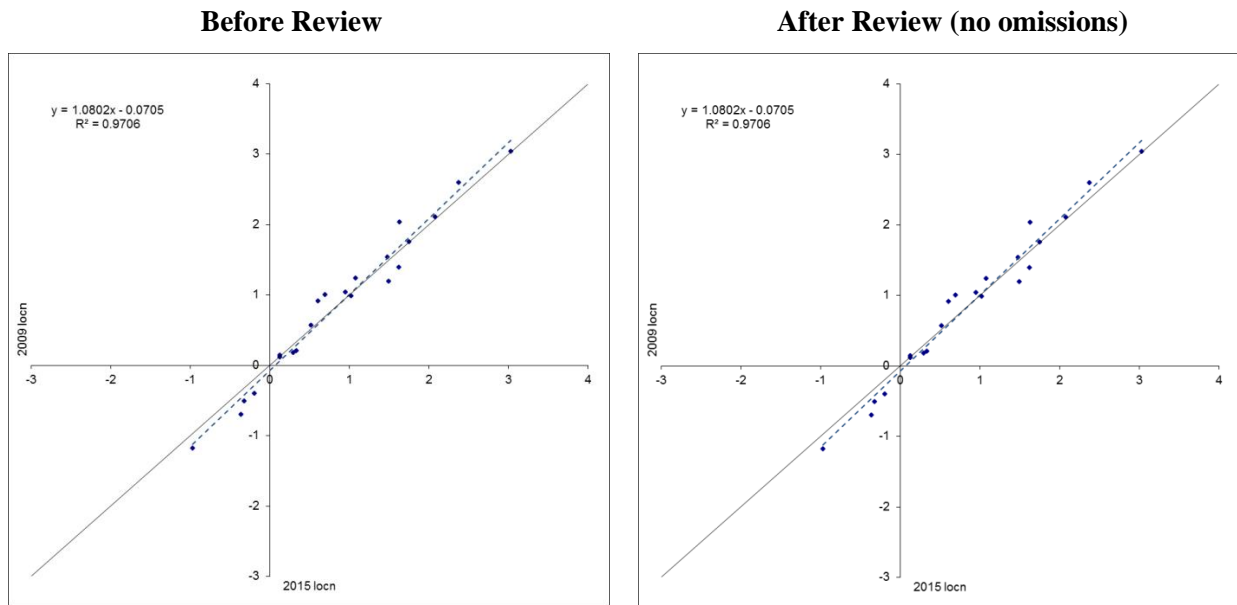


Figure 6.12. Links Review for Grammar and Punctuation equating form Year 7 (2015 vs. 2009).

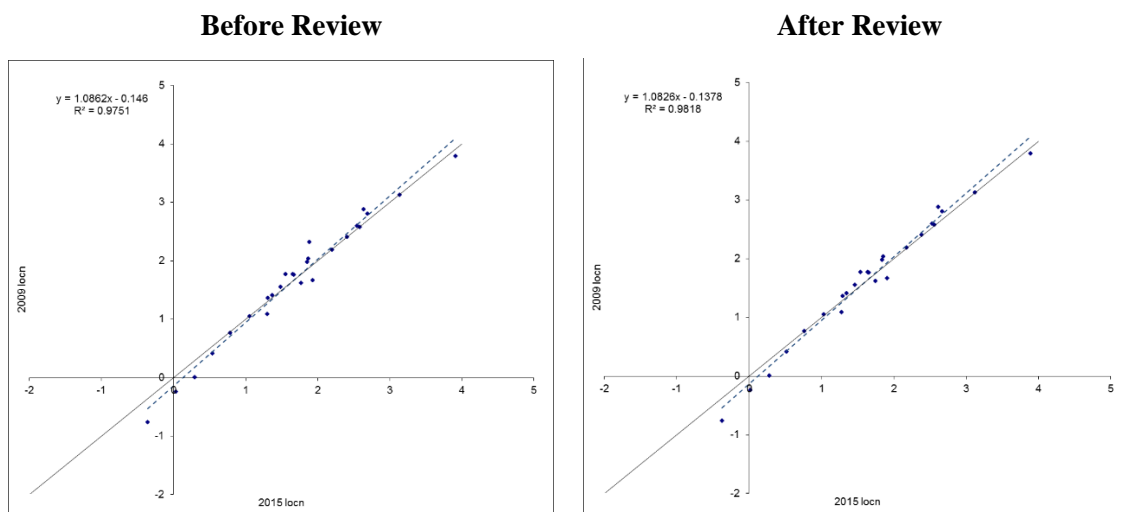


Figure 6.13. Links review for Grammar and Punctuation equating form Year 9 (2015 vs. 2009).

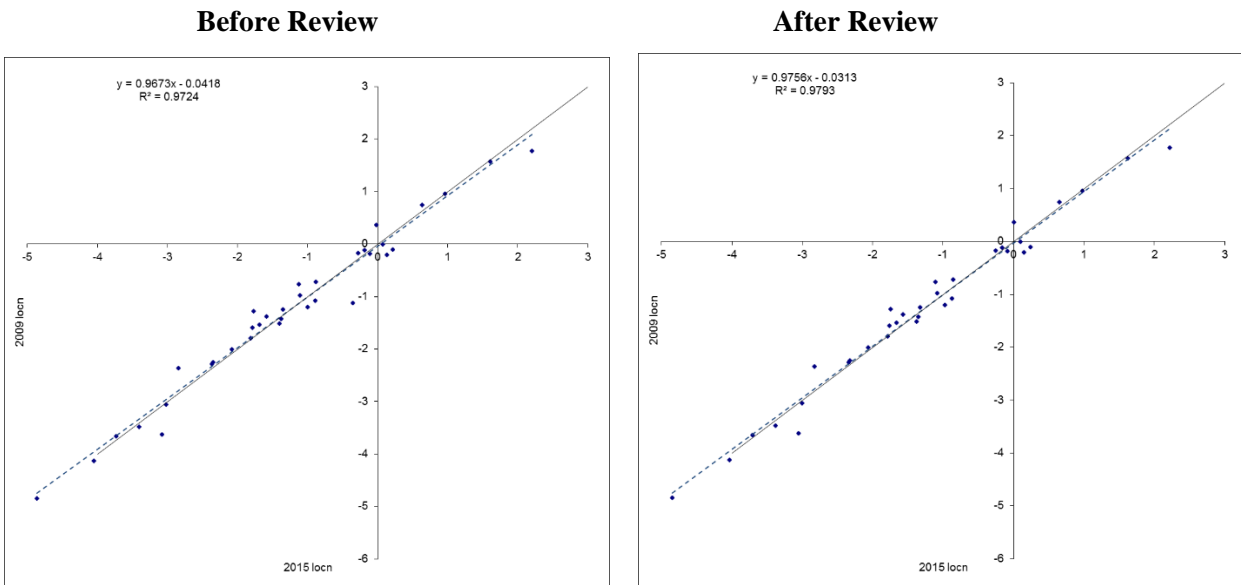


Figure 6.14. Links review for Numeracy equating form Year 3 (2015 vs. 2009).

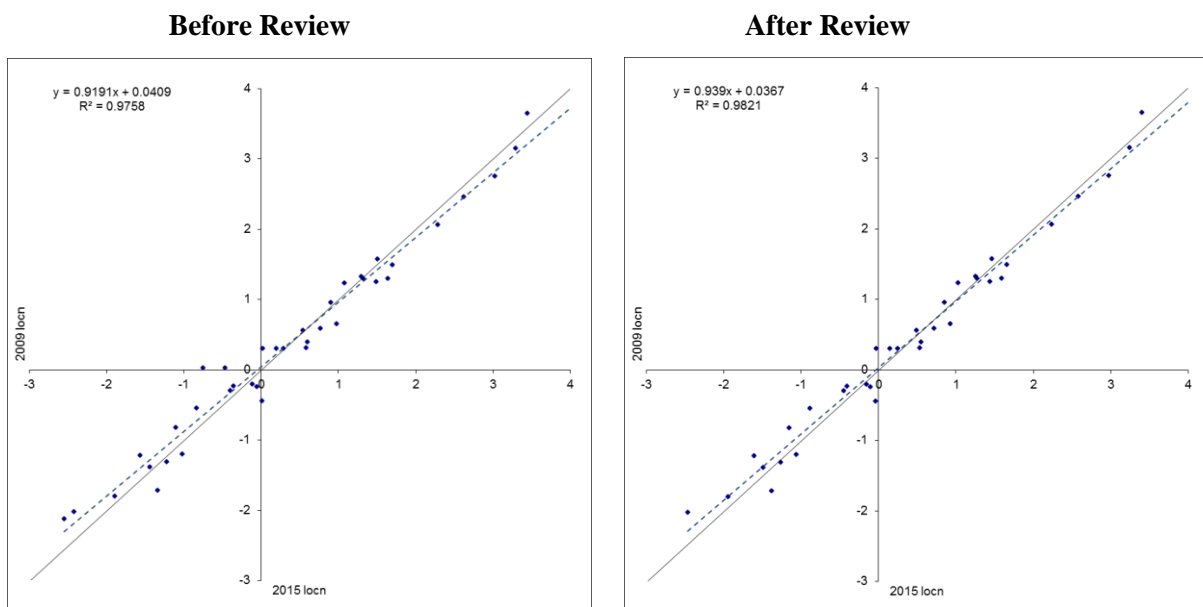


Figure 6.15. Links review for Numeracy equating form Year 5 (2015 vs. 2009).

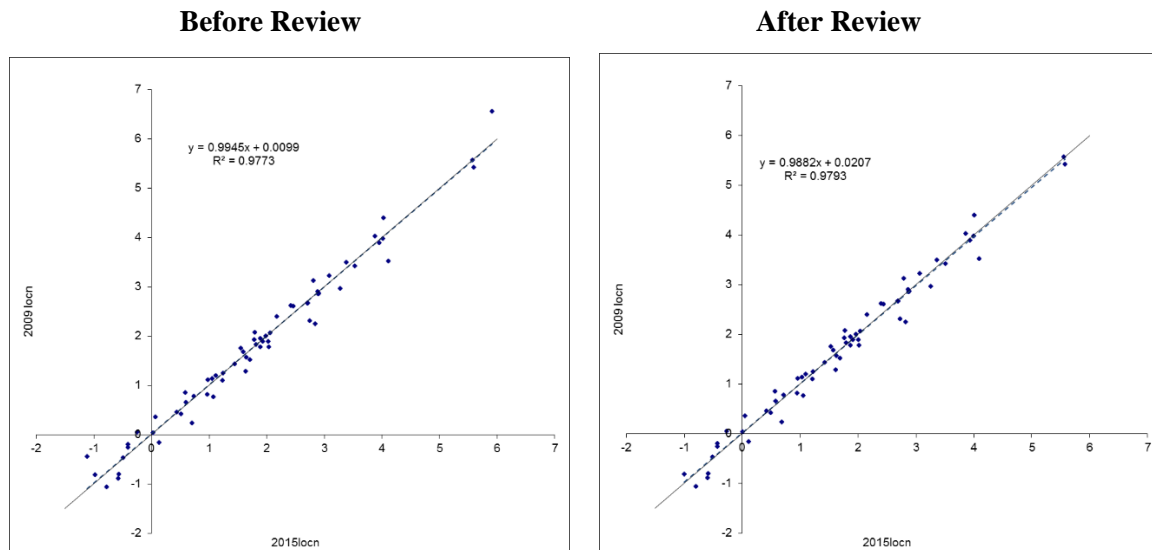


Figure 6.16. Links review for Numeracy equating form Year 7 (2015 vs. 2009).

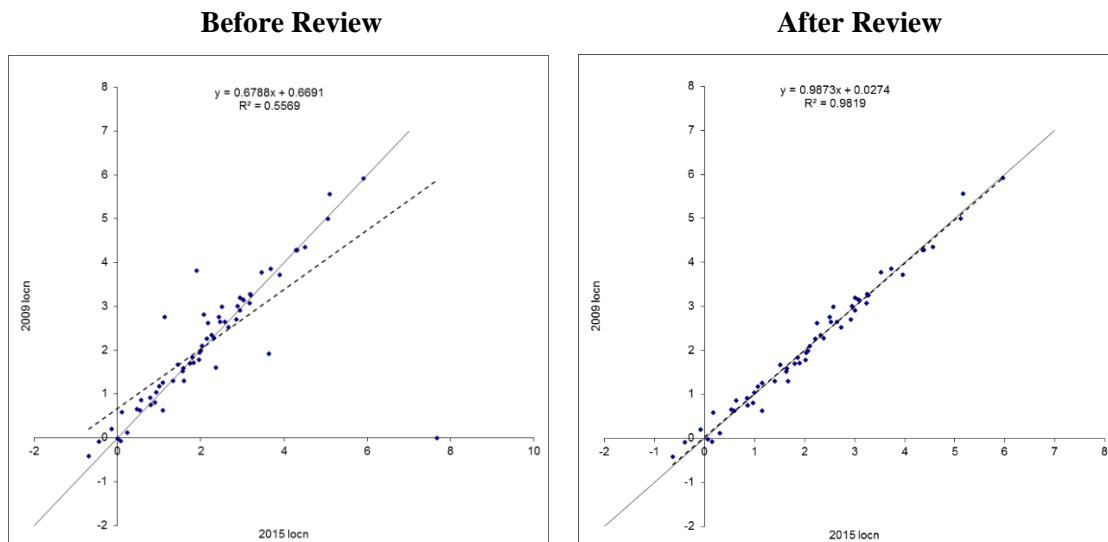


Figure 6.17. Links review for Numeracy equating form Year 9 (2015 vs. 2009).

As part of the equating process, the secure equating forms were calibrated jointly with the NAPLAN 2015 forms based on response data from an equating group of students. The locations of the equating items from the 2015 calibrations were compared with their locations from the 2009 calibration. For each domain and each year level, a final set of link items was identified. The final link items were used to calculate the shift to be applied to equate the 2015 equating forms onto the historic NAPLAN reporting scale, thus aligning the 2015 scale with the historic NAPLAN reporting scale.

Table 6.1 lists the horizontal shift-constants for each domain at each year level. The shifts are those required to equate the mean of the final set of link items for each domain and year level, based on the 2015 calibration, with the 2009 item locations of the same set of link items.

Table 6.1. Horizontal Shifts for Equating the 2015 Item Locations with 2009 Item Locations

	Reading	Spelling	Grammar & Punctuation	Numeracy
Year 3	-0.578	-1.386	-0.374	-1.058
Year 5	0.726	0.629	0.595	0.329
Year 7	1.522	1.920	1.054	1.683
Year 9	1.813	3.471	1.679	2.655

The horizontal equating of each of the 2015 NAPLAN domain scales in reading, spelling, grammar and punctuation and numeracy to the corresponding historic NAPLAN scales had provisionally put each of these domain scales on the vertical NAPLAN scales. The vertical scales, however, were constructed based on the original vertical equating of the tests. These original results were compared with the vertical equating results based on the 2015 tests and both sets of results were taken into consideration in determining the final shifts. The vertical equating of the 2015 tests is described in the next section.

6.3 Common-Item Vertical Equating of NAPLAN 2015 Tests

As in previous years of testing, the 2015 NAPLAN reading, spelling, grammar and punctuation and numeracy tests were vertically equated across Years 3, 5, 7 and 9 using link items embedded in tests in adjacent year levels. The quality of these link items was systematically reviewed for each domain. Only items that were considered to be good link items were used in the vertical equating.

Starting with the separate calibration of each test and using delta-centred item parameters, a vertical scale was constructed by determining the shift-constants (translation) between adjacent tests to equate the common items such that the tests are on a common scale.

A common item was considered for omission (i.e. not to be used as for vertical linking purposes) based on the fit of the item and evidence for Differential Item Functioning (DIF). An overarching principle, agreed in previous years, was to maximise the number of links retained where possible. In practical terms, the adoption of this principle means erring on the side of using a link where there is doubt regarding the justification and basis for its omission.

A four-stage process was used, as detailed to follow. In each stage, the transformed/equated estimates for the year level being equated to the other are used. For example, use Year 5 estimates and compare these with Year 3 estimates equated to Year 5 estimates using the provisional shift constant at the relevant point in the process.

Vertical Equating Stages

The vertical equating process was undertaken in four stages as follows:

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

Stage 2. Each item is checked for misfit at each year level based on: inspection of the ICC and graphical fit; the magnitude of the Outfit index; and the discrimination/slope estimate. Items that have no pronounced misfit in either year level form the reference set provided there are sufficient items.

Stage 3. Items that have high or low discrimination are identified and omitted if their inclusion affects the shift constant in the predicted direction. The effect is judged based upon changes in the shift constant for all items other than those omitted relative to the shift obtained for the reference set alone. For example, omitting a highly discriminating item may reduce the absolute magnitude of the shift based on the inclusion of all items such that it is more similar to the shift constant based on items in the reference set alone. If so, the relevant item would be omitted if the change is sufficiently large and if there are sufficient items available.

Stage 4. Items are omitted that show cross year-level DIF that affects the vertical shift.

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

Items were considered for deletion in the third stage based on high or low discrimination, i.e., if the discrimination (slope) estimate lay outside the range of approximately 0.8 to 1.15, and based on visual inspection of the level of discrimination evident in the ICC for the item. (The discrimination estimates were obtained from Winsteps and these are not the traditional discrimination indices.) Detailed comments were made about the functioning of each potential vertical link item, including the degree of discrimination and whether there is evidence of guessing. The reason for this stage is that when using the Rasch model to vertically equate, high discrimination is predicted to inflate the absolute shift constant whereas low discrimination is predicted to deflate the absolute shift constant (Humphry, 2007). This method typically gives similar results to omitting items on the basis of DIF criterion. However, the purpose of this additional stage is to avoid using a set of items with misfit for basing decisions about DIF.

At the last stage, items were considered for deletion based on DIF if the absolute adjusted difference was greater than 0.3 and if the absolute standardised difference was greater than 10. This is the criterion for DIF used since the inception of NAPLAN.

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. If there were insufficient items to evaluate the correspondence of the data with the identity line, it was necessary to relax the criteria applied in earlier stages of the method.

Three sets of link items (Year 3 and Year 5, Year 5 and Year 7, Year 7 and Year 9) were reviewed for each of the four domains. In each domain, the items administered to each year level were

calibrated separately. For each pair of adjacent tests with common items, mean item parameters of the common items were calculated for the tests administered to each of the two year levels. The vertical shift is the difference between the two means. The first vertical shift was applied to equate common Year 3 and Year 5 items by adjusting the Year 3 locations. The second vertical shift was applied to equate common Year 7 items with the common Year 5 items. The third vertical shift was applied to equate common Year 9 items with the common Year 7 items. The vertical shifts were computed based on the delta-centred item locations, i.e., based on usual constraint that the mean item location is 0. Thus, the vertical scale is centred about the Year 5 item locations.

In each case, the vertical shift is a constant that needs to be applied so that the mean adjusted difference is zero, i.e., so that the means of item locations for common items in adjacent year levels are equal. This permits the comparison of relative difficulties of the common items in the two tests. The standardised differences for each common item were also calculated.

For each pair of adjacent tests, one set of item parameters was then plotted against the other set of item parameters. Two plots are presented below for each review: one plot for the full set of common items before review 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.

Vertical Equating of 2015 Reading Tests**Reading – Year 3/Year 5**

Figure 6.18 shows the Year3/Year 5 reading links before and after review. Three items were omitted. Of these, two were omitted due to high discrimination that affected the shift in the direction predicted. The third showed cross-year level DIF beyond the criterion level.

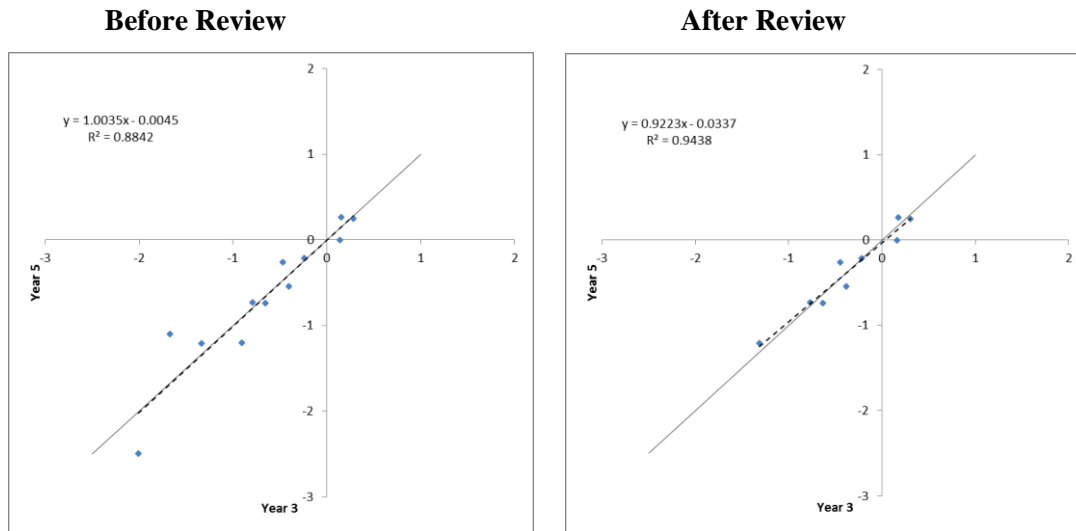


Figure 6.18. Links review for Reading Year 3 and Year 5.

Reading – Year 5/Year 7

Figure 6.19 shows the Year5/Year 7 reading links before and after review. Only one item with a relatively high item location was omitted due to high discrimination that affected the shift in the predicted direction.

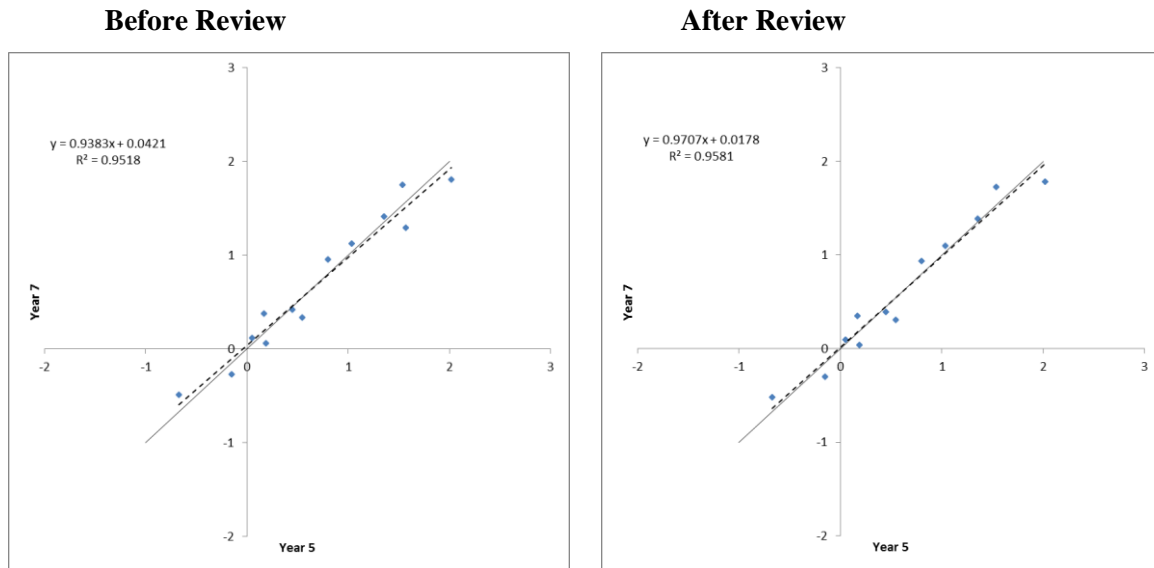


Figure 6.19. Links review for Reading Year 5 and Year 7

Reading – Year 7/Year 9

Figure 6.20 shows the Year 7/ Year 9 reading links before and after review. Only one item was omitted, which item showed DIF and also had high discrimination that affected the shift constant in the predicted direction.

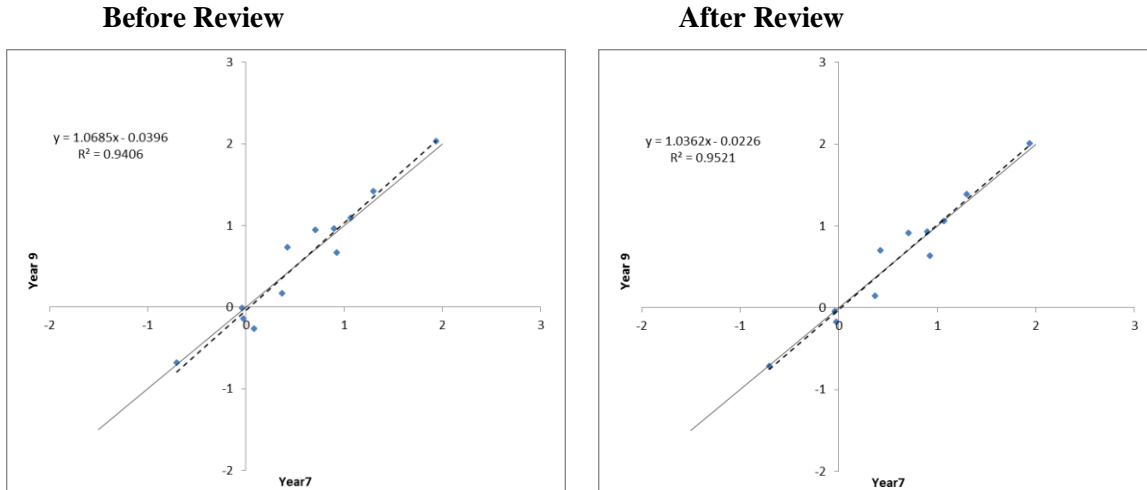


Figure 6.20. Links review for Reading Year 7 and Year 9.

*Vertical Equating of Spelling Tests**Spelling – Year 3/Year 5*

The Year 3/Year 5 vertical equating is summarised in Figure 6.21. Although three items showed DIF beyond the criterion level in logits, the decision was made to retain links because there are relatively few link items available. It was also noted that the standard deviation of the person and item locations is large in spelling which makes the absolute criterion of 0.3 relatively more strict relative to the large spread of item locations.

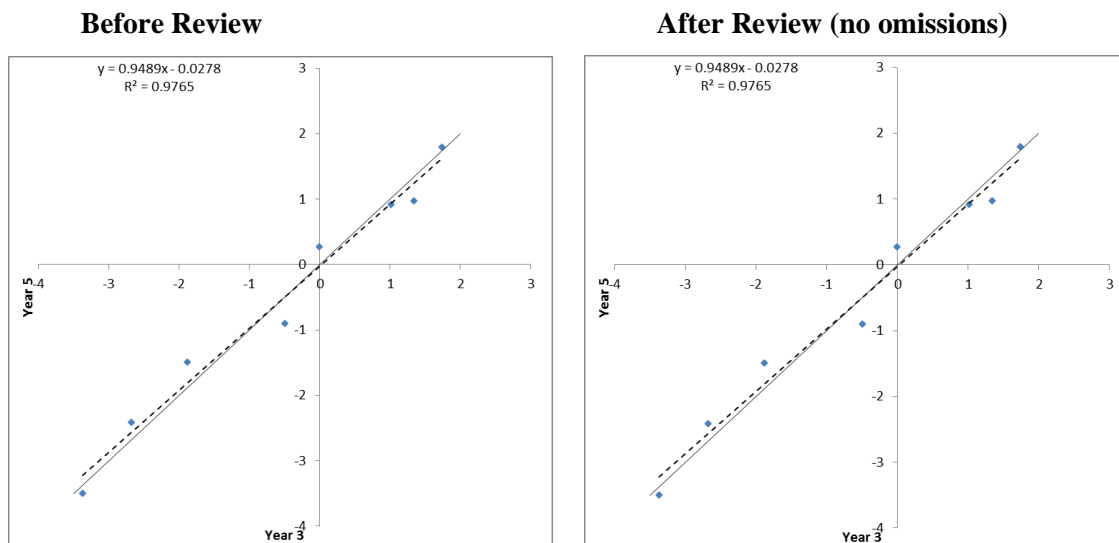


Figure 6.21. Links review for Spelling Year 3 and Year 5.

Spelling – Year 5/Year 7

The Year 5/ Year 7 links are shown in Figure 6.22. Two relatively easy items were omitted due to cross-year level DIF.

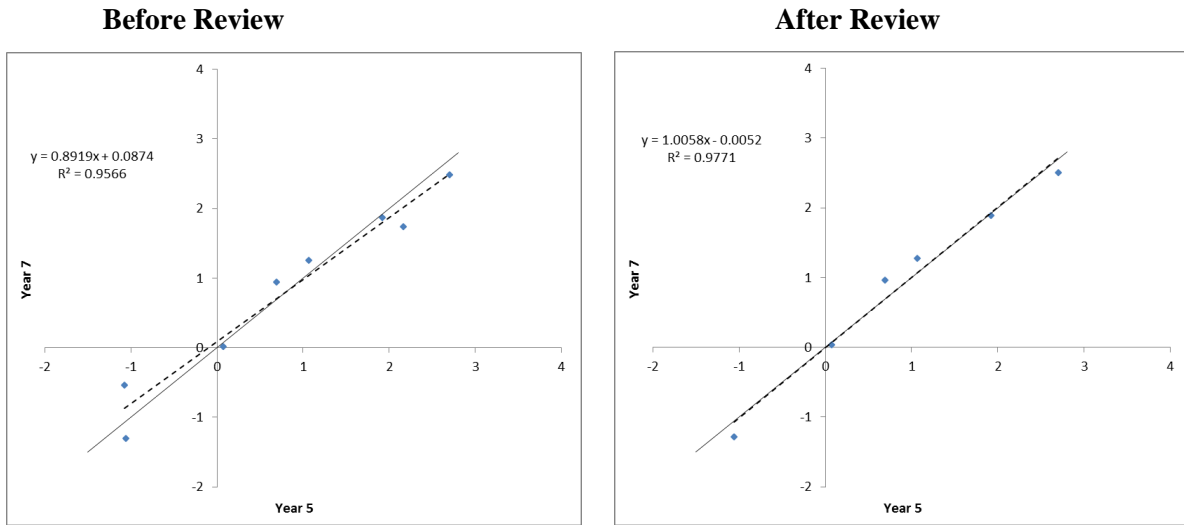


Figure 6.22. Links review for Spelling Year 5 and Year 7.

Spelling – Year 7/Year 9

The Year 7/ Year 9 links are summarised in Figure 6.23. Two items were omitted due to cross-year level DIF. The omission of the two items had a trivial impact on the shift constant of only 0.004.

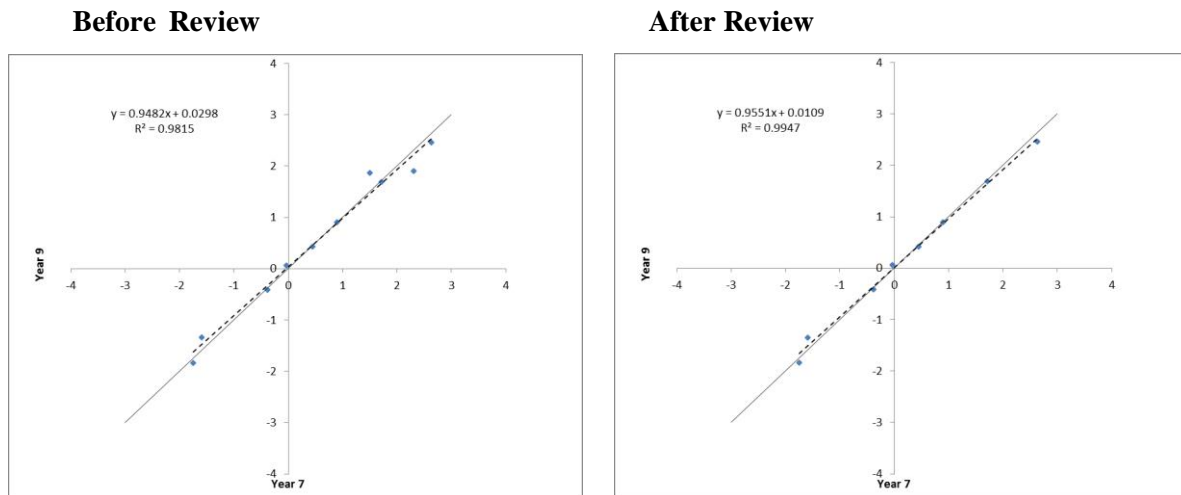


Figure 6.23. Links review for Spelling Year 7 and Year 9.

Vertical Equating of Grammar and Punctuation Tests*Grammar and Punctuation – Year 3/Year 5*

Figure 6.24 shows the Year 3/Year 5 grammar and punctuation scatterplots before and after review. Two items were omitted due to cross-year level DIF.

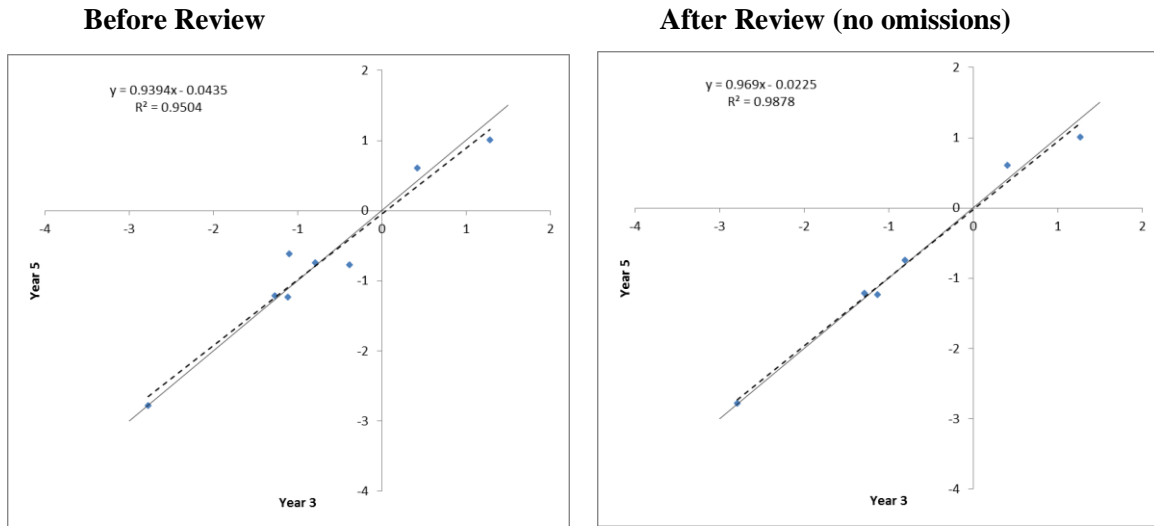


Figure 6.24. Links review for grammar and punctuation Year 3 and Year 5.

Grammar and Punctuation – Year 5/Year 7

Figure 6.25 shows the bivariate locations of the Year 5/Year 7 grammar and punctuation link items before and after review. One item with moderate difficulty was omitted due to strong guessing that affected the shift in the predicted direction.

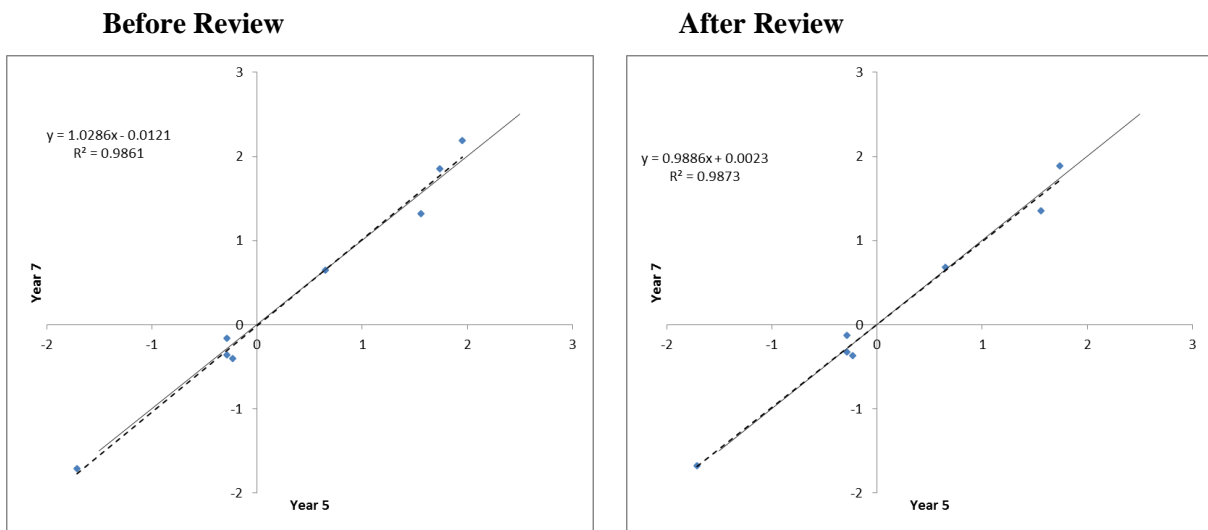


Figure 6.25. Links review for grammar and punctuation Year 5 and Year 7.

Grammar and Punctuation – Year 7/Year 9

Figure 6.26 shows the scatterplots for Year 7/ Year 9 vertical links before and after review. There were no omissions in the vertical equating of Year 7 and 9 grammar and punctuation.

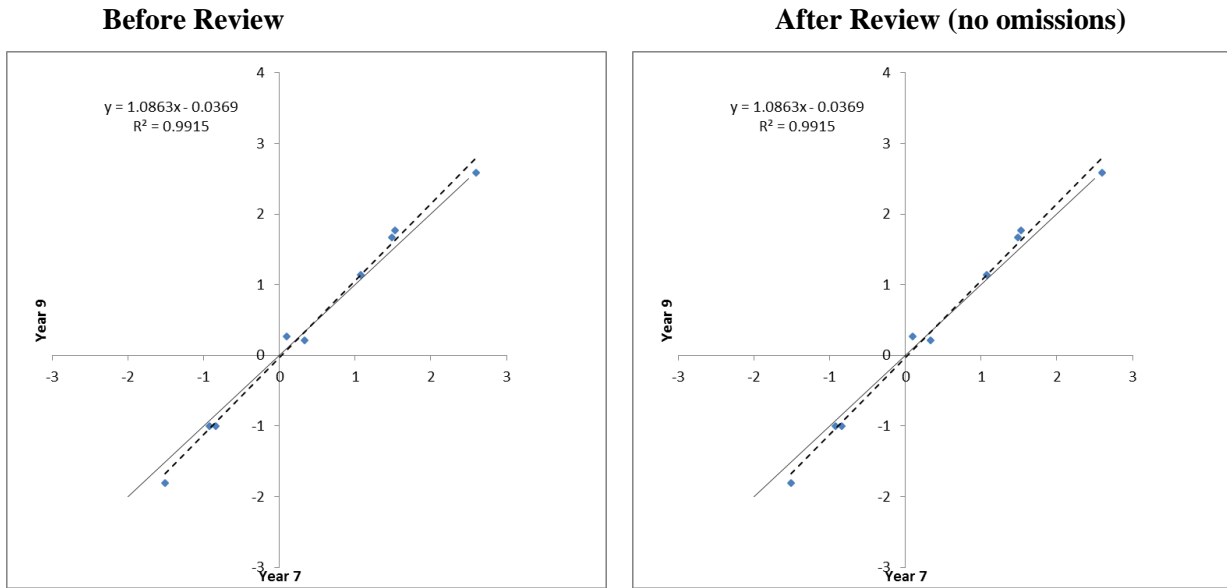


Figure 6.26. Links review for Grammar and Punctuation Year 7 and Year 9.

Vertical Equating of 2015 Numeracy Tests

The quality of the 2015 numeracy vertical links was generally high.

Numeracy – Year 3/Year 5

Figure 6.27 shows the scatterplots for Year 3/ Year 5 vertical links for numeracy before and after review. Two items were omitted. One of these had high discrimination that affected the shift in the predicted direction and one had low discrimination that affected the shift in the predicted direction.

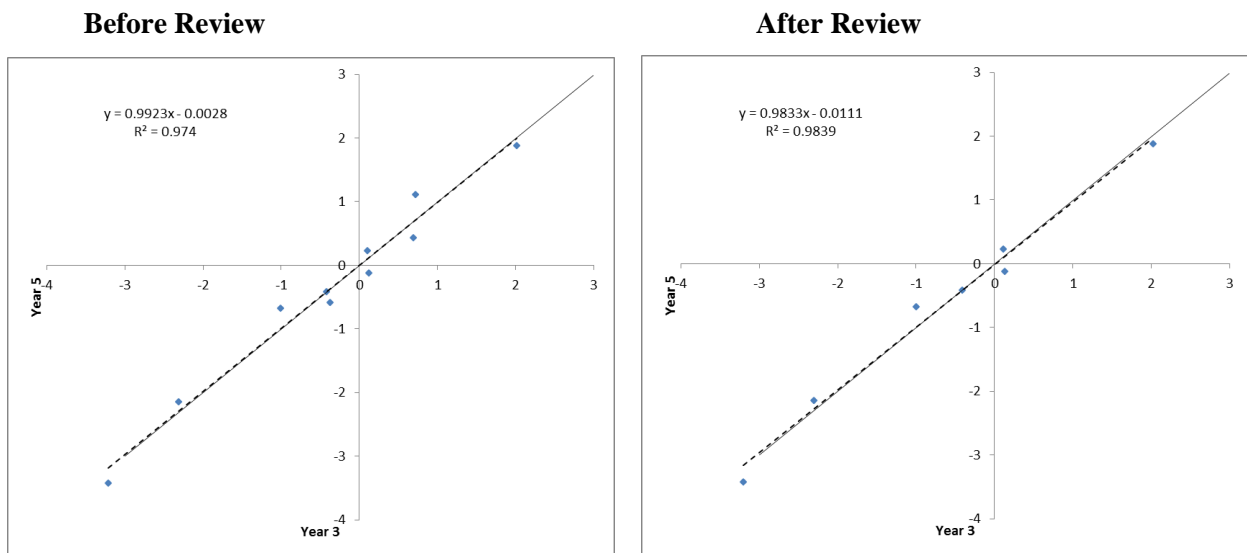


Figure 6.27. Links review for Numeracy Year 3 and Year 5

Numeracy – Year 5/Year 7

Figure 6.28 shows the scatterplot before and after review for numeracy Years 5 and 7. Two items were omitted. One relatively difficult item had high discrimination that affected the shift in the predicted direction; another relatively easy item had low discrimination that affected the shift in the predicted direction. Each of the items would have also been omitted based on cross-year level DIF.

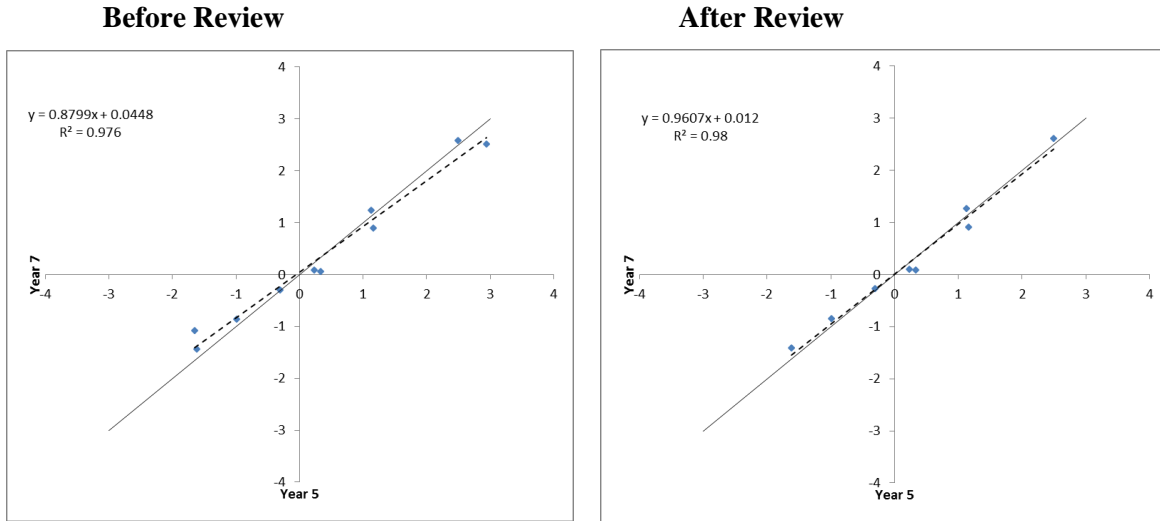


Figure 6.28. Links review for Numeracy Year 5 and Year 7.

Numeracy – Year 7/Year 9

Figure 6.29 shows the cross year-level plot for vertical equating of the Year 7 and Year 9 numeracy tests. Five items were omitted. Of these, two had high discrimination that affected the shift in the predicted direction and two had low discrimination that also affected the shift in the predicted direction. Three of these items would have been omitted based on cross-year level DIF and the fourth had a borderline level of DIF. The fifth item was omitted due to cross-year level DIF.

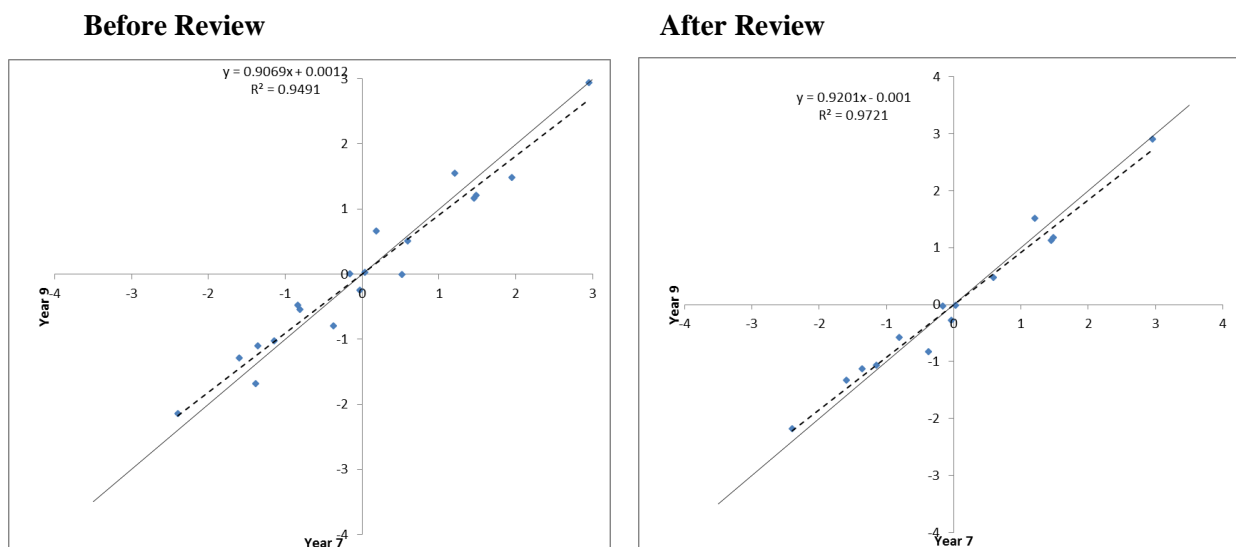


Figure 6.29. Links review for Numeracy Year 7 and Year 9.

The numbers of the vertical links used and retained for each adjacent pair of year levels are shown in Table 6.2. Appendix M presents the 2015 item locations (i.e., Rasch difficulty parameters), standard errors, mean square statistics, item facilities, and item discriminations by domain for each adjacent pair of year levels.

Table 6.2. Vertical Link Review Summary

Domain	Years 3 / 5		Years 5 / 7		Years 7 / 9	
	No. Links Retained	Total No. of Links	No. Links Retained	Total No. of Links	No. Links Retained	Total No. of Links
Reading	10	13	12	13	11	12
Spelling	8	8	6	8	8	10
Grammar & Punctuation	6	8	7	8	9	9
Numeracy	7	10	8	10	14	19

Summary of Vertical Equating of NAPLAN 2015 Tests

The mean shifts between two adjacent year levels for each of the four domains are shown in Table 6.3. Year 5 is used as the reference to which other years are vertically equated as in previous administrations of the program.

Table 6.3. Vertical Shift Constants

Shift	Reading	Spelling	Grammar & Punctuation	Numeracy
Year 3 to 5	-1.226	-1.819	-1.007	-1.138
Year 5 to 5	0.000	0.000	0.000	0.000
Year 7 to 5	0.920	1.228	0.728	0.976
Year 9 to 5	1.161	2.379	1.164	1.786

The final locations of the 2015 tests on each of the NAPLAN domain scales were determined by taking both of the horizontal equating results and the vertical equating results into consideration. The procedure and results are described in Section 6.4.

6.4 Comparing and Combining Results of Horizontal and Vertical Equating

The horizontal equating provides one basis for placing the 2015 NAPLAN tests on the vertical scale for each domain. The reason for this is that the four tests in each domain were vertically equated based on the vertical scale, established in 2008, through common-item vertical equating of the 2008 tests. The horizontal equating forms were first used in 2009.

It is useful to check the common-item vertical equating against the original 2008 common-item vertical equating to ascertain whether the new vertical scale is aligned with the original vertical scale. Figure 6.1 depicts the horizontal and vertical equating schematically. Each year-group can be equated directly through the horizontal equating. In principle, each year level could also be placed on the historical scale indirectly through vertical equating with the adjacent year level and horizontal equating through that adjacent year level. For example, the Year 3 NAPLAN 2015 test can be equated with the Year 5 NAPLAN 2015 test and then placed on the historical scale through the Year 5 equating form. The latter process is referred to here as *indirect* equating. The regression-based equating plots to follow indicate where there is some divergence. Ideally, any case of divergence between direct and indirect equating would be resolved to the degree possible through checking each specific component of the linking process.

The equating process that has been used in previous years of NAPLAN is designed to take into consideration both vertical equating and horizontal equating. This process was used again to establish final locations of the reading, spelling, grammar and punctuation and numeracy tests on the NAPLAN reporting scales.

In this section, the results of the horizontal equating based on the equating sample are compared with the vertical equating results based on the 2015 calibration sample for each domain. Specifically, the vertical and horizontal shift constants are plotted for each of the four year-level tests in each domain.

Figure 6.30 shows plots of the horizontal shifts for the 2015 tests (vertical axes) against the vertical shifts (horizontal axes). The latter are based on the common-item vertical equating and delta-centred at Year 5. Because each test is calibrated so that the mean item location is 0 (delta-centred),

the mean item parameters after equating will be equal to the shifts. The dotted line is the regression line based on the four tests in each domain. The regression equation and R -square are shown at the top-left corner of each plot. There is one plot per domain.

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. There is to some extent a re-setting of the vertical scale when the regression slopes deviate from 1.0.

To date in the program, scaling factors have been employed that assume the population standard deviation remains the same over time; i.e., the scaling factors applied make the standard deviations of the population equal by definition based on the calibration sample data. The scaling factors applied to the final scale are not applied at the point of vertical or horizontal equating. Consequently, there may be differences between the locations used for reporting and the locations used for equating. The differences between the two sets of locations increase as the scaling factor increases above 1. The grammar and punctuation scaling factors have often been smaller than 1 in previous years of NAPLAN. This could reflect a greater spread of the scale due to a systematic increase in the discriminations of items on the tests.

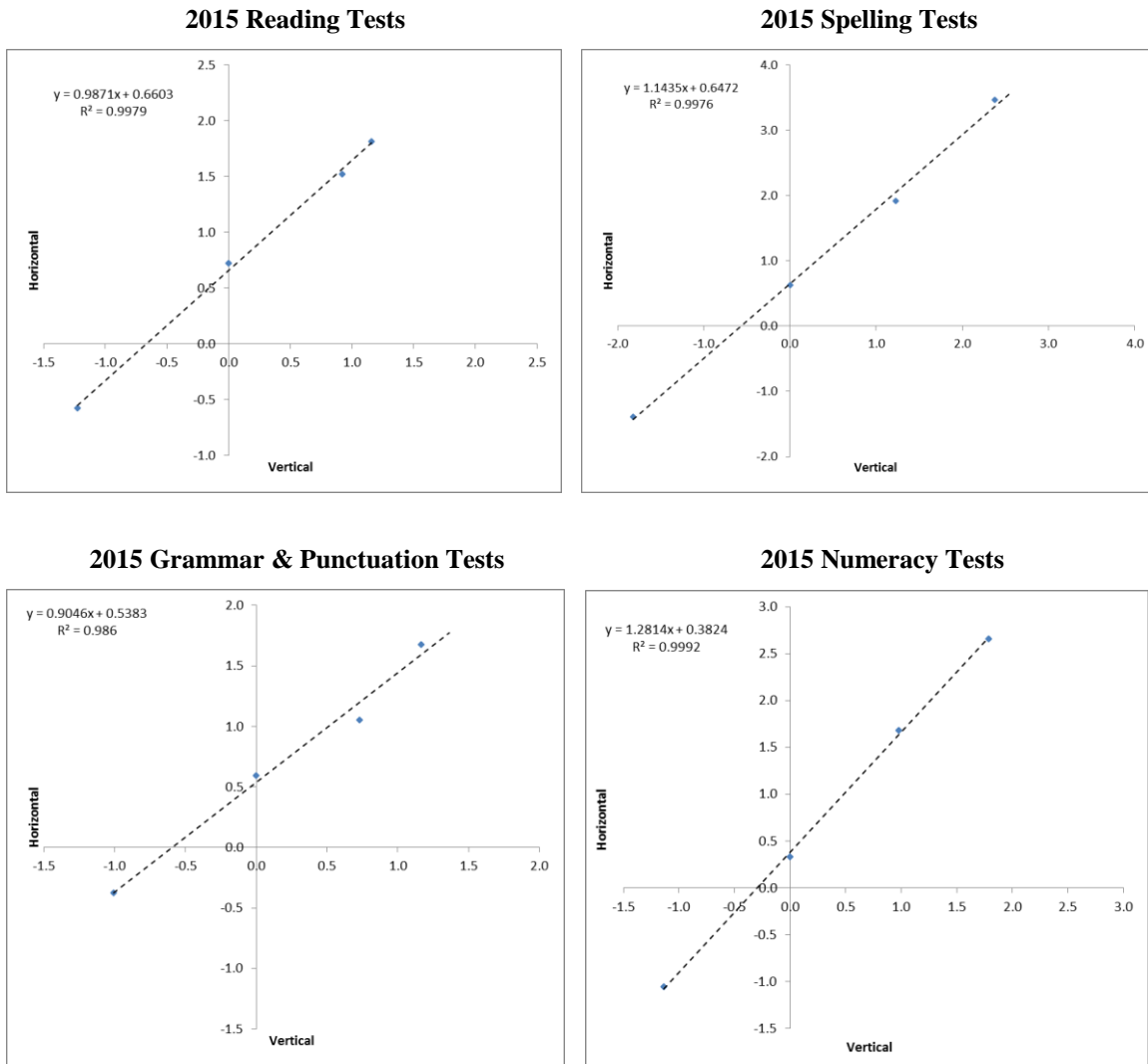


Figure 6.30. Regression-based combination of vertical and horizontal equating shifts.

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

Table 6.4 Regression Intercepts and Slopes

Regression Coefficient	Reading	Spelling	Grammar & Punctuation	Numeracy
Intercept	0.660	0.647	0.538	0.382
Slope	0.987	1.144	0.905	1.281

As in previous years, the final 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 vertical, Year-5 centred shift; b is the regression slope; and a is the regression intercept.

The final, regression-based shifts for each domain calculated using Equation 6.1 are shown in Table 6.5 by year level.

Table 6.5 Final Shifts Applied for Equating NAPLAN 2015 onto the NAPLAN 2008 Scale

Year Level	Reading	Spelling	Grammar & Punctuation	Numeracy
3	-0.550	-1.432	-0.372	-1.076
5	0.660	0.647	0.538	0.382
7	1.568	2.052	1.197	1.633
9	1.806	3.367	1.591	2.671

6.5 Calibration and Scaling of Persuasive Writing

Background

As noted earlier, in 2015 two persuasive writing tasks were administered as part of NAPLAN—one to Year 3 and 5 students and the other to Year 7 and 9 students. The rating of NAPLAN 2015 writing for all participating year groups was based on the same 10 criteria and the same marking guide used for the writing tests in 2011 through 2014.

Raw score summary

Tables 6.6 present the distributions of raw scores by year level for both calibration sample and census data, which indicate that the distributions of raw scores were very similar from 2011 to 2015.

Table 6.6. NAPLAN 2011—2015 Persuasive Writing Raw Score Distribution by Year Level

Persuasive Writing	Year Level	Number of Students	Mean	Standard Deviation
Sample 2011	3	1066	18.14	5.08
	5	1131	23.56	5.90
	7	2510	26.95	7.05
	9	2401	30.31	8.10
Full Cohort 2011	3	252901	19.42	5.12
	5	258563	24.74	5.79
	7	261475	28.67	6.53
	9	244772	31.97	7.54
Sample 2012	3	10487	18.73	5.15
	5	9644	23.70	5.71
	7	20751	27.56	6.45
	9	29151	30.60	7.45
Full Cohort 2012	3	259654	19.43	4.96
	5	240421	24.28	5.58
	7	263986	27.72	6.36
	9	253924	30.76	7.46
Sample 2013	3	10178	18.83	5.31
	5	10008	23.80	5.97
	7	19321	27.53	6.64
	9	30230	30.69	7.61
Full Cohort 2013	3	262679	19.43	5.25
	5	258562	24.35	5.68
	7	261373	27.60	6.45
	9	254470	30.76	7.66
Sample 2014	3	10709	18.23	5.16
	5	10337	23.52	5.54
	7	19038	27.18	6.24
	9	28305	30.67	7.04
Full Cohort 2014	3	274335	18.41	5.24
	5	263872	23.57	5.59
	7	242127	27.16	6.37
	9	255770	30.47	7.50
Sample 2015	3	11399	18.86	5.00
	5	10671	23.91	5.53
	7	26411	27.01	6.34
	9	28348	26.07	6.38
Full Cohort 2015	3	285722	19.46	5.03
	5	267506	24.36	5.34
	7	258921	27.12	6.44
	9	253216	30.18	7.48

Equating Methodology

The equating study design for persuasive writing in the NAPLAN 2015 assessment was the same as that used in 2009 and 2010 to equate narrative writing and to equate persuasive writing in 2011 through 2014.

The purpose of the equating exercise was to cross-check other sources of information in the equating of Writing, particularly the intended use of identity equating. Here identity equating is appropriate if the marking guide and exemplification is consistent across years, a formal equating process is not required.

A more complex equating design was used in 2015 than in previous years due to the introduction of two separate tasks. As in previous years, judges compared (i) 2011 scripts with other 2011 scripts, (ii) 2015 scripts with other 2015 scripts, and (iii) 2011 scripts with 2015 scripts. However, the 2015 scripts represented performances on two different tasks.

An additional common task was administered to all participating year levels in case it was necessary to detect interactions between task and rater effects in 2015. Specifically, approximately 500 students in total from Years 5 and 7 produced writing based on both: (i) the main 2015 tasks specific to each year level; and (ii) the secure task. Rubric scores were available for both tasks for the common persons. Pairwise locations were also available for a subset of 62 Year 5 students and 69 Year 7 students that attempted both the secure and main tasks.

The Bradley-Terry-Luce (BTL) model was applied to the pairwise judgements by markers to calibrate a pairwise equating scale to scale both the 2011 and 2014 equating scripts together.

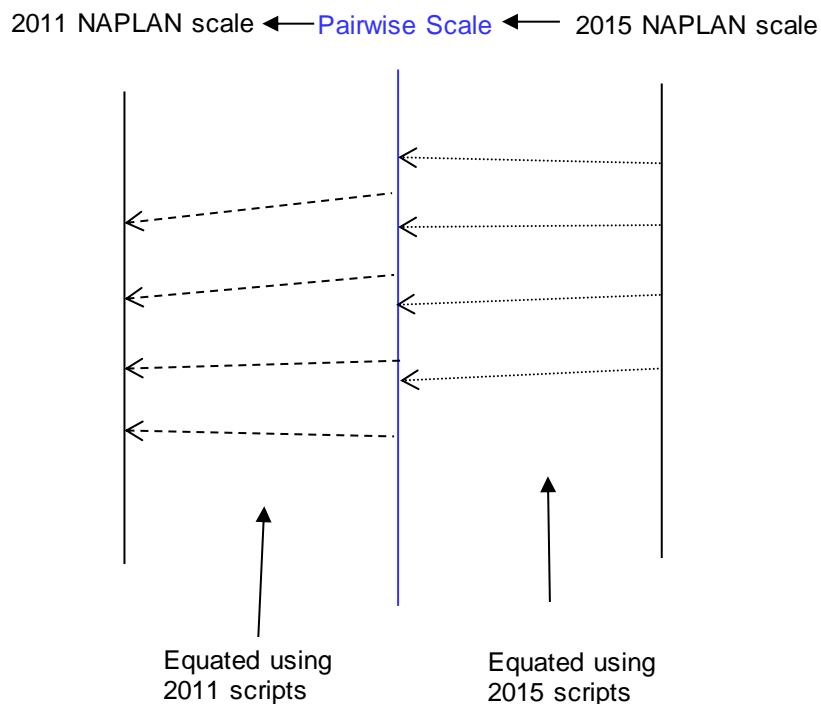


Figure 6.31. A schematic of the pairwise equating process used for Persuasive Writing.

Figure 6.31 is a schematic representation of the steps involved in the process of equating, which was used to ascertain whether results are comparable over time based on the consistency of the marking guide, training, and so forth. Both the 2011 and 2015 scripts used in the equating study have locations on the pairwise equating scale. The correspondences of the locations for four scripts from each year are shown for the purpose of illustration.

In total, 234 scripts from 2011 were compared with other scripts and 322 scripts from 2015 were compared with other scripts. Of the 2015 scripts, 132 were scripts on the secure task that was common across all year levels and the remainder were scripts on the main 2015 tasks. As in the previous two years of the program, markers judged each comparison with respect to two criteria, referred to as Authorial Choices and Conventions.

Figure 6.32 shows the plot of pairwise scale locations (x -axis) against locations based on the rubrics (y -axis) for 2011 and 2015. The correlation overall is approximately $r = 0.947$ for 2011 scripts and $r = 0.935$ for 2015 scripts. The pairwise scale locations show the ordering of the scripts based on direct comparisons whereas the NAPLAN scale locations are based on marking. In the plot, persuasive writing 2011 and persuasive writing 2015 are highlighted separately. The rubric locations for both 2011 and 2015 in Figure 6.32 are based on the 2011 total score to rubric correspondence table. Regression lines are shown separately for each of these years. It can be seen that there is a relatively similar correspondence between the pairwise and NAPLAN scale locations for 2011 and 2015 scripts. The most distinctive difference between the scatterplots for 2011 and 2015 is that the rubric locations (y -axis) show a somewhat larger spread in 2015.

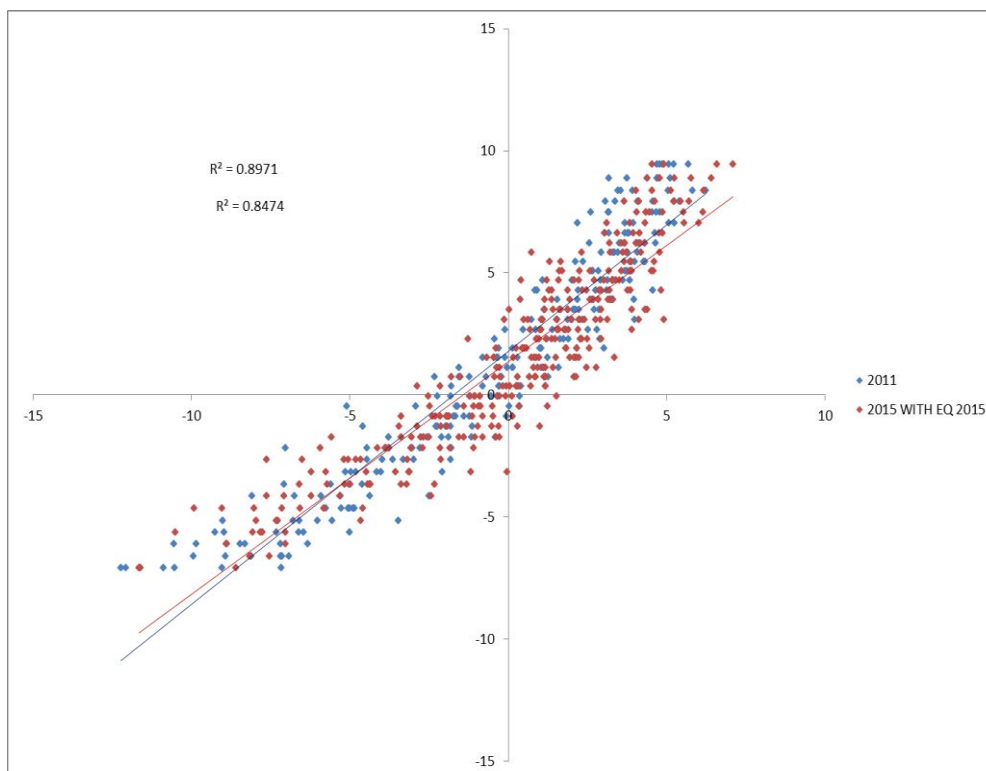


Figure 6.32. Scatterplot of the NAPLAN and pairwise scale locations.

6.6 Equating

In previous years, the two-stage equating method detailed in Humphry & McGrane (2015) has been used to check whether the results are comparable across calendar years. Inspection of the data

indicated subtle increases in local dependencies in 2014 and 2015. The most obvious indicator is that the distributions in 2014 and 2015 are somewhat multimodal compared with the distribution in 2011. See Humphry & Heldsinger (2014) and background literature cited therein for a detailed account of the evidence that a multimodal distribution and increased spread of scale locations in combination indicate intra-marker scoring dependencies. A multimodal distribution is symptomatic of dependencies, particularly so for rubrics with a simple grid-like structure. The NAPLAN rubric does not have a simple grid-like structure and it is likely that the dependencies occurring are more subtle and due to more complex sources.

In general, dependencies increase the spread of scale locations. However, they have the effect of distorting the shape of the distribution of scale locations rather than producing a uniform increase in the spread of the scale. Equating methods are designed to equate the unit and origin of two scales. Where units of scales need to be equated, equating methods, including the pairwise comparison method, assume there is a uniform difference between the units of the two scales. For the NAPLAN 2015 equating the evidence does not indicate that this assumption is clearly met. Given that one of the assumptions for equating is not clearly met, following the equating procedure may introduce more error than not doing so.

Despite the subtle dependencies evident, the threshold/delta locations for 2011 and 2015 are highly correlated and similar as shown in Figure 6.33. The reference line is the identity line.

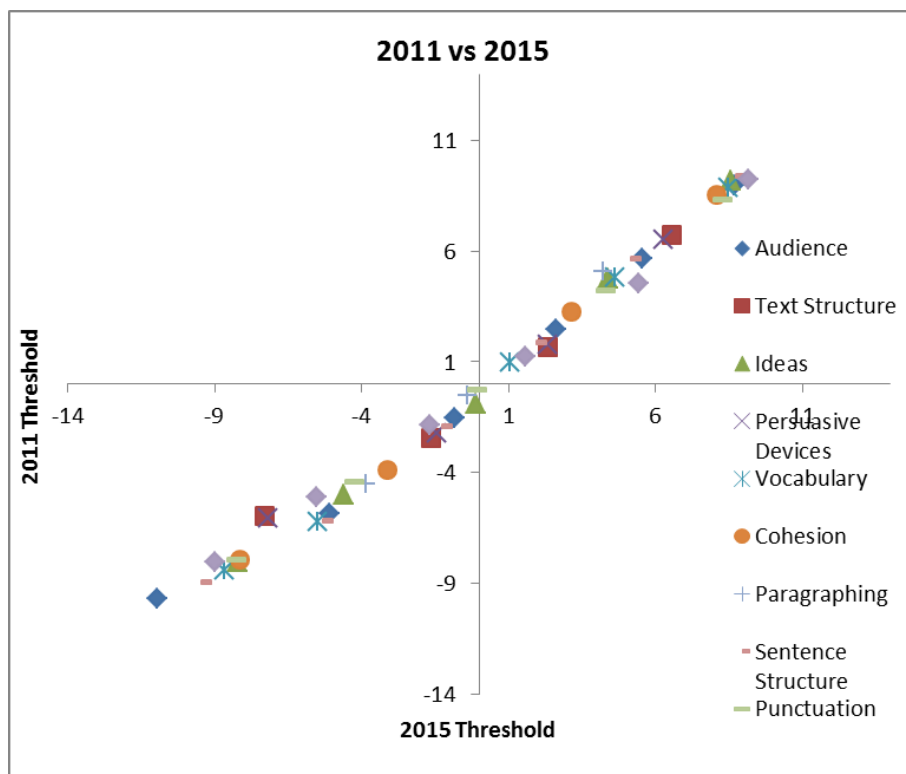


Figure 6.33. Writing thresholds/deltas for 2011 against 2015

Figure 6.34 shows that the thresholds/deltas remained very similar between 2014 and 2015, suggesting minimal changes since the previous year of testing. The reference line is the identity line. One delta/threshold for Audience is an outlier; however its location is extreme, its standard error is relatively large, and it does not affect the ability estimates of many students.

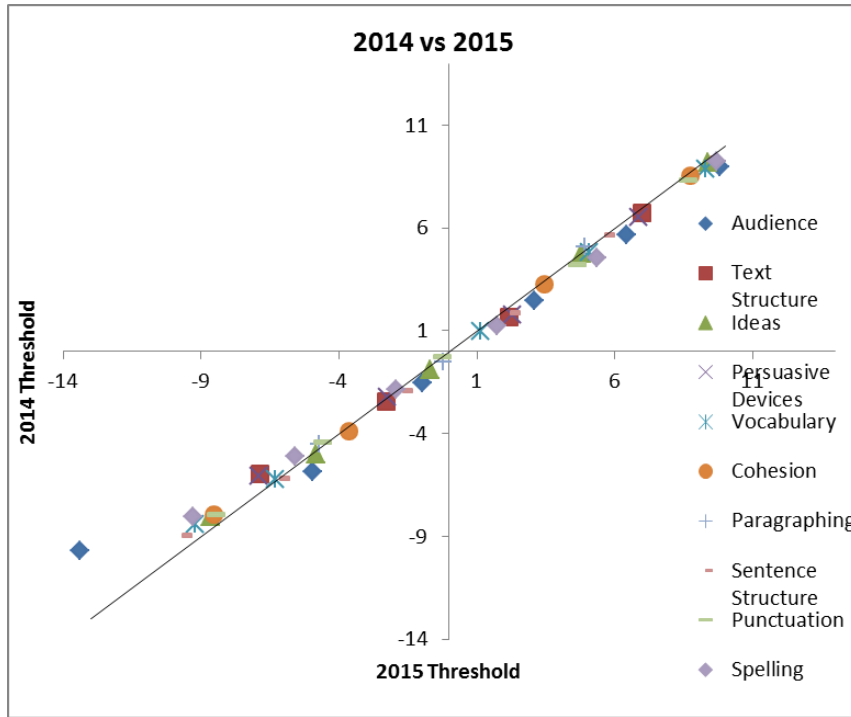


Figure 6.34. Writing thresholds/deltas for 2014 against 2015

Because the assumptions of equating were not well met and because the item parameters remained very similar from 2013 through 2015, the decision was taken again, as in 2014, to use identity equating; i.e., to use base year item parameters and corresponding estimates of person locations for the purpose of reporting.

The common person equating information indicated there was a slight task-year level interaction for the common secure task relative to the separate tasks. Specifically, the Year 5 students had a somewhat higher mean on the main task than on the common task. The main task was specific to Year 3 and 5 students whereas the common task was the same for all year groups. Figure 6.34 shows the difference based on the rubric between the mean logit on the main task and the mean logit on the common task. The positive mean difference for Year 5 indicates that the performance of the 502 Year 5 students was rated somewhat better for the main task than for the secure common form. This is not unexpected given that the motivation for introducing separate tasks is to make the tasks as appropriate as possible for the each year level. The mean difference for Year 7 students is negligible, indicating that the group’s performance was essentially rated equally based on the main and secure tasks.

Group Statistics

	Academic_Year	N	Mean	Std. Deviation	Std. Error Mean
DIFF_MN_EQ	5	502	.2701	1.73493	.07743
	7	494	-.0814	2.03208	.09143

Figure 6.34. Task-year level interaction in common secure relative to main task

6.7 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 6.35.

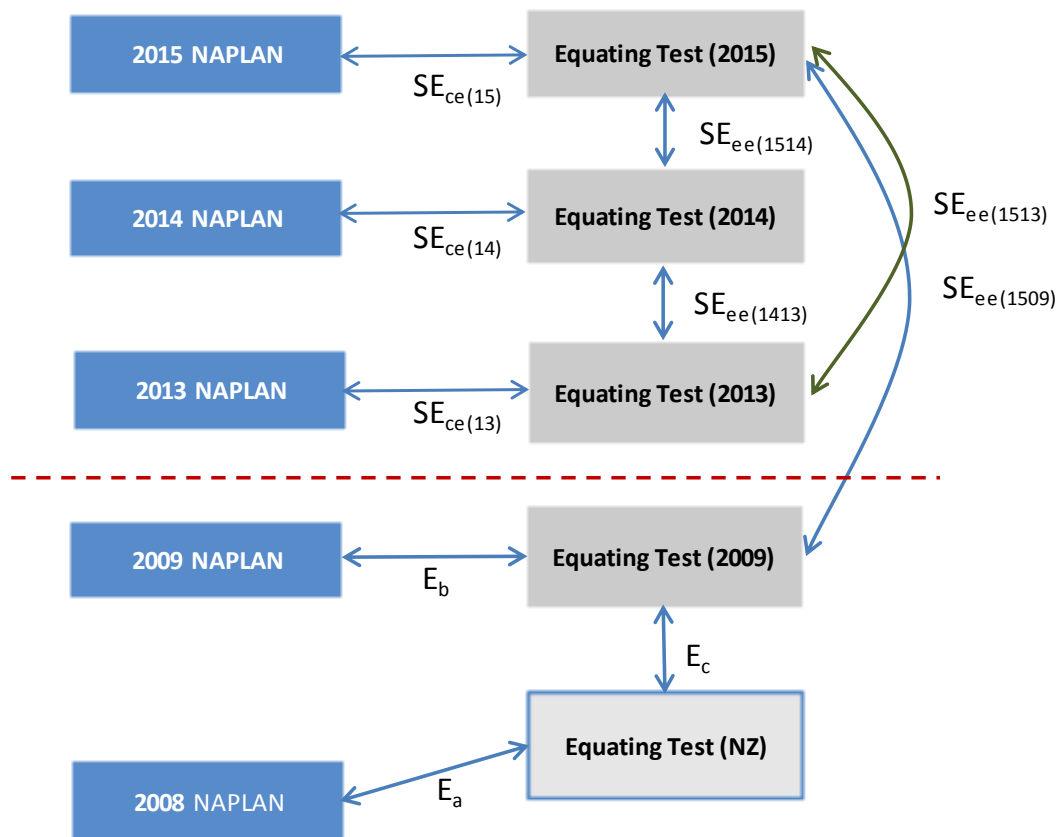


Figure 6.35. A schematic of the equating errors accumulated across NAPLAN administrations.

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;
- $SE_{ce(14)}$ is the standard error associated with equating the NAPLAN 2014 calibration with the equating test (calibration to equating);
- $SE_{ce(15)}$ is the error associated with equating the NAPLAN 2015 calibration with the equating test; and

- $SE_{ce(1415)}$ is the standard error associated with equating the 2014 and 2015 administrations of the equating test (equating to equating); and so forth

The equating errors for equating of the 2015 scale to the 2014 and 2008 scales are estimated by combining the relevant standard errors as follows:

$$SE_{2015to2014} = \sqrt{SE_{ce(14)}^2 + SE_{ce(15)}^2 + SE_{ce(1514)}^2} \quad (6.7)$$

$$SE_{2014to2008} = \sqrt{SE_a^2 + SE_c^2 + SE_{ce(1509)}^2 + SE_{ce(15)}^2} \quad (6.8)$$

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 2015.

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	2015 to base	2015 to 2014	2015 to 2013
G	3	0.0896	0.0663	0.0657
G	5	0.0979	0.0517	0.0519
G	7	0.0920	0.0452	0.0440
G	9	0.0756	0.0568	0.0504
N	3	0.0743	0.0490	0.0520
N	5	0.0754	0.0430	0.0475
N	7	0.0499	0.0313	0.0323
N	9	0.0520	0.0348	0.0330
R	3	0.0671	0.0558	0.0556
R	5	0.0582	0.0462	0.0466
R	7	0.0545	0.0407	0.0387
R	9	0.0498	0.0304	0.0302
S	3	0.0920	0.0644	0.0646
S	5	0.1002	0.0603	0.0548
S	7	0.0961	0.0463	0.0444
S	9	0.1010	0.0595	0.0576
W		0.1331*	0.1947	

*The base year for grammar & punctuation, numeracy, reading and spelling was 2008; base year for persuasive writing was 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 2015. In estimating standard errors for percentages at or above minimum standards, the equating errors were applied to the cut-points for proficiency bands.

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 2015. 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 2015

NAPLAN 2015 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 2014, while the NAPLAN 2015 achievement scores in persuasive writing used the same scale as the 2011 through 2014 assessments. This was made possible by applying the equating shifts and scale transformations necessary to bring the 2015 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 2015. The scale equating enabled achievement scores to be compared across NAPLAN administration years for reading, numeracy, spelling and grammar and punctuation and across 2011, 2012, 2013, 2014, and 2015 for persuasive writing.

7.1 Proficiency Estimates

As for the previous years, population statistics for the reporting of NAPLAN 2015 achievement at the state/territory and national levels were estimated using the technique of *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 – called the posterior distribution – is estimated for each student’s achievement. The plausible values represent a random selection from this distribution that is conditional on the student’s observed item

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).

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 for the model. The regression model used 2015 was the same as that used in previous NAPLAN cycles. The categorical variables used in the model were gender, LBOTE status, Indigenous status, parental education, parental occupation, school geolocation and school sector, and the continuous variable was a measure of average school ability, specifically the school reading WLE average score. A diagrammatic representation of the model is shown in Figure 7.1.

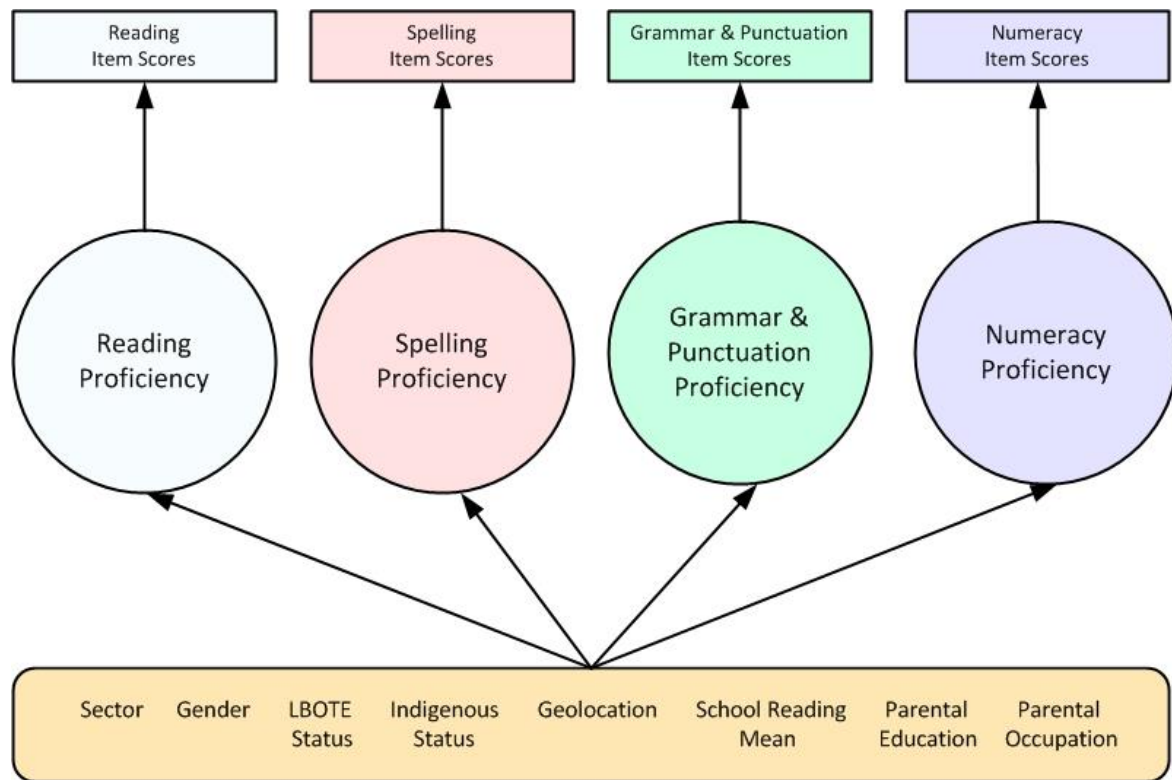


Figure 7.1. Conditioning variables for the multidimensional item response model with latent regression.

The categorical variables 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.

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 specific set of regression indicators used for each year level and jurisdiction in 2015 is presented in Appendix M.

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, students that had withdrawn from taking the test, and students who were exempt from taking the test.

The plausible values for writing were drawn in a separate calibration for each state/territory. In this calibration, school sector, gender, LBOTE status, Indigenous status, parental education, parent occupation, school geolocation, year level and the school writing WLE average score were included as conditioning variables. To calculate school writing WLE average score, each student's WLE was first obtained by running ConQuest program on a full census writing data. At this step, items were fixed with 2011 persuasive writing item parameters, and grade was set as predictor. After this, the full census data was divided into each grade, and only the WLEs of students who participated in writing test were used to calculate means of school and TAA by a test participation flag (i.e., $\text{test_writing} = P$) available from 2015 calibration data dictionary. If a student missed the test, his/her school WLE average score was the mean of the school that he/she attended. However, if a school did not have any student who participated in the writing test, then school WLE average score of those students is the mean of the TAA to which the school belonged.

The five sets of plausible values, one set for each content domain, were used to calculate means, standard deviations, percentiles and percentages of students within proficiency bands, for each domain and each year level at the jurisdictional and national level. The statistics were calculated for the full population of students and by selected background variables, such as gender, and included only 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 2015 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 2015 and 2014 as well as 2015 and 2008 for reading, numeracy, spelling, and grammar and punctuation and between 2015 and 2014 as well as 2015 and 2011 for persuasive writing.

7.2 Reporting NAPLAN 2015 Student Achievement on NAPLAN Reporting Scales

The plausible values were drawn on the delta-centred scale for each test. Before the scaling was finalised, the 2015 latent distributions of student achievement were estimated using the plausible values drawn for the 2015 calibration sample, with the student weights applied. The means and standard deviations calculated from the sample provided estimates of the population latent distributions before the full cohort data were available.

The standard deviations obtained for 2015 were then compared to the population standard deviations for what were referred to as each domain's *base year*. For the standard deviations for the reading, numeracy, spelling and grammar and punctuation domains, the base year chosen was 2009, while for persuasive writing, it was 2011. The ratio of the base year standard deviation to the 2015 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 2015 test did for that domain at the particular year level. Conversely, a ratio that was less than 1.0 indicated that the 2015 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 then used as scaling factors to correct for the different standard deviations.

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 scaling factor was applied for each domain at each year level, with the estimated population mean as the centre of transformation.

For each domain at each year level, a logit score was transformed as follows:

$$\text{TransformedLogitScore} = SF \cdot (\text{LogitScore} - \text{LocalMean}) + \text{LocalMean} + \text{EqShift} \quad (7.1)$$

where

LocalMean = the mean of the latent distribution estimated using the 2015 calibration 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 2015 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 persuasive writing, the scaling factor and equating shifts were set to one and zero, respectively, in Table 7.1.

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

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

where *DomainMean* and *DomainStdDeviation* are the estimated overall domain mean and overall domain standard deviation calculated using the 2008 calibration 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:

$$SE_{\text{NAPLANScale}} = 100 \cdot \frac{SE_{\text{logit}}}{\text{DomainStdDeviation}} \quad (7.3)$$

Table 7.1. Parameters for transforming the 2015 logit scores to the NAPLAN Scales

Year	Domain	Local Mean	Scaling Factor	Equating Shift
Year 3	Reading	0.6023	1.275	-0.5503
	Persuasive Writing	—*	1	0
	Spelling	0.0043	1.0052	-1.4323
	Grammar and Punctuation	0.7001	1.0674	-0.3722
	Numeracy	0.1897	1.2805	-1.0764
Year 5	Reading	0.4685	1.1024	0.6603
	Persuasive Writing	—*	1	0
	Spelling	0.2291	0.9729	0.6472
	Grammar and Punctuation	0.7536	1.002	0.5383
	Numeracy	0.3170	0.9688	0.3824
Year 7	Reading	0.3399	1.0752	1.5683
	Persuasive Writing	—*	1	0
	Spelling	0.1658	1.057	2.0518
	Grammar and Punctuation	0.6554	1.0232	1.1972
	Numeracy	-0.0325	1.0311	1.6327
Year 9	Reading	0.5921	0.9349	1.8059
	Persuasive Writing	—*	1	0
	Spelling	-0.2027	1.0853	3.3673
	Grammar and Punctuation	0.6126	1.0469	1.5911
	Numeracy	-0.2747	0.9954	2.6707

*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. The NAPLAN 2015 score equivalence tables are presented in Appendix K. The tables show the scores and the associated standard errors in logits and in

NAPLAN scale scores. For Year 7 and Year 9 numeracy, three separate tables were provided. The first was for the overall numeracy test, the second for the non-calculator form and the third for the calculator form. The second and third tables were for allocating scores to students who sat only one of the forms.

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 calibration 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 2015 results.

As the vertical scale for each domain is standardised, the scales for all the domains are very 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 7.2 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 7.2 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.

Band	Year 3	Year 5	Year 7	Year 9
10				Green
9			Green	Green
8		Green	Green	Green
7		Green	Green	Green
6	Green	Green	Green	Yellow
5	Green	Green	Yellow	Orange
4	Green	Yellow	Orange	
3	Green	Orange		
2	Yellow			
1	Orange			

Figure 7.2. Reporting against the NAPLAN proficiency bands.

7.5 National Reports

The NAPLAN 2015 Summary Information was released on 5 August 2015. 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 National Report includes subgroup results by gender, language background, Indigenous status, geolocation, parental education and parental occupation. The National Report was released on 2 December 2015.

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Purpose

The purpose of this report is to provide information regarding the 2015 NAPLAN Calibration and Equating Samples that complements existing NAPLAN technical documentation. It should be read in conjunction with the *NAPLAN 2015 Calibration Sample Weighting.pdf*.

Sample frame

Primary and Secondary samples

The NAPLAN Calibration and Equating Samples each consist of two sub-samples. For the Calibration Sample, one sample was drawn for the Primary year levels and the other sample for the Secondary year levels. This same procedure was also followed for the NAPLAN Equating Sample. Figure 1 illustrates the relationship between NAPLAN Year Levels, State/Territory and Primary and Secondary Schooling.

Year 7 was treated as a secondary year level for QLD and WA for the first time in 2015. SA was the only state where Year 7 was included as a primary year level.

State/Territory	Year 3	Year 5	Year 7	Year 9
ACT	Primary		Secondary	
NSW				
NT				
TAS				
VIC				
QLD				
WA				
SA	Primary		Secondary	

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

For each sampled school, all students in the target year levels were included in the calibration sample. For the Primary sample, this consisted of Year 3 and Year 5 students in all states and territories as well as Year 7 students in SA (see Figure 1). In relation to the Secondary sample, the target year levels were Year 7 and Year 9 except for SA whose target year levels consisted of Year 9 students only.

Source data

ACARA provided a list of Australian schools which included number of students enrolled at each school in Years 3, 5, 7 and 9 in 2014. Additional demographic information such as school postcode, state, sector and geographic location was also provided. Socio-economic (SEIFA) information was sourced from Table 5 in the Postal Area, Indexes, SEIFA 2011 downloaded from <http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/2033.0.55.0012011?OpenDocument> (accessed on 29JAN2015).

Measures of enrolment size

The measure of enrolment size for a particular year level was taken to be the enrolment size in the equivalent year level for the calendar year prior. That is, the 2014 enrolment numbers contained in the source data were used to estimate 2015 enrolment sizes (e.g. Year 3 enrolment sizes in the source data were used to estimate 2015 Year 3 enrolment sizes).

Year 9 enrolments in the source data were used to estimate 2015 Year 7 enrolments for WA and QLD to take into account the transition of Year 7 from primary to secondary schools in these states in 2015.

Calibration sample frames

The calibration sample frame consisted of 7554 schools with Primary year levels and 2722 schools with Secondary year levels. Very remote schools in WA and NSW (96 schools in total) were excluded from the sample frame prior to sample selection.

Equating sample frames

The equating sample frame comprised 3873 primary schools and 1925 secondary schools. Schools that were in the equating sample in 2014 were excluded from selection, as were all remote and very remote schools in each state/territory. Schools with an enrolment in any of the target year levels were also excluded if they were less than the desired target cluster size. The target cluster size was 25 students for Primary and 20 students for Secondary. Sampled schools were then assigned to one of three assessment domains (Reading, Language Conventions or Numeracy).¹

Sampling methodology

Once sample frames had been created, four samples were drawn: Calibration Primary, Calibration Secondary, Equating Primary and Equating Secondary.

The same methodology was applied to select schools for each of the four samples. Firstly, this involved explicit and implicit stratification of sample frames. Schools were then selected for inclusion in the sample using random start systematic sampling where schools within each explicit stratum had an equal probability of selection.

Explicit stratification

Sample frames were split into 24 explicit strata with each stratum containing a particular state/territory (n=8) and sector (n=3).

Implicit stratification

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

Table 1: Implicit stratification variables

Implicit Stratification	Description
SchtypeID	An indicator denoting the inclusion (or absence of) year 7 students in the sample.
Geolocation	Geographic location as provided by ACARA
SEIFA	A postcode based measure of socioeconomic status based on ABS information which includes Census variables relating to the educational and occupational characteristics of communities, like the proportion of people with a higher qualification or those employed in a skilled occupation. Within each state/territory, schools were divided into approximately five equal groups according to their SEIFA rank order.
MeanENR	Average of student enrolments across the target year levels within each school.

Further information relating to each implicit stratification variable has been provided below.

¹ The equating sample does not include the Writing domain.

SchtypeID

SchtypeID was named PriSchtype for primary samples and SecSchtype for secondary samples. The coding scheme used here was consistent with 2012 procedures.

PriSchtype 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). Set equal to 2 for all other primary schools.

SecSchtype 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). Set equal to 2 for all other secondary schools.

Geolocation

1 = Metropolitan, 2=Provincial, 3=Remote, 4=Very Remote

SEIFA

Within each state and territory SEIFA scores were condensed into five levels with approximately equal numbers of students in each level within the state. The percentile scores used to create the groups within each state are included in Table 2.

For example, level 5 represents schools with SEIFA scores that placed them above the 80th percentile of other schools in the same state/territory (e.g. in ACT this was schools with SEIFA scores higher than 1165, in SA this was schools with SEIFA scores higher than 1038). Level 4 denotes schools with a SEIFA percentile rank in their state/territory above the 60th percentile but less than or equal to the 80th percentile (e.g. in Victoria a SEIFA level 4 indicated that the school had a SEIFA score above 1009 but equal to or less than 1080).

Once SEIFA levels were created, the SEIFA levels for ACT were collapsed to 3 ordinal categories by recoding levels 2, 3 and 4 into a single level 3 (due to the small sample size in this jurisdiction combined with a relatively narrow range of SEIFA scores).

Table 2: SEIFA percentile groups

State/Territory	Percentiles (within state)			
	20	40	60	80
ACT	1070.36	1114.87	1140.31	1164.64
NSW	922.65	952.96	987.77	1065.52
NT	882.48	898.83	980.55	1017.16
QLD	907.61	932.45	966.12	1006.60
SA	899.01	937.80	986.19	1037.65
TAS	881.10	911.01	946.25	998.23
VIC	933.71	967.73	1008.70	1080.21
WA	928.25	951.37	993.70	1057.19

MeanENR

For the Primary and Secondary samples, the average enrolment size was estimated by taking 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 average enrolment across Years 3, 5 and 7 while for the other states/territories it is equal to the average enrolment across Years 3 and 5. In cases where there were no students in Year 5 for example, then the average was calculated using Years 3 students only (or Year 3 and Year 7 for SA schools). The definition of 'no students' in a year level was when the sample

frame contained an enrolment total that was either zero or missing. It appears that zero may sometimes be used to indicate that a school does not cater for a particular year level while for other schools (especially small schools) zero may indicate that there are simply no enrolments for students in a particular year level for a given calendar year. The implication being that the mean ENR may be slightly overestimated for some small schools.

Selecting schools

Within each explicit stratum schools were selected with equal probability. Further explanation of the steps used (including relevant sampling parameters) are detailed in Appendix B.

Selected schools

As shown in Table 3, the calibration sample comprised of 309 schools at the primary level and 300 schools at the secondary level. For the equating sample, 109 schools were selected at the primary level while there were 136 schools in the secondary equating sample.

Table 3: Number of selected schools in each state and sample

	Calibration Sample		Equating Sample	
	Primary	Secondary	Primary	Secondary
ACT	20	17	6	6
NSW	48	48	31	39
NT	25	17	6	5
QLD	48	48	17	25
SA	45	46	8	11
TAS	30	30	6	6
VIC	48	48	24	30
WA	45	46	11	14
Total	309	300	109	136

Replacement schools

Up to two replacement schools were also selected for each sample school. The overall numbers of replacement¹ and replacement² schools were close to, but slightly less than the number of selected schools (as shown in Table 4). In some cases, particularly in smaller states/territories, it was not possible to select any replacement schools. In some cases only one replacement school could be selected. Selection of replacement schools are consistent with those used in PISA (OECD 2012 p67)².

² OECD (2012), *PISA 2009 Technical Report*, PISA, OECD Publishing.
<http://dx.doi.org/10.1787/9789264167872-en>

Table 4: Number of selected and replacement schools

Sample type	selected	replacement1	replacement2	Total
Calibration Primary	309	309	309	927
Calibration Secondary	300	297	275	872
Equating Primary	109	108	108	325
Equating Secondary	136	133	132	401

Expected sample sizes

The expected number of students included in the calibration sample is equivalent to the sum of all enrolments at the target year levels for selected schools. The expected calibration sample sizes for 2015 are shown in Table 5. For example, approximately 12000 students are expected to be included in the calibration sample for Year 3 while 32000 students are 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 are expected for inclusion in the sample given the number of schools selected at each level (primary and secondary) is approximately equal. The total expected sample size of approximately 29000 students for Year 7 is comprised of students drawn from both the primary and secondary calibration samples.

Table 5: Expected calibration sample sizes by year level

Year	Sum ENR
Year 3	11790
Year 5	11175
Year 7 ³	28764
Year 9	31827

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 6, approximately 2700 students are sampled at each year level across the 3 domains. Year 7 is comprised of 36 schools from the primary equating sample (12 each domain with target cluster size of 25 students) and 87 schools from the secondary equating sample (29 each domain with target cluster size of 20 students).

³ Comprising 1696 Year 7 students from the primary calibration sample and 27068 students from the secondary calibration sample

Table 6: Expected equating sample sizes by year level

Year	Nschools	Expected total sample size	Expected sample
Year 3	109	2725	908
Year 5	109	2725	908
Year 7 ⁴	133	2700	900
Year 9	136	2720	907

Table 7 contains the number of schools included in the equating sample for each year level and domain.

Table 7: 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 ⁵	44	45	44
Year 9	45	46	45

⁴ Comprising 8 primary schools with Year 7 students (target cluster size of 25) and 125 secondary schools with Year 7 students (target cluster size 20)

⁵ Comprising 2 R, 3 LC and 3 N primary schools and 42 R, 42 LC and 41 N secondary schools

Appendix A

Sample Frame

Summary

Overall, the ACARA supplied sample frame information corresponds well to ABS totals for the target year levels suggesting that the supplied data is suitable for use as the NAPLAN sample frame.

Original data

The original sample frame provided by ACARA contains 2014 information. The number of schools per state/territory is shown in **Error! Not a valid bookmark self-reference.** compared to ABS 2014 totals.⁶

Table 8 Number of schools per state/territory

State/territory	ABS All (2014 ⁷)	ACARA Sample Frame ⁸	% Comparison
ACT	125	118	106%
NSW	2926	2913	100%
NT	185	185	100%
QLD	1647	1666	99%
SA	700	708	99%
TAS	252	258	98%
VIC	2118	2268	93%
WA	1001	918	109%
Aus	8954	9034	99%

⁶

⁷ Data sourced from the Australian Bureau of Statistics 2015, "[Table 35a Summary of School Characteristics, 2014](#)", cat. no. 4221.0, ABS, Canberra. Released 19/03/2015. ABS totals are based on Primary + Secondary + Combined only and do not include special schools.

⁸ The totals in this table are based on the original file from ACARA after approximately 114 schools were removed. The schools removed consisted of NSW and WA very remote schools and those schools with zero enrolments in all of the target year levels (i.e. no enrolments in any of Years 3, 5, 7 or 9).

contains enrolment totals by year level and state/territory while

Table 10 contains corresponding ABS totals.

Table 9 ACARA sample frame enrolment totals by year level and state/territory

ACARA Sample Frame containing 2014 enrolment information													
State	Pre Year1	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				5003		4810		4734		4852			
NSW				92924		89156		87370		88621			
NT				3472		3242		3221		2848			
QLD				62709		59170		40397		60022			
SA				19714		19045		18881		19548			
TAS				6289		5946		6096		6476			
VIC				70840		68069		65913		67643			
WA				32663		30203		26310		29159			

Table 10 ABS enrolment totals by year level and state/territory

ABS 2014 measure ⁹													
State	Pre Year1	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	5376	5316	5192	5014	4768	4841	4608	4786	4965	4945	4992	5233	4578
NSW	97690	98354	96143	92430	88977	88417	87087	86063	86868	87355	87539	79415	69197
NT	3709	3666	3544	3524	3291	3301	3459	3280	3158	2918	2752	2399	1791
QLD	66151	66004	64970	63379	61286	59886	58391	41392	59815	61238	60939	58890	52685
SA	20609	20734	20051	19731	18622	19055	18576	18939	19100	19671	20216	22052	19525
TAS	6661	6627	6518	6310	5940	5959	6229	6141	6438	6572	6584	5802	5338
VIC	75292	75081	73726	70683	67965	67852	67034	65805	66958	67642	68120	64521	57432
WA	33832	34512	33936	32373	31166	30458	29973	30004	30162	30522	30234	28930	16246

⁹ Data sourced from the Australian Bureau of Statistics 2015, "[Table 42b Number of Full-time and Part-time Students, 2006-2014](#)", cat. no. 4221.0, ABS, Canberra. Released 05/02/2015.

Appendix B

Sampling parameters

The sampling parameters used to draw the sample are provided in **Error! Not a valid bookmark self-reference.** . These can be used in conjunction with the sample frame to replicate selection of the samples. An explanation of the sample parameter variables is included in Table 11.

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 11: 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 (explicit stratification variable)
Sector	C=Catholic; G=Gov; I=Indep (explicit stratification variable)
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 12: Sampling parameters

Sample	strataID	State	Sector	cases	units	interval	RN	inclprob	designweight	Nsel	Nr1	Nr2
CP	1	ACT	C	24	5	4.8	0.5151	0.2083	4.8008	5	5	5
CP	2	ACT	G	57	11	5.1818	0.7672	0.193	5.1813	11	11	11
CP	3	ACT	I	15	4	3.75	0.7827	0.2667	3.7495	4	4	4
CP	4	NSW	C	427	9	47.4444	0.6886	0.0211	47.3934	9	9	9
CP	5	NSW	G	1643	33	49.7879	0.188	0.0201	49.7512	33	33	33
CP	6	NSW	I	319	6	53.1667	0.2722	0.0188	53.1915	6	6	6
CP	7	NT	C	13	3	4.3333	0.8559	0.2308	4.3328	3	3	3
CP	8	NT	G	131	19	6.8947	0.5511	0.145	6.8966	19	19	19
CP	9	NT	I	15	3	5	0.8957	0.2	5	3	3	3
CP	10	QLD	C	228	9	25.3333	0.3301	0.0395	25.3165	9	9	9
CP	11	QLD	G	1011	33	30.6364	0.2527	0.0326	30.6748	33	33	33
CP	12	QLD	I	165	6	27.5	0.7276	0.0364	27.4725	6	6	6
CP	13	SA	C	93	9	10.3333	0.8884	0.0968	10.3306	9	9	9
CP	14	SA	G	438	27	16.2222	0.1642	0.0616	16.2338	27	27	27
CP	15	SA	I	100	9	11.1111	0.3781	0.09	11.1111	9	9	9
CP	16	TAS	C	33	6	5.5	0.5708	0.1818	5.5006	6	6	6
CP	17	TAS	G	149	21	7.0952	0.5604	0.1409	7.0972	21	21	21
CP	18	TAS	I	35	3	11.6667	0.1225	0.0857	11.6686	3	3	3
CP	19	VIC	C	398	11	36.1818	0.6679	0.0276	36.2319	11	11	11
CP	20	VIC	G	1244	31	40.129	0.6137	0.0249	40.1606	31	31	31
CP	21	VIC	I	224	6	37.3333	0.8238	0.0268	37.3134	6	6	6
CP	22	WA	C	119	7	17	0.6991	0.0588	17.0068	7	7	7
CP	23	WA	G	548	32	17.125	0.7073	0.0584	17.1233	32	32	32
CP	24	WA	I	125	6	20.8333	0.9523	0.048	20.8333	6	6	6

Sample	strataID	State	Sector	cases	units	interval	RN	inclprob	designweight	Nsel	Nr1	Nr2
CS	1	ACT	C	5	3	1.6667	0.7881	0.6	1.6667	3	2	0
CS	2	ACT	G	19	8	2.375	0.7244	0.4211	2.3747	8	8	3
CS	3	ACT	I	15	6	2.5	0.2064	0.4	2.5	6	6	2
CS	4	NSW	C	118	9	13.1111	0.9327	0.0763	13.1062	9	9	9
CS	5	NSW	G	440	28	15.7143	0.8377	0.0636	15.7233	28	28	28
CS	6	NSW	I	277	11	25.1818	0.1924	0.0397	25.1889	11	11	11
CS	7	NT	C	10	3	3.3333	0.3087	0.3	3.3333	3	3	2
CS	8	NT	G	73	10	7.3	0.4645	0.137	7.2993	10	10	10
CS	9	NT	I	19	4	4.75	0.8787	0.2105	4.7506	4	4	4
CS	10	QLD	C	88	10	8.8	0.5725	0.1136	8.8028	10	10	10
CS	11	QLD	G	263	29	9.069	0.2	0.1103	9.0662	29	29	29
CS	12	QLD	I	142	9	15.7778	0.2172	0.0634	15.7729	9	9	9
CS	13	SA	C	31	10	3.1	0.3289	0.3226	3.0998	10	10	9
CS	14	SA	G	136	27	5.037	0.8753	0.1985	5.0378	27	27	27
CS	15	SA	I	59	9	6.5556	0.6197	0.1525	6.5574	9	9	9
CS	16	TAS	C	12	7	1.7143	0.8292	0.5833	1.7144	7	5	0
CS	17	TAS	G	53	19	2.7895	0.6228	0.3585	2.7894	19	19	15
CS	18	TAS	I	28	4	7	0.5663	0.1429	6.9979	4	4	4
CS	19	VIC	C	116	13	8.9231	0.7086	0.1121	8.9206	13	13	13
CS	20	VIC	G	354	26	13.6154	0.4361	0.0734	13.624	26	26	26
CS	21	VIC	I	196	9	21.7778	0.122	0.0459	21.7865	9	9	9
CS	22	WA	C	40	10	4	0.2285	0.25	4	10	10	10
CS	23	WA	G	138	25	5.52	0.507	0.1812	5.5188	25	25	25
CS	24	WA	I	90	11	8.1818	0.134	0.1222	8.1833	11	11	11

Sample	strataID	State	Sector	cases	units	interval	RN	inclprob	designweight	Nsel	Nr1	Nr2
EP	1	ACT	C	18	1	18	0.2879	0.0556	17.9856	1	1	1
EP	2	ACT	G	47	4	11.75	0.7268	0.0851	11.7509	4	4	4
EP	3	ACT	I	7	1	7	0.0829	0.1429	6.9979	1	1	1
EP	4	NSW	C	265	6	44.1667	0.2202	0.0226	44.2478	6	6	6
EP	5	NSW	G	871	21	41.4762	0.9343	0.0241	41.4938	21	21	21
EP	6	NSW	I	145	4	36.25	0.4433	0.0276	36.2319	4	4	4
EP	7	NT	C	5	1	5	0.3544	0.2	5	1	1	1
EP	8	NT	G	22	4	5.5	0.7886	0.1818	5.5006	4	4	4
EP	9	NT	I	1	1	1	0.3222	1	1	1	0	0
EP	10	QLD	C	143	3	47.6667	0.2235	0.021	47.619	3	3	3
EP	11	QLD	G	485	12	40.4167	0.9786	0.0247	40.4858	12	12	12
EP	12	QLD	I	91	2	45.5	0.3761	0.022	45.4545	2	2	2
EP	13	SA	C	41	2	20.5	0.8598	0.0488	20.4918	2	2	2
EP	14	SA	G	162	4	40.5	0.5877	0.0247	40.4858	4	4	4
EP	15	SA	I	36	2	18	0.2798	0.0556	17.9856	2	2	2
EP	16	TAS	C	18	1	18	0.4591	0.0556	17.9856	1	1	1
EP	17	TAS	G	73	4	18.25	0.246	0.0548	18.2482	4	4	4
EP	18	TAS	I	7	1	7	0.9343	0.1429	6.9979	1	1	1
EP	19	VIC	C	240	5	48	0.2739	0.0208	48.0769	5	5	5
EP	20	VIC	G	640	16	40	0.6258	0.025	40	16	16	16
EP	21	VIC	I	95	3	31.6667	0.7344	0.0316	31.6456	3	3	3
EP	22	WA	C	77	2	38.5	0.5144	0.026	38.4615	2	2	2
EP	23	WA	G	328	8	41	0.5336	0.0244	40.9836	8	8	8
EP	24	WA	I	56	1	56	0.4159	0.0179	55.8659	1	1	1

Sample	strataID	State	Sector	cases	units	interval	RN	inclprob	designweight	Nsel	Nr1	Nr2
ES	1	ACT	C	3	1	3	0.5785	0.3333	3.0003	1	1	1
ES	2	ACT	G	16	3	5.3333	0.2402	0.1875	5.3333	3	3	3
ES	3	ACT	I	8	2	4	0.0797	0.25	4	2	2	2
ES	4	NSW	C	106	7	15.1429	0.2281	0.066	15.1515	7	7	7
ES	5	NSW	G	370	23	16.087	0.4228	0.0622	16.0772	23	23	23
ES	6	NSW	I	188	9	20.8889	0.0695	0.0479	20.8768	9	9	9
ES	7	NT	C	2	1	2	0.5524	0.5	2	1	1	0
ES	8	NT	G	3	4	0.75	0.4643	1.3333	0.75	3	0	0
ES	9	NT	I	3	1	3	0.6003	0.3333	3.0003	1	1	1
ES	10	QLD	C	80	5	16	0.7113	0.0625	16	5	5	5
ES	11	QLD	G	183	15	12.2	0.1321	0.082	12.1951	15	15	15
ES	12	QLD	I	102	5	20.4	0.7424	0.049	20.4082	5	5	5
ES	13	SA	C	27	2	13.5	0.1549	0.0741	13.4953	2	2	2
ES	14	SA	G	76	7	10.8571	0.3753	0.0921	10.8578	7	7	7
ES	15	SA	I	47	2	23.5	0.1784	0.0426	23.4742	2	2	2
ES	16	TAS	C	10	1	10	0.1279	0.1	10	1	1	1
ES	17	TAS	G	33	4	8.25	0.4552	0.1212	8.2508	4	4	4
ES	18	TAS	I	10	1	10	0.3659	0.1	10	1	1	1
ES	19	VIC	C	82	8	10.25	0.8681	0.0976	10.2459	8	8	8
ES	20	VIC	G	259	16	16.1875	0.7036	0.0618	16.1812	16	16	16
ES	21	VIC	I	129	6	21.5	0.777	0.0465	21.5054	6	6	6
ES	22	WA	C	32	3	10.6667	0.4599	0.0938	10.661	3	3	3
ES	23	WA	G	92	8	11.5	0.1633	0.087	11.4943	8	8	8
ES	24	WA	I	64	3	21.3333	0.4308	0.0469	21.322	3	3	3

APPENDIX B. ITEM ANALYSIS

Appendix B.1 Year 3 Reading

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NAPLAN 2015, Calibration, Grade 3, reading
GENERALISED ITEM ANALYSIS

=====

Item 1

item:1 (r3q01)
Cases for this item 3789 Discrimination 0.29
Item Threshold(s): -3.05 Weighted MNSQ 0.94
Item Delta(s): -3.04

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.11	-0.03	-1.56(.120)	0.11	1.47
9	0.00	6	0.16	-0.02	-1.21(.225)	0.25	1.84
A	1.00	3634	95.91	0.29	18.62(.000)	0.63	1.01
B	0.00	43	1.13	-0.17	-10.59(.000)	-0.85	0.88
C	0.00	85	2.24	-0.20	-12.59(.000)	-0.66	0.75
D	0.00	17	0.45	-0.12	-7.51(.000)	-0.86	0.56

=====

Item 2

item:2 (r3q02)
Cases for this item 3789 Discrimination 0.45
Item Threshold(s): -1.86 Weighted MNSQ 0.88
Item Delta(s): -1.86

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.03	-1.93(.054)	-2.31	0.00
9	0.00	20	0.53	-0.05	-2.99(.003)	-0.18	0.68
A	0.00	139	3.67	-0.25	-15.78(.000)	-0.57	0.84
B	0.00	166	4.38	-0.29	-18.35(.000)	-0.63	0.90
C	1.00	3360	88.68	0.45	30.59(.000)	0.72	0.96
D	0.00	103	2.72	-0.20	-12.29(.000)	-0.50	0.80

=====

Item 3

item:3 (r3q03)
Cases for this item 3787 Discrimination 0.45
Item Threshold(s): -2.46 Weighted MNSQ 0.84
Item Delta(s): -2.46

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	15	0.40	-0.07	-4.18(.000)	-0.51	0.81
A	0.00	109	2.88	-0.29	-18.37(.000)	-0.98	0.67
B	1.00	3528	93.16	0.45	30.85(.000)	0.69	0.97
C	0.00	80	2.11	-0.24	-15.46(.000)	-0.87	0.72
D	0.00	55	1.45	-0.22	-13.69(.000)	-1.06	0.68

=====

Item 4

item:4 (r3q04)
Cases for this item 3787 Discrimination 0.46
Item Threshold(s): -1.73 Weighted MNSQ 0.88
Item Delta(s): -1.72

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.02	-1.46(.145)	-2.31	0.00
9	0.00	16	0.42	-0.06	-3.65(.000)	-0.30	1.02
A	1.00	3312	87.46	0.46	31.72(.000)	0.74	0.96
B	0.00	176	4.65	-0.24	-15.49(.000)	-0.42	0.92
C	0.00	181	4.78	-0.29	-18.37(.000)	-0.57	0.75
D	0.00	101	2.67	-0.22	-13.73(.000)	-0.68	0.82

=====

Item 5

```

-----
item:5 (r3q05)
Cases for this item  3787  Discrimination  0.41
Item Threshold(s):  -0.33  Weighted MNSQ  1.03
Item Delta(s):      -0.33

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.03	-2.06(.039)	-1.16	1.63
9	0.00	16	0.42	-0.08	-5.12(.000)	-1.12	0.89
A	1.00	2569	67.84	0.41	27.33(.000)	0.85	0.97
B	0.00	357	9.43	-0.22	-13.90(.000)	-0.06	0.92
C	0.00	506	13.36	-0.15	-9.44(.000)	0.20	0.94
D	0.00	337	8.90	-0.24	-15.00(.000)	-0.15	0.81

Item 6

```

-----
item:6 (r3q06)
Cases for this item  3785  Discrimination  0.58
Item Threshold(s):  -0.74  Weighted MNSQ  0.83
Item Delta(s):      -0.74

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.11	-0.04	-2.57(.010)	-1.12	1.04
9	0.00	31	0.82	-0.08	-4.98(.000)	-0.40	1.18
A	0.00	473	12.50	-0.33	-21.30(.000)	-0.24	0.75
B	0.00	239	6.31	-0.32	-20.49(.000)	-0.55	0.78
C	0.00	204	5.39	-0.26	-16.60(.000)	-0.40	0.77
D	1.00	2834	74.87	0.58	44.05(.000)	0.90	0.91

Item 7

```

-----
item:7 (r3q07)
Cases for this item  3783  Discrimination  0.47
Item Threshold(s):  -2.17  Weighted MNSQ  0.84
Item Delta(s):      -2.17

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.04	-2.48(.013)	-1.62	0.97
9	0.00	10	0.26	-0.07	-4.37(.000)	-0.64	1.04
A	0.00	127	3.36	-0.29	-18.86(.000)	-0.85	0.65
B	0.00	88	2.33	-0.25	-16.12(.000)	-0.88	0.80
C	1.00	3452	91.25	0.47	32.44(.000)	0.71	0.95
D	0.00	104	2.75	-0.22	-13.98(.000)	-0.66	0.88

Item 8

```

-----
item:8 (r3q08)
Cases for this item  3782  Discrimination  0.43
Item Threshold(s):  -1.75  Weighted MNSQ  0.89
Item Delta(s):      -1.75

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	0.00	0.16(.870)	-0.02	3.25
9	0.00	17	0.45	-0.07	-4.49(.000)	-0.77	1.36
A	0.00	69	1.82	-0.24	-15.03(.000)	-0.99	0.77
B	1.00	3317	87.70	0.43	28.95(.000)	0.73	0.95
C	0.00	275	7.27	-0.23	-14.43(.000)	-0.20	0.88
D	0.00	102	2.70	-0.27	-17.33(.000)	-0.93	0.72

Item 9

```

-----
item:9 (r3q09)
Cases for this item  3778  Discrimination  0.37
Item Threshold(s):  -0.79  Weighted MNSQ  1.02
Item Delta(s):      -0.79

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.08	-0.04	-2.44 (.015)	-1.43	0.68
9	0.00	22	0.58	-0.08	-4.78 (.000)	-0.53	0.89
A	0.00	163	4.31	-0.33	-21.53 (.000)	-0.82	0.66
B	0.00	236	6.25	-0.25	-15.76 (.000)	-0.29	0.88
C	1.00	2861	75.73	0.37	24.41 (.000)	0.78	0.96
D	0.00	493	13.05	-0.07	-4.38 (.000)	0.39	0.93

Item 10

```

-----
item:10 (r3q10)
Cases for this item  3775  Discrimination  0.48
Item Threshold(s):  -1.79  Weighted MNSQ  0.85
Item Delta(s):      -1.79

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	23	0.61	-0.06	-3.64 (.000)	-0.31	0.68
A	0.00	145	3.84	-0.26	-16.62 (.000)	-0.61	0.79
B	1.00	3329	88.19	0.48	33.87 (.000)	0.75	0.95
C	0.00	175	4.64	-0.30	-19.11 (.000)	-0.62	0.80
D	0.00	103	2.73	-0.24	-14.98 (.000)	-0.69	0.66

Item 11

```

-----
item:11 (r3q11)
Cases for this item  3774  Discrimination  0.54
Item Threshold(s):  -1.30  Weighted MNSQ  0.84
Item Delta(s):      -1.31

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.04	-2.46 (.014)	-0.71	0.13
9	0.00	20	0.53	-0.07	-4.40 (.000)	-0.59	0.96
A	0.00	103	2.73	-0.26	-16.53 (.000)	-0.78	0.68
B	0.00	223	5.91	-0.34	-22.34 (.000)	-0.64	0.74
C	0.00	295	7.82	-0.27	-17.19 (.000)	-0.28	0.79
D	1.00	3131	82.96	0.54	38.97 (.000)	0.81	0.92

Item 12

```

-----
item:12 (r3q12)
Cases for this item  3774  Discrimination  0.48
Item Threshold(s):  -1.37  Weighted MNSQ  0.89
Item Delta(s):      -1.37

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	20	0.53	-0.06	-3.79 (.000)	-0.42	0.85
A	0.00	174	4.61	-0.23	-14.48 (.000)	-0.42	0.89
B	0.00	310	8.21	-0.31	-19.99 (.000)	-0.36	0.81
C	0.00	111	2.94	-0.23	-14.24 (.000)	-0.61	0.90
D	1.00	3159	83.70	0.48	33.22 (.000)	0.78	0.94

Item 13

```

-----
item:13 (r3q13)
Cases for this item  3773  Discrimination  0.49
Item Threshold(s):   0.41  Weighted MNSQ  0.97
Item Delta(s):       0.41

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.03	-1.88 (.060)	-0.72	1.08
9	0.00	46	1.22	-0.06	-3.62 (.000)	-0.25	0.75
A	0.00	612	16.22	-0.30	-19.07 (.000)	-0.02	0.90
B	0.00	646	17.12	-0.22	-14.01 (.000)	0.12	0.88
C	1.00	2016	53.43	0.49	34.43 (.000)	1.02	0.94
D	0.00	451	11.95	-0.13	-8.35 (.000)	0.23	0.84

Item 14

```

-----
item:14 (r3q14)
Cases for this item  3769  Discrimination  0.46
Item Threshold(s):   -0.02  Weighted MNSQ  0.98
Item Delta(s):       -0.03

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	61	1.62	-0.07	-4.54 (.000)	-0.18	0.86
A	0.00	623	16.53	-0.29	-18.71 (.000)	-0.05	0.76
B	1.00	2347	62.27	0.46	31.71 (.000)	0.94	0.97
C	0.00	242	6.42	-0.23	-14.56 (.000)	-0.22	0.91
D	0.00	496	13.16	-0.14	-8.86 (.000)	0.24	0.85

Item 15

```

-----
item:15 (r3q15)
Cases for this item  3766  Discrimination  0.52
Item Threshold(s):   -0.75  Weighted MNSQ  0.89
Item Delta(s):       -0.75

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.04	-2.34 (.019)	-1.48	0.00
9	0.00	32	0.85	-0.08	-4.75 (.000)	-0.42	0.73
A	1.00	2831	75.17	0.52	37.82 (.000)	0.87	0.94
B	0.00	232	6.16	-0.28	-17.68 (.000)	-0.38	0.79
C	0.00	228	6.05	-0.33	-21.15 (.000)	-0.59	0.70
D	0.00	442	11.74	-0.23	-14.63 (.000)	-0.02	0.74

Item 16

```

-----
item:16 (r3q16)
Cases for this item  3766  Discrimination  0.49
Item Threshold(s):   0.64  Weighted MNSQ  0.95
Item Delta(s):       0.64

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.03	-1.76 (.078)	-0.59	0.00
9	0.00	56	1.49	-0.07	-4.23 (.000)	-0.12	0.87
A	1.00	1836	48.75	0.49	34.63 (.000)	1.08	0.98
B	0.00	805	21.38	-0.23	-14.55 (.000)	0.15	0.84
C	0.00	397	10.54	-0.26	-16.22 (.000)	-0.06	0.77
D	0.00	671	17.82	-0.17	-10.38 (.000)	0.22	0.84

Item 17

```

-----
item:17 (r3q17)
Cases for this item  3765  Discrimination  0.46
Item Threshold(s):  1.09  Weighted MNSQ  0.97
Item Delta(s):      1.10

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	0.00	0.16 (.873)	0.74	0.98
9	0.00	43	1.14	-0.06	-3.39 (.001)	-0.11	0.98
A	0.00	1209	32.11	-0.18	-10.93 (.000)	0.32	0.81
B	0.00	720	19.12	-0.23	-14.79 (.000)	0.14	0.86
C	0.00	299	7.94	-0.17	-10.57 (.000)	0.09	1.03
D	1.00	1492	39.63	0.46	31.93 (.000)	1.14	1.00

Item 18

```

-----
item:18 (r3q18)
Cases for this item  3763  Discrimination  0.42
Item Threshold(s):  -0.40  Weighted MNSQ  1.01
Item Delta(s):      -0.40

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	59	1.57	0.00	0.18 (.857)	0.55	0.90
9	0.00	42	1.12	-0.06	-3.50 (.000)	-0.11	0.95
A	0.00	408	10.84	-0.28	-17.65 (.000)	-0.16	0.88
B	0.00	393	10.44	-0.19	-11.71 (.000)	0.10	0.93
C	1.00	2606	69.25	0.42	28.60 (.000)	0.86	0.96
D	0.00	255	6.78	-0.18	-11.44 (.000)	-0.04	0.79

Item 19

```

-----
item:19 (r3q19)
Cases for this item  3762  Discrimination  0.56
Item Threshold(s):  -0.77  Weighted MNSQ  0.85
Item Delta(s):      -0.76

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.16	-0.03	-2.02 (.044)	-0.27	1.37
9	0.00	92	2.45	-0.07	-4.12 (.000)	0.02	0.83
A	0.00	302	8.03	-0.29	-18.68 (.000)	-0.28	0.74
B	0.00	217	5.77	-0.26	-16.54 (.000)	-0.37	0.75
C	0.00	310	8.24	-0.33	-21.46 (.000)	-0.41	0.79
D	1.00	2835	75.36	0.56	41.72 (.000)	0.89	0.91

Item 20

```

-----
item:20 (r3q20)
Cases for this item  3756  Discrimination  0.43
Item Threshold(s):  0.59  Weighted MNSQ  1.01
Item Delta(s):      0.59

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	85	2.26	-0.05	-3.06 (.002)	0.11	0.85
A	0.00	1032	27.48	-0.20	-12.32 (.000)	0.27	0.86
B	1.00	1872	49.84	0.43	29.53 (.000)	1.02	0.99
C	0.00	179	4.77	-0.24	-14.86 (.000)	-0.32	0.83
D	0.00	588	15.65	-0.20	-12.30 (.000)	0.15	0.85

Item 21

```

-----
item:21 (r3q21)
Cases for this item  3751  Discrimination  0.36
Item Threshold(s):  -0.42  Weighted MNSQ  1.07
Item Delta(s):      -0.42

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	7	0.19	-0.01	-0.66(.510)	0.25	0.50
9	0.00	39	1.04	-0.06	-3.74(.000)	-0.12	0.88
A	1.00	2614	69.69	0.36	23.85(.000)	0.82	0.99
B	0.00	322	8.58	-0.24	-15.18(.000)	-0.17	0.87
C	0.00	253	6.74	-0.25	-16.01(.000)	-0.27	0.83
D	0.00	516	13.76	-0.09	-5.22(.000)	0.39	0.89

Item 22

```

-----
item:22 (r3q22)
Cases for this item  3746  Discrimination  0.37
Item Threshold(s):   0.78  Weighted MNSQ  1.07
Item Delta(s):      0.78

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.08	-0.03	-1.92(.055)	-0.74	0.96
9	0.00	78	2.08	-0.07	-4.08(.000)	0.02	0.82
A	0.00	828	22.10	-0.18	-11.27(.000)	0.27	0.82
B	1.00	1727	46.10	0.37	24.17(.000)	0.98	1.03
C	0.00	710	18.95	-0.10	-6.25(.000)	0.41	0.98
D	0.00	400	10.68	-0.19	-11.65(.000)	0.05	0.86

Item 23

```

-----
item:23 (r3q23)
Cases for this item  3740  Discrimination  0.41
Item Threshold(s):   0.46  Weighted MNSQ  1.04
Item Delta(s):      0.46

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	53	1.42	-0.06	-3.59(.000)	-0.05	0.86
A	0.00	259	6.93	-0.27	-17.06(.000)	-0.33	0.80
B	1.00	1970	52.67	0.41	27.72(.000)	0.98	0.98
C	0.00	379	10.13	-0.23	-14.38(.000)	-0.03	0.87
D	0.00	1079	28.85	-0.14	-8.43(.000)	0.37	0.85

Item 24

```

-----
item:24 (r3q24)
Cases for this item  3733  Discrimination  0.31
Item Threshold(s):   1.53  Weighted MNSQ  1.07
Item Delta(s):      1.53

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	0.00	0.26(.797)	0.76	0.00
9	0.00	58	1.55	-0.03	-1.93(.054)	0.21	0.91
A	0.00	1551	41.55	-0.06	-3.43(.001)	0.50	0.83
B	0.00	489	13.10	-0.26	-16.25(.000)	-0.02	0.84
C	1.00	1179	31.58	0.31	20.13(.000)	1.07	1.11
D	0.00	455	12.19	-0.08	-5.11(.000)	0.41	1.04

Item 25

```

-----
item:25 (r3q25)
Cases for this item  3730  Discrimination  0.48
Item Threshold(s):  0.34  Weighted MNSQ  0.97
Item Delta(s):      0.34

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	9	0.24	0.01	0.45 (.650)	0.68	1.06
9	0.00	30	0.80	-0.08	-4.61 (.000)	-0.37	0.84
A	0.00	321	8.61	-0.31	-19.58 (.000)	-0.32	0.86
B	0.00	255	6.84	-0.25	-15.48 (.000)	-0.21	0.87
C	0.00	1060	28.42	-0.19	-11.56 (.000)	0.30	0.74
D	1.00	2055	55.09	0.48	33.27 (.000)	1.01	0.98

Item 26

```

-----
item:26 (r3q26)
Cases for this item  3722  Discrimination  0.40
Item Threshold(s):  -0.09  Weighted MNSQ  1.03
Item Delta(s):      -0.09

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.08	-0.01	-0.31 (.760)	0.18	1.83
9	0.00	83	2.23	-0.03	-1.59 (.112)	0.18	0.87
A	0.00	551	14.80	-0.32	-20.60 (.000)	-0.12	0.86
B	1.00	2370	63.68	0.40	26.84 (.000)	0.90	0.97
C	0.00	361	9.70	-0.20	-12.13 (.000)	0.05	0.87
D	0.00	354	9.51	-0.06	-3.82 (.000)	0.40	0.91

Item 27

```

-----
item:27 (r3q27)
Cases for this item  3686  Discrimination  0.43
Item Threshold(s):  1.01  Weighted MNSQ  1.00
Item Delta(s):      1.01

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	38	1.03	-0.06	-3.47 (.001)	-0.08	0.97
A	0.00	521	14.13	-0.17	-10.64 (.000)	0.20	0.87
B	0.00	725	19.67	-0.13	-7.86 (.000)	0.36	1.01
C	1.00	1534	41.62	0.43	29.09 (.000)	1.11	1.00
D	0.00	868	23.55	-0.23	-14.10 (.000)	0.19	0.73

Item 28

```

-----
item:28 (r3q28)
Cases for this item  3677  Discrimination  0.34
Item Threshold(s):  1.40  Weighted MNSQ  1.08
Item Delta(s):      1.40

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.02	-0.96 (.337)	-0.23	0.38
9	0.00	48	1.31	-0.06	-3.91 (.000)	-0.00	0.89
A	1.00	1255	34.13	0.34	21.75 (.000)	1.07	1.05
B	0.00	415	11.29	-0.27	-16.89 (.000)	-0.08	0.77
C	0.00	948	25.78	0.03	1.80 (.072)	0.65	1.01
D	0.00	1009	27.44	-0.18	-11.12 (.000)	0.30	0.80

Item 29

```

-----
item:29 (r3q29)
Cases for this item 3670 Discrimination 0.50
Item Threshold(s): 0.84 Weighted MNSQ 0.94
Item Delta(s): 0.85

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.04	-2.39(.017)	-1.32	0.40
9	0.00	42	1.14	-0.06	-3.87(.000)	-0.17	0.84
A	0.00	805	21.93	-0.24	-14.83(.000)	0.17	0.87
B	0.00	631	17.19	-0.20	-12.44(.000)	0.18	0.81
C	0.00	540	14.71	-0.19	-11.85(.000)	0.18	0.84
D	1.00	1650	44.96	0.50	35.21(.000)	1.15	0.96

Item 30

```

-----
item:30 (r3q30)
Cases for this item 3661 Discrimination 0.39
Item Threshold(s): 1.38 Weighted MNSQ 1.02
Item Delta(s): 1.38

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.03	-1.76(.079)	-0.81	0.00
9	0.00	56	1.53	-0.06	-3.68(.000)	0.13	0.92
A	0.00	877	23.96	-0.16	-9.70(.000)	0.33	0.89
B	0.00	690	18.85	-0.08	-4.92(.000)	0.46	0.94
C	0.00	776	21.20	-0.20	-12.04(.000)	0.22	0.84
D	1.00	1261	34.44	0.39	25.88(.000)	1.15	1.04

Item 31

```

-----
item:31 (r3q31)
Cases for this item 3655 Discrimination 0.38
Item Threshold(s): 1.19 Weighted MNSQ 1.05
Item Delta(s): 1.19

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.01	-0.32(.749)	0.04	0.00
9	0.00	60	1.64	-0.08	-4.61(.000)	-0.07	0.86
A	0.00	664	18.17	-0.14	-8.54(.000)	0.35	0.84
B	0.00	974	26.65	-0.13	-8.16(.000)	0.39	0.98
C	1.00	1397	38.22	0.38	24.45(.000)	1.07	1.03
D	0.00	559	15.29	-0.16	-10.11(.000)	0.21	0.82

Item 32

```

-----
item:32 (r3q32)
Cases for this item 3644 Discrimination 0.48
Item Threshold(s): 0.54 Weighted MNSQ 0.97
Item Delta(s): 0.54

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.03	-1.76(.079)	-0.81	0.00
9	0.00	63	1.73	-0.05	-2.85(.004)	0.13	0.89
A	0.00	1089	29.88	-0.22	-13.61(.000)	0.30	0.85
B	0.00	303	8.32	-0.27	-16.78(.000)	-0.23	0.83
C	0.00	316	8.67	-0.20	-12.43(.000)	0.00	0.87
D	1.00	1872	51.37	0.48	32.69(.000)	1.05	0.96

Item 33

```

-----
item:33 (r3q33)
Cases for this item   3613   Discrimination   0.38
Item Threshold(s):    0.67   Weighted MNSQ   1.07
Item Delta(s):        0.67

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1	SD:1
8	0.00	1	0.03	-0.04	-2.33(.020)	-2.22	0.00	
9	0.00	65	1.80	-0.05	-3.20(.001)	0.07	0.78	
A	1.00	1760	48.71	0.38	24.86(.000)	0.99	1.02	
B	0.00	764	21.15	-0.17	-10.59(.000)	0.29	0.93	
C	0.00	416	11.51	-0.22	-13.44(.000)	0.08	0.80	
D	0.00	607	16.80	-0.11	-6.93(.000)	0.37	0.90	

Item 34

```

-----
item:34 (r3q34)
Cases for this item   3581   Discrimination   0.23
Item Threshold(s):    1.13   Weighted MNSQ   1.20
Item Delta(s):        1.12

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1	SD:1
9	0.00	40	1.12	-0.04	-2.36(.018)	0.29	0.81	
A	0.00	647	18.07	-0.13	-7.62(.000)	0.39	0.94	
B	1.00	1423	39.74	0.23	14.28(.000)	0.89	1.06	
C	0.00	682	19.04	-0.12	-7.11(.000)	0.38	0.99	
D	0.00	789	22.03	-0.04	-2.10(.036)	0.56	0.94	

Item 35

```

-----
item:35 (r3q35)
Cases for this item   3574   Discrimination   0.40
Item Threshold(s):    0.04   Weighted MNSQ   1.05
Item Delta(s):        0.04

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1	SD:1
9	0.00	53	1.48	-0.06	-3.49(.000)	0.12	0.97	
A	0.00	801	22.41	-0.23	-13.99(.000)	0.19	0.79	
B	0.00	290	8.11	-0.16	-9.95(.000)	0.10	1.04	
C	1.00	2199	61.53	0.40	26.04(.000)	0.93	0.99	
D	0.00	231	6.46	-0.19	-11.73(.000)	-0.05	0.86	

Item 36

```

-----
item:36 (r3q36)
Cases for this item   3560   Discrimination   0.45
Item Threshold(s):    1.32   Weighted MNSQ   0.97
Item Delta(s):        1.32

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1	SD:1
9	0.00	27	0.76	-0.03	-1.50(.134)	0.20	1.01	
A	0.00	1291	36.26	-0.14	-8.31(.000)	0.43	0.83	
B	0.00	587	16.49	-0.21	-12.56(.000)	0.20	0.89	
C	1.00	1278	35.90	0.45	29.71(.000)	1.20	1.01	
D	0.00	377	10.59	-0.22	-13.70(.000)	0.02	0.90	

Item 37

```

-----
item:37 (r3q37)
Cases for this item 3551 Discrimination 0.15
Item Threshold(s): 1.88 Weighted MNSQ 1.24
Item Delta(s): 1.88

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1	SD:1
8	0.00	4	0.11	-0.03	-2.08(.037)	-0.23	0.81	
9	0.00	68	1.91	0.00	0.18(.859)	0.59	0.85	
A	0.00	710	19.99	-0.13	-7.86(.000)	0.40	1.02	
B	0.00	1042	29.34	0.07	4.40(.000)	0.72	1.04	
C	0.00	801	22.56	-0.11	-6.45(.000)	0.44	0.96	
D	1.00	926	26.08	0.15	8.85(.000)	0.86	1.01	

Item 38

```

-----
item:38 (r3q38)
Cases for this item 3526 Discrimination 0.14
Item Threshold(s): 2.49 Weighted MNSQ 1.15
Item Delta(s): 2.49

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1	SD:1
9	0.00	25	0.71	-0.00	-0.15(.877)	0.61	0.93	
A	1.00	612	17.36	0.14	8.50(.000)	0.95	1.19	
B	0.00	426	12.08	-0.21	-12.66(.000)	0.10	0.96	
C	0.00	623	17.67	-0.19	-11.68(.000)	0.25	1.10	
D	0.00	1840	52.18	0.18	10.65(.000)	0.76	0.86	

Item 39

```

-----
item:39 (r3q39)
Cases for this item 3520 Discrimination 0.21
Item Threshold(s): 2.03 Weighted MNSQ 1.12
Item Delta(s): 2.03

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1	SD:1
8	0.00	1	0.03	-0.03	-1.75(.080)	-0.81	0.00	
9	0.00	20	0.57	-0.02	-1.14(.256)	0.25	0.97	
A	0.00	1090	30.97	-0.05	-3.15(.002)	0.54	0.94	
B	1.00	834	23.69	0.21	12.76(.000)	1.04	1.17	
C	0.00	557	15.82	-0.09	-5.43(.000)	0.43	1.03	
D	0.00	1018	28.92	-0.07	-3.90(.000)	0.49	0.89	

The following traditional statistics are only meaningful for complete designs and when the amount of missing data is minimal.
In this analysis 1.98% of the data are missing.

The following results are scaled to assume that a single response was provided for each item.

```

-----
N 3789
Mean 23.18
Standard Deviation 6.97
Variance 48.64
Skewness -0.18
Kurtosis -0.46
Standard error of mean 0.11
Standard error of measurement 2.69
Coefficient Alpha 0.85
-----

```

Appendix B.2 Year 5 Reading

=====

NAPLAN 2015, Calibration, Grade 5, reading
GENERALISED ITEM ANALYSIS

=====

Item 1

item:1 (r5q01)
Cases for this item 3971 Discrimination 0.36
Item Threshold(s): -2.56 Weighted MNSQ 0.90
Item Delta(s): -2.57

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.04	-2.69(.007)	-3.52	0.00
9	0.00	5	0.13	-0.06	-3.99(.000)	-1.57	1.42
A	1.00	3680	92.67	0.36	24.59(.000)	0.53	1.02
B	0.00	51	1.28	-0.17	-10.59(.000)	-1.05	0.85
C	0.00	146	3.68	-0.27	-17.42(.000)	-0.96	0.86
D	0.00	88	2.22	-0.16	-9.98(.000)	-0.60	0.94

=====

Item 2

item:2 (r5q02)
Cases for this item 3971 Discrimination 0.23
Item Threshold(s): -2.27 Weighted MNSQ 1.02
Item Delta(s): -2.27

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.04	-2.67(.008)	-1.80	2.44
9	0.00	12	0.30	-0.08	-4.91(.000)	-1.28	1.70
A	0.00	262	6.60	-0.11	-6.78(.000)	-0.01	1.10
B	1.00	3599	90.63	0.23	14.92(.000)	0.51	1.04
C	0.00	58	1.46	-0.17	-10.65(.000)	-0.88	0.89
D	0.00	38	0.96	-0.16	-10.07(.000)	-1.29	0.79

=====

Item 3

item:3 (r5q03)
Cases for this item 3971 Discrimination 0.39
Item Threshold(s): -2.63 Weighted MNSQ 0.88
Item Delta(s): -2.62

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.04	-2.69(.007)	-3.52	0.00
9	0.00	18	0.45	-0.08	-4.95(.000)	-0.94	1.29
A	1.00	3694	93.02	0.39	26.78(.000)	0.53	1.02
B	0.00	52	1.31	-0.18	-11.72(.000)	-1.22	0.89
C	0.00	74	1.86	-0.21	-13.64(.000)	-1.07	0.78
D	0.00	132	3.32	-0.25	-16.08(.000)	-0.85	0.75

=====

Item 4

item:4 (r5q04)
Cases for this item 3970 Discrimination 0.36
Item Threshold(s): -1.27 Weighted MNSQ 1.01
Item Delta(s): -1.27

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.04	-2.69(.007)	-3.52	0.00
9	0.00	11	0.28	-0.05	-3.34(.001)	-0.93	1.86
A	0.00	71	1.79	-0.20	-12.75(.000)	-1.13	0.75
B	0.00	75	1.89	-0.18	-11.45(.000)	-0.91	0.96
C	1.00	3176	80.00	0.36	24.23(.000)	0.61	1.01
D	0.00	636	16.02	-0.24	-15.85(.000)	-0.14	0.97

=====

Item 5

```

-----
item:5 (r5q05)
Cases for this item 3969 Discrimination 0.47
Item Threshold(s): -0.80 Weighted MNSQ 0.96
Item Delta(s): -0.81

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.08	-0.04	-2.51(.012)	-1.44	2.11
9	0.00	11	0.28	-0.08	-4.99(.000)	-1.03	1.35
A	0.00	491	12.37	-0.34	-23.13(.000)	-0.47	0.81
B	0.00	431	10.86	-0.19	-12.01(.000)	-0.11	0.97
C	1.00	2899	73.04	0.47	33.62(.000)	0.71	1.00
D	0.00	134	3.38	-0.18	-11.32(.000)	-0.45	0.75

Item 6

```

-----
item:6 (r5q06)
Cases for this item 3968 Discrimination 0.37
Item Threshold(s): -2.49 Weighted MNSQ 0.89
Item Delta(s): -2.50

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.05	-2.96(.003)	-2.01	2.14
9	0.00	8	0.20	-0.08	-4.77(.000)	-1.63	1.30
A	0.00	86	2.17	-0.19	-12.06(.000)	-0.85	0.80
B	0.00	83	2.09	-0.17	-11.09(.000)	-0.75	1.03
C	0.00	129	3.25	-0.25	-15.99(.000)	-0.92	0.84
D	1.00	3660	92.24	0.37	25.46(.000)	0.54	1.02

Item 7

```

-----
item:7 (r5q07)
Cases for this item 3968 Discrimination 0.50
Item Threshold(s): -0.74 Weighted MNSQ 0.93
Item Delta(s): -0.74

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.04	-2.70(.007)	-3.52	0.00
9	0.00	29	0.73	-0.09	-5.70(.000)	-0.83	1.05
A	0.00	602	15.17	-0.29	-18.84(.000)	-0.24	0.86
B	1.00	2856	71.98	0.50	36.51(.000)	0.74	0.99
C	0.00	98	2.47	-0.19	-12.29(.000)	-0.81	0.97
D	0.00	382	9.63	-0.29	-18.80(.000)	-0.44	0.74

Item 8

```

-----
item:8 (r5q08)
Cases for this item 3968 Discrimination 0.39
Item Threshold(s): -1.10 Weighted MNSQ 1.01
Item Delta(s): -1.10

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.15	-0.05	-3.01(.003)	-0.91	1.55
9	0.00	20	0.50	-0.05	-3.06(.002)	-0.61	1.53
A	1.00	3079	77.60	0.39	26.92(.000)	0.64	1.03
B	0.00	211	5.32	-0.21	-13.47(.000)	-0.42	0.79
C	0.00	158	3.98	-0.20	-13.19(.000)	-0.58	0.89
D	0.00	494	12.45	-0.22	-13.99(.000)	-0.13	0.93

Item 9

```

-----
item:9 (r5q09)
Cases for this item 3967 Discrimination 0.45
Item Threshold(s): -0.26 Weighted MNSQ 1.00
Item Delta(s): -0.26

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.01	-0.88 (.376)	-0.20	0.34
9	0.00	37	0.93	-0.06	-4.01 (.000)	-0.45	1.26
A	0.00	445	11.22	-0.31	-20.35 (.000)	-0.41	0.84
B	1.00	2512	63.32	0.45	31.98 (.000)	0.78	1.01
C	0.00	773	19.49	-0.19	-11.87 (.000)	0.05	0.90
D	0.00	198	4.99	-0.19	-12.19 (.000)	-0.42	0.92

Item 10

```

-----
item:10 (r5q10)
Cases for this item 3964 Discrimination 0.48
Item Threshold(s): -0.73 Weighted MNSQ 0.95
Item Delta(s): -0.73

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.02	-1.37 (.172)	-0.48	1.65
9	0.00	22	0.55	-0.05	-2.93 (.003)	-0.28	1.40
A	0.00	131	3.30	-0.18	-11.55 (.000)	-0.60	1.13
B	1.00	2847	71.82	0.48	34.16 (.000)	0.73	1.00
C	0.00	208	5.25	-0.24	-15.65 (.000)	-0.62	0.84
D	0.00	754	19.02	-0.32	-21.08 (.000)	-0.20	0.80

Item 11

```

-----
item:11 (r5q11)
Cases for this item 3964 Discrimination 0.46
Item Threshold(s): 0.25 Weighted MNSQ 1.00
Item Delta(s): 0.25

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	23	0.58	-0.05	-3.02 (.003)	-0.44	1.12
A	0.00	1068	26.94	-0.30	-19.63 (.000)	-0.04	0.85
B	0.00	277	6.99	-0.29	-19.30 (.000)	-0.62	0.79
C	1.00	2119	53.46	0.46	32.89 (.000)	0.86	1.00
D	0.00	477	12.03	-0.06	-3.97 (.000)	0.24	1.05

Item 12

```

-----
item:12 (r5q12)
Cases for this item 3963 Discrimination 0.49
Item Threshold(s): -1.20 Weighted MNSQ 0.91
Item Delta(s): -1.20

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.08	-0.02	-1.20 (.229)	0.03	0.79
9	0.00	9	0.23	-0.08	-4.78 (.000)	-1.44	1.55
A	0.00	118	2.98	-0.19	-12.48 (.000)	-0.70	0.79
B	0.00	117	2.95	-0.21	-13.80 (.000)	-0.78	0.89
C	0.00	582	14.69	-0.36	-24.20 (.000)	-0.42	0.77
D	1.00	3134	79.08	0.49	35.66 (.000)	0.68	0.99

Item 13

```

-----
item:13 (r5q13)
Cases for this item  3962  Discrimination  0.42
Item Threshold(s):  -1.21  Weighted MNSQ  0.97
Item Delta(s):      -1.21

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	22	0.56	-0.10	-6.39(.000)	-1.30	1.17
A	0.00	269	6.79	-0.24	-15.60(.000)	-0.45	0.99
B	1.00	3140	79.25	0.42	29.06(.000)	0.65	1.01
C	0.00	264	6.66	-0.24	-15.39(.000)	-0.46	0.81
D	0.00	267	6.74	-0.17	-10.88(.000)	-0.19	0.81

Item 14

```

-----
item:14 (r5q14)
Cases for this item  3957  Discrimination  0.49
Item Threshold(s):  -0.21  Weighted MNSQ  0.96
Item Delta(s):      -0.21

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.04	-2.31(.021)	-0.94	0.84
9	0.00	11	0.28	-0.08	-5.10(.000)	-1.33	1.33
A	0.00	322	8.14	-0.22	-14.48(.000)	-0.30	0.82
B	0.00	684	17.29	-0.17	-10.55(.000)	0.07	0.91
C	1.00	2474	62.52	0.49	35.59(.000)	0.82	1.00
D	0.00	464	11.73	-0.34	-22.74(.000)	-0.49	0.71

Item 15

```

-----
item:15 (r5q15)
Cases for this item  3957  Discrimination  0.49
Item Threshold(s):   0.27  Weighted MNSQ  0.98
Item Delta(s):      0.26

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	9	0.23	-0.03	-1.60(.109)	-0.13	1.57
9	0.00	25	0.63	-0.10	-6.09(.000)	-0.87	1.25
A	1.00	2104	53.17	0.49	35.06(.000)	0.89	0.99
B	0.00	180	4.55	-0.23	-14.76(.000)	-0.60	0.81
C	0.00	1048	26.48	-0.13	-8.30(.000)	0.21	0.94
D	0.00	591	14.94	-0.36	-24.36(.000)	-0.39	0.68

Item 16

```

-----
item:16 (r5q16)
Cases for this item  3957  Discrimination  0.55
Item Threshold(s):  -0.55  Weighted MNSQ  0.88
Item Delta(s):      -0.55

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.10	-0.02	-1.19(.232)	-0.38	2.37
9	0.00	31	0.78	-0.11	-6.67(.000)	-0.91	1.04
A	0.00	509	12.86	-0.26	-17.17(.000)	-0.24	0.84
B	0.00	375	9.48	-0.30	-19.61(.000)	-0.48	0.74
C	0.00	320	8.09	-0.26	-17.21(.000)	-0.41	0.76
D	1.00	2718	68.69	0.55	41.92(.000)	0.80	0.97

Item 17

```

-----
item:17 (r5q17)
Cases for this item  3956  Discrimination  0.55
Item Threshold(s):  0.00  Weighted MNSQ  0.91
Item Delta(s):      -0.00

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.05	-3.17(.002)	-2.32	1.71
9	0.00	22	0.56	-0.08	-5.28(.000)	-0.88	1.30
A	0.00	647	16.35	-0.27	-17.62(.000)	-0.15	0.93
B	0.00	511	12.92	-0.23	-15.15(.000)	-0.15	0.87
C	0.00	462	11.68	-0.26	-16.86(.000)	-0.26	0.79
D	1.00	2312	58.44	0.55	40.93(.000)	0.88	0.96

Item 18

```

-----
item:18 (r5q18)
Cases for this item  3948  Discrimination  0.45
Item Threshold(s):  0.02  Weighted MNSQ  1.01
Item Delta(s):      0.02

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.03	-2.18(.029)	-1.88	2.32
9	0.00	25	0.63	-0.07	-4.29(.000)	-0.44	1.21
A	0.00	440	11.14	-0.25	-16.20(.000)	-0.27	0.83
B	0.00	916	23.20	-0.19	-12.30(.000)	0.10	0.95
C	1.00	2293	58.08	0.45	31.89(.000)	0.82	1.00
D	0.00	272	6.89	-0.23	-14.65(.000)	-0.38	0.84

Item 19

```

-----
item:19 (r5q19)
Cases for this item  3948  Discrimination  0.47
Item Threshold(s):  -0.15  Weighted MNSQ  0.99
Item Delta(s):      -0.15

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.13	-0.05	-3.43(.001)	-1.55	1.40
9	0.00	64	1.62	-0.05	-2.98(.003)	-0.05	1.15
A	1.00	2426	61.45	0.47	33.51(.000)	0.81	1.00
B	0.00	595	15.07	-0.28	-18.65(.000)	-0.22	0.82
C	0.00	414	10.49	-0.23	-14.69(.000)	-0.20	0.90
D	0.00	444	11.25	-0.16	-9.98(.000)	-0.01	0.91

Item 20

```

-----
item:20 (r5q20)
Cases for this item  3946  Discrimination  0.61
Item Threshold(s):  0.53  Weighted MNSQ  0.84
Item Delta(s):      0.53

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1723	43.66	-0.48	-34.80(.000)	-0.09	0.84
1	1.00	1888	47.85	0.61	48.89(.000)	1.07	0.90
9	0.00	335	8.49	-0.24	-15.42(.000)	-0.40	0.95

Item 21

```

-----
item:21 (r5q21)
Cases for this item  3942  Discrimination  0.43
Item Threshold(s):  -0.68  Weighted MNSQ  0.99
Item Delta(s):      -0.68

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.05	-3.09(.002)	-2.23	1.83
9	0.00	56	1.42	-0.10	-6.48(.000)	-0.47	0.95
A	1.00	2803	71.11	0.43	30.29(.000)	0.72	1.00
B	0.00	426	10.81	-0.21	-13.73(.000)	-0.18	0.95
C	0.00	492	12.48	-0.21	-13.51(.000)	-0.11	0.91
D	0.00	163	4.13	-0.24	-15.54(.000)	-0.67	0.71

Item 22

```

-----
item:22 (r5q22)
Cases for this item  3938  Discrimination  0.41
Item Threshold(s):   0.80  Weighted MNSQ  1.04
Item Delta(s):      0.80

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.04	-2.72(.007)	-3.52	0.00
9	0.00	32	0.81	-0.08	-4.94(.000)	-0.45	1.07
A	0.00	714	18.13	-0.23	-14.75(.000)	-0.05	0.98
B	0.00	870	22.09	-0.08	-5.28(.000)	0.29	0.92
C	1.00	1681	42.69	0.41	28.53(.000)	0.94	1.03
D	0.00	640	16.25	-0.20	-12.84(.000)	-0.04	0.82

Item 23

```

-----
item:23 (r5q23)
Cases for this item  3938  Discrimination  0.46
Item Threshold(s):   0.19  Weighted MNSQ  1.00
Item Delta(s):      0.18

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.05	-3.37(.001)	-2.58	1.33
9	0.00	51	1.30	-0.09	-5.86(.000)	-0.41	0.97
A	0.00	968	24.58	-0.20	-12.87(.000)	0.10	0.88
B	0.00	443	11.25	-0.20	-13.06(.000)	-0.13	0.98
C	1.00	2163	54.93	0.46	32.60(.000)	0.85	1.00
D	0.00	311	7.90	-0.25	-16.05(.000)	-0.36	0.87

Item 24

```

-----
item:24 (r5q24)
Cases for this item  3937  Discrimination  0.46
Item Threshold(s):   0.05  Weighted MNSQ  1.01
Item Delta(s):      0.05

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.01	-0.44(.663)	0.21	0.00
9	0.00	57	1.45	-0.07	-4.18(.000)	-0.19	1.21
A	0.00	564	14.33	-0.15	-9.48(.000)	0.05	0.97
B	0.00	517	13.13	-0.20	-12.66(.000)	-0.07	0.92
C	0.00	530	13.46	-0.29	-18.85(.000)	-0.25	0.82
D	1.00	2268	57.61	0.46	32.15(.000)	0.84	0.99

Item 25

```

-----
item:25 (r5q25)
Cases for this item  3934  Discrimination  0.29
Item Threshold(s):  1.54  Weighted MNSQ  1.13
Item Delta(s):      1.54

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.04	-2.72 (.007)	-3.52	0.00
9	0.00	31	0.79	-0.09	-5.62 (.000)	-0.70	1.26
A	0.00	1056	26.84	0.01	0.52 (.601)	0.45	0.99
B	0.00	893	22.70	-0.14	-8.85 (.000)	0.20	1.02
C	1.00	1142	29.03	0.29	18.79 (.000)	0.90	1.07
D	0.00	811	20.62	-0.17	-10.50 (.000)	0.12	0.96

Item 26

```

-----
item:26 (r5q26)
Cases for this item  3923  Discrimination  0.44
Item Threshold(s):  0.45  Weighted MNSQ  1.02
Item Delta(s):      0.45

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.04	-2.73 (.006)	-3.52	0.00
9	0.00	55	1.40	-0.05	-3.34 (.001)	-0.06	1.19
A	0.00	919	23.43	-0.25	-16.04 (.000)	0.00	0.89
B	1.00	1951	49.73	0.44	30.93 (.000)	0.89	1.03
C	0.00	813	20.72	-0.19	-11.91 (.000)	0.10	0.92
D	0.00	184	4.69	-0.16	-10.08 (.000)	-0.25	0.79

Item 27

```

-----
item:27 (r5q27)
Cases for this item  3913  Discrimination  0.43
Item Threshold(s):  1.03  Weighted MNSQ  1.02
Item Delta(s):      1.03

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.04	-2.73 (.006)	-3.52	0.00
9	0.00	49	1.25	-0.06	-3.98 (.000)	-0.24	1.12
A	0.00	925	23.64	-0.17	-10.86 (.000)	0.15	0.90
B	0.00	549	14.03	-0.30	-19.79 (.000)	-0.27	0.82
C	0.00	894	22.85	-0.05	-3.33 (.001)	0.35	0.95
D	1.00	1495	38.21	0.43	29.54 (.000)	0.99	1.03

Item 28

```

-----
item:28 (r5q28)
Cases for this item  3901  Discrimination  0.39
Item Threshold(s):  1.35  Weighted MNSQ  1.04
Item Delta(s):      1.35

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.04	-2.73 (.006)	-3.52	0.00
9	0.00	51	1.31	-0.04	-2.45 (.014)	-0.00	1.15
A	0.00	1172	30.04	-0.04	-2.51 (.012)	0.38	0.98
B	0.00	1008	25.84	-0.22	-14.27 (.000)	0.08	0.84
C	0.00	406	10.41	-0.20	-12.42 (.000)	-0.10	0.90
D	1.00	1263	32.38	0.39	26.14 (.000)	1.02	1.08

Item 29

```

-----
item:29 (r5q29)
Cases for this item  3896  Discrimination  0.20
Item Threshold(s):  2.02  Weighted MNSQ  1.15
Item Delta(s):      2.02

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.02	-1.39(.165)	-1.26	3.20
9	0.00	86	2.21	-0.05	-3.27(.001)	0.03	1.10
A	1.00	843	21.64	0.20	12.55(.000)	0.85	1.21
B	0.00	1839	47.20	0.04	2.70(.007)	0.49	0.95
C	0.00	592	15.20	-0.25	-15.98(.000)	-0.11	0.95
D	0.00	534	13.71	-0.02	-1.00(.317)	0.42	0.98

Item 30

```

-----
item:30 (r5q30)
Cases for this item  3884  Discrimination  0.43
Item Threshold(s):  0.17  Weighted MNSQ  1.04
Item Delta(s):      0.17

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.05	-3.39(.001)	-2.43	1.54
9	0.00	53	1.36	-0.07	-4.40(.000)	-0.19	1.25
A	0.00	331	8.52	-0.23	-14.99(.000)	-0.30	0.83
B	0.00	909	23.40	-0.14	-8.84(.000)	0.21	0.94
C	1.00	2156	55.51	0.43	29.68(.000)	0.84	1.02
D	0.00	433	11.15	-0.25	-16.26(.000)	-0.24	0.75

Item 31

```

-----
item:31 (r5q31)
Cases for this item  3880  Discrimination  0.39
Item Threshold(s):  1.57  Weighted MNSQ  1.01
Item Delta(s):      1.57

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.04	-2.53(.011)	-2.00	2.15
9	0.00	59	1.52	-0.08	-4.96(.000)	-0.25	1.06
A	0.00	1066	27.47	-0.08	-5.21(.000)	0.29	0.88
B	0.00	886	22.84	-0.05	-2.97(.003)	0.36	1.02
C	0.00	755	19.46	-0.28	-18.03(.000)	-0.08	0.84
D	1.00	1112	28.66	0.39	26.66(.000)	1.10	1.08

Item 32

```

-----
item:32 (r5q32)
Cases for this item  3876  Discrimination  0.41
Item Threshold(s):  0.55  Weighted MNSQ  1.06
Item Delta(s):      0.54

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.04	-2.73(.006)	-3.52	0.00
9	0.00	32	0.83	-0.06	-3.67(.000)	-0.24	1.22
A	1.00	1861	48.01	0.41	27.80(.000)	0.88	1.03
B	0.00	593	15.30	-0.16	-10.11(.000)	0.09	0.93
C	0.00	678	17.49	-0.15	-9.66(.000)	0.12	1.02
D	0.00	711	18.34	-0.21	-13.45(.000)	0.02	0.83

Item 33

```

-----
item:33 (r5q33)
Cases for this item 3872 Discrimination 0.49
Item Threshold(s): 0.93 Weighted MNSQ 0.97
Item Delta(s): 0.93

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.08	-0.04	-2.79(.005)	-1.66	2.25
9	0.00	66	1.70	-0.06	-3.87(.000)	-0.08	1.15
A	0.00	800	20.66	-0.20	-12.59(.000)	0.07	0.95
B	0.00	794	20.51	-0.20	-12.74(.000)	0.06	0.94
C	0.00	646	16.68	-0.18	-11.45(.000)	0.07	0.86
D	1.00	1563	40.37	0.49	34.54(.000)	1.05	0.96

Item 34

```

-----
item:34 (r5q34)
Cases for this item 3841 Discrimination 0.48
Item Threshold(s): 2.00 Weighted MNSQ 0.93
Item Delta(s): 2.00

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2649	68.97	-0.27	-17.15(.000)	0.28	0.95
1	1.00	845	22.00	0.48	33.92(.000)	1.38	0.85
9	0.00	347	9.03	-0.26	-16.93(.000)	-0.40	0.90

Item 35

```

-----
item:35 (r5q35)
Cases for this item 3826 Discrimination 0.46
Item Threshold(s): 0.17 Weighted MNSQ 1.01
Item Delta(s): 0.17

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.04	-2.74(.006)	-3.52	0.00
9	0.00	145	3.79	-0.02	-1.43(.153)	0.36	0.97
A	0.00	532	13.90	-0.19	-12.06(.000)	-0.02	0.94
B	1.00	2130	55.67	0.46	31.81(.000)	0.88	1.02
C	0.00	585	15.29	-0.30	-19.11(.000)	-0.22	0.73
D	0.00	433	11.32	-0.16	-9.79(.000)	0.02	0.84

Item 36

```

-----
item:36 (r5q36)
Cases for this item 3817 Discrimination 0.37
Item Threshold(s): 0.78 Weighted MNSQ 1.09
Item Delta(s): 0.78

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.04	-2.74(.006)	-3.52	0.00
9	0.00	38	1.00	-0.04	-2.41(.016)	0.11	1.13
A	0.00	887	23.24	-0.28	-18.09(.000)	-0.05	0.83
B	0.00	341	8.93	-0.21	-13.16(.000)	-0.18	0.86
C	0.00	892	23.37	-0.00	-0.23(.820)	0.46	1.00
D	1.00	1658	43.44	0.37	24.74(.000)	0.90	1.04

Item 37

```

-----
item:37 (r5q37)
Cases for this item   3808   Discrimination   0.54
Item Threshold(s):   0.65   Weighted MNSQ   0.92
Item Delta(s):       0.65

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.08	-0.05	-2.96(.003)	-1.56	1.79
9	0.00	37	0.97	-0.05	-2.84(.005)	-0.04	1.04
A	1.00	1757	46.14	0.54	39.15(.000)	1.05	0.99
B	0.00	492	12.92	-0.19	-11.67(.000)	-0.03	0.91
C	0.00	883	23.19	-0.37	-24.93(.000)	-0.20	0.76
D	0.00	636	16.70	-0.11	-6.79(.000)	0.21	0.83

Item 38

```

-----
item:38 (r5q38)
Cases for this item   3794   Discrimination   0.16
Item Threshold(s):   2.04   Weighted MNSQ   1.18
Item Delta(s):       2.04

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.04	-2.74(.006)	-3.52	0.00
9	0.00	26	0.69	-0.03	-1.80(.073)	0.12	0.98
A	0.00	1547	40.77	-0.11	-6.80(.000)	0.34	0.94
B	1.00	819	21.59	0.16	10.06(.000)	0.79	1.22
C	0.00	589	15.52	-0.12	-7.52(.000)	0.17	0.96
D	0.00	812	21.40	0.08	5.23(.000)	0.64	1.07

Item 39

```

-----
item:39 (r5q39)
Cases for this item   3786   Discrimination   0.35
Item Threshold(s):   1.52   Weighted MNSQ   1.05
Item Delta(s):       1.52

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.05	-3.22(.001)	-2.34	1.67
9	0.00	10	0.26	-0.02	-1.44(.149)	0.00	1.56
A	0.00	419	11.07	-0.28	-17.72(.000)	-0.33	0.82
B	0.00	1752	46.28	-0.06	-3.63(.000)	0.39	0.88
C	1.00	1126	29.74	0.35	23.25(.000)	1.04	1.14
D	0.00	477	12.60	-0.13	-8.04(.000)	0.16	0.96

The following traditional statistics are only meaningful for complete designs and when the amount of missing data is minimal.
In this analysis 1.24% of the data are missing.

The following results are scaled to assume that a single response was provided for each item.

N	3971
Mean	22.16
Standard Deviation	7.50
Variance	56.24
Skewness	-0.04
Kurtosis	-0.80
Standard error of mean	0.12
Standard error of measurement	2.64
Coefficient Alpha	0.88

Appendix B.3 Year 7 Reading

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NAPLAN 2015, Calibration, Grade 7, reading
GENERALISED ITEM ANALYSIS

=====

Item 1

item:1 (r7q01)

Cases for this item 4574 Discrimination 0.34
Item Threshold(s): -2.98 Weighted MNSQ 0.91
Item Delta(s): -2.98

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.04	-2.98 (.003)	-3.19	0.00
9	0.00	16	0.35	-0.08	-5.64 (.000)	-1.12	1.12
A	1.00	4326	94.58	0.34	24.53 (.000)	0.32	0.91
B	0.00	133	2.91	-0.25	-17.25 (.000)	-1.05	0.63
C	0.00	82	1.79	-0.18	-12.54 (.000)	-0.96	0.72
D	0.00	16	0.35	-0.10	-6.83 (.000)	-1.42	0.68

=====

Item 2

item:2 (r7q02)

Cases for this item 4574 Discrimination 0.42
Item Threshold(s): -1.91 Weighted MNSQ 0.90
Item Delta(s): -1.91

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.11	-0.06	-3.78 (.000)	-1.39	1.23
9	0.00	13	0.28	-0.11	-7.34 (.000)	-1.65	1.16
A	0.00	242	5.29	-0.27	-19.15 (.000)	-0.82	0.67
B	1.00	3961	86.60	0.42	31.67 (.000)	0.39	0.89
C	0.00	102	2.23	-0.17	-12.00 (.000)	-0.76	0.76
D	0.00	251	5.49	-0.22	-15.26 (.000)	-0.56	0.74

=====

Item 3

item:3 (r7q03)

Cases for this item 4573 Discrimination 0.38
Item Threshold(s): -1.83 Weighted MNSQ 0.94
Item Delta(s): -1.82

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.09	-0.07	-4.56 (.000)	-1.87	1.25
9	0.00	16	0.35	-0.09	-6.39 (.000)	-1.33	1.15
A	0.00	168	3.67	-0.19	-12.74 (.000)	-0.64	0.85
B	0.00	404	8.83	-0.25	-17.18 (.000)	-0.45	0.77
C	0.00	63	1.38	-0.17	-11.83 (.000)	-1.12	0.69
D	1.00	3918	85.68	0.38	27.60 (.000)	0.38	0.89

=====

Item 4

item:4 (r7q04)

Cases for this item 4573 Discrimination 0.42
Item Threshold(s): -2.12 Weighted MNSQ 0.88
Item Delta(s): -2.11

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	19	0.42	-0.10	-6.63 (.000)	-1.14	0.80
9	0.00	14	0.31	-0.10	-6.47 (.000)	-1.57	1.01
A	0.00	40	0.87	-0.14	-9.24 (.000)	-1.17	0.74
B	0.00	280	6.12	-0.27	-18.69 (.000)	-0.66	0.72
C	1.00	4053	88.63	0.42	31.33 (.000)	0.38	0.88
D	0.00	167	3.65	-0.24	-16.87 (.000)	-0.92	0.73

=====

Item 5

```

-----
item:5 (r7q05)
Cases for this item  4573  Discrimination  0.38
Item Threshold(s):  -2.66  Weighted MNSQ  0.88
Item Delta(s):      -2.66

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.07	-0.07	-4.57(.000)	-2.66	0.50
9	0.00	17	0.37	-0.12	-7.98(.000)	-1.72	0.93
A	0.00	116	2.54	-0.23	-15.85(.000)	-1.08	0.69
B	1.00	4244	92.81	0.38	28.09(.000)	0.34	0.89
C	0.00	127	2.78	-0.22	-15.00(.000)	-0.93	0.73
D	0.00	66	1.44	-0.16	-10.80(.000)	-0.86	0.64

Item 6

```

-----
item:6 (r7q06)
Cases for this item  4571  Discrimination  0.36
Item Threshold(s):  -1.34  Weighted MNSQ  0.98
Item Delta(s):      -1.34

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.07	-0.06	-3.80(.000)	-1.84	1.18
9	0.00	34	0.74	-0.12	-7.94(.000)	-1.04	1.01
A	1.00	3637	79.57	0.36	26.32(.000)	0.41	0.90
B	0.00	498	10.89	-0.23	-15.67(.000)	-0.33	0.84
C	0.00	182	3.98	-0.16	-10.91(.000)	-0.45	0.89
D	0.00	217	4.75	-0.16	-10.72(.000)	-0.37	0.79

Item 7

```

-----
item:7 (r7q07)
Cases for this item  4570  Discrimination  0.44
Item Threshold(s):  -1.22  Weighted MNSQ  0.92
Item Delta(s):      -1.22

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.07	-0.07	-4.65(.000)	-2.26	1.12
9	0.00	23	0.50	-0.09	-6.32(.000)	-1.21	0.94
A	1.00	3551	77.70	0.44	33.52(.000)	0.46	0.88
B	0.00	427	9.34	-0.27	-18.86(.000)	-0.49	0.75
C	0.00	279	6.11	-0.21	-14.45(.000)	-0.49	0.81
D	0.00	287	6.28	-0.20	-13.73(.000)	-0.44	0.78

Item 8

```

-----
item:8 (r7q08)
Cases for this item  4568  Discrimination  0.41
Item Threshold(s):  -1.44  Weighted MNSQ  0.93
Item Delta(s):      -1.43

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.09	-0.05	-3.59(.000)	-1.89	1.23
9	0.00	27	0.59	-0.13	-8.99(.000)	-1.42	0.92
A	1.00	3694	80.87	0.41	30.06(.000)	0.43	0.88
B	0.00	354	7.75	-0.21	-14.46(.000)	-0.40	0.80
C	0.00	377	8.25	-0.22	-15.28(.000)	-0.43	0.82
D	0.00	112	2.45	-0.20	-14.09(.000)	-0.92	0.66

Item 9

```

-----
item:9 (r7q09)
Cases for this item 4568 Discrimination 0.45
Item Threshold(s): 0.02 Weighted MNSQ 0.97
Item Delta(s): 0.01

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.07	-0.05	-3.21(.001)	-1.35	1.15
9	0.00	18	0.39	-0.08	-5.34(.000)	-1.10	1.30
A	0.00	515	11.27	-0.17	-11.78(.000)	-0.18	0.90
B	0.00	921	20.16	-0.23	-15.83(.000)	-0.14	0.77
C	1.00	2503	54.79	0.45	34.23(.000)	0.60	0.89
D	0.00	608	13.31	-0.21	-14.85(.000)	-0.24	0.79

Item 10

```

-----
item:10 (r7q10)
Cases for this item 4565 Discrimination 0.45
Item Threshold(s): -0.88 Weighted MNSQ 0.93
Item Delta(s): -0.88

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.04	-0.04	-3.02(.003)	-1.95	0.90
9	0.00	37	0.81	-0.10	-6.74(.000)	-0.86	1.04
A	0.00	732	16.04	-0.27	-18.99(.000)	-0.29	0.82
B	0.00	329	7.21	-0.21	-14.72(.000)	-0.43	0.79
C	1.00	3299	72.27	0.45	34.30(.000)	0.49	0.87
D	0.00	166	3.64	-0.21	-14.19(.000)	-0.64	0.73

Item 11

```

-----
item:11 (r7q11)
Cases for this item 4564 Discrimination 0.49
Item Threshold(s): -0.83 Weighted MNSQ 0.91
Item Delta(s): -0.83

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.04	-2.88(.004)	-2.59	0.00
9	0.00	41	0.90	-0.11	-7.74(.000)	-0.83	1.02
A	0.00	481	10.54	-0.21	-14.18(.000)	-0.26	0.75
B	0.00	425	9.31	-0.24	-17.03(.000)	-0.41	0.80
C	0.00	361	7.91	-0.28	-19.78(.000)	-0.61	0.72
D	1.00	3255	71.32	0.49	37.91(.000)	0.52	0.86

Item 12

```

-----
item:12 (r7q12)
Cases for this item 4564 Discrimination 0.37
Item Threshold(s): 0.80 Weighted MNSQ 1.03
Item Delta(s): 0.81

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.09	-0.04	-2.64(.008)	-1.33	0.97
9	0.00	14	0.31	-0.09	-6.40(.000)	-1.30	1.26
A	0.00	1142	25.02	-0.10	-6.76(.000)	0.11	0.82
B	0.00	872	19.11	-0.13	-8.65(.000)	0.01	0.80
C	1.00	1753	38.41	0.37	27.07(.000)	0.66	0.97
D	0.00	779	17.07	-0.22	-14.98(.000)	-0.17	0.82

Item 13

```

-----
item:13 (r7q13)
Cases for this item  4564  Discrimination  0.43
Item Threshold(s):  -0.70  Weighted MNSQ  0.97
Item Delta(s):      -0.71

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.09	-0.05	-3.19(.001)	-1.32	0.92
9	0.00	15	0.33	-0.07	-4.73(.000)	-0.87	1.28
A	1.00	3156	69.15	0.43	31.86(.000)	0.50	0.90
B	0.00	621	13.61	-0.27	-19.11(.000)	-0.37	0.81
C	0.00	354	7.76	-0.19	-13.05(.000)	-0.32	0.78
D	0.00	414	9.07	-0.17	-11.34(.000)	-0.19	0.74

Item 14

```

-----
item:14 (r7q14)
Cases for this item  4564  Discrimination  0.40
Item Threshold(s):   1.06  Weighted MNSQ  1.00
Item Delta(s):      1.07

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.11	-0.05	-3.08(.002)	-1.12	1.15
9	0.00	37	0.81	-0.08	-5.26(.000)	-0.52	1.23
A	0.00	1140	24.98	-0.10	-6.72(.000)	0.11	0.82
B	0.00	813	17.81	-0.25	-17.11(.000)	-0.23	0.78
C	0.00	1047	22.94	-0.10	-6.85(.000)	0.08	0.87
D	1.00	1522	33.35	0.40	29.32(.000)	0.75	0.93

Item 15

```

-----
item:15 (r7q15)
Cases for this item  4563  Discrimination  0.28
Item Threshold(s):   1.30  Weighted MNSQ  1.08
Item Delta(s):      1.30

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.04	-0.04	-2.41(.016)	-1.41	1.66
9	0.00	30	0.66	-0.06	-3.80(.000)	-0.47	1.25
A	0.00	1475	32.33	-0.09	-6.42(.000)	0.13	0.84
B	0.00	1386	30.37	-0.06	-4.19(.000)	0.17	0.89
C	1.00	1329	29.13	0.28	19.97(.000)	0.63	0.99
D	0.00	341	7.47	-0.19	-13.29(.000)	-0.32	0.77

Item 16

```

-----
item:16 (r7q16)
Cases for this item  4562  Discrimination  0.49
Item Threshold(s):   0.92  Weighted MNSQ  0.92
Item Delta(s):      0.92

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.09	-0.03	-2.26(.024)	-0.90	1.36
9	0.00	26	0.57	-0.08	-5.08(.000)	-0.64	1.08
A	0.00	1078	23.63	-0.25	-17.29(.000)	-0.16	0.76
B	1.00	1646	36.08	0.49	37.83(.000)	0.83	0.90
C	0.00	1339	29.35	-0.15	-10.36(.000)	0.05	0.77
D	0.00	469	10.28	-0.18	-12.13(.000)	-0.23	0.87

Item 17

```

-----
item:17 (r7q17)
Cases for this item  4561  Discrimination  0.35
Item Threshold(s):  -0.04  Weighted MNSQ  1.06
Item Delta(s):      -0.04

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.11	-0.04	-2.50(.013)	-0.64	1.16
9	0.00	37	0.81	-0.10	-7.07(.000)	-0.87	0.95
A	0.00	262	5.74	-0.25	-17.68(.000)	-0.66	0.76
B	1.00	2552	55.95	0.35	25.01(.000)	0.52	0.92
C	0.00	781	17.12	-0.19	-12.86(.000)	-0.13	0.80
D	0.00	924	20.26	-0.08	-5.46(.000)	0.12	0.82

Item 18

```

-----
item:18 (r7q18)
Cases for this item  4556  Discrimination  0.41
Item Threshold(s):   0.42  Weighted MNSQ  1.01
Item Delta(s):      0.42

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.13	-0.04	-2.76(.006)	-0.88	0.96
9	0.00	36	0.79	-0.10	-6.57(.000)	-0.70	0.90
A	1.00	2111	46.33	0.41	30.32(.000)	0.63	0.93
B	0.00	971	21.31	-0.18	-12.23(.000)	-0.03	0.79
C	0.00	188	4.13	-0.23	-16.17(.000)	-0.74	0.68
D	0.00	1244	27.30	-0.17	-11.52(.000)	0.00	0.81

Item 19

```

-----
item:19 (r7q19)
Cases for this item  4556  Discrimination  0.48
Item Threshold(s):  -0.52  Weighted MNSQ  0.93
Item Delta(s):      -0.52

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.04	-0.05	-3.11(.002)	-1.67	1.30
9	0.00	63	1.38	-0.06	-4.00(.000)	-0.29	1.14
A	0.00	707	15.52	-0.27	-19.14(.000)	-0.31	0.74
B	1.00	2996	65.76	0.48	36.83(.000)	0.56	0.88
C	0.00	632	13.87	-0.25	-17.18(.000)	-0.29	0.76
D	0.00	156	3.42	-0.19	-13.39(.000)	-0.60	0.67

Item 20

```

-----
item:20 (r7q20)
Cases for this item  4556  Discrimination  0.48
Item Threshold(s):   0.18  Weighted MNSQ  0.94
Item Delta(s):      0.18

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.09	-0.05	-3.38(.001)	-1.15	0.98
9	0.00	68	1.49	-0.07	-4.99(.000)	-0.30	1.02
A	0.00	836	18.35	-0.22	-15.14(.000)	-0.16	0.76
B	0.00	427	9.37	-0.28	-19.32(.000)	-0.51	0.71
C	0.00	878	19.27	-0.17	-11.63(.000)	-0.06	0.79
D	1.00	2343	51.43	0.48	37.42(.000)	0.67	0.88

Item 21

```

-----
item:21 (r7q21)
Cases for this item  4556  Discrimination  0.48
Item Threshold(s):  0.47  Weighted MNSQ  0.95
Item Delta(s):      0.47

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.09	-0.05	-3.32(.001)	-1.34	0.97
9	0.00	50	1.10	-0.07	-4.68(.000)	-0.27	1.08
A	0.00	1230	27.00	-0.15	-10.46(.000)	0.02	0.83
B	0.00	887	19.47	-0.29	-20.78(.000)	-0.28	0.75
C	0.00	318	6.98	-0.18	-12.24(.000)	-0.31	0.77
D	1.00	2067	45.37	0.48	36.86(.000)	0.72	0.87

Item 22

```

-----
item:22 (r7q22)
Cases for this item  4554  Discrimination  0.43
Item Threshold(s):  0.86  Weighted MNSQ  0.98
Item Delta(s):      0.86

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.09	-0.05	-3.21(.001)	-1.26	0.96
9	0.00	113	2.48	-0.06	-4.39(.000)	-0.12	0.96
A	1.00	1700	37.33	0.43	31.71(.000)	0.74	0.92
B	0.00	1643	36.08	-0.18	-12.05(.000)	0.04	0.80
C	0.00	532	11.68	-0.24	-16.68(.000)	-0.31	0.77
D	0.00	562	12.34	-0.10	-6.75(.000)	0.02	0.87

Item 23

```

-----
item:23 (r7q23)
Cases for this item  4553  Discrimination  0.46
Item Threshold(s):  -0.57  Weighted MNSQ  0.95
Item Delta(s):      -0.57

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.11	-0.04	-2.91(.004)	-0.75	1.19
9	0.00	42	0.92	-0.12	-8.05(.000)	-0.90	0.84
A	0.00	222	4.88	-0.23	-15.64(.000)	-0.61	0.62
B	0.00	940	20.65	-0.21	-14.19(.000)	-0.10	0.73
C	1.00	3034	66.64	0.46	34.57(.000)	0.54	0.89
D	0.00	310	6.81	-0.28	-19.61(.000)	-0.67	0.67

Item 24

```

-----
item:24 (r7q24)
Cases for this item  4552  Discrimination  0.56
Item Threshold(s):  0.35  Weighted MNSQ  0.87
Item Delta(s):      0.35

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.13	-0.05	-3.46(.001)	-1.02	0.85
9	0.00	38	0.83	-0.09	-6.43(.000)	-0.62	0.98
A	0.00	989	21.73	-0.29	-20.08(.000)	-0.22	0.69
B	0.00	838	18.41	-0.13	-8.69(.000)	0.01	0.73
C	0.00	503	11.05	-0.32	-22.94(.000)	-0.55	0.64
D	1.00	2178	47.85	0.56	45.33(.000)	0.77	0.88

Item 25

```

-----
item:25 (r7q25)
Cases for this item  4552  Discrimination  0.38
Item Threshold(s):  -0.61  Weighted MNSQ  1.00
Item Delta(s):      -0.61

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.04	-0.05	-3.11 (.002)	-1.67	1.30
9	0.00	22	0.48	-0.10	-6.55 (.000)	-1.02	1.09
A	1.00	3069	67.42	0.38	27.91 (.000)	0.48	0.87
B	0.00	445	9.78	-0.22	-14.86 (.000)	-0.31	0.83
C	0.00	657	14.43	-0.13	-9.10 (.000)	-0.02	0.98
D	0.00	357	7.84	-0.23	-15.61 (.000)	-0.43	0.68

Item 26

```

-----
item:26 (r7q26)
Cases for this item  4548  Discrimination  0.52
Item Threshold(s):  -1.09  Weighted MNSQ  0.86
Item Delta(s):      -1.10

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.13	-0.07	-4.80 (.000)	-1.92	0.98
9	0.00	21	0.46	-0.05	-3.37 (.001)	-0.56	1.13
A	0.00	383	8.42	-0.32	-22.71 (.000)	-0.64	0.59
B	0.00	485	10.66	-0.28	-19.35 (.000)	-0.45	0.75
C	0.00	197	4.33	-0.21	-14.50 (.000)	-0.65	0.71
D	1.00	3456	75.99	0.52	41.16 (.000)	0.51	0.85

Item 27

```

-----
item:27 (r7q27)
Cases for this item  4543  Discrimination  0.43
Item Threshold(s):  0.67  Weighted MNSQ  0.99
Item Delta(s):      0.67

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.11	-0.04	-2.91 (.004)	-0.91	0.98
9	0.00	42	0.92	-0.08	-5.34 (.000)	-0.54	1.11
A	0.00	1196	26.33	-0.06	-4.22 (.000)	0.16	0.79
B	0.00	643	14.15	-0.17	-11.55 (.000)	-0.11	0.82
C	1.00	1872	41.21	0.43	31.69 (.000)	0.70	0.92
D	0.00	785	17.28	-0.30	-21.32 (.000)	-0.32	0.74

Item 28

```

-----
item:28 (r7q28)
Cases for this item  4541  Discrimination  0.33
Item Threshold(s):  1.03  Weighted MNSQ  1.05
Item Delta(s):      1.03

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.11	-0.05	-3.30 (.001)	-1.09	0.91
9	0.00	48	1.06	-0.09	-6.09 (.000)	-0.55	1.09
A	0.00	814	17.93	-0.11	-7.23 (.000)	0.06	0.86
B	1.00	1548	34.09	0.33	23.30 (.000)	0.67	0.98
C	0.00	1685	37.11	-0.06	-4.04 (.000)	0.18	0.80
D	0.00	441	9.71	-0.25	-17.45 (.000)	-0.41	0.74

Item 29

```

-----
item:29 (r7q29)
Cases for this item  4540  Discrimination  0.49
Item Threshold(s):  -0.07  Weighted MNSQ  0.93
Item Delta(s):      -0.07

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.04	-0.05	-3.12(.002)	-1.67	1.30
9	0.00	26	0.57	-0.10	-6.45(.000)	-0.74	1.16
A	0.00	856	18.85	-0.28	-19.69(.000)	-0.24	0.68
B	1.00	2579	56.81	0.49	38.04(.000)	0.63	0.90
C	0.00	342	7.53	-0.21	-14.46(.000)	-0.38	0.82
D	0.00	735	16.19	-0.19	-13.10(.000)	-0.13	0.77

Item 30

```

-----
item:30 (r7q30)
Cases for this item  4538  Discrimination  0.59
Item Threshold(s):   0.57  Weighted MNSQ  0.85
Item Delta(s):      0.57

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1753	38.63	-0.34	-24.03(.000)	-0.11	0.77
1	1.00	1963	43.26	0.59	48.88(.000)	0.85	0.80
9	0.00	822	18.11	-0.33	-23.60(.000)	-0.37	0.75

Item 31

```

-----
item:31 (r7q31)
Cases for this item  4536  Discrimination  0.35
Item Threshold(s):   0.06  Weighted MNSQ  1.06
Item Delta(s):      0.06

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.13	-0.03	-2.25(.025)	-0.69	0.99
9	0.00	9	0.20	-0.07	-4.77(.000)	-1.19	1.28
A	1.00	2451	54.03	0.35	24.87(.000)	0.54	0.93
B	0.00	1347	29.70	-0.17	-11.31(.000)	0.03	0.82
C	0.00	391	8.62	-0.17	-11.64(.000)	-0.23	0.89
D	0.00	332	7.32	-0.17	-11.75(.000)	-0.26	0.79

Item 32

```

-----
item:32 (r7q32)
Cases for this item  4535  Discrimination  0.23
Item Threshold(s):   1.94  Weighted MNSQ  1.08
Item Delta(s):      1.94

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.13	-0.05	-3.32(.001)	-1.14	1.10
9	0.00	31	0.68	-0.07	-4.68(.000)	-0.44	0.83
A	0.00	772	17.02	-0.27	-18.61(.000)	-0.26	0.76
B	0.00	790	17.42	-0.14	-9.43(.000)	-0.01	0.94
C	0.00	2064	45.51	0.14	9.53(.000)	0.39	0.82
D	1.00	872	19.23	0.23	15.87(.000)	0.68	1.04

Item 33

```

-----
item:33 (r7q33)
Cases for this item  4527  Discrimination  0.35
Item Threshold(s):  -0.02  Weighted MNSQ  1.06
Item Delta(s):      -0.03

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.09	-0.04	-2.88(.004)	-1.16	1.05
9	0.00	31	0.68	-0.08	-5.30(.000)	-0.56	0.98
A	0.00	963	21.27	-0.19	-13.03(.000)	-0.07	0.78
B	1.00	2529	55.86	0.35	25.36(.000)	0.54	0.93
C	0.00	768	16.96	-0.14	-9.66(.000)	-0.02	0.86
D	0.00	232	5.12	-0.16	-11.20(.000)	-0.39	0.78

Item 34

```

-----
item:34 (r7q34)
Cases for this item  4522  Discrimination  0.35
Item Threshold(s):   0.71  Weighted MNSQ  1.06
Item Delta(s):      0.71

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.11	-0.04	-2.50(.012)	-0.79	1.14
9	0.00	41	0.91	-0.07	-5.06(.000)	-0.51	0.81
A	1.00	1834	40.56	0.35	24.94(.000)	0.63	0.93
B	0.00	674	14.90	-0.25	-17.33(.000)	-0.26	0.77
C	0.00	1636	36.18	-0.07	-4.52(.000)	0.18	0.84
D	0.00	332	7.34	-0.16	-10.77(.000)	-0.23	0.87

Item 35

```

-----
item:35 (r7q35)
Cases for this item  4515  Discrimination  0.51
Item Threshold(s):   0.09  Weighted MNSQ  0.92
Item Delta(s):      0.08

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.07	-0.04	-2.98(.003)	-1.59	0.89
9	0.00	44	0.97	-0.11	-7.46(.000)	-0.75	0.97
A	0.00	736	16.30	-0.14	-9.19(.000)	-0.03	0.80
B	0.00	950	21.04	-0.30	-20.81(.000)	-0.23	0.69
C	1.00	2420	53.60	0.51	39.56(.000)	0.67	0.89
D	0.00	362	8.02	-0.26	-18.04(.000)	-0.47	0.64

Item 36

```

-----
item:36 (r7q36)
Cases for this item  4512  Discrimination  0.50
Item Threshold(s):   0.37  Weighted MNSQ  0.93
Item Delta(s):      0.37

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.09	-0.03	-2.10(.035)	-0.83	1.18
9	0.00	28	0.62	-0.10	-6.74(.000)	-0.88	1.09
A	0.00	1161	25.73	-0.24	-16.24(.000)	-0.10	0.73
B	0.00	714	15.82	-0.18	-12.64(.000)	-0.10	0.83
C	0.00	457	10.13	-0.23	-15.80(.000)	-0.32	0.76
D	1.00	2148	47.61	0.50	38.45(.000)	0.72	0.88

Item 37

```

-----
item:37 (r7q37)
Cases for this item  4511  Discrimination  0.40
Item Threshold(s):  0.89  Weighted MNSQ  1.00
Item Delta(s):      0.89

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.11	-0.06	-3.78(.000)	-1.46	0.80
9	0.00	40	0.89	-0.07	-4.43(.000)	-0.35	1.03
A	0.00	1283	28.44	-0.14	-9.33(.000)	0.08	0.77
B	1.00	1663	36.87	0.40	29.05(.000)	0.71	0.98
C	0.00	923	20.46	-0.12	-8.16(.000)	0.05	0.82
D	0.00	597	13.23	-0.21	-14.76(.000)	-0.22	0.78

Item 38

```

-----
item:38 (r7q38)
Cases for this item  4508  Discrimination  0.46
Item Threshold(s):  0.43  Weighted MNSQ  0.96
Item Delta(s):      0.43

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.07	-0.03	-2.26(.024)	-0.96	1.43
9	0.00	65	1.44	-0.05	-3.62(.000)	-0.18	0.97
A	0.00	1097	24.33	-0.16	-10.89(.000)	0.01	0.77
B	0.00	934	20.72	-0.31	-21.55(.000)	-0.26	0.68
C	1.00	2090	46.36	0.46	34.50(.000)	0.70	0.94
D	0.00	319	7.08	-0.11	-7.39(.000)	-0.11	0.77

Item 39

```

-----
item:39 (r7q39)
Cases for this item  4487  Discrimination  0.45
Item Threshold(s):  0.05  Weighted MNSQ  0.97
Item Delta(s):      0.05

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.13	-0.05	-3.15(.002)	-0.93	0.95
9	0.00	58	1.29	-0.06	-3.77(.000)	-0.12	0.90
A	0.00	1017	22.67	-0.27	-18.82(.000)	-0.19	0.70
B	0.00	535	11.92	-0.12	-8.22(.000)	-0.03	0.84
C	0.00	433	9.65	-0.21	-14.56(.000)	-0.30	0.83
D	1.00	2438	54.33	0.45	33.64(.000)	0.63	0.90

Item 40

```

-----
item:40 (r7q40)
Cases for this item  4481  Discrimination  0.21
Item Threshold(s):  1.48  Weighted MNSQ  1.14
Item Delta(s):      1.48

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.04	-0.05	-3.13(.002)	-1.72	1.23
9	0.00	54	1.21	-0.08	-5.62(.000)	-0.37	0.97
A	0.00	888	19.82	-0.14	-9.57(.000)	0.02	0.79
B	0.00	1949	43.49	0.07	4.64(.000)	0.32	0.91
C	0.00	413	9.22	-0.21	-14.19(.000)	-0.29	0.77
D	1.00	1175	26.22	0.21	14.35(.000)	0.58	0.98

Item 41

```

-----
item:41 (r7q41)
Cases for this item  4478  Discrimination  0.37
Item Threshold(s):  0.23  Weighted MNSQ  1.04
Item Delta(s):      0.23

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.09	-0.04	-2.38 (.017)	-0.75	1.64
9	0.00	99	2.21	-0.07	-4.83 (.000)	-0.18	0.94
A	1.00	2267	50.63	0.37	26.40 (.000)	0.58	0.91
B	0.00	706	15.77	-0.22	-14.82 (.000)	-0.18	0.79
C	0.00	758	16.93	-0.16	-11.06 (.000)	-0.06	0.87
D	0.00	644	14.38	-0.09	-6.10 (.000)	0.08	0.84

Item 42

```

-----
item:42 (r7q42)
Cases for this item  4458  Discrimination  0.37
Item Threshold(s):  0.84  Weighted MNSQ  1.03
Item Delta(s):      0.84

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	9	0.20	-0.06	-3.71 (.000)	-0.79	1.04
9	0.00	59	1.32	-0.04	-2.90 (.004)	-0.02	0.96
A	0.00	1134	25.44	-0.13	-8.82 (.000)	0.07	0.80
B	0.00	909	20.39	-0.23	-15.58 (.000)	-0.13	0.78
C	1.00	1696	38.04	0.37	26.24 (.000)	0.68	0.98
D	0.00	651	14.60	-0.06	-4.08 (.000)	0.14	0.84

Item 43

```

-----
item:43 (r7q43)
Cases for this item  4453  Discrimination  0.23
Item Threshold(s):  1.02  Weighted MNSQ  1.14
Item Delta(s):      1.02

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.04	-0.04	-2.98 (.003)	-1.60	1.40
9	0.00	75	1.68	-0.07	-4.40 (.000)	-0.11	0.80
A	0.00	1146	25.74	-0.02	-1.17 (.241)	0.23	0.87
B	1.00	1540	34.58	0.23	16.06 (.000)	0.56	0.98
C	0.00	959	21.54	-0.09	-6.25 (.000)	0.12	0.84
D	0.00	731	16.42	-0.15	-10.18 (.000)	-0.04	0.91

Item 44

```

-----
item:44 (r7q44)
Cases for this item  4444  Discrimination  0.28
Item Threshold(s):  0.96  Weighted MNSQ  1.10
Item Delta(s):      0.96

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.05	-3.06 (.002)	-1.95	0.90
9	0.00	123	2.77	-0.07	-4.56 (.000)	-0.06	0.96
A	0.00	1309	29.46	-0.12	-8.35 (.000)	0.11	0.84
B	0.00	1002	22.55	-0.06	-3.68 (.000)	0.17	0.87
C	1.00	1588	35.73	0.28	19.32 (.000)	0.59	0.98
D	0.00	420	9.45	-0.14	-9.56 (.000)	-0.13	0.80

Item 45

```

-----
item:45 (r7q45)
Cases for this item  4414  Discrimination  0.15
Item Threshold(s):  0.87  Weighted MNSQ  1.22
Item Delta(s):      0.87

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.03	-2.01(.044)	-1.53	1.49
9	0.00	61	1.38	-0.05	-3.54(.000)	-0.20	1.01
A	0.00	1124	25.46	-0.07	-4.70(.000)	0.15	0.82
B	1.00	1659	37.58	0.15	10.40(.000)	0.46	0.99
C	0.00	1153	26.12	-0.06	-4.23(.000)	0.18	0.91
D	0.00	415	9.40	-0.03	-2.15(.032)	0.17	0.94

Item 46

```

-----
item:46 (r7q46)
Cases for this item  4404  Discrimination  0.44
Item Threshold(s):  -0.20  Weighted MNSQ  0.97
Item Delta(s):      -0.20

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.05	-3.14(.002)	-1.72	1.23
9	0.00	80	1.82	-0.05	-3.47(.001)	-0.11	0.99
A	0.00	575	13.06	-0.22	-14.61(.000)	-0.23	0.76
B	1.00	2628	59.67	0.44	32.70(.000)	0.59	0.89
C	0.00	532	12.08	-0.23	-15.66(.000)	-0.26	0.83
D	0.00	587	13.33	-0.18	-12.21(.000)	-0.12	0.74

Item 47

```

-----
item:47 (r7q47)
Cases for this item  4394  Discrimination  0.27
Item Threshold(s):  0.95  Weighted MNSQ  1.11
Item Delta(s):      0.95

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.07	-0.05	-3.38(.001)	-1.58	0.90
9	0.00	58	1.32	-0.06	-3.89(.000)	-0.16	0.96
A	1.00	1578	35.91	0.27	18.68(.000)	0.60	0.99
B	0.00	1096	24.94	-0.07	-4.85(.000)	0.15	0.88
C	0.00	984	22.39	-0.09	-5.74(.000)	0.12	0.85
D	0.00	675	15.36	-0.15	-10.15(.000)	-0.05	0.80

Item 48

```

-----
item:48 (r7q48)
Cases for this item  4382  Discrimination  0.29
Item Threshold(s):  1.28  Weighted MNSQ  1.07
Item Delta(s):      1.28

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.04	-2.90(.004)	-2.59	0.00
9	0.00	34	0.78	-0.08	-5.20(.000)	-0.48	1.15
A	0.00	1226	27.98	-0.01	-0.96(.338)	0.24	0.79
B	0.00	1181	26.95	-0.16	-10.59(.000)	0.03	0.82
C	1.00	1302	29.71	0.29	19.87(.000)	0.67	1.05
D	0.00	638	14.56	-0.13	-8.95(.000)	0.01	0.86

Item 49

```

-----
item:49 (r7q49)
Cases for this item  4373  Discrimination  0.19
Item Threshold(s):  0.20  Weighted MNSQ  1.20
Item Delta(s):      0.20

```

```

-----
Label      Score      Count      % of tot  Pt Bis      t      (p)      PVIAvg:1  PVI  SD:1
-----
8          0.00         3          0.07     -0.06     -3.65(.000)  -1.73     1.16
9          0.00        332         7.59     -0.07     -4.65(.000)  0.06     0.93
A          0.00        294         6.72     -0.23    -15.61(.000) -0.48     0.71
B          1.00       2248        51.41     0.19     12.84(.000)  0.44     0.93
C          0.00        880        20.12     -0.07     -4.63(.000)  0.14     0.83
D          0.00        616        14.09     0.03      1.96(.050)  0.33     0.97
=====

```

```

-----
The following traditional statistics are only meaningful for complete
designs and when the amount of missing data is minimal.
In this analysis 1.07% of the data are missing.

```

```

The following results are scaled to assume that a single response
was provided for each item.

```

```

N                      4574
Mean                   26.32
Standard Deviation     8.85
Variance               78.36
Skewness               0.12
Kurtosis              -0.61
Standard error of mean 0.13
Standard error of measurement 3.06
Coefficient Alpha      0.88
=====

```

Appendix B.4 Year 9 Reading

=====

NAPLAN 2015, Calibration, Grade 9, reading
GENERALISED ITEM ANALYSIS

=====

Item 1

item:1 (r9q01)
Cases for this item 3862 Discrimination 0.35
Item Threshold(s): -1.53 Weighted MNSQ 0.99
Item Delta(s): -1.53

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.16	-0.10	-6.16(.000)	-2.48	0.96
9	0.00	5	0.13	-0.05	-3.03(.002)	-1.19	1.41
A	0.00	516	13.36	-0.29	-18.51(.000)	-0.19	1.05
B	0.00	24	0.62	-0.12	-7.41(.000)	-1.17	0.93
C	1.00	3281	84.96	0.35	22.94(.000)	0.72	1.03
D	0.00	30	0.78	-0.13	-8.38(.000)	-0.95	0.83

=====

Item 2

item:2 (r9q02)
Cases for this item 3862 Discrimination 0.37
Item Threshold(s): -2.09 Weighted MNSQ 0.91
Item Delta(s): -2.09

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.08	-0.08	-5.18(.000)	-3.18	0.42
9	0.00	8	0.21	-0.05	-3.27(.001)	-0.95	1.42
A	0.00	49	1.27	-0.17	-10.92(.000)	-1.10	0.90
B	0.00	29	0.75	-0.14	-9.05(.000)	-1.27	0.89
C	0.00	287	7.43	-0.28	-17.96(.000)	-0.44	1.04
D	1.00	3486	90.26	0.37	24.66(.000)	0.69	1.03

=====

Item 3

item:3 (r9q03)
Cases for this item 3862 Discrimination 0.28
Item Threshold(s): -2.63 Weighted MNSQ 0.95
Item Delta(s): -2.63

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.13	-0.09	-5.76(.000)	-2.51	1.26
9	0.00	7	0.18	-0.04	-2.76(.006)	-0.85	1.45
A	0.00	86	2.23	-0.07	-4.56(.000)	0.07	1.32
B	0.00	41	1.06	-0.17	-10.55(.000)	-1.16	0.80
C	1.00	3621	93.76	0.28	18.26(.000)	0.64	1.05
D	0.00	102	2.64	-0.22	-13.92(.000)	-0.84	1.05

=====

Item 4

item:4 (r9q04)
Cases for this item 3862 Discrimination 0.45
Item Threshold(s): -1.45 Weighted MNSQ 0.91
Item Delta(s): -1.44

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.10	-0.09	-5.78(.000)	-3.05	0.42
9	0.00	17	0.44	-0.10	-5.99(.000)	-1.19	1.10
A	1.00	3243	83.97	0.45	31.27(.000)	0.77	1.01
B	0.00	219	5.67	-0.28	-17.95(.000)	-0.61	0.75
C	0.00	172	4.45	-0.23	-14.93(.000)	-0.57	0.93
D	0.00	207	5.36	-0.19	-12.14(.000)	-0.26	1.01

=====

Item 5

```

-----
item:5 (r9q05)
Cases for this item 3862 Discrimination 0.43
Item Threshold(s): -0.17 Weighted MNSQ 1.02
Item Delta(s): -0.17

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.10	-0.09	-5.78 (.000)	-3.05	0.42
9	0.00	9	0.23	-0.08	-4.70 (.000)	-1.48	1.23
A	0.00	75	1.94	-0.21	-13.35 (.000)	-0.99	0.88
B	0.00	178	4.61	-0.25	-16.15 (.000)	-0.67	0.93
C	1.00	2491	64.50	0.43	29.75 (.000)	0.89	0.99
D	0.00	1105	28.61	-0.26	-16.85 (.000)	0.16	0.97

Item 6

```

-----
item:6 (r9q06)
Cases for this item 3862 Discrimination 0.46
Item Threshold(s): -1.34 Weighted MNSQ 0.91
Item Delta(s): -1.34

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.13	-0.10	-6.07 (.000)	-2.67	0.94
9	0.00	12	0.31	-0.07	-4.22 (.000)	-1.13	1.31
A	0.00	324	8.39	-0.26	-16.79 (.000)	-0.30	0.96
B	1.00	3198	82.81	0.46	31.99 (.000)	0.78	1.00
C	0.00	243	6.29	-0.26	-16.96 (.000)	-0.48	0.84
D	0.00	80	2.07	-0.20	-13.00 (.000)	-0.95	0.89

Item 7

```

-----
item:7 (r9q07)
Cases for this item 3862 Discrimination 0.41
Item Threshold(s): -1.88 Weighted MNSQ 0.92
Item Delta(s): -1.88

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.08	-0.08	-5.18 (.000)	-3.18	0.42
9	0.00	19	0.49	-0.07	-4.52 (.000)	-0.62	1.23
A	0.00	155	4.01	-0.22	-13.84 (.000)	-0.49	0.94
B	0.00	197	5.10	-0.25	-16.12 (.000)	-0.56	0.90
C	0.00	72	1.86	-0.20	-12.58 (.000)	-0.94	0.66
D	1.00	3416	88.45	0.41	28.22 (.000)	0.72	1.03

Item 8

```

-----
item:8 (r9q08)
Cases for this item 3862 Discrimination 0.38
Item Threshold(s): -2.43 Weighted MNSQ 0.90
Item Delta(s): -2.43

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.10	-0.08	-5.18 (.000)	-2.53	1.34
9	0.00	7	0.18	-0.05	-3.17 (.002)	-1.01	1.51
A	1.00	3577	92.62	0.38	25.64 (.000)	0.68	1.04
B	0.00	114	2.95	-0.20	-12.58 (.000)	-0.59	0.90
C	0.00	81	2.10	-0.20	-12.41 (.000)	-0.86	0.83
D	0.00	79	2.05	-0.23	-15.00 (.000)	-1.13	0.76

Item 9

```

-----
item:9 (r9q09)
Cases for this item 3862 Discrimination 0.35
Item Threshold(s): -2.49 Weighted MNSQ 0.90
Item Delta(s): -2.50

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.10	-0.07	-4.48(.000)	-2.24	1.91
9	0.00	7	0.18	-0.10	-6.04(.000)	-2.58	0.50
A	0.00	191	4.95	-0.26	-16.67(.000)	-0.66	1.06
B	0.00	36	0.93	-0.16	-9.90(.000)	-1.13	0.76
C	1.00	3593	93.03	0.35	23.56(.000)	0.67	1.03
D	0.00	31	0.80	-0.14	-8.79(.000)	-1.05	0.70

Item 10

```

-----
item:10 (r9q10)
Cases for this item 3859 Discrimination 0.47
Item Threshold(s): -0.15 Weighted MNSQ 0.98
Item Delta(s): -0.15

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.10	-0.08	-5.29(.000)	-2.73	0.95
9	0.00	9	0.23	-0.07	-4.15(.000)	-1.26	1.48
A	0.00	62	1.61	-0.21	-13.14(.000)	-1.05	0.70
B	0.00	422	10.94	-0.31	-19.90(.000)	-0.34	0.84
C	0.00	888	23.01	-0.24	-15.15(.000)	0.11	0.90
D	1.00	2474	64.11	0.47	33.35(.000)	0.93	1.01

Item 11

```

-----
item:11 (r9q11)
Cases for this item 3859 Discrimination 0.60
Item Threshold(s): -0.05 Weighted MNSQ 0.84
Item Delta(s): -0.04

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1024	26.54	-0.40	-26.73(.000)	-0.09	0.91
1	1.00	2398	62.14	0.60	46.42(.000)	1.04	0.92
9	0.00	437	11.32	-0.37	-24.39(.000)	-0.50	0.85

Item 12

```

-----
item:12 (r9q12)
Cases for this item 3856 Discrimination 0.45
Item Threshold(s): -1.45 Weighted MNSQ 0.91
Item Delta(s): -1.45

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	7	0.18	-0.10	-6.18(.000)	-2.14	1.22
9	0.00	7	0.18	-0.06	-3.75(.000)	-1.11	1.59
A	0.00	98	2.54	-0.17	-10.89(.000)	-0.59	0.89
B	1.00	3246	84.18	0.45	30.91(.000)	0.77	1.01
C	0.00	218	5.65	-0.18	-11.38(.000)	-0.18	0.98
D	0.00	280	7.26	-0.34	-22.10(.000)	-0.64	0.79

Item 13

```

-----
item:13 (r9q13)
Cases for this item  3856  Discrimination  0.44
Item Threshold(s):  -0.95  Weighted MNSQ  0.96
Item Delta(s):      -0.96

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	7	0.18	-0.08	-4.97(.000)	-1.68	1.57
9	0.00	15	0.39	-0.09	-5.78(.000)	-1.58	1.40
A	1.00	2995	77.67	0.44	30.44(.000)	0.81	1.01
B	0.00	406	10.53	-0.31	-19.92(.000)	-0.34	0.97
C	0.00	190	4.93	-0.15	-9.66(.000)	-0.12	0.87
D	0.00	243	6.30	-0.19	-12.28(.000)	-0.20	0.81

Item 14

```

-----
item:14 (r9q14)
Cases for this item  3851  Discrimination  0.49
Item Threshold(s):   0.82  Weighted MNSQ  0.97
Item Delta(s):      0.82

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.08	-0.07	-4.28(.000)	-2.48	1.64
9	0.00	21	0.55	-0.06	-3.78(.000)	-0.47	1.22
A	0.00	892	23.16	-0.13	-8.41(.000)	0.33	0.91
B	0.00	518	13.45	-0.31	-20.33(.000)	-0.25	0.86
C	0.00	678	17.61	-0.19	-12.16(.000)	0.13	0.96
D	1.00	1739	45.16	0.49	34.64(.000)	1.13	0.99

Item 15

```

-----
item:15 (r9q15)
Cases for this item  3851  Discrimination  0.28
Item Threshold(s):   1.15  Weighted MNSQ  1.18
Item Delta(s):      1.14

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.08	-0.08	-5.21(.000)	-3.18	0.42
9	0.00	25	0.65	-0.06	-3.57(.000)	-0.41	1.26
A	0.00	993	25.79	-0.10	-5.92(.000)	0.38	1.04
B	0.00	1159	30.10	-0.10	-6.06(.000)	0.42	1.02
C	1.00	1493	38.77	0.28	18.25(.000)	0.95	1.05
D	0.00	178	4.62	-0.21	-13.42(.000)	-0.40	0.83

Item 16

```

-----
item:16 (r9q16)
Cases for this item  3851  Discrimination  0.54
Item Threshold(s):   0.40  Weighted MNSQ  0.92
Item Delta(s):      0.40

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.10	-0.07	-4.17(.000)	-2.11	1.57
9	0.00	15	0.39	-0.08	-4.99(.000)	-1.06	1.13
A	0.00	641	16.65	-0.30	-19.59(.000)	-0.10	0.88
B	1.00	2065	53.62	0.54	39.91(.000)	1.10	0.96
C	0.00	885	22.98	-0.25	-15.96(.000)	0.08	0.86
D	0.00	241	6.26	-0.19	-11.91(.000)	-0.21	0.99

Item 17

```

-----
item:17 (r9q17)
Cases for this item  3851  Discrimination  0.41
Item Threshold(s):  -0.28  Weighted MNSQ  1.04
Item Delta(s):      -0.28

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.10	-0.07	-4.31(.000)	-2.25	1.36
9	0.00	22	0.57	-0.12	-7.74(.000)	-1.24	1.14
A	0.00	114	2.96	-0.23	-14.84(.000)	-0.79	0.75
B	1.00	2568	66.68	0.41	27.56(.000)	0.87	1.03
C	0.00	524	13.61	-0.19	-11.83(.000)	0.09	0.95
D	0.00	619	16.07	-0.21	-13.15(.000)	0.09	0.90

Item 18

```

-----
item:18 (r9q18)
Cases for this item  3847  Discrimination  0.42
Item Threshold(s):   0.46  Weighted MNSQ  1.04
Item Delta(s):      0.46

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.13	-0.06	-3.43(.001)	-1.39	1.86
9	0.00	11	0.29	-0.09	-5.86(.000)	-1.42	1.11
A	1.00	2012	52.30	0.42	28.94(.000)	1.00	1.03
B	0.00	723	18.79	-0.20	-12.79(.000)	0.12	0.92
C	0.00	80	2.08	-0.19	-11.77(.000)	-0.79	0.79
D	0.00	1016	26.41	-0.22	-14.24(.000)	0.20	0.95

Item 19

```

-----
item:19 (r9q19)
Cases for this item  3847  Discrimination  0.35
Item Threshold(s):   1.77  Weighted MNSQ  1.04
Item Delta(s):      1.76

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.07	-4.26(.000)	-3.42	0.00
9	0.00	52	1.35	-0.09	-5.67(.000)	-0.29	1.14
A	0.00	408	10.61	-0.31	-19.92(.000)	-0.34	0.82
B	0.00	454	11.80	-0.12	-7.21(.000)	0.23	1.13
C	0.00	1866	48.51	-0.03	-1.89(.059)	0.53	0.90
D	1.00	1065	27.68	0.35	23.53(.000)	1.20	1.09

Item 20

```

-----
item:20 (r9q20)
Cases for this item  3847  Discrimination  0.41
Item Threshold(s):  -0.41  Weighted MNSQ  1.03
Item Delta(s):      -0.41

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.13	-0.06	-3.88(.000)	-1.45	1.91
9	0.00	48	1.25	-0.09	-5.80(.000)	-0.31	1.13
A	0.00	516	13.41	-0.26	-16.90(.000)	-0.10	0.85
B	1.00	2655	69.01	0.41	27.47(.000)	0.85	1.02
C	0.00	480	12.48	-0.14	-8.83(.000)	0.20	1.05
D	0.00	143	3.72	-0.20	-12.89(.000)	-0.47	0.89

Item 21

```

-----
item:21 (r9q21)
Cases for this item  3845  Discrimination  0.37
Item Threshold(s):  0.67  Weighted MNSQ  1.09
Item Delta(s):      0.67

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.07	-4.26(.000)	-3.42	0.00
9	0.00	18	0.47	-0.08	-5.21(.000)	-0.86	1.21
A	1.00	1849	48.09	0.37	24.89(.000)	0.98	1.06
B	0.00	317	8.24	-0.27	-17.21(.000)	-0.32	0.84
C	0.00	1503	39.09	-0.18	-11.07(.000)	0.34	0.95
D	0.00	156	4.06	-0.10	-6.16(.000)	0.08	1.02

Item 22

```

-----
item:22 (r9q22)
Cases for this item  3845  Discrimination  0.52
Item Threshold(s):  -0.54  Weighted MNSQ  0.91
Item Delta(s):      -0.54

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.08	-0.07	-4.30(.000)	-2.70	1.24
9	0.00	21	0.55	-0.11	-6.64(.000)	-1.02	0.94
A	0.00	450	11.70	-0.21	-13.01(.000)	0.01	0.87
B	0.00	498	12.95	-0.35	-23.02(.000)	-0.34	0.79
C	1.00	2739	71.24	0.52	38.09(.000)	0.91	0.99
D	0.00	134	3.49	-0.24	-15.43(.000)	-0.67	0.78

Item 23

```

-----
item:23 (r9q23)
Cases for this item  3845  Discrimination  0.47
Item Threshold(s):  -0.10  Weighted MNSQ  0.97
Item Delta(s):      -0.10

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.10	-0.06	-4.02(.000)	-1.96	1.72
9	0.00	20	0.52	-0.09	-5.87(.000)	-0.90	1.18
A	0.00	649	16.88	-0.25	-15.70(.000)	0.01	0.92
B	0.00	474	12.33	-0.20	-12.37(.000)	0.04	1.04
C	0.00	263	6.84	-0.25	-15.96(.000)	-0.33	0.92
D	1.00	2435	63.33	0.47	33.31(.000)	0.94	0.97

Item 24

```

-----
item:24 (r9q24)
Cases for this item  3845  Discrimination  0.53
Item Threshold(s):  0.69  Weighted MNSQ  0.92
Item Delta(s):      0.69

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.13	-0.07	-4.51(.000)	-1.77	1.52
9	0.00	29	0.75	-0.07	-4.58(.000)	-0.41	1.20
A	0.00	803	20.88	-0.29	-18.83(.000)	-0.00	0.82
B	1.00	1839	47.83	0.53	38.91(.000)	1.15	0.99
C	0.00	799	20.78	-0.14	-8.60(.000)	0.30	0.90
D	0.00	370	9.62	-0.28	-18.10(.000)	-0.31	0.87

Item 25

```

-----
item:25 (r9q25)
Cases for this item  3845  Discrimination  0.39
Item Threshold(s):  -0.93  Weighted MNSQ  0.98
Item Delta(s):      -0.93

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.10	-0.05	-3.29(.001)	-1.60	2.16
9	0.00	14	0.36	-0.04	-2.61(.009)	-0.31	1.62
A	0.00	312	8.11	-0.23	-14.43(.000)	-0.22	1.08
B	0.00	154	4.01	-0.22	-14.22(.000)	-0.55	0.84
C	0.00	383	9.96	-0.18	-11.38(.000)	0.03	1.07
D	1.00	2978	77.45	0.39	26.46(.000)	0.79	0.99

Item 26

```

-----
item:26 (r9q26)
Cases for this item  3844  Discrimination  0.38
Item Threshold(s):   0.10  Weighted MNSQ  1.08
Item Delta(s):       0.10

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.16	-0.05	-3.12(.002)	-1.15	2.16
9	0.00	14	0.36	-0.06	-3.63(.000)	-0.52	1.64
A	0.00	1021	26.56	-0.18	-11.02(.000)	0.27	0.95
B	0.00	439	11.42	-0.25	-15.96(.000)	-0.13	0.88
C	1.00	2285	59.44	0.38	25.75(.000)	0.90	1.04
D	0.00	79	2.06	-0.18	-11.65(.000)	-0.78	0.75

Item 27

```

-----
item:27 (r9q27)
Cases for this item  3844  Discrimination  0.54
Item Threshold(s):   0.47  Weighted MNSQ  0.92
Item Delta(s):       0.47

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.08	-0.07	-4.65(.000)	-2.65	1.33
9	0.00	16	0.42	-0.06	-3.69(.000)	-0.52	1.46
A	0.00	460	11.97	-0.39	-26.25(.000)	-0.51	0.84
B	0.00	996	25.91	-0.21	-13.26(.000)	0.20	0.84
C	0.00	362	9.42	-0.16	-10.08(.000)	0.06	0.92
D	1.00	2007	52.21	0.54	40.04(.000)	1.11	0.95

Item 28

```

-----
item:28 (r9q28)
Cases for this item  3844  Discrimination  0.27
Item Threshold(s):   0.98  Weighted MNSQ  1.20
Item Delta(s):       0.98

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.13	-0.04	-2.72(.007)	-1.00	2.23
9	0.00	15	0.39	-0.06	-3.92(.000)	-0.74	1.48
A	0.00	641	16.68	-0.15	-9.27(.000)	0.24	1.03
B	1.00	1617	42.07	0.27	17.37(.000)	0.90	1.02
C	0.00	1086	28.25	0.00	0.21(.832)	0.58	1.05
D	0.00	480	12.49	-0.22	-14.26(.000)	-0.04	1.05

Item 29

```

-----
item:29 (r9q29)
Cases for this item 3842 Discrimination 0.54
Item Threshold(s): 0.14 1.56 Weighted MNSQ 1.12
Item Delta(s): 0.42 1.29

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	987	25.69	-0.27	-17.42(.000)	0.11	0.96
1	1.00	1305	33.97	0.08	5.11(.000)	0.67	0.91
2	2.00	1044	27.17	0.45	30.97(.000)	1.35	0.92
9	0.00	506	13.17	-0.35	-23.41(.000)	-0.37	0.90

Item 30

```

-----
item:30 (r9q30)
Cases for this item 3839 Discrimination 0.29
Item Threshold(s): 1.67 Weighted MNSQ 1.10
Item Delta(s): 1.67

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.10	-0.06	-3.79(.000)	-1.71	2.11
9	0.00	8	0.21	-0.08	-4.98(.000)	-1.52	1.27
A	1.00	1123	29.25	0.29	18.60(.000)	1.06	1.17
B	0.00	1642	42.77	-0.16	-9.85(.000)	0.38	0.95
C	0.00	487	12.69	-0.15	-9.18(.000)	0.19	0.98
D	0.00	575	14.98	0.00	0.23(.819)	0.58	1.01

Item 31

```

-----
item:31 (r9q31)
Cases for this item 3839 Discrimination 0.46
Item Threshold(s): 0.44 Weighted MNSQ 1.00
Item Delta(s): 0.44

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.10	-0.07	-4.04(.000)	-2.03	1.62
9	0.00	13	0.34	-0.07	-4.63(.000)	-0.90	1.68
A	0.00	639	16.64	-0.30	-19.39(.000)	-0.10	0.82
B	0.00	505	13.15	-0.17	-10.86(.000)	0.12	0.92
C	1.00	2029	52.85	0.46	32.10(.000)	1.03	1.03
D	0.00	649	16.91	-0.14	-8.96(.000)	0.24	0.94

Item 32

```

-----
item:32 (r9q32)
Cases for this item 3838 Discrimination 0.53
Item Threshold(s): 0.17 Weighted MNSQ 0.93
Item Delta(s): 0.17

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.08	-0.07	-4.19(.000)	-2.42	1.73
9	0.00	19	0.50	-0.07	-4.32(.000)	-0.69	1.27
A	1.00	2233	58.18	0.53	38.47(.000)	1.03	0.98
B	0.00	707	18.42	-0.32	-20.69(.000)	-0.10	0.87
C	0.00	516	13.44	-0.23	-14.71(.000)	-0.02	0.91
D	0.00	360	9.38	-0.18	-11.19(.000)	0.02	0.88

Item 33

```

-----
item:33 (r9q33)
Cases for this item  3834  Discrimination  0.36
Item Threshold(s):  0.33  Weighted MNSQ  1.12
Item Delta(s):      0.33

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.10	-0.06	-3.64(.000)	-1.76	2.02
9	0.00	20	0.52	-0.09	-5.66(.000)	-0.77	1.38
A	0.00	475	12.39	-0.16	-9.72(.000)	0.17	1.14
B	0.00	323	8.42	-0.28	-18.04(.000)	-0.33	0.95
C	1.00	2112	55.09	0.36	23.51(.000)	0.91	1.03
D	0.00	900	23.47	-0.09	-5.76(.000)	0.40	0.88

Item 34

```

-----
item:34 (r9q34)
Cases for this item  3830  Discrimination  0.35
Item Threshold(s):  1.08  Weighted MNSQ  1.10
Item Delta(s):      1.07

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.10	-0.06	-3.55(.000)	-1.56	2.18
9	0.00	25	0.65	-0.09	-5.78(.000)	-0.70	1.25
A	0.00	329	8.59	-0.29	-18.92(.000)	-0.39	0.78
B	1.00	1542	40.26	0.35	23.15(.000)	1.03	1.08
C	0.00	271	7.08	-0.29	-18.61(.000)	-0.44	0.78
D	0.00	1659	43.32	-0.01	-0.84(.400)	0.55	0.90

Item 35

```

-----
item:35 (r9q35)
Cases for this item  3830  Discrimination  0.36
Item Threshold(s):  0.71  Weighted MNSQ  1.11
Item Delta(s):      0.71

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.07	-4.28(.000)	-3.42	0.00
9	0.00	29	0.76	-0.08	-5.27(.000)	-0.49	1.16
A	0.00	687	17.94	-0.11	-6.88(.000)	0.32	0.94
B	0.00	488	12.74	-0.22	-14.23(.000)	-0.04	0.99
C	1.00	1817	47.44	0.36	23.52(.000)	0.98	1.06
D	0.00	807	21.07	-0.13	-7.85(.000)	0.34	0.95

Item 36

```

-----
item:36 (r9q36)
Cases for this item  3828  Discrimination  0.42
Item Threshold(s):  -0.13  Weighted MNSQ  1.03
Item Delta(s):      -0.13

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.10	-0.07	-4.36(.000)	-2.09	1.57
9	0.00	21	0.55	-0.12	-7.19(.000)	-1.03	0.96
A	1.00	2449	63.98	0.42	28.42(.000)	0.90	1.01
B	0.00	257	6.71	-0.14	-8.97(.000)	0.04	1.08
C	0.00	490	12.80	-0.23	-14.72(.000)	-0.05	0.93
D	0.00	607	15.86	-0.21	-13.22(.000)	0.09	0.94

Item 37

```

-----
item:37 (r9q37)
Cases for this item  3826  Discrimination  0.44
Item Threshold(s):  0.14  Weighted MNSQ  1.02
Item Delta(s):      0.14

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.08	-0.08	-4.68(.000)	-2.69	1.26
9	0.00	22	0.58	-0.09	-5.32(.000)	-0.63	1.19
A	0.00	380	9.93	-0.30	-19.34(.000)	-0.34	0.88
B	1.00	2253	58.89	0.44	29.92(.000)	0.95	1.00
C	0.00	701	18.32	-0.08	-5.06(.000)	0.40	1.00
D	0.00	467	12.21	-0.26	-16.59(.000)	-0.10	0.78

Item 38

```

-----
item:38 (r9q38)
Cases for this item  3825  Discrimination  0.28
Item Threshold(s):  0.99  Weighted MNSQ  1.18
Item Delta(s):      0.99

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.13	-0.06	-3.96(.000)	-1.58	1.73
9	0.00	22	0.58	-0.06	-3.56(.000)	-0.31	1.27
A	1.00	1602	41.88	0.28	18.18(.000)	0.93	1.07
B	0.00	536	14.01	-0.07	-4.31(.000)	0.42	1.13
C	0.00	562	14.69	-0.01	-0.41(.681)	0.56	1.05
D	0.00	1098	28.71	-0.23	-14.91(.000)	0.20	0.91

Item 39

```

-----
item:39 (r9q39)
Cases for this item  3823  Discrimination  0.49
Item Threshold(s):  -0.38  Weighted MNSQ  0.95
Item Delta(s):      -0.38

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.13	-0.08	-4.82(.000)	-2.04	1.56
9	0.00	38	0.99	-0.07	-4.12(.000)	-0.09	1.19
A	0.00	607	15.88	-0.28	-17.85(.000)	-0.04	0.85
B	1.00	2627	68.72	0.49	34.59(.000)	0.91	1.01
C	0.00	386	10.10	-0.28	-18.34(.000)	-0.26	0.78
D	0.00	160	4.19	-0.15	-9.33(.000)	-0.20	0.93

Item 40

```

-----
item:40 (r9q40)
Cases for this item  3820  Discrimination  0.56
Item Threshold(s):  0.91  Weighted MNSQ  0.89
Item Delta(s):      0.91

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1799	47.09	-0.35	-22.78(.000)	0.21	0.91
1	1.00	1662	43.51	0.56	41.71(.000)	1.24	0.90
9	0.00	359	9.40	-0.36	-23.75(.000)	-0.55	0.82

Item 41

```

-----
item:41 (r9q41)
Cases for this item  3819  Discrimination  0.45
Item Threshold(s):  0.39  Weighted MNSQ  1.01
Item Delta(s):      0.39

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.08	-0.06	-3.81(.000)	-2.25	2.04
9	0.00	32	0.84	-0.10	-6.43(.000)	-0.62	1.15
A	1.00	2058	53.89	0.45	31.18(.000)	1.01	1.00
B	0.00	858	22.47	-0.16	-10.11(.000)	0.28	0.96
C	0.00	635	16.63	-0.29	-18.78(.000)	-0.08	0.92
D	0.00	233	6.10	-0.16	-9.87(.000)	-0.05	0.81

Item 42

```

-----
item:42 (r9q42)
Cases for this item  3816  Discrimination  0.45
Item Threshold(s):  0.90  Weighted MNSQ  1.00
Item Delta(s):      0.90

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.07	-4.29(.000)	-3.42	0.00
9	0.00	54	1.42	-0.09	-5.66(.000)	-0.30	1.08
A	0.00	443	11.61	-0.15	-9.33(.000)	0.17	1.02
B	0.00	448	11.74	-0.23	-14.43(.000)	-0.06	1.01
C	1.00	1674	43.87	0.45	31.00(.000)	1.12	1.03
D	0.00	1195	31.32	-0.19	-12.11(.000)	0.27	0.82

Item 43

```

-----
item:43 (r9q43)
Cases for this item  3813  Discrimination  0.41
Item Threshold(s):  0.46  Weighted MNSQ  1.05
Item Delta(s):      0.46

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.07	-4.29(.000)	-3.42	0.00
9	0.00	29	0.76	-0.10	-6.33(.000)	-0.83	1.06
A	0.00	265	6.95	-0.22	-13.97(.000)	-0.24	0.78
B	0.00	592	15.53	-0.30	-19.70(.000)	-0.13	0.92
C	1.00	2006	52.61	0.41	27.99(.000)	1.00	1.03
D	0.00	919	24.10	-0.07	-4.28(.000)	0.45	0.89

Item 44

```

-----
item:44 (r9q44)
Cases for this item  3812  Discrimination  0.42
Item Threshold(s):  0.23  Weighted MNSQ  1.04
Item Delta(s):      0.24

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.13	-0.07	-4.62(.000)	-1.99	1.61
9	0.00	23	0.60	-0.11	-6.71(.000)	-1.06	1.14
A	0.00	328	8.60	-0.17	-10.71(.000)	0.04	0.99
B	1.00	2174	57.03	0.42	28.89(.000)	0.97	1.03
C	0.00	546	14.32	-0.25	-15.83(.000)	-0.04	0.88
D	0.00	736	19.31	-0.16	-10.11(.000)	0.23	0.89

Item 45

```

-----
item:45 (r9q45)
Cases for this item  3810  Discrimination  0.56
Item Threshold(s):  2.09  Weighted MNSQ  0.82
Item Delta(s):      2.09

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2904	76.22	-0.52	-37.22(.000)	0.28	0.93
1	1.00	865	22.70	0.56	41.39(.000)	1.68	0.81
9	0.00	41	1.08	-0.13	-8.11(.000)	-0.69	0.96

Item 46

```

-----
item:46 (r9q46)
Cases for this item  3804  Discrimination  0.60
Item Threshold(s):  0.21  Weighted MNSQ  0.86
Item Delta(s):      0.21

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.08	-0.06	-3.81(.000)	-2.25	2.04
9	0.00	31	0.81	-0.09	-5.67(.000)	-0.57	1.21
A	0.00	545	14.33	-0.24	-15.57(.000)	-0.02	0.85
B	0.00	538	14.14	-0.31	-20.25(.000)	-0.20	0.85
C	0.00	498	13.09	-0.27	-17.12(.000)	-0.11	0.78
D	1.00	2189	57.54	0.60	45.79(.000)	1.11	0.93

Item 47

```

-----
item:47 (r9q47)
Cases for this item  3793  Discrimination  0.46
Item Threshold(s):  0.41  Weighted MNSQ  1.00
Item Delta(s):      0.41

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.13	-0.05	-3.12(.002)	-1.15	2.09
9	0.00	33	0.87	-0.08	-4.81(.000)	-0.37	1.13
A	1.00	2038	53.73	0.46	31.56(.000)	1.03	1.02
B	0.00	336	8.86	-0.24	-15.29(.000)	-0.18	0.82
C	0.00	1005	26.50	-0.17	-10.53(.000)	0.29	0.94
D	0.00	376	9.91	-0.25	-16.09(.000)	-0.16	0.78

Item 48

```

-----
item:48 (r9q48)
Cases for this item  3786  Discrimination  0.56
Item Threshold(s):  0.01  Weighted MNSQ  0.89
Item Delta(s):      0.01

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.07	-4.30(.000)	-3.42	0.00
9	0.00	27	0.71	-0.08	-4.93(.000)	-0.43	1.24
A	0.00	484	12.78	-0.27	-17.21(.000)	-0.13	0.88
B	1.00	2333	61.62	0.56	41.88(.000)	1.04	0.97
C	0.00	347	9.17	-0.21	-13.03(.000)	-0.06	0.85
D	0.00	593	15.66	-0.32	-20.64(.000)	-0.15	0.74

Item 49

```

-----
item:49 (r9q49)
Cases for this item  3781  Discrimination  0.48
Item Threshold(s):  0.30  Weighted MNSQ  0.98
Item Delta(s):      0.30

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.11	-0.05	-3.28(.001)	-1.50	2.23
9	0.00	48	1.27	-0.06	-3.57(.000)	-0.05	1.11
A	0.00	654	17.30	-0.11	-6.50(.000)	0.36	0.96
B	1.00	2114	55.91	0.48	33.54(.000)	1.03	1.00
C	0.00	323	8.54	-0.26	-16.51(.000)	-0.25	0.85
D	0.00	638	16.87	-0.31	-20.28(.000)	-0.12	0.79

Item 50

```

-----
item:50 (r9q50)
Cases for this item  3741  Discrimination  0.46
Item Threshold(s):  1.59  Weighted MNSQ  0.94
Item Delta(s):      1.59

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	7	0.19	-0.06	-3.94(.000)	-1.03	1.76
9	0.00	5	0.13	-0.04	-2.28(.023)	-0.37	0.70
A	0.00	863	23.07	-0.14	-8.93(.000)	0.32	0.98
B	0.00	1053	28.15	-0.21	-13.34(.000)	0.26	0.83
C	0.00	651	17.40	-0.14	-8.76(.000)	0.25	1.01
D	1.00	1162	31.06	0.46	32.02(.000)	1.32	1.03

The following traditional statistics are only meaningful for complete designs and when the amount of missing data is minimal.
In this analysis 0.65% of the data are missing.

The following results are scaled to assume that a single response was provided for each item.

```

-----
N                      3862
Mean                   30.09
Standard Deviation     10.11
Variance               102.13
Skewness               -0.19
Kurtosis               -0.77
Standard error of mean  0.16
Standard error of measurement  3.03
Coefficient Alpha       0.91
-----

```


Appendix B.5 Year 3 Spelling

=====

NAPLAN 2015, Calibration, Grade 3, spelling
GENERALISED ITEM ANALYSIS

=====

Item 1

item:1 (lc3q01)
Cases for this item 3798 Discrimination 0.49
Item Threshold(s): -3.21 Weighted MNSQ 1.06
Item Delta(s): -3.21

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.04	-2.53(.011)	-6.33	3.21
9	0.00	19	0.50	-0.09	-5.68(.000)	-3.21	1.79
A	0.00	318	8.37	-0.34	-22.18(.000)	-2.71	1.83
B	0.00	148	3.90	-0.25	-15.84(.000)	-3.39	1.82
C	0.00	72	1.90	-0.19	-11.85(.000)	-3.51	1.96
D	1.00	3239	85.28	0.49	35.05(.000)	0.30	2.02

=====

Item 2

item:2 (lc3q02)
Cases for this item 3798 Discrimination 0.51
Item Threshold(s): -3.05 Weighted MNSQ 1.03
Item Delta(s): -3.05

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.03	-1.96(.050)	-4.35	0.00
9	0.00	63	1.66	-0.10	-6.41(.000)	-1.96	2.27
A	0.00	150	3.95	-0.26	-16.26(.000)	-3.34	1.97
B	1.00	3189	83.97	0.51	37.01(.000)	0.34	2.00
C	0.00	193	5.08	-0.27	-17.19(.000)	-2.92	1.85
D	0.00	202	5.32	-0.30	-19.11(.000)	-3.05	1.62

=====

Item 3

item:3 (lc3q03)
Cases for this item 3798 Discrimination 0.34
Item Threshold(s): -5.16 Weighted MNSQ 0.95
Item Delta(s): -5.16

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	167	4.40	-0.33	-21.41(.000)	-4.21	1.91
1	1.00	3622	95.37	0.34	22.26(.000)	0.01	2.16
9	0.00	9	0.24	-0.08	-5.25(.000)	-4.70	1.15

=====

Item 4

item:4 (lc3q04)
Cases for this item 3795 Discrimination 0.39
Item Threshold(s): -4.62 Weighted MNSQ 0.85
Item Delta(s): -4.62

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	231	6.09	-0.37	-24.66(.000)	-4.08	2.01
1	1.00	3547	93.47	0.39	25.74(.000)	0.09	2.08
9	0.00	17	0.45	-0.10	-5.97(.000)	-4.31	1.71

=====

Item 5

```

-----
item:5 (lc3q05)
Cases for this item  3791  Discrimination  0.58
Item Threshold(s):  -2.27  Weighted MNSQ  1.00
Item Delta(s):      -2.27

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	825	21.76	-0.56	-41.29(.000)	-2.57	1.79
1	1.00	2914	76.87	0.58	43.55(.000)	0.55	1.92
9	0.00	52	1.37	-0.12	-7.29(.000)	-3.39	2.05

Item 6

```

-----
item:6 (lc3q06)
Cases for this item  3783  Discrimination  0.61
Item Threshold(s):  -1.37  Weighted MNSQ  1.08
Item Delta(s):      -1.37

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1221	32.28	-0.59	-44.46(.000)	-2.04	1.83
1	1.00	2514	66.46	0.61	47.52(.000)	0.80	1.88
9	0.00	48	1.27	-0.13	-8.19(.000)	-3.25	1.57

Item 7

```

-----
item:7 (lc3q07)
Cases for this item  3781  Discrimination  0.64
Item Threshold(s):  -1.55  Weighted MNSQ  0.96
Item Delta(s):      -1.55

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1121	29.65	-0.62	-48.48(.000)	-2.29	1.74
1	1.00	2601	68.79	0.64	51.78(.000)	0.80	1.83
9	0.00	59	1.56	-0.13	-7.85(.000)	-2.67	1.75

Item 8

```

-----
item:8 (lc3q08)
Cases for this item  3778  Discrimination  0.69
Item Threshold(s):  -0.55  Weighted MNSQ  0.94
Item Delta(s):      -0.54

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1580	41.82	-0.65	-52.16(.000)	-1.79	1.76
1	1.00	2096	55.48	0.69	58.74(.000)	1.17	1.76
9	0.00	102	2.70	-0.15	-9.29(.000)	-2.44	1.73

Item 9

```

-----
item:9 (lc3q09)
Cases for this item  3772  Discrimination  0.66
Item Threshold(s):  -0.30  Weighted MNSQ  1.03
Item Delta(s):      -0.31

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1740	46.13	-0.63	-50.11(.000)	-1.61	1.82
1	1.00	1970	52.23	0.66	54.11(.000)	1.20	1.78
9	0.00	62	1.64	-0.12	-7.33(.000)	-2.63	2.20

Item 10

```

-----
item:10 (lc3q10)
Cases for this item  3756  Discrimination  0.69
Item Threshold(s):  -0.06  Weighted MNSQ  0.97
Item Delta(s):      -0.07

```

Label	Score	Count	% of tot	Pt Bis	t	(p)	PV1Avg:1	PV1 SD:1
0	0.00	1843	49.07	-0.66	-53.63	(.000)	-1.56	1.77
1	1.00	1843	49.07	0.69	58.02	(.000)	1.35	1.74
9	0.00	70	1.86	-0.11	-6.60	(.000)	-2.12	1.79

Item 11

```

-----
item:11 (lc3q11)
Cases for this item  3749  Discrimination  0.66
Item Threshold(s):   0.83  Weighted MNSQ  1.00
Item Delta(s):      0.83

```

Label	Score	Count	% of tot	Pt Bis	t	(p)	PV1Avg:1	PV1 SD:1
0	0.00	2278	60.76	-0.61	-47.02	(.000)	-1.15	1.84
1	1.00	1379	36.78	0.66	53.25	(.000)	1.67	1.78
9	0.00	92	2.45	-0.12	-7.60	(.000)	-2.13	1.84

Item 12

```

-----
item:12 (lc3q12)
Cases for this item  3739  Discrimination  0.65
Item Threshold(s):   1.32  Weighted MNSQ  0.96
Item Delta(s):      1.32

```

Label	Score	Count	% of tot	Pt Bis	t	(p)	PV1Avg:1	PV1 SD:1
0	0.00	2448	65.47	-0.55	-40.76	(.000)	-0.97	1.88
1	1.00	1142	30.54	0.65	52.42	(.000)	1.96	1.62
9	0.00	149	3.99	-0.18	-11.47	(.000)	-2.33	1.71

Item 13

```

-----
item:13 (lc3q13)
Cases for this item  3730  Discrimination  0.57
Item Threshold(s):   2.68  Weighted MNSQ  0.92
Item Delta(s):      2.68

```

Label	Score	Count	% of tot	Pt Bis	t	(p)	PV1Avg:1	PV1 SD:1
0	0.00	3040	81.50	-0.50	-34.81	(.000)	-0.62	1.96
1	1.00	609	16.33	0.57	42.08	(.000)	2.65	1.53
9	0.00	81	2.17	-0.12	-7.35	(.000)	-2.16	2.31

Item 14

```

-----
item:14 (lc3q14)
Cases for this item  3726  Discrimination  0.49
Item Threshold(s):   3.16  Weighted MNSQ  1.01
Item Delta(s):      3.15

```

Label	Score	Count	% of tot	Pt Bis	t	(p)	PV1Avg:1	PV1 SD:1
0	0.00	3054	81.96	-0.31	-19.96	(.000)	-0.43	2.04
1	1.00	471	12.64	0.49	34.66	(.000)	2.73	1.63
9	0.00	201	5.39	-0.20	-12.29	(.000)	-2.00	1.60

Item 15

```

-----
item:15 (lc3q15)
Cases for this item  3711  Discrimination  0.63
Item Threshold(s):  -1.27  Weighted MNSQ  1.02
Item Delta(s):      -1.27

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1175	31.66	-0.58	-43.61(.000)	-1.95	1.74
1	1.00	2453	66.10	0.63	49.42(.000)	0.88	1.82
9	0.00	83	2.24	-0.19	-11.52(.000)	-3.21	1.94

Item 16

```

-----
item:16 (lc3q16)
Cases for this item  3690  Discrimination  0.65
Item Threshold(s):  -0.87  Weighted MNSQ  1.01
Item Delta(s):      -0.87

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1323	35.85	-0.58	-43.71(.000)	-1.73	1.74
1	1.00	2251	61.00	0.65	51.88(.000)	1.03	1.77
9	0.00	116	3.14	-0.21	-13.04(.000)	-2.95	1.74

Item 17

```

-----
item:17 (lc3q17)
Cases for this item  3666  Discrimination  0.63
Item Threshold(s):  -0.33  Weighted MNSQ  1.09
Item Delta(s):      -0.33

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1569	42.80	-0.57	-42.41(.000)	-1.43	1.77
1	1.00	1971	53.76	0.63	49.61(.000)	1.17	1.80
9	0.00	126	3.44	-0.18	-10.85(.000)	-2.32	1.82

Item 18

```

-----
item:18 (lc3q18)
Cases for this item  3645  Discrimination  0.70
Item Threshold(s):  0.55  Weighted MNSQ  0.91
Item Delta(s):      0.54

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1975	54.18	-0.62	-47.94(.000)	-1.22	1.72
1	1.00	1516	41.59	0.70	59.07(.000)	1.67	1.65
9	0.00	154	4.22	-0.17	-10.62(.000)	-1.94	1.74

Item 19

```

-----
item:19 (lc3q19)
Cases for this item  3628  Discrimination  0.61
Item Threshold(s):  1.20  Weighted MNSQ  1.08
Item Delta(s):      1.20

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2266	62.46	-0.54	-38.35(.000)	-0.90	1.85
1	1.00	1194	32.91	0.61	46.27(.000)	1.79	1.77
9	0.00	168	4.63	-0.12	-7.56(.000)	-1.40	1.85

Item 20

```

-----
item:20 (lc3q20)
Cases for this item   3595   Discrimination   0.63
Item Threshold(s):    0.60   Weighted MNSQ   1.09
Item Delta(s):        0.60

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1953	54.33	-0.57	-42.10(.000)	-1.10	1.82
1	1.00	1479	41.14	0.63	48.79(.000)	1.55	1.73
9	0.00	163	4.53	-0.12	-7.05(.000)	-1.36	2.07

Item 21

```

-----
item:21 (lc3q21)
Cases for this item   3559   Discrimination   0.65
Item Threshold(s):    1.59   Weighted MNSQ   0.92
Item Delta(s):        1.59

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2432	68.33	-0.57	-41.51(.000)	-0.80	1.80
1	1.00	1012	28.43	0.65	50.87(.000)	2.14	1.62
9	0.00	115	3.23	-0.15	-9.21(.000)	-1.90	1.71

Item 22

```

-----
item:22 (lc3q22)
Cases for this item   3532   Discrimination   0.58
Item Threshold(s):    1.81   Weighted MNSQ   1.10
Item Delta(s):        1.81

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2443	69.17	-0.48	-32.74(.000)	-0.64	1.93
1	1.00	920	26.05	0.58	41.85(.000)	2.01	1.68
9	0.00	169	4.78	-0.14	-8.39(.000)	-1.29	1.75

Item 23

```

-----
item:23 (lc3q23)
Cases for this item   3487   Discrimination   0.55
Item Threshold(s):    2.84   Weighted MNSQ   0.95
Item Delta(s):        2.83

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2805	80.44	-0.46	-30.59(.000)	-0.43	1.94
1	1.00	556	15.94	0.55	38.73(.000)	2.70	1.51
9	0.00	126	3.61	-0.10	-5.82(.000)	-1.05	1.86

Item 24

```

-----
item:24 (lc3q24)
Cases for this item   3446   Discrimination   0.48
Item Threshold(s):    3.56   Weighted MNSQ   0.95
Item Delta(s):        3.56

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2974	86.30	-0.39	-24.81(.000)	-0.27	1.99
1	1.00	368	10.68	0.48	31.75(.000)	3.04	1.54
9	0.00	104	3.02	-0.08	-4.50(.000)	-0.94	1.82

Item 25

item:25 (1c3q25)

Cases for this item 3384 Discrimination 0.40

Item Threshold(s): 4.49 Weighted MNSQ 0.95

Item Delta(s): 4.49

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3039	89.80	-0.26	-15.78(.000)	-0.12	2.06
1	1.00	203	6.00	0.40	25.04(.000)	3.64	1.51
9	0.00	142	4.20	-0.07	-4.28(.000)	-0.56	1.66

The following traditional statistics are only meaningful for complete designs and when the amount of missing data is minimal. In this analysis 2.96% of the data are missing.

The following results are scaled to assume that a single response was provided for each item.

N	3798
Mean	12.05
Standard Deviation	6.15
Variance	37.87
Skewness	0.10
Kurtosis	-0.87
Standard error of mean	0.10
Standard error of measurement	1.83
Coefficient Alpha	0.91

Appendix B.6 Year 5 Spelling

=====

NAPLAN 2015, Calibration, Grade 5, spelling
GENERALISED ITEM ANALYSIS

=====

Item 1

item:1 (lc5q01)
Cases for this item 3989 Discrimination 0.45
Item Threshold(s): -3.70 Weighted MNSQ 0.94
Item Delta(s): -3.70

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	355	8.90	-0.44	-31.25(.000)	-3.21	2.08
1	1.00	3632	91.05	0.45	31.45(.000)	0.29	1.77
9	0.00	2	0.05	-0.04	-2.80(.005)	-4.73	2.00

=====

Item 2

item:2 (lc5q02)
Cases for this item 3989 Discrimination 0.51
Item Threshold(s): -3.50 Weighted MNSQ 0.83
Item Delta(s): -3.50

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	391	9.80	-0.50	-36.11(.000)	-3.31	1.81
1	1.00	3588	89.95	0.51	36.96(.000)	0.34	1.73
9	0.00	10	0.25	-0.09	-5.45(.000)	-4.31	1.79

=====

Item 3

item:3 (lc5q03)
Cases for this item 3989 Discrimination 0.63
Item Threshold(s): -1.45 Weighted MNSQ 0.95
Item Delta(s): -1.45

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1104	27.68	-0.61	-48.56(.000)	-1.95	1.79
1	1.00	2838	71.15	0.63	51.56(.000)	0.76	1.57
9	0.00	47	1.18	-0.13	-8.14(.000)	-2.72	1.98

=====

Item 4

item:4 (lc5q04)
Cases for this item 3983 Discrimination 0.63
Item Threshold(s): -1.49 Weighted MNSQ 0.94
Item Delta(s): -1.49

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1078	27.07	-0.62	-49.39(.000)	-1.99	1.79
1	1.00	2856	71.70	0.63	51.59(.000)	0.75	1.58
9	0.00	49	1.23	-0.10	-6.49(.000)	-2.00	1.90

=====

Item 5

item:5 (lc5q05)
Cases for this item 3979 Discrimination 0.60
Item Threshold(s): -1.06 Weighted MNSQ 1.08
Item Delta(s): -1.06

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1292	32.47	-0.58	-44.55(.000)	-1.65	1.81
1	1.00	2631	66.12	0.60	47.66(.000)	0.83	1.59
9	0.00	56	1.41	-0.13	-8.19(.000)	-2.49	1.85

=====

Item 6

```

-----
item:6 (lc5q06)
Cases for this item  3976  Discrimination  0.63
Item Threshold(s):  -0.78  Weighted MNSQ  1.02
Item Delta(s):      -0.78

```

Label	Score	Count	% of tot	Pt Bis	t	(p)	PV1Avg:1	PV1	SD:1
0	0.00	1428	35.92	-0.59	-46.14	(.000)	-1.51		1.79
1	1.00	2473	62.20	0.63	51.58	(.000)	0.93		1.56
9	0.00	75	1.89	-0.17	-11.17	(.000)	-2.78		1.81

Item 7

```

-----
item:7 (lc5q07)
Cases for this item  3968  Discrimination  0.60
Item Threshold(s):  -1.08  Weighted MNSQ  1.09
Item Delta(s):      -1.08

```

Label	Score	Count	% of tot	Pt Bis	t	(p)	PV1Avg:1	PV1	SD:1
0	0.00	1263	31.83	-0.57	-43.19	(.000)	-1.60		1.82
1	1.00	2637	66.46	0.60	46.75	(.000)	0.81		1.61
9	0.00	68	1.71	-0.14	-8.81	(.000)	-2.51		1.96

Item 8

```

-----
item:8 (lc5q08)
Cases for this item  3962  Discrimination  0.66
Item Threshold(s):  -0.90  Weighted MNSQ  0.93
Item Delta(s):      -0.90

```

Label	Score	Count	% of tot	Pt Bis	t	(p)	PV1Avg:1	PV1	SD:1
0	0.00	1377	34.76	-0.63	-51.61	(.000)	-1.66		1.73
1	1.00	2537	64.03	0.66	55.66	(.000)	0.95		1.51
9	0.00	48	1.21	-0.15	-9.30	(.000)	-3.17		1.92

Item 9

```

-----
item:9 (lc5q09)
Cases for this item  3961  Discrimination  0.70
Item Threshold(s):  0.07  Weighted MNSQ  0.87
Item Delta(s):      0.07

```

Label	Score	Count	% of tot	Pt Bis	t	(p)	PV1Avg:1	PV1	SD:1
0	0.00	1932	48.78	-0.67	-56.66	(.000)	-1.27		1.68
1	1.00	1967	49.66	0.70	62.25	(.000)	1.31		1.41
9	0.00	62	1.57	-0.14	-8.78	(.000)	-2.58		2.24

Item 10

```

-----
item:10 (lc5q10)
Cases for this item  3960  Discrimination  0.65
Item Threshold(s):  0.52  Weighted MNSQ  0.96
Item Delta(s):      0.52

```

Label	Score	Count	% of tot	Pt Bis	t	(p)	PV1Avg:1	PV1	SD:1
0	0.00	2171	54.82	-0.61	-47.92	(.000)	-1.02		1.76
1	1.00	1693	42.75	0.65	53.67	(.000)	1.39		1.46
9	0.00	96	2.42	-0.13	-8.05	(.000)	-1.85		2.29

Item 11

```

-----
item:11 (lc5q11)
Cases for this item  3959  Discrimination  0.60
Item Threshold(s):  0.69  Weighted MNSQ  1.07
Item Delta(s):      0.69

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2319	58.58	-0.57	-43.55(.000)	-0.90	1.84
1	1.00	1594	40.26	0.60	46.60(.000)	1.36	1.47
9	0.00	46	1.16	-0.11	-6.80(.000)	-2.28	2.09

Item 12

```

-----
item:12 (lc5q12)
Cases for this item  3949  Discrimination  0.62
Item Threshold(s):  0.97  Weighted MNSQ  0.99
Item Delta(s):      0.97

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2423	61.36	-0.56	-42.22(.000)	-0.81	1.79
1	1.00	1432	36.26	0.62	49.23(.000)	1.53	1.41
9	0.00	94	2.38	-0.16	-10.41(.000)	-2.32	1.90

Item 13

```

-----
item:13 (lc5q13)
Cases for this item  3946  Discrimination  0.49
Item Threshold(s):  2.11  Weighted MNSQ  1.08
Item Delta(s):      2.11

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3041	77.07	-0.43	-30.00(.000)	-0.44	1.85
1	1.00	844	21.39	0.49	35.59(.000)	1.82	1.47
9	0.00	61	1.55	-0.17	-10.81(.000)	-3.04	2.02

Item 14

```

-----
item:14 (lc5q14)
Cases for this item  3938  Discrimination  0.56
Item Threshold(s):  -2.30  Weighted MNSQ  0.94
Item Delta(s):      -2.30

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	684	17.37	-0.53	-38.75(.000)	-2.30	1.91
1	1.00	3200	81.26	0.56	42.26(.000)	0.56	1.63
9	0.00	54	1.37	-0.16	-10.35(.000)	-2.93	1.72

Item 15

```

-----
item:15 (lc5q15)
Cases for this item  3928  Discrimination  0.53
Item Threshold(s):  -2.41  Weighted MNSQ  1.00
Item Delta(s):      -2.41

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	646	16.45	-0.50	-36.03(.000)	-2.22	1.93
1	1.00	3238	82.43	0.53	39.20(.000)	0.52	1.65
9	0.00	44	1.12	-0.16	-10.27(.000)	-3.58	1.70

Item 16

```

-----
item:16 (lc5q16)
Cases for this item  3913  Discrimination  0.57
Item Threshold(s):  -0.45  Weighted MNSQ  1.15
Item Delta(s):      -0.45

```

Label	Score	Count	% of tot	Pt Bis	t	(p)	PV1Avg:1	PV1	SD:1
0	0.00	1557	39.79	-0.52	-38.57	(.000)	-1.19	1.78	
1	1.00	2275	58.14	0.57	43.42	(.000)	0.97	1.58	
9	0.00	81	2.07	-0.17	-10.87	(.000)	-2.56	1.84	

Item 17

```

-----
item:17 (lc5q17)
Cases for this item  3901  Discrimination  0.68
Item Threshold(s):  -0.16  Weighted MNSQ  0.92
Item Delta(s):      -0.16

```

Label	Score	Count	% of tot	Pt Bis	t	(p)	PV1Avg:1	PV1	SD:1
0	0.00	1672	42.86	-0.62	-48.76	(.000)	-1.24	1.69	
1	1.00	2101	53.86	0.68	57.28	(.000)	1.20	1.45	
9	0.00	128	3.28	-0.18	-11.55	(.000)	-2.00	1.78	

Item 18

```

-----
item:18 (lc5q18)
Cases for this item  3890  Discrimination  0.60
Item Threshold(s):   0.27  Weighted MNSQ  1.07
Item Delta(s):       0.27

```

Label	Score	Count	% of tot	Pt Bis	t	(p)	PV1Avg:1	PV1	SD:1
0	0.00	1923	49.43	-0.54	-39.96	(.000)	-0.94	1.76	
1	1.00	1844	47.40	0.60	47.38	(.000)	1.24	1.49	
9	0.00	123	3.16	-0.18	-11.72	(.000)	-2.04	1.76	

Item 19

```

-----
item:19 (lc5q19)
Cases for this item  3878  Discrimination  0.65
Item Threshold(s):   0.92  Weighted MNSQ  0.91
Item Delta(s):       0.92

```

Label	Score	Count	% of tot	Pt Bis	t	(p)	PV1Avg:1	PV1	SD:1
0	0.00	2339	60.31	-0.61	-47.50	(.000)	-0.82	1.70	
1	1.00	1458	37.60	0.65	53.90	(.000)	1.61	1.36	
9	0.00	81	2.09	-0.14	-8.93	(.000)	-1.99	1.75	

Item 20

```

-----
item:20 (lc5q20)
Cases for this item  3867  Discrimination  0.58
Item Threshold(s):   1.06  Weighted MNSQ  1.05
Item Delta(s):       1.06

```

Label	Score	Count	% of tot	Pt Bis	t	(p)	PV1Avg:1	PV1	SD:1
0	0.00	2303	59.56	-0.49	-34.67	(.000)	-0.67	1.76	
1	1.00	1374	35.53	0.58	44.26	(.000)	1.52	1.46	
9	0.00	190	4.91	-0.18	-11.26	(.000)	-1.45	1.77	

Item 21

```

-----
item:21 (lc5q21)
Cases for this item  3852  Discrimination  0.58
Item Threshold(s):  1.80  Weighted MNSQ  0.95
Item Delta(s):      1.80

```

Label	Score	Count	% of tot	Pt Bis	t	(p)	PV1Avg:1	PV1	SD:1
0	0.00	2772	71.96	-0.52	-37.48	(.000)	-0.51	1.73	
1	1.00	987	25.62	0.58	44.14	(.000)	1.92	1.38	
9	0.00	93	2.41	-0.14	-8.49	(.000)	-1.76	1.81	

Item 22

```

-----
item:22 (lc5q22)
Cases for this item  3829  Discrimination  0.47
Item Threshold(s):  1.92  Weighted MNSQ  1.15
Item Delta(s):      1.92

```

Label	Score	Count	% of tot	Pt Bis	t	(p)	PV1Avg:1	PV1	SD:1
0	0.00	2818	73.60	-0.41	-28.01	(.000)	-0.36	1.81	
1	1.00	927	24.21	0.47	33.00	(.000)	1.65	1.57	
9	0.00	84	2.19	-0.14	-8.44	(.000)	-1.78	1.86	

Item 23

```

-----
item:23 (lc5q23)
Cases for this item  3803  Discrimination  0.49
Item Threshold(s):  2.16  Weighted MNSQ  1.07
Item Delta(s):      2.16

```

Label	Score	Count	% of tot	Pt Bis	t	(p)	PV1Avg:1	PV1	SD:1
0	0.00	2794	73.47	-0.39	-26.15	(.000)	-0.33	1.80	
1	1.00	817	21.48	0.49	34.63	(.000)	1.86	1.49	
9	0.00	192	5.05	-0.13	-8.17	(.000)	-0.95	1.64	

Item 24

```

-----
item:24 (lc5q24)
Cases for this item  3747  Discrimination  0.51
Item Threshold(s):  2.70  Weighted MNSQ  0.94
Item Delta(s):      2.70

```

Label	Score	Count	% of tot	Pt Bis	t	(p)	PV1Avg:1	PV1	SD:1
0	0.00	3058	81.61	-0.42	-28.66	(.000)	-0.25	1.78	
1	1.00	600	16.01	0.51	35.83	(.000)	2.28	1.30	
9	0.00	89	2.38	-0.14	-8.53	(.000)	-1.51	1.77	

Item 25

```

-----
item:25 (lc5q25)
Cases for this item  3723  Discrimination  0.36
Item Threshold(s):  4.09  Weighted MNSQ  0.97
Item Delta(s):      4.09

```

Label	Score	Count	% of tot	Pt Bis	t	(p)	PV1Avg:1	PV1	SD:1
0	0.00	3377	90.71	-0.27	-16.94	(.000)	-0.03	1.86	
1	1.00	240	6.45	0.36	23.18	(.000)	2.80	1.38	
9	0.00	106	2.85	-0.06	-3.50	(.000)	-0.45	1.83	

The following traditional statistics are only meaningful for complete designs and when the amount of missing data is minimal.
In this analysis 1.85% of the data are missing.

The following results are scaled to assume that a single response was provided for each item.

N	3989
Mean	12.58
Standard Deviation	6.36
Variance	40.41
Skewness	-0.12
Kurtosis	-0.86
Standard error of mean	0.10
Standard error of measurement	1.90
Coefficient Alpha	0.91

=====

Appendix B.7 Year 7 Spelling

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NAPLAN 2015, Calibration, Grade 7, spelling
GENERALISED ITEM ANALYSIS

=====

Item 1

item:1 (lc7q01)
Cases for this item 4609 Discrimination 0.48
Item Threshold(s): -2.98 Weighted MNSQ 1.01
Item Delta(s): -2.98

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	576	12.50	-0.46	-34.84(.000)	-2.40	1.84
1	1.00	3997	86.72	0.48	37.14(.000)	0.26	1.61
9	0.00	36	0.78	-0.14	-9.25(.000)	-3.19	1.84

=====

Item 2

item:2 (lc7q02)
Cases for this item 4609 Discrimination 0.55
Item Threshold(s): -2.52 Weighted MNSQ 0.98
Item Delta(s): -2.51

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	727	15.77	-0.51	-40.63(.000)	-2.28	1.67
1	1.00	3817	82.82	0.55	44.53(.000)	0.36	1.57
9	0.00	65	1.41	-0.17	-11.52(.000)	-2.82	1.72

=====

Item 3

item:3 (lc7q03)
Cases for this item 4604 Discrimination 0.64
Item Threshold(s): -1.74 Weighted MNSQ 0.87
Item Delta(s): -1.74

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1034	22.46	-0.56	-46.35(.000)	-1.96	1.59
1	1.00	3442	74.76	0.64	56.19(.000)	0.58	1.44
9	0.00	128	2.78	-0.25	-17.78(.000)	-3.12	1.40

=====

Item 4

item:4 (lc7q04)
Cases for this item 4600 Discrimination 0.62
Item Threshold(s): -1.76 Weighted MNSQ 0.91
Item Delta(s): -1.76

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1075	23.37	-0.58	-48.15(.000)	-1.97	1.60
1	1.00	3449	74.98	0.62	54.18(.000)	0.56	1.46
9	0.00	76	1.65	-0.20	-13.77(.000)	-3.24	1.51

=====

Item 5

item:5 (lc7q05)
Cases for this item 4599 Discrimination 0.60
Item Threshold(s): -1.89 Weighted MNSQ 0.96
Item Delta(s): -1.89

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	964	20.96	-0.55	-44.91(.000)	-2.04	1.67
1	1.00	3518	76.49	0.60	50.50(.000)	0.51	1.50
9	0.00	117	2.54	-0.18	-12.48(.000)	-2.12	1.63

=====

Item 6

```

-----
item:6 (lc7q06)
Cases for this item  4596  Discrimination  0.57
Item Threshold(s):  -1.75  Weighted MNSQ  1.07
Item Delta(s):      -1.75

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1054	22.93	-0.51	-40.56(.000)	-1.79	1.69
1	1.00	3441	74.87	0.57	46.69(.000)	0.51	1.53
9	0.00	101	2.20	-0.21	-14.26(.000)	-2.76	1.52

Item 7

```

-----
item:7 (lc7q07)
Cases for this item  4593  Discrimination  0.61
Item Threshold(s):  -1.59  Weighted MNSQ  0.98
Item Delta(s):      -1.59

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1150	25.04	-0.57	-46.87(.000)	-1.84	1.62
1	1.00	3352	72.98	0.61	52.20(.000)	0.58	1.49
9	0.00	91	1.98	-0.18	-12.12(.000)	-2.56	1.62

Item 8

```

-----
item:8 (lc7q08)
Cases for this item  4591  Discrimination  0.61
Item Threshold(s):  -1.37  Weighted MNSQ  0.97
Item Delta(s):      -1.36

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1309	28.51	-0.58	-47.95(.000)	-1.71	1.67
1	1.00	3220	70.14	0.61	52.50(.000)	0.63	1.44
9	0.00	62	1.35	-0.17	-11.60(.000)	-3.03	1.55

Item 9

```

-----
item:9 (lc7q09)
Cases for this item  4588  Discrimination  0.67
Item Threshold(s):  -1.20  Weighted MNSQ  0.87
Item Delta(s):      -1.19

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1389	30.27	-0.63	-54.28(.000)	-1.75	1.57
1	1.00	3113	67.85	0.67	61.03(.000)	0.73	1.39
9	0.00	86	1.87	-0.19	-12.87(.000)	-2.69	1.43

Item 10

```

-----
item:10 (lc7q10)
Cases for this item  4586  Discrimination  0.66
Item Threshold(s):  -0.95  Weighted MNSQ  0.89
Item Delta(s):      -0.96

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1500	32.71	-0.60	-51.10(.000)	-1.59	1.61
1	1.00	2959	64.52	0.66	60.09(.000)	0.79	1.36
9	0.00	127	2.77	-0.21	-14.77(.000)	-2.52	1.56

Item 11

```

-----
item:11 (lc7q11)
Cases for this item  4584  Discrimination  0.57
Item Threshold(s):  -0.27  Weighted MNSQ  1.10
Item Delta(s):      -0.26

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2040	44.50	-0.53	-42.31(.000)	-1.12	1.73
1	1.00	2476	54.01	0.57	46.76(.000)	0.85	1.42
9	0.00	68	1.48	-0.16	-11.27(.000)	-2.68	1.67

Item 12

```

-----
item:12 (lc7q12)
Cases for this item  4582  Discrimination  0.64
Item Threshold(s):  -0.70  Weighted MNSQ  0.96
Item Delta(s):      -0.69

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1719	37.52	-0.59	-49.36(.000)	-1.41	1.66
1	1.00	2781	60.69	0.64	55.69(.000)	0.82	1.38
9	0.00	82	1.79	-0.19	-13.02(.000)	-2.73	1.44

Item 13

```

-----
item:13 (lc7q13)
Cases for this item  4578  Discrimination  0.58
Item Threshold(s):  -0.38  Weighted MNSQ  1.08
Item Delta(s):      -0.38

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1811	39.56	-0.51	-40.34(.000)	-1.17	1.65
1	1.00	2560	55.92	0.58	48.54(.000)	0.83	1.49
9	0.00	207	4.52	-0.19	-12.93(.000)	-1.72	1.66

Item 14

```

-----
item:14 (lc7q14)
Cases for this item  4570  Discrimination  0.59
Item Threshold(s):  0.27  Weighted MNSQ  1.02
Item Delta(s):      0.27

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2054	44.95	-0.42	-31.27(.000)	-0.87	1.69
1	1.00	2084	45.60	0.59	49.79(.000)	1.07	1.36
9	0.00	432	9.45	-0.30	-20.93(.000)	-1.75	1.50

Item 15

```

-----
item:15 (lc7q15)
Cases for this item  4568  Discrimination  0.63
Item Threshold(s):  -0.04  Weighted MNSQ  0.97
Item Delta(s):      -0.04

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2173	47.57	-0.59	-49.35(.000)	-1.14	1.64
1	1.00	2308	50.53	0.63	55.28(.000)	1.02	1.34
9	0.00	87	1.90	-0.16	-11.04(.000)	-2.35	1.62

Item 16

```

-----
item:16 (lc7q16)
Cases for this item  4568  Discrimination  0.46
Item Threshold(s):  1.50  Weighted MNSQ  1.11
Item Delta(s):      1.50

```

Label	Score	Count	% of tot	Pt Bis	t	(p)	PV1Avg:1	PV1	SD:1
0	0.00	3100	67.86	-0.32	-22.98	(.000)	-0.46	1.70	
1	1.00	1229	26.90	0.46	35.43	(.000)	1.30	1.49	
9	0.00	239	5.23	-0.25	-17.41	(.000)	-2.07	1.42	

Item 17

```

-----
item:17 (lc7q17)
Cases for this item  4548  Discrimination  0.64
Item Threshold(s):  -0.84  Weighted MNSQ  0.94
Item Delta(s):      -0.84

```

Label	Score	Count	% of tot	Pt Bis	t	(p)	PV1Avg:1	PV1	SD:1
0	0.00	1408	30.96	-0.55	-44.20	(.000)	-1.48	1.63	
1	1.00	2874	63.19	0.64	56.02	(.000)	0.80	1.39	
9	0.00	266	5.85	-0.23	-16.16	(.000)	-1.85	1.56	

Item 18

```

-----
item:18 (lc7q18)
Cases for this item  4527  Discrimination  0.59
Item Threshold(s):  0.05  Weighted MNSQ  1.04
Item Delta(s):      0.05

```

Label	Score	Count	% of tot	Pt Bis	t	(p)	PV1Avg:1	PV1	SD:1
0	0.00	1987	43.89	-0.50	-39.03	(.000)	-1.01	1.64	
1	1.00	2242	49.53	0.59	49.32	(.000)	0.99	1.42	
9	0.00	298	6.58	-0.19	-12.87	(.000)	-1.37	1.65	

Item 19

```

-----
item:19 (lc7q19)
Cases for this item  4514  Discrimination  0.63
Item Threshold(s):  0.45  Weighted MNSQ  0.94
Item Delta(s):      0.45

```

Label	Score	Count	% of tot	Pt Bis	t	(p)	PV1Avg:1	PV1	SD:1
0	0.00	2228	49.36	-0.48	-36.47	(.000)	-0.85	1.60	
1	1.00	1945	43.09	0.63	54.75	(.000)	1.22	1.30	
9	0.00	341	7.55	-0.28	-19.68	(.000)	-1.85	1.43	

Item 20

```

-----
item:20 (lc7q20)
Cases for this item  4498  Discrimination  0.53
Item Threshold(s):  0.66  Weighted MNSQ  1.11
Item Delta(s):      0.66

```

Label	Score	Count	% of tot	Pt Bis	t	(p)	PV1Avg:1	PV1	SD:1
0	0.00	2606	57.94	-0.47	-35.39	(.000)	-0.71	1.67	
1	1.00	1791	39.82	0.53	41.52	(.000)	1.10	1.44	
9	0.00	101	2.25	-0.18	-12.55	(.000)	-2.31	1.53	

Item 21

```

-----
item:21 (1c7q21)
Cases for this item  4475  Discrimination  0.48
Item Threshold(s):  1.73  Weighted MNSQ  1.06
Item Delta(s):      1.73

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2967	66.30	-0.35	-25.36(.000)	-0.44	1.69
1	1.00	1090	24.36	0.48	36.23(.000)	1.46	1.42
9	0.00	418	9.34	-0.13	-8.54(.000)	-0.75	1.60

Item 22

```

-----
item:22 (1c7q22)
Cases for this item  4437  Discrimination  0.56
Item Threshold(s):  0.53  Weighted MNSQ  1.05
Item Delta(s):      0.53

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2322	52.33	-0.48	-36.54(.000)	-0.77	1.64
1	1.00	1883	42.44	0.56	44.95(.000)	1.13	1.39
9	0.00	232	5.23	-0.16	-10.99(.000)	-1.28	1.53

Item 23

```

-----
item:23 (1c7q23)
Cases for this item  4425  Discrimination  0.58
Item Threshold(s):  1.27  Weighted MNSQ  0.96
Item Delta(s):      1.27

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2945	66.55	-0.51	-39.24(.000)	-0.59	1.59
1	1.00	1368	30.92	0.58	46.82(.000)	1.49	1.29
9	0.00	112	2.53	-0.17	-11.28(.000)	-1.78	1.65

Item 24

```

-----
item:24 (1c7q24)
Cases for this item  4409  Discrimination  0.63
Item Threshold(s):  0.90  Weighted MNSQ  0.89
Item Delta(s):      0.90

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2499	56.68	-0.53	-41.85(.000)	-0.74	1.55
1	1.00	1622	36.79	0.63	53.49(.000)	1.41	1.29
9	0.00	288	6.53	-0.16	-10.42(.000)	-1.06	1.54

Item 25

```

-----
item:25 (1c7q25)
Cases for this item  4368  Discrimination  0.55
Item Threshold(s):  0.46  Weighted MNSQ  1.08
Item Delta(s):      0.46

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2144	49.08	-0.48	-36.15(.000)	-0.78	1.63
1	1.00	1922	44.00	0.55	43.21(.000)	1.09	1.42
9	0.00	302	6.91	-0.13	-8.33(.000)	-0.79	1.54

Item 26

```

-----
item:26 (lc7q26)
Cases for this item  4331  Discrimination  0.45
Item Threshold(s):  2.01  Weighted MNSQ  1.07
Item Delta(s):      2.01

```

Label	Score	Count	% of tot	Pt Bis	t	(p)	PV1Avg:1	PV1	SD:1
0	0.00	3139	72.48	-0.33	-22.69	(.000)	-0.30	1.66	
1	1.00	928	21.43	0.45	33.07	(.000)	1.56	1.40	
9	0.00	264	6.10	-0.16	-10.77	(.000)	-1.01	1.43	

Item 27

```

-----
item:27 (lc7q27)
Cases for this item  4279  Discrimination  0.51
Item Threshold(s):  1.71  Weighted MNSQ  1.02
Item Delta(s):      1.71

```

Label	Score	Count	% of tot	Pt Bis	t	(p)	PV1Avg:1	PV1	SD:1
0	0.00	2798	65.39	-0.38	-26.99	(.000)	-0.40	1.64	
1	1.00	1088	25.43	0.51	38.29	(.000)	1.57	1.33	
9	0.00	393	9.18	-0.13	-8.81	(.000)	-0.66	1.50	

Item 28

```

-----
item:28 (lc7q28)
Cases for this item  4227  Discrimination  0.45
Item Threshold(s):  2.31  Weighted MNSQ  1.00
Item Delta(s):      2.31

```

Label	Score	Count	% of tot	Pt Bis	t	(p)	PV1Avg:1	PV1	SD:1
0	0.00	3248	76.84	-0.33	-22.43	(.000)	-0.23	1.64	
1	1.00	773	18.29	0.45	32.37	(.000)	1.74	1.45	
9	0.00	206	4.87	-0.16	-10.62	(.000)	-1.04	1.38	

Item 29

```

-----
item:29 (lc7q29)
Cases for this item  4181  Discrimination  0.41
Item Threshold(s):  2.63  Weighted MNSQ  1.02
Item Delta(s):      2.63

```

Label	Score	Count	% of tot	Pt Bis	t	(p)	PV1Avg:1	PV1	SD:1
0	0.00	3312	79.22	-0.32	-21.69	(.000)	-0.19	1.68	
1	1.00	630	15.07	0.41	29.39	(.000)	1.82	1.42	
9	0.00	239	5.72	-0.08	-5.31	(.000)	-0.41	1.39	

Item 30

```

-----
item:30 (lc7q30)
Cases for this item  4056  Discrimination  0.35
Item Threshold(s):  3.46  Weighted MNSQ  0.98
Item Delta(s):      3.46

```

Label	Score	Count	% of tot	Pt Bis	t	(p)	PV1Avg:1	PV1	SD:1
0	0.00	3436	84.71	-0.21	-13.61	(.000)	-0.05	1.70	
1	1.00	355	8.75	0.35	23.49	(.000)	2.18	1.47	
9	0.00	265	6.53	-0.09	-5.86	(.000)	-0.42	1.54	

The following traditional statistics are only meaningful for complete designs and when the amount of missing data is minimal. In this analysis 2.58% of the data are missing.

The following results are scaled to assume that a single response was provided for each item.

N	4609
Mean	14.98
Standard Deviation	7.58
Variance	57.42
Skewness	-0.22
Kurtosis	-0.82
Standard error of mean	0.11
Standard error of measurement	2.13
Coefficient Alpha	0.92

=====

Appendix B.8 Year 9 Spelling

=====

NAPLAN 2015, Calibration, Grade 9, spelling
GENERALISED ITEM ANALYSIS

=====

Item 1

item:1 (lc9q01)
Cases for this item 3859 Discrimination 0.49
Item Threshold(s): -2.98 Weighted MNSQ 0.95
Item Delta(s): -2.98

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	508	13.16	-0.45	-31.72(.000)	-2.49	1.67
1	1.00	3307	85.70	0.49	35.26(.000)	0.10	1.57
9	0.00	44	1.14	-0.18	-11.33(.000)	-3.88	1.44

=====

Item 2

item:2 (lc9q02)
Cases for this item 3859 Discrimination 0.54
Item Threshold(s): -2.50 Weighted MNSQ 0.98
Item Delta(s): -2.50

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	676	17.52	-0.51	-36.90(.000)	-2.30	1.57
1	1.00	3133	81.19	0.54	40.10(.000)	0.19	1.55
9	0.00	50	1.30	-0.16	-9.91(.000)	-3.03	1.53

=====

Item 3

item:3 (lc9q03)
Cases for this item 3858 Discrimination 0.59
Item Threshold(s): -2.09 Weighted MNSQ 0.92
Item Delta(s): -2.09

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	829	21.49	-0.54	-39.91(.000)	-2.13	1.58
1	1.00	2961	76.75	0.59	44.79(.000)	0.29	1.49
9	0.00	68	1.76	-0.19	-12.03(.000)	-3.10	1.32

=====

Item 4

item:4 (lc9q04)
Cases for this item 3858 Discrimination 0.59
Item Threshold(s): -2.14 Weighted MNSQ 0.91
Item Delta(s): -2.14

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	795	20.61	-0.55	-40.42(.000)	-2.16	1.53
1	1.00	2984	77.35	0.59	45.65(.000)	0.29	1.50
9	0.00	79	2.05	-0.19	-12.19(.000)	-3.07	1.55

=====

Item 5

item:5 (lc9q05)
Cases for this item 3856 Discrimination 0.59
Item Threshold(s): -1.56 Weighted MNSQ 1.02
Item Delta(s): -1.57

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1002	25.99	-0.52	-37.67(.000)	-1.83	1.55
1	1.00	2707	70.20	0.59	45.35(.000)	0.40	1.50
9	0.00	147	3.81	-0.22	-14.06(.000)	-2.35	1.48

=====

Item 6

```

-----
item:6 (lc9q06)
Cases for this item  3854  Discrimination  0.61
Item Threshold(s):  -1.34  Weighted MNSQ  0.99
Item Delta(s):      -1.35

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1147	29.76	-0.55	-40.60(.000)	-1.73	1.53
1	1.00	2590	67.20	0.61	47.86(.000)	0.47	1.47
9	0.00	117	3.04	-0.21	-13.49(.000)	-2.67	1.51

Item 7

```

-----
item:7 (lc9q07)
Cases for this item  3852  Discrimination  0.63
Item Threshold(s):  -1.09  Weighted MNSQ  0.96
Item Delta(s):      -1.09

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1328	34.48	-0.58	-44.18(.000)	-1.66	1.54
1	1.00	2443	63.42	0.63	50.29(.000)	0.55	1.43
9	0.00	81	2.10	-0.19	-12.16(.000)	-2.89	1.53

Item 8

```

-----
item:8 (lc9q08)
Cases for this item  3849  Discrimination  0.62
Item Threshold(s):  -0.87  Weighted MNSQ  0.99
Item Delta(s):      -0.87

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1406	36.53	-0.55	-40.93(.000)	-1.52	1.56
1	1.00	2318	60.22	0.62	48.63(.000)	0.59	1.44
9	0.00	125	3.25	-0.21	-13.15(.000)	-2.43	1.47

Item 9

```

-----
item:9 (lc9q09)
Cases for this item  3845  Discrimination  0.62
Item Threshold(s):  -0.03  Weighted MNSQ  1.00
Item Delta(s):      -0.03

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1841	47.88	-0.50	-35.92(.000)	-1.15	1.56
1	1.00	1804	46.92	0.62	48.98(.000)	0.85	1.39
9	0.00	200	5.20	-0.27	-17.07(.000)	-2.40	1.35

Item 10

```

-----
item:10 (lc9q10)
Cases for this item  3841  Discrimination  0.54
Item Threshold(s):   0.08  Weighted MNSQ  1.14
Item Delta(s):      0.08

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1995	51.94	-0.47	-32.89(.000)	-1.04	1.63
1	1.00	1736	45.20	0.54	39.69(.000)	0.76	1.47
9	0.00	110	2.86	-0.20	-12.97(.000)	-2.64	1.48

Item 11

```

-----
item:11 (lc9q11)
Cases for this item  3841  Discrimination  0.67
Item Threshold(s):  -0.15  Weighted MNSQ  0.90
Item Delta(s):      -0.15

```

Label	Score	Count	% of tot	Pt Bis	t	(p)	PV1Avg:1	PV1	SD:1
0	0.00	1862	48.48	-0.60	-46.66	(.000)	-1.32	1.51	
1	1.00	1877	48.87	0.67	55.24	(.000)	0.89	1.34	
9	0.00	102	2.66	-0.20	-12.59	(.000)	-2.59	1.35	

Item 12

```

-----
item:12 (lc9q12)
Cases for this item  3833  Discrimination  0.55
Item Threshold(s):   0.23  Weighted MNSQ  1.11
Item Delta(s):      0.23

```

Label	Score	Count	% of tot	Pt Bis	t	(p)	PV1Avg:1	PV1	SD:1
0	0.00	2018	52.65	-0.44	-30.47	(.000)	-0.98	1.61	
1	1.00	1639	42.76	0.55	40.43	(.000)	0.83	1.47	
9	0.00	176	4.59	-0.24	-15.23	(.000)	-2.36	1.46	

Item 13

```

-----
item:13 (lc9q13)
Cases for this item  3826  Discrimination  0.53
Item Threshold(s):   0.72  Weighted MNSQ  1.08
Item Delta(s):      0.72

```

Label	Score	Count	% of tot	Pt Bis	t	(p)	PV1Avg:1	PV1	SD:1
0	0.00	2327	60.82	-0.43	-29.43	(.000)	-0.85	1.60	
1	1.00	1348	35.23	0.53	38.83	(.000)	0.99	1.48	
9	0.00	151	3.95	-0.23	-14.43	(.000)	-2.39	1.44	

Item 14

```

-----
item:14 (lc9q14)
Cases for this item  3823  Discrimination  0.53
Item Threshold(s):   1.46  Weighted MNSQ  0.98
Item Delta(s):      1.46

```

Label	Score	Count	% of tot	Pt Bis	t	(p)	PV1Avg:1	PV1	SD:1
0	0.00	2529	66.15	-0.31	-20.18	(.000)	-0.63	1.59	
1	1.00	946	24.74	0.53	38.64	(.000)	1.35	1.42	
9	0.00	348	9.10	-0.28	-18.36	(.000)	-1.91	1.39	

Item 15

```

-----
item:15 (lc9q15)
Cases for this item  3815  Discrimination  0.40
Item Threshold(s):   2.10  Weighted MNSQ  1.12
Item Delta(s):      2.10

```

Label	Score	Count	% of tot	Pt Bis	t	(p)	PV1Avg:1	PV1	SD:1
0	0.00	2530	66.32	-0.12	-7.34	(.000)	-0.40	1.71	
1	1.00	658	17.25	0.40	26.86	(.000)	1.30	1.52	
9	0.00	627	16.44	-0.26	-16.37	(.000)	-1.30	1.52	

Item 16

```

-----
item:16 (lc9q16)
Cases for this item  3811  Discrimination  0.45
Item Threshold(s):   2.80  Weighted MNSQ  0.92
Item Delta(s):      2.81

```

Label	Score	Count	% of tot	Pt Bis	t	(p)	PV1Avg:1	PV1	SD:1
0	0.00	3073	80.64	-0.19	-11.85	(.000)	-0.41	1.66	
1	1.00	418	10.97	0.45	30.93	(.000)	2.02	1.23	
9	0.00	320	8.40	-0.24	-15.00	(.000)	-1.72	1.43	

Item 17

```

-----
item:17 (lc9q17)
Cases for this item  3807  Discrimination  0.57
Item Threshold(s):  -2.23  Weighted MNSQ  0.90
Item Delta(s):     -2.22

```

Label	Score	Count	% of tot	Pt Bis	t	(p)	PV1Avg:1	PV1	SD:1
0	0.00	692	18.18	-0.50	-35.77	(.000)	-2.15	1.65	
1	1.00	3002	78.85	0.57	42.68	(.000)	0.28	1.48	
9	0.00	113	2.97	-0.23	-14.53	(.000)	-2.71	1.29	

Item 18

```

-----
item:18 (lc9q18)
Cases for this item  3784  Discrimination  0.60
Item Threshold(s):  -0.73  Weighted MNSQ  1.01
Item Delta(s):     -0.72

```

Label	Score	Count	% of tot	Pt Bis	t	(p)	PV1Avg:1	PV1	SD:1
0	0.00	1358	35.89	-0.50	-35.12	(.000)	-1.36	1.60	
1	1.00	2220	58.67	0.60	46.60	(.000)	0.64	1.42	
9	0.00	206	5.44	-0.26	-16.72	(.000)	-2.19	1.23	

Item 19

```

-----
item:19 (lc9q19)
Cases for this item  3762  Discrimination  0.61
Item Threshold(s):  -1.12  Weighted MNSQ  0.98
Item Delta(s):     -1.12

```

Label	Score	Count	% of tot	Pt Bis	t	(p)	PV1Avg:1	PV1	SD:1
0	0.00	947	25.17	-0.46	-31.84	(.000)	-1.55	1.63	
1	1.00	2440	64.86	0.61	47.15	(.000)	0.55	1.43	
9	0.00	375	9.97	-0.30	-19.55	(.000)	-1.84	1.30	

Item 20

```

-----
item:20 (lc9q20)
Cases for this item  3743  Discrimination  0.64
Item Threshold(s):  -0.25  Weighted MNSQ  0.93
Item Delta(s):     -0.25

```

Label	Score	Count	% of tot	Pt Bis	t	(p)	PV1Avg:1	PV1	SD:1
0	0.00	1433	38.28	-0.51	-35.99	(.000)	-1.26	1.56	
1	1.00	1926	51.46	0.64	51.62	(.000)	0.84	1.33	
9	0.00	384	10.26	-0.25	-15.79	(.000)	-1.53	1.47	

Item 21

```

-----
item:21 (lc9q21)
Cases for this item  3735  Discrimination  0.64
Item Threshold(s):  0.04  Weighted MNSQ  0.94
Item Delta(s):      0.04

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1617	43.29	-0.50	-35.23(.000)	-1.15	1.51
1	1.00	1749	46.83	0.64	50.51(.000)	0.94	1.35
9	0.00	369	9.88	-0.24	-14.84(.000)	-1.47	1.49

Item 22

```

-----
item:22 (lc9q22)
Cases for this item  3709  Discrimination  0.65
Item Threshold(s):  0.37  Weighted MNSQ  0.90
Item Delta(s):      0.37

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1830	49.34	-0.51	-36.13(.000)	-1.02	1.50
1	1.00	1546	41.68	0.65	51.62(.000)	1.08	1.31
9	0.00	333	8.98	-0.22	-13.91(.000)	-1.45	1.42

Item 23

```

-----
item:23 (lc9q23)
Cases for this item  3688  Discrimination  0.62
Item Threshold(s):  0.13  Weighted MNSQ  0.96
Item Delta(s):      0.13

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1733	46.99	-0.51	-35.65(.000)	-1.04	1.51
1	1.00	1687	45.74	0.62	48.04(.000)	0.94	1.38
9	0.00	268	7.27	-0.22	-13.53(.000)	-1.51	1.44

Item 24

```

-----
item:24 (lc9q24)
Cases for this item  3672  Discrimination  0.58
Item Threshold(s):  0.64  Weighted MNSQ  1.00
Item Delta(s):      0.64

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1922	52.34	-0.44	-29.38(.000)	-0.85	1.57
1	1.00	1381	37.61	0.58	43.17(.000)	1.08	1.36
9	0.00	369	10.05	-0.21	-13.03(.000)	-1.23	1.46

Item 25

```

-----
item:25 (lc9q25)
Cases for this item  3636  Discrimination  0.55
Item Threshold(s):  0.54  Weighted MNSQ  1.06
Item Delta(s):      0.54

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1747	48.05	-0.37	-24.24(.000)	-0.78	1.63
1	1.00	1438	39.55	0.55	39.92(.000)	0.99	1.38
9	0.00	451	12.40	-0.25	-15.79(.000)	-1.26	1.34

Item 26

```

-----
item:26 (lc9q26)
Cases for this item  3609  Discrimination  0.56
Item Threshold(s):  0.76  Weighted MNSQ  1.02
Item Delta(s):      0.75

```

Label	Score	Count	% of tot	Pt Bis	t	(p)	PV1Avg:1	PV1	SD:1
0	0.00	2066	57.25	-0.42	-27.48	(.000)	-0.71	1.52	
1	1.00	1311	36.33	0.56	40.56	(.000)	1.11	1.41	
9	0.00	232	6.43	-0.26	-16.06	(.000)	-1.78	1.31	

Item 27

```

-----
item:27 (lc9q27)
Cases for this item  3598  Discrimination  0.48
Item Threshold(s):  1.30  Weighted MNSQ  1.09
Item Delta(s):      1.31

```

Label	Score	Count	% of tot	Pt Bis	t	(p)	PV1Avg:1	PV1	SD:1
0	0.00	2282	63.42	-0.32	-20.18	(.000)	-0.52	1.62	
1	1.00	1012	28.13	0.48	33.15	(.000)	1.16	1.45	
9	0.00	304	8.45	-0.23	-14.16	(.000)	-1.31	1.19	

Item 28

```

-----
item:28 (lc9q28)
Cases for this item  3574  Discrimination  0.53
Item Threshold(s):  1.30  Weighted MNSQ  1.01
Item Delta(s):      1.31

```

Label	Score	Count	% of tot	Pt Bis	t	(p)	PV1Avg:1	PV1	SD:1
0	0.00	2425	67.85	-0.45	-29.88	(.000)	-0.61	1.56	
1	1.00	1011	28.29	0.53	36.98	(.000)	1.29	1.41	
9	0.00	138	3.86	-0.15	-8.82	(.000)	-1.33	1.42	

Item 29

```

-----
item:29 (lc9q29)
Cases for this item  3536  Discrimination  0.27
Item Threshold(s):  2.84  Weighted MNSQ  1.18
Item Delta(s):      2.85

```

Label	Score	Count	% of tot	Pt Bis	t	(p)	PV1Avg:1	PV1	SD:1
0	0.00	2610	73.81	-0.04	-2.21	(.027)	-0.13	1.72	
1	1.00	402	11.37	0.27	16.68	(.000)	1.19	1.65	
9	0.00	524	14.82	-0.20	-11.85	(.000)	-0.86	1.39	

Item 30

```

-----
item:30 (lc9q30)
Cases for this item  3373  Discrimination  0.30
Item Threshold(s):  3.73  Weighted MNSQ  1.03
Item Delta(s):      3.73

```

Label	Score	Count	% of tot	Pt Bis	t	(p)	PV1Avg:1	PV1	SD:1
0	0.00	3058	90.66	-0.20	-11.88	(.000)	-0.16	1.69	
1	1.00	207	6.14	0.30	18.49	(.000)	2.05	1.40	
9	0.00	108	3.20	-0.08	-4.80	(.000)	-0.74	1.30	

The following traditional statistics are only meaningful for complete designs and when the amount of missing data is minimal.
In this analysis 2.65% of the data are missing.

The following results are scaled to assume that a single response was provided for each item.

N	3859
Mean	14.20
Standard Deviation	7.49
Variance	56.12
Skewness	-0.06
Kurtosis	-0.91
Standard error of mean	0.12
Standard error of measurement	2.13
Coefficient Alpha	0.92

=====

Appendix B.9 Year 3 G&P

=====

NAPLAN 2015, Calibration, Grade 3, GP
GENERALISED ITEM ANALYSIS

=====

Item 1

item:1 (lc3q26)
Cases for this item 3778 Discrimination 0.45
Item Threshold(s): -1.91 Weighted MNSQ 0.89
Item Delta(s): -1.92

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.04	-2.47 (.014)	-0.88	1.02
9	0.00	29	0.77	-0.09	-5.82 (.000)	-0.77	1.31
A	0.00	184	4.87	-0.30	-19.63 (.000)	-0.66	0.87
B	1.00	3375	89.33	0.45	31.21 (.000)	0.81	1.05
C	0.00	159	4.21	-0.28	-17.71 (.000)	-0.64	1.09
D	0.00	29	0.77	-0.11	-6.76 (.000)	-0.78	1.02

=====

Item 2

item:2 (lc3q27)
Cases for this item 3778 Discrimination 0.39
Item Threshold(s): -2.28 Weighted MNSQ 0.91
Item Delta(s): -2.28

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.04	-2.54 (.011)	-2.07	0.00
9	0.00	23	0.61	-0.12	-7.67 (.000)	-1.07	0.99
A	0.00	172	4.55	-0.23	-14.40 (.000)	-0.43	1.08
B	0.00	50	1.32	-0.20	-12.33 (.000)	-1.07	0.87
C	1.00	3478	92.06	0.39	26.30 (.000)	0.77	1.07
D	0.00	54	1.43	-0.22	-13.83 (.000)	-1.14	0.71

=====

Item 3

item:3 (lc3q28)
Cases for this item 3771 Discrimination 0.48
Item Threshold(s): -1.78 Weighted MNSQ 0.88
Item Delta(s): -1.78

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.06	-3.96 (.000)	-1.83	0.33
9	0.00	40	1.06	-0.14	-8.48 (.000)	-0.65	1.13
A	1.00	3326	88.20	0.48	33.65 (.000)	0.83	1.05
B	0.00	130	3.45	-0.27	-17.37 (.000)	-0.74	0.80
C	0.00	106	2.81	-0.21	-13.35 (.000)	-0.59	0.88
D	0.00	167	4.43	-0.27	-16.95 (.000)	-0.66	0.92

=====

Item 4

item:4 (lc3q29)
Cases for this item 3770 Discrimination 0.51
Item Threshold(s): -1.29 Weighted MNSQ 0.89
Item Delta(s): -1.29

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.08	-0.07	-4.23 (.000)	-1.40	0.79
9	0.00	51	1.35	-0.12	-7.69 (.000)	-0.55	1.10
A	0.00	189	5.01	-0.28	-17.90 (.000)	-0.55	0.85
B	1.00	3127	82.94	0.51	36.74 (.000)	0.89	1.04
C	0.00	312	8.28	-0.31	-20.05 (.000)	-0.37	0.83
D	0.00	88	2.33	-0.20	-12.55 (.000)	-0.67	0.85

=====

Item 5

```

-----
item:5 (lc3q30)
Cases for this item  3768  Discrimination  0.48
Item Threshold(s):  -1.35  Weighted MNSQ  0.90
Item Delta(s):      -1.35

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	11	0.29	0.01	0.75 (.454)	0.95	1.12
9	0.00	25	0.66	-0.11	-6.98 (.000)	-1.00	0.92
A	1.00	3154	83.70	0.48	33.77 (.000)	0.87	1.03
B	0.00	51	1.35	-0.18	-10.98 (.000)	-0.81	0.95
C	0.00	163	4.33	-0.28	-17.85 (.000)	-0.58	0.78
D	0.00	364	9.66	-0.31	-20.20 (.000)	-0.34	1.06

Item 6

```

-----
item:6 (lc3q31)
Cases for this item  3764  Discrimination  0.57
Item Threshold(s):  -0.66  Weighted MNSQ  0.87
Item Delta(s):      -0.66

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.04	-2.29 (.022)	-0.39	1.72
9	0.00	39	1.04	-0.15	-9.20 (.000)	-0.95	1.26
A	0.00	460	12.22	-0.34	-21.82 (.000)	-0.29	0.92
B	0.00	124	3.29	-0.18	-11.13 (.000)	-0.28	0.94
C	0.00	345	9.17	-0.32	-20.58 (.000)	-0.34	0.84
D	1.00	2794	74.23	0.57	42.54 (.000)	1.00	1.00

Item 7

```

-----
item:7 (lc3q32)
Cases for this item  3758  Discrimination  0.56
Item Threshold(s):  -0.53  Weighted MNSQ  0.90
Item Delta(s):      -0.53

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	25	0.67	-0.05	-2.95 (.003)	0.01	0.71
9	0.00	94	2.50	-0.17	-10.83 (.000)	-0.58	1.02
A	0.00	474	12.61	-0.33	-21.38 (.000)	-0.23	0.86
B	0.00	219	5.83	-0.25	-15.66 (.000)	-0.32	0.83
C	1.00	2716	72.27	0.56	41.30 (.000)	1.02	1.02
D	0.00	230	6.12	-0.22	-13.55 (.000)	-0.21	0.83

Item 8

```

-----
item:8 (lc3q33)
Cases for this item  3756  Discrimination  0.54
Item Threshold(s):  -0.28  Weighted MNSQ  0.93
Item Delta(s):      -0.28

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.16	-0.05	-2.92 (.004)	0.07	1.51
9	0.00	72	1.92	-0.14	-8.84 (.000)	-0.44	1.05
A	0.00	284	7.56	-0.31	-20.28 (.000)	-0.41	0.90
B	1.00	2555	68.02	0.54	39.53 (.000)	1.04	1.02
C	0.00	427	11.37	-0.19	-12.10 (.000)	0.07	0.98
D	0.00	412	10.97	-0.28	-17.71 (.000)	-0.14	0.83

Item 9

```

-----
item:9 (lc3q34)
Cases for this item  3753  Discrimination  0.56
Item Threshold(s):  -0.38  Weighted MNSQ  0.90
Item Delta(s):      -0.38

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.05	-2.97(.003)	-0.81	1.12
9	0.00	59	1.57	-0.13	-8.29(.000)	-0.50	1.06
A	0.00	295	7.86	-0.25	-15.80(.000)	-0.21	0.97
B	1.00	2619	69.78	0.56	41.78(.000)	1.04	1.02
C	0.00	328	8.74	-0.29	-18.35(.000)	-0.31	0.89
D	0.00	450	11.99	-0.29	-18.24(.000)	-0.10	0.79

Item 10

```

-----
item:10 (lc3q35)
Cases for this item  3749  Discrimination  0.54
Item Threshold(s):  -0.13  Weighted MNSQ  0.93
Item Delta(s):      -0.13

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	41	1.09	-0.12	-7.23(.000)	-0.71	1.13
A	0.00	735	19.61	-0.23	-14.36(.000)	0.18	0.92
B	0.00	252	6.72	-0.36	-23.34(.000)	-0.63	0.83
C	1.00	2447	65.27	0.54	39.52(.000)	1.07	1.00
D	0.00	274	7.31	-0.25	-16.09(.000)	-0.28	0.84

Item 11

```

-----
item:11 (lc3q36)
Cases for this item  3735  Discrimination  0.45
Item Threshold(s):   0.25  Weighted MNSQ  1.04
Item Delta(s):       0.25

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.13	-0.04	-2.15(.032)	0.00	2.43
9	0.00	39	1.04	-0.09	-5.26(.000)	-0.31	1.23
A	1.00	2176	58.26	0.45	30.84(.000)	1.06	1.05
B	0.00	356	9.53	-0.30	-19.14(.000)	-0.26	0.83
C	0.00	338	9.05	-0.30	-19.55(.000)	-0.32	0.88
D	0.00	821	21.98	-0.09	-5.48(.000)	0.48	0.95

Item 12

```

-----
item:12 (lc3q37)
Cases for this item  3726  Discrimination  0.46
Item Threshold(s):  -0.63  Weighted MNSQ  0.99
Item Delta(s):      -0.62

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.05	-3.07(.002)	-1.60	0.00
9	0.00	54	1.45	-0.10	-6.43(.000)	-0.38	1.10
A	0.00	424	11.38	-0.18	-11.30(.000)	0.18	1.01
B	0.00	300	8.05	-0.29	-18.48(.000)	-0.29	0.90
C	0.00	193	5.18	-0.24	-14.94(.000)	-0.31	0.91
D	1.00	2754	73.91	0.46	31.76(.000)	0.94	1.05

Item 13

```

-----
item:13 (lc3q38)
Cases for this item  3719  Discrimination  0.52
Item Threshold(s):  -0.11  Weighted MNSQ  0.95
Item Delta(s):      -0.11

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.08	-0.04	-2.63(.009)	-0.53	1.24
9	0.00	57	1.53	-0.11	-6.75(.000)	-0.42	1.04
A	1.00	2421	65.10	0.52	36.63(.000)	1.05	1.02
B	0.00	284	7.64	-0.28	-17.90(.000)	-0.30	0.76
C	0.00	245	6.59	-0.30	-18.99(.000)	-0.43	0.83
D	0.00	709	19.06	-0.21	-13.04(.000)	0.24	0.99

Item 14

```

-----
item:14 (lc3q39)
Cases for this item  3713  Discrimination  0.52
Item Threshold(s):   0.44  Weighted MNSQ  0.97
Item Delta(s):      0.44

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.08	-0.06	-3.66(.000)	-1.38	1.16
9	0.00	48	1.29	-0.12	-7.29(.000)	-0.61	1.25
A	0.00	721	19.42	-0.30	-19.23(.000)	0.04	0.96
B	0.00	410	11.04	-0.16	-9.93(.000)	0.22	0.96
C	0.00	505	13.60	-0.22	-13.50(.000)	0.10	0.90
D	1.00	2026	54.57	0.52	37.06(.000)	1.16	1.01

Item 15

```

-----
item:15 (lc3q40)
Cases for this item  3700  Discrimination  0.52
Item Threshold(s):   0.20  Weighted MNSQ  0.97
Item Delta(s):      0.20

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.04	-2.72(.007)	-0.86	1.04
9	0.00	50	1.35	-0.11	-6.73(.000)	-0.50	1.15
A	0.00	395	10.68	-0.21	-13.19(.000)	0.07	0.94
B	0.00	531	14.35	-0.27	-17.16(.000)	0.01	0.92
C	0.00	528	14.27	-0.23	-14.11(.000)	0.09	0.91
D	1.00	2194	59.30	0.52	36.63(.000)	1.11	1.03

Item 16

```

-----
item:16 (lc3q41)
Cases for this item  3694  Discrimination  0.50
Item Threshold(s):   0.60  Weighted MNSQ  0.98
Item Delta(s):      0.60

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.11	-0.06	-3.37(.001)	-0.80	0.72
9	0.00	86	2.33	-0.13	-7.77(.000)	-0.26	1.13
A	0.00	673	18.22	-0.18	-11.02(.000)	0.28	0.90
B	0.00	322	8.72	-0.23	-14.05(.000)	-0.05	0.93
C	0.00	708	19.17	-0.25	-15.41(.000)	0.15	0.91
D	1.00	1901	51.46	0.50	35.13(.000)	1.18	1.05

Item 17

```

-----
item:17 (lc3q42)
Cases for this item  3684  Discrimination  0.37
Item Threshold(s):  0.69  Weighted MNSQ  1.13
Item Delta(s):      0.69

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.08	-0.04	-2.34(.020)	-0.27	1.39
9	0.00	70	1.90	-0.10	-6.40(.000)	-0.13	1.20
A	0.00	833	22.61	-0.17	-10.49(.000)	0.36	0.99
B	1.00	1836	49.84	0.37	23.96(.000)	1.08	1.09
C	0.00	472	12.81	-0.12	-7.49(.000)	0.32	1.00
D	0.00	470	12.76	-0.17	-10.33(.000)	0.17	1.01

Item 18

```

-----
item:18 (lc3q43)
Cases for this item  3679  Discrimination  0.32
Item Threshold(s):  -0.07  Weighted MNSQ  1.17
Item Delta(s):      -0.07

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.04	-2.18(.030)	-0.14	2.07
9	0.00	37	1.01	-0.09	-5.65(.000)	-0.38	1.01
A	1.00	2372	64.47	0.32	20.48(.000)	0.93	1.09
B	0.00	927	25.20	-0.13	-8.11(.000)	0.43	1.01
C	0.00	224	6.09	-0.21	-13.24(.000)	-0.15	0.93
D	0.00	117	3.18	-0.20	-12.14(.000)	-0.41	0.87

Item 19

```

-----
item:19 (lc3q44)
Cases for this item  3662  Discrimination  0.45
Item Threshold(s):  0.23  Weighted MNSQ  1.04
Item Delta(s):      0.24

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.11	-0.05	-3.29(.001)	-0.65	1.31
9	0.00	34	0.93	-0.07	-4.33(.000)	-0.26	0.99
A	0.00	221	6.03	-0.19	-11.57(.000)	0.01	1.03
B	1.00	2153	58.79	0.45	30.19(.000)	1.06	1.07
C	0.00	161	4.40	-0.25	-15.63(.000)	-0.46	0.96
D	0.00	1089	29.74	-0.25	-15.75(.000)	0.28	0.91

Item 20

```

-----
item:20 (lc3q45)
Cases for this item  3652  Discrimination  0.37
Item Threshold(s):  0.67  Weighted MNSQ  1.12
Item Delta(s):      0.67

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.04	-2.46(.014)	-0.89	1.01
9	0.00	83	2.27	-0.08	-5.08(.000)	-0.01	1.04
A	0.00	1064	29.13	-0.13	-7.66(.000)	0.48	1.00
B	0.00	287	7.86	-0.26	-16.34(.000)	-0.17	0.96
C	1.00	1835	50.25	0.37	23.82(.000)	1.06	1.09
D	0.00	381	10.43	-0.14	-8.50(.000)	0.27	0.98

Item 21

```

-----
item:21 (1c3q46)
Cases for this item 3630 Discrimination 0.39
Item Threshold(s): 0.90 Weighted MNSQ 1.08
Item Delta(s): 0.90

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.05	-3.09(.002)	-1.60	0.00
9	0.00	58	1.60	-0.12	-7.17(.000)	-0.38	1.04
A	0.00	890	24.52	-0.22	-13.73(.000)	0.28	0.90
B	0.00	178	4.90	-0.27	-17.22(.000)	-0.46	0.82
C	1.00	1666	45.90	0.39	25.72(.000)	1.14	1.12
D	0.00	837	23.06	-0.06	-3.59(.000)	0.56	0.95

Item 22

```

-----
item:22 (1c3q47)
Cases for this item 3621 Discrimination 0.38
Item Threshold(s): 0.73 Weighted MNSQ 1.11
Item Delta(s): 0.73

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.11	-0.04	-2.34(.019)	-0.23	1.09
9	0.00	50	1.38	-0.10	-5.88(.000)	-0.27	1.08
A	1.00	1786	49.32	0.38	24.71(.000)	1.10	1.09
B	0.00	434	11.99	-0.22	-13.48(.000)	0.10	0.99
C	0.00	751	20.74	-0.11	-6.50(.000)	0.45	0.97
D	0.00	596	16.46	-0.17	-10.32(.000)	0.32	0.97

Item 23

```

-----
item:23 (1c3q48)
Cases for this item 3606 Discrimination 0.29
Item Threshold(s): 1.41 Weighted MNSQ 1.16
Item Delta(s): 1.41

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.05	-3.10(.002)	-1.60	0.00
9	0.00	71	1.97	-0.09	-5.23(.000)	0.07	1.06
A	0.00	1146	31.78	-0.12	-7.08(.000)	0.53	1.00
B	1.00	1303	36.13	0.29	18.12(.000)	1.10	1.18
C	0.00	449	12.45	-0.19	-11.63(.000)	0.20	1.06
D	0.00	636	17.64	-0.02	-1.36(.175)	0.61	0.93

Item 24

```

-----
item:24 (1c3q49)
Cases for this item 3591 Discrimination 0.49
Item Threshold(s): 0.94 Weighted MNSQ 0.98
Item Delta(s): 0.94

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	9	0.25	-0.04	-2.63(.008)	-0.04	0.93
9	0.00	81	2.26	-0.11	-6.93(.000)	-0.17	0.93
A	0.00	627	17.46	-0.23	-14.02(.000)	0.21	0.89
B	0.00	931	25.93	-0.20	-12.00(.000)	0.35	1.00
C	0.00	318	8.86	-0.19	-11.33(.000)	0.13	0.89
D	1.00	1625	45.25	0.49	33.82(.000)	1.26	1.04

Item 25

```

-----
item:25 (1c3q50)
Cases for this item  3562  Discrimination  0.37
Item Threshold(s):  2.27  Weighted MNSQ  1.01
Item Delta(s):      2.27

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	16	0.45	-0.04	-2.32 (.020)	0.20	0.83
9	0.00	90	2.53	-0.05	-2.90 (.004)	0.33	0.99
A	0.00	1079	30.29	-0.08	-5.05 (.000)	0.55	0.98
B	0.00	460	12.91	-0.11	-6.69 (.000)	0.43	1.11
C	0.00	1131	31.75	-0.14	-8.59 (.000)	0.49	0.96
D	1.00	786	22.07	0.37	23.64 (.000)	1.47	1.18

Item 26

```

-----
item:26 (1c3q51)
Cases for this item  3510  Discrimination  0.30
Item Threshold(s):  2.08  Weighted MNSQ  1.08
Item Delta(s):      2.08

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.09	-0.06	-3.40 (.001)	-1.23	0.38
9	0.00	29	0.83	-0.02	-0.90 (.366)	0.45	1.02
A	0.00	1390	39.60	-0.09	-5.28 (.000)	0.59	0.97
B	0.00	528	15.04	-0.21	-12.54 (.000)	0.20	1.01
C	1.00	879	25.04	0.30	18.70 (.000)	1.31	1.26
D	0.00	681	19.40	-0.03	-1.48 (.138)	0.64	0.96

The following traditional statistics are only meaningful for complete designs and when the amount of missing data is minimal.
In this analysis 2.14% of the data are missing.

The following results are scaled to assume that a single response was provided for each item.

```

N 3778
Mean 15.98
Standard Deviation 5.27
Variance 27.78
Skewness -0.31
Kurtosis -0.51
Standard error of mean 0.09
Standard error of measurement 2.25
Coefficient Alpha 0.82

```

Appendix B.10 Year 5 G&P

=====

NAPLAN 2015, Calibration, Grade 5, GP
GENERALISED ITEM ANALYSIS

=====

Item 1

item:1 (lc5q26)
Cases for this item 3974 Discrimination 0.37
Item Threshold(s): -2.77 Weighted MNSQ 0.90
Item Delta(s): -2.78

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.04	-2.43 (.015)	-0.88	0.32
9	0.00	8	0.20	-0.09	-5.87 (.000)	-1.25	0.85
A	1.00	3779	95.09	0.37	25.38 (.000)	0.76	1.03
B	0.00	79	1.99	-0.26	-17.09 (.000)	-1.02	0.68
C	0.00	46	1.16	-0.16	-10.44 (.000)	-0.81	0.93
D	0.00	60	1.51	-0.18	-11.36 (.000)	-0.53	1.04

=====

Item 2

item:2 (lc5q27)
Cases for this item 3974 Discrimination 0.47
Item Threshold(s): -1.71 Weighted MNSQ 0.88
Item Delta(s): -1.71

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.01	-0.61 (.541)	-0.18	0.00
9	0.00	15	0.38	-0.11	-6.68 (.000)	-0.72	0.92
A	0.00	116	2.92	-0.23	-14.83 (.000)	-0.50	0.89
B	0.00	206	5.18	-0.29	-19.33 (.000)	-0.55	0.83
C	0.00	138	3.47	-0.24	-15.60 (.000)	-0.55	0.94
D	1.00	3498	88.02	0.47	34.00 (.000)	0.85	0.99

=====

Item 3

item:3 (lc5q28)
Cases for this item 3973 Discrimination 0.44
Item Threshold(s): -1.22 Weighted MNSQ 0.96
Item Delta(s): -1.22

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.08	-0.02	-1.41 (.158)	-0.18	1.41
9	0.00	23	0.58	-0.12	-7.58 (.000)	-0.78	0.82
A	0.00	140	3.52	-0.23	-15.23 (.000)	-0.45	0.90
B	1.00	3286	82.71	0.44	31.06 (.000)	0.87	1.01
C	0.00	346	8.71	-0.23	-15.02 (.000)	-0.02	0.94
D	0.00	175	4.40	-0.24	-15.42 (.000)	-0.33	0.89

=====

Item 4

item:4 (lc5q29)
Cases for this item 3969 Discrimination 0.49
Item Threshold(s): -1.24 Weighted MNSQ 0.91
Item Delta(s): -1.24

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.04	-2.23 (.026)	-1.58	0.00
9	0.00	40	1.01	-0.12	-7.43 (.000)	-0.39	1.12
A	1.00	3295	83.02	0.49	35.31 (.000)	0.89	0.98
B	0.00	222	5.59	-0.32	-21.07 (.000)	-0.56	0.93
C	0.00	107	2.70	-0.20	-12.63 (.000)	-0.39	0.78
D	0.00	304	7.66	-0.25	-16.29 (.000)	-0.14	0.87

=====

Item 5

```

-----
item:5 (lc5q30)
Cases for this item  3964  Discrimination  0.48
Item Threshold(s):  -1.23  Weighted MNSQ  0.91
Item Delta(s):      -1.24

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.04	-2.24 (.025)	-1.58	0.00
9	0.00	20	0.50	-0.11	-6.72 (.000)	-0.81	0.73
A	0.00	450	11.35	-0.30	-19.86 (.000)	-0.11	0.87
B	0.00	96	2.42	-0.28	-18.04 (.000)	-1.01	0.74
C	1.00	3291	83.02	0.48	34.72 (.000)	0.89	0.98
D	0.00	106	2.67	-0.22	-14.17 (.000)	-0.54	0.88

Item 6

```

-----
item:6 (lc5q31)
Cases for this item  3963  Discrimination  0.42
Item Threshold(s):  -1.36  Weighted MNSQ  0.97
Item Delta(s):      -1.36

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.04	-2.24 (.025)	-1.58	0.00
9	0.00	22	0.56	-0.09	-5.99 (.000)	-0.67	0.99
A	0.00	119	3.00	-0.17	-11.01 (.000)	-0.21	0.93
B	0.00	62	1.56	-0.17	-11.14 (.000)	-0.64	0.98
C	1.00	3349	84.51	0.42	28.97 (.000)	0.86	1.01
D	0.00	410	10.35	-0.30	-20.10 (.000)	-0.18	0.93

Item 7

```

-----
item:7 (lc5q32)
Cases for this item  3960  Discrimination  0.43
Item Threshold(s):  -0.62  Weighted MNSQ  1.00
Item Delta(s):      -0.61

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	23	0.58	-0.13	-8.11 (.000)	-0.93	0.64
A	1.00	2943	74.32	0.43	30.36 (.000)	0.93	0.98
B	0.00	139	3.51	-0.27	-17.63 (.000)	-0.65	0.79
C	0.00	147	3.71	-0.30	-19.92 (.000)	-0.74	0.75
D	0.00	708	17.88	-0.19	-12.28 (.000)	0.29	0.95

Item 8

```

-----
item:8 (lc5q33)
Cases for this item  3958  Discrimination  0.49
Item Threshold(s):  -0.74  Weighted MNSQ  0.95
Item Delta(s):      -0.75

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	25	0.63	-0.10	-6.12 (.000)	-0.41	1.14
A	0.00	222	5.61	-0.20	-13.02 (.000)	-0.09	0.91
B	0.00	307	7.76	-0.27	-17.64 (.000)	-0.20	0.90
C	0.00	381	9.63	-0.28	-18.22 (.000)	-0.08	0.90
D	1.00	3023	76.38	0.49	35.46 (.000)	0.94	0.99

Item 9

```

-----
item:9 (lc5q34)
Cases for this item  3956  Discrimination  0.57
Item Threshold(s):  -0.77  Weighted MNSQ  0.86
Item Delta(s):      -0.77

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1	SD:1
9	0.00	36	0.91	-0.10	-6.35(.000)	-0.44	1.04	
A	0.00	307	7.76	-0.26	-16.71(.000)	-0.13	0.83	
B	0.00	146	3.69	-0.27	-17.88(.000)	-0.62	0.83	
C	0.00	429	10.84	-0.36	-24.33(.000)	-0.29	0.79	
D	1.00	3038	76.79	0.57	44.00(.000)	0.99	0.95	

Item 10

```

-----
item:10 (lc5q35)
Cases for this item  3954  Discrimination  0.51
Item Threshold(s):  -0.29  Weighted MNSQ  0.95
Item Delta(s):      -0.29

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1	SD:1
8	0.00	1	0.03	-0.04	-2.25(.025)	-1.58	0.00	
9	0.00	48	1.21	-0.08	-5.04(.000)	-0.15	1.01	
A	0.00	363	9.18	-0.34	-22.86(.000)	-0.37	0.82	
B	0.00	375	9.48	-0.23	-14.74(.000)	0.05	0.96	
C	0.00	442	11.18	-0.19	-12.18(.000)	0.17	0.81	
D	1.00	2725	68.92	0.51	37.02(.000)	1.02	0.97	

Item 11

```

-----
item:11 (lc5q36)
Cases for this item  3953  Discrimination  0.44
Item Threshold(s):   0.19  Weighted MNSQ  1.04
Item Delta(s):       0.19

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1	SD:1
8	0.00	1	0.03	-0.00	-0.02(.987)	0.68	0.00	
9	0.00	37	0.94	-0.07	-4.38(.000)	-0.06	0.98	
A	0.00	344	8.70	-0.26	-16.79(.000)	-0.08	0.88	
B	0.00	274	6.93	-0.12	-7.63(.000)	0.26	0.90	
C	1.00	2373	60.03	0.44	30.91(.000)	1.04	1.04	
D	0.00	924	23.37	-0.25	-16.28(.000)	0.23	0.85	

Item 12

```

-----
item:12 (lc5q37)
Cases for this item  3951  Discrimination  0.57
Item Threshold(s):  -0.01  Weighted MNSQ  0.91
Item Delta(s):      -0.01

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1	SD:1
8	0.00	2	0.05	-0.03	-2.11(.035)	-1.06	0.74	
9	0.00	16	0.40	-0.08	-5.11(.000)	-0.81	1.05	
A	0.00	525	13.29	-0.31	-20.15(.000)	-0.08	0.89	
B	0.00	201	5.09	-0.27	-17.37(.000)	-0.38	0.90	
C	0.00	688	17.41	-0.27	-17.83(.000)	0.13	0.79	
D	1.00	2519	63.76	0.57	43.03(.000)	1.10	0.95	

Item 13

```

-----
item:13 (lc5q38)
Cases for this item  3946  Discrimination  0.46
Item Threshold(s):  -0.23  Weighted MNSQ  1.00
Item Delta(s):      -0.23

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.04	-2.26(.024)	-1.58	0.00
9	0.00	38	0.96	-0.08	-4.97(.000)	-0.39	1.00
A	0.00	770	19.51	-0.24	-15.71(.000)	0.23	0.93
B	0.00	251	6.36	-0.29	-18.77(.000)	-0.33	0.88
C	1.00	2680	67.92	0.46	32.60(.000)	1.00	0.99
D	0.00	206	5.22	-0.18	-11.69(.000)	-0.07	0.89

Item 14

```

-----
item:14 (lc5q39)
Cases for this item  3939  Discrimination  0.45
Item Threshold(s):  -0.28  Weighted MNSQ  1.01
Item Delta(s):      -0.28

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	45	1.14	0.01	0.83(.404)	0.79	0.98
9	0.00	27	0.69	-0.10	-6.25(.000)	-0.43	0.83
A	0.00	168	4.27	-0.28	-18.13(.000)	-0.55	0.81
B	0.00	783	19.88	-0.25	-16.20(.000)	0.22	0.88
C	1.00	2714	68.90	0.45	31.59(.000)	0.98	1.01
D	0.00	202	5.13	-0.21	-13.24(.000)	-0.09	0.84

Item 15

```

-----
item:15 (lc5q40)
Cases for this item  3939  Discrimination  0.54
Item Threshold(s):  0.30  Weighted MNSQ  0.94
Item Delta(s):      0.30

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.04	-2.26(.024)	-1.58	0.00
9	0.00	31	0.79	-0.09	-5.42(.000)	-0.40	1.05
A	0.00	554	14.06	-0.29	-18.70(.000)	-0.01	0.86
B	1.00	2278	57.83	0.54	39.83(.000)	1.14	0.96
C	0.00	334	8.48	-0.25	-16.15(.000)	-0.08	0.91
D	0.00	741	18.81	-0.22	-14.46(.000)	0.25	0.86

Item 16

```

-----
item:16 (lc5q41)
Cases for this item  3938  Discrimination  0.53
Item Threshold(s):  -0.15  Weighted MNSQ  0.94
Item Delta(s):      -0.15

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.15	-0.03	-1.79(.073)	-0.05	1.00
9	0.00	34	0.86	-0.11	-7.02(.000)	-0.61	0.77
A	1.00	2619	66.51	0.53	38.77(.000)	1.05	0.99
B	0.00	526	13.36	-0.24	-15.35(.000)	0.13	0.79
C	0.00	376	9.55	-0.28	-18.51(.000)	-0.13	0.85
D	0.00	377	9.57	-0.25	-16.01(.000)	-0.04	0.89

Item 17

```

-----
item:17 (lc5q42)
Cases for this item  3930  Discrimination  0.49
Item Threshold(s):  -0.15  Weighted MNSQ  0.98
Item Delta(s):      -0.15

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.04	-2.26(.024)	-1.58	0.00
9	0.00	30	0.76	-0.11	-6.73(.000)	-0.60	0.98
A	0.00	436	11.09	-0.18	-11.17(.000)	0.19	0.94
B	0.00	232	5.90	-0.29	-18.78(.000)	-0.34	0.88
C	1.00	2615	66.54	0.49	35.15(.000)	1.03	0.98
D	0.00	616	15.67	-0.27	-17.58(.000)	0.11	0.86

Item 18

```

-----
item:18 (lc5q43)
Cases for this item  3925  Discrimination  0.39
Item Threshold(s):   0.65  Weighted MNSQ  1.10
Item Delta(s):      0.65

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.04	-2.26(.024)	-1.58	0.00
9	0.00	60	1.53	-0.08	-5.23(.000)	-0.03	1.00
A	0.00	1063	27.08	-0.19	-12.00(.000)	0.37	0.90
B	0.00	463	11.80	-0.15	-9.48(.000)	0.32	1.01
C	0.00	336	8.56	-0.18	-11.54(.000)	0.15	1.11
D	1.00	2002	51.01	0.39	26.28(.000)	1.08	1.01

Item 19

```

-----
item:19 (lc5q44)
Cases for this item  3916  Discrimination  0.48
Item Threshold(s):   0.61  Weighted MNSQ  0.99
Item Delta(s):      0.61

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.03	-2.06(.040)	-1.66	0.00
9	0.00	38	0.97	-0.07	-4.35(.000)	-0.06	0.85
A	0.00	949	24.23	-0.24	-15.67(.000)	0.29	0.87
B	1.00	2032	51.89	0.48	34.58(.000)	1.15	1.02
C	0.00	432	11.03	-0.19	-12.23(.000)	0.18	0.90
D	0.00	464	11.85	-0.22	-13.92(.000)	0.12	0.90

Item 20

```

-----
item:20 (lc5q45)
Cases for this item  3912  Discrimination  0.33
Item Threshold(s):   0.59  Weighted MNSQ  1.15
Item Delta(s):      0.60

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	32	0.82	-0.09	-5.37(.000)	-0.44	1.06
A	0.00	1137	29.06	-0.22	-14.07(.000)	0.38	0.97
B	0.00	292	7.46	-0.14	-8.76(.000)	0.29	1.05
C	0.00	413	10.56	-0.08	-4.78(.000)	0.45	0.94
D	1.00	2038	52.10	0.33	22.22(.000)	1.01	1.05

Item 21

```

-----
item:21 (lc5q46)
Cases for this item  3893  Discrimination  0.28
Item Threshold(s):  1.55  Weighted MNSQ  1.14
Item Delta(s):      1.56

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1	SD:1
9	0.00	36	0.92	-0.04	-2.49(.013)	0.23	1.12	
A	0.00	392	10.07	-0.28	-18.03(.000)	-0.05	0.85	
B	1.00	1301	33.42	0.28	18.20(.000)	1.12	1.14	
C	0.00	1228	31.54	0.03	1.91(.056)	0.73	0.96	
D	0.00	936	24.04	-0.14	-8.70(.000)	0.44	0.89	

Item 22

```

-----
item:22 (lc5q47)
Cases for this item  3889  Discrimination  0.52
Item Threshold(s):  1.01  Weighted MNSQ  0.95
Item Delta(s):      1.01

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1	SD:1
8	0.00	8	0.21	-0.04	-2.47(.014)	-0.08	0.39	
9	0.00	50	1.29	-0.06	-3.46(.001)	0.21	0.85	
A	0.00	841	21.63	-0.18	-11.60(.000)	0.34	0.91	
B	0.00	459	11.80	-0.16	-9.88(.000)	0.27	0.91	
C	0.00	823	21.16	-0.31	-20.03(.000)	0.15	0.84	
D	1.00	1708	43.92	0.52	38.10(.000)	1.30	0.97	

Item 23

```

-----
item:23 (lc5q48)
Cases for this item  3884  Discrimination  0.41
Item Threshold(s):  1.73  Weighted MNSQ  0.99
Item Delta(s):      1.74

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1	SD:1
9	0.00	27	0.70	-0.05	-2.99(.003)	0.02	0.89	
A	1.00	1175	30.25	0.41	27.89(.000)	1.35	1.09	
B	0.00	1241	31.95	-0.29	-18.91(.000)	0.28	0.87	
C	0.00	362	9.32	-0.17	-10.51(.000)	0.26	1.00	
D	0.00	1079	27.78	0.00	0.02(.986)	0.68	0.90	

Item 24

```

-----
item:24 (lc5q49)
Cases for this item  3874  Discrimination  0.37
Item Threshold(s):  1.49  Weighted MNSQ  1.06
Item Delta(s):      1.49

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1	SD:1
8	0.00	105	2.71	0.05	2.82(.005)	0.86	0.85	
9	0.00	56	1.45	-0.02	-1.49(.136)	0.53	0.86	
A	1.00	1345	34.72	0.37	24.96(.000)	1.22	1.08	
B	0.00	472	12.18	-0.23	-15.01(.000)	0.14	0.92	
C	0.00	543	14.02	-0.22	-14.35(.000)	0.18	0.95	
D	0.00	1353	34.93	-0.06	-3.53(.000)	0.62	0.92	

Item 25

```

-----
item:25 (1c5q50)
Cases for this item  3866  Discrimination  0.15
Item Threshold(s):  1.95  Weighted MNSQ  1.23
Item Delta(s):      1.95

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.08	-0.04	-2.42(.016)	-0.36	0.90
9	0.00	33	0.85	-0.06	-3.98(.000)	-0.06	0.89
A	1.00	1033	26.72	0.15	9.55(.000)	0.98	1.18
B	0.00	1056	27.32	-0.10	-6.00(.000)	0.56	1.02
C	0.00	723	18.70	-0.02	-1.46(.145)	0.64	1.04
D	0.00	1018	26.33	-0.02	-1.17(.242)	0.68	0.93

Item 26

```

-----
item:26 (1c5q51)
Cases for this item  3845  Discrimination  0.22
Item Threshold(s):  2.70  Weighted MNSQ  1.08
Item Delta(s):      2.69

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.03	-2.08(.037)	-0.88	0.00
9	0.00	11	0.29	0.01	0.62(.534)	0.84	1.01
A	0.00	2728	70.95	0.05	3.37(.001)	0.73	0.95
B	0.00	300	7.80	-0.22	-13.87(.000)	0.03	1.04
C	1.00	629	16.36	0.22	14.25(.000)	1.26	1.20
D	0.00	176	4.58	-0.23	-14.93(.000)	-0.25	0.85

The following traditional statistics are only meaningful for complete designs and when the amount of missing data is minimal.
In this analysis 1.04% of the data are missing.

The following results are scaled to assume that a single response was provided for each item.

```

N 3974
Mean 16.04
Standard Deviation 4.97
Variance 24.69
Skewness -0.33
Kurtosis -0.45
Standard error of mean 0.08
Standard error of measurement 2.13
Coefficient Alpha 0.82

```


Appendix B.11 Year 7 G&P

=====

NAPLAN 2015, Calibration, Grade 7, GP
GENERALISED ITEM ANALYSIS

=====

Item 1

item:1 (lc7q31)
Cases for this item 4603 Discrimination 0.42
Item Threshold(s): -2.40 Weighted MNSQ 0.89
Item Delta(s): -2.40

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.13	-0.07	-4.54 (.000)	-1.49	1.49
9	0.00	6	0.13	-0.07	-5.07 (.000)	-1.29	0.65
A	0.00	82	1.78	-0.22	-15.11 (.000)	-0.94	1.03
B	0.00	133	2.89	-0.26	-18.47 (.000)	-0.76	0.80
C	0.00	115	2.50	-0.21	-14.81 (.000)	-0.68	0.95
D	1.00	4261	92.57	0.42	31.74 (.000)	0.63	0.93

=====

Item 2

item:2 (lc7q32)
Cases for this item 4603 Discrimination 0.40
Item Threshold(s): -1.70 Weighted MNSQ 0.96
Item Delta(s): -1.70

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.07	-0.07	-4.52 (.000)	-1.83	1.17
9	0.00	9	0.20	-0.08	-5.19 (.000)	-0.71	0.82
A	1.00	4000	86.90	0.40	29.44 (.000)	0.67	0.94
B	0.00	109	2.37	-0.22	-15.20 (.000)	-0.76	0.93
C	0.00	155	3.37	-0.26	-17.89 (.000)	-0.71	0.97
D	0.00	327	7.10	-0.19	-13.45 (.000)	-0.11	0.83

=====

Item 3

item:3 (lc7q33)
Cases for this item 4602 Discrimination 0.46
Item Threshold(s): -1.86 Weighted MNSQ 0.89
Item Delta(s): -1.86

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.04	-0.06	-4.07 (.000)	-2.71	0.61
9	0.00	12	0.26	-0.10	-6.59 (.000)	-1.28	0.84
A	0.00	287	6.24	-0.28	-19.69 (.000)	-0.41	0.87
B	1.00	4069	88.42	0.46	34.97 (.000)	0.68	0.92
C	0.00	136	2.96	-0.25	-17.47 (.000)	-0.78	0.90
D	0.00	96	2.09	-0.22	-14.98 (.000)	-0.81	0.88

=====

Item 4

item:4 (lc7q34)
Cases for this item 4601 Discrimination 0.51
Item Threshold(s): -1.43 Weighted MNSQ 0.87
Item Delta(s): -1.43

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.04	-0.07	-4.64 (.000)	-2.27	1.23
9	0.00	13	0.28	-0.10	-6.62 (.000)	-1.05	0.89
A	0.00	182	3.96	-0.28	-20.08 (.000)	-0.76	0.89
B	0.00	243	5.28	-0.24	-16.84 (.000)	-0.36	0.85
C	0.00	299	6.50	-0.29	-20.65 (.000)	-0.41	0.86
D	1.00	3862	83.94	0.51	40.31 (.000)	0.72	0.90

=====

Item 5

```

-----
item:5 (1c7q35)
Cases for this item  4600  Discrimination  0.44
Item Threshold(s):  -1.51  Weighted MNSQ  0.93
Item Delta(s):      -1.51

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.13	-0.09	-6.10 (.000)	-1.85	1.08
9	0.00	31	0.67	-0.13	-9.16 (.000)	-1.04	1.02
A	0.00	269	5.85	-0.26	-18.00 (.000)	-0.39	0.94
B	1.00	3903	84.85	0.44	33.64 (.000)	0.70	0.92
C	0.00	113	2.46	-0.22	-15.63 (.000)	-0.78	0.85
D	0.00	278	6.04	-0.21	-14.61 (.000)	-0.21	0.84

Item 6

```

-----
item:6 (1c7q36)
Cases for this item  4592  Discrimination  0.50
Item Threshold(s):  -1.05  Weighted MNSQ  0.91
Item Delta(s):      -1.05

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.09	-0.08	-5.60 (.000)	-2.26	0.75
9	0.00	32	0.70	-0.10	-6.62 (.000)	-0.55	0.90
A	0.00	198	4.31	-0.26	-18.32 (.000)	-0.51	0.81
B	0.00	328	7.14	-0.25	-17.81 (.000)	-0.28	0.95
C	0.00	400	8.71	-0.27	-18.79 (.000)	-0.20	0.85
D	1.00	3630	79.05	0.50	39.35 (.000)	0.76	0.90

Item 7

```

-----
item:7 (1c7q37)
Cases for this item  4591  Discrimination  0.50
Item Threshold(s):  -0.95  Weighted MNSQ  0.92
Item Delta(s):      -0.96

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.07	-0.08	-5.60 (.000)	-2.57	0.52
9	0.00	29	0.63	-0.09	-6.16 (.000)	-0.56	1.05
A	0.00	187	4.07	-0.27	-19.15 (.000)	-0.65	0.82
B	1.00	3566	77.67	0.50	39.43 (.000)	0.77	0.90
C	0.00	160	3.49	-0.26	-18.30 (.000)	-0.60	0.77
D	0.00	646	14.07	-0.28	-20.03 (.000)	-0.10	0.83

Item 8

```

-----
item:8 (1c7q38)
Cases for this item  4590  Discrimination  0.51
Item Threshold(s):  -0.93  Weighted MNSQ  0.91
Item Delta(s):      -0.93

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.07	-0.08	-5.61 (.000)	-2.57	0.52
9	0.00	27	0.59	-0.11	-7.47 (.000)	-0.90	1.07
A	0.00	414	9.02	-0.28	-19.66 (.000)	-0.26	0.78
B	0.00	204	4.44	-0.26	-18.45 (.000)	-0.53	0.79
C	1.00	3546	77.25	0.51	39.66 (.000)	0.78	0.90
D	0.00	396	8.63	-0.24	-16.73 (.000)	-0.15	0.93

Item 9

```

-----
item:9 (lc7q39)
Cases for this item  4588  Discrimination  0.47
Item Threshold(s):  -1.09  Weighted MNSQ  0.93
Item Delta(s):      -1.10

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.09	-0.08	-5.25(.000)	-2.08	1.07
9	0.00	22	0.48	-0.11	-7.53(.000)	-0.84	0.86
A	0.00	573	12.49	-0.28	-19.38(.000)	-0.11	0.89
B	0.00	144	3.14	-0.25	-17.46(.000)	-0.65	0.75
C	1.00	3659	79.75	0.47	35.90(.000)	0.74	0.92
D	0.00	186	4.05	-0.22	-15.43(.000)	-0.42	0.87

Item 10

```

-----
item:10 (lc7q40)
Cases for this item  4584  Discrimination  0.54
Item Threshold(s):  -0.84  Weighted MNSQ  0.88
Item Delta(s):      -0.84

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.09	-0.09	-5.84(.000)	-2.40	0.54
9	0.00	26	0.57	-0.10	-7.08(.000)	-0.63	0.99
A	1.00	3485	76.03	0.54	43.66(.000)	0.81	0.88
B	0.00	524	11.43	-0.34	-24.80(.000)	-0.32	0.84
C	0.00	343	7.48	-0.23	-16.06(.000)	-0.17	0.89
D	0.00	202	4.41	-0.25	-17.32(.000)	-0.48	0.76

Item 11

```

-----
item:11 (lc7q41)
Cases for this item  4582  Discrimination  0.45
Item Threshold(s):  -0.86  Weighted MNSQ  0.97
Item Delta(s):      -0.86

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	79	1.72	-0.03	-1.75(.081)	0.39	1.01
9	0.00	16	0.35	-0.07	-4.70(.000)	-0.38	0.78
A	0.00	135	2.95	-0.24	-17.06(.000)	-0.74	0.79
B	0.00	675	14.73	-0.29	-20.62(.000)	-0.06	0.86
C	1.00	3495	76.28	0.45	34.18(.000)	0.75	0.92
D	0.00	182	3.97	-0.20	-14.07(.000)	-0.33	0.84

Item 12

```

-----
item:12 (lc7q42)
Cases for this item  4581  Discrimination  0.47
Item Threshold(s):   0.11  Weighted MNSQ  0.98
Item Delta(s):      0.11

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.13	-0.07	-4.62(.000)	-1.45	1.29
9	0.00	48	1.05	-0.10	-6.53(.000)	-0.23	0.76
A	0.00	583	12.73	-0.21	-14.74(.000)	0.01	0.87
B	1.00	2693	58.79	0.47	36.33(.000)	0.89	0.92
C	0.00	408	8.91	-0.23	-16.09(.000)	-0.10	0.94
D	0.00	843	18.40	-0.22	-14.98(.000)	0.12	0.84

Item 13

```

-----
item:13 (lc7q43)
Cases for this item  4579  Discrimination  0.46
Item Threshold(s):  -0.59  Weighted MNSQ  0.97
Item Delta(s):      -0.58

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.04	-0.07	-4.70 (.000)	-2.78	0.51
9	0.00	22	0.48	-0.12	-7.98 (.000)	-1.13	0.81
A	1.00	3289	71.83	0.46	35.07 (.000)	0.79	0.91
B	0.00	604	13.19	-0.20	-13.58 (.000)	0.08	0.90
C	0.00	584	12.75	-0.32	-22.66 (.000)	-0.20	0.81
D	0.00	78	1.70	-0.19	-13.27 (.000)	-0.66	0.84

Item 14

```

-----
item:14 (lc7q44)
Cases for this item  4575  Discrimination  0.41
Item Threshold(s):  -0.05  Weighted MNSQ  1.04
Item Delta(s):      -0.04

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.04	-0.07	-4.71 (.000)	-2.78	0.51
9	0.00	38	0.83	-0.09	-6.29 (.000)	-0.52	0.92
A	0.00	815	17.81	-0.21	-14.63 (.000)	0.14	0.90
B	0.00	538	11.76	-0.18	-12.43 (.000)	0.12	0.94
C	0.00	350	7.65	-0.19	-12.74 (.000)	-0.03	1.02
D	1.00	2832	61.90	0.41	30.23 (.000)	0.82	0.91

Item 15

```

-----
item:15 (lc7q45)
Cases for this item  4572  Discrimination  0.42
Item Threshold(s):  0.19   Weighted MNSQ  1.03
Item Delta(s):      0.18

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.04	-0.03	-1.87 (.062)	-0.88	2.19
9	0.00	53	1.16	-0.09	-6.19 (.000)	-0.31	1.06
A	1.00	2623	57.37	0.42	31.31 (.000)	0.86	0.93
B	0.00	536	11.72	-0.16	-10.65 (.000)	0.17	0.98
C	0.00	573	12.53	-0.21	-14.17 (.000)	0.06	0.92
D	0.00	785	17.17	-0.21	-14.58 (.000)	0.14	0.82

Item 16

```

-----
item:16 (lc7q46)
Cases for this item  4571  Discrimination  0.41
Item Threshold(s):  0.07   Weighted MNSQ  1.04
Item Delta(s):      0.07

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.09	-0.06	-4.35 (.000)	-1.25	1.30
9	0.00	37	0.81	-0.10	-6.47 (.000)	-0.58	1.12
A	0.00	174	3.81	-0.23	-16.15 (.000)	-0.47	0.92
B	0.00	329	7.20	-0.14	-9.57 (.000)	0.10	0.89
C	1.00	2730	59.72	0.41	30.71 (.000)	0.85	0.94
D	0.00	1297	28.37	-0.25	-17.30 (.000)	0.17	0.85

Item 17

```

-----
item:17 (lc7q47)
Cases for this item  4566  Discrimination  0.35
Item Threshold(s):  0.34  Weighted MNSQ  1.10
Item Delta(s):      0.34

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	7	0.15	-0.09	-6.10(.000)	-1.52	1.10
9	0.00	29	0.64	-0.09	-6.25(.000)	-0.61	0.75
A	0.00	1600	35.04	-0.18	-12.50(.000)	0.30	0.87
B	1.00	2478	54.27	0.35	25.03(.000)	0.83	0.97
C	0.00	215	4.71	-0.23	-15.80(.000)	-0.38	0.85
D	0.00	237	5.19	-0.12	-8.35(.000)	0.12	0.91

Item 18

```

-----
item:18 (lc7q48)
Cases for this item  4564  Discrimination  0.48
Item Threshold(s):  0.10  Weighted MNSQ  0.98
Item Delta(s):      0.10

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.09	-0.09	-5.77(.000)	-2.20	0.92
9	0.00	59	1.29	-0.11	-7.17(.000)	-0.26	0.82
A	0.00	590	12.93	-0.22	-14.99(.000)	0.04	0.84
B	0.00	697	15.27	-0.24	-16.95(.000)	0.02	0.94
C	1.00	2697	59.09	0.48	36.63(.000)	0.90	0.90
D	0.00	517	11.33	-0.19	-12.95(.000)	0.07	0.84

Item 19

```

-----
item:19 (lc7q49)
Cases for this item  4563  Discrimination  0.42
Item Threshold(s):  0.63  Weighted MNSQ  1.03
Item Delta(s):      0.63

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.04	-0.07	-4.72(.000)	-2.78	0.51
9	0.00	29	0.64	-0.08	-5.38(.000)	-0.38	0.93
A	0.00	198	4.34	-0.25	-17.10(.000)	-0.47	0.77
B	1.00	2205	48.32	0.42	31.22(.000)	0.94	0.96
C	0.00	1326	29.06	-0.16	-10.92(.000)	0.31	0.85
D	0.00	803	17.60	-0.21	-14.40(.000)	0.13	0.85

Item 20

```

-----
item:20 (lc7q50)
Cases for this item  4563  Discrimination  0.32
Item Threshold(s):  1.07  Weighted MNSQ  1.10
Item Delta(s):      1.07

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	7	0.15	-0.11	-7.18(.000)	-2.08	0.62
9	0.00	45	0.99	-0.08	-5.35(.000)	-0.21	1.05
A	0.00	505	11.07	-0.18	-12.43(.000)	0.08	0.93
B	1.00	1791	39.25	0.32	23.11(.000)	0.92	1.01
C	0.00	1475	32.33	-0.07	-4.67(.000)	0.43	0.87
D	0.00	740	16.22	-0.15	-10.58(.000)	0.24	0.85

Item 21

```

-----
item:21 (lc7q51)
Cases for this item  4561  Discrimination  0.48
Item Threshold(s):  1.16  Weighted MNSQ  0.95
Item Delta(s):      1.16

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.09	-0.05	-3.05(.002)	-0.96	1.08
9	0.00	21	0.46	-0.08	-5.30(.000)	-0.86	1.13
A	1.00	1713	37.56	0.48	36.87(.000)	1.10	0.94
B	0.00	1079	23.66	-0.35	-25.03(.000)	-0.00	0.81
C	0.00	424	9.30	-0.13	-9.13(.000)	0.18	0.95
D	0.00	1320	28.94	-0.09	-5.81(.000)	0.41	0.80

Item 22

```

-----
item:22 (lc7q52)
Cases for this item  4547  Discrimination  0.38
Item Threshold(s):  1.52  Weighted MNSQ  1.02
Item Delta(s):      1.52

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.07	-0.05	-3.47(.001)	-1.52	1.45
9	0.00	99	2.18	-0.03	-2.12(.034)	0.39	0.89
A	0.00	1511	33.23	-0.07	-5.00(.000)	0.43	0.91
B	0.00	840	18.47	-0.13	-8.61(.000)	0.31	0.92
C	0.00	699	15.37	-0.24	-16.53(.000)	0.07	0.85
D	1.00	1395	30.68	0.38	27.80(.000)	1.07	0.96

Item 23

```

-----
item:23 (lc7q53)
Cases for this item  4538  Discrimination  0.36
Item Threshold(s):  1.13  Weighted MNSQ  1.07
Item Delta(s):      1.13

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.07	-0.05	-3.47(.001)	-1.52	1.45
9	0.00	59	1.30	-0.05	-3.25(.001)	0.22	0.82
A	0.00	563	12.41	-0.22	-15.19(.000)	0.03	0.81
B	0.00	716	15.78	-0.19	-13.07(.000)	0.14	0.92
C	0.00	1462	32.22	-0.05	-3.58(.000)	0.49	0.98
D	1.00	1735	38.23	0.36	25.75(.000)	0.95	0.91

Item 24

```

-----
item:24 (lc7q54)
Cases for this item  4536  Discrimination  0.35
Item Threshold(s):  1.55  Weighted MNSQ  1.05
Item Delta(s):      1.54

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.13	-0.04	-3.02(.003)	-0.80	1.28
9	0.00	21	0.46	-0.06	-4.11(.000)	-0.25	0.86
A	0.00	1019	22.46	-0.17	-11.87(.000)	0.25	0.88
B	1.00	1377	30.36	0.35	25.19(.000)	1.04	1.00
C	0.00	697	15.37	-0.10	-6.55(.000)	0.37	0.94
D	0.00	1416	31.22	-0.10	-7.01(.000)	0.40	0.90

Item 25

```

-----
item:25 (1c7q55)
Cases for this item  4532  Discrimination  0.29
Item Threshold(s):  1.50  Weighted MNSQ  1.09
Item Delta(s):      1.50

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.07	-0.06	-4.17(.000)	-1.66	1.20
9	0.00	60	1.32	-0.03	-1.77(.077)	0.40	1.05
A	1.00	1413	31.18	0.29	20.09(.000)	0.94	1.07
B	0.00	1064	23.48	-0.16	-10.56(.000)	0.30	0.90
C	0.00	750	16.55	-0.08	-5.43(.000)	0.39	0.93
D	0.00	1242	27.41	-0.07	-4.88(.000)	0.43	0.86

Item 26

```

-----
item:26 (1c7q56)
Cases for this item  4517  Discrimination  0.35
Item Threshold(s):  1.48  Weighted MNSQ  1.05
Item Delta(s):      1.49

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.11	-0.05	-3.25(.001)	-0.79	1.51
9	0.00	59	1.31	-0.05	-3.15(.002)	0.18	0.86
A	0.00	762	16.87	-0.17	-11.40(.000)	0.24	0.91
B	0.00	1142	25.28	-0.06	-3.95(.000)	0.47	0.94
C	0.00	1129	24.99	-0.16	-10.57(.000)	0.29	0.88
D	1.00	1420	31.44	0.35	25.09(.000)	1.01	0.98

Item 27

```

-----
item:27 (1c7q57)
Cases for this item  4512  Discrimination  0.34
Item Threshold(s):  1.83  Weighted MNSQ  1.03
Item Delta(s):      1.83

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.09	-0.05	-3.17(.002)	-1.29	1.26
9	0.00	37	0.82	-0.03	-2.25(.025)	0.29	0.92
A	0.00	1984	43.97	-0.10	-6.54(.000)	0.43	0.90
B	1.00	1156	25.62	0.34	23.95(.000)	1.09	1.03
C	0.00	738	16.36	-0.14	-9.47(.000)	0.28	0.91
D	0.00	593	13.14	-0.13	-8.51(.000)	0.27	0.87

Item 28

```

-----
item:28 (1c7q58)
Cases for this item  4506  Discrimination  0.14
Item Threshold(s):  2.60  Weighted MNSQ  1.12
Item Delta(s):      2.60

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.04	-0.06	-4.17(.000)	-2.35	0.10
9	0.00	12	0.27	-0.05	-3.29(.001)	-0.27	1.26
A	0.00	804	17.84	0.00	0.04(.965)	0.56	0.98
B	0.00	784	17.40	-0.18	-12.63(.000)	0.19	0.93
C	0.00	2232	49.53	0.04	3.02(.003)	0.59	0.92
D	1.00	672	14.91	0.14	9.75(.000)	0.88	1.13

The following traditional statistics are only meaningful for complete designs and when the amount of missing data is minimal.
In this analysis 0.75% of the data are missing.

The following results are scaled to assume that a single response was provided for each item.

N	4603
Mean	16.52
Standard Deviation	5.06
Variance	25.59
Skewness	-0.32
Kurtosis	-0.22
Standard error of mean	0.07
Standard error of measurement	2.19
Coefficient Alpha	0.81

=====

Appendix B.12 Year 9 G&P

=====

NAPLAN 2015, Calibration, Grade 9, GP
GENERALISED ITEM ANALYSIS

=====

Item 1

item:1 (lc9q31)
Cases for this item 3864 Discrimination 0.36
Item Threshold(s): -2.23 Weighted MNSQ 0.94
Item Delta(s): -2.23

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.08	-0.09	-5.31(.000)	-2.43	0.54
9	0.00	8	0.21	-0.09	-5.36(.000)	-0.91	0.95
A	0.00	30	0.78	-0.14	-8.57(.000)	-0.71	0.84
B	1.00	3562	92.18	0.36	24.20(.000)	0.64	0.86
C	0.00	200	5.18	-0.24	-15.24(.000)	-0.26	0.74
D	0.00	61	1.58	-0.21	-13.44(.000)	-0.82	0.91

=====

Item 2

item:2 (lc9q32)
Cases for this item 3864 Discrimination 0.37
Item Threshold(s): -2.24 Weighted MNSQ 0.92
Item Delta(s): -2.24

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.08	-0.09	-5.31(.000)	-2.43	0.54
9	0.00	10	0.26	-0.10	-6.30(.000)	-1.11	0.87
A	0.00	96	2.48	-0.18	-11.65(.000)	-0.38	0.81
B	1.00	3564	92.24	0.37	24.90(.000)	0.64	0.85
C	0.00	59	1.53	-0.21	-13.63(.000)	-0.79	0.84
D	0.00	132	3.42	-0.20	-12.96(.000)	-0.33	0.92

=====

Item 3

item:3 (lc9q33)
Cases for this item 3864 Discrimination 0.47
Item Threshold(s): -2.03 Weighted MNSQ 0.86
Item Delta(s): -2.03

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.08	-0.09	-5.31(.000)	-2.43	0.54
9	0.00	12	0.31	-0.11	-6.98(.000)	-1.08	0.68
A	0.00	178	4.61	-0.27	-17.52(.000)	-0.45	0.74
B	0.00	56	1.45	-0.22	-13.81(.000)	-0.88	0.66
C	0.00	109	2.82	-0.27	-17.58(.000)	-0.77	0.71
D	1.00	3506	90.73	0.47	33.15(.000)	0.67	0.82

=====

Item 4

item:4 (lc9q34)
Cases for this item 3863 Discrimination 0.43
Item Threshold(s): -1.55 Weighted MNSQ 0.92
Item Delta(s): -1.55

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.08	-0.07	-4.36(.000)	-1.83	0.89
9	0.00	10	0.26	-0.08	-5.27(.000)	-0.89	0.97
A	0.00	52	1.35	-0.19	-12.34(.000)	-0.82	0.79
B	1.00	3335	86.33	0.43	29.69(.000)	0.69	0.83
C	0.00	76	1.97	-0.15	-9.32(.000)	-0.25	0.90
D	0.00	387	10.02	-0.33	-21.66(.000)	-0.24	0.80

=====

Item 5

```

-----
item:5 (lc9q35)
Cases for this item  3863  Discrimination  0.44
Item Threshold(s):  -1.43  Weighted MNSQ  0.91
Item Delta(s):      -1.43

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.08	-0.09	-5.32(.000)	-2.43	0.54
9	0.00	29	0.75	-0.13	-8.35(.000)	-0.76	1.15
A	0.00	203	5.25	-0.27	-17.32(.000)	-0.37	0.75
B	0.00	112	2.90	-0.24	-15.42(.000)	-0.61	0.77
C	1.00	3282	84.96	0.44	30.36(.000)	0.70	0.82
D	0.00	234	6.06	-0.18	-11.32(.000)	-0.02	0.85

Item 6

```

-----
item:6 (lc9q36)
Cases for this item  3857  Discrimination  0.47
Item Threshold(s):  -1.43  Weighted MNSQ  0.89
Item Delta(s):      -1.43

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.10	-0.08	-5.00(.000)	-1.76	1.41
9	0.00	16	0.41	-0.11	-7.16(.000)	-0.97	1.23
A	1.00	3279	85.01	0.47	33.40(.000)	0.71	0.82
B	0.00	252	6.53	-0.30	-19.48(.000)	-0.33	0.80
C	0.00	219	5.68	-0.23	-14.57(.000)	-0.16	0.83
D	0.00	87	2.26	-0.22	-13.85(.000)	-0.62	0.58

Item 7

```

-----
item:7 (lc9q37)
Cases for this item  3857  Discrimination  0.49
Item Threshold(s):  -0.95  Weighted MNSQ  0.90
Item Delta(s):      -0.96

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.07	-4.11(.000)	-2.27	0.66
9	0.00	25	0.65	-0.11	-6.83(.000)	-0.49	1.10
A	0.00	398	10.32	-0.31	-20.06(.000)	-0.16	0.77
B	0.00	323	8.37	-0.28	-18.25(.000)	-0.18	0.82
C	1.00	3038	78.77	0.49	35.28(.000)	0.76	0.81
D	0.00	71	1.84	-0.15	-9.40(.000)	-0.36	0.69

Item 8

```

-----
item:8 (lc9q38)
Cases for this item  3857  Discrimination  0.48
Item Threshold(s):  -0.13  Weighted MNSQ  0.96
Item Delta(s):      -0.13

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.10	-0.08	-5.10(.000)	-1.72	1.49
9	0.00	24	0.62	-0.12	-7.54(.000)	-0.80	1.02
A	1.00	2482	64.35	0.48	33.85(.000)	0.83	0.85
B	0.00	433	11.23	-0.25	-16.07(.000)	-0.00	0.69
C	0.00	230	5.96	-0.16	-9.77(.000)	0.08	0.76
D	0.00	684	17.73	-0.27	-17.07(.000)	0.12	0.76

Item 9

```

-----
item:9 (lc9q39)
Cases for this item 3855 Discrimination 0.33
Item Threshold(s): -0.63 Weighted MNSQ 1.05
Item Delta(s): -0.63

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.08	-0.07	-4.27(.000)	-1.79	1.65
9	0.00	12	0.31	-0.07	-4.28(.000)	-0.69	1.06
A	1.00	2836	73.57	0.33	21.62(.000)	0.71	0.86
B	0.00	908	23.55	-0.26	-16.48(.000)	0.21	0.83
C	0.00	39	1.01	-0.13	-8.23(.000)	-0.56	0.92
D	0.00	57	1.48	-0.14	-8.98(.000)	-0.40	0.92

Item 10

```

-----
item:10 (lc9q40)
Cases for this item 3852 Discrimination 0.40
Item Threshold(s): -0.26 Weighted MNSQ 1.01
Item Delta(s): -0.26

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.08	-0.09	-5.35(.000)	-2.34	0.69
9	0.00	26	0.67	-0.11	-6.98(.000)	-0.54	0.85
A	0.00	193	5.01	-0.15	-9.35(.000)	0.06	0.82
B	1.00	2576	66.87	0.40	27.36(.000)	0.78	0.84
C	0.00	800	20.77	-0.26	-16.45(.000)	0.16	0.82
D	0.00	254	6.59	-0.17	-10.63(.000)	0.03	0.79

Item 11

```

-----
item:11 (lc9q41)
Cases for this item 3849 Discrimination 0.36
Item Threshold(s): -0.23 Weighted MNSQ 1.05
Item Delta(s): -0.23

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.08	-0.08	-5.11(.000)	-1.81	1.60
9	0.00	13	0.34	-0.10	-5.94(.000)	-0.78	1.21
A	0.00	1039	26.99	-0.22	-14.23(.000)	0.26	0.82
B	1.00	2552	66.30	0.36	23.59(.000)	0.77	0.84
C	0.00	104	2.70	-0.21	-13.15(.000)	-0.48	0.81
D	0.00	138	3.59	-0.15	-9.21(.000)	-0.04	0.85

Item 12

```

-----
item:12 (lc9q42)
Cases for this item 3848 Discrimination 0.50
Item Threshold(s): -0.25 Weighted MNSQ 0.93
Item Delta(s): -0.25

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.08	-4.86(.000)	-2.74	0.00
9	0.00	23	0.60	-0.09	-5.44(.000)	-0.33	1.05
A	1.00	2573	66.87	0.50	35.35(.000)	0.83	0.81
B	0.00	270	7.02	-0.27	-17.50(.000)	-0.25	0.74
C	0.00	436	11.33	-0.25	-16.01(.000)	0.03	0.82
D	0.00	544	14.14	-0.22	-13.85(.000)	0.15	0.78

Item 13

 item:13 (lc9q43)
 Cases for this item 3848 Discrimination 0.38
 Item Threshold(s): 0.53 Weighted MNSQ 1.04
 Item Delta(s): 0.53

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.08	-4.86(.000)	-2.74	0.00
9	0.00	24	0.62	-0.10	-6.45(.000)	-0.49	1.07
A	0.00	237	6.16	-0.19	-11.73(.000)	-0.01	0.83
B	1.00	1956	50.83	0.38	25.81(.000)	0.85	0.87
C	0.00	1378	35.81	-0.18	-11.52(.000)	0.37	0.78
D	0.00	251	6.52	-0.20	-12.80(.000)	-0.01	0.83

Item 14

 item:14 (lc9q44)
 Cases for this item 3846 Discrimination 0.44
 Item Threshold(s): -0.16 Weighted MNSQ 0.99
 Item Delta(s): -0.17

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.08	-4.86(.000)	-2.74	0.00
9	0.00	45	1.17	-0.13	-7.82(.000)	-0.37	0.90
A	0.00	319	8.29	-0.20	-12.94(.000)	0.05	0.71
B	0.00	692	17.99	-0.20	-12.83(.000)	0.22	0.83
C	1.00	2508	65.21	0.44	30.07(.000)	0.81	0.83
D	0.00	280	7.28	-0.22	-14.31(.000)	-0.11	0.82

Item 15

 item:15 (lc9q45)
 Cases for this item 3846 Discrimination 0.51
 Item Threshold(s): 0.31 Weighted MNSQ 0.94
 Item Delta(s): 0.31

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.16	-0.06	-3.61(.000)	-0.84	1.53
9	0.00	19	0.49	-0.10	-6.01(.000)	-0.58	0.98
A	1.00	2129	55.36	0.51	36.33(.000)	0.92	0.83
B	0.00	325	8.45	-0.25	-15.93(.000)	-0.09	0.78
C	0.00	1129	29.36	-0.31	-20.31(.000)	0.18	0.74
D	0.00	238	6.19	-0.13	-8.12(.000)	0.14	0.80

Item 16

 item:16 (lc9q46)
 Cases for this item 3846 Discrimination 0.41
 Item Threshold(s): 0.55 Weighted MNSQ 1.02
 Item Delta(s): 0.56

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.16	-0.07	-4.37(.000)	-0.85	1.51
9	0.00	18	0.47	-0.09	-5.44(.000)	-0.66	1.19
A	1.00	1931	50.21	0.41	27.55(.000)	0.88	0.82
B	0.00	649	16.87	-0.21	-13.53(.000)	0.17	0.80
C	0.00	716	18.62	-0.26	-16.98(.000)	0.13	0.78
D	0.00	526	13.68	-0.03	-2.10(.036)	0.48	0.91

Item 17

```

-----
item:17 (lc9q47)
Cases for this item  3846  Discrimination  0.41
Item Threshold(s):  0.48  Weighted MNSQ  1.01
Item Delta(s):      0.48

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.08	-0.07	-4.64(.000)	-1.80	1.63
9	0.00	24	0.62	-0.08	-5.26(.000)	-0.39	0.75
A	0.00	242	6.29	-0.11	-6.90(.000)	0.19	0.76
B	1.00	1997	51.92	0.41	28.25(.000)	0.88	0.83
C	0.00	574	14.92	-0.15	-9.57(.000)	0.26	0.87
D	0.00	1006	26.16	-0.27	-17.16(.000)	0.21	0.82

Item 18

```

-----
item:18 (lc9q48)
Cases for this item  3844  Discrimination  0.44
Item Threshold(s):  0.33  Weighted MNSQ  0.99
Item Delta(s):      0.33

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.08	-4.86(.000)	-2.74	0.00
9	0.00	28	0.73	-0.09	-5.63(.000)	-0.24	0.94
A	0.00	87	2.26	-0.20	-12.40(.000)	-0.42	0.75
B	1.00	2119	55.12	0.44	30.25(.000)	0.88	0.85
C	0.00	201	5.23	-0.22	-13.67(.000)	-0.22	0.86
D	0.00	1407	36.60	-0.27	-17.60(.000)	0.27	0.74

Item 19

```

-----
item:19 (lc9q49)
Cases for this item  3842  Discrimination  0.40
Item Threshold(s):  0.70  Weighted MNSQ  1.02
Item Delta(s):      0.70

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.08	-0.07	-4.29(.000)	-1.79	1.64
9	0.00	34	0.88	-0.09	-5.83(.000)	-0.26	0.93
A	0.00	282	7.34	-0.18	-11.12(.000)	0.08	0.73
B	1.00	1810	47.11	0.40	27.40(.000)	0.90	0.87
C	0.00	1315	34.23	-0.19	-12.24(.000)	0.35	0.79
D	0.00	398	10.36	-0.17	-10.98(.000)	0.13	0.82

Item 20

```

-----
item:20 (lc9q50)
Cases for this item  3838  Discrimination  0.35
Item Threshold(s):  0.27  Weighted MNSQ  1.07
Item Delta(s):      0.27

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.07	-4.14(.000)	-2.27	0.66
9	0.00	38	0.99	-0.10	-6.40(.000)	-0.21	0.94
A	0.00	777	20.24	-0.12	-7.41(.000)	0.35	0.82
B	0.00	258	6.72	-0.24	-15.48(.000)	-0.11	0.90
C	1.00	2163	56.36	0.35	22.84(.000)	0.80	0.86
D	0.00	600	15.63	-0.14	-8.86(.000)	0.32	0.79

Item 21

```

-----
item:21 (1c9q51)
Cases for this item  3836  Discrimination  0.33
Item Threshold(s):  0.82  Weighted MNSQ  1.07
Item Delta(s):      0.82

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.05	-2.83(.005)	-1.32	2.00
9	0.00	13	0.34	-0.05	-3.05(.002)	-0.17	1.38
A	0.00	457	11.91	-0.15	-9.45(.000)	0.25	0.80
B	0.00	1230	32.06	-0.05	-3.31(.001)	0.50	0.85
C	0.00	420	10.95	-0.28	-18.27(.000)	-0.04	0.78
D	1.00	1714	44.68	0.33	21.94(.000)	0.85	0.85

Item 22

```

-----
item:22 (1c9q52)
Cases for this item  3829  Discrimination  0.41
Item Threshold(s):  1.34  Weighted MNSQ  0.98
Item Delta(s):      1.33

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.04	-2.25(.025)	-1.05	2.38
9	0.00	67	1.75	-0.04	-2.27(.024)	0.35	0.83
A	0.00	1320	34.47	-0.10	-6.30(.000)	0.43	0.79
B	0.00	697	18.20	-0.16	-10.05(.000)	0.30	0.75
C	0.00	432	11.28	-0.25	-15.65(.000)	0.04	0.78
D	1.00	1311	34.24	0.41	27.58(.000)	1.03	0.88

Item 23

```

-----
item:23 (1c9q53)
Cases for this item  3828  Discrimination  0.36
Item Threshold(s):  0.94  Weighted MNSQ  1.05
Item Delta(s):      0.94

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.06	-3.57(.000)	-1.78	1.36
9	0.00	36	0.94	-0.05	-3.08(.002)	0.09	0.77
A	0.00	422	11.02	-0.13	-8.09(.000)	0.28	0.77
B	0.00	766	20.01	-0.15	-9.51(.000)	0.35	0.91
C	1.00	1619	42.29	0.36	23.56(.000)	0.89	0.86
D	0.00	983	25.68	-0.16	-9.79(.000)	0.34	0.79

Item 24

```

-----
item:24 (1c9q54)
Cases for this item  3824  Discrimination  0.25
Item Threshold(s):  1.06  Weighted MNSQ  1.13
Item Delta(s):      1.07

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.06	-3.46(.001)	-2.74	0.00
9	0.00	25	0.65	-0.06	-3.72(.000)	-0.05	0.73
A	1.00	1516	39.64	0.25	16.08(.000)	0.83	0.88
B	0.00	259	6.77	-0.19	-11.86(.000)	0.03	0.86
C	0.00	972	25.42	-0.10	-6.03(.000)	0.43	0.87
D	0.00	1051	27.48	-0.06	-3.85(.000)	0.47	0.81

Item 25

```

-----
item:25 (lc9q55)
Cases for this item  3823  Discrimination  0.33
Item Threshold(s):  1.49  Weighted MNSQ  1.04
Item Delta(s):      1.49

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.04	-2.25 (.024)	-0.99	2.48
9	0.00	20	0.52	-0.08	-4.66 (.000)	-0.18	0.97
A	1.00	1196	31.28	0.33	21.72 (.000)	0.97	0.94
B	0.00	1096	28.67	-0.07	-4.21 (.000)	0.46	0.82
C	0.00	802	20.98	-0.23	-14.75 (.000)	0.20	0.72
D	0.00	707	18.49	-0.06	-3.54 (.000)	0.50	0.81

Item 26

```

-----
item:26 (lc9q56)
Cases for this item  3821  Discrimination  0.39
Item Threshold(s):  1.23  Weighted MNSQ  1.01
Item Delta(s):      1.24

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.08	-0.06	-3.48 (.001)	-1.21	1.89
9	0.00	15	0.39	-0.06	-3.67 (.000)	0.02	0.89
A	0.00	575	15.05	-0.17	-10.90 (.000)	0.26	0.79
B	0.00	961	25.15	-0.03	-2.12 (.034)	0.48	0.82
C	0.00	884	23.14	-0.24	-15.57 (.000)	0.22	0.77
D	1.00	1383	36.19	0.39	25.83 (.000)	0.99	0.87

Item 27

```

-----
item:27 (lc9q57)
Cases for this item  3817  Discrimination  0.31
Item Threshold(s):  2.14  Weighted MNSQ  1.01
Item Delta(s):      2.14

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.13	-0.07	-4.60 (.000)	-1.28	0.90
9	0.00	7	0.18	-0.01	-0.92 (.355)	0.18	0.77
A	0.00	870	22.79	0.03	1.63 (.104)	0.59	0.79
B	0.00	550	14.41	-0.19	-12.21 (.000)	0.17	0.85
C	0.00	1604	42.02	-0.13	-8.40 (.000)	0.45	0.83
D	1.00	781	20.46	0.31	20.47 (.000)	1.08	0.91

Item 28

```

-----
item:28 (lc9q58)
Cases for this item  3815  Discrimination  0.29
Item Threshold(s):  1.34  Weighted MNSQ  1.08
Item Delta(s):      1.34

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.06	-3.46 (.001)	-2.74	0.00
9	0.00	9	0.24	-0.02	-1.40 (.161)	0.05	0.74
A	1.00	1307	34.26	0.29	18.67 (.000)	0.90	0.94
B	0.00	396	10.38	-0.24	-15.17 (.000)	-0.01	0.80
C	0.00	1638	42.94	-0.08	-4.72 (.000)	0.49	0.76
D	0.00	464	12.16	-0.08	-4.71 (.000)	0.42	0.85

The following traditional statistics are only meaningful for complete designs and when the amount of missing data is minimal.
In this analysis 0.51% of the data are missing.

The following results are scaled to assume that a single response was provided for each item.

N	3864
Mean	16.62
Standard Deviation	4.90
Variance	23.99
Skewness	-0.21
Kurtosis	-0.27
Standard error of mean	0.08
Standard error of measurement	2.24
Coefficient Alpha	0.79

=====

Appendix B.13 Year 3 Numeracy

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NAPLAN 2015, Calibration, Grade 3, numeracy
GENERALISED ITEM ANALYSIS

=====

Item 1

item:1 (n3q01)
Cases for this item 3785 Discrimination 0.23
Item Threshold(s): -3.27 Weighted MNSQ 0.97
Item Delta(s): -3.26

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.03	-1.86(.063)	-1.90	0.00
9	0.00	7	0.18	-0.06	-3.66(.000)	-1.06	1.24
A	1.00	3608	95.32	0.23	14.53(.000)	0.19	0.93
B	0.00	91	2.40	-0.16	-9.93(.000)	-0.72	0.80
C	0.00	78	2.06	-0.15	-9.23(.000)	-0.77	0.85

=====

Item 2

item:2 (n3q02)
Cases for this item 3785 Discrimination 0.34
Item Threshold(s): -2.73 Weighted MNSQ 0.93
Item Delta(s): -2.73

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	16	0.42	-0.03	-2.07(.039)	-0.51	1.29
A	1.00	3502	92.52	0.34	22.26(.000)	0.23	0.91
B	0.00	191	5.05	-0.26	-16.83(.000)	-0.80	0.64
C	0.00	43	1.14	-0.15	-9.42(.000)	-1.11	0.60
D	0.00	33	0.87	-0.15	-9.05(.000)	-1.35	0.63

=====

Item 3

item:3 (n3q03)
Cases for this item 3785 Discrimination 0.36
Item Threshold(s): -2.29 Weighted MNSQ 0.94
Item Delta(s): -2.29

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	6	0.16	-0.03	-2.14(.033)	-0.67	1.22
A	0.00	73	1.93	-0.16	-9.92(.000)	-0.86	0.86
B	0.00	218	5.76	-0.23	-14.49(.000)	-0.66	0.76
C	0.00	116	3.06	-0.20	-12.84(.000)	-0.88	0.76
D	1.00	3372	89.09	0.36	23.66(.000)	0.26	0.90

=====

Item 4

item:4 (n3q04)
Cases for this item 3785 Discrimination 0.43
Item Threshold(s): -2.06 Weighted MNSQ 0.90
Item Delta(s): -2.06

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	15	0.40	-0.06	-3.80(.000)	-0.87	1.00
A	0.00	256	6.76	-0.33	-21.74(.000)	-0.96	0.65
B	0.00	72	1.90	-0.15	-9.46(.000)	-0.83	0.71
C	0.00	151	3.99	-0.19	-11.67(.000)	-0.68	0.82
D	1.00	3291	86.95	0.43	29.28(.000)	0.30	0.88

=====

Item 5

```

-----
item:5 (n3q05)
Cases for this item  3784  Discrimination  0.25
Item Threshold(s):  -1.45  Weighted MNSQ  1.09
Item Delta(s):      -1.45

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.04	-2.25 (.025)	-1.66	1.21
9	0.00	13	0.34	-0.02	-1.16 (.247)	-0.11	1.25
A	0.00	36	0.95	-0.09	-5.36 (.000)	-0.63	0.84
B	1.00	3006	79.44	0.25	15.95 (.000)	0.25	0.93
C	0.00	676	17.86	-0.20	-12.44 (.000)	-0.20	0.86
D	0.00	51	1.35	-0.13	-8.16 (.000)	-0.83	0.90

Item 6

```

-----
item:6 (n3q06)
Cases for this item  3784  Discrimination  0.40
Item Threshold(s):  -2.04  Weighted MNSQ  0.92
Item Delta(s):      -2.04

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.08	-0.03	-1.96 (.050)	-1.38	0.67
9	0.00	6	0.16	-0.05	-3.05 (.002)	-1.19	1.06
A	1.00	3282	86.73	0.40	27.15 (.000)	0.28	0.89
B	0.00	83	2.19	-0.13	-8.21 (.000)	-0.64	0.84
C	0.00	60	1.59	-0.14	-8.76 (.000)	-0.84	0.81
D	0.00	48	1.27	-0.13	-8.00 (.000)	-0.87	0.76
E	0.00	302	7.98	-0.31	-19.71 (.000)	-0.74	0.77

Item 7

```

-----
item:7 (n3q07)
Cases for this item  3784  Discrimination  0.38
Item Threshold(s):  -0.92  Weighted MNSQ  1.01
Item Delta(s):      -0.92

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.04	-2.37 (.018)	-2.04	0.00
9	0.00	15	0.40	-0.07	-4.52 (.000)	-1.14	0.85
A	0.00	212	5.60	-0.24	-15.08 (.000)	-0.71	0.71
B	0.00	201	5.31	-0.20	-12.25 (.000)	-0.57	0.83
C	1.00	2683	70.90	0.38	25.38 (.000)	0.36	0.90
D	0.00	672	17.76	-0.18	-11.36 (.000)	-0.18	0.86

Item 8

```

-----
item:8 (n3q08)
Cases for this item  3784  Discrimination  0.32
Item Threshold(s):  -0.87  Weighted MNSQ  1.08
Item Delta(s):      -0.87

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	0.02	1.32 (.187)	1.83	0.00
9	0.00	29	0.77	-0.05	-3.16 (.002)	-0.66	1.05
A	0.00	198	5.23	-0.10	-6.49 (.000)	-0.27	0.84
B	0.00	831	21.96	-0.26	-16.80 (.000)	-0.29	0.84
C	0.00	79	2.09	-0.08	-4.79 (.000)	-0.28	0.90
D	1.00	2646	69.93	0.32	20.92 (.000)	0.33	0.92

Item 9

```

-----
item:9 (n3q09)
Cases for this item  3784  Discrimination  0.43
Item Threshold(s):  -1.16  Weighted MNSQ  0.95
Item Delta(s):      -1.17

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.13	-0.06	-3.43(.001)	-1.06	0.63
9	0.00	24	0.63	-0.06	-3.77(.000)	-0.73	0.82
A	0.00	152	4.02	-0.14	-8.43(.000)	-0.43	0.95
B	1.00	2840	75.05	0.43	29.52(.000)	0.36	0.89
C	0.00	528	13.95	-0.23	-14.81(.000)	-0.33	0.77
D	0.00	235	6.21	-0.30	-19.39(.000)	-0.85	0.74

Item 10

```

-----
item:10 (n3q10)
Cases for this item  3784  Discrimination  0.44
Item Threshold(s):  -0.77  Weighted MNSQ  0.97
Item Delta(s):      -0.76

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	26	0.69	-0.09	-5.87(.000)	-1.07	1.01
A	0.00	986	26.06	-0.32	-21.12(.000)	-0.32	0.80
B	0.00	125	3.30	-0.19	-11.66(.000)	-0.74	0.80
C	1.00	2573	68.00	0.44	30.32(.000)	0.41	0.88
D	0.00	74	1.96	-0.16	-10.17(.000)	-0.86	0.66

Item 11

```

-----
item:11 (n3q11)
Cases for this item  3784  Discrimination  0.36
Item Threshold(s):  -1.21  Weighted MNSQ  1.02
Item Delta(s):      -1.21

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.11	-0.01	-0.55(.584)	0.10	0.89
9	0.00	18	0.48	-0.05	-2.93(.003)	-0.44	1.08
A	0.00	340	8.99	-0.16	-10.08(.000)	-0.33	0.81
B	0.00	192	5.07	-0.15	-9.28(.000)	-0.43	0.88
C	1.00	2865	75.71	0.36	24.09(.000)	0.33	0.91
D	0.00	365	9.65	-0.25	-15.88(.000)	-0.52	0.81

Item 12

```

-----
item:12 (n3q12)
Cases for this item  3784  Discrimination  0.46
Item Threshold(s):  -0.53  Weighted MNSQ  0.97
Item Delta(s):      -0.53

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.04	-2.29(.022)	-1.64	0.43
9	0.00	26	0.69	-0.08	-4.78(.000)	-0.74	0.88
A	0.00	821	21.70	-0.23	-14.69(.000)	-0.22	0.81
B	0.00	389	10.28	-0.28	-18.13(.000)	-0.57	0.81
C	0.00	140	3.70	-0.16	-9.94(.000)	-0.54	0.74
D	1.00	2406	63.58	0.46	31.43(.000)	0.44	0.88

Item 13

```

-----
item:13 (n3q13)
Cases for this item  3784  Discrimination  0.46
Item Threshold(s):  -0.41  Weighted MNSQ  0.97
Item Delta(s):      -0.41

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.04	-2.37(.018)	-2.04	0.00
9	0.00	14	0.37	-0.05	-3.00(.003)	-0.71	0.81
A	0.00	71	1.88	-0.14	-8.72(.000)	-0.71	0.88
B	1.00	2310	61.05	0.46	32.22(.000)	0.46	0.89
C	0.00	397	10.49	-0.16	-10.27(.000)	-0.27	0.79
D	0.00	991	26.19	-0.35	-22.86(.000)	-0.35	0.81

Item 14

```

-----
item:14 (n3q14)
Cases for this item  3784  Discrimination  0.47
Item Threshold(s):  -0.49  Weighted MNSQ  0.95
Item Delta(s):      -0.49

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.02	-1.08(.279)	-1.11	0.00
9	0.00	12	0.32	-0.05	-2.89(.004)	-0.72	1.14
A	0.00	1021	26.98	-0.37	-24.45(.000)	-0.39	0.79
B	0.00	302	7.98	-0.17	-10.33(.000)	-0.31	0.86
C	0.00	72	1.90	-0.13	-7.83(.000)	-0.69	0.82
D	1.00	2376	62.79	0.47	33.09(.000)	0.47	0.87

Item 15

```

-----
item:15 (n3q15)
Cases for this item  3784  Discrimination  0.52
Item Threshold(s):  -0.13  Weighted MNSQ  0.92
Item Delta(s):      -0.13

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	0.01	0.44(.657)	1.04	0.00
9	0.00	64	1.69	-0.07	-4.11(.000)	-0.34	1.02
A	0.00	477	12.61	-0.18	-10.93(.000)	-0.26	0.80
B	1.00	2099	55.47	0.52	37.24(.000)	0.55	0.86
C	0.00	564	14.90	-0.17	-10.75(.000)	-0.22	0.80
D	0.00	409	10.81	-0.27	-16.98(.000)	-0.49	0.71
E	0.00	170	4.49	-0.23	-14.28(.000)	-0.77	0.71

Item 16

```

-----
item:16 (n3q16)
Cases for this item  3783  Discrimination  0.43
Item Threshold(s):  -0.05  Weighted MNSQ  1.01
Item Delta(s):      -0.04

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.01	-0.86(.390)	-0.57	0.00
9	0.00	16	0.42	-0.06	-3.81(.000)	-0.65	0.94
A	1.00	2028	53.61	0.43	29.01(.000)	0.48	0.89
B	0.00	681	18.00	-0.09	-5.59(.000)	0.00	0.83
C	0.00	427	11.29	-0.20	-12.67(.000)	-0.34	0.78
D	0.00	630	16.65	-0.30	-18.99(.000)	-0.41	0.89

Item 17

```

-----
item:17 (n3q17)
Cases for this item  3781  Discrimination  0.39
Item Threshold(s):  0.13  Weighted MNSQ  1.04
Item Delta(s):      0.13

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1	SD:1
9	0.00	31	0.82	-0.05	-3.18(.002)	-0.39	0.89	
A	0.00	583	15.42	-0.17	-10.73(.000)	-0.21	0.87	
B	1.00	1886	49.88	0.39	26.36(.000)	0.48	0.90	
C	0.00	698	18.46	-0.13	-7.76(.000)	-0.08	0.84	
D	0.00	583	15.42	-0.23	-14.28(.000)	-0.30	0.86	

Item 18

```

-----
item:18 (n3q18)
Cases for this item  3781  Discrimination  0.40
Item Threshold(s):  0.65  Weighted MNSQ  1.02
Item Delta(s):      0.65

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1	SD:1
8	0.00	1	0.03	0.01	0.65(.517)	0.01	0.00	
9	0.00	71	1.88	-0.05	-3.10(.002)	-0.27	0.93	
A	1.00	1484	39.25	0.40	27.16(.000)	0.59	0.94	
B	0.00	1110	29.36	-0.09	-5.86(.000)	0.03	0.78	
C	0.00	905	23.94	-0.20	-12.61(.000)	-0.17	0.80	
D	0.00	210	5.55	-0.27	-17.19(.000)	-0.86	0.79	

Item 19

```

-----
item:19 (n3q19)
Cases for this item  3780  Discrimination  0.35
Item Threshold(s):  0.48  Weighted MNSQ  1.07
Item Delta(s):      0.47

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1	SD:1
8	0.00	1	0.03	-0.01	-0.36(.720)	-0.85	0.00	
9	0.00	20	0.53	-0.07	-4.14(.000)	-0.66	0.94	
A	0.00	811	21.46	-0.26	-16.34(.000)	-0.26	0.83	
B	0.00	1061	28.07	-0.08	-4.83(.000)	0.04	0.86	
C	1.00	1618	42.80	0.35	23.11(.000)	0.49	0.93	
D	0.00	219	5.79	-0.07	-4.55(.000)	-0.10	0.86	
E	0.00	50	1.32	-0.10	-6.10(.000)	-0.66	0.96	

Item 20

```

-----
item:20 (n3q20)
Cases for this item  3780  Discrimination  0.51
Item Threshold(s):  0.59  Weighted MNSQ  0.93
Item Delta(s):      0.60

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1	SD:1
8	0.00	2	0.05	-0.04	-2.76(.006)	-1.46	0.83	
9	0.00	56	1.48	-0.07	-4.41(.000)	-0.47	0.90	
A	0.00	861	22.78	-0.22	-13.57(.000)	-0.18	0.80	
B	0.00	1102	29.15	-0.25	-16.17(.000)	-0.21	0.77	
C	1.00	1525	40.34	0.51	36.42(.000)	0.69	0.89	
D	0.00	234	6.19	-0.14	-8.85(.000)	-0.32	0.80	

Item 21

```

-----
item:21 (n3q21)
Cases for this item  3780  Discrimination  0.36
Item Threshold(s):  0.73  Weighted MNSQ  1.06
Item Delta(s):      0.73

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.04	-2.26(.024)	-2.33	0.00
9	0.00	40	1.06	-0.04	-2.38(.017)	-0.21	0.95
A	1.00	1427	37.75	0.36	23.71(.000)	0.56	0.93
B	0.00	1457	38.54	-0.13	-8.20(.000)	-0.00	0.82
C	0.00	544	14.39	-0.09	-5.65(.000)	-0.06	0.89
D	0.00	311	8.23	-0.27	-17.06(.000)	-0.64	0.79

Item 22

```

-----
item:22 (n3q22)
Cases for this item  3778  Discrimination  0.41
Item Threshold(s):  0.55  Weighted MNSQ  1.02
Item Delta(s):      0.56

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.02	-1.46(.145)	-0.63	0.53
9	0.00	64	1.69	-0.07	-4.15(.000)	-0.36	0.93
A	1.00	1554	41.13	0.41	27.83(.000)	0.59	0.91
B	0.00	658	17.42	-0.10	-6.21(.000)	-0.04	0.77
C	0.00	511	13.53	-0.02	-1.26(.209)	0.10	0.85
D	0.00	570	15.09	-0.18	-11.16(.000)	-0.23	0.84
E	0.00	419	11.09	-0.27	-17.22(.000)	-0.53	0.78

Item 23

```

-----
item:23 (n3q23)
Cases for this item  3775  Discrimination  0.25
Item Threshold(s):  0.48  Weighted MNSQ  1.16
Item Delta(s):      0.47

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.13	-0.04	-2.41(.016)	-0.84	0.96
9	0.00	19	0.50	-0.05	-3.19(.001)	-0.70	0.79
A	0.00	75	1.99	-0.14	-8.61(.000)	-0.72	0.90
B	1.00	1618	42.86	0.25	16.04(.000)	0.40	0.94
C	0.00	2008	53.19	-0.17	-10.28(.000)	0.02	0.88
D	0.00	50	1.32	-0.16	-9.89(.000)	-1.08	0.70

Item 24

```

-----
item:24 (n3q24)
Cases for this item  3774  Discrimination  0.25
Item Threshold(s):  0.78  Weighted MNSQ  1.15
Item Delta(s):      0.78

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	75	1.99	-0.05	-3.19(.001)	-0.26	0.89
A	0.00	723	19.16	-0.17	-10.65(.000)	-0.17	0.82
B	0.00	950	25.17	-0.09	-5.53(.000)	0.02	0.91
C	1.00	1384	36.67	0.25	15.92(.000)	0.43	0.93
D	0.00	642	17.01	-0.02	-1.23(.219)	0.13	0.99

Item 25

```

-----
item:25 (n3q25)
Cases for this item  3774  Discrimination  0.56
Item Threshold(s):  0.88  Weighted MNSQ  0.88
Item Delta(s):      0.88

```

Label	Score	Count	% of tot	Pt Bis	t	(p)	PV1Avg:1	PV1	SD:1
0	0.00	2349	62.24	-0.51	-36.29	(.000)	-0.19	0.81	
1	1.00	1314	34.82	0.56	41.27	(.000)	0.81	0.80	
9	0.00	111	2.94	-0.11	-6.98	(.000)	-0.47	0.86	

Item 26

```

-----
item:26 (n3q26)
Cases for this item  3772  Discrimination  0.39
Item Threshold(s):  1.02  Weighted MNSQ  1.03
Item Delta(s):      1.02

```

Label	Score	Count	% of tot	Pt Bis	t	(p)	PV1Avg:1	PV1	SD:1
0	0.00	2501	66.30	-0.36	-23.43	(.000)	-0.07	0.87	
1	1.00	1212	32.13	0.39	26.03	(.000)	0.64	0.89	
9	0.00	59	1.56	-0.11	-6.85	(.000)	-0.69	0.90	

Item 27

```

-----
item:27 (n3q27)
Cases for this item  3770  Discrimination  0.29
Item Threshold(s):  0.09  Weighted MNSQ  1.14
Item Delta(s):      0.09

```

Label	Score	Count	% of tot	Pt Bis	t	(p)	PV1Avg:1	PV1	SD:1
8	0.00	4	0.11	-0.04	-2.19	(.029)	-0.73	0.44	
9	0.00	33	0.88	-0.04	-2.57	(.010)	-0.27	0.87	
A	0.00	609	16.15	-0.09	-5.32	(.000)	-0.03	0.87	
B	1.00	1914	50.77	0.29	18.59	(.000)	0.40	1.00	
C	0.00	1210	32.10	-0.23	-14.61	(.000)	-0.14	0.78	

Item 28

```

-----
item:28 (n3q28)
Cases for this item  3767  Discrimination  0.52
Item Threshold(s):  0.77  Weighted MNSQ  0.92
Item Delta(s):      0.77

```

Label	Score	Count	% of tot	Pt Bis	t	(p)	PV1Avg:1	PV1	SD:1
9	0.00	86	2.28	-0.10	-6.00	(.000)	-0.41	0.70	
A	0.00	1260	33.45	-0.31	-19.74	(.000)	-0.22	0.81	
B	0.00	660	17.52	-0.12	-7.42	(.000)	-0.06	0.83	
C	0.00	372	9.88	-0.15	-9.48	(.000)	-0.26	0.76	
D	1.00	1389	36.87	0.52	37.22	(.000)	0.73	0.88	

Item 29

```

-----
item:29 (n3q29)
Cases for this item  3760  Discrimination  0.46
Item Threshold(s):  1.27  Weighted MNSQ  0.95
Item Delta(s):      1.27

```

Label	Score	Count	% of tot	Pt Bis	t	(p)	PV1Avg:1	PV1	SD:1
0	0.00	2558	68.03	-0.40	-26.63	(.000)	-0.08	0.85	
1	1.00	1041	27.69	0.46	31.57	(.000)	0.80	0.87	
9	0.00	161	4.28	-0.09	-5.80	(.000)	-0.32	0.87	

Item 30

```

-----
item:30 (n3q30)
Cases for this item  3744  Discrimination  0.38
Item Threshold(s):  1.24  Weighted MNSQ  1.00
Item Delta(s):      1.25

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.08	-0.01	-0.43 (.668)	0.22	1.02
9	0.00	99	2.64	-0.03	-1.64 (.101)	-0.11	0.92
A	0.00	1498	40.01	-0.15	-9.56 (.000)	-0.00	0.80
B	0.00	604	16.13	-0.09	-5.62 (.000)	-0.04	0.88
C	1.00	1054	28.15	0.38	25.38 (.000)	0.69	0.98
D	0.00	486	12.98	-0.17	-10.82 (.000)	-0.24	0.90

Item 31

```

-----
item:31 (n3q31)
Cases for this item  3725  Discrimination  0.48
Item Threshold(s):  1.84  Weighted MNSQ  0.90
Item Delta(s):      1.84

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2919	78.36	-0.42	-27.99 (.000)	-0.03	0.85
1	1.00	709	19.03	0.48	33.44 (.000)	1.01	0.85
9	0.00	97	2.60	-0.11	-6.54 (.000)	-0.54	0.81

Item 32

```

-----
item:32 (n3q32)
Cases for this item  3715  Discrimination  0.32
Item Threshold(s):  1.72  Weighted MNSQ  1.02
Item Delta(s):      1.72

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	0.01	0.31 (.757)	0.45	0.00
9	0.00	31	0.83	-0.03	-1.78 (.074)	-0.22	0.93
A	0.00	159	4.28	-0.07	-4.55 (.000)	-0.20	0.99
B	1.00	772	20.78	0.32	20.41 (.000)	0.70	1.04
C	0.00	219	5.90	-0.13	-8.12 (.000)	-0.26	0.81
D	0.00	445	11.98	-0.08	-4.80 (.000)	-0.02	0.85
E	0.00	2088	56.20	-0.11	-6.75 (.000)	0.07	0.85

Item 33

```

-----
item:33 (n3q33)
Cases for this item  3703  Discrimination  0.42
Item Threshold(s):  2.13  Weighted MNSQ  0.94
Item Delta(s):      2.12

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2960	79.94	-0.33	-21.49 (.000)	0.01	0.87
1	1.00	575	15.53	0.42	28.11 (.000)	1.02	0.85
9	0.00	168	4.54	-0.09	-5.44 (.000)	-0.25	0.89

Item 34

```

-----
item:34 (n3q34)
Cases for this item  3635  Discrimination  0.30
Item Threshold(s):  1.87  Weighted MNSQ  1.05
Item Delta(s):      1.87

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2844	78.24	-0.26	-16.53 (.000)	0.05	0.90
1	1.00	684	18.82	0.30	19.26 (.000)	0.74	0.91
9	0.00	107	2.94	-0.06	-3.50 (.000)	-0.15	0.88

Item 35

item:35 (n3q35)Cases for this item 3608 Discrimination 0.33
Item Threshold(s): 3.16 Weighted MNSQ 0.97
Item Delta(s): 3.16

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3318	91.96	-0.30	-18.56(.000)	0.10	0.91
1	1.00	244	6.76	0.33	20.84(.000)	1.20	0.80
9	0.00	46	1.27	-0.02	-1.10(.273)	-0.04	0.86

The following traditional statistics are only meaningful for complete designs and when the amount of missing data is minimal.
In this analysis 0.55% of the data are missing.

The following results are scaled to assume that a single response was provided for each item.

N	3785
Mean	18.13
Standard Deviation	5.97
Variance	35.70
Skewness	0.15
Kurtosis	-0.46
Standard error of mean	0.10
Standard error of measurement	2.44
Coefficient Alpha	0.83

=====

Appendix B.14 Year 5 Numeracy

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NAPLAN 2015, Calibration, Grade 5, numeracy
GENERALISED ITEM ANALYSIS

=====

Item 1

item:1 (n5q01)
Cases for this item 3942 Discrimination 0.36
Item Threshold(s): -2.92 Weighted MNSQ 0.89
Item Delta(s): -2.92

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.00	-0.02 (.985)	1.04	0.00
9	0.00	6	0.15	-0.05	-2.92 (.004)	-1.06	1.60
A	1.00	3670	93.10	0.36	23.87 (.000)	0.31	1.10
B	0.00	168	4.26	-0.24	-15.75 (.000)	-1.10	0.88
C	0.00	70	1.78	-0.21	-13.38 (.000)	-1.54	0.85
D	0.00	27	0.68	-0.14	-8.91 (.000)	-1.72	0.95

=====

Item 2

item:2 (n5q02)
Cases for this item 3942 Discrimination 0.28
Item Threshold(s): -3.43 Weighted MNSQ 0.93
Item Delta(s): -3.43

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	8	0.20	-0.05	-3.01 (.003)	-0.81	1.36
A	0.00	65	1.65	-0.20	-13.08 (.000)	-1.62	0.97
B	0.00	39	0.99	-0.12	-7.53 (.000)	-1.04	1.14
C	0.00	63	1.60	-0.14	-8.74 (.000)	-1.00	1.06
D	1.00	3767	95.56	0.28	18.15 (.000)	0.26	1.12

=====

Item 3

item:3 (n5q03)
Cases for this item 3942 Discrimination 0.35
Item Threshold(s): -2.14 Weighted MNSQ 0.97
Item Delta(s): -2.14

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.08	-0.05	-3.38 (.001)	-2.15	0.48
9	0.00	17	0.43	-0.11	-6.88 (.000)	-1.75	1.15
A	0.00	83	2.11	-0.09	-5.88 (.000)	-0.51	1.01
B	1.00	3432	87.06	0.35	23.76 (.000)	0.34	1.10
C	0.00	332	8.42	-0.25	-16.46 (.000)	-0.69	1.01
D	0.00	75	1.90	-0.19	-12.36 (.000)	-1.24	0.80

=====

Item 4

item:4 (n5q04)
Cases for this item 3942 Discrimination 0.37
Item Threshold(s): -2.38 Weighted MNSQ 0.95
Item Delta(s): -2.38

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.01	-0.94 (.348)	-0.48	0.00
9	0.00	16	0.41	-0.08	-4.74 (.000)	-0.98	1.22
A	0.00	135	3.42	-0.22	-14.26 (.000)	-1.18	0.90
B	0.00	180	4.57	-0.22	-13.87 (.000)	-0.88	1.00
C	1.00	3517	89.22	0.37	24.82 (.000)	0.34	1.09
D	0.00	93	2.36	-0.16	-9.91 (.000)	-0.95	0.99

=====

Item 5

```

-----
item:5 (n5q05)
Cases for this item  3942  Discrimination  0.42
Item Threshold(s):  -1.80  Weighted MNSQ  0.95
Item Delta(s):      -1.80

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.03	-1.60 (.111)	-1.63	0.00
9	0.00	38	0.96	-0.08	-4.84 (.000)	-0.80	1.29
A	0.00	399	10.12	-0.28	-18.16 (.000)	-0.68	0.95
B	1.00	3286	83.36	0.42	28.82 (.000)	0.40	1.08
C	0.00	121	3.07	-0.23	-15.07 (.000)	-1.25	0.85
D	0.00	97	2.46	-0.15	-9.60 (.000)	-0.86	0.97

Item 6

```

-----
item:6 (n5q06)
Cases for this item  3942  Discrimination  0.31
Item Threshold(s):  -1.65  Weighted MNSQ  1.08
Item Delta(s):      -1.65

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.02	-1.46 (.143)	-1.30	0.00
9	0.00	14	0.36	-0.08	-4.81 (.000)	-1.21	1.36
A	0.00	431	10.93	-0.19	-12.19 (.000)	-0.43	1.02
B	0.00	223	5.66	-0.18	-11.75 (.000)	-0.59	1.08
C	1.00	3214	81.53	0.31	20.46 (.000)	0.36	1.12
D	0.00	59	1.50	-0.11	-6.93 (.000)	-0.71	0.94

Item 7

```

-----
item:7 (n5q07)
Cases for this item  3942  Discrimination  0.41
Item Threshold(s):  -1.62  Weighted MNSQ  0.99
Item Delta(s):      -1.62

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	46	1.17	-0.09	-5.57 (.000)	-0.84	1.20
A	1.00	3200	81.18	0.41	27.97 (.000)	0.41	1.09
B	0.00	526	13.34	-0.29	-18.89 (.000)	-0.59	0.93
C	0.00	114	2.89	-0.19	-12.41 (.000)	-1.06	0.82
D	0.00	56	1.42	-0.16	-10.26 (.000)	-1.21	0.93

Item 8

```

-----
item:8 (n5q08)
Cases for this item  3941  Discrimination  0.47
Item Threshold(s):  -1.33  Weighted MNSQ  0.92
Item Delta(s):      -1.33

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.03	-1.71 (.087)	-1.56	2.40
9	0.00	8	0.20	-0.10	-6.42 (.000)	-2.41	0.53
A	0.00	232	5.89	-0.35	-23.21 (.000)	-1.32	0.79
B	1.00	3040	77.14	0.47	33.86 (.000)	0.48	1.05
C	0.00	462	11.72	-0.24	-15.50 (.000)	-0.50	0.94
D	0.00	197	5.00	-0.16	-10.33 (.000)	-0.58	0.89

Item 9

```

-----
item:9 (n5q09)
Cases for this item  3941  Discrimination  0.36
Item Threshold(s):  -0.67  Weighted MNSQ  1.11
Item Delta(s):      -0.67

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	19	0.48	-0.11	-7.02(.000)	-1.49	1.08
A	0.00	381	9.67	-0.15	-9.41(.000)	-0.29	1.01
B	1.00	2618	66.43	0.36	24.59(.000)	0.48	1.10
C	0.00	570	14.46	-0.17	-10.92(.000)	-0.26	1.07
D	0.00	353	8.96	-0.21	-13.60(.000)	-0.53	1.02

Item 10

```

-----
item:10 (n5q10)
Cases for this item  3941  Discrimination  0.44
Item Threshold(s):  -0.99  Weighted MNSQ  0.99
Item Delta(s):      -0.99

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.04	-2.61(.009)	-1.84	0.29
9	0.00	26	0.66	-0.09	-5.77(.000)	-1.16	1.41
A	0.00	226	5.73	-0.27	-17.75(.000)	-1.01	0.83
B	0.00	415	10.53	-0.31	-20.43(.000)	-0.80	0.90
C	0.00	439	11.14	-0.10	-6.61(.000)	-0.11	0.99
D	1.00	2833	71.89	0.44	31.09(.000)	0.50	1.06

Item 11

```

-----
item:11 (n5q11)
Cases for this item  3941  Discrimination  0.42
Item Threshold(s):  -1.83  Weighted MNSQ  0.93
Item Delta(s):      -1.83

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	21	0.53	-0.12	-7.30(.000)	-1.70	1.10
A	0.00	247	6.27	-0.24	-15.57(.000)	-0.82	0.94
B	0.00	78	1.98	-0.17	-10.90(.000)	-1.11	1.04
C	0.00	295	7.49	-0.24	-15.37(.000)	-0.75	1.05
D	1.00	3300	83.74	0.42	28.64(.000)	0.40	1.07

Item 12

```

-----
item:12 (n5q12)
Cases for this item  3940  Discrimination  0.32
Item Threshold(s):   0.45  Weighted MNSQ  1.20
Item Delta(s):      0.44

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	7	0.18	-0.07	-4.13(.000)	-1.46	0.81
9	0.00	14	0.36	-0.08	-4.75(.000)	-1.53	1.25
A	1.00	1771	44.95	0.32	21.33(.000)	0.58	1.13
B	0.00	1356	34.42	-0.23	-14.71(.000)	-0.13	1.04
C	0.00	76	1.93	-0.14	-9.18(.000)	-0.97	1.07
D	0.00	274	6.95	-0.02	-1.28(.202)	0.12	1.04
E	0.00	442	11.22	-0.06	-3.86(.000)	0.02	1.11

Item 13

```

-----
item:13 (n5q13)
Cases for this item  3939  Discrimination  0.42
Item Threshold(s):  -0.41  Weighted MNSQ  1.05
Item Delta(s):      -0.42

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.03	-1.60 (.111)	-1.63	0.00
9	0.00	16	0.41	-0.11	-7.16 (.000)	-1.92	0.93
A	1.00	2432	61.74	0.42	29.41 (.000)	0.56	1.06
B	0.00	927	23.53	-0.29	-18.80 (.000)	-0.36	1.03
C	0.00	459	11.65	-0.13	-7.99 (.000)	-0.18	1.05
D	0.00	104	2.64	-0.23	-14.63 (.000)	-1.27	0.78

Item 14

```

-----
item:14 (n5q14)
Cases for this item  3939  Discrimination  0.55
Item Threshold(s):  -0.58  Weighted MNSQ  0.90
Item Delta(s):      -0.58

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.03	-1.60 (.111)	-1.63	0.00
9	0.00	56	1.42	-0.08	-4.87 (.000)	-0.48	1.25
A	0.00	683	17.34	-0.35	-23.50 (.000)	-0.61	0.89
B	0.00	410	10.41	-0.24	-15.34 (.000)	-0.55	0.90
C	0.00	238	6.04	-0.20	-13.02 (.000)	-0.68	0.96
D	1.00	2551	64.76	0.55	41.44 (.000)	0.63	1.03

Item 15

```

-----
item:15 (n5q15)
Cases for this item  3939  Discrimination  0.49
Item Threshold(s):  -0.62  Weighted MNSQ  0.97
Item Delta(s):      -0.62

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.15	-0.02	-1.12 (.263)	-0.51	0.73
9	0.00	29	0.74	-0.09	-5.66 (.000)	-1.05	1.31
A	0.00	396	10.05	-0.21	-13.75 (.000)	-0.50	0.91
B	0.00	676	17.16	-0.28	-18.27 (.000)	-0.45	0.89
C	1.00	2579	65.47	0.49	35.60 (.000)	0.59	1.08
D	0.00	253	6.42	-0.23	-14.85 (.000)	-0.79	0.91

Item 16

```

-----
item:16 (n5q16)
Cases for this item  3939  Discrimination  0.54
Item Threshold(s):  -0.77  Weighted MNSQ  0.91
Item Delta(s):      -0.76

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	60	1.52	-0.10	-6.21 (.000)	-0.76	1.08
A	1.00	2680	68.04	0.54	40.28 (.000)	0.60	1.06
B	0.00	582	14.78	-0.28	-18.45 (.000)	-0.53	0.84
C	0.00	401	10.18	-0.29	-18.91 (.000)	-0.73	0.82
D	0.00	216	5.48	-0.23	-14.87 (.000)	-0.82	0.91

Item 17

```

-----
item:17 (n5q17)
Cases for this item  3939  Discrimination  0.55
Item Threshold(s):  -0.48  Weighted MNSQ  0.91
Item Delta(s):      -0.47

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.01	-0.41 (.680)	0.45	0.00
9	0.00	33	0.84	-0.09	-5.78 (.000)	-1.05	1.35
A	0.00	313	7.95	-0.23	-14.92 (.000)	-0.66	0.83
B	1.00	2473	62.78	0.55	41.40 (.000)	0.65	1.05
C	0.00	364	9.24	-0.35	-23.14 (.000)	-0.97	0.83
D	0.00	755	19.17	-0.24	-15.60 (.000)	-0.32	0.83

Item 18

```

-----
item:18 (n5q18)
Cases for this item  3936  Discrimination  0.54
Item Threshold(s):  -0.38  Weighted MNSQ  0.92
Item Delta(s):      -0.37

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.02	-1.07 (.284)	-0.95	0.00
9	0.00	16	0.41	-0.06	-3.64 (.000)	-0.95	1.63
A	0.00	621	15.78	-0.30	-20.07 (.000)	-0.55	0.84
B	0.00	843	21.42	-0.31	-20.64 (.000)	-0.42	0.95
C	1.00	2399	60.95	0.54	40.06 (.000)	0.65	1.05
D	0.00	56	1.42	-0.16	-10.35 (.000)	-1.34	0.92

Item 19

```

-----
item:19 (n5q19)
Cases for this item  3936  Discrimination  0.51
Item Threshold(s):  -0.31  Weighted MNSQ  0.96
Item Delta(s):      -0.31

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	43	1.09	-0.09	-5.67 (.000)	-0.87	1.20
A	1.00	2350	59.71	0.51	37.44 (.000)	0.65	1.09
B	0.00	296	7.52	-0.32	-21.29 (.000)	-1.02	0.80
C	0.00	1100	27.95	-0.28	-18.32 (.000)	-0.27	0.82
D	0.00	147	3.73	-0.17	-10.56 (.000)	-0.72	0.99

Item 20

```

-----
item:20 (n5q20)
Cases for this item  3935  Discrimination  0.40
Item Threshold(s):  0.34  Weighted MNSQ  1.10
Item Delta(s):      0.34

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.02	-1.42 (.155)	-0.46	0.21
9	0.00	37	0.94	-0.07	-4.35 (.000)	-0.71	1.28
A	1.00	1853	47.09	0.40	27.10 (.000)	0.65	1.16
B	0.00	846	21.50	-0.15	-9.50 (.000)	-0.09	0.96
C	0.00	723	18.37	-0.27	-17.88 (.000)	-0.42	0.90
D	0.00	474	12.05	-0.07	-4.46 (.000)	-0.03	1.08

Item 21

```

-----
item:21 (n5q21)
Cases for this item  3934  Discrimination  0.53
Item Threshold(s):  -0.12  Weighted MNSQ  0.94
Item Delta(s):      -0.12

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1606	40.82	-0.48	-34.57(.000)	-0.42	0.94
1	1.00	2204	56.02	0.53	39.35(.000)	0.71	1.04
9	0.00	124	3.15	-0.15	-9.64(.000)	-0.74	1.12

Item 22

```

-----
item:22 (n5q22)
Cases for this item  3934  Discrimination  0.44
Item Threshold(s):   0.23  Weighted MNSQ  1.05
Item Delta(s):      0.23

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.01	-0.81(.419)	0.15	0.00
9	0.00	65	1.65	-0.08	-5.20(.000)	-0.66	1.12
A	0.00	427	10.85	-0.21	-13.55(.000)	-0.44	0.89
B	0.00	922	23.44	-0.19	-11.95(.000)	-0.16	0.97
C	1.00	1933	49.14	0.44	30.79(.000)	0.69	1.10
D	0.00	586	14.90	-0.18	-11.57(.000)	-0.27	1.09

Item 23

```

-----
item:23 (n5q23)
Cases for this item  3934  Discrimination  0.55
Item Threshold(s):   0.23  Weighted MNSQ  0.92
Item Delta(s):      0.23

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	66	1.68	-0.10	-6.26(.000)	-0.75	1.14
A	0.00	1037	26.36	-0.33	-21.92(.000)	-0.39	0.85
B	0.00	596	15.15	-0.19	-12.41(.000)	-0.29	0.83
C	1.00	1934	49.16	0.55	41.17(.000)	0.80	1.07
D	0.00	301	7.65	-0.18	-11.17(.000)	-0.48	1.15

Item 24

```

-----
item:24 (n5q24)
Cases for this item  3932  Discrimination  0.48
Item Threshold(s):   0.56  Weighted MNSQ  1.00
Item Delta(s):      0.56

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	34	0.86	-0.07	-4.32(.000)	-0.74	1.36
A	0.00	223	5.67	-0.13	-8.14(.000)	-0.41	1.12
B	0.00	365	9.28	-0.20	-13.00(.000)	-0.51	1.00
C	0.00	1632	41.51	-0.29	-19.00(.000)	-0.17	0.92
D	1.00	1678	42.68	0.48	34.41(.000)	0.82	1.10

Item 25

```

-----
item:25 (n5q25)
Cases for this item  3930  Discrimination  0.56
Item Threshold(s):  0.31  Weighted MNSQ  0.91
Item Delta(s):      0.31

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.04	-2.41 (.016)	-3.39	0.00
9	0.00	108	2.75	-0.09	-5.60 (.000)	-0.43	1.09
A	0.00	1076	27.38	-0.41	-28.45 (.000)	-0.50	0.85
B	0.00	663	16.87	-0.13	-7.92 (.000)	-0.10	0.98
C	1.00	1869	47.56	0.56	42.44 (.000)	0.84	1.03
D	0.00	213	5.42	-0.15	-9.41 (.000)	-0.53	0.97

Item 26

```

-----
item:26 (n5q26)
Cases for this item  3927  Discrimination  0.60
Item Threshold(s):  0.44  Weighted MNSQ  0.86
Item Delta(s):      0.44

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2098	53.43	-0.57	-44.00 (.000)	-0.38	0.91
1	1.00	1774	45.17	0.60	47.58 (.000)	0.93	0.98
9	0.00	55	1.40	-0.12	-7.68 (.000)	-0.98	1.13

Item 27

```

-----
item:27 (n5q27)
Cases for this item  3927  Discrimination  0.27
Item Threshold(s):  0.39  Weighted MNSQ  1.24
Item Delta(s):      0.39

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.13	-0.03	-1.76 (.078)	-1.01	2.51
9	0.00	35	0.89	-0.06	-3.78 (.000)	-0.58	1.15
A	0.00	1113	28.34	-0.18	-11.19 (.000)	-0.10	1.05
B	0.00	321	8.17	-0.09	-5.87 (.000)	-0.14	1.13
C	0.00	643	16.37	-0.07	-4.34 (.000)	0.03	1.02
D	1.00	1810	46.09	0.27	17.92 (.000)	0.53	1.17

Item 28

```

-----
item:28 (n5q28)
Cases for this item  3926  Discrimination  0.46
Item Threshold(s):  0.77  Weighted MNSQ  1.02
Item Delta(s):      0.76

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2250	57.31	-0.40	-27.63 (.000)	-0.17	1.00
1	1.00	1528	38.92	0.46	32.56 (.000)	0.83	1.08
9	0.00	148	3.77	-0.13	-8.39 (.000)	-0.58	1.14

Item 29

```

-----
item:29 (n5q29)
Cases for this item  3920  Discrimination  0.35
Item Threshold(s):  1.16  Weighted MNSQ  1.11
Item Delta(s):      1.16

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	44	1.12	-0.08	-5.10 (.000)	-0.63	1.18
A	0.00	1293	32.98	-0.06	-3.54 (.000)	0.12	0.98
B	0.00	594	15.15	-0.21	-13.51 (.000)	-0.33	0.97
C	0.00	745	19.01	-0.13	-8.32 (.000)	-0.10	1.14
D	1.00	1244	31.73	0.35	23.32 (.000)	0.76	1.18

Item 30

```

-----
item:30 (n5q30)
Cases for this item 3917 Discrimination 0.44
Item Threshold(s): 1.08 Weighted MNSQ 1.01
Item Delta(s): 1.08

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.01	-0.42 (.678)	-0.87	1.08
9	0.00	38	0.97	-0.09	-5.73 (.000)	-0.77	1.05
A	0.00	1833	46.80	-0.33	-21.80 (.000)	-0.17	0.96
B	1.00	1300	33.19	0.44	30.76 (.000)	0.89	1.15
C	0.00	274	7.00	-0.11	-6.91 (.000)	-0.22	1.04
D	0.00	470	12.00	-0.02	-1.25 (.210)	0.12	1.00

Item 31

```

-----
item:31 (n5q31)
Cases for this item 3915 Discrimination 0.40
Item Threshold(s): 1.13 Weighted MNSQ 1.05
Item Delta(s): 1.13

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.03	-2.18 (.029)	-1.27	0.04
9	0.00	105	2.68	-0.03	-1.98 (.048)	-0.04	1.06
A	0.00	650	16.60	-0.20	-12.46 (.000)	-0.27	0.93
B	0.00	630	16.09	-0.23	-14.89 (.000)	-0.38	0.97
C	1.00	1267	32.36	0.40	27.10 (.000)	0.85	1.20
D	0.00	569	14.53	-0.07	-4.18 (.000)	0.03	0.89
E	0.00	692	17.68	0.00	0.19 (.853)	0.19	1.01

Item 32

```

-----
item:32 (n5q32)
Cases for this item 3904 Discrimination 0.40
Item Threshold(s): 1.11 Weighted MNSQ 1.08
Item Delta(s): 1.11

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2501	64.06	-0.33	-22.12 (.000)	-0.06	1.06
1	1.00	1276	32.68	0.40	27.18 (.000)	0.83	1.07
9	0.00	127	3.25	-0.15	-9.61 (.000)	-0.78	0.92

Item 33

```

-----
item:33 (n5q33)
Cases for this item 3900 Discrimination 0.57
Item Threshold(s): 1.42 Weighted MNSQ 0.87
Item Delta(s): 1.42

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2736	70.15	-0.51	-36.87 (.000)	-0.15	0.98
1	1.00	1071	27.46	0.57	42.91 (.000)	1.21	0.94
9	0.00	93	2.38	-0.13	-8.30 (.000)	-0.76	0.98

Item 34

```

-----
item:34 (n5q34)
Cases for this item 3898 Discrimination 0.50
Item Threshold(s): 2.13 Weighted MNSQ 0.89
Item Delta(s): 2.13

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3018	77.42	-0.42	-28.70 (.000)	-0.04	1.01
1	1.00	684	17.55	0.50	35.92 (.000)	1.40	0.98
9	0.00	196	5.03	-0.07	-4.31 (.000)	-0.15	1.10

Item 35

```

-----
item:35 (n5q35)
Cases for this item  3888  Discrimination  0.49
Item Threshold(s):  2.41  Weighted MNSQ  0.88
Item Delta(s):      2.41

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3065	78.83	-0.37	-25.09(.000)	-0.00	1.02
1	1.00	562	14.45	0.49	34.98(.000)	1.54	0.95
9	0.00	261	6.71	-0.08	-4.89(.000)	-0.15	1.01

Item 36

```

-----
item:36 (n5q36)
Cases for this item  3876  Discrimination  0.22
Item Threshold(s):  1.89  Weighted MNSQ  1.15
Item Delta(s):      1.89

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.08	-0.02	-1.11(.267)	-0.28	0.89
9	0.00	95	2.45	-0.01	-0.84(.398)	0.02	0.99
A	0.00	1169	30.16	-0.12	-7.53(.000)	0.00	1.07
B	1.00	800	20.64	0.22	14.20(.000)	0.72	1.35
C	0.00	616	15.89	-0.02	-1.54(.125)	0.16	1.08
D	0.00	1193	30.78	-0.05	-3.15(.002)	0.12	1.03

Item 37

```

-----
item:37 (n5q37)
Cases for this item  3869  Discrimination  0.33
Item Threshold(s):  2.49  Weighted MNSQ  1.00
Item Delta(s):      2.49

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.08	-0.03	-2.00(.046)	-1.07	1.89
9	0.00	81	2.09	-0.00	-0.05(.962)	0.09	1.04
A	0.00	1538	39.75	-0.11	-6.58(.000)	0.07	0.94
B	0.00	734	18.97	-0.12	-7.50(.000)	-0.09	1.07
C	0.00	557	14.40	-0.08	-5.14(.000)	-0.00	1.16
D	0.00	429	11.09	0.05	2.95(.003)	0.37	1.18
E	1.00	527	13.62	0.33	21.80(.000)	1.16	1.30

Item 38

```

-----
item:38 (n5q38)
Cases for this item  3842  Discrimination  0.34
Item Threshold(s):  1.02  Weighted MNSQ  1.13
Item Delta(s):      1.02

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.13	-0.04	-2.35(.019)	-0.96	0.85
9	0.00	49	1.28	-0.04	-2.28(.023)	-0.26	1.03
A	0.00	681	17.73	-0.28	-18.37(.000)	-0.47	0.92
B	1.00	1323	34.44	0.34	22.63(.000)	0.74	1.18
C	0.00	661	17.20	-0.11	-6.75(.000)	-0.03	0.95
D	0.00	1123	29.23	-0.02	-1.11(.269)	0.18	1.07

Item 39

item:39 (n5q39)

Cases for this item 3827 Discrimination 0.45

Item Threshold(s): 1.88 Weighted MNSQ 0.97

Item Delta(s): 1.88

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2930	76.56	-0.41	-27.73(.000)	-0.04	1.04
1	1.00	795	20.77	0.45	31.10(.000)	1.19	1.02
9	0.00	102	2.67	-0.06	-3.45(.001)	-0.21	1.10

Item 40

item:40 (n5q40)

Cases for this item 3761 Discrimination 0.45

Item Threshold(s): 2.95 Weighted MNSQ 0.88

Item Delta(s): 2.94

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3290	87.48	-0.39	-25.89(.000)	0.06	1.04
1	1.00	366	9.73	0.45	31.01(.000)	1.76	0.92
9	0.00	105	2.79	-0.03	-1.87(.062)	0.01	1.05

The following traditional statistics are only meaningful for complete designs and when the amount of missing data is minimal.
In this analysis 0.58% of the data are missing.

The following results are scaled to assume that a single response was provided for each item.

N	3942
Mean	21.14
Standard Deviation	7.61
Variance	57.89
Skewness	0.08
Kurtosis	-0.61
Standard error of mean	0.12
Standard error of measurement	2.55
Coefficient Alpha	0.89

Appendix B.15 Year 7 Numeracy

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NAPLAN 2015, Calibration, Grade 7, numeracy
GENERALISED ITEM ANALYSIS

=====

Item 1

item:1 (n7CAq01)
Cases for this item 4558 Discrimination 0.34
Item Threshold(s): -1.88 Weighted MNSQ 0.99
Item Delta(s): -1.88

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	23	0.50	-0.06	-4.19(.000)	-1.27	1.33
A	0.00	232	5.09	-0.28	-20.00(.000)	-1.48	0.69
B	1.00	3642	79.90	0.34	24.13(.000)	-0.02	1.04
C	0.00	528	11.58	-0.18	-12.58(.000)	-0.70	0.91
D	0.00	133	2.92	-0.06	-3.79(.000)	-0.57	1.03

=====

Item 2

item:2 (n7CAq02)
Cases for this item 4558 Discrimination 0.22
Item Threshold(s): -2.40 Weighted MNSQ 1.06
Item Delta(s): -2.40

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.02	-1.22(.224)	-1.38	0.00
9	0.00	15	0.33	-0.05	-3.26(.001)	-1.24	1.47
A	0.00	150	3.29	-0.09	-6.14(.000)	-0.72	1.07
B	1.00	3932	86.27	0.22	15.01(.000)	-0.11	1.07
C	0.00	172	3.77	-0.14	-9.84(.000)	-0.95	0.89
D	0.00	288	6.32	-0.12	-7.84(.000)	-0.63	0.85

=====

Item 3

item:3 (n7CAq03)
Cases for this item 4558 Discrimination 0.49
Item Threshold(s): -1.61 Weighted MNSQ 0.88
Item Delta(s): -1.61

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.04	-0.01	-0.69(.491)	-0.59	0.87
9	0.00	50	1.10	-0.09	-6.18(.000)	-1.12	1.01
A	0.00	98	2.15	-0.17	-11.91(.000)	-1.46	0.78
B	0.00	170	3.73	-0.22	-15.30(.000)	-1.38	0.70
C	0.00	786	17.24	-0.35	-25.58(.000)	-0.98	0.63
D	1.00	3452	75.73	0.49	38.09(.000)	0.09	1.02

=====

Item 4

item:4 (n7CAq04)
Cases for this item 4558 Discrimination 0.42
Item Threshold(s): -1.30 Weighted MNSQ 0.97
Item Delta(s): -1.30

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.04	-0.04	-2.40(.017)	-2.29	1.00
9	0.00	37	0.81	-0.09	-5.87(.000)	-1.38	1.20
A	0.00	325	7.13	-0.24	-16.90(.000)	-1.10	0.74
B	1.00	3222	70.69	0.42	31.41(.000)	0.08	1.05
C	0.00	609	13.36	-0.25	-17.49(.000)	-0.85	0.79
D	0.00	363	7.96	-0.13	-8.98(.000)	-0.64	0.82

=====

Item 5

```

-----
item:5 (n7CAq05)
Cases for this item 4558 Discrimination 0.33
Item Threshold(s): -1.59 Weighted MNSQ 1.03
Item Delta(s): -1.59

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.07	-0.06	-3.92(.000)	-2.93	1.30
9	0.00	17	0.37	-0.06	-4.28(.000)	-1.58	1.44
A	0.00	143	3.14	-0.13	-8.93(.000)	-0.97	0.88
B	0.00	418	9.17	-0.27	-19.15(.000)	-1.10	0.81
C	1.00	3442	75.52	0.33	23.86(.000)	0.00	1.05
D	0.00	535	11.74	-0.11	-7.67(.000)	-0.51	0.89

Item 6

```

-----
item:6 (n7CAq06)
Cases for this item 4557 Discrimination 0.36
Item Threshold(s): -1.44 Weighted MNSQ 1.03
Item Delta(s): -1.44

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.09	-0.05	-3.12(.002)	-2.24	1.79
9	0.00	32	0.70	-0.07	-4.70(.000)	-1.11	1.30
A	0.00	201	4.41	-0.15	-10.09(.000)	-0.93	1.01
B	1.00	3329	73.05	0.36	25.89(.000)	0.03	1.07
C	0.00	218	4.78	-0.15	-9.96(.000)	-0.84	0.81
D	0.00	773	16.96	-0.24	-16.71(.000)	-0.74	0.77

Item 7

```

-----
item:7 (n7CAq07)
Cases for this item 4557 Discrimination 0.42
Item Threshold(s): -1.42 Weighted MNSQ 0.96
Item Delta(s): -1.43

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.09	-0.04	-2.91(.004)	-2.12	1.79
9	0.00	76	1.67	-0.07	-4.88(.000)	-0.84	1.16
A	0.00	238	5.22	-0.17	-11.90(.000)	-0.94	0.72
B	0.00	676	14.83	-0.35	-25.31(.000)	-1.06	0.69
C	1.00	3318	72.81	0.42	31.63(.000)	0.07	1.04
D	0.00	245	5.38	-0.07	-4.46(.000)	-0.47	0.92

Item 8

```

-----
item:8 (n7CAq08)
Cases for this item 4557 Discrimination 0.51
Item Threshold(s): -0.80 Weighted MNSQ 0.91
Item Delta(s): -0.80

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.04	-0.05	-3.36(.001)	-3.60	0.85
9	0.00	21	0.46	-0.06	-4.33(.000)	-1.28	1.09
A	0.00	1142	25.06	-0.29	-20.43(.000)	-0.70	0.76
B	0.00	187	4.10	-0.20	-13.89(.000)	-1.19	0.72
C	0.00	181	3.97	-0.21	-14.67(.000)	-1.23	0.72
D	0.00	227	4.98	-0.16	-11.13(.000)	-0.94	0.85
E	1.00	2797	61.38	0.51	39.91(.000)	0.21	1.02

Item 9

```

-----
item:9 (n7CAq09)
Cases for this item 4557 Discrimination 0.35
Item Threshold(s): -1.59 Weighted MNSQ 1.02
Item Delta(s): -1.60

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.09	-0.06	-4.11 (.000)	-3.04	1.21
9	0.00	13	0.29	-0.07	-4.84 (.000)	-1.77	1.32
A	1.00	3446	75.62	0.35	25.02 (.000)	0.01	1.06
B	0.00	687	15.08	-0.24	-17.04 (.000)	-0.78	0.84
C	0.00	272	5.97	-0.17	-11.91 (.000)	-0.91	0.82
D	0.00	135	2.96	-0.09	-5.95 (.000)	-0.71	0.92

Item 10

```

-----
item:10 (n7CAq10)
Cases for this item 4557 Discrimination 0.28
Item Threshold(s): -0.84 Weighted MNSQ 1.14
Item Delta(s): -0.84

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.07	-0.05	-3.45 (.001)	-2.86	1.41
9	0.00	80	1.76	-0.05	-3.04 (.002)	-0.64	1.12
A	0.00	636	13.96	-0.34	-24.34 (.000)	-1.05	0.69
B	1.00	2826	62.01	0.28	19.95 (.000)	0.04	1.07
C	0.00	746	16.37	-0.02	-1.44 (.151)	-0.27	0.99
D	0.00	266	5.84	-0.02	-1.42 (.155)	-0.28	0.94

Item 11

```

-----
item:11 (n7CAq11)
Cases for this item 4553 Discrimination 0.44
Item Threshold(s): -0.38 Weighted MNSQ 1.01
Item Delta(s): -0.38

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.13	-0.05	-3.41 (.001)	-1.95	1.40
9	0.00	56	1.23	-0.08	-5.52 (.000)	-1.11	1.02
A	1.00	2408	52.89	0.44	32.81 (.000)	0.23	1.06
B	0.00	328	7.20	-0.15	-10.30 (.000)	-0.74	0.92
C	0.00	1108	24.34	-0.23	-15.65 (.000)	-0.60	0.84
D	0.00	647	14.21	-0.20	-14.13 (.000)	-0.70	0.88

Item 12

```

-----
item:12 (n7CAq12)
Cases for this item 4553 Discrimination 0.34
Item Threshold(s): -0.45 Weighted MNSQ 1.11
Item Delta(s): -0.45

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.04	-0.05	-3.12 (.002)	-3.02	0.03
9	0.00	65	1.43	-0.11	-7.80 (.000)	-1.38	1.05
A	0.00	1293	28.40	-0.07	-4.47 (.000)	-0.30	0.90
B	1.00	2477	54.40	0.34	24.70 (.000)	0.12	1.10
C	0.00	490	10.76	-0.29	-20.68 (.000)	-1.04	0.67
D	0.00	226	4.96	-0.17	-11.33 (.000)	-0.90	0.71

Item 13

```

-----
item:13 (n7CAq13)
Cases for this item 4551 Discrimination 0.53
Item Threshold(s): -0.02 Weighted MNSQ 0.91
Item Delta(s): -0.02

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.03	-2.25 (.025)	-3.00	0.00
9	0.00	87	1.91	-0.08	-5.68 (.000)	-0.98	1.02
A	1.00	2076	45.62	0.53	42.36 (.000)	0.40	1.07
B	0.00	689	15.14	-0.28	-19.30 (.000)	-0.85	0.71
C	0.00	870	19.12	-0.20	-13.46 (.000)	-0.60	0.78
D	0.00	828	18.19	-0.20	-13.80 (.000)	-0.64	0.79

Item 14

```

-----
item:14 (n7CAq14)
Cases for this item 4550 Discrimination 0.37
Item Threshold(s): -0.03 Weighted MNSQ 1.08
Item Delta(s): -0.03

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.07	-0.05	-3.05 (.002)	-2.68	1.70
9	0.00	22	0.48	-0.07	-4.55 (.000)	-1.40	1.14
A	0.00	892	19.60	-0.21	-14.29 (.000)	-0.63	0.81
B	0.00	390	8.57	-0.21	-14.22 (.000)	-0.89	0.83
C	0.00	1151	25.30	-0.09	-6.29 (.000)	-0.36	0.99
D	1.00	2092	45.98	0.37	27.17 (.000)	0.23	1.08

Item 15

```

-----
item:15 (n7CAq15)
Cases for this item 4550 Discrimination 0.60
Item Threshold(s): -0.23 Weighted MNSQ 0.83
Item Delta(s): -0.23

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.13	-0.05	-3.09 (.002)	-1.79	1.48
9	0.00	111	2.44	-0.11	-7.56 (.000)	-1.00	0.97
A	0.00	499	10.97	-0.25	-17.06 (.000)	-0.91	0.71
B	0.00	849	18.66	-0.29	-20.39 (.000)	-0.81	0.77
C	0.00	812	17.85	-0.25	-17.06 (.000)	-0.71	0.75
D	1.00	2273	49.96	0.60	51.13 (.000)	0.42	0.99

Item 16

```

-----
item:16 (n7CAq16)
Cases for this item 4549 Discrimination 0.34
Item Threshold(s): 0.52 Weighted MNSQ 1.11
Item Delta(s): 0.52

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.09	-0.05	-3.71 (.000)	-2.40	1.47
9	0.00	139	3.06	-0.03	-1.80 (.072)	-0.42	1.07
A	0.00	502	11.04	-0.07	-4.72 (.000)	-0.41	0.95
B	0.00	1386	30.47	-0.17	-11.87 (.000)	-0.47	0.88
C	1.00	1605	35.28	0.34	24.61 (.000)	0.29	1.19
D	0.00	913	20.07	-0.14	-9.51 (.000)	-0.48	0.88

Item 17

```

-----
item:17 (n7CAq17)
Cases for this item 4549 Discrimination 0.54
Item Threshold(s): 0.09 Weighted MNSQ 0.90
Item Delta(s): 0.10

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.13	-0.04	-2.78 (.005)	-1.79	1.57
9	0.00	36	0.79	-0.09	-6.28 (.000)	-1.34	1.05
A	0.00	653	14.35	-0.27	-18.64 (.000)	-0.85	0.70
B	0.00	507	11.15	-0.30	-21.07 (.000)	-1.04	0.62
C	0.00	527	11.58	-0.18	-12.57 (.000)	-0.70	0.82
D	1.00	1973	43.37	0.54	43.79 (.000)	0.43	1.04
E	0.00	847	18.62	-0.04	-2.47 (.014)	-0.28	0.82

Item 18

```

-----
item:18 (n7CAq18)
Cases for this item 4549 Discrimination 0.39
Item Threshold(s): -0.31 Weighted MNSQ 1.06
Item Delta(s): -0.31

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.09	-0.05	-3.48 (.001)	-2.38	1.68
9	0.00	102	2.24	-0.09	-5.86 (.000)	-0.88	0.96
A	0.00	743	16.33	-0.23	-16.10 (.000)	-0.74	0.72
B	0.00	991	21.79	-0.21	-14.15 (.000)	-0.58	0.82
C	1.00	2346	51.57	0.39	28.66 (.000)	0.20	1.12
D	0.00	363	7.98	-0.04	-2.63 (.009)	-0.34	1.01

Item 19

```

-----
item:19 (n7CAq19)
Cases for this item 4544 Discrimination 0.50
Item Threshold(s): 0.03 Weighted MNSQ 0.95
Item Delta(s): 0.03

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2195	48.31	-0.38	-27.61 (.000)	-0.59	0.90
1	1.00	2031	44.70	0.50	39.07 (.000)	0.38	0.99
9	0.00	318	7.00	-0.23	-16.29 (.000)	-1.10	0.79

Item 20

```

-----
item:20 (n7CAq20)
Cases for this item 4537 Discrimination 0.49
Item Threshold(s): -0.89 Weighted MNSQ 0.93
Item Delta(s): -0.89

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.13	-0.04	-2.67 (.008)	-1.75	1.56
9	0.00	45	0.99	-0.08	-5.15 (.000)	-1.07	0.84
A	0.00	895	19.73	-0.25	-17.24 (.000)	-0.69	0.78
B	1.00	2868	63.21	0.49	37.52 (.000)	0.19	1.04
C	0.00	460	10.14	-0.27	-18.72 (.000)	-0.99	0.72
D	0.00	263	5.80	-0.20	-13.56 (.000)	-1.03	0.83

Item 21

```

-----
item:21 (n7CAq21)
Cases for this item  4536  Discrimination  0.55
Item Threshold(s):  1.56  Weighted MNSQ  0.85
Item Delta(s):      1.56

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3180	70.11	-0.36	-25.87(.000)	-0.44	0.86
1	1.00	863	19.03	0.55	44.36(.000)	1.00	1.03
9	0.00	493	10.87	-0.17	-11.35(.000)	-0.70	0.94

Item 22

```

-----
item:22 (n7CAq22)
Cases for this item  4530  Discrimination  0.47
Item Threshold(s):  0.50  Weighted MNSQ  0.97
Item Delta(s):      0.50

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.13	-0.05	-3.26(.001)	-1.96	1.47
9	0.00	98	2.16	-0.06	-3.89(.000)	-0.62	1.01
A	1.00	1619	35.74	0.47	35.87(.000)	0.46	1.15
B	0.00	694	15.32	-0.22	-14.93(.000)	-0.72	0.87
C	0.00	534	11.79	-0.14	-9.40(.000)	-0.59	0.85
D	0.00	1579	34.86	-0.19	-13.34(.000)	-0.46	0.78

Item 23

```

-----
item:23 (n7CAq23)
Cases for this item  4524  Discrimination  0.38
Item Threshold(s):  0.89  Weighted MNSQ  1.05
Item Delta(s):      0.89

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.11	-0.02	-1.62(.106)	-1.45	2.13
9	0.00	183	4.05	-0.06	-4.07(.000)	-0.58	0.93
A	0.00	1165	25.75	-0.04	-2.69(.007)	-0.27	0.92
B	0.00	902	19.94	-0.24	-16.71(.000)	-0.66	0.84
C	0.00	959	21.20	-0.11	-7.22(.000)	-0.41	0.87
D	1.00	1310	28.96	0.38	27.23(.000)	0.43	1.21

Item 24

```

-----
item:24 (n7CAq24)
Cases for this item  4516  Discrimination  0.40
Item Threshold(s):  0.33  Weighted MNSQ  1.05
Item Delta(s):      0.33

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.11	-0.04	-2.62(.009)	-1.47	0.93
9	0.00	96	2.13	-0.05	-3.47(.001)	-0.65	1.16
A	0.00	784	17.36	-0.12	-8.01(.000)	-0.46	0.84
B	0.00	1480	32.77	-0.30	-20.83(.000)	-0.62	0.82
C	1.00	1760	38.97	0.40	29.48(.000)	0.34	1.16
D	0.00	391	8.66	-0.01	-0.81(.420)	-0.27	0.92

Item 25

```

-----
item:25 (n7CAq25)
Cases for this item  4506  Discrimination  0.26
Item Threshold(s):  0.84  Weighted MNSQ  1.18
Item Delta(s):      0.83

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.11	-0.05	-3.05(.002)	-1.99	1.69
9	0.00	84	1.86	-0.02	-1.64(.100)	-0.42	1.17
A	0.00	1359	30.16	-0.08	-5.43(.000)	-0.33	0.85
B	0.00	876	19.44	-0.02	-1.07(.287)	-0.22	1.04
C	1.00	1346	29.87	0.26	18.07(.000)	0.23	1.23
D	0.00	836	18.55	-0.18	-12.45(.000)	-0.57	0.94

Item 26

```

-----
item:26 (n7CAq26)
Cases for this item  4500  Discrimination  0.44
Item Threshold(s):  1.48  Weighted MNSQ  0.96
Item Delta(s):      1.48

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.13	-0.03	-2.19(.029)	-1.50	1.95
9	0.00	98	2.18	-0.05	-3.25(.001)	-0.64	0.91
A	0.00	1120	24.89	-0.02	-1.47(.141)	-0.22	0.95
B	0.00	1352	30.04	-0.33	-23.74(.000)	-0.71	0.76
C	0.00	1017	22.60	-0.01	-0.72(.473)	-0.23	0.96
D	1.00	907	20.16	0.44	32.56(.000)	0.73	1.17

Item 27

```

-----
item:27 (n7CAq27)
Cases for this item  4490  Discrimination  0.49
Item Threshold(s):  1.45  Weighted MNSQ  0.92
Item Delta(s):      1.45

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3337	74.32	-0.38	-27.77(.000)	-0.41	0.90
1	1.00	921	20.51	0.49	37.30(.000)	0.79	1.09
9	0.00	232	5.17	-0.13	-8.91(.000)	-0.83	1.08

Item 28

```

-----
item:28 (n7CAq28)
Cases for this item  4464  Discrimination  0.58
Item Threshold(s):  1.95  Weighted MNSQ  0.80
Item Delta(s):      1.95

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3323	74.44	-0.41	-29.88(.000)	-0.43	0.87
1	1.00	654	14.65	0.58	47.33(.000)	1.28	0.93
9	0.00	487	10.91	-0.08	-5.66(.000)	-0.50	0.96

Item 29

```

-----
item:29 (n7CAq29)
Cases for this item  4411  Discrimination  0.46
Item Threshold(s):  1.86  Weighted MNSQ  0.92
Item Delta(s):      1.86

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3002	68.06	-0.32	-22.37(.000)	-0.41	0.90
1	1.00	690	15.64	0.46	34.78(.000)	0.96	1.14
9	0.00	719	16.30	-0.05	-3.54(.000)	-0.34	1.01

Item 30

```

-----
item:30 (n7CAq30)
Cases for this item  4365  Discrimination  0.14
Item Threshold(s):  0.45  Weighted MNSQ  1.33
Item Delta(s):      0.45

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	7	0.16	-0.05	-3.16(.002)	-1.70	1.50
9	0.00	103	2.36	0.02	1.51(.131)	-0.07	1.00
A	0.00	1118	25.61	-0.07	-4.54(.000)	-0.31	0.96
B	1.00	1609	36.86	0.14	9.31(.000)	0.02	1.19
C	0.00	1044	23.92	-0.15	-10.14(.000)	-0.46	0.86
D	0.00	285	6.53	0.04	2.65(.008)	-0.07	1.26
E	0.00	199	4.56	0.08	5.05(.000)	0.13	1.11

Item 31

```

-----
item:31 (n7CAq31)
Cases for this item  4346  Discrimination  0.24
Item Threshold(s):  2.34  Weighted MNSQ  1.06
Item Delta(s):      2.34

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.09	-0.06	-4.01(.000)	-2.85	1.04
9	0.00	63	1.45	-0.03	-1.72(.086)	-0.45	0.73
A	1.00	479	11.02	0.24	16.27(.000)	0.57	1.51
B	0.00	786	18.09	-0.17	-11.14(.000)	-0.55	0.92
C	0.00	2464	56.70	0.11	7.21(.000)	-0.10	0.95
D	0.00	261	6.01	-0.17	-11.58(.000)	-0.88	0.84
E	0.00	289	6.65	-0.07	-4.96(.000)	-0.46	1.04

Item 32

```

-----
item:32 (n7CAq32)
Cases for this item  4315  Discrimination  0.24
Item Threshold(s):  2.95  Weighted MNSQ  1.07
Item Delta(s):      2.95

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3598	83.38	-0.10	-6.71(.000)	-0.23	1.01
1	1.00	295	6.84	0.24	16.24(.000)	0.80	1.31
9	0.00	422	9.78	-0.08	-5.04(.000)	-0.45	1.13

Item 33

```

-----
item:33 (n7NCq01)
Cases for this item  4564  Discrimination  0.22
Item Threshold(s):  -2.03  Weighted MNSQ  1.08
Item Delta(s):      -2.03

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.04	-0.04	-2.81(.005)	-2.46	0.76
9	0.00	23	0.50	-0.12	-7.85(.000)	-2.15	1.37
A	0.00	319	6.99	-0.17	-11.35(.000)	-0.80	0.86
B	0.00	422	9.25	-0.09	-5.81(.000)	-0.48	1.04
C	1.00	3737	81.88	0.22	15.38(.000)	-0.09	1.06
D	0.00	61	1.34	-0.08	-5.53(.000)	-0.89	0.90

Item 34

```

-----
item:34 (n7NCq02)
Cases for this item 4564 Discrimination 0.42
Item Threshold(s): -2.20 Weighted MNSQ 0.90
Item Delta(s): -2.21

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.04	-0.04	-2.93(.003)	-2.38	0.87
9	0.00	25	0.55	-0.14	-9.24(.000)	-2.35	1.09
A	0.00	266	5.83	-0.26	-18.05(.000)	-1.28	0.69
B	1.00	3836	84.05	0.42	31.19(.000)	-0.01	1.02
C	0.00	370	8.11	-0.25	-17.18(.000)	-1.05	0.72
D	0.00	65	1.42	-0.13	-8.53(.000)	-1.24	0.63

Item 35

```

-----
item:35 (n7NCq03)
Cases for this item 4564 Discrimination 0.38
Item Threshold(s): -2.39 Weighted MNSQ 0.92
Item Delta(s): -2.39

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.04	-0.04	-2.37(.018)	-1.90	0.10
9	0.00	46	1.01	-0.13	-8.69(.000)	-1.73	1.14
A	1.00	3930	86.11	0.38	27.80(.000)	-0.04	1.03
B	0.00	468	10.25	-0.29	-20.28(.000)	-1.04	0.75
C	0.00	89	1.95	-0.17	-11.48(.000)	-1.51	0.67
D	0.00	29	0.64	-0.10	-6.63(.000)	-1.45	0.58

Item 36

```

-----
item:36 (n7NCq04)
Cases for this item 4564 Discrimination 0.40
Item Threshold(s): -1.82 Weighted MNSQ 0.94
Item Delta(s): -1.82

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.07	-0.05	-3.43(.001)	-2.24	0.66
9	0.00	30	0.66	-0.10	-7.07(.000)	-1.78	1.54
A	0.00	143	3.13	-0.20	-13.77(.000)	-1.33	0.60
B	0.00	299	6.55	-0.30	-21.16(.000)	-1.38	0.61
C	0.00	488	10.69	-0.14	-9.50(.000)	-0.58	0.91
D	1.00	3601	78.90	0.40	29.12(.000)	0.01	1.02

Item 37

```

-----
item:37 (n7NCq05)
Cases for this item 4564 Discrimination 0.49
Item Threshold(s): -1.25 Weighted MNSQ 0.91
Item Delta(s): -1.25

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.07	-0.05	-3.13(.002)	-2.28	0.62
9	0.00	39	0.85	-0.10	-7.10(.000)	-1.58	1.47
A	1.00	3181	69.70	0.49	37.78(.000)	0.13	1.03
B	0.00	158	3.46	-0.21	-14.73(.000)	-1.34	0.65
C	0.00	1060	23.23	-0.35	-25.32(.000)	-0.83	0.72
D	0.00	123	2.70	-0.16	-11.12(.000)	-1.24	0.74

Item 38

```

-----
item:38 (n7NCq06)
Cases for this item 4564 Discrimination 0.44
Item Threshold(s): -1.39 Weighted MNSQ 0.94
Item Delta(s): -1.39

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	9	0.20	-0.07	-4.67(.000)	-1.90	0.43
9	0.00	71	1.56	-0.11	-7.56(.000)	-1.33	1.31
A	0.00	352	7.71	-0.24	-16.73(.000)	-1.03	0.68
B	1.00	3291	72.11	0.44	33.07(.000)	0.08	1.03
C	0.00	541	11.85	-0.22	-15.04(.000)	-0.81	0.84
D	0.00	300	6.57	-0.19	-12.75(.000)	-0.89	0.74

Item 39

```

-----
item:39 (n7NCq07)
Cases for this item 4564 Discrimination 0.48
Item Threshold(s): -0.89 Weighted MNSQ 0.94
Item Delta(s): -0.89

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.13	-0.05	-3.14(.002)	-2.08	1.45
9	0.00	39	0.85	-0.10	-7.05(.000)	-1.49	1.18
A	1.00	2880	63.10	0.48	37.37(.000)	0.18	1.04
B	0.00	764	16.74	-0.26	-18.28(.000)	-0.77	0.77
C	0.00	391	8.57	-0.29	-20.48(.000)	-1.19	0.64
D	0.00	484	10.60	-0.14	-9.66(.000)	-0.61	0.79

Item 40

```

-----
item:40 (n7NCq08)
Cases for this item 4562 Discrimination 0.48
Item Threshold(s): -1.16 Weighted MNSQ 0.92
Item Delta(s): -1.16

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1227	26.90	-0.40	-29.48(.000)	-0.85	0.78
1	1.00	3105	68.06	0.48	37.31(.000)	0.14	1.03
9	0.00	230	5.04	-0.22	-15.20(.000)	-1.22	0.83

Item 41

```

-----
item:41 (n7NCq09)
Cases for this item 4562 Discrimination 0.41
Item Threshold(s): -0.81 Weighted MNSQ 1.02
Item Delta(s): -0.81

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.13	-0.05	-3.18(.001)	-1.89	1.47
9	0.00	56	1.23	-0.10	-6.51(.000)	-1.22	1.28
A	1.00	2808	61.55	0.41	30.40(.000)	0.14	1.07
B	0.00	945	20.71	-0.27	-18.87(.000)	-0.75	0.83
C	0.00	455	9.97	-0.14	-9.37(.000)	-0.61	0.81
D	0.00	292	6.40	-0.15	-10.38(.000)	-0.76	0.80

Item 42

```

-----
item:42 (n7NCq10)
Cases for this item  4562  Discrimination  0.37
Item Threshold(s):  -1.36  Weighted MNSQ  1.03
Item Delta(s):      -1.36

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.07	-0.06	-3.84(.000)	-2.99	1.21
9	0.00	26	0.57	-0.06	-4.02(.000)	-1.09	1.13
A	0.00	290	6.36	-0.21	-14.36(.000)	-1.00	0.76
B	1.00	3268	71.64	0.37	26.85(.000)	0.04	1.07
C	0.00	492	10.78	-0.16	-10.92(.000)	-0.67	0.90
D	0.00	483	10.59	-0.20	-13.52(.000)	-0.77	0.77

Item 43

```

-----
item:43 (n7NCq11)
Cases for this item  4561  Discrimination  0.38
Item Threshold(s):  -1.15  Weighted MNSQ  1.01
Item Delta(s):      -1.15

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.09	-0.05	-3.28(.001)	-2.38	1.48
9	0.00	45	0.99	-0.10	-6.99(.000)	-1.38	1.34
A	0.00	678	14.87	-0.15	-10.38(.000)	-0.55	0.89
B	0.00	408	8.95	-0.21	-14.62(.000)	-0.89	0.89
C	0.00	330	7.24	-0.20	-14.12(.000)	-0.96	0.82
D	1.00	3096	67.88	0.38	28.04(.000)	0.07	1.04

Item 44

```

-----
item:44 (n7NCq12)
Cases for this item  4561  Discrimination  0.43
Item Threshold(s):  -0.88  Weighted MNSQ  1.00
Item Delta(s):      -0.87

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.09	-0.06	-3.84(.000)	-2.61	1.25
9	0.00	59	1.29	-0.10	-7.05(.000)	-1.22	1.13
A	0.00	252	5.53	-0.18	-12.42(.000)	-0.96	0.74
B	0.00	787	17.25	-0.22	-15.02(.000)	-0.67	0.84
C	1.00	2859	62.68	0.43	31.73(.000)	0.13	1.06
D	0.00	600	13.16	-0.20	-14.07(.000)	-0.72	0.85

Item 45

```

-----
item:45 (n7NCq13)
Cases for this item  4561  Discrimination  0.43
Item Threshold(s):  -0.19  Weighted MNSQ  1.02
Item Delta(s):      -0.19

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.07	-0.06	-3.93(.000)	-3.48	0.63
9	0.00	27	0.59	-0.10	-6.79(.000)	-1.74	1.31
A	1.00	2236	49.02	0.43	32.30(.000)	0.25	1.06
B	0.00	1259	27.60	-0.13	-8.88(.000)	-0.41	0.89
C	0.00	608	13.33	-0.19	-12.97(.000)	-0.69	0.85
D	0.00	428	9.38	-0.29	-20.35(.000)	-1.11	0.70

Item 46

```

-----
item:46 (n7NCq14)
Cases for this item  4560  Discrimination  0.55
Item Threshold(s):  -0.38  Weighted MNSQ  0.89
Item Delta(s):      -0.37

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.11	-0.06	-3.91 (.000)	-2.23	1.37
9	0.00	65	1.43	-0.08	-5.26 (.000)	-0.97	1.31
A	0.00	460	10.09	-0.14	-9.86 (.000)	-0.63	0.73
B	0.00	746	16.36	-0.27	-18.91 (.000)	-0.81	0.69
C	1.00	2407	52.79	0.55	43.90 (.000)	0.32	1.06
D	0.00	877	19.23	-0.30	-21.14 (.000)	-0.81	0.74

Item 47

```

-----
item:47 (n7NCq15)
Cases for this item  4560  Discrimination  0.44
Item Threshold(s):  -0.16  Weighted MNSQ  1.01
Item Delta(s):      -0.16

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.07	-0.03	-1.70 (.088)	-1.90	3.01
9	0.00	87	1.91	-0.09	-6.28 (.000)	-0.99	1.10
A	0.00	531	11.64	-0.07	-4.40 (.000)	-0.39	0.78
B	0.00	578	12.68	-0.20	-13.64 (.000)	-0.72	0.74
C	1.00	2208	48.42	0.44	33.01 (.000)	0.27	1.08
D	0.00	754	16.54	-0.13	-8.72 (.000)	-0.49	0.91
E	0.00	399	8.75	-0.25	-17.75 (.000)	-1.04	0.79

Item 48

```

-----
item:48 (n7NCq16)
Cases for this item  4559  Discrimination  0.51
Item Threshold(s):  -0.36  Weighted MNSQ  0.94
Item Delta(s):      -0.36

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.09	-0.05	-3.38 (.001)	-2.41	1.53
9	0.00	84	1.84	-0.09	-6.38 (.000)	-1.03	1.07
A	0.00	896	19.65	-0.31	-22.07 (.000)	-0.83	0.72
B	1.00	2392	52.47	0.51	39.50 (.000)	0.29	1.08
C	0.00	707	15.51	-0.16	-10.65 (.000)	-0.56	0.78
D	0.00	476	10.44	-0.19	-13.08 (.000)	-0.75	0.73

Item 49

```

-----
item:49 (n7NCq17)
Cases for this item  4559  Discrimination  0.43
Item Threshold(s):  -0.06  Weighted MNSQ  1.03
Item Delta(s):      -0.07

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.07	-0.04	-2.93 (.003)	-2.32	1.63
9	0.00	59	1.29	-0.11	-7.44 (.000)	-1.27	1.12
A	0.00	1142	25.05	-0.17	-11.99 (.000)	-0.52	0.80
B	0.00	475	10.42	-0.25	-17.28 (.000)	-0.94	0.77
C	0.00	757	16.60	-0.13	-8.97 (.000)	-0.47	0.96
D	1.00	2123	46.57	0.43	32.06 (.000)	0.27	1.09

Item 50

```

-----
item:50 (n7NCq18)
Cases for this item  4559  Discrimination  0.39
Item Threshold(s):  -0.16  Weighted MNSQ  1.07
Item Delta(s):      -0.16

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.07	-0.06	-3.84(.000)	-2.99	1.21
9	0.00	55	1.21	-0.07	-5.01(.000)	-0.99	1.28
A	0.00	363	7.96	-0.06	-3.77(.000)	-0.41	0.85
B	1.00	2209	48.45	0.39	28.56(.000)	0.21	1.09
C	0.00	1694	37.16	-0.32	-22.71(.000)	-0.62	0.87
D	0.00	235	5.15	-0.07	-4.90(.000)	-0.52	1.04

Item 51

```

-----
item:51 (n7NCq19)
Cases for this item  4558  Discrimination  0.45
Item Threshold(s):   0.29  Weighted MNSQ  1.00
Item Delta(s):      0.29

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.07	-0.05	-3.34(.001)	-2.89	1.36
9	0.00	79	1.73	-0.08	-5.17(.000)	-0.90	1.08
A	0.00	418	9.17	-0.19	-13.11(.000)	-0.83	0.79
B	0.00	722	15.84	-0.23	-15.68(.000)	-0.73	0.84
C	1.00	1807	39.64	0.45	34.18(.000)	0.39	1.13
D	0.00	672	14.74	-0.15	-10.18(.000)	-0.57	0.78
E	0.00	857	18.80	-0.05	-3.32(.001)	-0.31	0.79

Item 52

```

-----
item:52 (n7NCq20)
Cases for this item  4557  Discrimination  0.41
Item Threshold(s):  -0.23  Weighted MNSQ  1.05
Item Delta(s):      -0.23

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.11	-0.04	-2.41(.016)	-1.65	1.99
9	0.00	31	0.68	-0.04	-2.69(.007)	-0.82	1.23
A	0.00	963	21.13	-0.36	-26.17(.000)	-0.90	0.77
B	1.00	2276	49.95	0.41	30.09(.000)	0.22	1.07
C	0.00	611	13.41	-0.03	-2.15(.032)	-0.30	0.98
D	0.00	671	14.72	-0.11	-7.80(.000)	-0.47	0.87

Item 53

```

-----
item:53 (n7NCq21)
Cases for this item  4554  Discrimination  0.41
Item Threshold(s):   0.59  Weighted MNSQ  1.03
Item Delta(s):      0.59

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.09	-0.06	-3.89(.000)	-2.53	1.35
9	0.00	35	0.77	-0.07	-4.83(.000)	-1.10	1.31
A	1.00	1547	33.97	0.41	30.71(.000)	0.39	1.12
B	0.00	1726	37.90	-0.20	-13.99(.000)	-0.46	0.84
C	0.00	688	15.11	-0.17	-11.54(.000)	-0.59	0.93
D	0.00	323	7.09	-0.10	-6.83(.000)	-0.59	0.96
E	0.00	231	5.07	-0.02	-1.09(.278)	-0.29	1.11

Item 54

item:54 (n7NCq22)Cases for this item 4549 Discrimination 0.33
Item Threshold(s): 0.18 Weighted MNSQ 1.13
Item Delta(s): 0.18

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	9	0.20	-0.03	-2.28(.022)	-1.17	1.53
9	0.00	69	1.52	-0.06	-4.35(.000)	-0.83	1.18
A	0.00	1734	38.12	-0.08	-5.31(.000)	-0.30	0.88
B	0.00	838	18.42	-0.30	-20.91(.000)	-0.83	0.83
C	1.00	1899	41.75	0.33	23.50(.000)	0.21	1.15

Item 55

item:55 (n7NCq23)Cases for this item 4547 Discrimination 0.54
Item Threshold(s): 0.94 Weighted MNSQ 0.89
Item Delta(s): 0.94

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2803	61.65	-0.44	-32.99(.000)	-0.54	0.84
1	1.00	1277	28.08	0.54	43.00(.000)	0.70	1.06
9	0.00	467	10.27	-0.09	-6.24(.000)	-0.53	0.96

Item 56

item:56 (n7NCq24)Cases for this item 4543 Discrimination 0.43
Item Threshold(s): 1.63 Weighted MNSQ 0.96
Item Delta(s): 1.63

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.09	-0.03	-1.76(.079)	-1.20	1.98
9	0.00	55	1.21	-0.03	-1.69(.091)	-0.48	1.07
A	0.00	1587	34.93	-0.22	-15.23(.000)	-0.50	0.79
B	0.00	850	18.71	-0.11	-7.73(.000)	-0.43	1.00
C	0.00	689	15.17	-0.09	-5.86(.000)	-0.40	0.97
D	0.00	533	11.73	0.06	3.87(.000)	-0.05	1.02
E	1.00	825	18.16	0.43	32.08(.000)	0.74	1.18

Item 57

item:57 (n7NCq25)Cases for this item 4543 Discrimination 0.53
Item Threshold(s): 1.23 Weighted MNSQ 0.88
Item Delta(s): 1.23

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2988	65.77	-0.37	-26.91(.000)	-0.47	0.85
1	1.00	1070	23.55	0.53	41.70(.000)	0.80	1.11
9	0.00	485	10.68	-0.15	-10.45(.000)	-0.69	0.86

Item 58

```

-----
item:58 (n7NCq26)
Cases for this item  4531  Discrimination  0.43
Item Threshold(s):  1.20  Weighted MNSQ  0.97
Item Delta(s):      1.20

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.11	-0.05	-3.34(.001)	-2.18	1.69
9	0.00	36	0.79	-0.06	-3.72(.000)	-0.96	1.18
A	0.00	2236	49.35	-0.24	-16.37(.000)	-0.43	0.82
B	0.00	560	12.36	-0.16	-11.06(.000)	-0.65	0.89
C	0.00	607	13.40	-0.02	-1.10(.273)	-0.24	1.03
D	1.00	1087	23.99	0.43	32.06(.000)	0.60	1.22

Item 59

```

-----
item:59 (n7NCq27)
Cases for this item  4527  Discrimination  0.57
Item Threshold(s):  1.55  Weighted MNSQ  0.83
Item Delta(s):      1.55

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3474	76.74	-0.47	-36.25(.000)	-0.46	0.87
1	1.00	867	19.15	0.57	46.60(.000)	1.01	0.98
9	0.00	186	4.11	-0.12	-8.07(.000)	-0.82	1.02

Item 60

```

-----
item:60 (n7NCq28)
Cases for this item  4515  Discrimination  0.53
Item Threshold(s):  2.13  Weighted MNSQ  0.84
Item Delta(s):      2.14

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3121	69.13	-0.34	-23.89(.000)	-0.42	0.88
1	1.00	576	12.76	0.53	41.95(.000)	1.27	1.02
9	0.00	818	18.12	-0.06	-3.83(.000)	-0.35	0.98

Item 61

```

-----
item:61 (n7NCq29)
Cases for this item  4501  Discrimination  0.31
Item Threshold(s):  1.48  Weighted MNSQ  1.08
Item Delta(s):      1.49

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	7	0.16	-0.04	-2.93(.003)	-1.74	1.53
9	0.00	58	1.29	0.01	0.72(.474)	-0.13	1.18
A	0.00	969	21.53	-0.11	-7.66(.000)	-0.40	0.90
B	0.00	943	20.95	-0.22	-15.19(.000)	-0.64	0.89
C	0.00	1622	36.04	0.03	1.80(.072)	-0.17	0.95
D	1.00	902	20.04	0.31	21.87(.000)	0.47	1.28

Item 62

```

-----
item:62 (n7NCq30)
Cases for this item  4491  Discrimination  0.30
Item Threshold(s):  1.92  Weighted MNSQ  1.04
Item Delta(s):      1.92

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	9	0.20	-0.05	-3.15(.002)	-1.55	1.38
9	0.00	78	1.74	-0.02	-1.12(.261)	-0.38	0.92
A	0.00	482	10.73	-0.13	-8.55(.000)	-0.56	0.93
B	0.00	997	22.20	-0.27	-18.99(.000)	-0.70	0.81
C	0.00	2256	50.23	0.10	6.84(.000)	-0.11	0.93
D	1.00	669	14.90	0.30	20.89(.000)	0.60	1.40

Item 63

```

-----
item:63 (n7NCq31)
Cases for this item  4465  Discrimination  0.21
Item Threshold(s):  2.34  Weighted MNSQ  1.13
Item Delta(s):      2.34

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3636	81.43	-0.06	-4.00(.000)	-0.21	1.02
1	1.00	490	10.97	0.21	14.13(.000)	0.43	1.25
9	0.00	339	7.59	-0.16	-10.58(.000)	-0.77	0.97

Item 64

```

-----
item:64 (n7NCq32)
Cases for this item  4194  Discrimination  0.36
Item Threshold(s):  3.32  Weighted MNSQ  0.96
Item Delta(s):      3.32

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3562	84.93	-0.28	-18.87(.000)	-0.28	0.98
1	1.00	217	5.17	0.36	24.70(.000)	1.56	1.26
9	0.00	415	9.90	0.07	4.59(.000)	0.06	0.89

The following traditional statistics are only meaningful for complete designs and when the amount of missing data is minimal.
In this analysis 1.04% of the data are missing.

The following results are scaled to assume that a single response was provided for each item.

```

N 4575
Mean 30.12
Standard Deviation 11.70
Variance 136.79
Skewness 0.43
Kurtosis -0.34
Standard error of mean 0.17
Standard error of measurement 3.30
Coefficient Alpha 0.92

```

Appendix B.16 Year 9 Numeracy

=====

NAPLAN 2015, Calibration, Grade 9, numeracy
GENERALISED ITEM ANALYSIS

=====

Item 1

item:1 (n9CAq01)
Cases for this item 3819 Discrimination 0.18
Item Threshold(s): -2.98 Weighted MNSQ 1.07
Item Delta(s): -2.98

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.08	-0.04	-2.63(.008)	-2.81	1.59
9	0.00	8	0.21	-0.02	-1.16(.245)	-0.84	0.79
A	0.00	78	2.04	-0.06	-3.99(.000)	-0.86	1.13
B	1.00	3445	90.21	0.18	10.99(.000)	-0.29	1.12
C	0.00	93	2.44	-0.09	-5.27(.000)	-0.95	0.81
D	0.00	192	5.03	-0.13	-7.92(.000)	-0.89	0.92

=====

Item 2

item:2 (n9CAq02)
Cases for this item 3819 Discrimination 0.38
Item Threshold(s): -1.38 Weighted MNSQ 1.03
Item Delta(s): -1.39

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.10	-0.05	-2.85(.004)	-2.39	1.54
9	0.00	19	0.50	-0.04	-2.30(.021)	-0.83	1.25
A	0.00	98	2.57	-0.14	-8.81(.000)	-1.23	0.79
B	0.00	960	25.14	-0.28	-18.07(.000)	-0.86	0.86
C	1.00	2649	69.36	0.38	25.25(.000)	-0.09	1.11
D	0.00	89	2.33	-0.17	-10.87(.000)	-1.62	0.75

=====

Item 3

item:3 (n9CAq03)
Cases for this item 3819 Discrimination 0.32
Item Threshold(s): -2.13 Weighted MNSQ 1.02
Item Delta(s): -2.13

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.10	-0.05	-2.83(.005)	-2.45	1.75
9	0.00	8	0.21	-0.00	-0.23(.819)	-0.44	1.12
A	1.00	3096	81.07	0.32	20.81(.000)	-0.19	1.10
B	0.00	460	12.05	-0.23	-14.52(.000)	-1.00	0.93
C	0.00	171	4.48	-0.18	-11.33(.000)	-1.24	0.79
D	0.00	80	2.09	-0.08	-5.02(.000)	-0.96	0.93

=====

Item 4

item:4 (n9CAq04)
Cases for this item 3819 Discrimination 0.39
Item Threshold(s): -1.32 Weighted MNSQ 1.02
Item Delta(s): -1.32

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.05	-3.02(.003)	-3.61	1.07
9	0.00	73	1.91	-0.11	-6.69(.000)	-1.24	0.83
A	0.00	315	8.25	-0.23	-14.72(.000)	-1.17	0.72
B	0.00	514	13.46	-0.29	-18.98(.000)	-1.15	0.81
C	1.00	2604	68.19	0.39	25.82(.000)	-0.07	1.10
D	0.00	311	8.14	0.00	0.05(.956)	-0.36	0.91

=====

Item 5

```

-----
item:5 (n9CAq05)
Cases for this item 3818 Discrimination 0.38
Item Threshold(s): -1.42 Weighted MNSQ 1.01
Item Delta(s): -1.42

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.08	-0.06	-3.90 (.000)	-3.87	0.87
9	0.00	26	0.68	-0.04	-2.77 (.006)	-1.03	0.90
A	0.00	461	12.07	-0.30	-19.34 (.000)	-1.20	0.76
B	1.00	2672	69.98	0.38	24.99 (.000)	-0.09	1.08
C	0.00	334	8.75	-0.05	-2.88 (.004)	-0.53	1.11
D	0.00	322	8.43	-0.20	-12.70 (.000)	-1.06	0.82

Item 6

```

-----
item:6 (n9CAq06)
Cases for this item 3818 Discrimination 0.46
Item Threshold(s): -1.06 Weighted MNSQ 0.96
Item Delta(s): -1.06

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.08	-0.06	-3.90 (.000)	-3.87	0.87
9	0.00	48	1.26	-0.10	-6.16 (.000)	-1.38	0.84
A	1.00	2420	63.38	0.46	31.90 (.000)	0.02	1.07
B	0.00	423	11.08	-0.19	-12.22 (.000)	-0.92	0.93
C	0.00	248	6.50	-0.25	-16.08 (.000)	-1.39	0.68
D	0.00	676	17.71	-0.22	-14.15 (.000)	-0.87	0.83

Item 7

```

-----
item:7 (n9CAq07)
Cases for this item 3818 Discrimination 0.22
Item Threshold(s): -1.18 Weighted MNSQ 1.20
Item Delta(s): -1.18

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.13	-0.04	-2.70 (.007)	-2.29	2.25
9	0.00	20	0.52	-0.01	-0.72 (.470)	-0.69	1.03
A	0.00	177	4.64	-0.06	-3.76 (.000)	-0.65	1.12
B	0.00	867	22.71	-0.15	-9.48 (.000)	-0.66	0.98
C	1.00	2507	65.66	0.22	14.14 (.000)	-0.18	1.13
D	0.00	242	6.34	-0.11	-6.93 (.000)	-0.79	0.95

Item 8

```

-----
item:8 (n9CAq08)
Cases for this item 3817 Discrimination 0.22
Item Threshold(s): -1.48 Weighted MNSQ 1.19
Item Delta(s): -1.48

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.08	-0.06	-3.90 (.000)	-3.87	0.87
9	0.00	35	0.92	-0.03	-2.06 (.040)	-0.87	1.04
A	0.00	320	8.38	-0.11	-6.86 (.000)	-0.76	1.00
B	1.00	2714	71.10	0.22	13.79 (.000)	-0.20	1.13
C	0.00	667	17.47	-0.13	-7.98 (.000)	-0.65	0.96
D	0.00	78	2.04	-0.10	-6.39 (.000)	-1.05	0.79

Item 9

```

-----
item:9 (n9CAq09)
Cases for this item  3816  Discrimination  0.28
Item Threshold(s):  -1.32  Weighted MNSQ  1.14
Item Delta(s):      -1.32

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.13	-0.05	-3.35(.001)	-2.49	1.99
9	0.00	36	0.94	-0.02	-1.22(.222)	-0.64	1.19
A	0.00	218	5.71	-0.28	-18.03(.000)	-1.60	0.68
B	1.00	2603	68.21	0.28	17.90(.000)	-0.14	1.12
C	0.00	745	19.52	-0.11	-6.57(.000)	-0.58	0.91
D	0.00	209	5.48	-0.08	-5.11(.000)	-0.70	0.87

Item 10

```

-----
item:10 (n9CAq10)
Cases for this item  3815  Discrimination  0.41
Item Threshold(s):  -1.63  Weighted MNSQ  0.96
Item Delta(s):      -1.64

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.10	-0.06	-3.62(.000)	-3.16	1.58
9	0.00	31	0.81	-0.07	-4.50(.000)	-1.30	0.98
A	1.00	2811	73.68	0.41	27.61(.000)	-0.09	1.07
B	0.00	200	5.24	-0.13	-7.90(.000)	-0.94	1.04
C	0.00	409	10.72	-0.26	-16.47(.000)	-1.15	0.72
D	0.00	360	9.44	-0.22	-13.70(.000)	-1.08	0.93

Item 11

```

-----
item:11 (n9CAq11)
Cases for this item  3815  Discrimination  0.37
Item Threshold(s):  -1.09  Weighted MNSQ  1.05
Item Delta(s):      -1.08

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.13	-0.05	-3.35(.001)	-2.56	1.91
9	0.00	24	0.63	-0.04	-2.50(.012)	-0.99	1.08
A	0.00	431	11.30	-0.26	-16.34(.000)	-1.09	0.70
B	0.00	147	3.85	-0.18	-11.41(.000)	-1.36	0.78
C	0.00	773	20.26	-0.14	-8.68(.000)	-0.66	1.03
D	1.00	2435	63.83	0.37	24.48(.000)	-0.05	1.09

Item 12

```

-----
item:12 (n9CAq12)
Cases for this item  3815  Discrimination  0.55
Item Threshold(s):  -0.84  Weighted MNSQ  0.89
Item Delta(s):      -0.85

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.08	-0.06	-3.90(.000)	-3.87	0.87
9	0.00	87	2.28	-0.05	-3.18(.001)	-0.81	0.98
A	0.00	275	7.21	-0.19	-11.81(.000)	-1.08	0.75
B	0.00	752	19.71	-0.34	-22.50(.000)	-1.08	0.71
C	1.00	2259	59.21	0.55	40.16(.000)	0.14	1.06
D	0.00	439	11.51	-0.23	-14.65(.000)	-1.02	0.77

Item 13

```

-----
item:13 (n9CAq13)
Cases for this item  3815  Discrimination  0.50
Item Threshold(s):  -0.30  Weighted MNSQ  0.96
Item Delta(s):      -0.30

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.08	-0.06	-3.90(.000)	-3.87	0.87
9	0.00	21	0.55	-0.08	-4.93(.000)	-1.53	0.78
A	0.00	1063	27.86	-0.18	-11.28(.000)	-0.66	0.88
B	0.00	694	18.19	-0.33	-21.91(.000)	-1.08	0.71
C	1.00	1838	48.18	0.50	35.54(.000)	0.20	1.11
D	0.00	196	5.14	-0.15	-9.06(.000)	-1.04	0.78

Item 14

```

-----
item:14 (n9CAq14)
Cases for this item  3814  Discrimination  0.45
Item Threshold(s):  -0.92  Weighted MNSQ  0.99
Item Delta(s):      -0.92

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.10	-0.05	-2.79(.005)	-2.30	1.78
9	0.00	13	0.34	-0.04	-2.64(.008)	-1.19	1.25
A	0.00	836	21.92	-0.23	-14.65(.000)	-0.80	0.84
B	0.00	357	9.36	-0.24	-15.21(.000)	-1.14	0.91
C	1.00	2317	60.75	0.45	30.94(.000)	0.03	1.09
D	0.00	287	7.52	-0.19	-11.83(.000)	-1.03	0.81

Item 15

```

-----
item:15 (n9CAq15)
Cases for this item  3814  Discrimination  0.43
Item Threshold(s):  -0.82  Weighted MNSQ  0.99
Item Delta(s):      -0.82

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1382	36.23	-0.35	-22.76(.000)	-0.84	0.96
1	1.00	2238	58.68	0.43	29.78(.000)	0.04	1.06
9	0.00	194	5.09	-0.22	-13.73(.000)	-1.37	0.74

Item 16

```

-----
item:16 (n9CAq16)
Cases for this item  3814  Discrimination  0.39
Item Threshold(s):  -0.77  Weighted MNSQ  1.06
Item Delta(s):      -0.77

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.13	-0.03	-1.89(.059)	-1.66	1.88
9	0.00	28	0.73	-0.05	-3.12(.002)	-1.10	1.25
A	0.00	310	8.13	-0.20	-12.84(.000)	-1.07	0.77
B	0.00	753	19.74	-0.18	-11.41(.000)	-0.75	0.99
C	1.00	2199	57.66	0.39	26.08(.000)	0.00	1.11
D	0.00	519	13.61	-0.17	-10.77(.000)	-0.79	0.85

Item 17

```

-----
item:17 (n9CAq17)
Cases for this item  3808  Discrimination  0.53
Item Threshold(s):  0.38  Weighted MNSQ  0.92
Item Delta(s):      0.37

```

Label	Score	Count	% of tot	Pt Bis	t	(p)	PV1Avg:1	PV1	SD:1
8	0.00	4	0.11	-0.07	-4.07	(.000)	-3.36	1.24	
9	0.00	45	1.18	-0.05	-3.13	(.002)	-0.92	1.13	
A	0.00	751	19.72	-0.11	-7.05	(.000)	-0.61	0.91	
B	0.00	760	19.96	-0.38	-25.56	(.000)	-1.14	0.71	
C	0.00	902	23.69	-0.12	-7.24	(.000)	-0.57	0.90	
D	1.00	1346	35.35	0.53	38.97	(.000)	0.42	1.06	

Item 18

```

-----
item:18 (n9CAq18)
Cases for this item  3807  Discrimination  0.58
Item Threshold(s):  0.44  Weighted MNSQ  0.86
Item Delta(s):      0.44

```

Label	Score	Count	% of tot	Pt Bis	t	(p)	PV1Avg:1	PV1	SD:1
8	0.00	6	0.16	-0.04	-2.42	(.015)	-1.83	2.37	
9	0.00	83	2.18	-0.07	-4.24	(.000)	-0.96	0.99	
A	1.00	1302	34.20	0.58	43.41	(.000)	0.49	1.09	
B	0.00	828	21.75	-0.26	-16.35	(.000)	-0.86	0.89	
C	0.00	586	15.39	-0.19	-12.13	(.000)	-0.82	0.82	
D	0.00	1002	26.32	-0.20	-12.30	(.000)	-0.68	0.78	

Item 19

```

-----
item:19 (n9CAq19)
Cases for this item  3806  Discrimination  0.35
Item Threshold(s):  0.23  Weighted MNSQ  1.12
Item Delta(s):      0.22

```

Label	Score	Count	% of tot	Pt Bis	t	(p)	PV1Avg:1	PV1	SD:1
8	0.00	7	0.18	-0.04	-2.71	(.007)	-1.98	2.03	
9	0.00	48	1.26	-0.04	-2.25	(.024)	-0.92	1.19	
A	0.00	380	9.98	-0.09	-5.75	(.000)	-0.66	1.06	
B	0.00	1124	29.53	-0.26	-16.47	(.000)	-0.75	0.82	
C	0.00	797	20.94	-0.05	-3.15	(.002)	-0.47	1.01	
D	1.00	1450	38.10	0.35	23.39	(.000)	0.15	1.18	

Item 20

```

-----
item:20 (n9CAq20)
Cases for this item  3806  Discrimination  0.50
Item Threshold(s):  0.31  Weighted MNSQ  0.94
Item Delta(s):      0.31

```

Label	Score	Count	% of tot	Pt Bis	t	(p)	PV1Avg:1	PV1	SD:1
8	0.00	4	0.11	-0.06	-3.89	(.000)	-3.31	1.31	
9	0.00	166	4.36	-0.03	-1.82	(.068)	-0.56	0.95	
A	0.00	268	7.04	-0.07	-4.38	(.000)	-0.58	0.94	
B	1.00	1388	36.47	0.50	35.66	(.000)	0.36	1.18	
C	0.00	862	22.65	-0.25	-15.94	(.000)	-0.83	0.80	
D	0.00	821	21.57	-0.20	-12.42	(.000)	-0.75	0.79	
E	0.00	297	7.80	-0.11	-6.66	(.000)	-0.75	0.87	

Item 21

```

-----
item:21 (n9CAq21)
Cases for this item  3802  Discrimination  0.56
Item Threshold(s):  0.32  Weighted MNSQ  0.90
Item Delta(s):      0.32

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2260	59.44	-0.48	-34.11(.000)	-0.77	0.90
1	1.00	1382	36.35	0.56	41.13(.000)	0.43	1.02
9	0.00	160	4.21	-0.15	-9.08(.000)	-1.11	0.84

Item 22

```

-----
item:22 (n9CAq22)
Cases for this item  3802  Discrimination  0.28
Item Threshold(s):  0.84  Weighted MNSQ  1.16
Item Delta(s):      0.85

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.11	-0.05	-2.96(.003)	-2.71	2.41
9	0.00	73	1.92	-0.00	-0.10(.921)	-0.41	1.02
A	1.00	1037	27.28	0.28	17.83(.000)	0.14	1.32
B	0.00	1628	42.82	-0.07	-4.64(.000)	-0.44	0.94
C	0.00	961	25.28	-0.16	-9.74(.000)	-0.64	0.97
D	0.00	99	2.60	-0.11	-6.64(.000)	-1.00	0.91

Item 23

```

-----
item:23 (n9CAq23)
Cases for this item  3801  Discrimination  0.61
Item Threshold(s):  0.64  Weighted MNSQ  0.82
Item Delta(s):      0.64

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2223	58.48	-0.48	-34.13(.000)	-0.77	0.85
1	1.00	1163	30.60	0.61	47.40(.000)	0.62	1.01
9	0.00	415	10.92	-0.14	-8.42(.000)	-0.80	0.91

Item 24

```

-----
item:24 (n9CAq24)
Cases for this item  3794  Discrimination  0.41
Item Threshold(s):  1.21  Weighted MNSQ  1.02
Item Delta(s):      1.21

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2563	67.55	-0.33	-21.25(.000)	-0.58	0.99
1	1.00	828	21.82	0.41	27.69(.000)	0.48	1.13
9	0.00	403	10.62	-0.05	-3.33(.001)	-0.55	1.03

Item 25

```

-----
item:25 (n9CAq25)
Cases for this item  3792  Discrimination  0.59
Item Threshold(s):  1.80  Weighted MNSQ  0.80
Item Delta(s):      1.80

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2626	69.25	-0.28	-18.26(.000)	-0.54	0.92
1	1.00	558	14.72	0.59	44.78(.000)	1.18	0.94
9	0.00	608	16.03	-0.21	-13.24(.000)	-0.89	0.83

Item 26

```

-----
item:26 (n9CAq26)
Cases for this item  3788  Discrimination  0.19
Item Threshold(s):  1.36  Weighted MNSQ  1.22
Item Delta(s):      1.36

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.16	-0.06	-3.79(.000)	-2.66	1.45
9	0.00	51	1.35	-0.03	-1.77(.076)	-0.72	1.08
A	0.00	1166	30.78	-0.03	-1.61(.107)	-0.39	1.04
B	0.00	559	14.76	-0.14	-8.67(.000)	-0.69	0.90
C	0.00	1251	33.03	-0.02	-1.32(.186)	-0.37	1.06
D	1.00	755	19.93	0.19	12.16(.000)	0.08	1.29

Item 27

```

-----
item:27 (n9CAq27)
Cases for this item  3780  Discrimination  0.42
Item Threshold(s):  2.10  Weighted MNSQ  0.91
Item Delta(s):      2.10

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.13	-0.06	-3.75(.000)	-2.67	1.88
9	0.00	39	1.03	-0.03	-2.15(.032)	-0.83	1.02
A	0.00	145	3.84	-0.17	-10.29(.000)	-1.23	0.82
B	0.00	252	6.67	-0.20	-12.75(.000)	-1.19	0.84
C	0.00	346	9.15	-0.10	-6.10(.000)	-0.69	1.16
D	1.00	448	11.85	0.42	28.33(.000)	0.95	1.41
E	0.00	2545	67.33	-0.04	-2.45(.014)	-0.38	0.86

Item 28

```

-----
item:28 (n9CAq28)
Cases for this item  3776  Discrimination  0.48
Item Threshold(s):  2.34  Weighted MNSQ  0.89
Item Delta(s):      2.34

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2697	71.42	-0.24	-15.01(.000)	-0.50	0.98
1	1.00	375	9.93	0.48	33.91(.000)	1.26	1.07
9	0.00	704	18.64	-0.10	-5.91(.000)	-0.60	0.92

Item 29

```

-----
item:29 (n9CAq29)
Cases for this item  3733  Discrimination  0.37
Item Threshold(s):  2.00  Weighted MNSQ  1.00
Item Delta(s):      2.00

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.16	-0.05	-3.32(.001)	-2.39	1.94
9	0.00	115	3.08	0.03	1.79(.073)	-0.19	1.07
A	1.00	479	12.83	0.37	23.95(.000)	0.72	1.33
B	0.00	1577	42.24	-0.25	-16.08(.000)	-0.65	0.94
C	0.00	1245	33.35	-0.08	-4.67(.000)	-0.47	0.93
D	0.00	311	8.33	0.13	8.19(.000)	0.13	1.11

Item 30

 item:30 (n9CAq30)
 Cases for this item 3705 Discrimination 0.35
 Item Threshold(s): 2.10 Weighted MNSQ 1.01
 Item Delta(s): 2.10

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2733	73.77	-0.22	-13.55(.000)	-0.47	1.00
1	1.00	443	11.96	0.35	22.66(.000)	0.71	1.34
9	0.00	529	14.28	-0.05	-3.07(.002)	-0.51	1.00

=====

Item 31

 item:31 (n9CAq31)
 Cases for this item 3492 Discrimination 0.43
 Item Threshold(s): 3.19 Weighted MNSQ 0.94
 Item Delta(s): 3.19

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2859	81.87	-0.19	-11.36(.000)	-0.41	1.02
1	1.00	182	5.21	0.43	28.11(.000)	1.75	1.04
9	0.00	451	12.92	-0.07	-4.01(.000)	-0.52	0.93

=====

Item 32

 item:32 (n9CAq32)
 Cases for this item 3302 Discrimination 0.41
 Item Threshold(s): 3.27 Weighted MNSQ 0.95
 Item Delta(s): 3.28

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2813	85.19	-0.24	-14.50(.000)	-0.40	1.02
1	1.00	164	4.97	0.41	25.78(.000)	1.73	1.17
9	0.00	325	9.84	-0.01	-0.38(.701)	-0.34	0.97

=====

Item 33

 item:33 (n9NCq01)
 Cases for this item 3829 Discrimination 0.41
 Item Threshold(s): -2.53 Weighted MNSQ 0.89
 Item Delta(s): -2.53

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.16	-0.07	-4.53(.000)	-2.75	1.34
9	0.00	11	0.29	-0.04	-2.61(.009)	-1.02	0.70
A	0.00	156	4.07	-0.23	-14.74(.000)	-1.57	0.65
B	1.00	3288	85.87	0.41	27.43(.000)	-0.18	1.07
C	0.00	270	7.05	-0.25	-15.76(.000)	-1.32	0.79
D	0.00	98	2.56	-0.17	-10.74(.000)	-1.46	0.77

=====

Item 34

 item:34 (n9NCq02)
 Cases for this item 3829 Discrimination 0.42
 Item Threshold(s): -2.20 Weighted MNSQ 0.91
 Item Delta(s): -2.20

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.06	-3.50(.000)	-4.37	0.00
9	0.00	12	0.31	-0.05	-3.40(.001)	-1.29	0.87
A	0.00	137	3.58	-0.22	-13.90(.000)	-1.60	0.71
B	1.00	3140	82.01	0.42	28.88(.000)	-0.14	1.08
C	0.00	353	9.22	-0.24	-15.58(.000)	-1.14	0.75
D	0.00	185	4.83	-0.22	-13.82(.000)	-1.38	0.60

=====

Item 35

```

-----
item:35 (n9NCq03)
Cases for this item  3829  Discrimination  0.40
Item Threshold(s):  -1.38  Weighted MNSQ  1.01
Item Delta(s):      -1.38

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.16	-0.04	-2.24 (.025)	-1.91	1.97
9	0.00	38	0.99	-0.02	-1.50 (.133)	-0.68	1.02
A	1.00	2653	69.29	0.40	27.10 (.000)	-0.07	1.12
B	0.00	616	16.09	-0.26	-16.88 (.000)	-0.98	0.76
C	0.00	331	8.64	-0.19	-11.71 (.000)	-0.98	0.80
D	0.00	185	4.83	-0.15	-9.42 (.000)	-1.04	0.79

Item 36

```

-----
item:36 (n9NCq04)
Cases for this item  3829  Discrimination  0.39
Item Threshold(s):  -1.94  Weighted MNSQ  0.97
Item Delta(s):      -1.94

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.08	-0.06	-3.55 (.000)	-3.40	1.69
9	0.00	10	0.26	-0.03	-1.62 (.106)	-0.77	0.57
A	0.00	155	4.05	-0.20	-12.88 (.000)	-1.42	0.65
B	1.00	3001	78.38	0.39	25.96 (.000)	-0.14	1.09
C	0.00	359	9.38	-0.19	-12.24 (.000)	-1.01	0.90
D	0.00	301	7.86	-0.22	-14.06 (.000)	-1.16	0.75

Item 37

```

-----
item:37 (n9NCq05)
Cases for this item  3829  Discrimination  0.42
Item Threshold(s):  -1.48  Weighted MNSQ  0.97
Item Delta(s):      -1.48

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.10	-0.04	-2.46 (.014)	-2.57	2.29
9	0.00	27	0.71	-0.08	-4.70 (.000)	-1.35	0.78
A	0.00	444	11.60	-0.23	-14.52 (.000)	-1.02	0.83
B	1.00	2716	70.93	0.42	28.99 (.000)	-0.06	1.08
C	0.00	432	11.28	-0.29	-18.48 (.000)	-1.22	0.73
D	0.00	206	5.38	-0.09	-5.88 (.000)	-0.77	0.99

Item 38

```

-----
item:38 (n9NCq06)
Cases for this item  3829  Discrimination  0.34
Item Threshold(s):  -1.87  Weighted MNSQ  1.02
Item Delta(s):      -1.87

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.08	-0.06	-3.70 (.000)	-3.56	1.40
9	0.00	14	0.37	-0.04	-2.36 (.018)	-1.24	0.90
A	0.00	417	10.89	-0.18	-11.04 (.000)	-0.88	0.90
B	0.00	247	6.45	-0.19	-12.27 (.000)	-1.15	0.90
C	0.00	189	4.94	-0.17	-10.51 (.000)	-1.18	0.91
D	1.00	2959	77.28	0.34	22.42 (.000)	-0.15	1.09

Item 39

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-----
item:39 (n9NCq07)
Cases for this item  3828  Discrimination  0.50
Item Threshold(s):  -1.36  Weighted MNSQ  0.91
Item Delta(s):      -1.36

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.06	-3.50 (.000)	-4.37	0.00
9	0.00	27	0.71	-0.06	-3.91 (.000)	-1.35	0.94
A	0.00	922	24.09	-0.42	-28.82 (.000)	-1.14	0.69
B	1.00	2638	68.91	0.50	35.28 (.000)	0.00	1.08
C	0.00	152	3.97	-0.17	-10.92 (.000)	-1.29	0.76
D	0.00	87	2.27	-0.06	-3.41 (.001)	-0.73	0.67

Item 40

```

-----
item:40 (n9NCq08)
Cases for this item  3828  Discrimination  0.49
Item Threshold(s):  -0.84  Weighted MNSQ  0.95
Item Delta(s):      -0.84

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.06	-3.50 (.000)	-4.37	0.00
9	0.00	44	1.15	-0.06	-3.98 (.000)	-1.05	1.01
A	0.00	270	7.05	-0.12	-7.36 (.000)	-0.79	0.82
B	0.00	321	8.39	-0.22	-13.73 (.000)	-1.11	0.75
C	1.00	2260	59.04	0.49	34.49 (.000)	0.08	1.09
D	0.00	686	17.92	-0.22	-13.93 (.000)	-0.84	0.81
E	0.00	245	6.40	-0.23	-14.75 (.000)	-1.32	0.76

Item 41

```

-----
item:41 (n9NCq09)
Cases for this item  3827  Discrimination  0.36
Item Threshold(s):  -1.19  Weighted MNSQ  1.06
Item Delta(s):      -1.19

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	22	0.57	-0.02	-1.27 (.205)	-0.86	1.62
9	0.00	21	0.55	-0.04	-2.42 (.016)	-1.08	0.95
A	0.00	481	12.57	-0.22	-13.66 (.000)	-0.95	0.88
B	0.00	679	17.74	-0.21	-13.35 (.000)	-0.82	0.90
C	1.00	2514	65.69	0.36	24.11 (.000)	-0.08	1.11
D	0.00	110	2.87	-0.10	-5.91 (.000)	-0.93	0.88

Item 42

```

-----
item:42 (n9NCq10)
Cases for this item  3825  Discrimination  0.42
Item Threshold(s):  -0.58  Weighted MNSQ  1.04
Item Delta(s):      -0.57

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.13	-0.05	-2.88 (.004)	-2.32	2.13
9	0.00	16	0.42	-0.06	-3.45 (.001)	-1.37	0.81
A	1.00	2056	53.75	0.42	28.30 (.000)	0.06	1.12
B	0.00	251	6.56	-0.30	-19.67 (.000)	-1.60	0.63
C	0.00	1085	28.37	-0.25	-16.04 (.000)	-0.77	0.83
D	0.00	412	10.77	-0.05	-2.80 (.005)	-0.51	0.88

Item 43

```

-----
item:43 (n9NCq11)
Cases for this item  3825  Discrimination  0.47
Item Threshold(s):  -0.48  Weighted MNSQ  0.98
Item Delta(s):      -0.48

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.16	-0.06	-3.72(.000)	-2.47	1.55
9	0.00	21	0.55	-0.04	-2.49(.013)	-0.92	1.16
A	0.00	427	11.16	-0.20	-12.87(.000)	-0.97	0.81
B	0.00	1124	29.39	-0.31	-19.87(.000)	-0.84	0.89
C	1.00	1984	51.87	0.47	32.51(.000)	0.12	1.11
D	0.00	263	6.88	-0.09	-5.80(.000)	-0.71	0.85

Item 44

```

-----
item:44 (n9NCq12)
Cases for this item  3825  Discrimination  0.43
Item Threshold(s):  -0.34  Weighted MNSQ  1.03
Item Delta(s):      -0.34

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	9	0.24	-0.06	-3.53(.000)	-1.88	1.56
9	0.00	63	1.65	-0.06	-3.96(.000)	-0.93	0.93
A	0.00	695	18.17	-0.11	-6.75(.000)	-0.61	0.95
B	0.00	513	13.41	-0.26	-16.87(.000)	-1.05	0.83
C	0.00	672	17.57	-0.19	-12.01(.000)	-0.79	0.94
D	1.00	1873	48.97	0.43	29.46(.000)	0.12	1.10

Item 45

```

-----
item:45 (n9NCq13)
Cases for this item  3824  Discrimination  0.43
Item Threshold(s):  -0.29  Weighted MNSQ  1.03
Item Delta(s):      -0.29

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.10	-0.06	-3.88(.000)	-3.14	1.42
9	0.00	48	1.26	-0.08	-4.85(.000)	-1.13	0.85
A	0.00	697	18.23	-0.25	-16.18(.000)	-0.90	0.77
B	1.00	1839	48.09	0.43	29.61(.000)	0.12	1.16
C	0.00	820	21.44	-0.11	-6.77(.000)	-0.58	0.93
D	0.00	416	10.88	-0.20	-12.71(.000)	-0.97	0.76

Item 46

```

-----
item:46 (n9NCq14)
Cases for this item  3824  Discrimination  0.54
Item Threshold(s):  -1.25  Weighted MNSQ  0.87
Item Delta(s):      -1.25

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.13	-0.06	-3.75(.000)	-2.76	1.49
9	0.00	16	0.42	-0.05	-3.17(.002)	-1.23	0.78
A	0.00	121	3.16	-0.10	-6.11(.000)	-0.97	0.93
B	0.00	323	8.45	-0.30	-19.32(.000)	-1.42	0.63
C	0.00	798	20.87	-0.36	-23.85(.000)	-1.07	0.73
D	1.00	2561	66.97	0.54	39.21(.000)	0.05	1.05

Item 47

```

-----
item:47 (n9NCq15)
Cases for this item  3824  Discrimination  0.46
Item Threshold(s):  -0.34  Weighted MNSQ  1.00
Item Delta(s):      -0.33
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.13	-0.03	-2.10 (.036)	-1.53	1.80
9	0.00	26	0.68	-0.06	-3.84 (.000)	-1.20	0.99
A	1.00	1871	48.93	0.46	31.87 (.000)	0.14	1.12
B	0.00	947	24.76	-0.33	-21.79 (.000)	-0.95	0.75
C	0.00	515	13.47	-0.17	-10.40 (.000)	-0.80	1.00
D	0.00	241	6.30	-0.09	-5.44 (.000)	-0.72	0.91
E	0.00	219	5.73	-0.01	-0.34 (.732)	-0.39	0.94

Item 48

```

-----
item:48 (n9NCq16)
Cases for this item  3824  Discrimination  0.33
Item Threshold(s):  -0.18  Weighted MNSQ  1.15
Item Delta(s):      -0.18
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.16	-0.06	-3.54 (.000)	-2.34	1.68
9	0.00	40	1.05	-0.02	-1.25 (.211)	-0.58	0.97
A	0.00	1317	34.44	-0.13	-8.26 (.000)	-0.55	0.94
B	0.00	709	18.54	-0.25	-15.83 (.000)	-0.91	0.89
C	1.00	1752	45.82	0.33	21.50 (.000)	0.03	1.18

Item 49

```

-----
item:49 (n9NCq17)
Cases for this item  3823  Discrimination  0.50
Item Threshold(s):  0.03  Weighted MNSQ  0.96
Item Delta(s):      0.03
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.05	-0.06	-3.50 (.000)	-4.37	0.00
9	0.00	18	0.47	-0.07	-4.24 (.000)	-1.43	0.87
A	0.00	128	3.35	-0.08	-5.05 (.000)	-0.82	0.83
B	0.00	1072	28.04	-0.24	-15.27 (.000)	-0.76	0.90
C	0.00	1009	26.39	-0.27	-16.99 (.000)	-0.82	0.84
D	1.00	1594	41.70	0.50	35.43 (.000)	0.27	1.12

Item 50

```

-----
item:50 (n9NCq18)
Cases for this item  3822  Discrimination  0.47
Item Threshold(s):  0.05  Weighted MNSQ  0.99
Item Delta(s):      0.05
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	7	0.18	-0.03	-1.71 (.088)	-1.32	2.31
9	0.00	30	0.78	-0.08	-5.01 (.000)	-1.39	0.91
A	1.00	1579	41.31	0.47	32.99 (.000)	0.25	1.09
B	0.00	748	19.57	-0.36	-23.58 (.000)	-1.11	0.76
C	0.00	365	9.55	-0.13	-7.94 (.000)	-0.79	0.98
D	0.00	1093	28.60	-0.10	-6.15 (.000)	-0.51	0.91

Item 51

```

-----
item:51 (n9NCq19)
Cases for this item 3822 Discrimination 0.58
Item Threshold(s): 0.58 Weighted MNSQ 0.86
Item Delta(s): 0.58

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2299	60.15	-0.44	-30.31(.000)	-0.72	0.88
1	1.00	1209	31.63	0.58	44.52(.000)	0.56	1.04
9	0.00	314	8.22	-0.20	-12.93(.000)	-1.12	0.81

Item 52

```

-----
item:52 (n9NCq20)
Cases for this item 3821 Discrimination 0.46
Item Threshold(s): 0.70 Weighted MNSQ 0.98
Item Delta(s): 0.71

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	7	0.18	-0.05	-3.33(.001)	-2.11	1.63
9	0.00	18	0.47	-0.05	-3.09(.002)	-1.26	0.89
A	0.00	1637	42.84	-0.33	-21.89(.000)	-0.76	0.86
B	0.00	513	13.43	-0.12	-7.71(.000)	-0.70	0.90
C	0.00	520	13.61	0.01	0.48(.632)	-0.33	1.00
D	1.00	1126	29.47	0.46	32.18(.000)	0.42	1.18

Item 53

```

-----
item:53 (n9NCq21)
Cases for this item 3820 Discrimination 0.36
Item Threshold(s): 0.80 Weighted MNSQ 1.07
Item Delta(s): 0.80

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.13	-0.01	-0.74(.457)	-1.38	2.75
9	0.00	121	3.17	-0.04	-2.68(.007)	-0.65	1.01
A	1.00	1069	27.98	0.36	23.58(.000)	0.28	1.32
B	0.00	1616	42.30	-0.21	-13.43(.000)	-0.63	0.92
C	0.00	293	7.67	-0.10	-6.48(.000)	-0.76	0.96
D	0.00	716	18.74	-0.05	-3.06(.002)	-0.45	0.83

Item 54

```

-----
item:54 (n9NCq22)
Cases for this item 3819 Discrimination 0.43
Item Threshold(s): 0.12 Weighted MNSQ 1.04
Item Delta(s): 0.11

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.08	-0.06	-3.45(.001)	-3.30	1.85
9	0.00	33	0.86	-0.06	-3.49(.000)	-1.05	1.10
A	1.00	1532	40.12	0.43	29.14(.000)	0.21	1.14
B	0.00	505	13.22	-0.28	-17.83(.000)	-1.10	0.80
C	0.00	934	24.46	-0.18	-11.37(.000)	-0.70	0.91
D	0.00	812	21.26	-0.07	-4.62(.000)	-0.51	0.93

Item 55

```

-----
item:55 (n9NCq23)
Cases for this item 3819 Discrimination 0.38
Item Threshold(s): 0.94 Weighted MNSQ 1.05
Item Delta(s): 0.94

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2485	65.07	-0.28	-17.96(.000)	-0.57	0.96
1	1.00	985	25.79	0.38	25.40(.000)	0.35	1.23
9	0.00	349	9.14	-0.12	-7.19(.000)	-0.78	0.96

Item 56

```

-----
item:56 (n9NCq24)
Cases for this item 3811 Discrimination 0.53
Item Threshold(s): 0.75 Weighted MNSQ 0.91
Item Delta(s): 0.75

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	8	0.21	-0.03	-1.88(.060)	-1.23	1.71
9	0.00	111	2.91	-0.01	-0.76(.446)	-0.50	1.11
A	1.00	1095	28.73	0.53	38.42(.000)	0.54	1.13
B	0.00	825	21.65	-0.20	-12.64(.000)	-0.75	0.88
C	0.00	806	21.15	-0.13	-7.85(.000)	-0.62	0.91
D	0.00	966	25.35	-0.23	-14.81(.000)	-0.76	0.82

Item 57

```

-----
item:57 (n9NCq25)
Cases for this item 3810 Discrimination 0.57
Item Threshold(s): 0.23 Weighted MNSQ 0.87
Item Delta(s): 0.24

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.08	-0.03	-2.06(.040)	-2.12	2.17
9	0.00	47	1.23	-0.04	-2.71(.007)	-0.82	1.03
A	0.00	601	15.77	-0.27	-17.21(.000)	-1.01	0.75
B	0.00	726	19.06	-0.19	-11.83(.000)	-0.76	0.84
C	0.00	991	26.01	-0.22	-14.10(.000)	-0.74	0.83
D	1.00	1442	37.85	0.57	42.55(.000)	0.43	1.09

Item 58

```

-----
item:58 (n9NCq26)
Cases for this item 3809 Discrimination 0.22
Item Threshold(s): 1.66 Weighted MNSQ 1.13
Item Delta(s): 1.67

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	7	0.18	-0.04	-2.75(.006)	-1.78	2.01
9	0.00	92	2.42	-0.01	-0.40(.686)	-0.44	1.04
A	0.00	528	13.86	-0.19	-11.83(.000)	-0.83	1.00
B	0.00	2120	55.66	0.07	4.57(.000)	-0.28	0.97
C	0.00	447	11.74	-0.16	-9.99(.000)	-0.82	0.91
D	1.00	615	16.15	0.22	14.24(.000)	0.22	1.44

Item 59

```

-----
item:59 (n9NCq27)
Cases for this item 3805 Discrimination 0.49
Item Threshold(s): 1.15 Weighted MNSQ 0.94
Item Delta(s): 1.15

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.11	-0.06	-3.42(.001)	-2.78	1.93
9	0.00	30	0.79	-0.01	-0.74(.459)	-0.49	1.23
A	0.00	75	1.97	-0.13	-7.78(.000)	-1.33	0.86
B	0.00	2027	53.27	-0.48	-33.95(.000)	-0.82	0.77
C	0.00	361	9.49	-0.03	-1.83(.067)	-0.44	1.07
D	0.00	443	11.64	0.19	12.20(.000)	0.21	1.05
E	1.00	865	22.73	0.49	35.10(.000)	0.62	1.08

Item 60

```

-----
item:60 (n9NCq28)
Cases for this item 3803 Discrimination 0.28
Item Threshold(s): 1.63 Weighted MNSQ 1.09
Item Delta(s): 1.62

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.16	-0.04	-2.47(.014)	-1.90	2.10
9	0.00	141	3.71	0.01	0.50(.614)	-0.34	1.07
A	0.00	501	13.17	-0.04	-2.21(.027)	-0.44	0.97
B	0.00	979	25.74	-0.10	-6.13(.000)	-0.53	1.05
C	0.00	1543	40.57	-0.10	-6.27(.000)	-0.48	0.95
D	1.00	633	16.64	0.28	18.13(.000)	0.36	1.39

Item 61

```

-----
item:61 (n9NCq29)
Cases for this item 3789 Discrimination 0.54
Item Threshold(s): 1.86 Weighted MNSQ 0.85
Item Delta(s): 1.86

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2880	76.01	-0.36	-23.92(.000)	-0.56	0.94
1	1.00	535	14.12	0.54	39.42(.000)	1.08	1.04
9	0.00	374	9.87	-0.11	-6.88(.000)	-0.72	0.92

Item 62

```

-----
item:62 (n9NCq30)
Cases for this item 3773 Discrimination 0.35
Item Threshold(s): 0.73 Weighted MNSQ 1.11
Item Delta(s): 0.73

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.13	-0.05	-2.79(.005)	-2.17	2.23
9	0.00	37	0.98	0.01	0.68(.495)	-0.33	1.01
A	0.00	136	3.60	-0.16	-10.10(.000)	-1.28	0.76
B	0.00	2294	60.80	-0.25	-15.60(.000)	-0.56	0.97
C	1.00	1099	29.13	0.35	22.62(.000)	0.24	1.21
D	0.00	202	5.35	-0.03	-1.64(.100)	-0.48	0.94

Item 63

```

-----
item:63 (n9NCq31)
Cases for this item  3766  Discrimination  0.38
Item Threshold(s):  3.13  Weighted MNSQ  0.97
Item Delta(s):      3.13

```

Label	Score	Count	% of tot	Pt Bis	t	(p)	PV1Avg:1	PV1 SD:1
0	0.00	3093	82.13	-0.09	-5.75	(.000)	-0.39	1.04
1	1.00	199	5.28	0.38	25.49	(.000)	1.45	1.07
9	0.00	474	12.59	-0.15	-9.38	(.000)	-0.80	0.89

Item 64

```

-----
item:64 (n9NCq32)
Cases for this item  3428  Discrimination  0.47
Item Threshold(s):  2.00  Weighted MNSQ  0.90
Item Delta(s):      2.00

```

Label	Score	Count	% of tot	Pt Bis	t	(p)	PV1Avg:1	PV1 SD:1
0	0.00	2601	75.88	-0.37	-23.46	(.000)	-0.53	0.96
1	1.00	458	13.36	0.47	30.95	(.000)	1.03	1.22
9	0.00	369	10.76	0.00	0.02	(.982)	-0.31	0.92

The following traditional statistics are only meaningful for complete designs and when the amount of missing data is minimal.
In this analysis 1.30% of the data are missing.

The following results are scaled to assume that a single response was provided for each item.

```

N 3841
Mean 28.75
Standard Deviation 11.63
Variance 135.28
Skewness 0.51
Kurtosis -0.26
Standard error of mean 0.19
Standard error of measurement 3.30
Coefficient Alpha 0.92

```

Appendix B.17 Year 3, 5, 7, 9 Writing

=====

NAPLAN 2015, Calibration, All Grades, Writing
GENERALISED ITEM ANALYSIS

=====

Item 1

item:1 (WQ01_Audience)
Cases for this item 16202 Discrimination 0.92
Item Threshold(s): -9.75 -5.91 -1.60 2.38 5.59 8.92 Weighted MNSQ 0.76
Item Delta(s): -9.74 -5.93 -1.60 2.39 5.59 8.89

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	97	0.60	-0.25	-32.20(.000)	-9.81	2.12
1	1.00	643	3.97	-0.41	-57.13(.000)	-6.05	1.59
2	2.00	4247	26.21	-0.53	-78.91(.000)	-2.69	1.47
3	3.00	6861	42.35	0.03	4.26(.000)	0.30	1.42
4	4.00	3293	20.32	0.47	68.56(.000)	3.13	1.39
5	5.00	941	5.81	0.45	63.50(.000)	5.89	1.35
6	6.00	120	0.74	0.22	28.62(.000)	8.39	1.17

=====

Item 2

item:2 (WQ02_Text_Structure)
Cases for this item 16202 Discrimination 0.87
Item Threshold(s): -5.87 -2.29 1.79 6.88 Weighted MNSQ 0.95
Item Delta(s): -5.84 -2.30 1.78 6.88

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	735	4.54	-0.39	-54.36(.000)	-5.45	2.81
1	1.00	3226	19.91	-0.52	-77.98(.000)	-3.19	1.69
2	2.00	7012	43.28	-0.09	-11.00(.000)	-0.15	1.55
3	3.00	4675	28.85	0.58	90.26(.000)	3.04	1.73
4	4.00	554	3.42	0.39	53.95(.000)	6.80	1.56

=====

Item 3

item:3 (WQ03_Ideas)
Cases for this item 16202 Discrimination 0.86
Item Threshold(s): -8.47 -5.38 -1.29 4.32 8.79 Weighted MNSQ 0.93
Item Delta(s): -8.43 -5.41 -1.31 4.33 8.78

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	175	1.08	-0.31	-42.14(.000)	-9.19	1.92
1	1.00	802	4.95	-0.37	-50.81(.000)	-4.93	1.97
2	2.00	4577	28.25	-0.49	-71.60(.000)	-2.35	1.62
3	3.00	8571	52.90	0.27	35.71(.000)	0.97	1.76
4	4.00	1929	11.91	0.54	82.52(.000)	4.89	1.58
5	5.00	148	0.91	0.24	31.13(.000)	8.12	1.25

=====

Item 4

item:4 (WQ04_Persuasive_devices)
Cases for this item 16202 Discrimination 0.86
Item Threshold(s): -5.84 -1.94 2.05 6.83 Weighted MNSQ 1.03
Item Delta(s): -5.81 -1.94 2.04 6.82

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	762	4.70	-0.40	-55.56(.000)	-5.44	2.79
1	1.00	3708	22.89	-0.51	-76.07(.000)	-2.84	1.84
2	2.00	6908	42.64	-0.04	-4.62(.000)	0.03	1.62
3	3.00	4257	26.27	0.56	86.03(.000)	3.13	1.72
4	4.00	567	3.50	0.39	53.92(.000)	6.75	1.63

=====

Item 5

item:5 (WQ05_Vocabulary)

Cases for this item 16202 Discrimination 0.85

Item Threshold(s): -8.82 -6.41 0.65 4.49 8.57 Weighted MNSQ 0.96

Item Delta(s): -8.73 -6.51 0.67 4.49 8.55

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	141	0.87	-0.29	-38.98(.000)	-9.59	1.83
1	1.00	449	2.77	-0.33	-45.18(.000)	-5.97	1.54
2	2.00	8340	51.48	-0.54	-81.96(.000)	-1.53	1.93
3	3.00	5405	33.36	0.36	49.09(.000)	1.79	1.67
4	4.00	1697	10.47	0.52	76.49(.000)	4.97	1.62
5	5.00	170	1.05	0.25	32.60(.000)	7.99	1.37

Item 6

item:6 (WQ06_Cohesion)

Cases for this item 16202 Discrimination 0.82

Item Threshold(s): -8.87 -4.81 2.34 7.61 Weighted MNSQ 0.93

Item Delta(s): -8.85 -4.83 2.34 7.60

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	153	0.94	-0.30	-40.67(.000)	-9.54	1.60
1	1.00	1220	7.53	-0.44	-62.88(.000)	-4.72	1.76
2	2.00	10370	64.00	-0.33	-44.38(.000)	-0.63	2.01
3	3.00	4104	25.33	0.59	92.66(.000)	3.38	1.80
4	4.00	355	2.19	0.33	44.58(.000)	7.30	1.57

Item 7

item:7 (WQ07_Paragraphing)

Cases for this item 16202 Discrimination 0.82

Item Threshold(s): -3.45 0.58 6.15 Weighted MNSQ 1.04

Item Delta(s): -3.44 0.57 6.14

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2482	15.32	-0.60	-94.35(.000)	-4.28	2.23
1	1.00	6413	39.58	-0.27	-36.32(.000)	-0.92	1.75
2	2.00	6456	39.85	0.52	77.39(.000)	2.19	1.93
3	3.00	851	5.25	0.42	59.40(.000)	5.92	1.97

Item 8

item:8 (WQ08_Sentence_Structure)

Cases for this item 16202 Discrimination 0.87

Item Threshold(s): -8.11 -5.23 -1.02 2.79 6.55 10.32 Weighted MNSQ 1.05

Item Delta(s): -8.06 -5.28 -1.01 2.79 6.55 10.30

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	206	1.27	-0.33	-44.69(.000)	-8.90	1.95
1	1.00	852	5.26	-0.39	-53.63(.000)	-5.00	1.56
2	2.00	4899	30.24	-0.45	-64.85(.000)	-2.05	1.71
3	3.00	6498	40.11	0.11	14.50(.000)	0.60	1.67
4	4.00	3109	19.19	0.51	74.89(.000)	3.48	1.72
5	5.00	601	3.71	0.38	51.76(.000)	6.27	1.72
6	6.00	37	0.23	0.12	15.86(.000)	8.45	1.50

Item 9

 item:9 (WQ09_Punctuation)

Cases for this item 16202 Discrimination 0.80

Item Threshold(s): -7.70 -4.16 -0.01 4.45 8.60 Weighted MNSQ 1.38

Item Delta(s): -7.67 -4.18 -0.01 4.46 8.59

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	268	1.65	-0.34	-46.09(.000)	-8.02	2.48
1	1.00	1541	9.51	-0.44	-61.92(.000)	-4.10	1.78
2	2.00	5997	37.01	-0.32	-43.71(.000)	-1.20	1.91
3	3.00	6465	39.90	0.35	46.88(.000)	1.51	2.09
4	4.00	1764	10.89	0.45	63.97(.000)	4.25	2.18
5	5.00	167	1.03	0.19	25.00(.000)	6.19	2.46

Item 10

 item:10 (WQ10_Spelling)

Cases for this item 16202 Discrimination 0.86

Item Threshold(s): -9.00 -5.98 -2.79 0.34 3.64 8.34 Weighted MNSQ 1.22

Item Delta(s): -8.95 -5.99 -2.78 0.34 3.61 8.34

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	135	0.83	-0.29	-38.16(.000)	-9.58	1.65
1	1.00	537	3.31	-0.36	-49.04(.000)	-5.87	1.57
2	2.00	2549	15.73	-0.44	-62.82(.000)	-3.15	1.50
3	3.00	5226	32.26	-0.19	-24.71(.000)	-0.72	1.71
4	4.00	5094	31.44	0.27	35.01(.000)	1.41	1.80
5	5.00	2452	15.13	0.54	80.74(.000)	4.22	1.95
6	6.00	209	1.29	0.23	29.64(.000)	6.55	2.05

 The following traditional statistics are only meaningful for complete designs and when the amount of missing data is minimal.

In this analysis 0.00% of the data are missing.

The following results are scaled to assume that a single response was provided for each item.

N	16202
Mean	24.62
Standard Deviation	7.54
Variance	56.85
Skewness	-0.11
Kurtosis	0.35
Standard error of mean	0.06
Standard error of measurement	1.59
Coefficient Alpha	0.96

APPENDIX C. ITEM CALIBRATION RESULTS

C.1 Year 3 Reading Item Calibration Results

Item_Label	Delta_Centered	Error	Discrimination	Facility	MnSQ	CI_L	CI_H	T	Slope
r3q01	-3.044	0.038	0.29	95.91	0.94	0.86	1.14	-0.8	1.05
r3q02	-1.855	0.034	0.45	88.68	0.88	0.93	1.07	-3.4	1.13
r3q03	-2.463	0.036	0.45	93.16	0.84	0.9	1.1	-3.3	1.15
r3q04	-1.725	0.033	0.46	87.46	0.88	0.93	1.07	-3.6	1.13
r3q05	-0.331	0.029	0.41	67.84	1.03	0.97	1.03	1.6	0.94
r3q06	-0.742	0.03	0.58	74.87	0.83	0.96	1.04	-9.1	1.33
r3q07	-2.169	0.035	0.47	91.25	0.84	0.91	1.09	-3.9	1.16
r3q08	-1.746	0.033	0.43	87.7	0.89	0.93	1.07	-3.2	1.1
r3q09	-0.791	0.03	0.37	75.73	1.02	0.96	1.04	1	0.94
r3q10	-1.79	0.034	0.48	88.19	0.85	0.93	1.07	-4.5	1.17
r3q11	-1.306	0.032	0.54	82.96	0.84	0.95	1.05	-6.3	1.22
r3q12	-1.367	0.032	0.48	83.7	0.89	0.94	1.06	-4.2	1.15
r3q13	0.414	0.028	0.49	53.43	0.97	0.97	1.03	-2.4	1.13
r3q14	-0.027	0.028	0.46	62.27	0.98	0.97	1.03	-1.2	1.07
r3q15	-0.752	0.03	0.52	75.17	0.89	0.96	1.04	-5.5	1.22
r3q16	0.644	0.028	0.49	48.75	0.95	0.97	1.03	-3.8	1.16
r3q17	1.097	0.028	0.46	39.63	0.97	0.97	1.03	-2.2	1.06
r3q18	-0.4	0.029	0.42	69.25	1.01	0.97	1.03	0.4	1
r3q19	-0.763	0.03	0.56	75.36	0.85	0.96	1.04	-7.8	1.29
r3q20	0.593	0.028	0.43	49.84	1.01	0.97	1.03	0.6	0.95
r3q21	-0.422	0.029	0.36	69.69	1.07	0.97	1.03	4	0.86
r3q22	0.779	0.028	0.37	46.1	1.07	0.97	1.03	5.3	0.75
r3q23	0.458	0.028	0.41	52.67	1.04	0.97	1.03	2.9	0.89
r3q24	1.53	0.029	0.31	31.58	1.07	0.97	1.03	4.1	0.76
r3q25	0.341	0.028	0.48	55.09	0.97	0.97	1.03	-1.9	1.11
r3q26	-0.089	0.028	0.4	63.68	1.03	0.97	1.03	2	0.93
r3q27	1.01	0.028	0.43	41.62	1	0.97	1.03	0.1	0.96
r3q28	1.399	0.029	0.34	34.13	1.08	0.97	1.03	4.5	0.77
r3q29	0.846	0.028	0.5	44.96	0.94	0.97	1.03	-4.1	1.18
r3q30	1.385	0.029	0.39	34.44	1.02	0.97	1.03	1.2	0.91
r3q31	1.188	0.028	0.38	38.22	1.05	0.97	1.03	3.5	0.82
r3q32	0.538	0.028	0.48	51.37	0.97	0.97	1.03	-1.9	1.09
r3q33	0.67	0.028	0.38	48.71	1.07	0.97	1.03	4.7	0.77
r3q34	1.122	0.028	0.23	39.74	1.2	0.97	1.03	12.7	0.38
r3q35	0.042	0.028	0.4	61.53	1.05	0.97	1.03	3.3	0.88
r3q36	1.324	0.029	0.45	35.9	0.97	0.97	1.03	-1.7	1.03
r3q37	1.879	0.03	0.15	26.08	1.24	0.96	1.04	11	0.48
r3q38	2.49	0.032	0.14	17.36	1.15	0.95	1.05	5.2	0.69
r3q39	2.033	0.185	0.21	23.69	1.12	0.96	1.04	5.4	0.69

C.2 Year 5 Reading Item Calibration Results

Item_Label	Delta_Centered	Error	Discrimination	Facility	MnSQ	CI_L	CI_H	T	Slope
r5q01	-2.566	0.033	0.36	92.67	0.9	0.91	1.09	-2	1.09
r5q02	-2.272	0.032	0.23	90.63	1.02	0.92	1.08	0.5	0.94
r5q03	-2.624	0.034	0.39	93.02	0.88	0.9	1.1	-2.5	1.12
r5q04	-1.27	0.029	0.36	80	1.01	0.95	1.05	0.5	0.96
r5q05	-0.807	0.028	0.47	73.04	0.96	0.96	1.04	-2.4	1.1
r5q06	-2.496	0.033	0.37	92.24	0.89	0.91	1.09	-2.4	1.11
r5q07	-0.742	0.028	0.5	71.98	0.93	0.96	1.04	-4.1	1.17
r5q08	-1.099	0.028	0.39	77.6	1.01	0.96	1.04	0.4	0.99
r5q09	-0.259	0.027	0.45	63.32	1	0.97	1.03	0.1	1
r5q10	-0.731	0.028	0.48	71.82	0.95	0.96	1.04	-2.7	1.12
r5q11	0.247	0.026	0.46	53.46	1	0.97	1.03	0.3	0.97
r5q12	-1.198	0.029	0.49	79.08	0.91	0.96	1.04	-4.3	1.17
r5q13	-1.21	0.029	0.42	79.25	0.97	0.96	1.04	-1.3	1.06
r5q14	-0.211	0.027	0.49	62.52	0.96	0.97	1.03	-2.6	1.1
r5q15	0.264	0.026	0.49	53.17	0.98	0.97	1.03	-1.5	1.04
r5q16	-0.545	0.027	0.55	68.69	0.88	0.97	1.03	-7.1	1.28
r5q17	0	0.026	0.55	58.44	0.91	0.97	1.03	-6.4	1.26
r5q18	0.022	0.026	0.45	58.08	1.01	0.97	1.03	1	0.97
r5q19	-0.151	0.027	0.47	61.45	0.99	0.97	1.03	-0.8	1.05
r5q20	0.534	0.026	0.61	47.85	0.84	0.97	1.03	-12	1.47
r5q21	-0.677	0.027	0.43	71.11	0.99	0.97	1.03	-0.3	1.02
r5q22	0.796	0.026	0.41	42.69	1.04	0.97	1.03	3	0.85
r5q23	0.184	0.026	0.46	54.93	1	0.97	1.03	0.3	0.98
r5q24	0.05	0.026	0.46	57.61	1.01	0.97	1.03	0.5	0.99
r5q25	1.535	0.028	0.29	29.03	1.13	0.96	1.04	7.1	0.68
r5q26	0.448	0.026	0.44	49.73	1.02	0.97	1.03	1.4	0.93
r5q27	1.035	0.027	0.43	38.21	1.02	0.97	1.03	1.6	0.92
r5q28	1.352	0.027	0.39	32.38	1.04	0.97	1.03	2.4	0.87
r5q29	2.018	0.029	0.2	21.64	1.15	0.96	1.04	6.5	0.68
r5q30	0.169	0.026	0.43	55.51	1.04	0.97	1.03	2.5	0.9
r5q31	1.569	0.028	0.39	28.66	1.01	0.96	1.04	0.7	0.93
r5q32	0.543	0.026	0.41	48.01	1.06	0.97	1.03	3.9	0.8
r5q33	0.929	0.027	0.49	40.37	0.97	0.97	1.03	-1.8	1.07
r5q34	2.002	0.029	0.48	22	0.93	0.96	1.04	-3.3	1.11
r5q35	0.171	0.027	0.46	55.67	1.01	0.97	1.03	0.7	0.99
r5q36	0.784	0.027	0.37	43.44	1.09	0.97	1.03	6.3	0.72
r5q37	0.649	0.027	0.54	46.14	0.92	0.97	1.03	-5.8	1.23
r5q38	2.038	0.029	0.16	21.59	1.18	0.96	1.04	7.5	0.61
r5q39	1.52	0.172	0.35	29.74	1.05	0.96	1.04	2.5	0.84

C.3 Year 7 Reading Item Calibration Results

Item_Label	Delta_Centered	Error	Discrimination	Facility	MnSQ	CI_L	CI_H	T	Slope
r7q01	-2.978	0.03	0.34	94.58	0.91	0.89	1.11	-1.7	1.09
r7q02	-1.91	0.027	0.42	86.6	0.9	0.94	1.06	-3.5	1.13
r7q03	-1.825	0.026	0.38	85.68	0.94	0.94	1.06	-2.2	1.08
r7q04	-2.115	0.027	0.42	88.63	0.88	0.93	1.07	-3.6	1.13
r7q05	-2.657	0.029	0.38	92.81	0.88	0.91	1.09	-2.6	1.12
r7q06	-1.343	0.025	0.36	79.57	0.98	0.96	1.04	-1	1.04
r7q07	-1.217	0.025	0.44	77.7	0.92	0.96	1.04	-4	1.15
r7q08	-1.435	0.025	0.41	80.87	0.93	0.96	1.04	-2.9	1.1
r7q09	0.013	0.023	0.45	54.79	0.97	0.98	1.02	-2.4	1.11
r7q10	-0.882	0.024	0.45	72.27	0.93	0.97	1.03	-4.3	1.15
r7q11	-0.827	0.024	0.49	71.32	0.91	0.97	1.03	-6.1	1.23
r7q12	0.805	0.023	0.37	38.41	1.03	0.97	1.03	2.4	0.87
r7q13	-0.707	0.024	0.43	69.15	0.97	0.97	1.03	-1.8	1.09
r7q14	1.066	0.024	0.4	33.35	1	0.97	1.03	0.1	0.97
r7q15	1.298	0.024	0.28	29.13	1.08	0.97	1.03	5.1	0.77
r7q16	0.924	0.024	0.49	36.08	0.92	0.97	1.03	-6	1.18
r7q17	-0.039	0.023	0.35	55.95	1.06	0.98	1.02	5.3	0.78
r7q18	0.421	0.023	0.41	46.33	1.01	0.98	1.02	0.7	0.96
r7q19	-0.524	0.024	0.48	65.76	0.93	0.97	1.03	-5.3	1.21
r7q20	0.179	0.023	0.48	51.43	0.94	0.98	1.02	-5.3	1.21
r7q21	0.467	0.023	0.48	45.37	0.95	0.98	1.02	-4.7	1.18
r7q22	0.863	0.023	0.43	37.33	0.98	0.97	1.03	-1.4	1.02
r7q23	-0.569	0.024	0.46	66.64	0.95	0.97	1.03	-3.4	1.15
r7q24	0.35	0.023	0.56	47.85	0.87	0.98	1.02	-11.6	1.44
r7q25	-0.61	0.024	0.38	67.42	1	0.97	1.03	-0.1	0.97
r7q26	-1.097	0.025	0.52	75.99	0.86	0.96	1.04	-7.8	1.27
r7q27	0.672	0.023	0.43	41.21	0.99	0.98	1.02	-1	1.01
r7q28	1.033	0.024	0.33	34.09	1.05	0.97	1.03	3.8	0.81
r7q29	-0.074	0.023	0.49	56.81	0.93	0.98	1.02	-6	1.25
r7q30	0.574	0.023	0.59	43.26	0.85	0.98	1.02	-13.7	1.51
r7q31	0.06	0.023	0.35	54.03	1.06	0.98	1.02	5.5	0.76
r7q32	1.938	0.026	0.23	19.23	1.08	0.96	1.04	3.4	0.83
r7q33	-0.026	0.023	0.35	55.86	1.06	0.98	1.02	5	0.8
r7q34	0.708	0.023	0.35	40.56	1.06	0.98	1.02	4.6	0.8
r7q35	0.084	0.023	0.51	53.6	0.92	0.98	1.02	-7	1.3
r7q36	0.369	0.023	0.5	47.61	0.93	0.98	1.02	-6.4	1.24
r7q37	0.894	0.024	0.4	36.87	1	0.97	1.03	0.1	0.96
r7q38	0.43	0.023	0.46	46.36	0.96	0.98	1.02	-3.5	1.12
r7q39	0.053	0.023	0.45	54.33	0.97	0.98	1.02	-2.5	1.11
r7q40	1.482	0.025	0.21	26.22	1.14	0.97	1.03	7.3	0.69
r7q41	0.23	0.023	0.37	50.63	1.04	0.98	1.02	3.8	0.82
r7q42	0.841	0.024	0.37	38.04	1.03	0.97	1.03	2.3	0.87
r7q43	1.018	0.024	0.23	34.58	1.14	0.97	1.03	9.7	0.58
r7q44	0.959	0.024	0.28	35.73	1.1	0.97	1.03	7.3	0.67
r7q45	0.867	0.024	0.15	37.58	1.22	0.97	1.03	15.5	0.32
r7q46	-0.198	0.023	0.44	59.67	0.97	0.98	1.02	-2.4	1.11
r7q47	0.952	0.024	0.27	35.91	1.11	0.97	1.03	7.8	0.65
r7q48	1.285	0.024	0.29	29.71	1.07	0.97	1.03	4.2	0.79
r7q49	0.2	0.167	0.19	51.41	1.2	0.98	1.02	16.3	0.2

C.4 Year 9 Reading Item Calibration Results

Item Label	Delta	Centered	Error	Discrimination	Facility	MnSQ	CI L	CI H	T	Slope
r9q01		-1.53	0.03	0.35	84.96	0.99	0.94	1.06	-0.4	0.99
r9q02		-2.093	0.032	0.37	90.26	0.91	0.92	1.08	-2.2	1.07
r9q03		-2.625	0.034	0.28	93.76	0.95	0.89	1.11	-1	1.02
r9q04		-1.443	0.03	0.45	83.97	0.91	0.94	1.06	-3.2	1.11
r9q05		-0.173	0.027	0.43	64.5	1.02	0.97	1.03	1.4	0.94
r9q06		-1.345	0.03	0.46	82.81	0.91	0.95	1.05	-3.3	1.11
r9q07		-1.877	0.032	0.41	88.45	0.92	0.93	1.07	-2.3	1.09
r9q08		-2.428	0.033	0.38	92.62	0.9	0.9	1.1	-2.1	1.09
r9q09		-2.496	0.034	0.35	93.03	0.9	0.9	1.1	-2	1.08
r9q10		-0.149	0.027	0.47	64.11	0.98	0.97	1.03	-1.3	1.04
r9q11		-0.045	0.027	0.6	62.14	0.84	0.97	1.03	-10.7	1.39
r9q12		-1.454	0.03	0.45	84.18	0.91	0.94	1.06	-3.2	1.11
r9q13		-0.955	0.029	0.44	77.67	0.96	0.96	1.04	-1.7	1.07
r9q14		0.818	0.027	0.49	45.16	0.97	0.97	1.03	-2.2	1.09
r9q15		1.145	0.027	0.28	38.77	1.18	0.97	1.03	11.1	0.51
r9q16		0.395	0.026	0.54	53.62	0.92	0.97	1.03	-6	1.24
r9q17		-0.284	0.027	0.41	66.68	1.04	0.97	1.03	2.6	0.9
r9q18		0.464	0.026	0.42	52.3	1.04	0.97	1.03	3.1	0.88
r9q19		1.765	0.028	0.35	27.68	1.04	0.96	1.04	2.2	0.87
r9q20		-0.411	0.027	0.41	69.01	1.03	0.97	1.03	1.9	0.92
r9q21		0.674	0.026	0.37	48.09	1.09	0.97	1.03	6.3	0.71
r9q22		-0.539	0.028	0.52	71.24	0.91	0.96	1.04	-5.2	1.2
r9q23		-0.099	0.027	0.47	63.33	0.97	0.97	1.03	-1.8	1.05
r9q24		0.687	0.026	0.53	47.83	0.92	0.97	1.03	-6.1	1.22
r9q25		-0.932	0.029	0.39	77.45	0.98	0.96	1.04	-0.7	0.98
r9q26		0.104	0.027	0.38	59.44	1.08	0.97	1.03	5.4	0.78
r9q27		0.469	0.026	0.54	52.21	0.92	0.97	1.03	-6.2	1.25
r9q28		0.978	0.027	0.27	42.07	1.2	0.97	1.03	13.1	0.42
r9q29		0.853	0.021	0.54	44.15	1.12	0.96	1.04	6.1	0.8
r9q30		1.673	0.028	0.29	29.25	1.1	0.96	1.04	5.6	0.71
r9q31		0.439	0.026	0.46	52.85	1	0.97	1.03	0.1	0.99
r9q32		0.171	0.027	0.53	58.18	0.93	0.97	1.03	-4.9	1.21
r9q33		0.329	0.027	0.36	55.09	1.12	0.97	1.03	7.8	0.66
r9q34		1.075	0.027	0.35	40.26	1.1	0.97	1.03	6.5	0.71
r9q35		0.712	0.027	0.36	47.44	1.11	0.97	1.03	7.6	0.67
r9q36		-0.126	0.027	0.42	63.98	1.03	0.97	1.03	2.1	0.92
r9q37		0.14	0.027	0.44	58.89	1.02	0.97	1.03	1.6	0.93
r9q38		0.994	0.027	0.28	41.88	1.18	0.97	1.03	11.8	0.47
r9q39		-0.384	0.027	0.49	68.72	0.95	0.97	1.03	-2.7	1.12
r9q40		0.913	0.027	0.56	43.51	0.89	0.97	1.03	-7.9	1.3
r9q41		0.394	0.027	0.45	53.89	1.01	0.97	1.03	1	0.97
r9q42		0.895	0.027	0.45	43.87	1	0.97	1.03	0	0.98
r9q43		0.459	0.027	0.41	52.61	1.05	0.97	1.03	3.6	0.85
r9q44		0.238	0.027	0.42	57.03	1.04	0.97	1.03	2.6	0.9
r9q45		2.093	0.029	0.56	22.7	0.82	0.96	1.04	-8.6	1.29
r9q46		0.213	0.027	0.6	57.54	0.86	0.97	1.03	-10.4	1.42
r9q47		0.408	0.027	0.46	53.73	1	0.97	1.03	0.3	0.99
r9q48		0.007	0.027	0.56	61.62	0.89	0.97	1.03	-7.6	1.31
r9q49		0.3	0.027	0.48	55.91	0.98	0.97	1.03	-1.4	1.06
r9q50		1.586	0.195	0.46	31.06	0.94	0.97	1.03	-3.5	1.09

C.5 Year 3 Spelling Item Calibration Results

Item_Label	Delta_Centered	Error	Discrimination	Facility	MnSQ	CI_L	CI_H	T	Slope
lc3q01	-3.215	0.048	0.49	85.28	1.06	0.93	1.07	1.7	0.9
lc3q02	-3.049	0.047	0.51	83.97	1.03	0.93	1.07	0.8	0.94
lc3q03	-5.162	0.063	0.34	95.37	0.95	0.88	1.12	-0.9	0.94
lc3q04	-4.618	0.059	0.39	93.47	0.85	0.9	1.1	-3	1.04
lc3q05	-2.273	0.043	0.58	76.87	1	0.95	1.05	0.2	0.99
lc3q06	-1.368	0.04	0.61	66.46	1.08	0.95	1.05	3.2	0.9
lc3q07	-1.552	0.041	0.64	68.79	0.96	0.95	1.05	-1.6	1.09
lc3q08	-0.543	0.039	0.69	55.48	0.94	0.96	1.04	-2.6	1.13
lc3q09	-0.305	0.039	0.66	52.23	1.03	0.96	1.04	1.4	0.97
lc3q10	-0.066	0.039	0.69	49.07	0.97	0.96	1.04	-1.6	1.08
lc3q11	0.83	0.04	0.66	36.78	1	0.95	1.05	-0.1	1
lc3q12	1.322	0.041	0.65	30.54	0.96	0.95	1.05	-1.5	1.06
lc3q13	2.68	0.047	0.57	16.33	0.92	0.94	1.06	-2.6	1.09
lc3q14	3.153	0.05	0.49	12.64	1.01	0.93	1.07	0.2	0.97
lc3q15	-1.271	0.04	0.63	66.1	1.02	0.95	1.05	1.1	1
lc3q16	-0.865	0.039	0.65	61	1.01	0.96	1.04	0.3	1.02
lc3q17	-0.328	0.039	0.63	53.76	1.09	0.96	1.04	3.8	0.9
lc3q18	0.544	0.039	0.7	41.59	0.91	0.96	1.04	-3.9	1.16
lc3q19	1.199	0.041	0.61	32.91	1.08	0.95	1.05	3.1	0.89
lc3q20	0.601	0.04	0.63	41.14	1.09	0.96	1.04	3.9	0.88
lc3q21	1.593	0.042	0.65	28.43	0.92	0.95	1.05	-3.3	1.1
lc3q22	1.81	0.043	0.58	26.05	1.1	0.95	1.05	3.6	0.87
lc3q23	2.834	0.048	0.55	15.94	0.95	0.94	1.06	-1.4	1.05
lc3q24	3.559	0.053	0.48	10.68	0.95	0.92	1.08	-1.2	1.03
lc3q25	4.49	0.219	0.4	6	0.95	0.89	1.11	-0.8	1.04

C.6 Year 5 Spelling Item Calibration Results

Item_Label	Delta_Centered	Error	Discrimination	Facility	MnSQ	CI_L	CI_H	T	Slope
lc5q01	-3.696	0.051	0.45	91.05	0.94	0.91	1.09	-1.5	0.9
lc5q02	-3.501	0.049	0.51	89.95	0.83	0.92	1.08	-4.2	1.05
lc5q03	-1.453	0.038	0.63	71.15	0.95	0.95	1.05	-2	1.07
lc5q04	-1.492	0.039	0.63	71.7	0.94	0.95	1.05	-2.5	1.08
lc5q05	-1.062	0.037	0.6	66.12	1.08	0.96	1.04	3.4	0.91
lc5q06	-0.78	0.037	0.63	62.2	1.02	0.96	1.04	0.7	0.99
lc5q07	-1.078	0.037	0.6	66.46	1.09	0.96	1.04	3.8	0.87
lc5q08	-0.897	0.037	0.66	64.03	0.93	0.96	1.04	-3.4	1.13
lc5q09	0.071	0.036	0.7	49.66	0.87	0.96	1.04	-7.1	1.27
lc5q10	0.525	0.036	0.65	42.75	0.96	0.96	1.04	-1.9	1.09
lc5q11	0.691	0.036	0.6	40.26	1.07	0.96	1.04	3.5	0.91
lc5q12	0.968	0.037	0.62	36.26	0.99	0.96	1.04	-0.3	1.04
lc5q13	2.109	0.04	0.49	21.39	1.08	0.95	1.05	2.9	0.89
lc5q14	-2.304	0.042	0.56	81.26	0.94	0.94	1.06	-2	1.02
lc5q15	-2.413	0.043	0.53	82.43	1	0.94	1.06	0.2	0.96
lc5q16	-0.448	0.036	0.57	58.14	1.15	0.96	1.04	7.3	0.77
lc5q17	-0.157	0.036	0.68	53.86	0.92	0.96	1.04	-3.9	1.18
lc5q18	0.268	0.036	0.6	47.4	1.07	0.96	1.04	3.3	0.91
lc5q19	0.918	0.037	0.65	37.6	0.91	0.96	1.04	-4.4	1.19
lc5q20	1.063	0.037	0.58	35.53	1.05	0.96	1.04	2.5	0.93
lc5q21	1.796	0.039	0.58	25.62	0.95	0.95	1.05	-2.4	1.1
lc5q22	1.92	0.039	0.47	24.21	1.15	0.95	1.05	5.9	0.76
lc5q23	2.16	0.041	0.49	21.48	1.07	0.95	1.05	2.7	0.9
lc5q24	2.704	0.044	0.51	16.01	0.94	0.94	1.06	-1.9	1.08
lc5q25	4.089	0.193	0.36	6.45	0.97	0.9	1.1	-0.5	1.03

C.7 Year 7 Spelling Item Calibration Results

Item_Label	Delta_Centered	Error	Discrimination	Facility	MnSQ	CI_L	CI_H	T	Slope
lc7q01	-2.978	0.041	0.48	86.72	1.01	0.94	1.06	0.4	0.88
lc7q02	-2.512	0.038	0.55	82.82	0.98	0.94	1.06	-0.7	0.97
lc7q03	-1.744	0.035	0.64	74.76	0.87	0.95	1.05	-5.5	1.13
lc7q04	-1.759	0.035	0.62	74.98	0.91	0.95	1.05	-3.7	1.09
lc7q05	-1.889	0.036	0.6	76.49	0.96	0.95	1.05	-1.5	1.02
lc7q06	-1.746	0.035	0.57	74.87	1.07	0.95	1.05	3	0.9
lc7q07	-1.588	0.035	0.61	72.98	0.98	0.95	1.05	-0.8	1.03
lc7q08	-1.364	0.034	0.61	70.14	0.97	0.96	1.04	-1.3	1.03
lc7q09	-1.193	0.034	0.67	67.85	0.87	0.96	1.04	-6.3	1.19
lc7q10	-0.955	0.033	0.66	64.52	0.89	0.96	1.04	-5.6	1.17
lc7q11	-0.265	0.032	0.57	54.01	1.1	0.97	1.03	5.6	0.82
lc7q12	-0.694	0.032	0.64	60.69	0.96	0.96	1.04	-2	1.07
lc7q13	-0.382	0.032	0.58	55.92	1.08	0.96	1.04	4.3	0.87
lc7q14	0.268	0.032	0.59	45.6	1.02	0.97	1.03	1.3	0.99
lc7q15	-0.036	0.032	0.63	50.53	0.97	0.97	1.03	-2	1.1
lc7q16	1.501	0.034	0.46	26.9	1.11	0.96	1.04	5.5	0.8
lc7q17	-0.838	0.033	0.64	63.19	0.94	0.96	1.04	-3	1.11
lc7q18	0.048	0.032	0.59	49.53	1.04	0.97	1.03	2.3	0.95
lc7q19	0.453	0.032	0.63	43.09	0.94	0.97	1.03	-3.8	1.17
lc7q20	0.665	0.032	0.53	39.82	1.11	0.97	1.03	6.1	0.79
lc7q21	1.729	0.035	0.48	24.36	1.06	0.96	1.04	3	0.91
lc7q22	0.529	0.032	0.56	42.44	1.05	0.97	1.03	3	0.91
lc7q23	1.274	0.033	0.58	30.92	0.96	0.96	1.04	-2.4	1.12
lc7q24	0.895	0.032	0.63	36.79	0.89	0.97	1.03	-6.4	1.25
lc7q25	0.46	0.032	0.55	44	1.08	0.97	1.03	4.9	0.87
lc7q26	2.009	0.036	0.45	21.43	1.07	0.95	1.05	2.8	0.91
lc7q27	1.71	0.035	0.51	25.43	1.02	0.96	1.04	1	1
lc7q28	2.309	0.037	0.45	18.29	1	0.95	1.05	-0.1	0.98
lc7q29	2.635	0.039	0.41	15.07	1.02	0.94	1.06	0.5	0.97
lc7q30	3.459	0.184	0.35	8.75	0.98	0.92	1.08	-0.4	1

C.8 Year 9 Spelling Item Calibration Results

Item_Label	Delta_Centered	Error	Discrimination	Facility	MnSQ	CI_L	CI_H	T	Slope
lc9q01	-2.985	0.045	0.49	85.7	0.95	0.93	1.07	-1.6	0.98
lc9q02	-2.497	0.043	0.54	81.19	0.98	0.94	1.06	-0.5	0.99
lc9q03	-2.089	0.04	0.59	76.75	0.92	0.95	1.05	-3	1.06
lc9q04	-2.14	0.041	0.59	77.35	0.91	0.95	1.05	-3.5	1.09
lc9q05	-1.566	0.038	0.59	70.2	1.02	0.95	1.05	0.8	0.97
lc9q06	-1.347	0.038	0.61	67.2	0.99	0.96	1.04	-0.6	1.03
lc9q07	-1.085	0.037	0.63	63.42	0.96	0.96	1.04	-2.1	1.08
lc9q08	-0.871	0.036	0.62	60.22	0.99	0.96	1.04	-0.6	1.03
lc9q09	-0.031	0.036	0.62	46.92	1	0.96	1.04	-0.2	1.06
lc9q10	0.078	0.036	0.54	45.2	1.14	0.96	1.04	7.2	0.75
lc9q11	-0.149	0.036	0.67	48.87	0.9	0.96	1.04	-5.3	1.21
lc9q12	0.234	0.036	0.55	42.76	1.11	0.96	1.04	5.6	0.8
lc9q13	0.719	0.037	0.53	35.23	1.08	0.96	1.04	3.8	0.84
lc9q14	1.46	0.039	0.53	24.74	0.98	0.96	1.04	-0.8	1.01
lc9q15	2.104	0.042	0.4	17.25	1.12	0.95	1.05	4.1	0.83
lc9q16	2.808	0.047	0.45	10.97	0.92	0.93	1.07	-2.2	1.1
lc9q17	-2.224	0.041	0.57	78.85	0.9	0.95	1.05	-3.8	1.08
lc9q18	-0.725	0.036	0.6	58.67	1.01	0.96	1.04	0.5	1
lc9q19	-1.116	0.037	0.61	64.86	0.98	0.96	1.04	-0.9	1.05
lc9q20	-0.25	0.036	0.64	51.46	0.93	0.96	1.04	-3.9	1.16
lc9q21	0.038	0.036	0.64	46.83	0.94	0.96	1.04	-3	1.15
lc9q22	0.369	0.036	0.65	41.68	0.9	0.96	1.04	-5.4	1.22
lc9q23	0.131	0.036	0.62	45.74	0.96	0.96	1.04	-1.9	1.1
lc9q24	0.643	0.037	0.58	37.61	1	0.96	1.04	0.2	1.03
lc9q25	0.54	0.037	0.55	39.55	1.06	0.96	1.04	2.9	0.91
lc9q26	0.755	0.037	0.56	36.33	1.02	0.96	1.04	1	0.98
lc9q27	1.308	0.039	0.48	28.13	1.09	0.96	1.04	4	0.85
lc9q28	1.305	0.039	0.53	28.29	1.01	0.96	1.04	0.5	0.99
lc9q29	2.847	0.048	0.27	11.37	1.18	0.93	1.07	4.4	0.74
lc9q30	3.734	0.209	0.3	6.14	1.03	0.89	1.11	0.6	0.98

C.9 Year 3 G&P Item Calibration Results

Item_Label	Delta_Centered	Error	Discrimination	Facility	MnSQ	CI_L	CI_H	T	Slope
lc3q26	-1.917	0.034	0.45	89.33	0.89	0.93	1.07	-3.1	1.12
lc3q27	-2.281	0.036	0.39	92.06	0.91	0.91	1.09	-1.9	1.08
lc3q28	-1.784	0.034	0.48	88.2	0.88	0.93	1.07	-3.6	1.15
lc3q29	-1.286	0.032	0.51	82.94	0.89	0.95	1.05	-4.1	1.16
lc3q30	-1.35	0.032	0.48	83.7	0.9	0.94	1.06	-3.6	1.12
lc3q31	-0.658	0.03	0.57	74.23	0.87	0.96	1.04	-6.4	1.26
lc3q32	-0.533	0.029	0.56	72.27	0.9	0.96	1.04	-5.5	1.24
lc3q33	-0.284	0.029	0.54	68.02	0.93	0.97	1.03	-4.1	1.18
lc3q34	-0.384	0.029	0.56	69.78	0.9	0.96	1.04	-5.7	1.24
lc3q35	-0.128	0.029	0.54	65.27	0.93	0.97	1.03	-4.1	1.19
lc3q36	0.248	0.028	0.45	58.26	1.04	0.97	1.03	2.5	0.89
lc3q37	-0.624	0.03	0.46	73.91	0.99	0.96	1.04	-0.5	1.03
lc3q38	-0.109	0.029	0.52	65.1	0.95	0.97	1.03	-2.8	1.12
lc3q39	0.441	0.028	0.52	54.57	0.97	0.97	1.03	-2.2	1.13
lc3q40	0.202	0.028	0.52	59.3	0.97	0.97	1.03	-1.7	1.13
lc3q41	0.601	0.028	0.5	51.46	0.98	0.97	1.03	-1.3	1.06
lc3q42	0.685	0.028	0.37	49.84	1.13	0.97	1.03	8.4	0.59
lc3q43	-0.068	0.029	0.32	64.47	1.17	0.97	1.03	9.7	0.58
lc3q44	0.238	0.028	0.45	58.79	1.04	0.97	1.03	2.5	0.9
lc3q45	0.673	0.028	0.37	50.25	1.12	0.97	1.03	8.1	0.61
lc3q46	0.897	0.028	0.39	45.9	1.08	0.97	1.03	5.6	0.72
lc3q47	0.727	0.028	0.38	49.32	1.11	0.97	1.03	7.1	0.66
lc3q48	1.409	0.029	0.29	36.13	1.16	0.97	1.03	9.6	0.51
lc3q49	0.939	0.028	0.49	45.25	0.98	0.97	1.03	-1.2	1.04
lc3q50	2.27	0.031	0.37	22.07	1.01	0.95	1.05	0.2	0.91
lc3q51	2.077	0.148	0.3	25.04	1.08	0.96	1.04	3.5	0.76

C.10 Year 5 G&P Item Calibration Results

Item_Label	Delta_Centered	Error	Discrimination	Facility	MnSQ	CI_L	CI_H	T	Slope
lc5q26	-2.775	0.04	0.37	95.09	0.9	0.88	1.12	-1.6	1.1
lc5q27	-1.709	0.035	0.47	88.02	0.88	0.93	1.07	-3.5	1.14
lc5q28	-1.215	0.033	0.44	82.71	0.96	0.95	1.05	-1.6	1.07
lc5q29	-1.239	0.033	0.49	83.02	0.91	0.95	1.05	-3.6	1.13
lc5q30	-1.236	0.033	0.48	83.02	0.91	0.95	1.05	-3.6	1.13
lc5q31	-1.362	0.033	0.42	84.51	0.97	0.94	1.06	-1.2	1.05
lc5q32	-0.614	0.03	0.43	74.32	1	0.96	1.04	-0.1	0.98
lc5q33	-0.746	0.031	0.49	76.38	0.95	0.96	1.04	-2.6	1.12
lc5q34	-0.772	0.031	0.57	76.79	0.86	0.96	1.04	-6.8	1.27
lc5q35	-0.29	0.029	0.51	68.92	0.95	0.97	1.03	-2.8	1.13
lc5q36	0.187	0.029	0.44	60.03	1.04	0.97	1.03	2.5	0.93
lc5q37	-0.007	0.029	0.57	63.76	0.91	0.97	1.03	-6.2	1.28
lc5q38	-0.23	0.029	0.46	67.92	1	0.97	1.03	0.1	1.01
lc5q39	-0.284	0.03	0.45	68.9	1.01	0.97	1.03	0.8	0.99
lc5q40	0.303	0.029	0.54	57.83	0.94	0.97	1.03	-3.9	1.2
lc5q41	-0.151	0.029	0.53	66.51	0.94	0.97	1.03	-3.6	1.18
lc5q42	-0.15	0.029	0.49	66.54	0.98	0.97	1.03	-1.1	1.09
lc5q43	0.649	0.028	0.39	51.01	1.1	0.97	1.03	6.7	0.7
lc5q44	0.607	0.028	0.48	51.89	0.99	0.97	1.03	-0.5	1.05
lc5q45	0.598	0.028	0.33	52.1	1.15	0.97	1.03	10.4	0.54
lc5q46	1.557	0.029	0.28	33.42	1.14	0.97	1.03	8.6	0.59
lc5q47	1.011	0.029	0.52	43.92	0.95	0.97	1.03	-3.8	1.18
lc5q48	1.737	0.03	0.41	30.25	0.99	0.97	1.03	-0.4	0.95
lc5q49	1.49	0.029	0.37	34.72	1.06	0.97	1.03	3.9	0.8
lc5q50	1.95	0.03	0.15	26.72	1.23	0.96	1.04	11.3	0.42
lc5q51	2.692	0.153	0.22	16.36	1.08	0.95	1.05	2.9	0.79

C.11 Year 7 G&P Item Calibration Results

Item_Label	Delta_Centered	Error	Discrimination	Facility	MnSQ	CI_L	CI_H	T	Slope
lc7q31	-2.402	0.035	0.42	92.57	0.89	0.91	1.09	-2.6	1.11
lc7q32	-1.703	0.032	0.4	86.9	0.96	0.94	1.06	-1.5	1.04
lc7q33	-1.861	0.033	0.46	88.42	0.89	0.94	1.06	-3.4	1.12
lc7q34	-1.431	0.031	0.51	83.94	0.87	0.95	1.05	-5	1.16
lc7q35	-1.51	0.031	0.44	84.85	0.93	0.95	1.05	-2.7	1.09
lc7q36	-1.05	0.029	0.5	79.05	0.91	0.96	1.04	-4.4	1.15
lc7q37	-0.955	0.029	0.5	77.67	0.92	0.96	1.04	-4.2	1.15
lc7q38	-0.927	0.029	0.51	77.25	0.91	0.96	1.04	-4.5	1.15
lc7q39	-1.098	0.03	0.47	79.75	0.93	0.96	1.04	-3	1.11
lc7q40	-0.843	0.029	0.54	76.03	0.88	0.96	1.04	-6.4	1.22
lc7q41	-0.857	0.029	0.45	76.28	0.97	0.96	1.04	-1.6	1.07
lc7q42	0.111	0.026	0.47	58.79	0.98	0.97	1.03	-1.4	1.09
lc7q43	-0.583	0.028	0.46	71.83	0.97	0.97	1.03	-1.7	1.06
lc7q44	-0.044	0.027	0.41	61.9	1.04	0.97	1.03	3	0.88
lc7q45	0.184	0.026	0.42	57.37	1.03	0.98	1.02	2.7	0.92
lc7q46	0.067	0.027	0.41	59.72	1.04	0.97	1.03	3	0.91
lc7q47	0.337	0.026	0.35	54.27	1.1	0.98	1.02	8.3	0.66
lc7q48	0.1	0.027	0.48	59.09	0.98	0.97	1.03	-1.7	1.09
lc7q49	0.625	0.026	0.42	48.32	1.03	0.98	1.02	2.5	0.92
lc7q50	1.07	0.027	0.32	39.25	1.1	0.97	1.03	7.4	0.67
lc7q51	1.157	0.027	0.48	37.56	0.95	0.97	1.03	-4	1.14
lc7q52	1.525	0.027	0.38	30.68	1.02	0.97	1.03	1.4	0.92
lc7q53	1.127	0.027	0.36	38.23	1.07	0.97	1.03	5.6	0.74
lc7q54	1.545	0.028	0.35	30.36	1.05	0.97	1.03	3	0.87
lc7q55	1.5	0.027	0.29	31.18	1.09	0.97	1.03	6.1	0.71
lc7q56	1.488	0.027	0.35	31.44	1.05	0.97	1.03	3.5	0.84
lc7q57	1.825	0.028	0.34	25.62	1.03	0.97	1.03	1.7	0.89
lc7q58	2.603	0.148	0.14	14.91	1.12	0.95	1.05	4.1	0.76

C.12 Year 9 G&P Item Calibration Results

Item_Label	Delta_Centered	Error	Discrimination	Facility	MnSQ	CI_L	CI_H	T	Slope
lc9q31	-2.235	0.032	0.36	92.18	0.94	0.91	1.09	-1.3	1.06
lc9q32	-2.242	0.032	0.37	92.24	0.92	0.91	1.09	-1.7	1.08
lc9q33	-2.034	0.031	0.47	90.73	0.86	0.92	1.08	-3.4	1.15
lc9q34	-1.555	0.029	0.43	86.33	0.92	0.94	1.06	-2.6	1.1
lc9q35	-1.431	0.029	0.44	84.96	0.91	0.94	1.06	-3.1	1.11
lc9q36	-1.431	0.029	0.47	85.01	0.89	0.94	1.06	-3.7	1.15
lc9q37	-0.955	0.028	0.49	78.77	0.9	0.96	1.04	-4.5	1.18
lc9q38	-0.128	0.026	0.48	64.35	0.96	0.97	1.03	-2.8	1.16
lc9q39	-0.627	0.027	0.33	73.57	1.05	0.96	1.04	2.6	0.89
lc9q40	-0.256	0.026	0.4	66.87	1.01	0.97	1.03	0.8	0.99
lc9q41	-0.225	0.026	0.36	66.3	1.05	0.97	1.03	3.1	0.87
lc9q42	-0.254	0.026	0.5	66.87	0.93	0.97	1.03	-4.4	1.21
lc9q43	0.527	0.025	0.38	50.83	1.04	0.98	1.02	3.3	0.87
lc9q44	-0.167	0.026	0.44	65.21	0.99	0.97	1.03	-0.9	1.07
lc9q45	0.315	0.025	0.51	55.36	0.94	0.98	1.02	-5	1.27
lc9q46	0.557	0.025	0.41	50.21	1.02	0.98	1.02	1.7	0.92
lc9q47	0.477	0.025	0.41	51.92	1.01	0.98	1.02	0.7	0.95
lc9q48	0.326	0.025	0.44	55.12	0.99	0.98	1.02	-0.4	1.06
lc9q49	0.704	0.025	0.4	47.11	1.02	0.98	1.02	1.4	0.94
lc9q50	0.27	0.025	0.35	56.36	1.07	0.98	1.02	5.4	0.76
lc9q51	0.821	0.025	0.33	44.68	1.07	0.98	1.02	5.9	0.69
lc9q52	1.335	0.026	0.41	34.24	0.98	0.97	1.03	-1	1
lc9q53	0.936	0.025	0.36	42.29	1.05	0.98	1.02	3.8	0.8
lc9q54	1.065	0.026	0.25	39.64	1.13	0.97	1.03	9.7	0.5
lc9q55	1.491	0.026	0.33	31.28	1.04	0.97	1.03	2.3	0.86
lc9q56	1.236	0.026	0.39	36.19	1.01	0.97	1.03	1	0.95
lc9q57	2.145	0.028	0.31	20.46	1.01	0.95	1.05	0.6	0.94
lc9q58	1.336	0.14	0.29	34.26	1.08	0.97	1.03	5.3	0.73

C.13 Year 3 Numeracy Item Calibration Results

Item_Label	Delta_Centered	Error	Discrimination	Facility	MnSQ	CI_L	CI_H	T	Slope
n3q01	-3.262	0.052	0.23	95.32	0.97	0.87	1.13	-0.4	1.03
n3q02	-2.734	0.047	0.34	92.52	0.93	0.9	1.1	-1.4	1.08
n3q03	-2.286	0.043	0.36	89.09	0.94	0.93	1.07	-1.7	1.08
n3q04	-2.063	0.041	0.43	86.95	0.9	0.93	1.07	-3.2	1.14
n3q05	-1.453	0.036	0.25	79.44	1.09	0.95	1.05	3.5	0.85
n3q06	-2.041	0.041	0.4	86.73	0.92	0.94	1.06	-2.6	1.11
n3q07	-0.924	0.034	0.38	70.9	1.01	0.97	1.03	0.8	0.98
n3q08	-0.869	0.033	0.32	69.93	1.08	0.97	1.03	4.3	0.83
n3q09	-1.167	0.035	0.43	75.05	0.95	0.96	1.04	-2.5	1.11
n3q10	-0.764	0.033	0.44	68	0.97	0.97	1.03	-1.7	1.09
n3q11	-1.208	0.035	0.36	75.71	1.02	0.96	1.04	0.9	0.98
n3q12	-0.533	0.032	0.46	63.58	0.97	0.97	1.03	-2.3	1.11
n3q13	-0.406	0.032	0.46	61.05	0.97	0.97	1.03	-2.2	1.13
n3q14	-0.493	0.032	0.47	62.79	0.95	0.97	1.03	-3.4	1.17
n3q15	-0.134	0.032	0.52	55.47	0.92	0.97	1.03	-6.1	1.29
n3q16	-0.044	0.032	0.43	53.61	1.01	0.97	1.03	0.4	0.98
n3q17	0.135	0.032	0.39	49.88	1.04	0.98	1.02	2.9	0.87
n3q18	0.65	0.032	0.4	39.25	1.02	0.97	1.03	1.6	0.92
n3q19	0.475	0.032	0.35	42.8	1.07	0.97	1.03	5.5	0.74
n3q20	0.596	0.032	0.51	40.34	0.93	0.97	1.03	-5.3	1.22
n3q21	0.725	0.032	0.36	37.75	1.06	0.97	1.03	3.8	0.81
n3q22	0.557	0.032	0.41	41.13	1.02	0.97	1.03	1.2	0.94
n3q23	0.474	0.032	0.25	42.86	1.16	0.97	1.03	11.8	0.42
n3q24	0.782	0.032	0.25	36.67	1.15	0.97	1.03	10	0.52
n3q25	0.878	0.033	0.56	34.82	0.88	0.97	1.03	-8.1	1.32
n3q26	1.021	0.033	0.39	32.13	1.03	0.97	1.03	1.5	0.93
n3q27	0.095	0.032	0.29	50.77	1.14	0.98	1.02	10.3	0.5
n3q28	0.772	0.032	0.52	36.87	0.92	0.97	1.03	-5.9	1.23
n3q29	1.271	0.034	0.46	27.69	0.95	0.96	1.04	-2.7	1.09
n3q30	1.246	0.034	0.38	28.15	1	0.96	1.04	0.1	0.95
n3q31	1.841	0.037	0.48	19.03	0.9	0.95	1.05	-3.9	1.14
n3q32	1.715	0.037	0.32	20.78	1.02	0.95	1.05	1	0.9
n3q33	2.123	0.04	0.42	15.53	0.94	0.94	1.06	-1.9	1.07
n3q34	1.869	0.038	0.3	18.82	1.05	0.95	1.05	1.8	0.9
n3q35	3.16	0.207	0.33	6.76	0.97	0.89	1.11	-0.5	1.05

C.14 Year 5 Numeracy Item Calibration Results

Item_Label	Delta_Centered	Error	Discrimination	Facility	MnSQ	CI_L	CI_H	T	Slope
n5q01	-2.92	0.044	0.36	93.1	0.89	0.9	1.1	-2.2	1.1
n5q02	-3.427	0.048	0.28	95.56	0.93	0.87	1.13	-1	1.06
n5q03	-2.139	0.039	0.35	87.06	0.97	0.94	1.06	-0.8	1.02
n5q04	-2.375	0.04	0.37	89.22	0.95	0.93	1.07	-1.5	1.06
n5q05	-1.797	0.036	0.42	83.36	0.95	0.95	1.05	-1.9	1.08
n5q06	-1.648	0.036	0.31	81.53	1.08	0.95	1.05	3.2	0.87
n5q07	-1.62	0.035	0.41	81.18	0.99	0.95	1.05	-0.4	1.04
n5q08	-1.326	0.034	0.47	77.14	0.92	0.96	1.04	-3.8	1.13
n5q09	-0.673	0.032	0.36	66.43	1.11	0.97	1.03	6.5	0.74
n5q10	-0.989	0.033	0.44	71.89	0.99	0.96	1.04	-0.6	1.02
n5q11	-1.828	0.037	0.42	83.74	0.93	0.95	1.05	-2.6	1.08
n5q12	0.445	0.031	0.32	44.95	1.2	0.97	1.03	12.6	0.46
n5q13	-0.418	0.031	0.42	61.74	1.05	0.97	1.03	3.1	0.86
n5q14	-0.58	0.032	0.55	64.76	0.9	0.97	1.03	-6.4	1.26
n5q15	-0.619	0.032	0.49	65.47	0.97	0.97	1.03	-1.8	1.1
n5q16	-0.763	0.032	0.54	68.04	0.91	0.97	1.03	-5.6	1.23
n5q17	-0.473	0.031	0.55	62.78	0.91	0.97	1.03	-6	1.25
n5q18	-0.374	0.031	0.54	60.95	0.92	0.97	1.03	-5.2	1.2
n5q19	-0.309	0.031	0.51	59.71	0.96	0.97	1.03	-2.7	1.14
n5q20	0.337	0.031	0.4	47.09	1.1	0.97	1.03	6.8	0.71
n5q21	-0.117	0.031	0.53	56.02	0.94	0.97	1.03	-4.1	1.18
n5q22	0.233	0.031	0.44	49.14	1.05	0.97	1.03	3.6	0.85
n5q23	0.232	0.031	0.55	49.16	0.92	0.97	1.03	-5.4	1.22
n5q24	0.565	0.031	0.48	42.68	1	0.97	1.03	-0.1	1
n5q25	0.315	0.031	0.56	47.56	0.91	0.97	1.03	-6.3	1.25
n5q26	0.438	0.031	0.6	45.17	0.86	0.97	1.03	-9.9	1.39
n5q27	0.391	0.031	0.27	46.09	1.24	0.97	1.03	15.5	0.32
n5q28	0.764	0.031	0.46	38.92	1.02	0.97	1.03	1.3	0.95
n5q29	1.164	0.032	0.35	31.73	1.11	0.97	1.03	6.3	0.71
n5q30	1.082	0.032	0.44	33.19	1.01	0.97	1.03	0.8	0.93
n5q31	1.129	0.032	0.4	32.36	1.05	0.97	1.03	2.9	0.84
n5q32	1.113	0.032	0.4	32.68	1.08	0.97	1.03	4.5	0.82
n5q33	1.425	0.033	0.57	27.46	0.87	0.96	1.04	-6.9	1.23
n5q34	2.132	0.036	0.5	17.55	0.89	0.95	1.05	-4.3	1.14
n5q35	2.409	0.038	0.49	14.45	0.88	0.94	1.06	-4	1.14
n5q36	1.89	0.035	0.22	20.64	1.15	0.95	1.05	6.2	0.66
n5q37	2.492	0.039	0.33	13.62	1	0.94	1.06	-0.1	0.94
n5q38	1.016	0.032	0.34	34.44	1.13	0.97	1.03	7.2	0.65
n5q39	1.88	0.035	0.45	20.77	0.97	0.95	1.05	-1.4	1.03
n5q40	2.943	0.212	0.45	9.73	0.88	0.92	1.08	-3	1.13

C.15 Year 7 Numeracy Item Calibration Results

Item_Label	Delta_Centered	Error	Discrimination	Facility	MnSQ	CI_L	CI_H	T	Slope
n7CAq01	-1.885	0.035	0.34	79.9	0.99	0.96	1.04	-0.4	1
n7CAq02	-2.401	0.039	0.22	86.27	1.06	0.94	1.06	2.1	0.92
n7CAq03	-1.605	0.033	0.49	75.73	0.88	0.96	1.04	-6.8	1.25
n7CAq04	-1.303	0.032	0.42	70.69	0.97	0.97	1.03	-1.8	1.08
n7CAq05	-1.592	0.033	0.33	75.52	1.03	0.96	1.04	1.4	0.95
n7CAq06	-1.44	0.032	0.36	73.05	1.03	0.97	1.03	1.7	0.96
n7CAq07	-1.426	0.032	0.42	72.81	0.96	0.97	1.03	-2.4	1.1
n7CAq08	-0.803	0.03	0.51	61.38	0.91	0.97	1.03	-7	1.27
n7CAq09	-1.598	0.033	0.35	75.62	1.02	0.96	1.04	1.1	0.97
n7CAq10	-0.835	0.031	0.28	62.01	1.14	0.97	1.03	10.2	0.56
n7CAq11	-0.377	0.03	0.44	52.89	1.01	0.98	1.02	0.7	0.97
n7CAq12	-0.452	0.03	0.34	54.4	1.11	0.98	1.02	8.5	0.65
n7CAq13	-0.016	0.03	0.53	45.62	0.91	0.97	1.03	-7.1	1.25
n7CAq14	-0.034	0.03	0.37	45.98	1.08	0.97	1.03	6.3	0.73
n7CAq15	-0.231	0.03	0.6	49.96	0.83	0.98	1.02	-14.3	1.52
n7CAq16	0.521	0.031	0.34	35.28	1.11	0.97	1.03	6.7	0.73
n7CAq17	0.097	0.03	0.54	43.37	0.9	0.97	1.03	-7.6	1.26
n7CAq18	-0.311	0.03	0.39	51.57	1.06	0.98	1.02	5	0.81
n7CAq19	0.031	0.03	0.5	44.7	0.95	0.97	1.03	-4	1.13
n7CAq20	-0.892	0.031	0.49	63.21	0.93	0.97	1.03	-5.3	1.22
n7CAq21	1.564	0.036	0.55	19.03	0.85	0.95	1.05	-6.8	1.17
n7CAq22	0.5	0.031	0.47	35.74	0.97	0.97	1.03	-1.9	1.03
n7CAq23	0.887	0.033	0.38	28.96	1.05	0.97	1.03	3	0.86
n7CAq24	0.329	0.031	0.4	38.97	1.05	0.97	1.03	3.4	0.85
n7CAq25	0.834	0.033	0.26	29.87	1.18	0.97	1.03	9.6	0.61
n7CAq26	1.48	0.036	0.44	20.16	0.96	0.95	1.05	-1.8	1.01
n7CAq27	1.454	0.036	0.49	20.51	0.92	0.95	1.05	-3.4	1.08
n7CAq28	1.95	0.039	0.58	14.65	0.8	0.94	1.06	-7.4	1.22
n7CAq29	1.86	0.039	0.46	15.64	0.92	0.95	1.05	-3.1	1.08
n7CAq30	0.445	0.032	0.14	36.86	1.33	0.97	1.03	19.9	0.17
n7CAq31	2.343	0.043	0.24	11.02	1.06	0.93	1.07	1.7	0.87
n7CAq32	2.954	0.049	0.24	6.84	1.07	0.9	1.1	1.5	0.93

(table continues)

C.15 (continued)

Item_Label	Delta_Centered	Error	Discrimination	Facility	MnSQ	CI_L	CI_H	T	Slope
n7NCq01	-2.033	0.036	0.22	81.88	1.08	0.95	1.05	3.5	0.85
n7NCq02	-2.207	0.037	0.42	84.05	0.9	0.95	1.05	-4.1	1.15
n7NCq03	-2.388	0.039	0.38	86.11	0.92	0.94	1.06	-2.9	1.1
n7NCq04	-1.817	0.034	0.4	78.9	0.94	0.96	1.04	-3.1	1.08
n7NCq05	-1.249	0.032	0.49	69.7	0.91	0.97	1.03	-6.3	1.24
n7NCq06	-1.387	0.032	0.44	72.11	0.94	0.97	1.03	-3.8	1.13
n7NCq07	-0.894	0.031	0.48	63.1	0.94	0.97	1.03	-4.9	1.2
n7NCq08	-1.158	0.031	0.48	68.06	0.92	0.97	1.03	-5.9	1.23
n7NCq09	-0.814	0.031	0.41	61.55	1.02	0.97	1.03	1.6	0.96
n7NCq10	-1.359	0.032	0.37	71.64	1.03	0.97	1.03	1.7	0.97
n7NCq11	-1.147	0.031	0.38	67.88	1.01	0.97	1.03	0.8	0.96
n7NCq12	-0.872	0.031	0.43	62.68	1	0.97	1.03	0.1	1.02
n7NCq13	-0.189	0.03	0.43	49.02	1.02	0.98	1.02	1.6	0.92
n7NCq14	-0.374	0.03	0.55	52.79	0.89	0.98	1.02	-9	1.35
n7NCq15	-0.159	0.03	0.44	48.42	1.01	0.98	1.02	1.1	0.95
n7NCq16	-0.358	0.03	0.51	52.47	0.94	0.98	1.02	-4.9	1.21
n7NCq17	-0.066	0.03	0.43	46.57	1.03	0.98	1.02	2	0.91
n7NCq18	-0.16	0.03	0.39	48.45	1.07	0.98	1.02	5.1	0.78
n7NCq19	0.286	0.031	0.45	39.64	1	0.97	1.03	-0.2	1
n7NCq20	-0.233	0.03	0.41	49.95	1.05	0.98	1.02	3.6	0.84
n7NCq21	0.591	0.032	0.41	33.97	1.03	0.97	1.03	2.2	0.9
n7NCq22	0.181	0.031	0.33	41.75	1.13	0.97	1.03	9.4	0.62
n7NCq23	0.936	0.033	0.54	28.08	0.89	0.96	1.04	-6.2	1.17
n7NCq24	1.631	0.037	0.43	18.16	0.96	0.95	1.05	-1.6	1.01
n7NCq25	1.229	0.034	0.53	23.55	0.88	0.96	1.04	-6	1.15
n7NCq26	1.201	0.034	0.43	23.99	0.97	0.96	1.04	-1.3	0.99
n7NCq27	1.554	0.036	0.57	19.15	0.83	0.95	1.05	-7.3	1.2
n7NCq28	2.135	0.041	0.53	12.76	0.84	0.94	1.06	-5.2	1.17
n7NCq29	1.486	0.036	0.31	20.04	1.08	0.95	1.05	3.5	0.83
n7NCq30	1.922	0.039	0.3	14.9	1.04	0.94	1.06	1.4	0.89
n7NCq31	2.343	0.042	0.21	10.97	1.13	0.93	1.07	3.5	0.81
n7NCq32	3.318	0.267	0.36	5.17	0.96	0.88	1.12	-0.7	1.07

C.16 Year 9 Numeracy Item Calibration Results

Item_Label	Delta_Centered	Error	Discrimination	Facility	MnSQ	CI_L	CI_H	T	Slope
n9CAq01	-2.984	0.04	0.18	90.21	1.07	0.92	1.08	1.6	0.93
n9CAq02	-1.386	0.032	0.38	69.36	1.03	0.97	1.03	1.6	0.95
n9CAq03	-2.131	0.034	0.32	81.07	1.02	0.95	1.05	0.7	0.99
n9CAq04	-1.32	0.031	0.39	68.19	1.02	0.97	1.03	1.3	0.96
n9CAq05	-1.42	0.032	0.38	69.98	1.01	0.97	1.03	0.9	0.95
n9CAq06	-1.062	0.031	0.46	63.38	0.96	0.97	1.03	-2.9	1.12
n9CAq07	-1.183	0.031	0.22	65.66	1.2	0.97	1.03	12.4	0.45
n9CAq08	-1.484	0.032	0.22	71.1	1.19	0.97	1.03	10.1	0.58
n9CAq09	-1.321	0.031	0.28	68.21	1.14	0.97	1.03	8.1	0.67
n9CAq10	-1.636	0.032	0.41	73.68	0.96	0.96	1.04	-2.1	1.07
n9CAq11	-1.084	0.031	0.37	63.83	1.05	0.97	1.03	3.4	0.84
n9CAq12	-0.846	0.03	0.55	59.21	0.89	0.97	1.03	-8.4	1.38
n9CAq13	-0.295	0.03	0.5	48.18	0.96	0.97	1.03	-3.1	1.14
n9CAq14	-0.924	0.031	0.45	60.75	0.99	0.97	1.03	-1	1.07
n9CAq15	-0.819	0.03	0.43	58.68	0.99	0.97	1.03	-0.5	1
n9CAq16	-0.767	0.03	0.39	57.66	1.06	0.97	1.03	4	0.84
n9CAq17	0.373	0.031	0.53	35.35	0.92	0.97	1.03	-5	1.16
n9CAq18	0.436	0.031	0.58	34.2	0.86	0.97	1.03	-8.3	1.26
n9CAq19	0.225	0.031	0.35	38.1	1.12	0.97	1.03	7.1	0.71
n9CAq20	0.312	0.031	0.5	36.47	0.94	0.97	1.03	-3.4	1.1
n9CAq21	0.319	0.031	0.56	36.35	0.9	0.97	1.03	-6.4	1.22
n9CAq22	0.845	0.033	0.28	27.28	1.16	0.96	1.04	7.3	0.66
n9CAq23	0.643	0.032	0.61	30.6	0.82	0.96	1.04	-10	1.31
n9CAq24	1.213	0.034	0.41	21.82	1.02	0.95	1.05	0.9	0.94
n9CAq25	1.804	0.037	0.59	14.72	0.8	0.94	1.06	-6.8	1.21
n9CAq26	1.356	0.035	0.19	19.93	1.22	0.95	1.05	8	0.65
n9CAq27	2.105	0.039	0.42	11.85	0.91	0.93	1.07	-2.5	1.04
n9CAq28	2.342	0.04	0.48	9.93	0.89	0.92	1.08	-2.8	1.12
n9CAq29	2.001	0.038	0.37	12.83	1	0.93	1.07	-0.1	0.97
n9CAq30	2.102	0.039	0.35	11.96	1.01	0.93	1.07	0.4	0.96
n9CAq31	3.191	0.046	0.43	5.21	0.94	0.87	1.13	-1	1.12
n9CAq32	3.277	0.046	0.41	4.97	0.95	0.86	1.14	-0.7	1.1

(table continues)

C.16 (continued)

Item_Label	Delta_Centered	Error	Discrimination	Facility	MnSQ	CI_L	CI_H	T	Slope
n9NCq01	-2.527	0.037	0.41	85.87	0.89	0.94	1.06	-3.6	1.14
n9NCq02	-2.203	0.035	0.42	82.01	0.91	0.95	1.05	-3.5	1.15
n9NCq03	-1.383	0.031	0.4	69.29	1.01	0.97	1.03	0.8	1.01
n9NCq04	-1.94	0.034	0.39	78.38	0.97	0.96	1.04	-1.4	1.07
n9NCq05	-1.477	0.032	0.42	70.93	0.97	0.97	1.03	-1.9	1.09
n9NCq06	-1.867	0.033	0.34	77.28	1.02	0.96	1.04	0.7	0.98
n9NCq07	-1.362	0.031	0.5	68.91	0.91	0.97	1.03	-5.4	1.25
n9NCq08	-0.84	0.03	0.49	59.04	0.95	0.97	1.03	-3.6	1.18
n9NCq09	-1.185	0.031	0.36	65.69	1.06	0.97	1.03	3.7	0.86
n9NCq10	-0.574	0.03	0.42	53.75	1.04	0.97	1.03	2.5	0.9
n9NCq11	-0.481	0.03	0.47	51.87	0.98	0.97	1.03	-1.1	1.04
n9NCq12	-0.336	0.03	0.43	48.97	1.03	0.97	1.03	2	0.9
n9NCq13	-0.292	0.03	0.43	48.09	1.03	0.97	1.03	2.2	0.91
n9NCq14	-1.254	0.031	0.54	66.97	0.87	0.97	1.03	-8.8	1.36
n9NCq15	-0.334	0.03	0.46	48.93	1	0.97	1.03	0.1	1
n9NCq16	-0.178	0.03	0.33	45.82	1.15	0.97	1.03	9.9	0.56
n9NCq17	0.032	0.031	0.5	41.7	0.96	0.97	1.03	-2.9	1.1
n9NCq18	0.052	0.031	0.47	41.31	0.99	0.97	1.03	-0.7	1.02
n9NCq19	0.578	0.032	0.58	31.63	0.86	0.96	1.04	-8.1	1.27
n9NCq20	0.706	0.032	0.46	29.47	0.98	0.96	1.04	-1	1
n9NCq21	0.797	0.033	0.36	27.98	1.07	0.96	1.04	3.4	0.82
n9NCq22	0.115	0.031	0.43	40.12	1.04	0.97	1.03	2.5	0.89
n9NCq23	0.936	0.033	0.38	25.79	1.05	0.96	1.04	2.4	0.87
n9NCq24	0.752	0.032	0.53	28.73	0.91	0.96	1.04	-5	1.15
n9NCq25	0.236	0.031	0.57	37.85	0.87	0.97	1.03	-8.3	1.27
n9NCq26	1.666	0.036	0.22	16.15	1.13	0.94	1.06	4.3	0.76
n9NCq27	1.146	0.034	0.49	22.73	0.94	0.95	1.05	-2.8	1.07
n9NCq28	1.623	0.036	0.28	16.64	1.09	0.94	1.06	3.1	0.83
n9NCq29	1.859	0.038	0.54	14.12	0.85	0.94	1.06	-4.8	1.16
n9NCq30	0.73	0.032	0.35	29.13	1.11	0.96	1.04	5.3	0.77
n9NCq31	3.13	0.045	0.38	5.28	0.97	0.88	1.12	-0.4	1.06
n9NCq32	1.996	0.266	0.47	13.36	0.9	0.93	1.07	-2.8	1.09

C.17 Years 3, 5, 7, and 9 Writing Item Calibration Results

Item_Label	Delta_C entered	Error	Discrimi nation	MnSQ	CI_L	CI_H	T	Slope
Audience	-0.066	0.011	0.92	0.76	0.98	1.02	-22.9	1.32
Text Structure	0.129	0.011	0.87	0.95	0.98	1.02	-4.7	1.08
Ideas	-0.406	0.011	0.86	0.93	0.98	1.02	-6.3	1.14
Persuasive Devices	0.276	0.011	0.86	1.03	0.98	1.02	2.3	0.99
Vocabulary	-0.304	0.011	0.85	0.96	0.98	1.02	-3.3	1.11
Cohesion	-0.935	0.012	0.82	0.93	0.98	1.02	-5.8	1.1
Paragraphing	1.091	0.011	0.82	1.04	0.98	1.02	3.1	0.96
Sentence Structure	0.883	0.011	0.87	1.05	0.98	1.02	4.2	1
Punctuation	0.237	0.011	0.8	1.38	0.98	1.02	30.3	0.57
Spelling	-0.905	0.033	0.86	1.22	0.98	1.02	18.8	0.77

(continued)

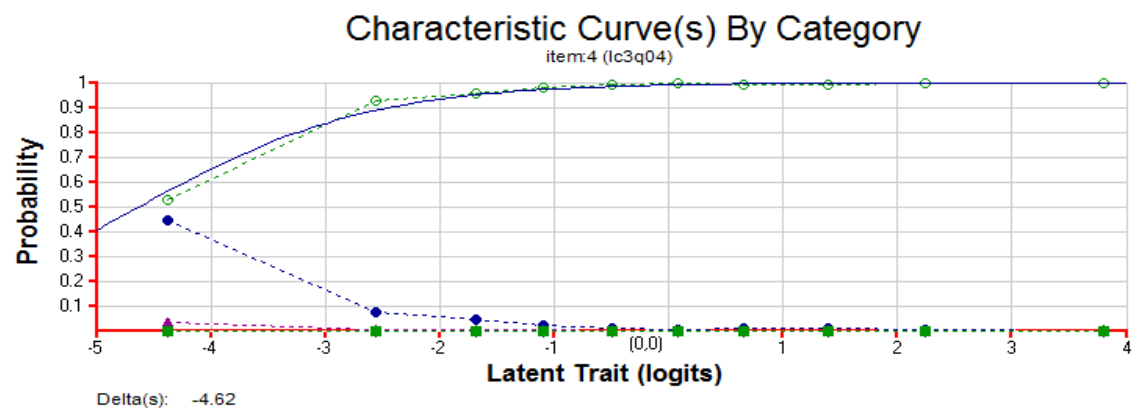
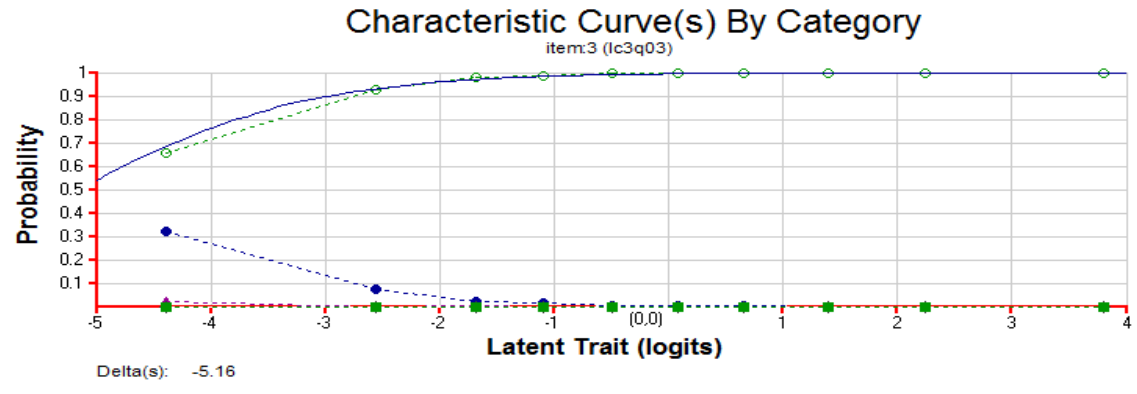
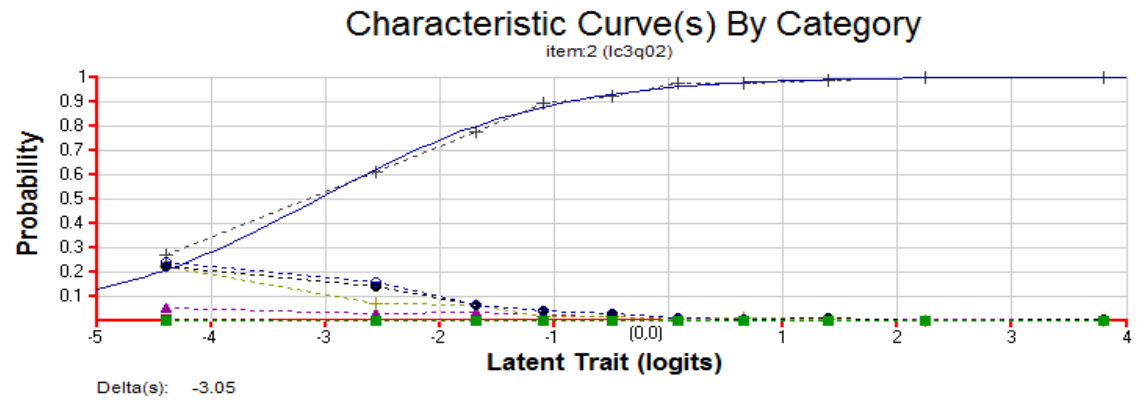
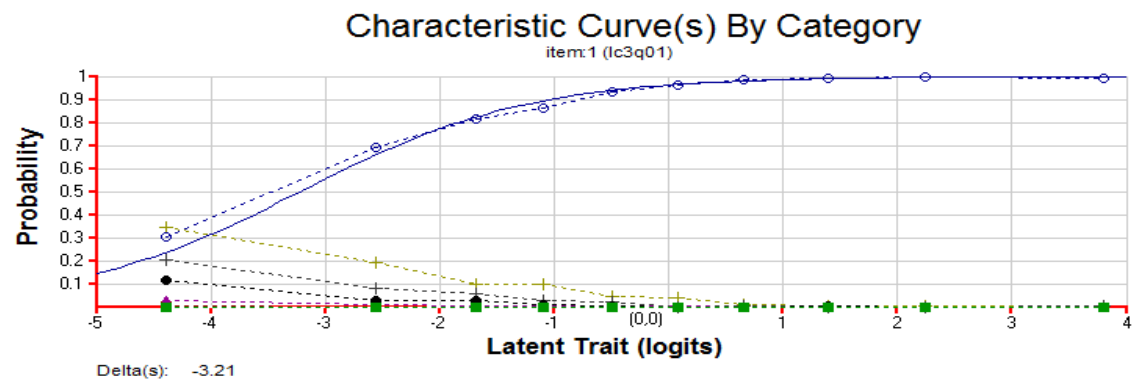
C.17 (continued)

Item Level	Step	Tau	Error
Audience	0		
	1	-9.672	0.089
	2	-5.86	0.047
	3	-1.534	0.025
	4	2.458	0.027
	5	5.655	0.044
	6	8.953*	
Text Structure	0		
	1	-5.972	0.039
	2	-2.429	0.025
	3	1.652	0.024
	4	6.749*	
Ideas	0		
	1	-8.022	0.076
	2	-5.001	0.042
	3	-0.899	0.024
	4	4.737	0.032
	5	9.185*	
Persuasive Devices	0		
	1	-6.09	0.038
	2	-2.216	0.024
	3	1.761	0.024
	4	6.545*	
Vocabulary	0		
	1	-8.421	0.078
	2	-6.202	0.049
	3	0.971	0.023
	4	4.794	0.034
	5	8.859*	
Cohesion	0		
	1	-7.916	0.059
	2	-3.898	0.034
	3	3.274	0.025
	4	8.539*	
Paragraphing	0		
	1	-4.53	0.026
	2	-0.524	0.022
	3	5.054*	
Sentence Structure	0		
	1	-8.94	0.094
	2	-6.159	0.044
	3	-1.895	0.025
	4	1.906	0.028
	5	5.671	0.054
	6	9.417*	
Punctuation	0		
	1	-7.908	0.066
	2	-4.416	0.033
	3	-0.245	0.023
	4	4.219	0.033
	5	8.349*	
Spelling	0		
	1	-8.04	0.072
	2	-5.086	0.047
	3	-1.878	0.028
	4	1.242	0.024
	5	4.52	0.03
	6	9.244*	

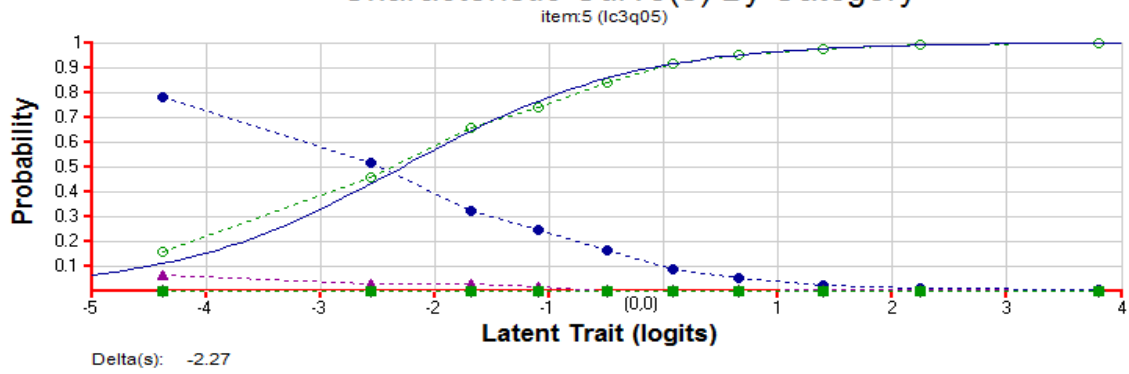
*An asterisk next to a parameter estimate indicates that it is constrained

APPENDIX D. ICC PLOTS

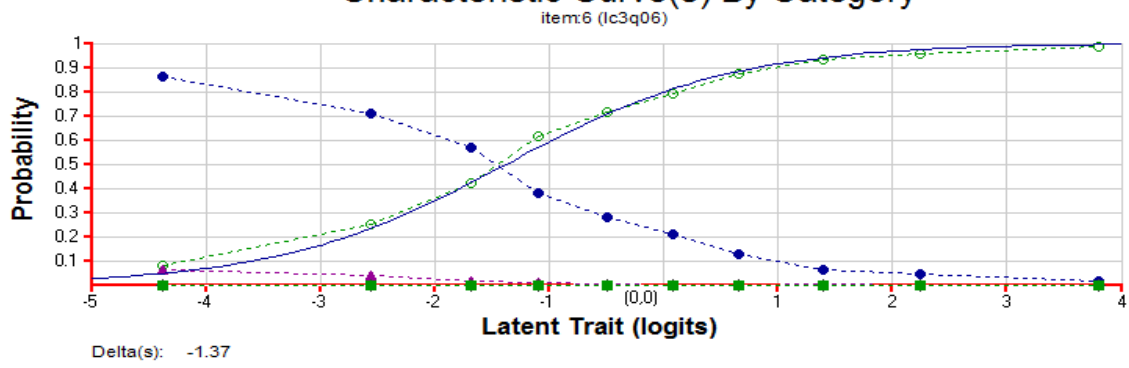
Year 3 Spelling



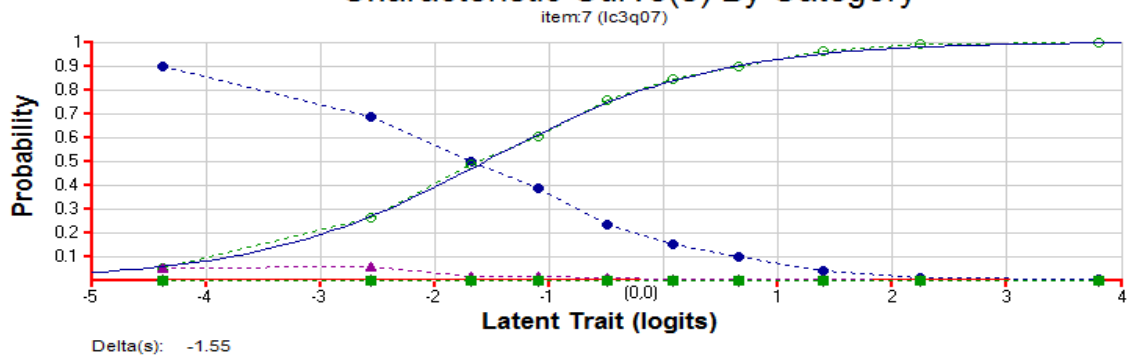
Characteristic Curve(s) By Category



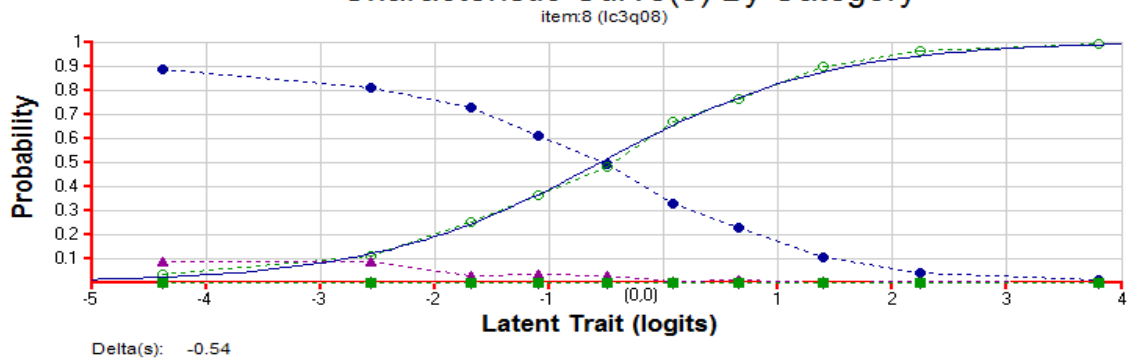
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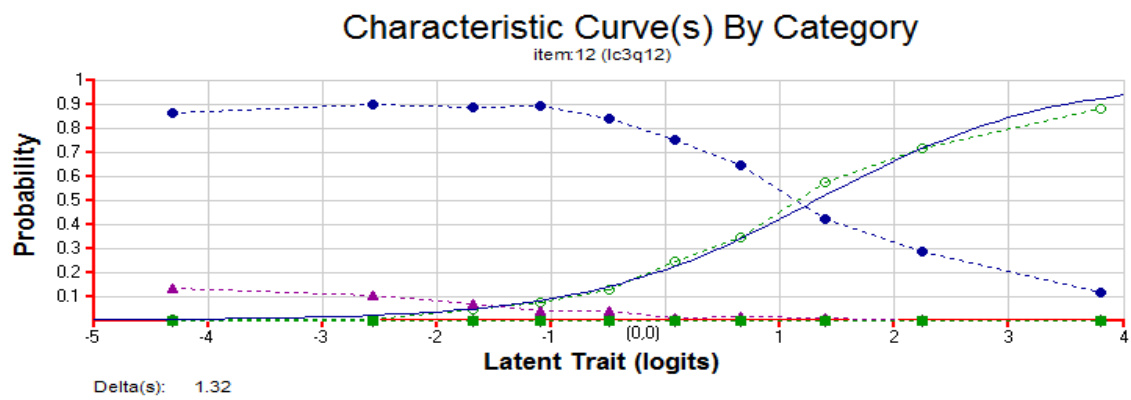
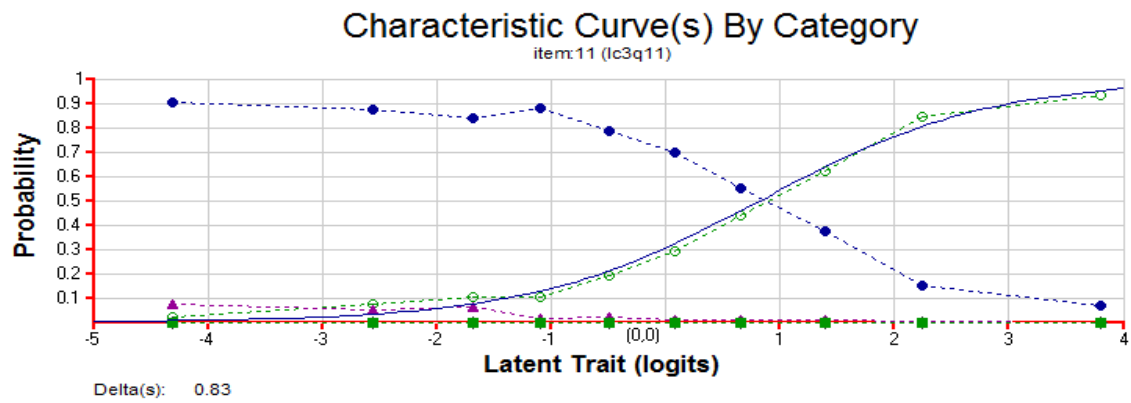
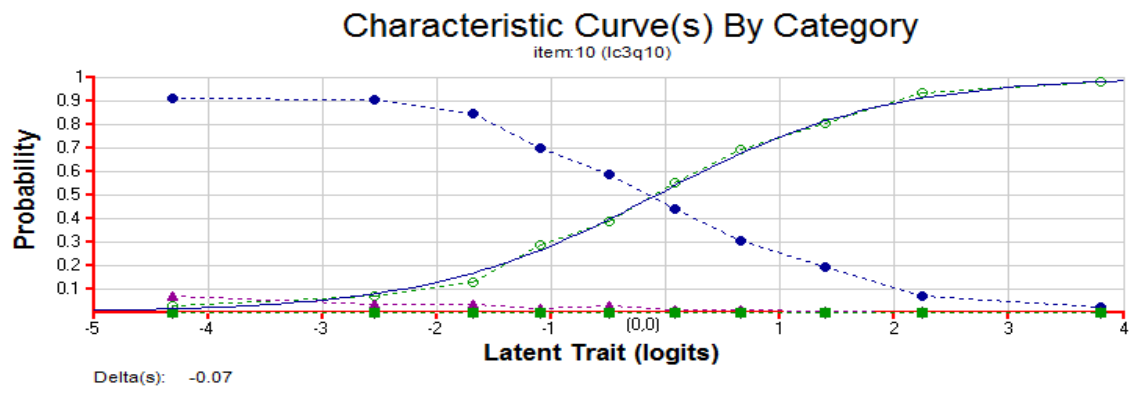
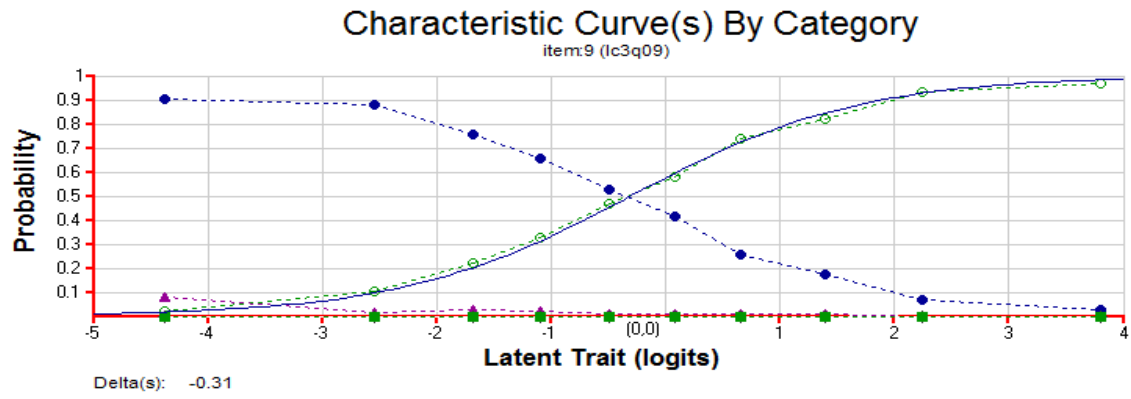


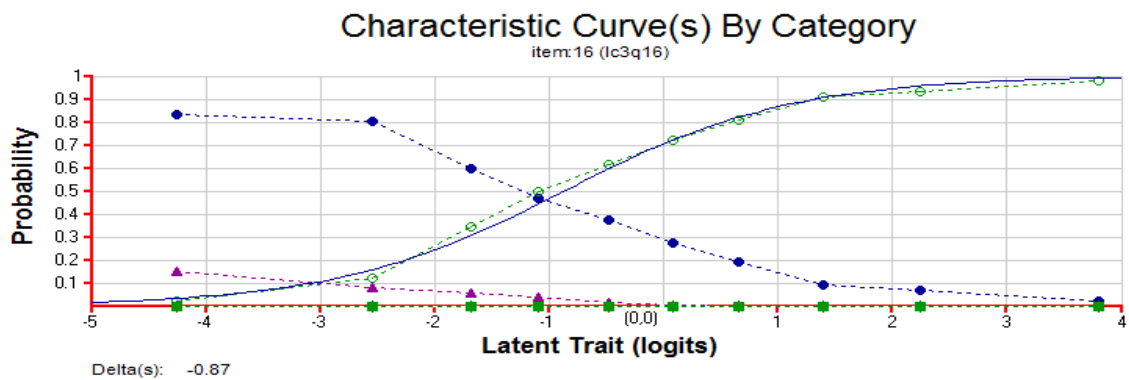
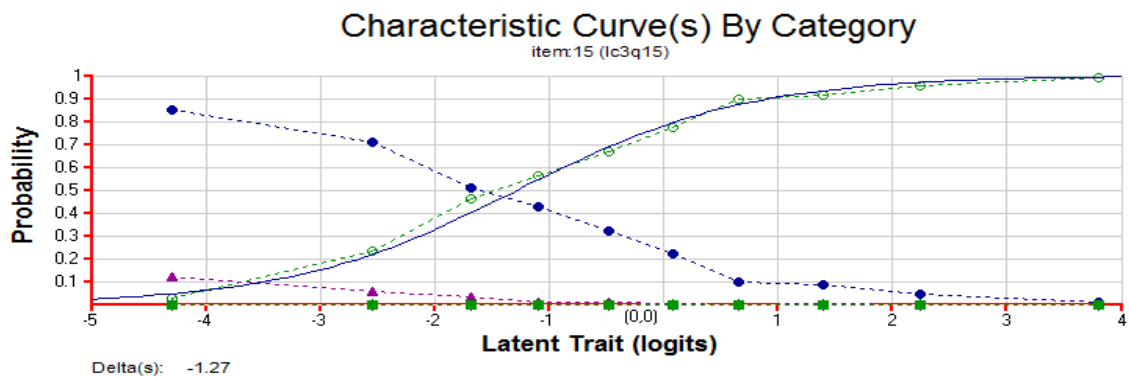
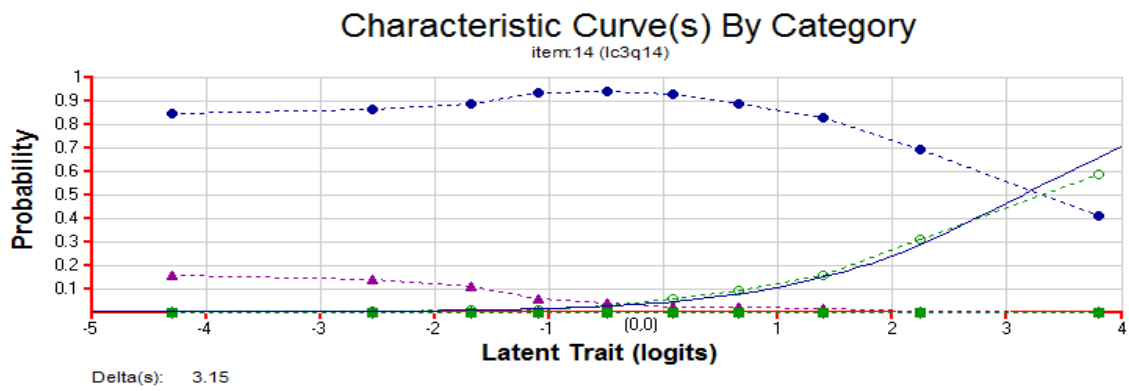
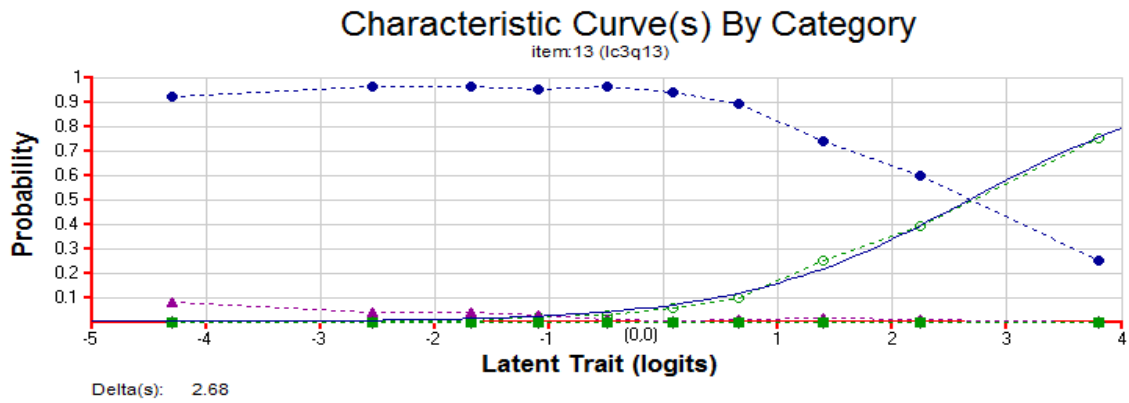
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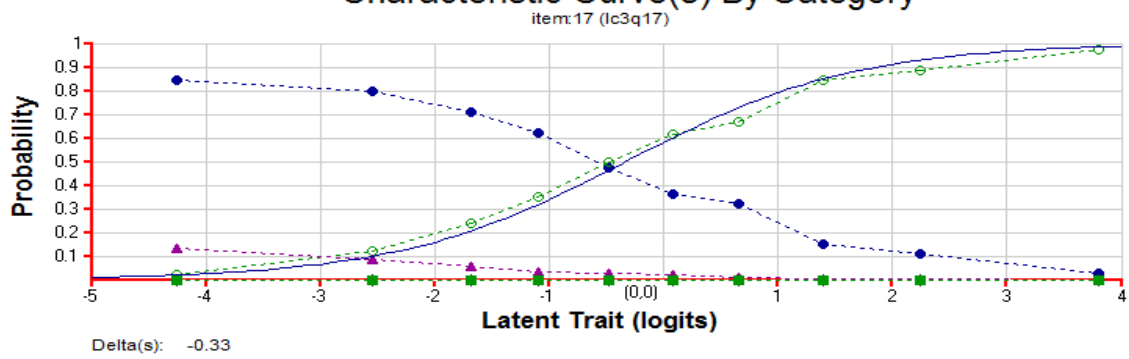
Characteristic Curve(s) By Category



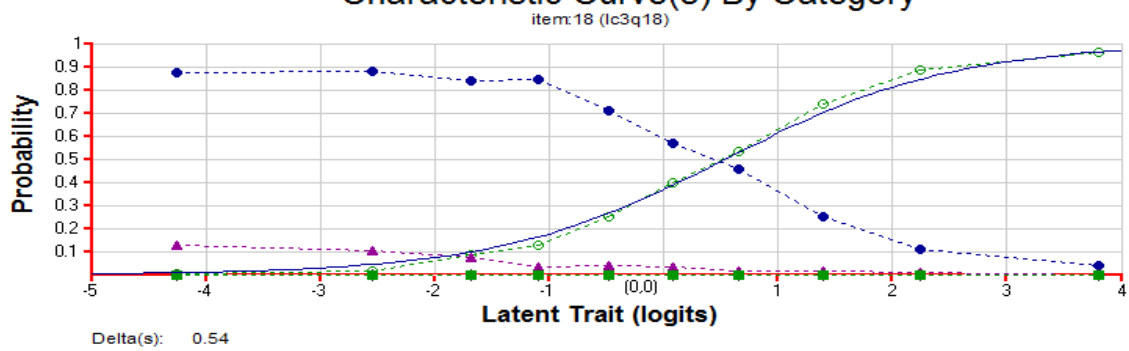




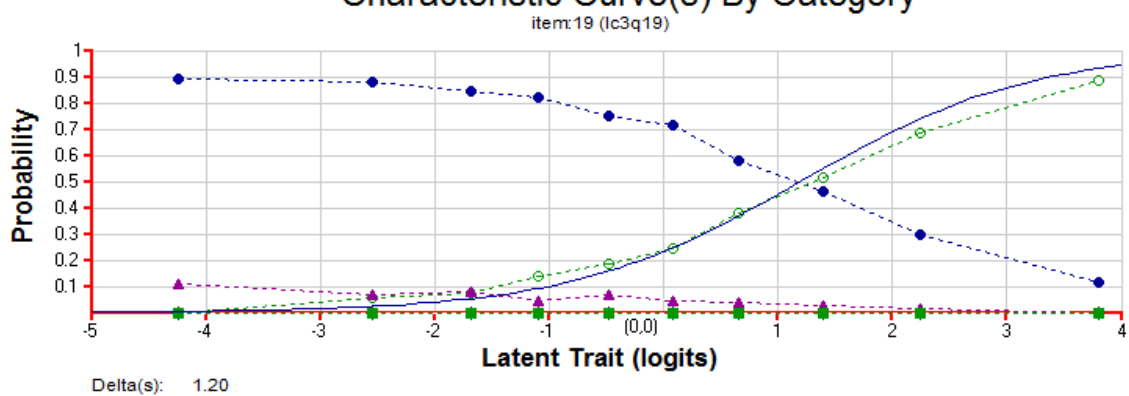
Characteristic Curve(s) By Category



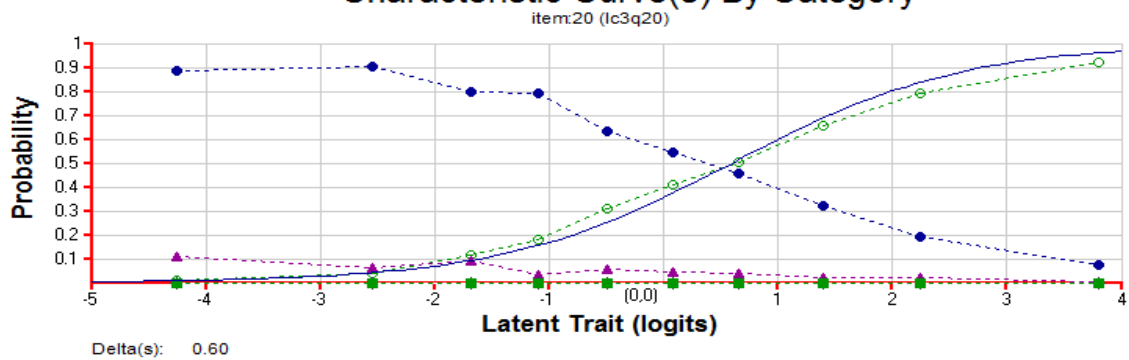
Characteristic Curve(s) By Category

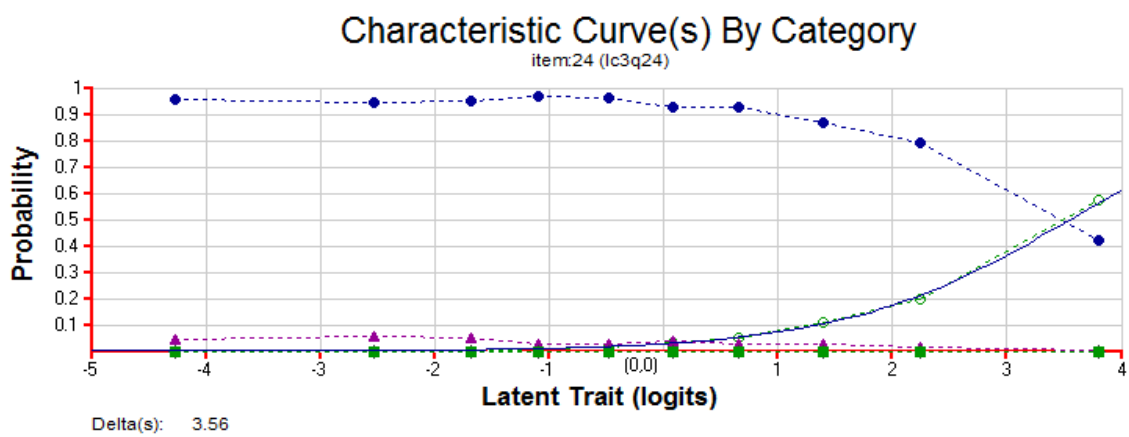
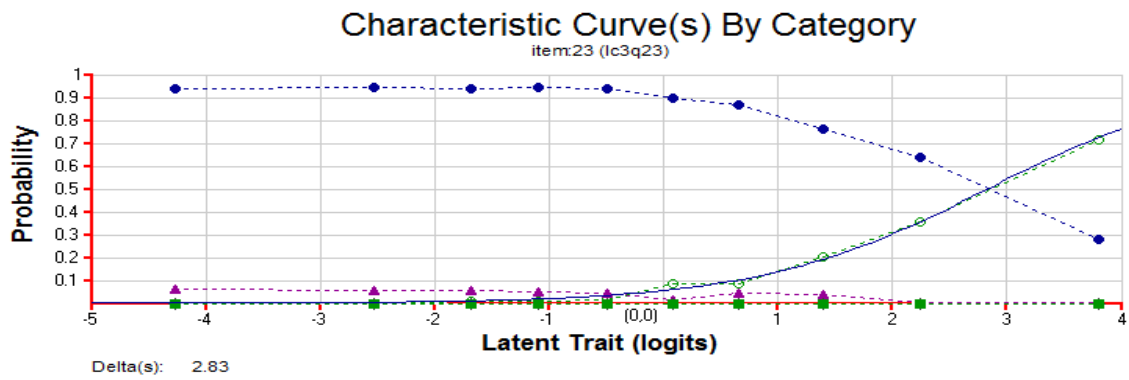
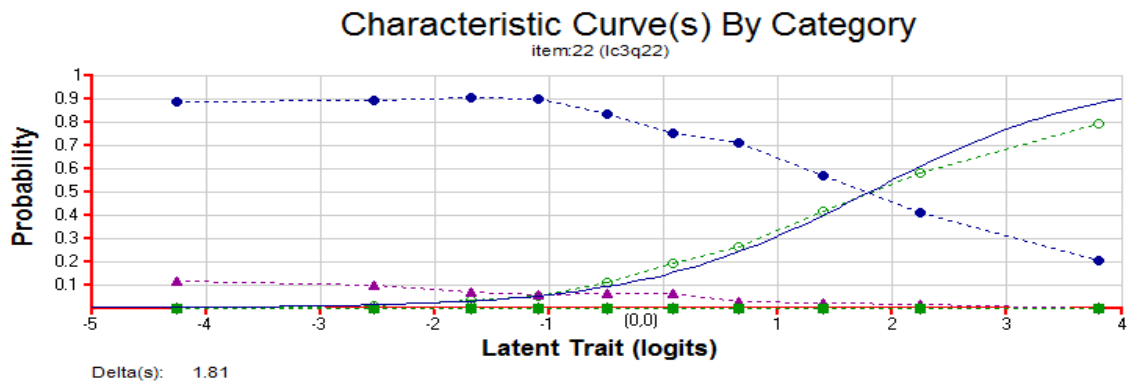
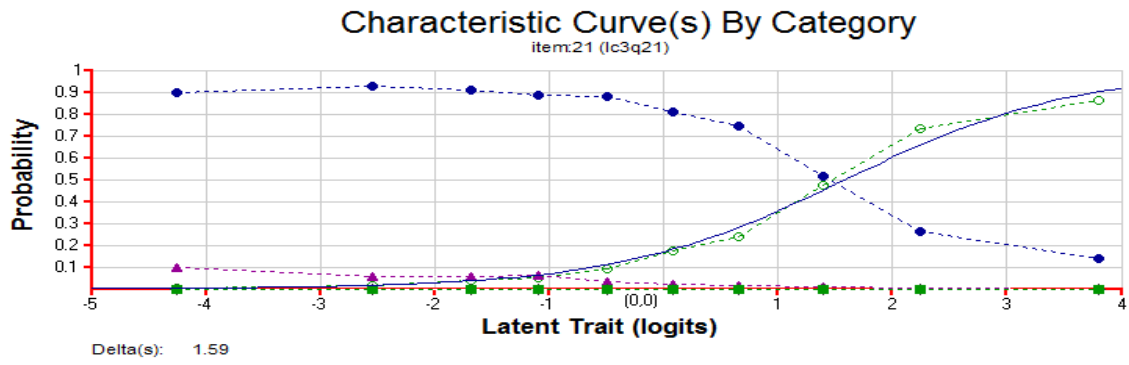


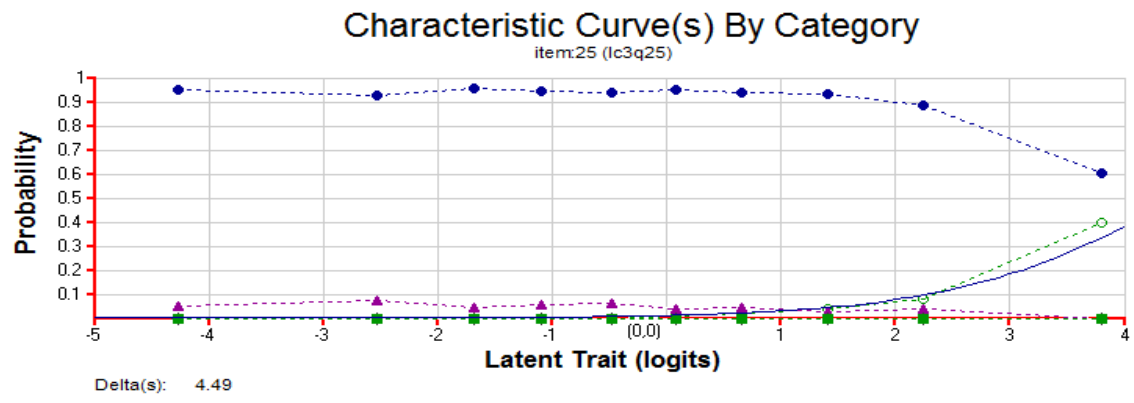
Characteristic Curve(s) By Category



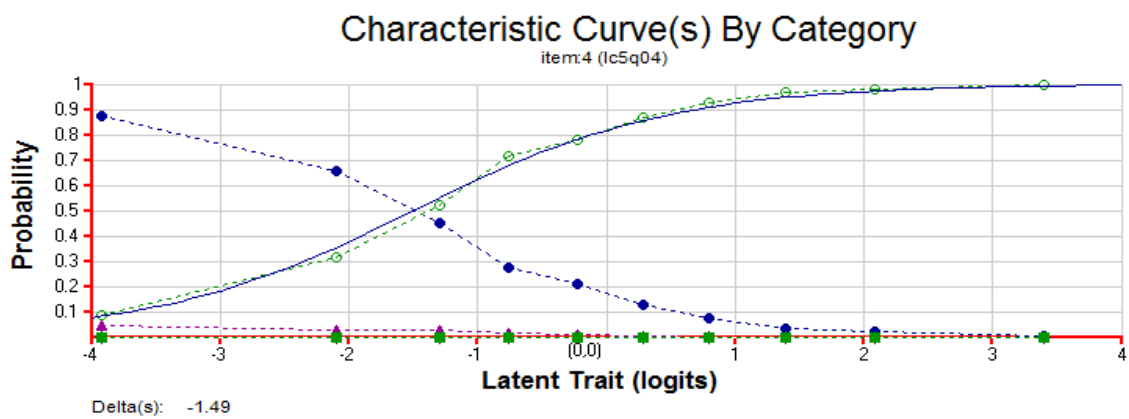
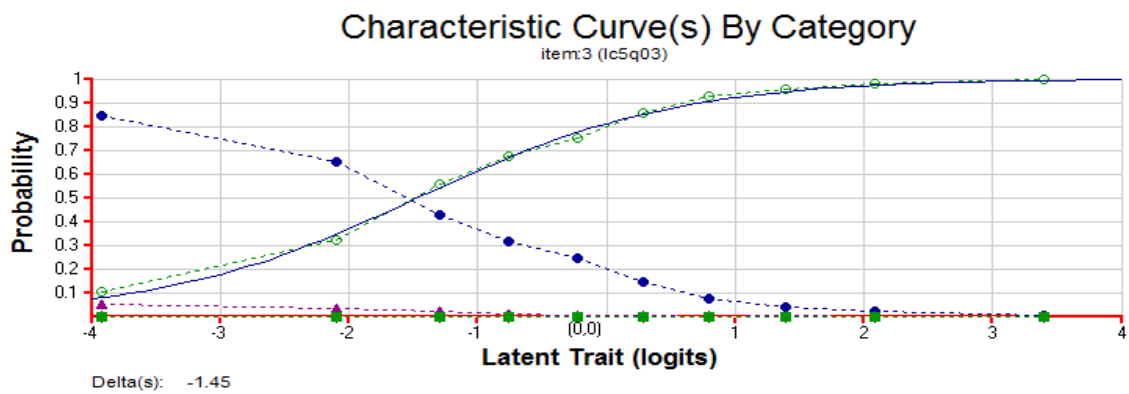
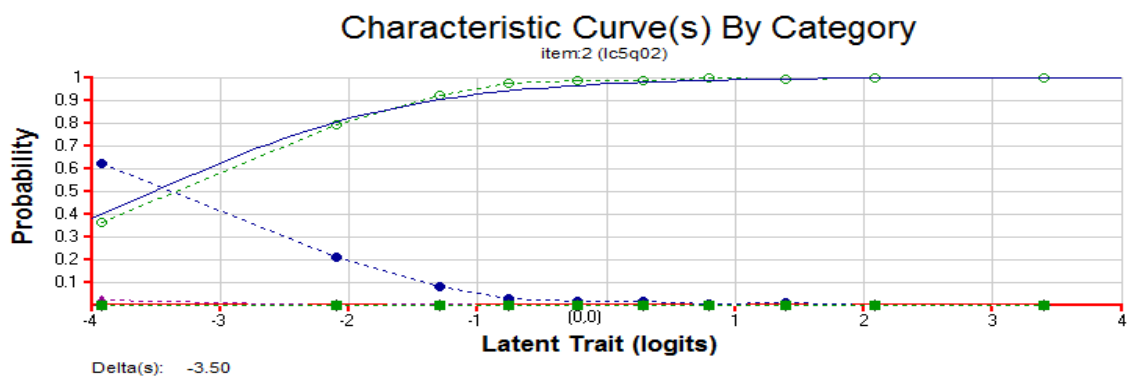
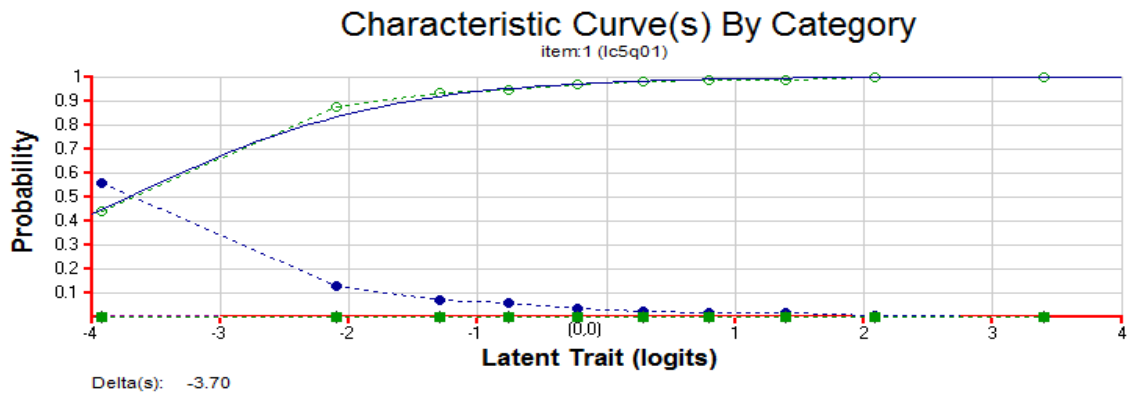
Characteristic Curve(s) By Category



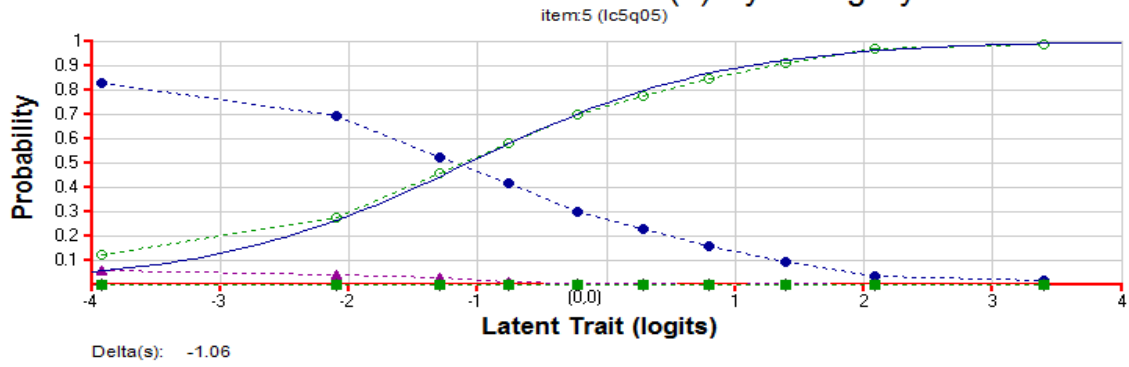




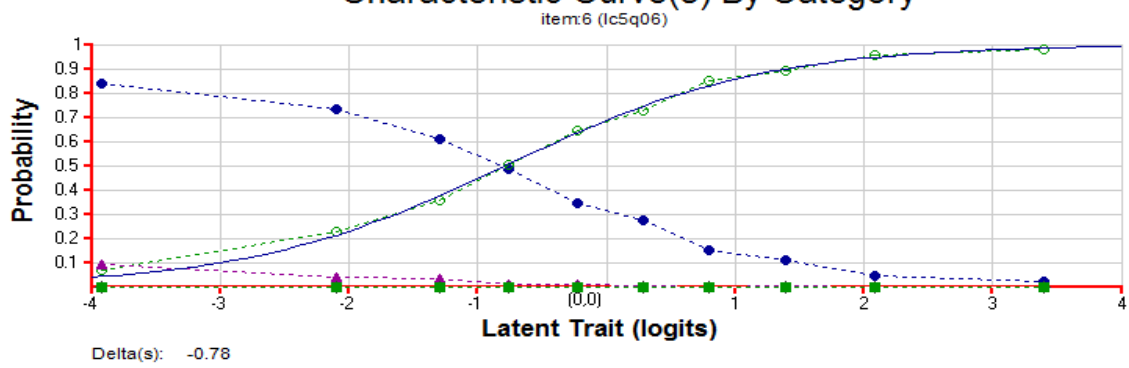
Year 5 Spelling



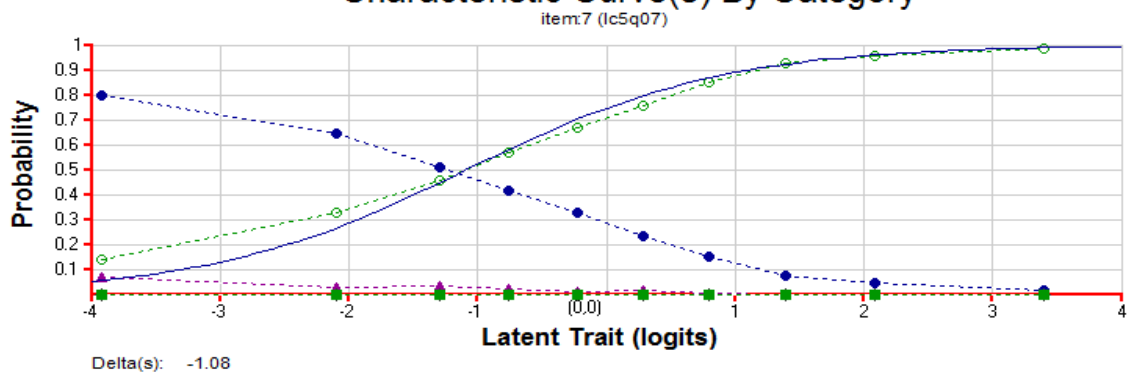
Characteristic Curve(s) By Category



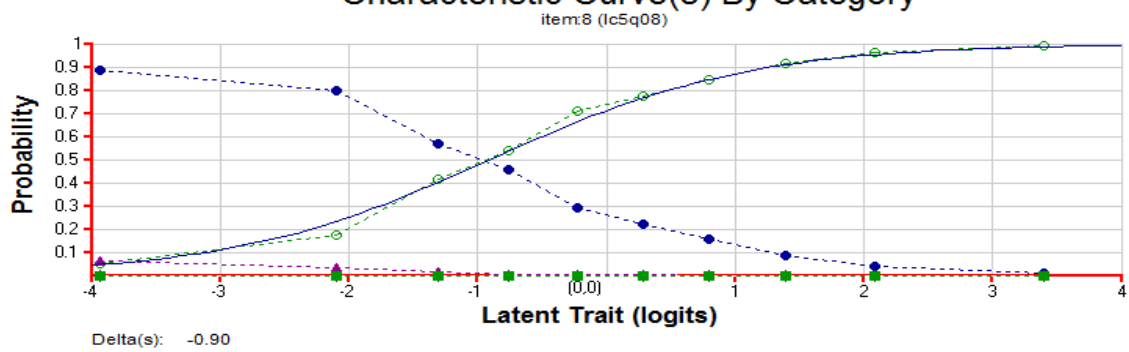
Characteristic Curve(s) By Category

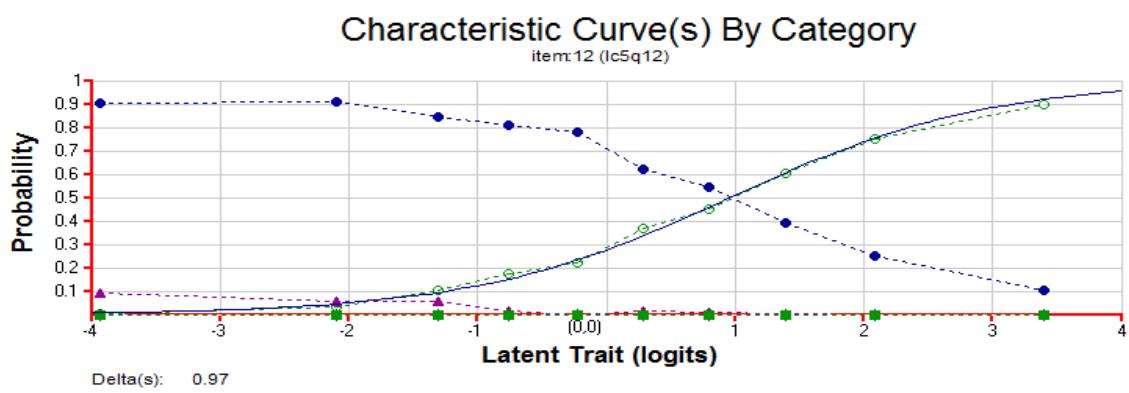
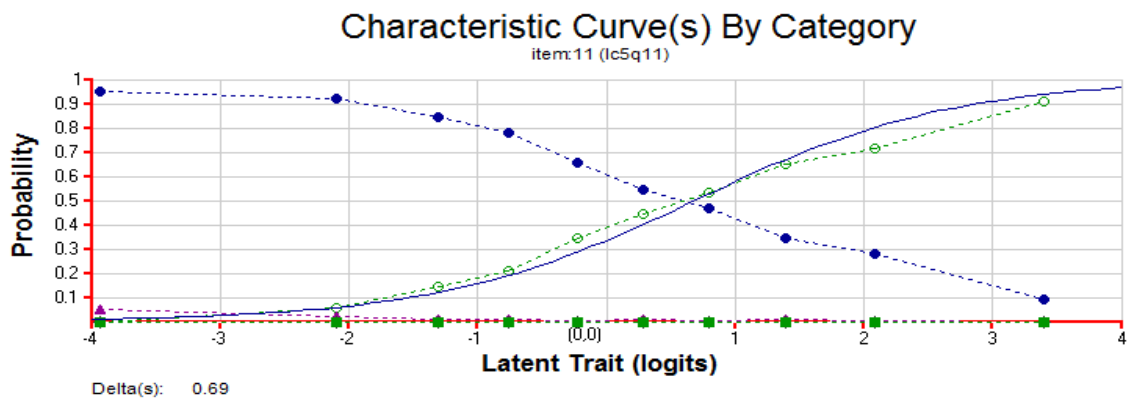
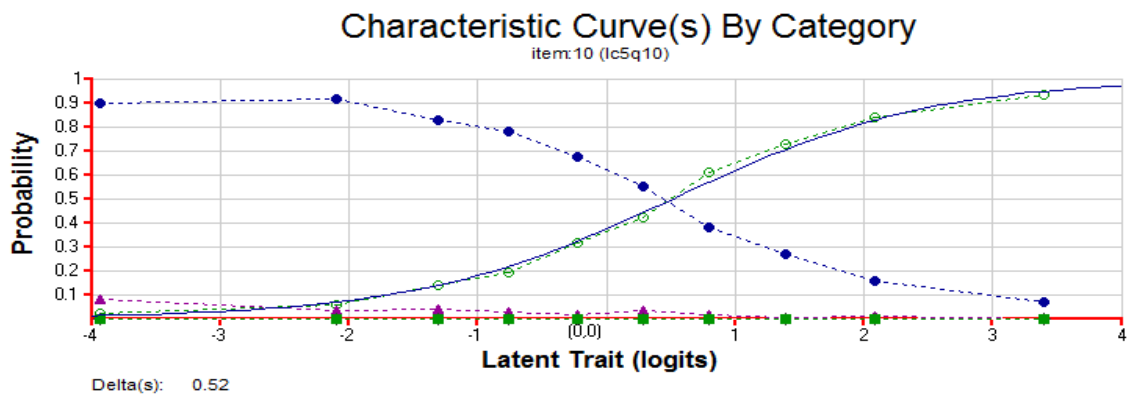
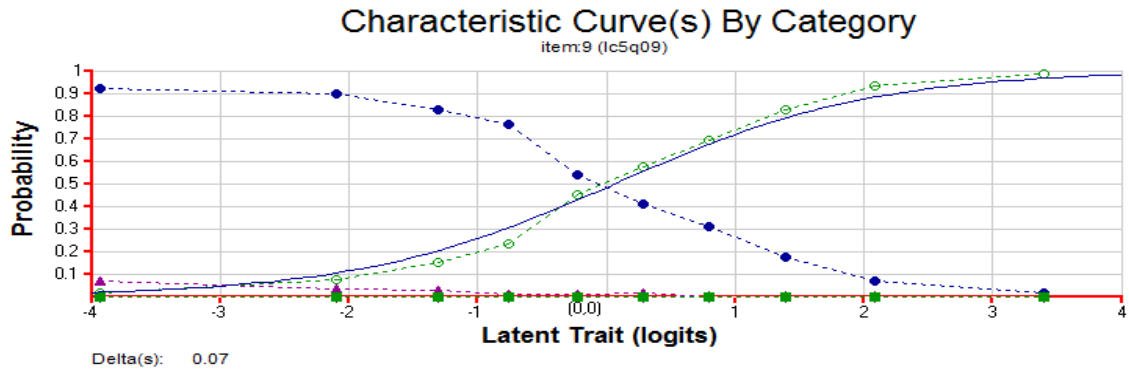


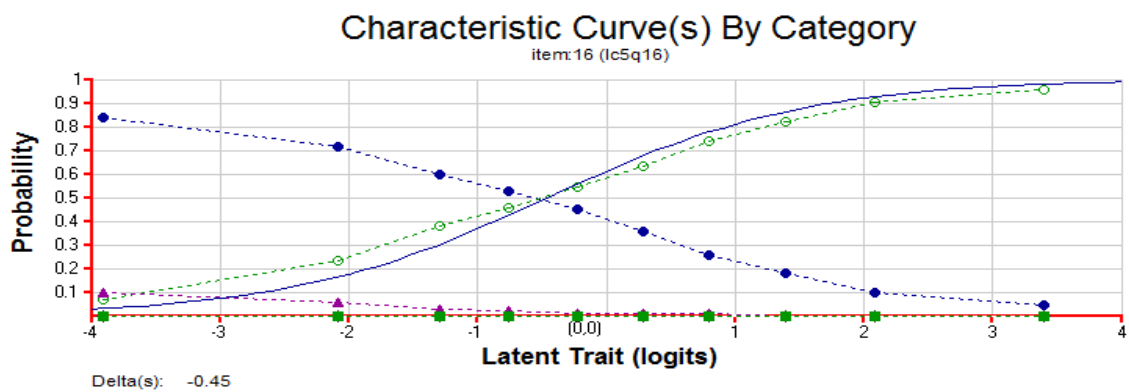
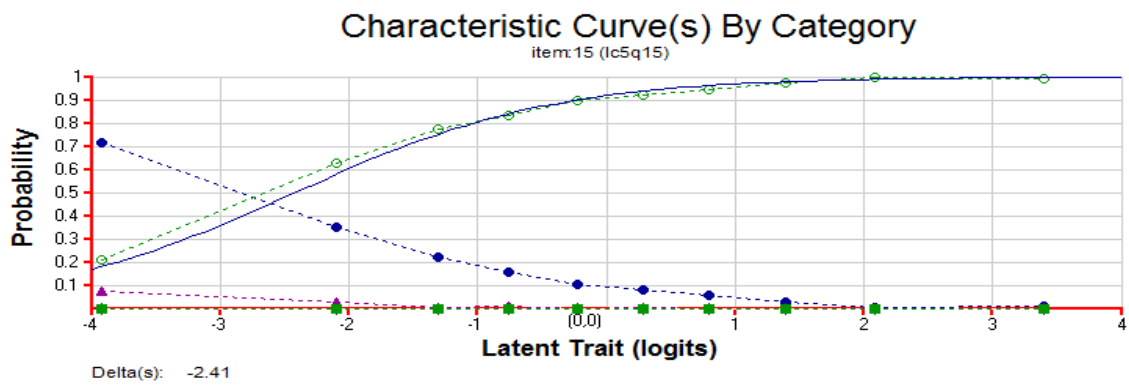
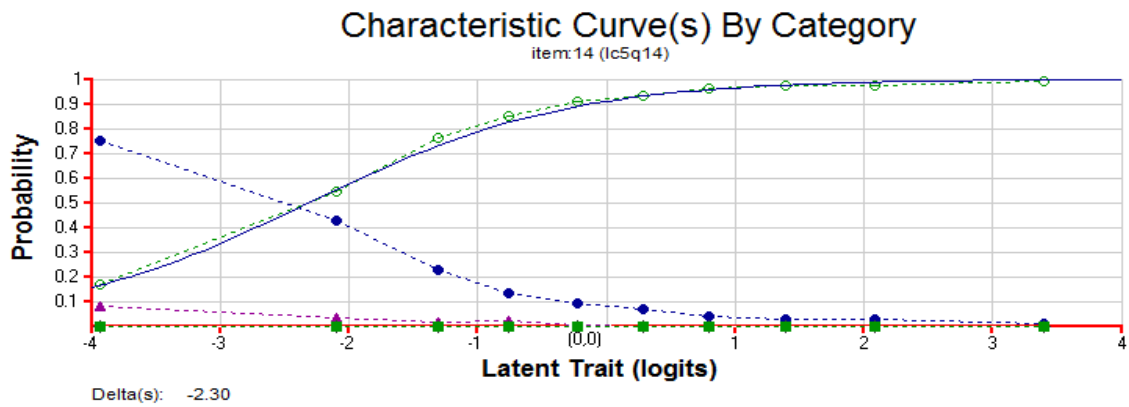
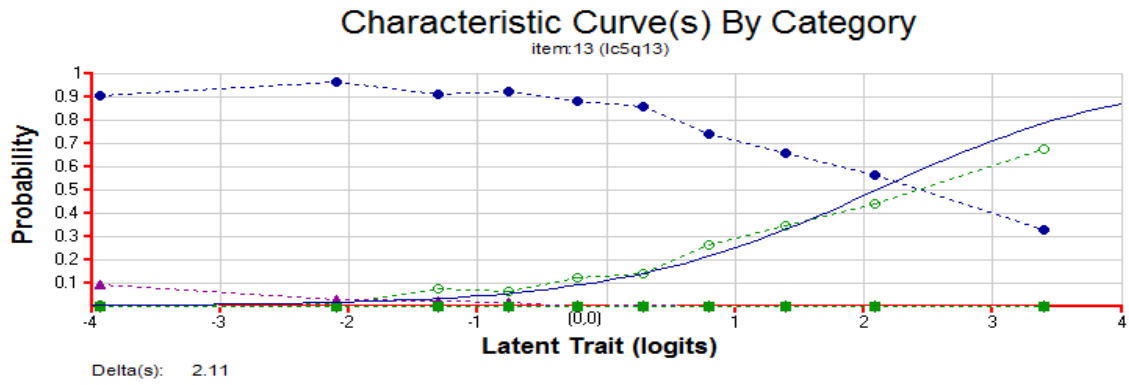
Characteristic Curve(s) By Category

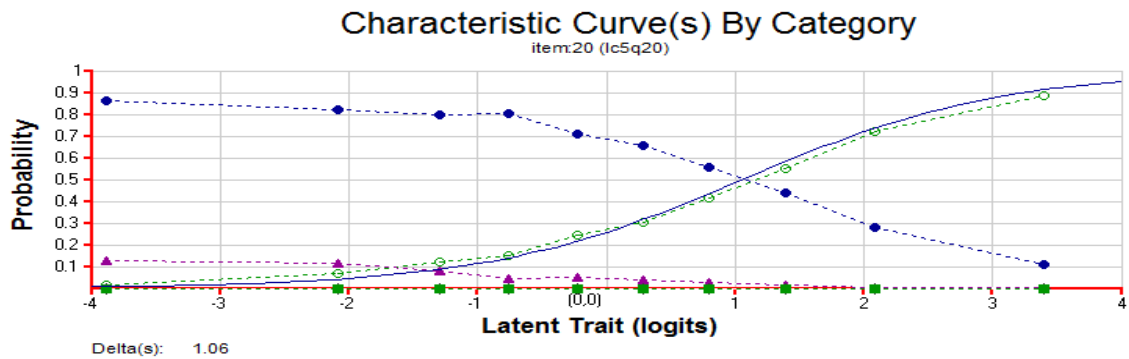
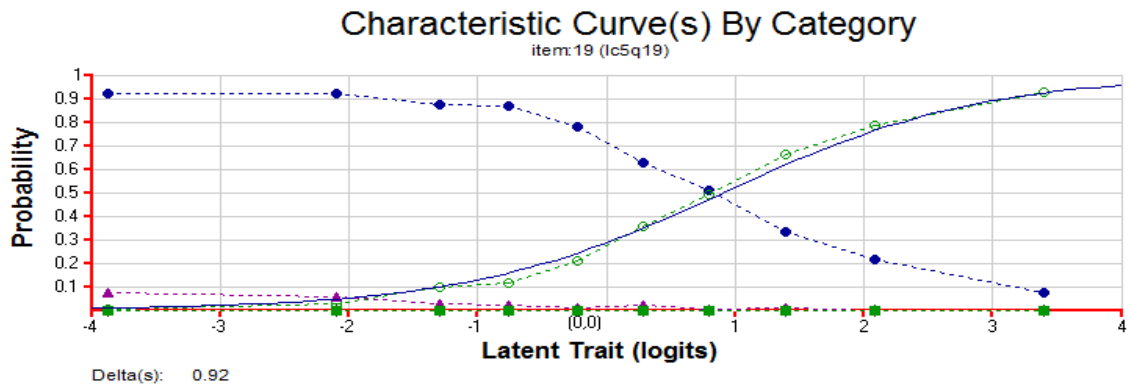
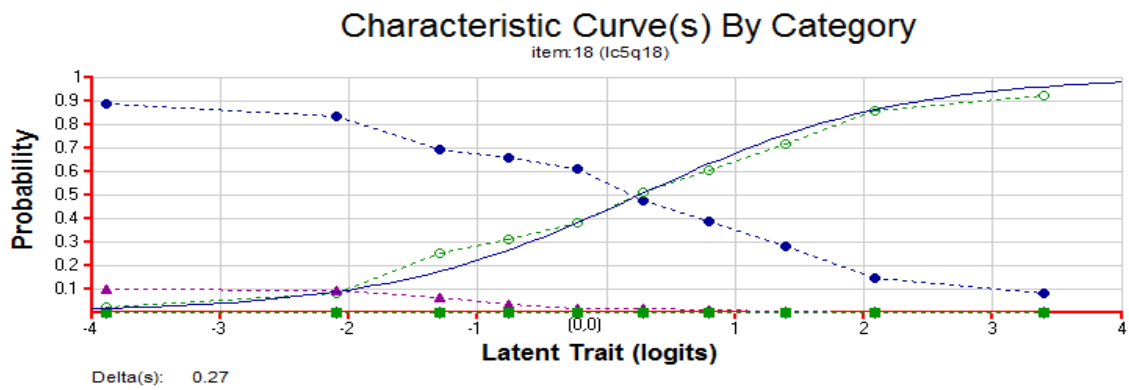
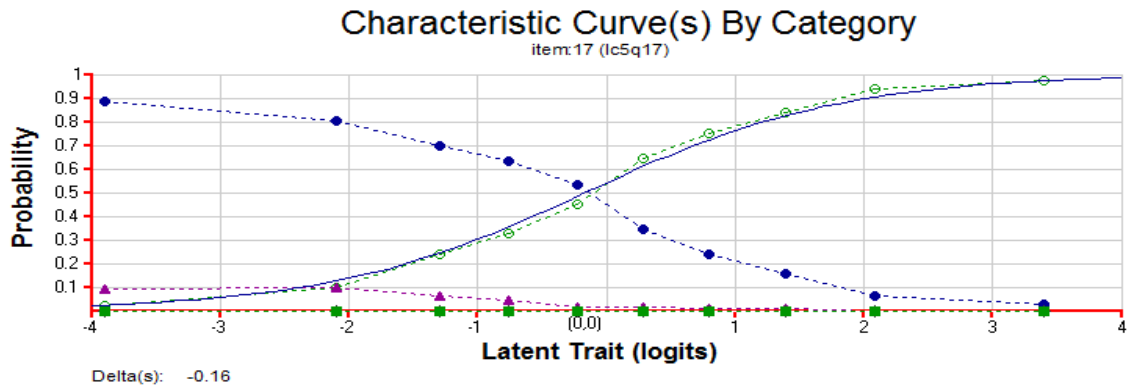


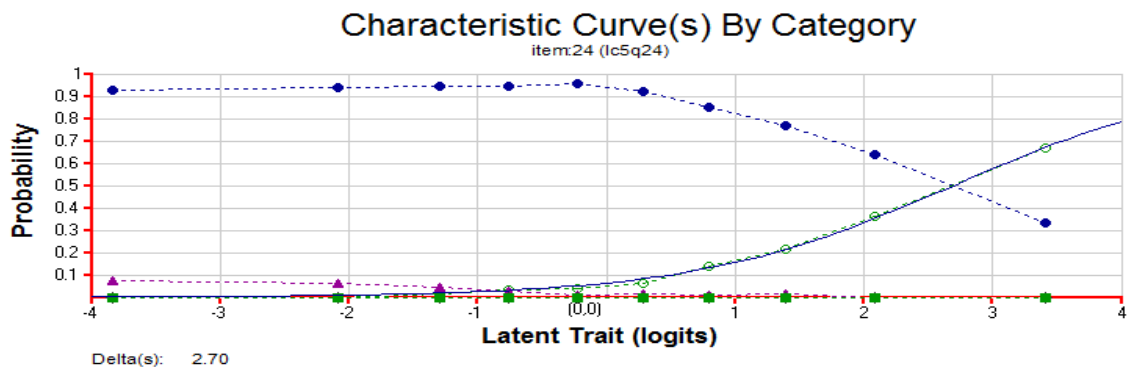
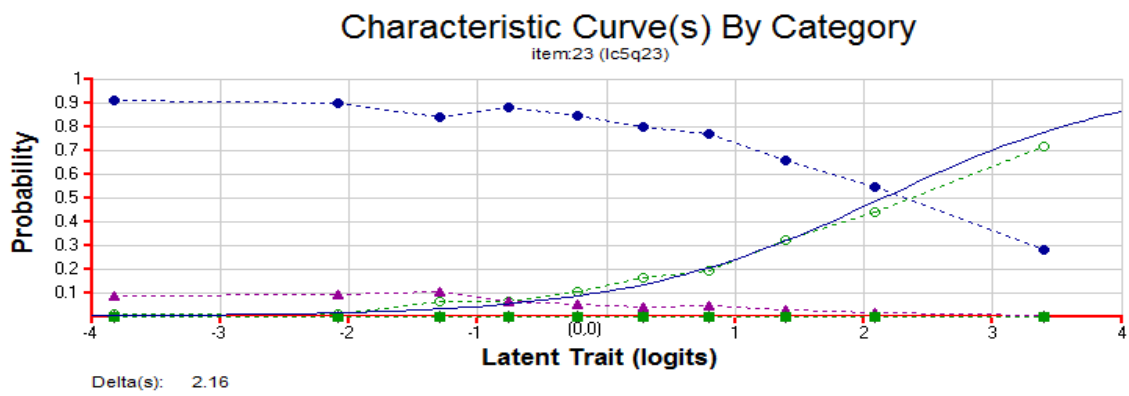
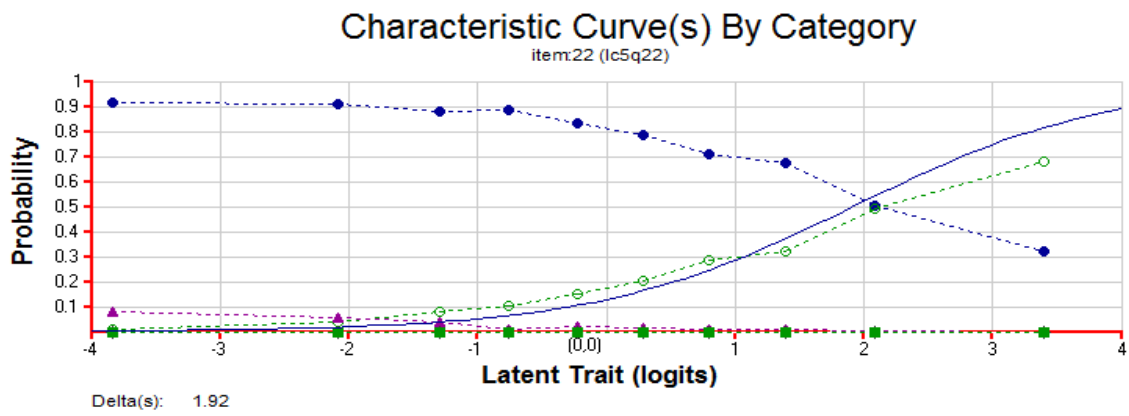
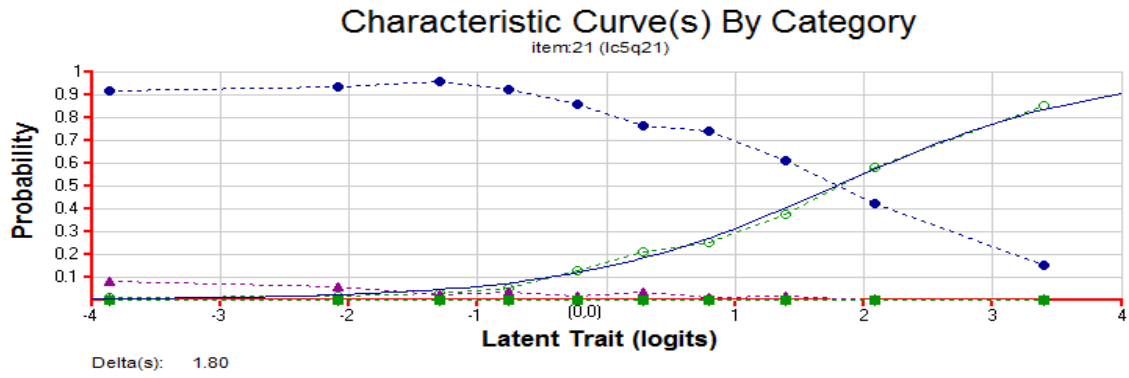
Characteristic Curve(s) By Category

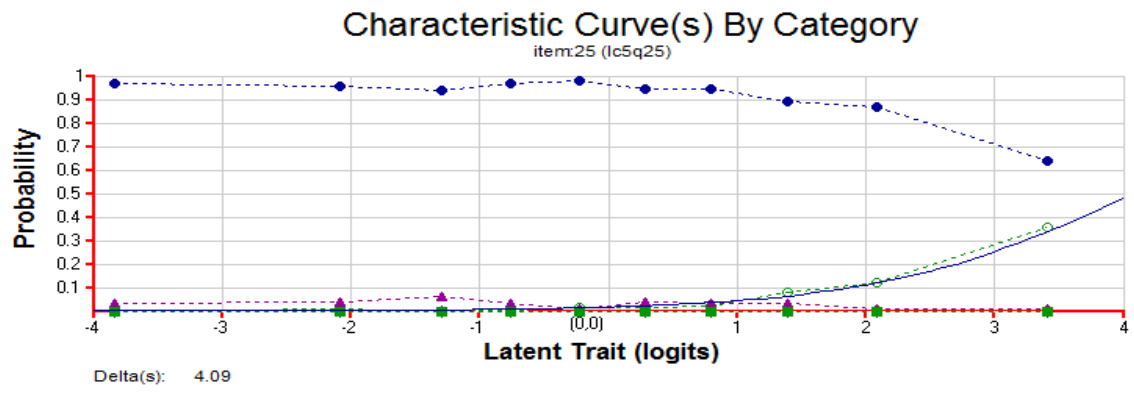




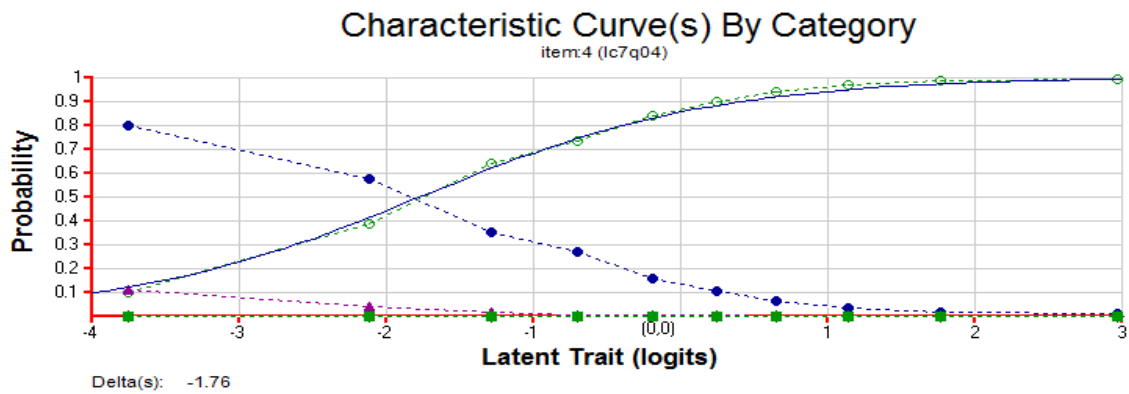
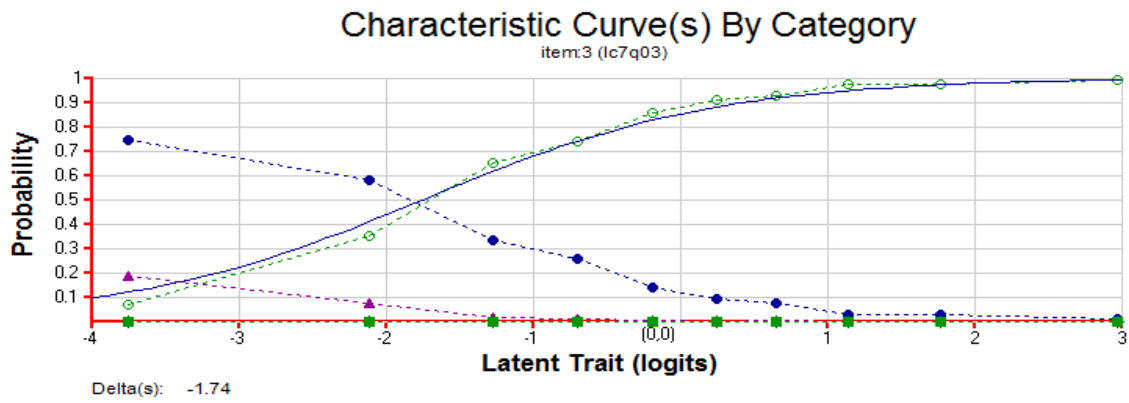
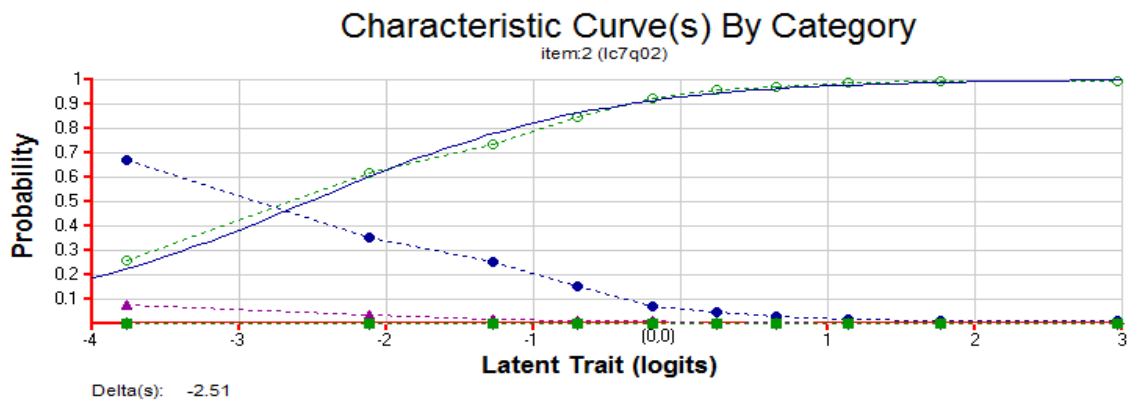
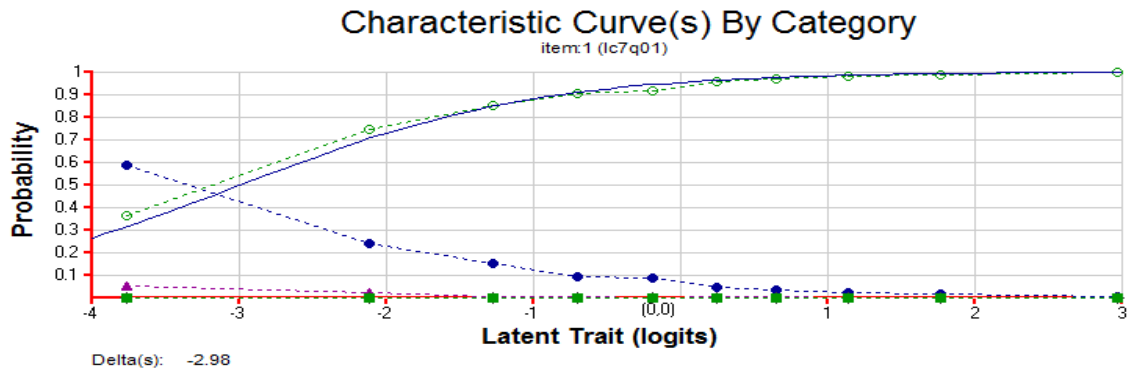




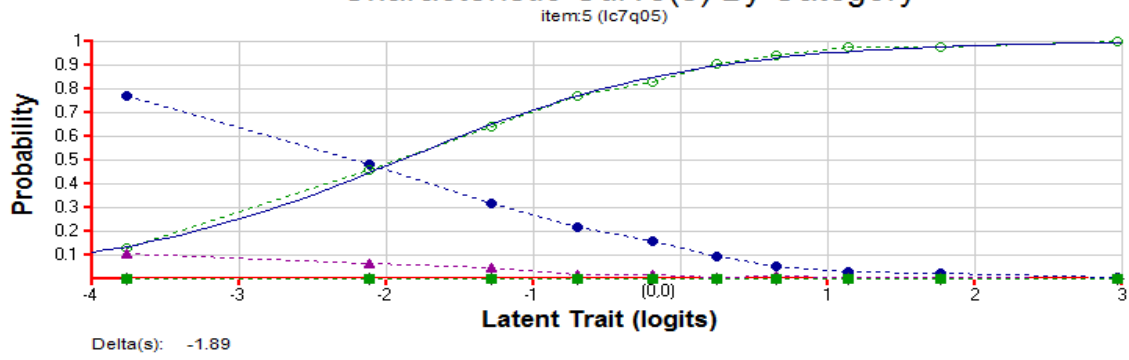




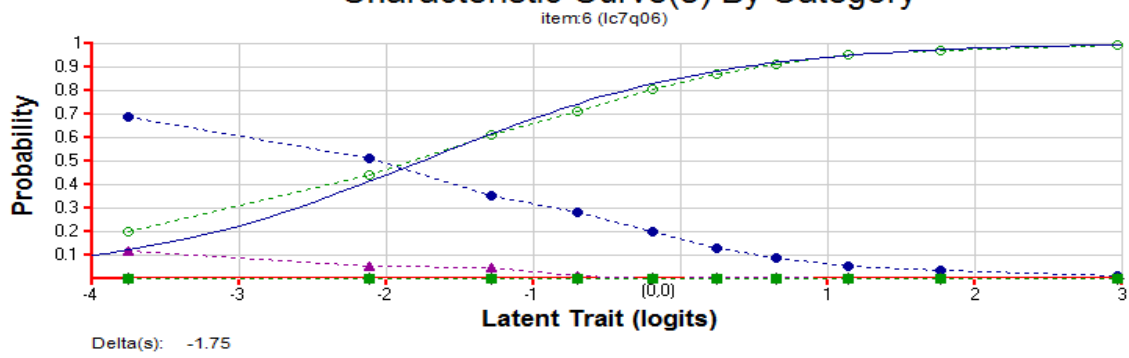
Year 7 Spelling



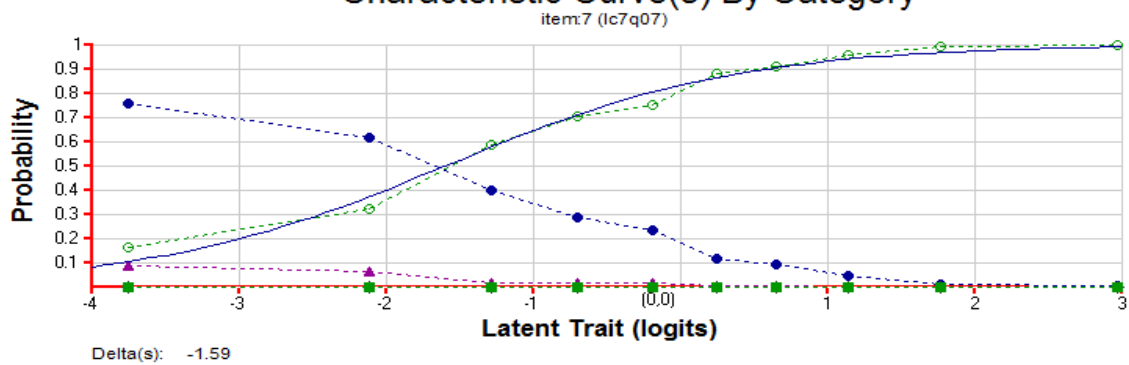
Characteristic Curve(s) By Category



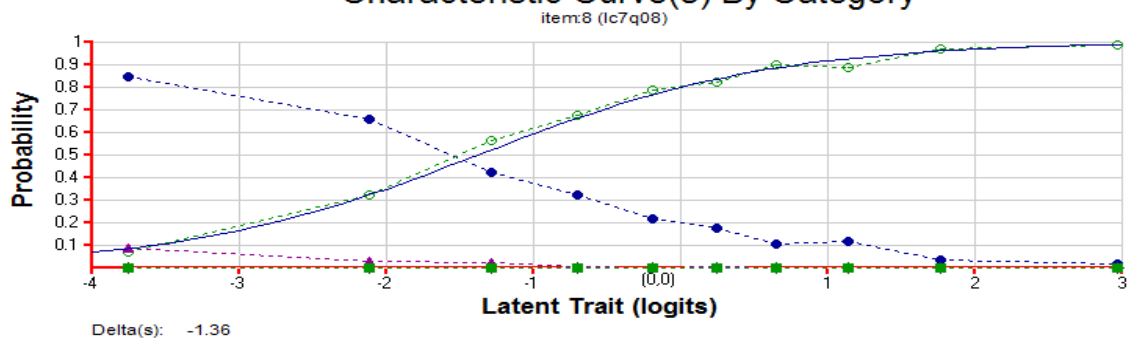
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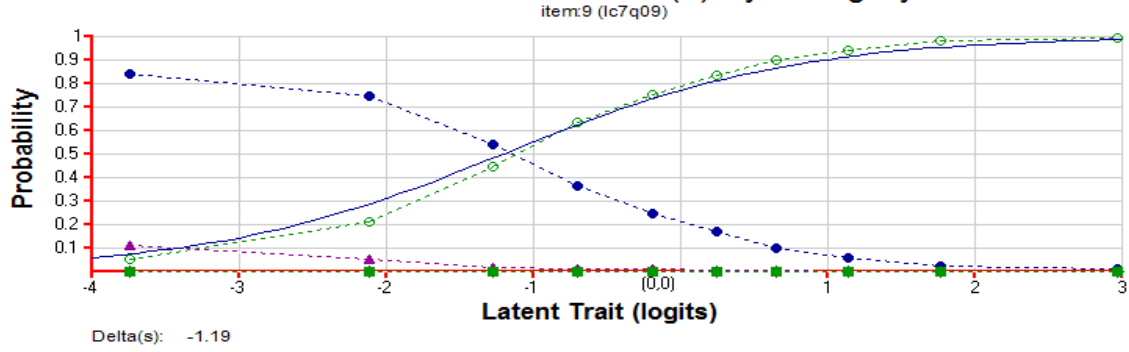
Characteristic Curve(s) By Category



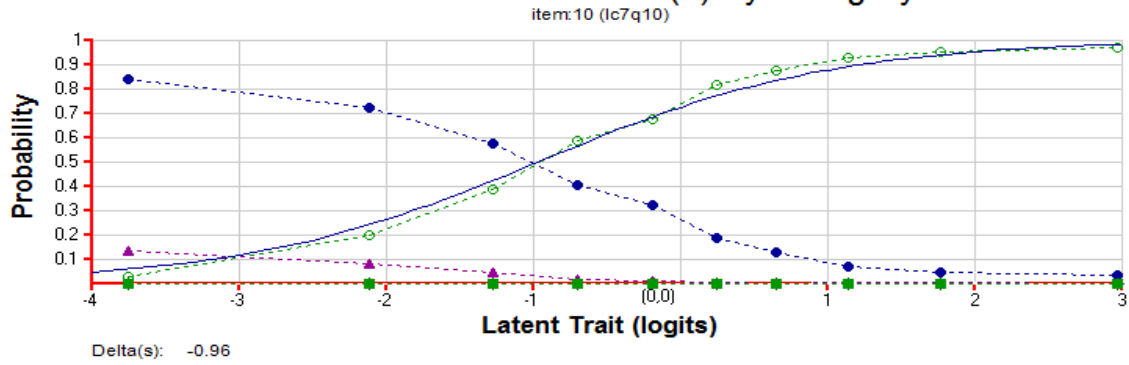
Characteristic Curve(s) By Category



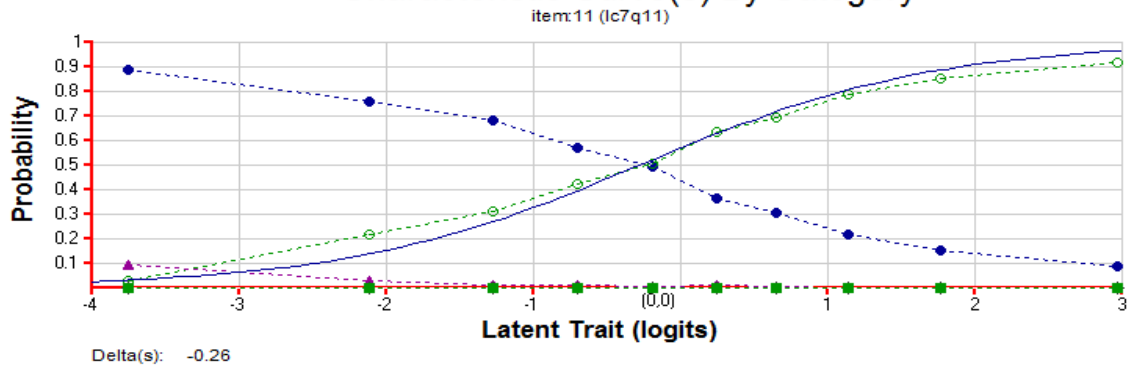
Characteristic Curve(s) By Category



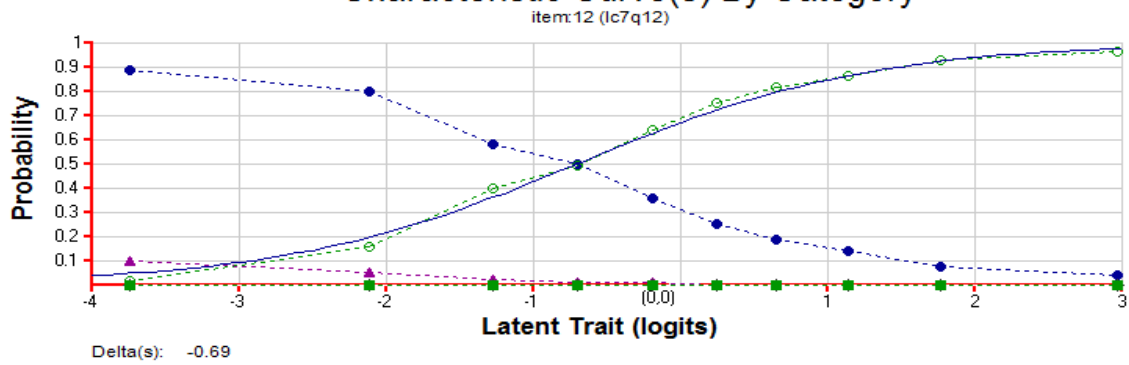
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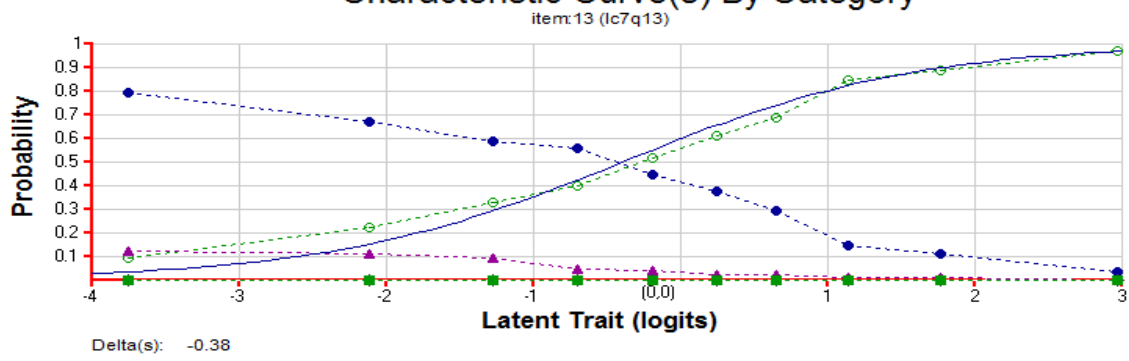
Characteristic Curve(s) By Category



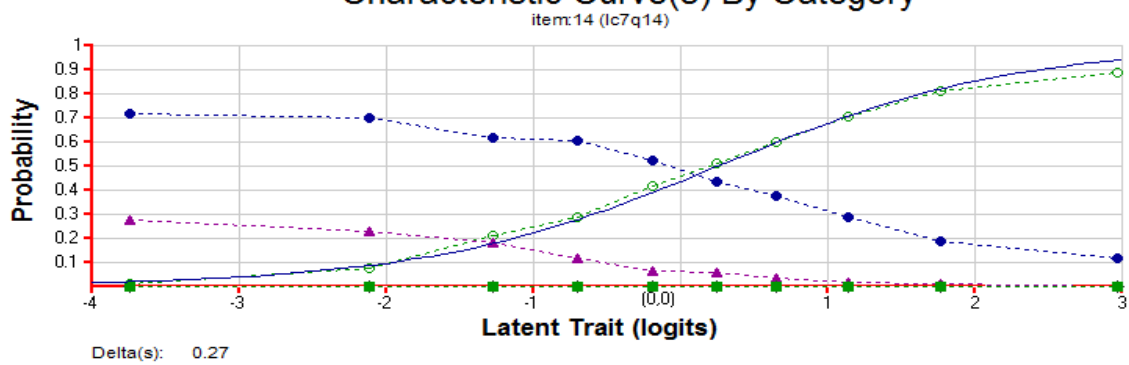
Characteristic Curve(s) By Category



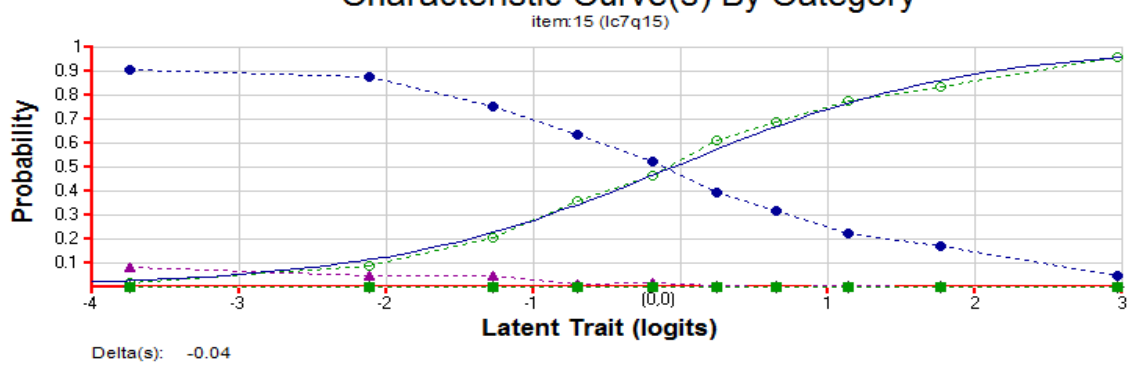
Characteristic Curve(s) By Category



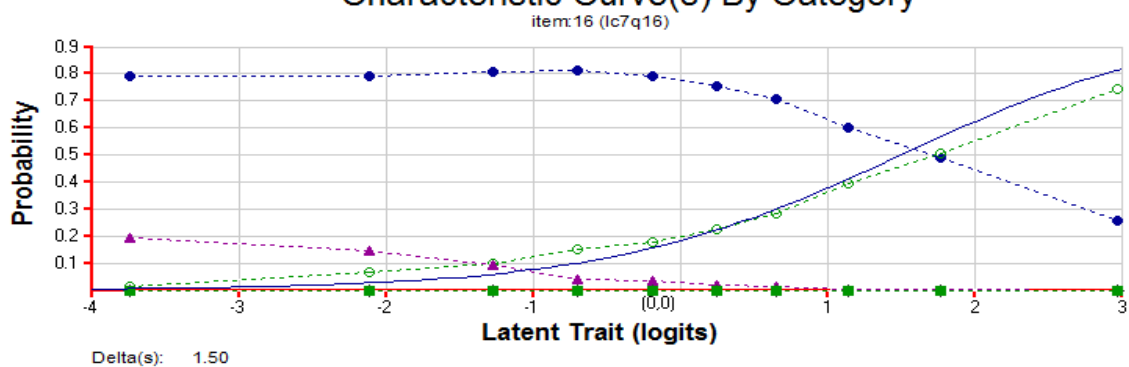
Characteristic Curve(s) By Category

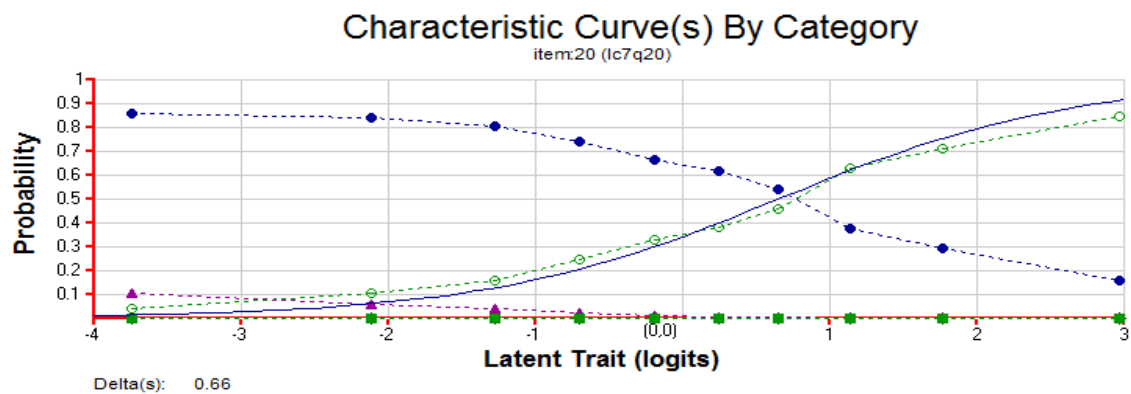
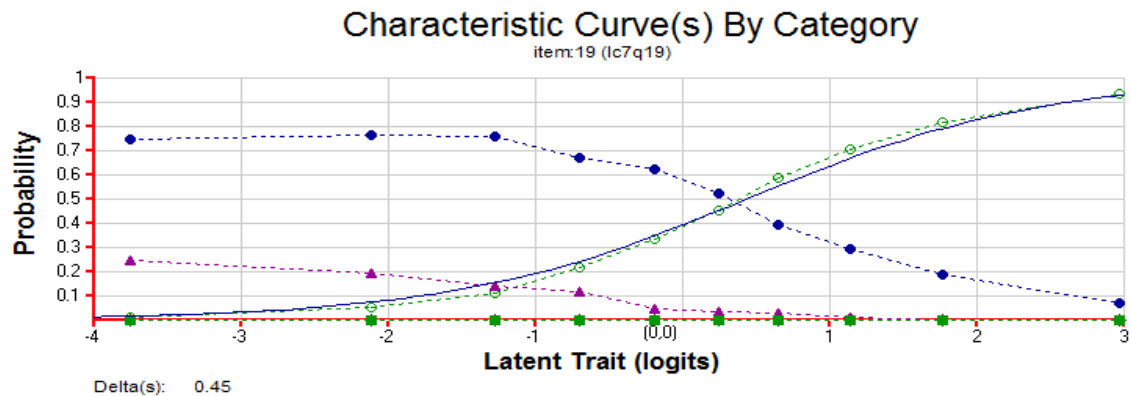
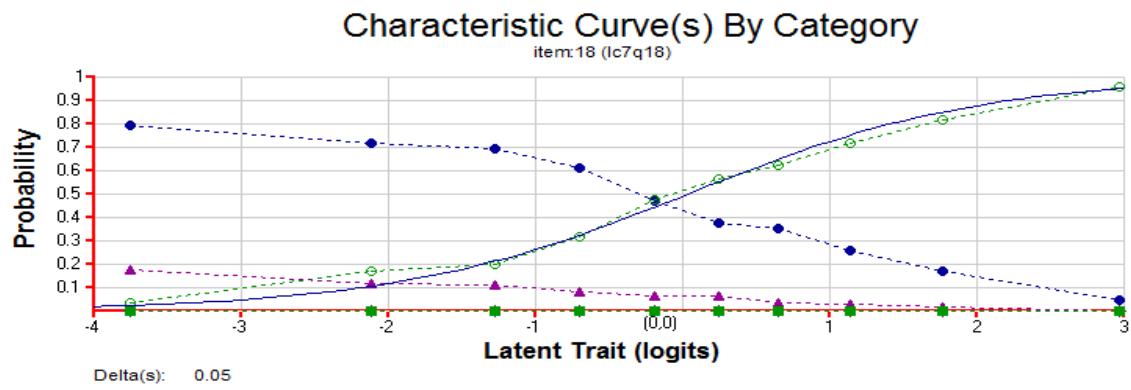
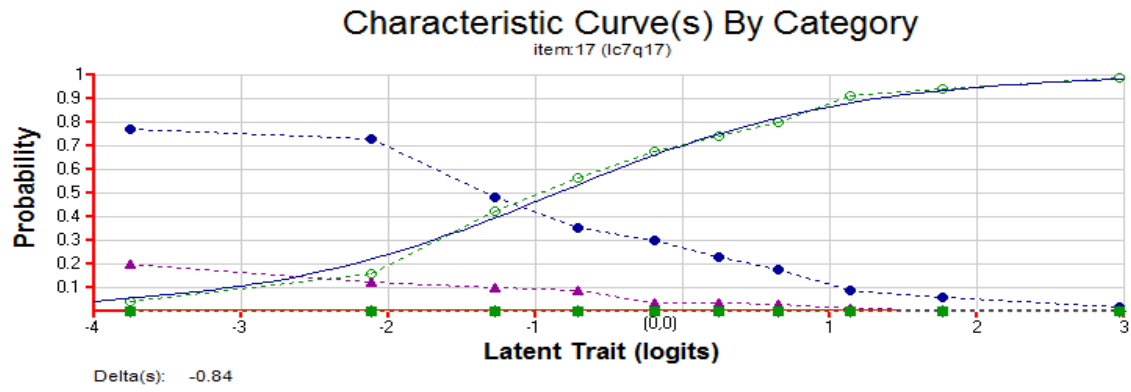


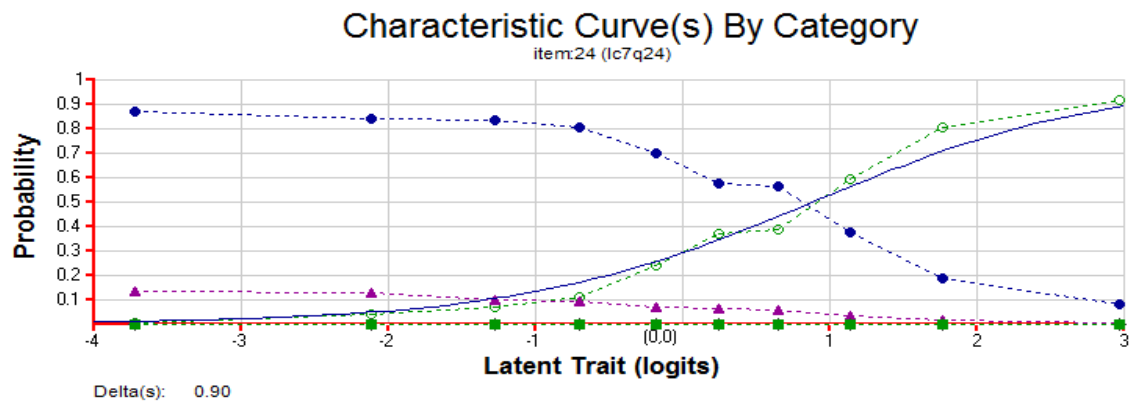
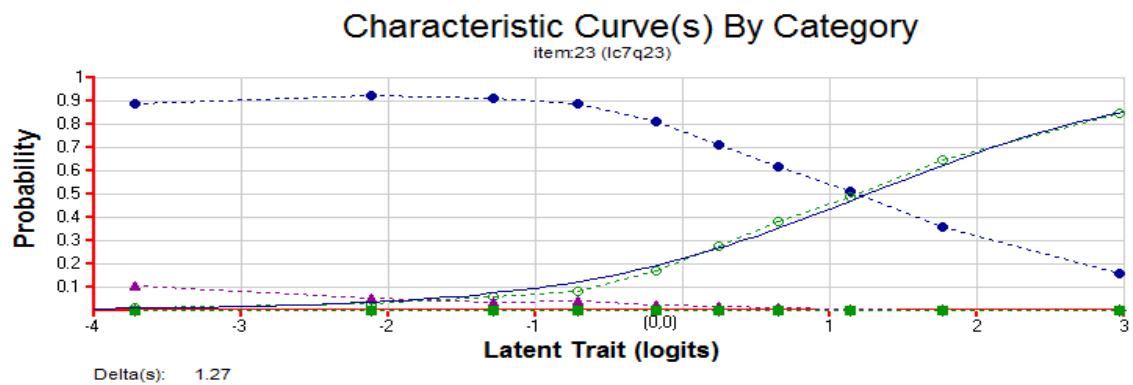
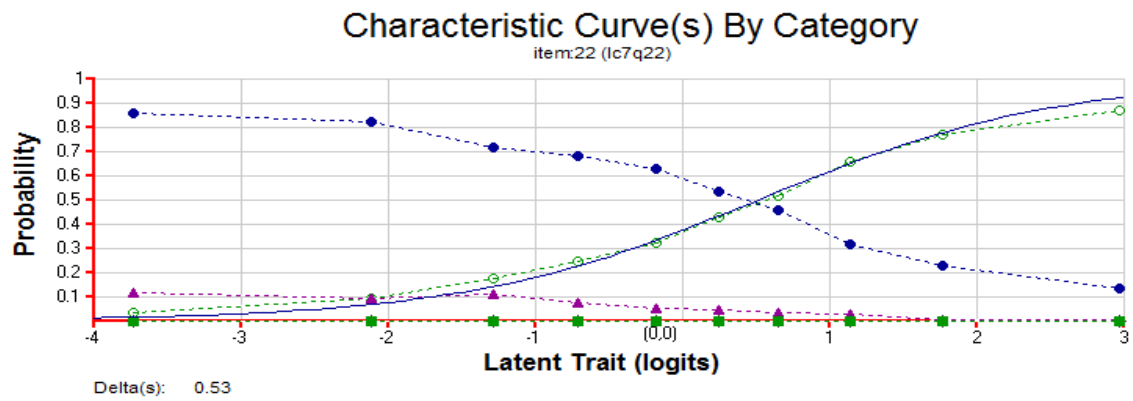
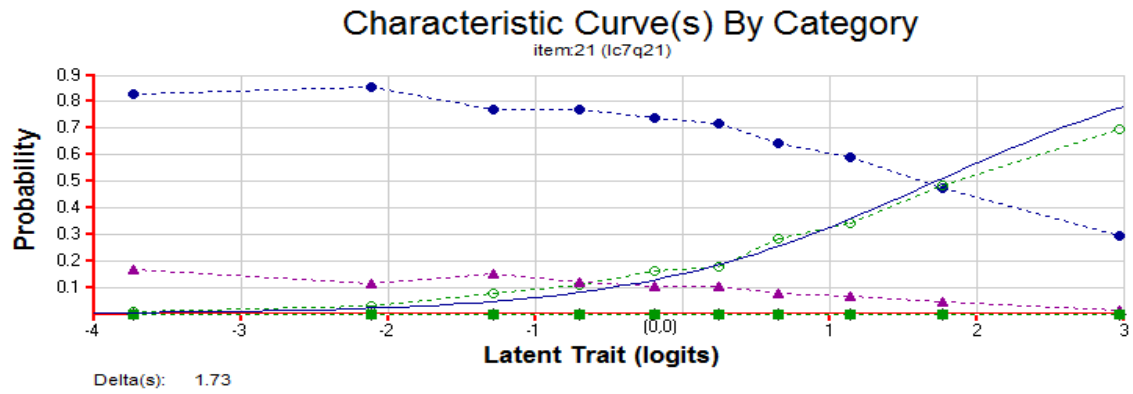
Characteristic Curve(s) By Category

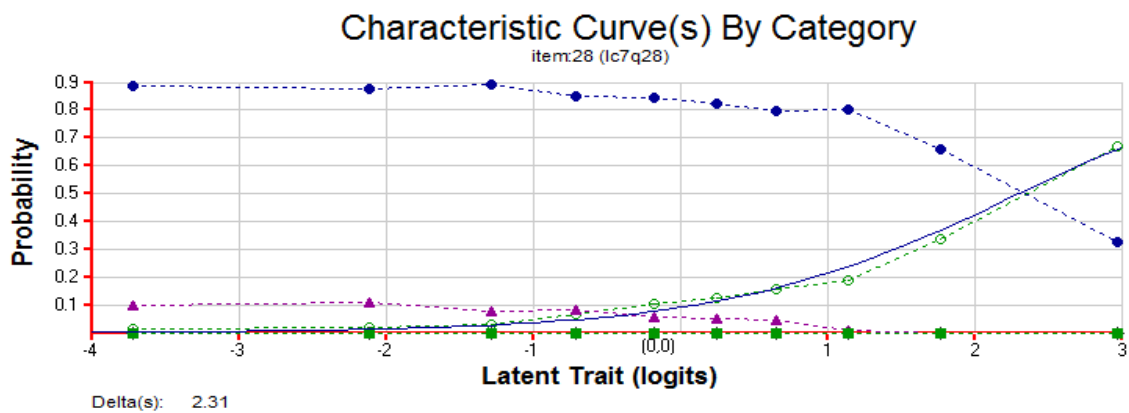
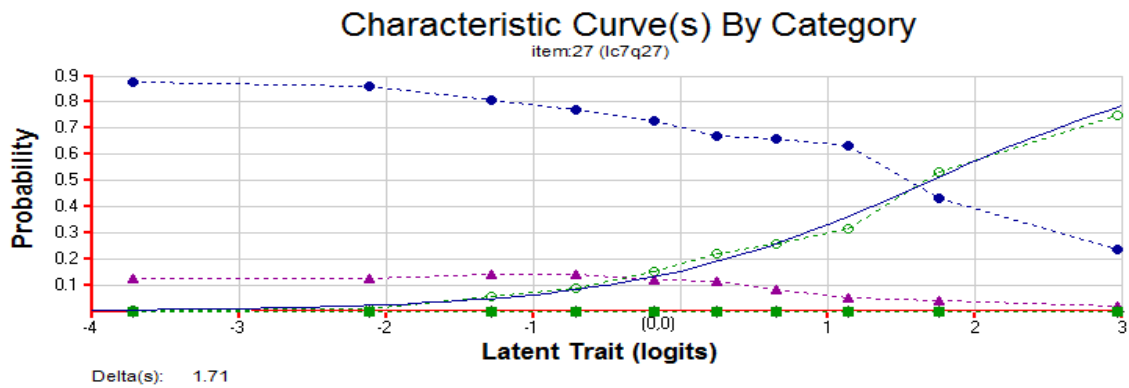
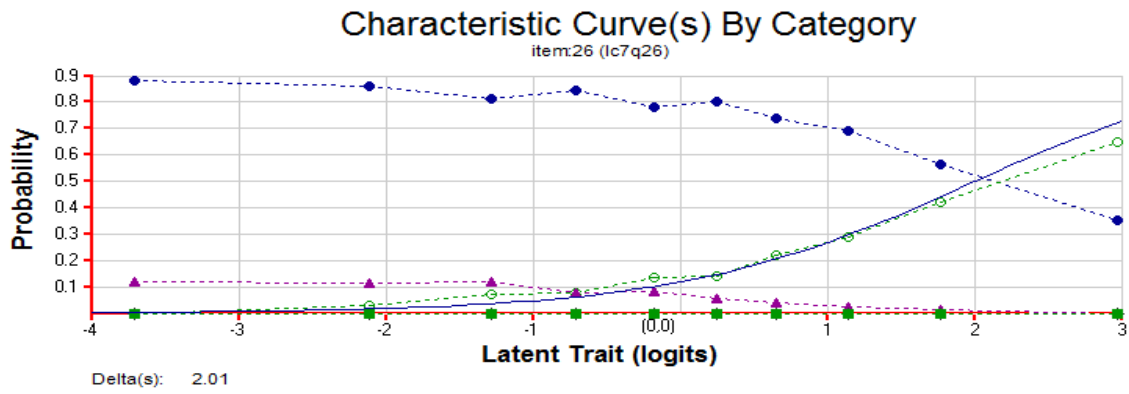
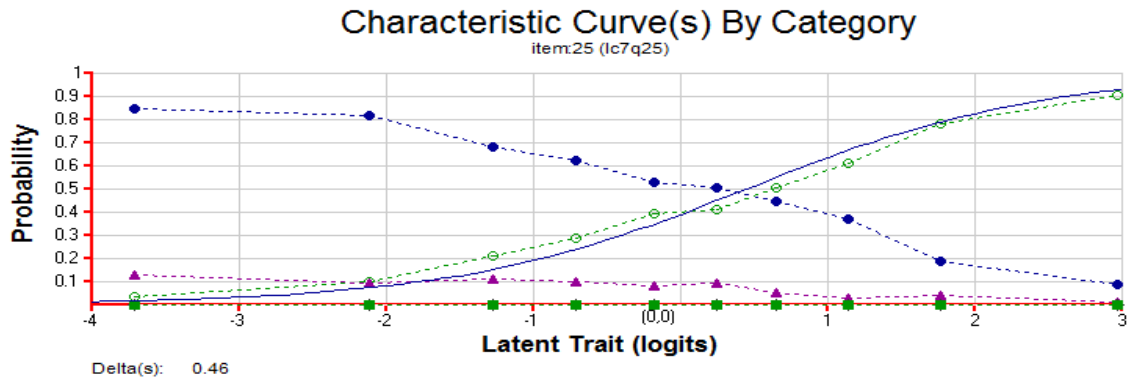


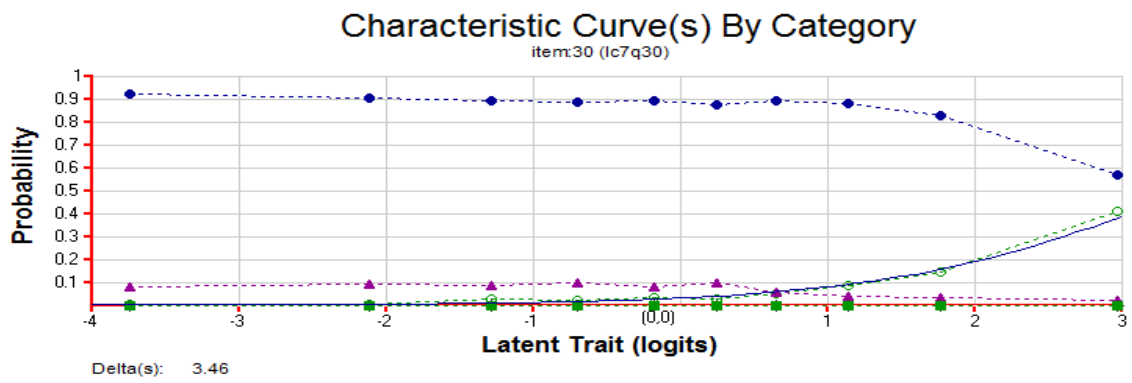
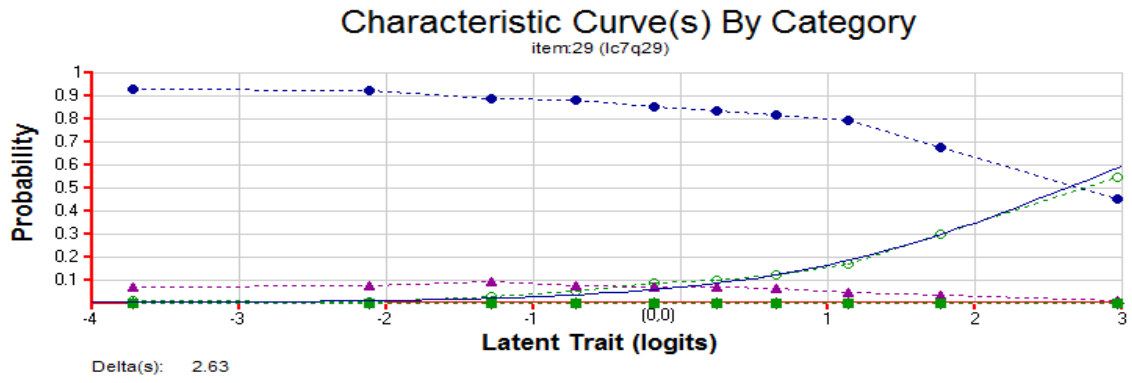
Characteristic Curve(s) By Category





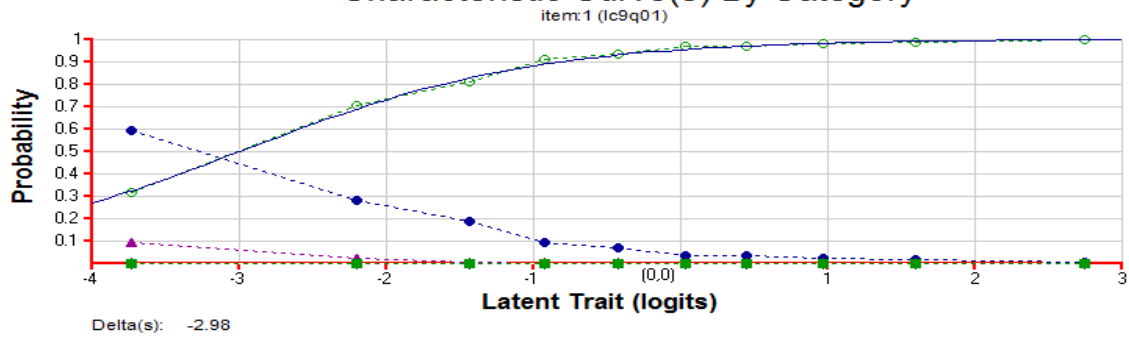




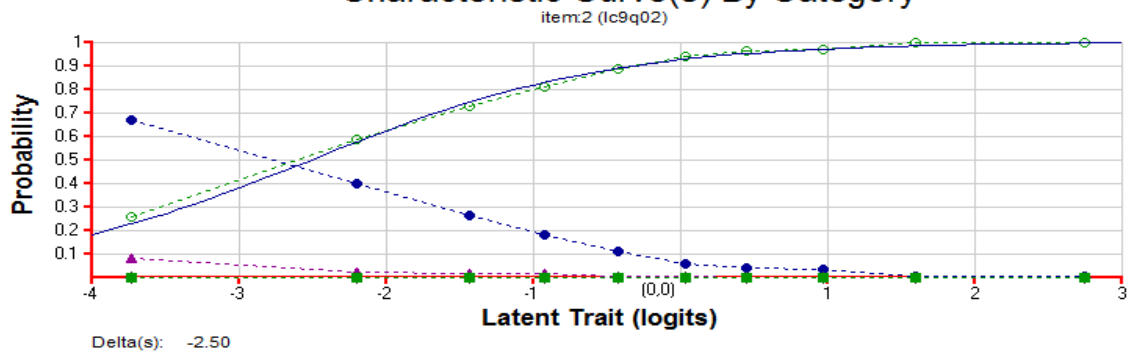


Year 9 Spelling

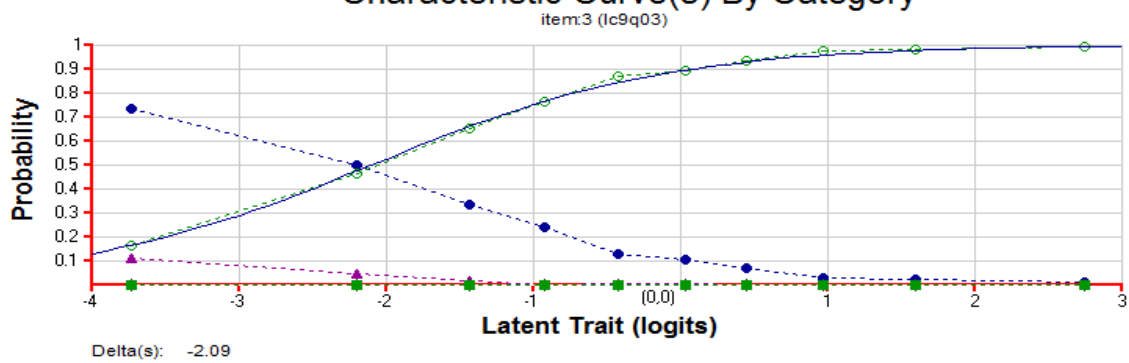
Characteristic Curve(s) By Category



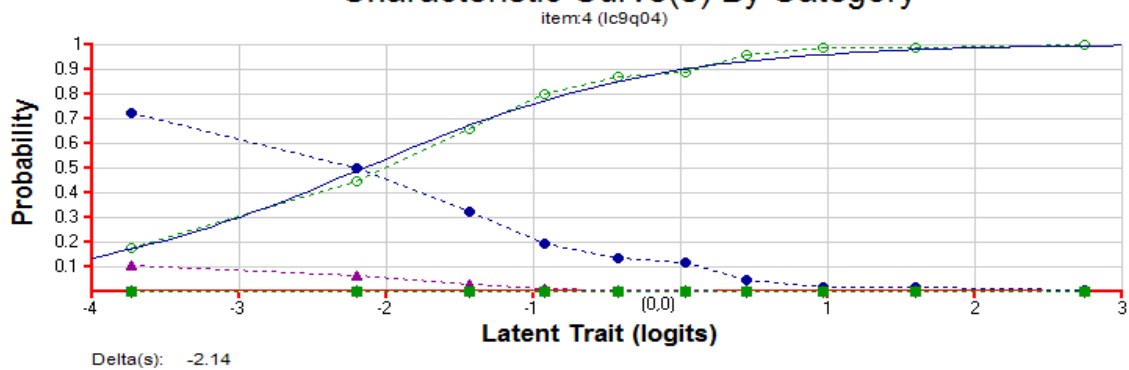
Characteristic Curve(s) By Category

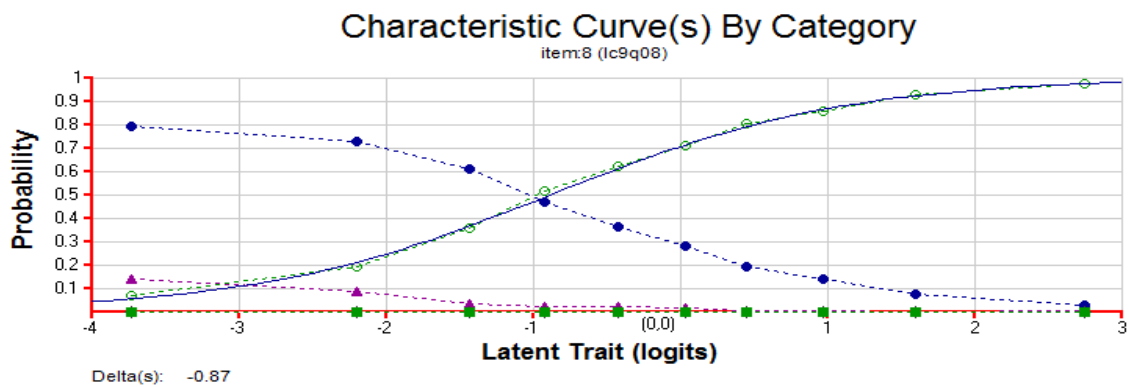
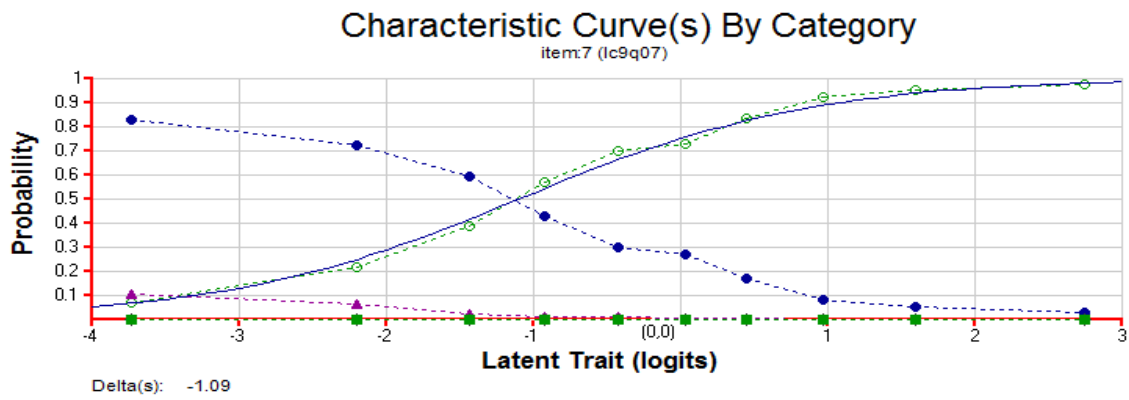
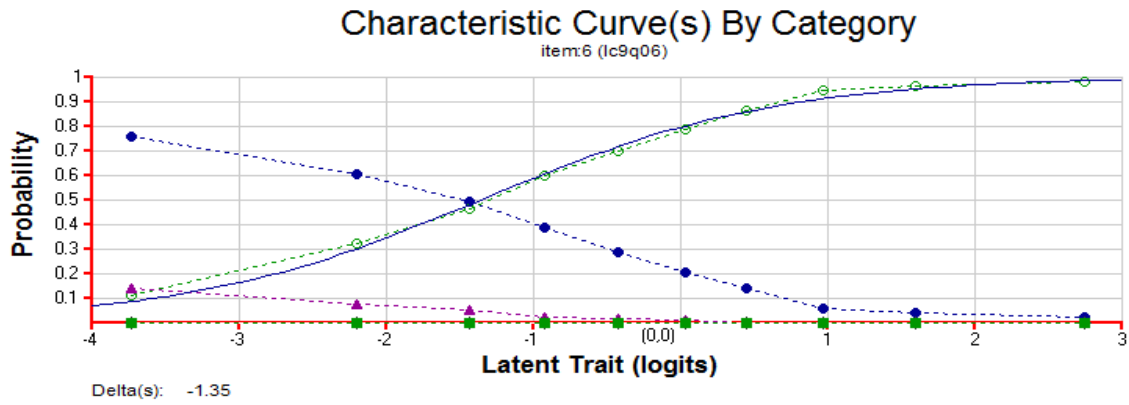
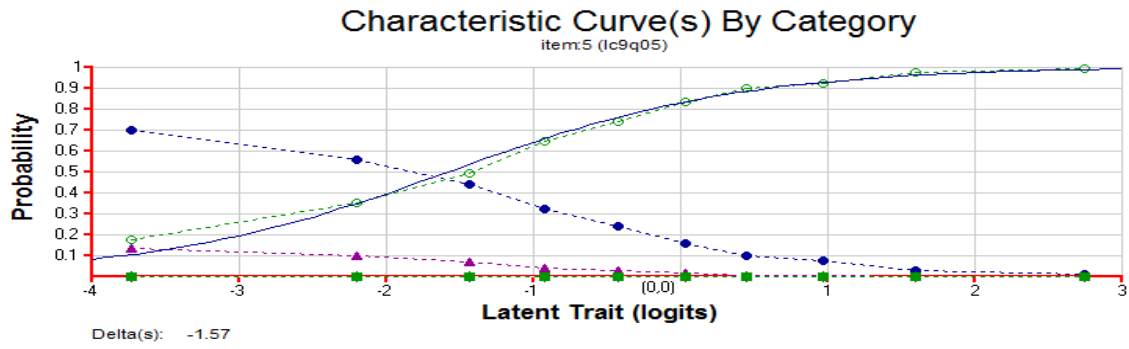


Characteristic Curve(s) By Category

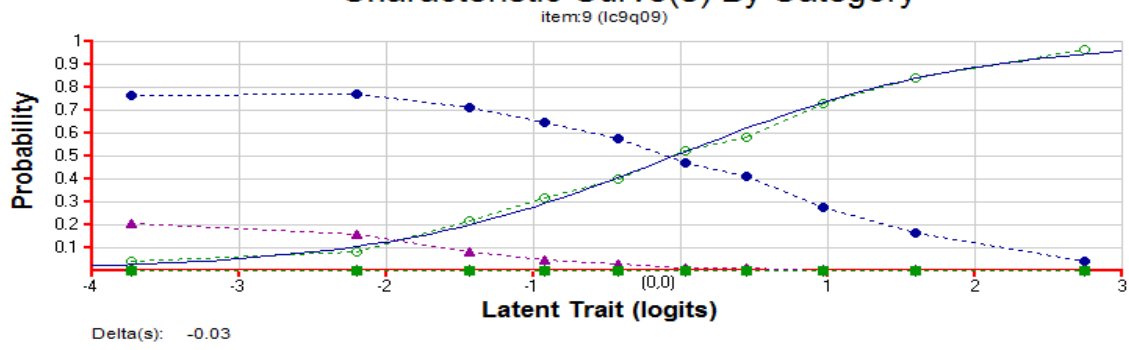


Characteristic Curve(s) By Category

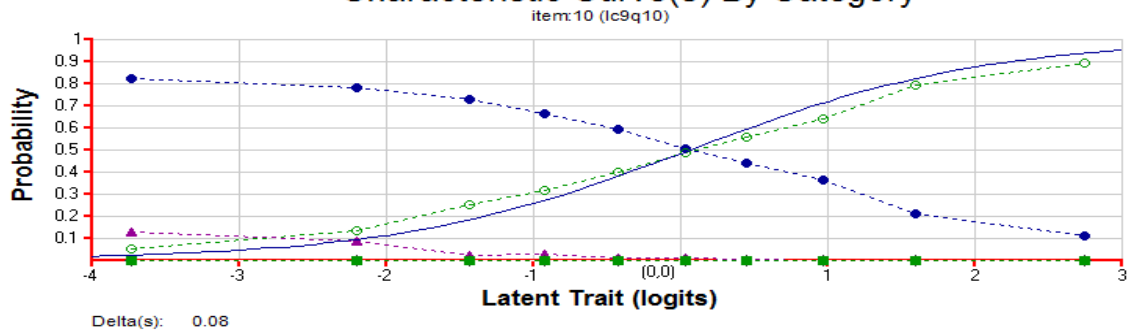




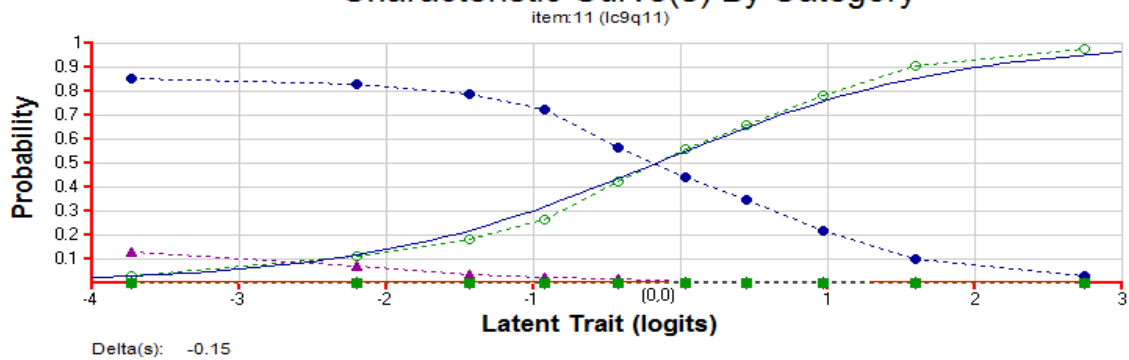
Characteristic Curve(s) By Category



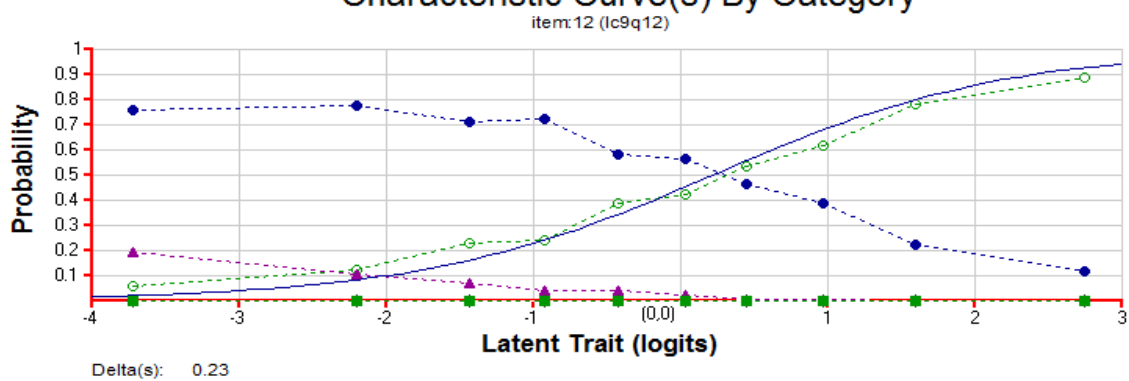
Characteristic Curve(s) By Category



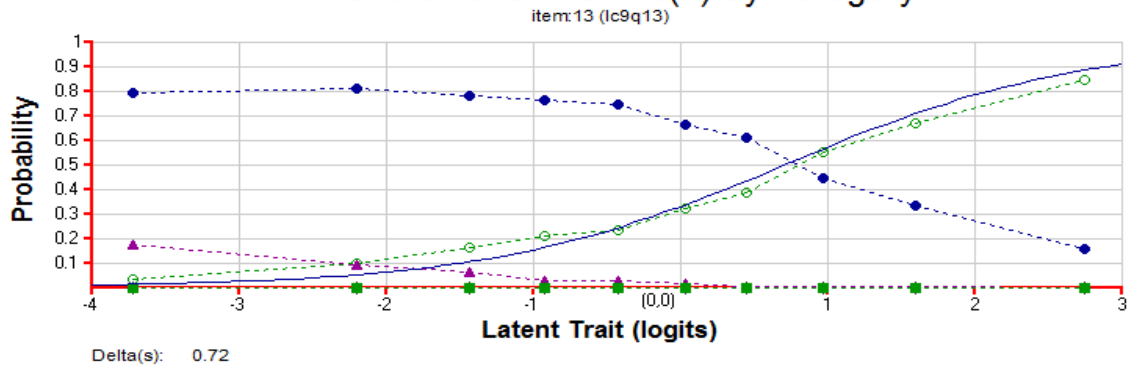
Characteristic Curve(s) By Category



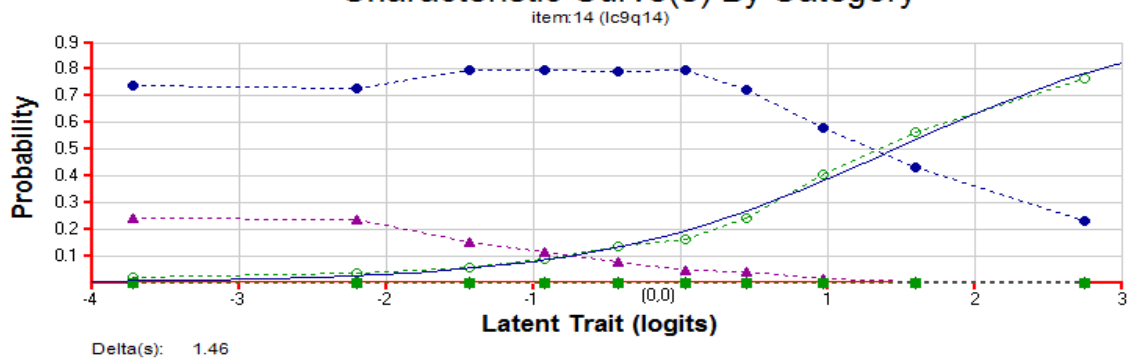
Characteristic Curve(s) By Category



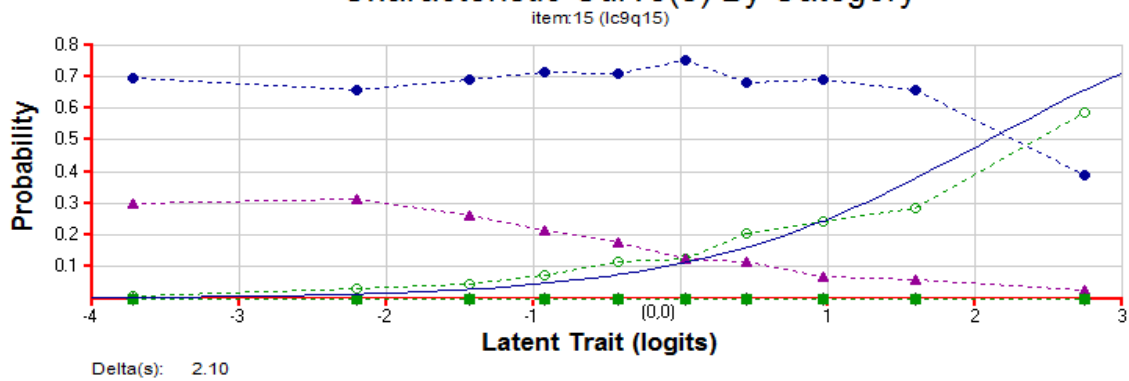
Characteristic Curve(s) By Category



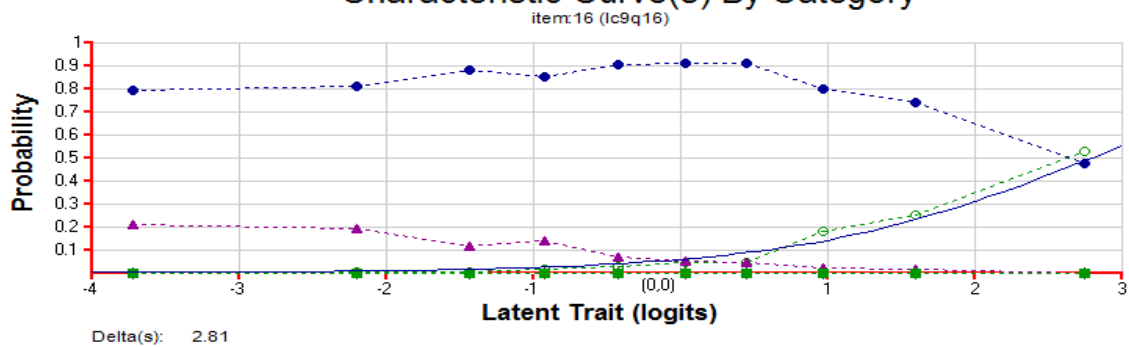
Characteristic Curve(s) By Category



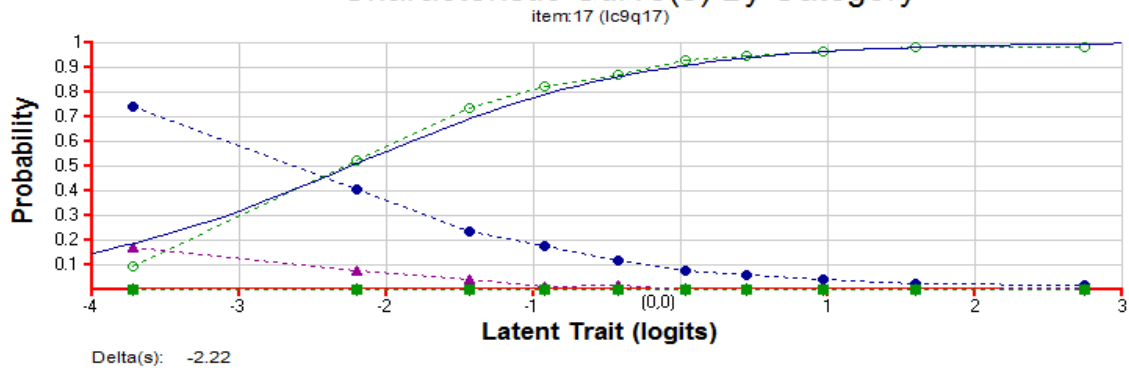
Characteristic Curve(s) By Category



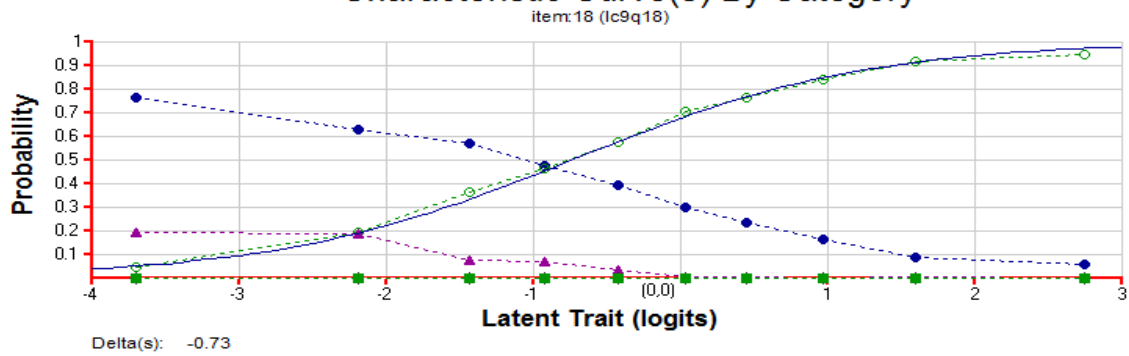
Characteristic Curve(s) By Category



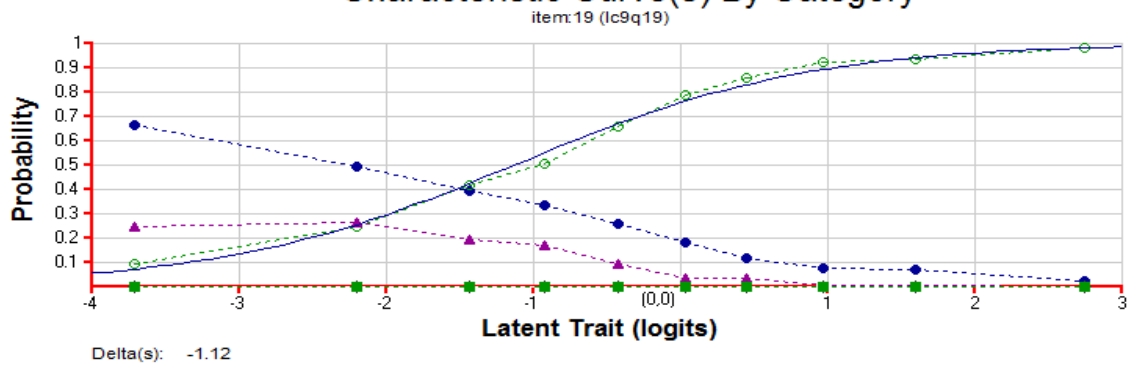
Characteristic Curve(s) By Category



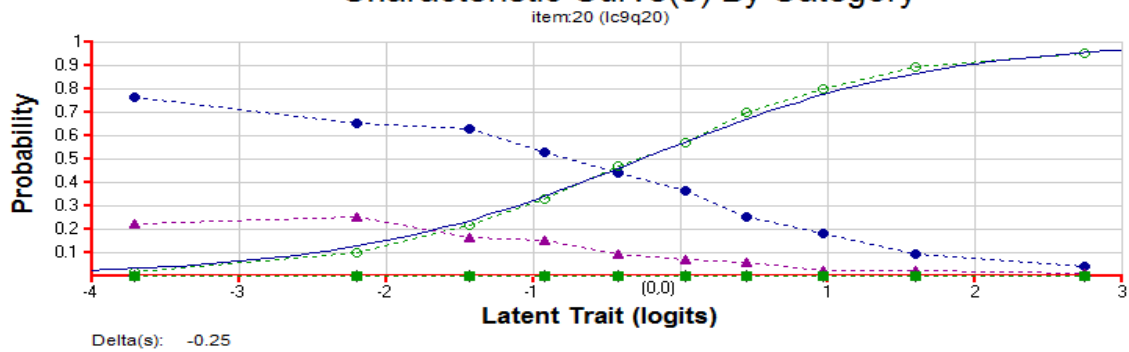
Characteristic Curve(s) By Category



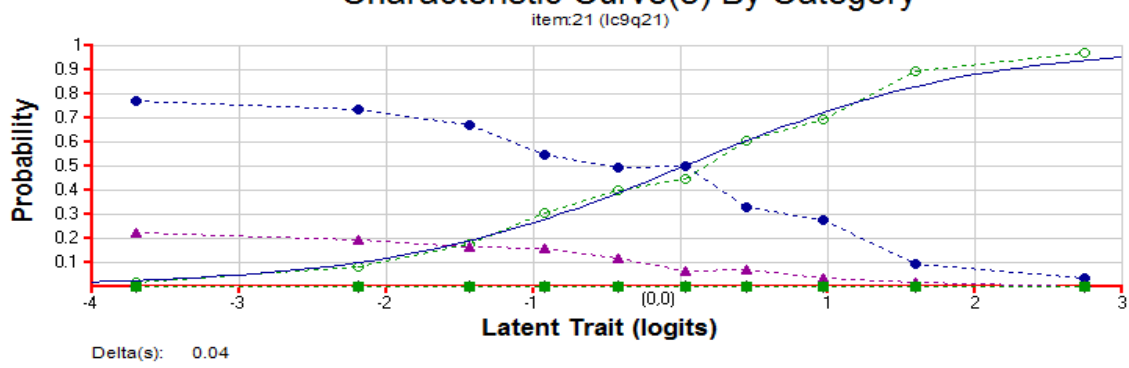
Characteristic Curve(s) By Category



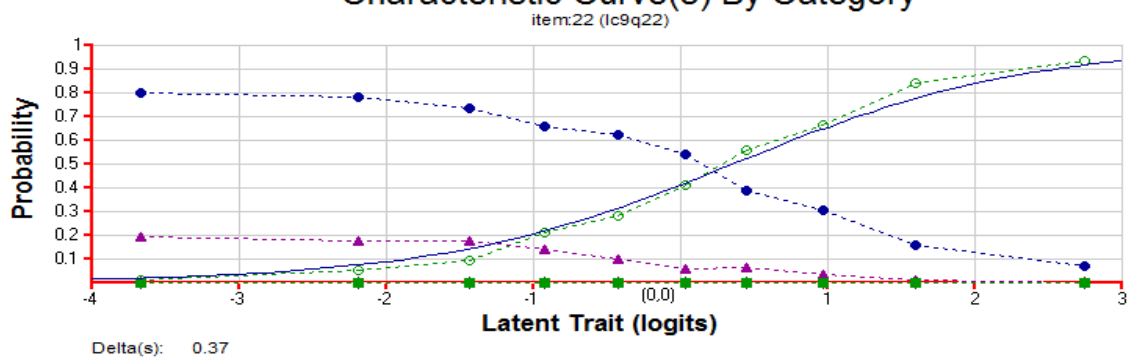
Characteristic Curve(s) By Category



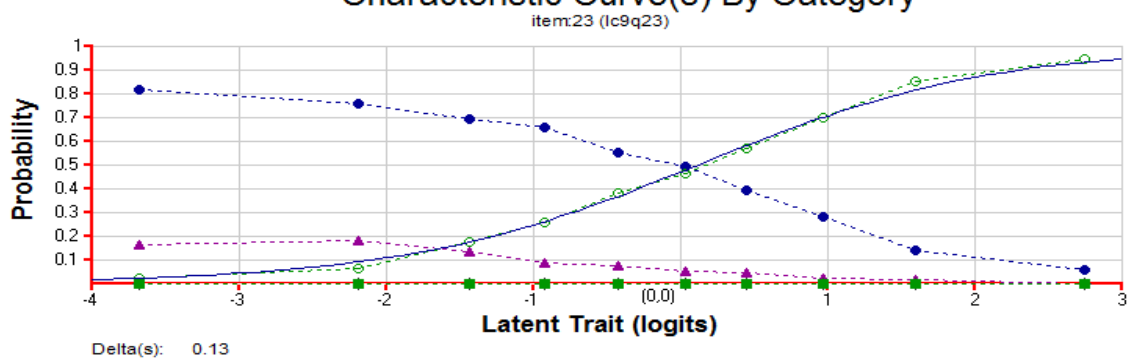
Characteristic Curve(s) By Category



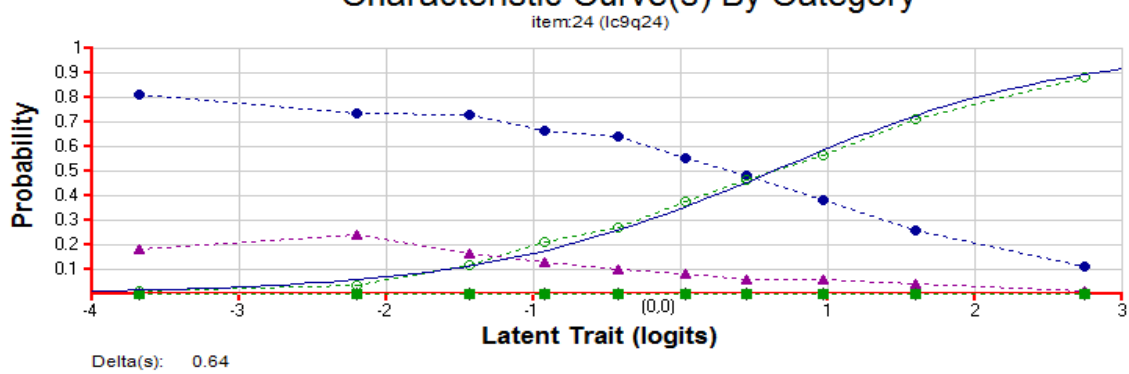
Characteristic Curve(s) By Category



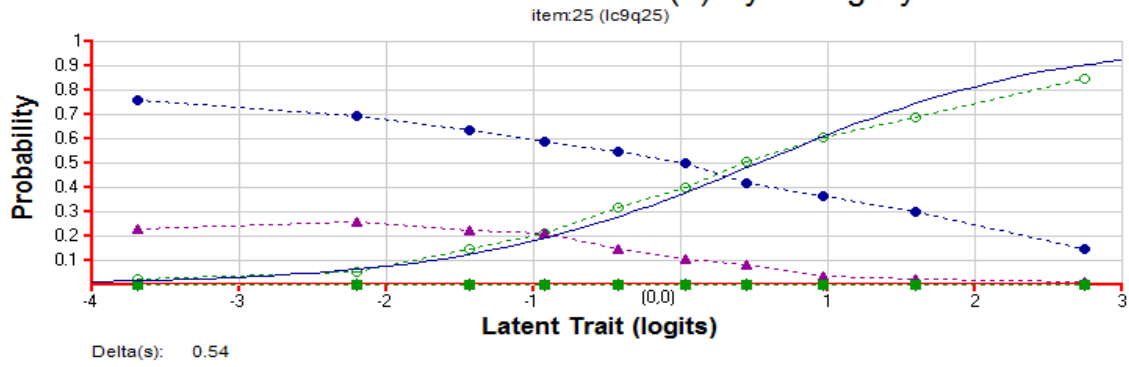
Characteristic Curve(s) By Category



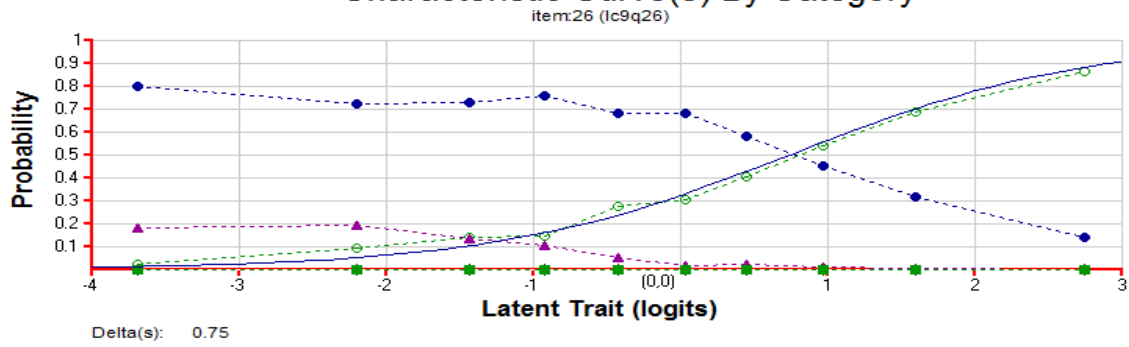
Characteristic Curve(s) By Category



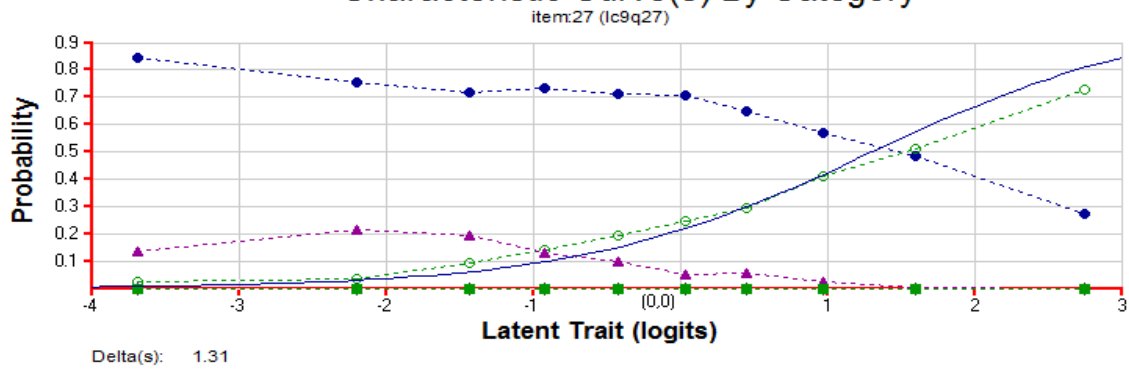
Characteristic Curve(s) By Category



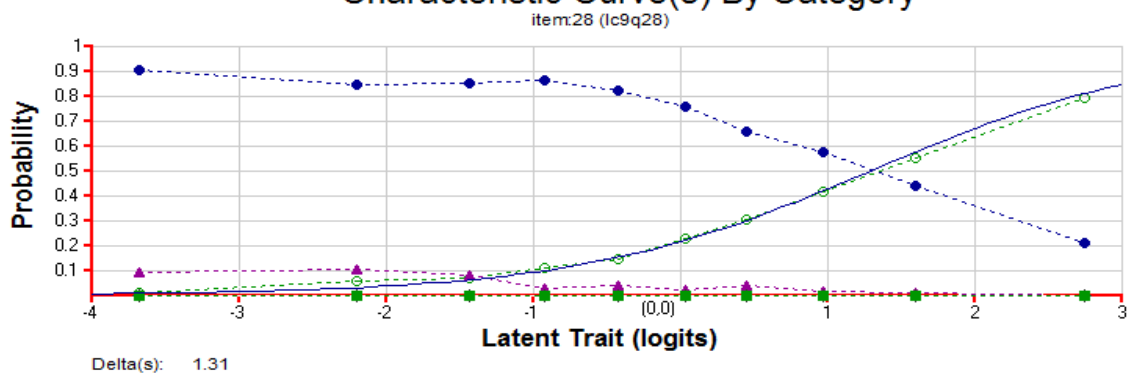
Characteristic Curve(s) By Category

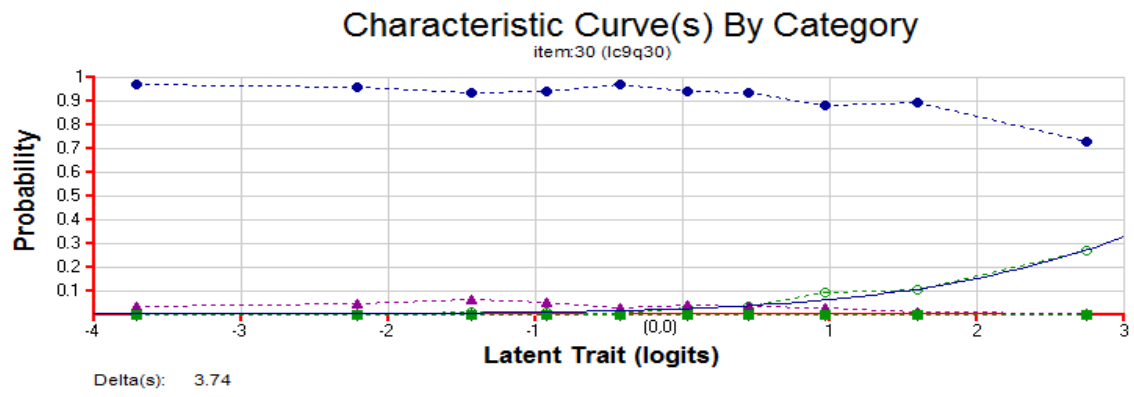
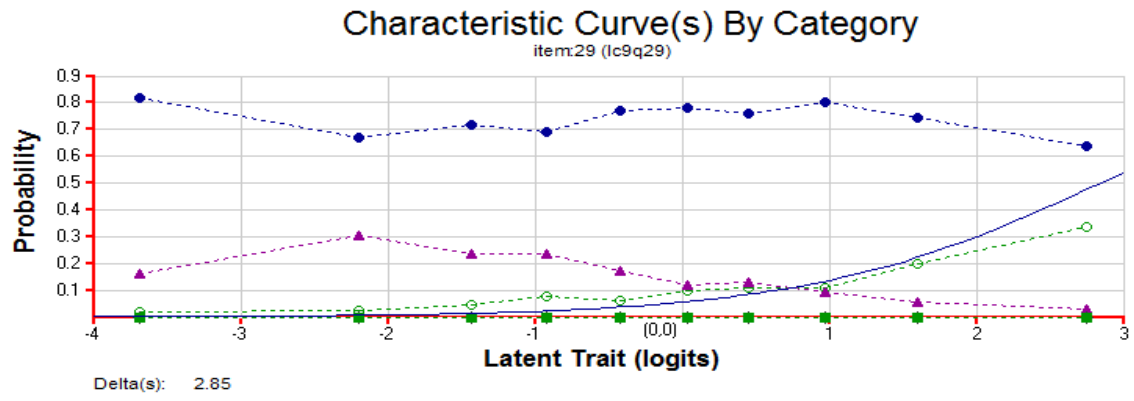


Characteristic Curve(s) By Category

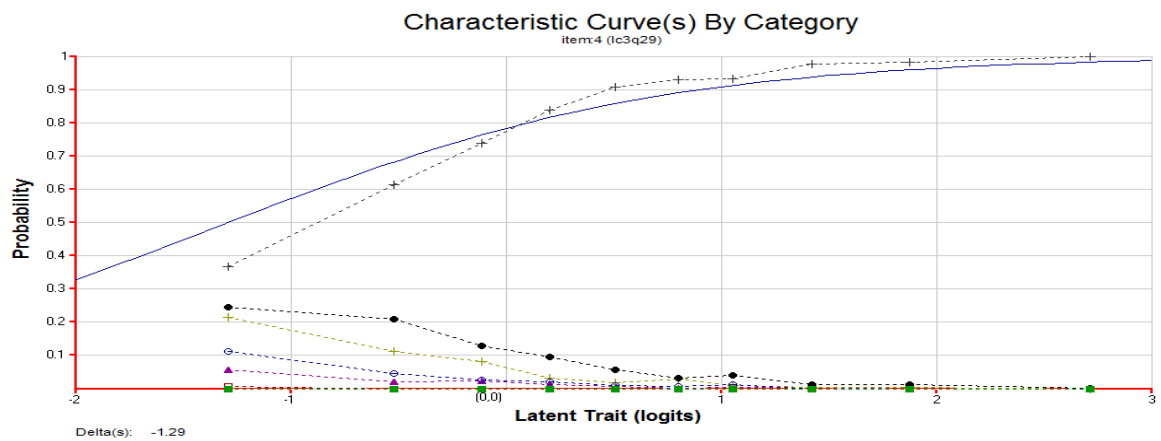
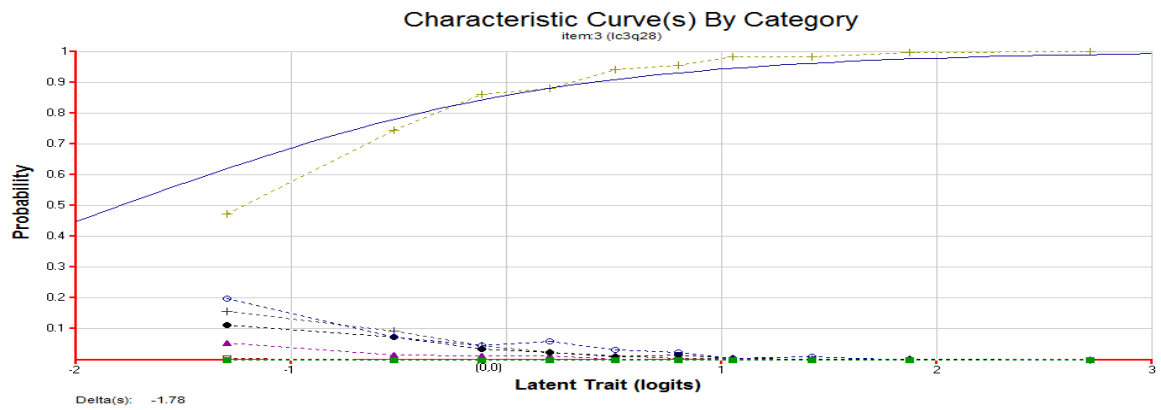
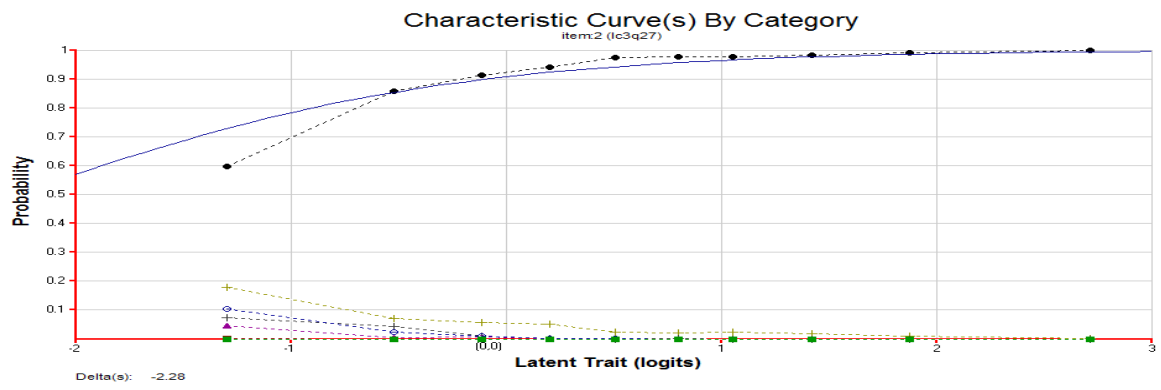
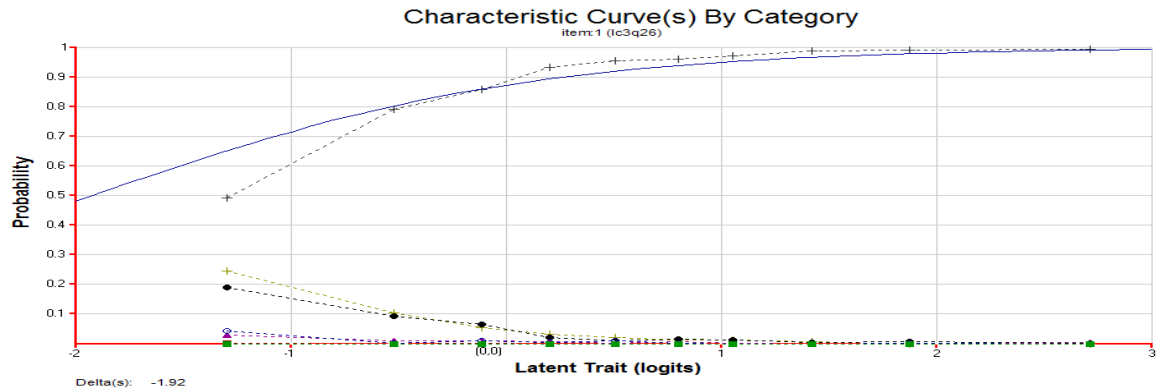


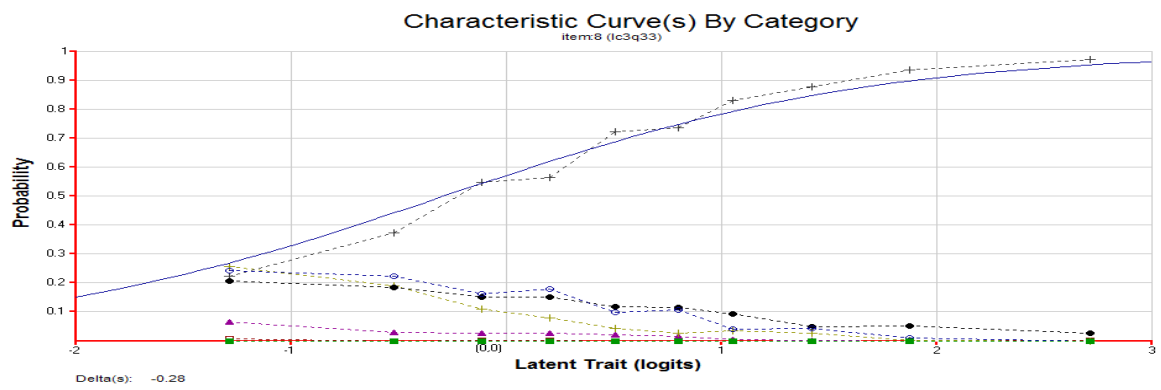
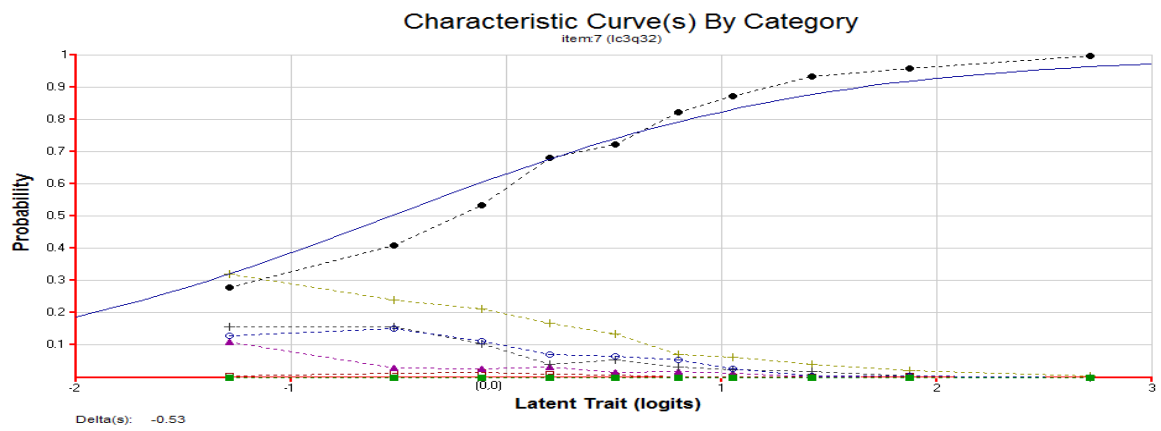
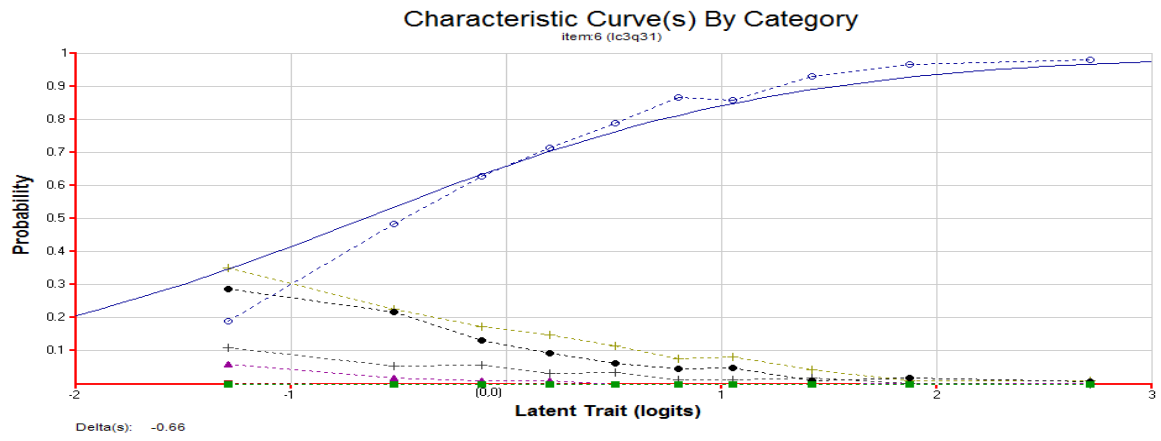
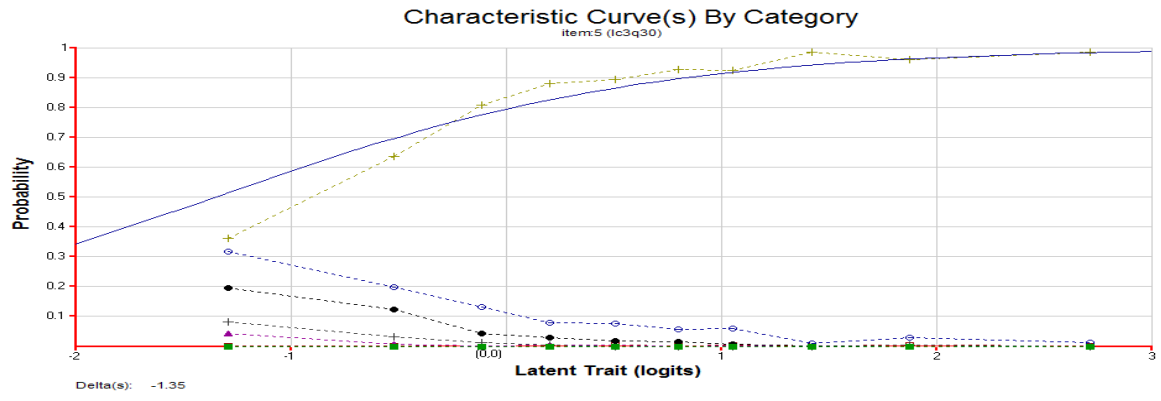
Characteristic Curve(s) By Category

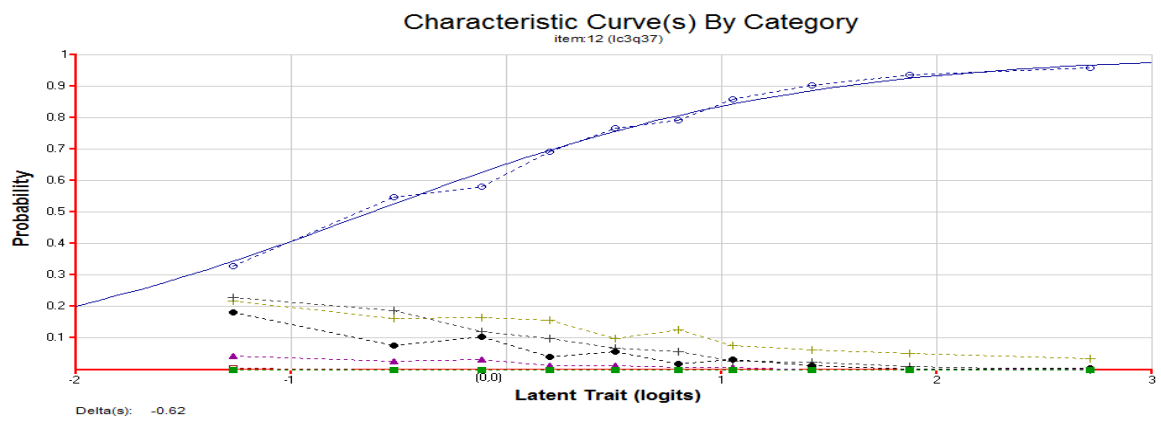
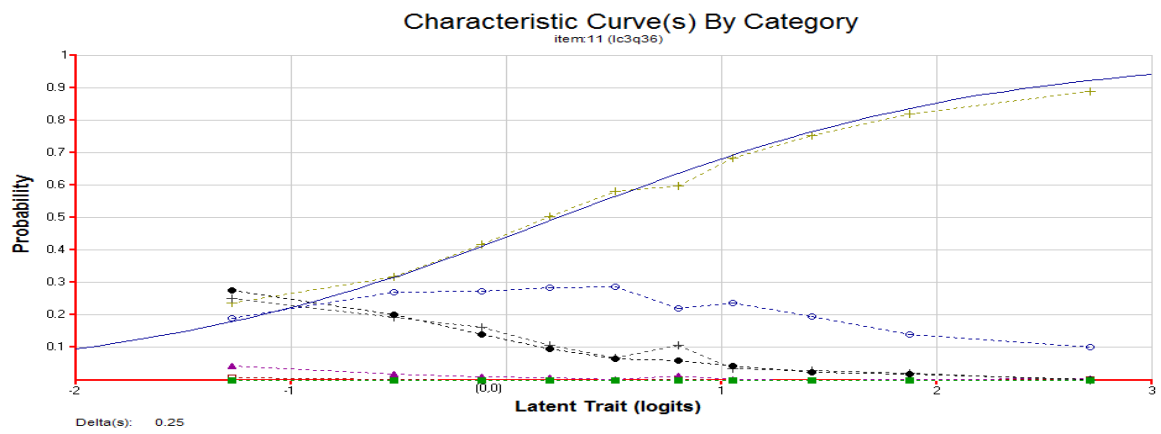
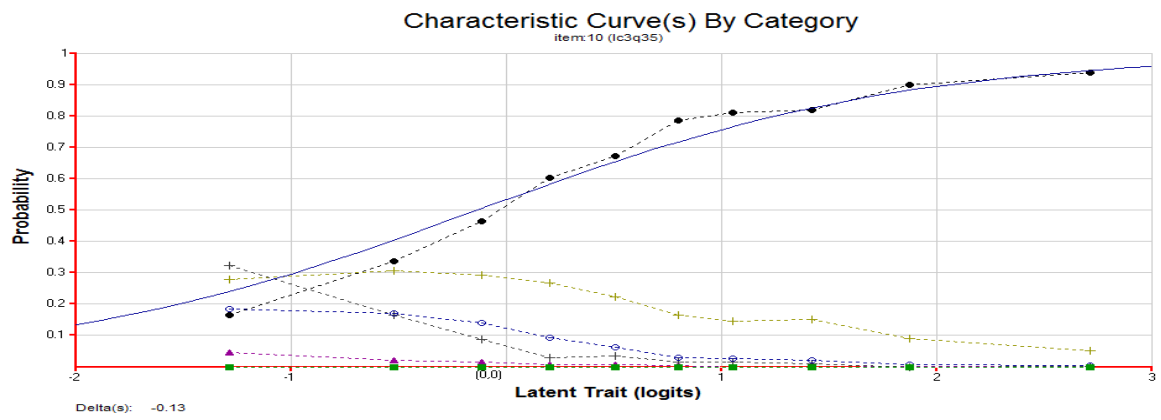
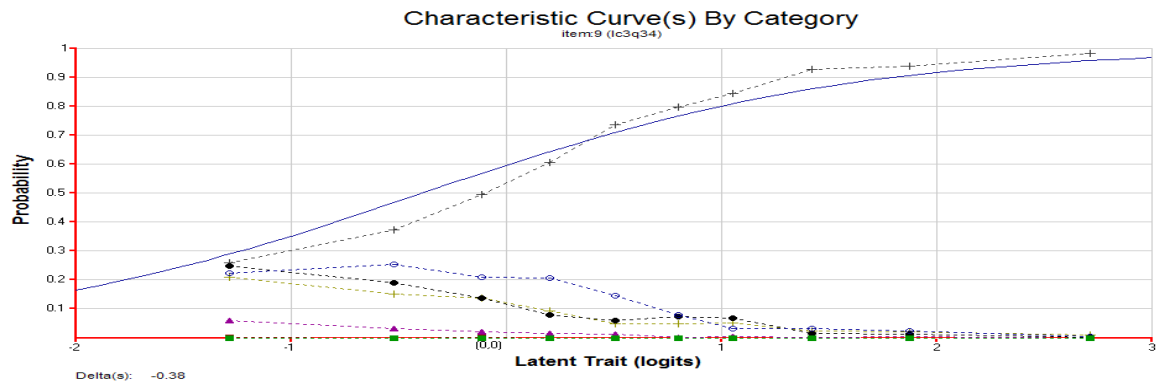


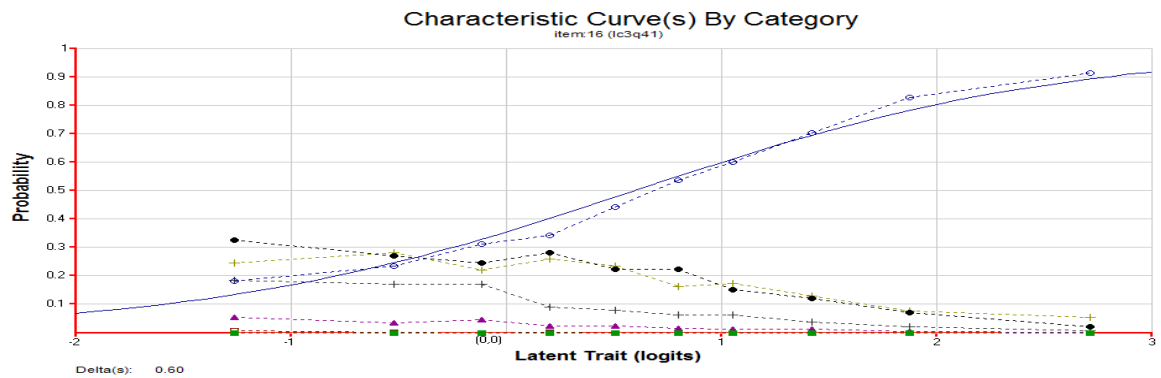
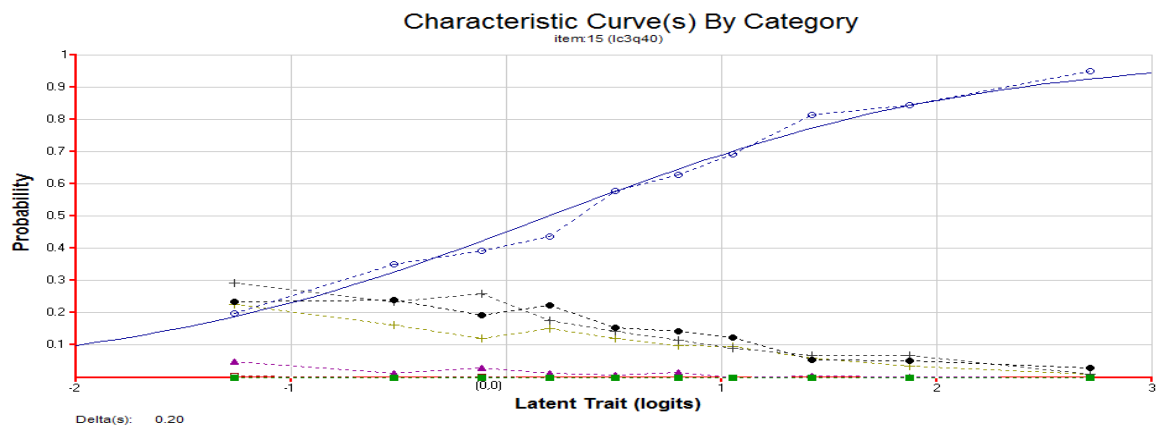
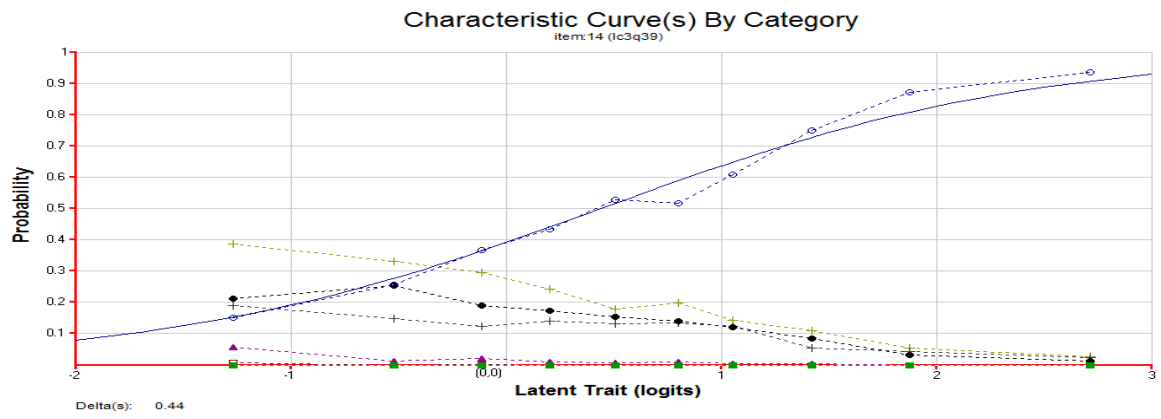
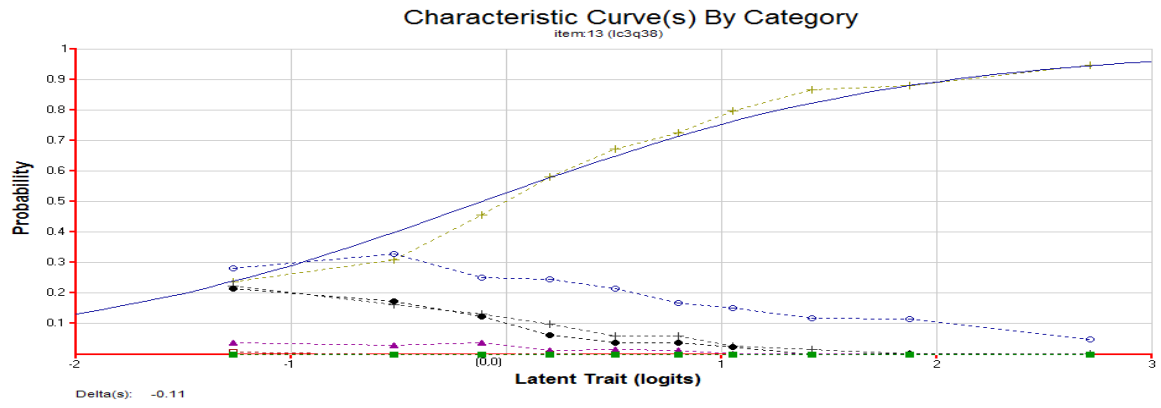


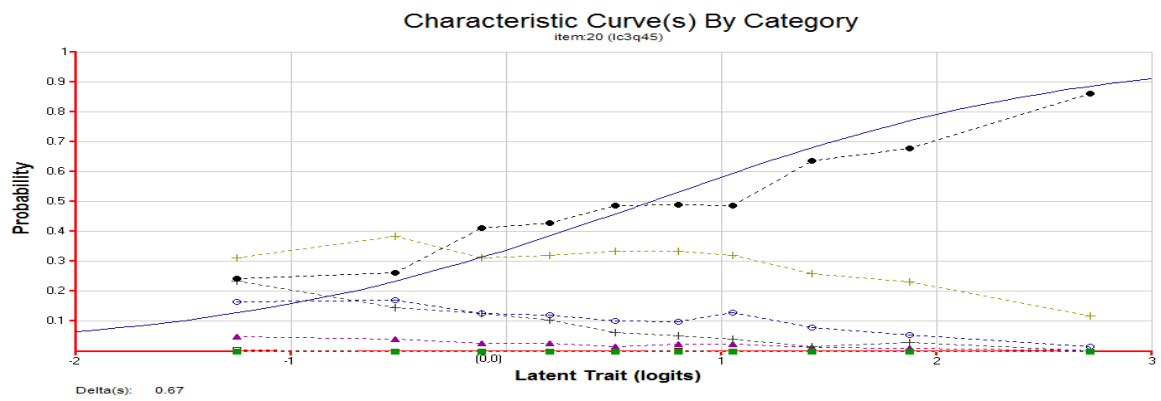
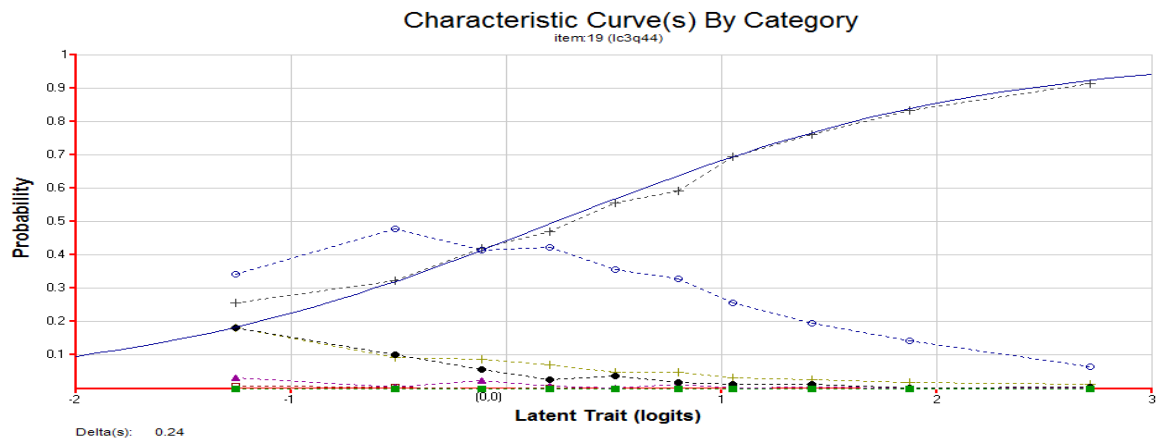
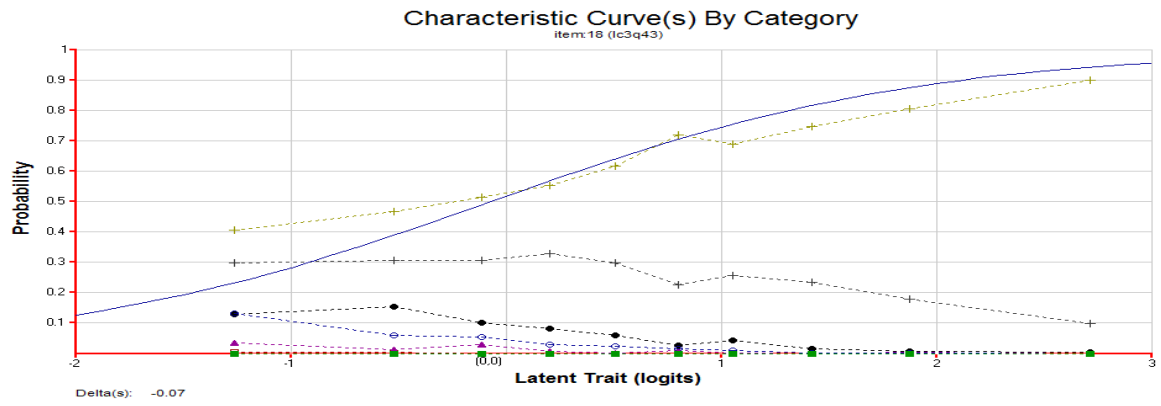
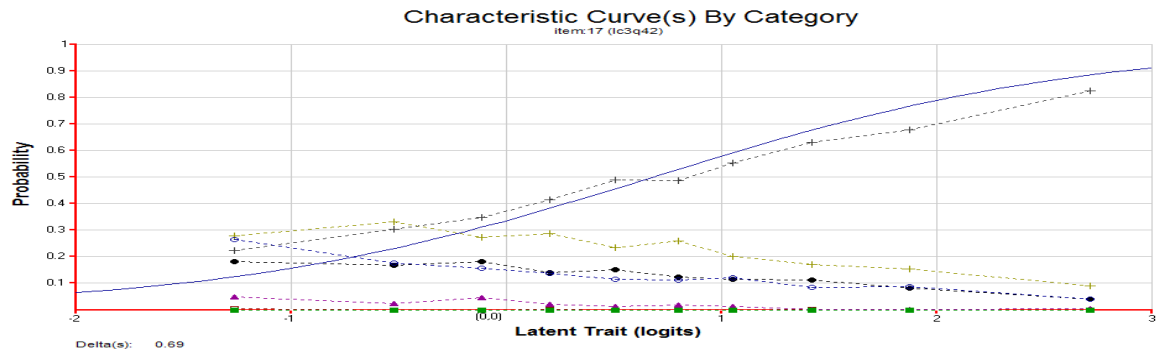
Year 3 Grammar and Punctuation

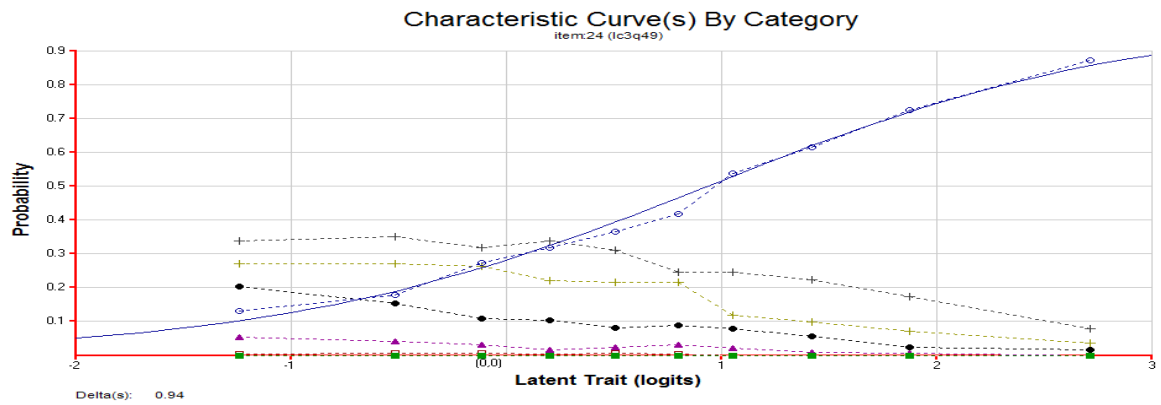
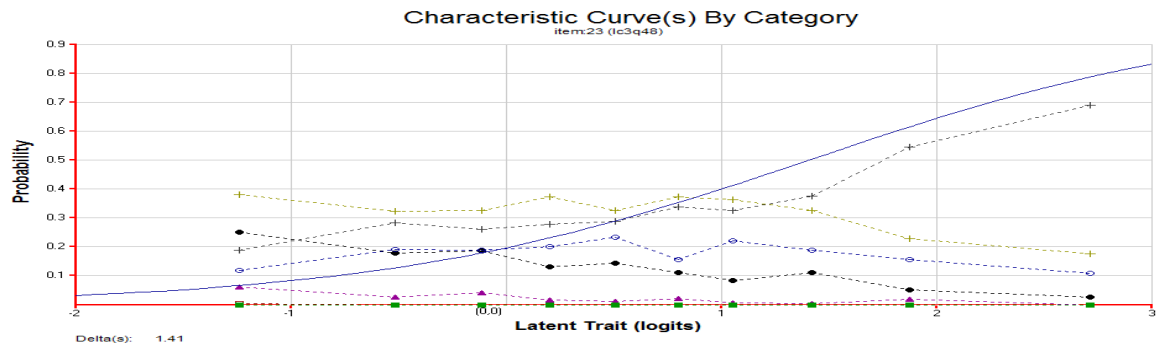
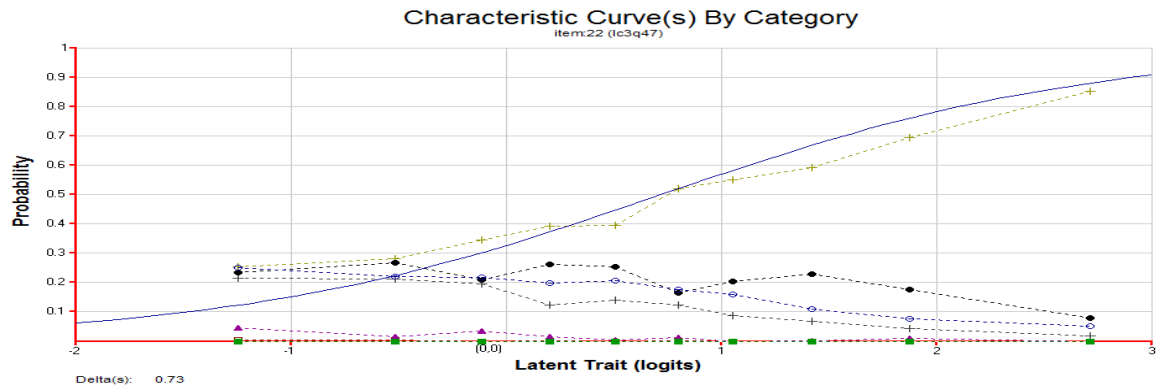
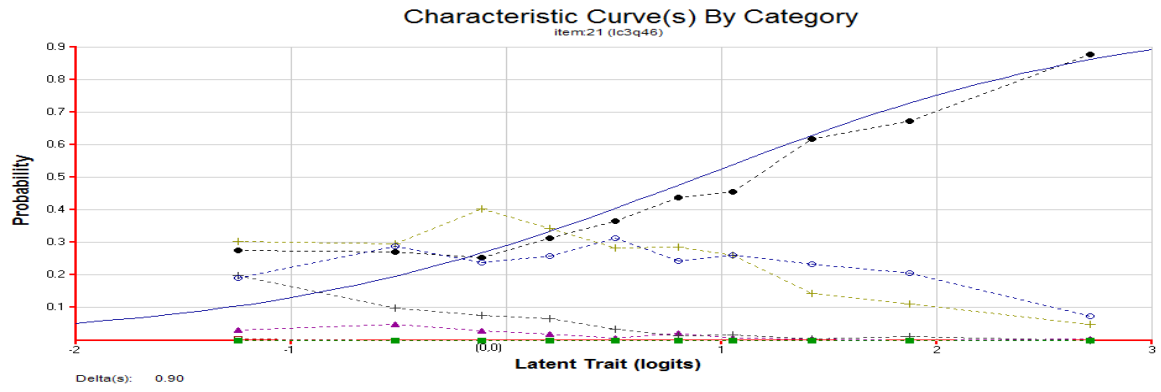


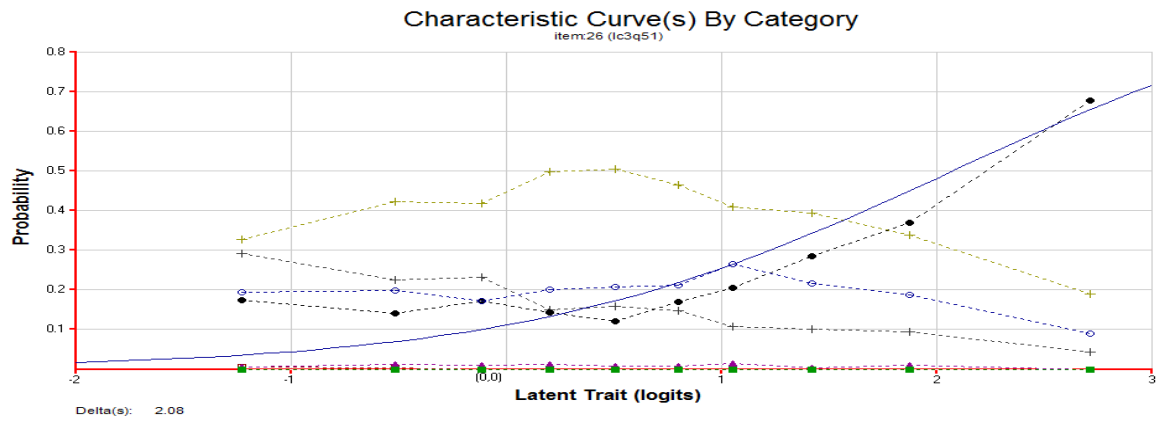
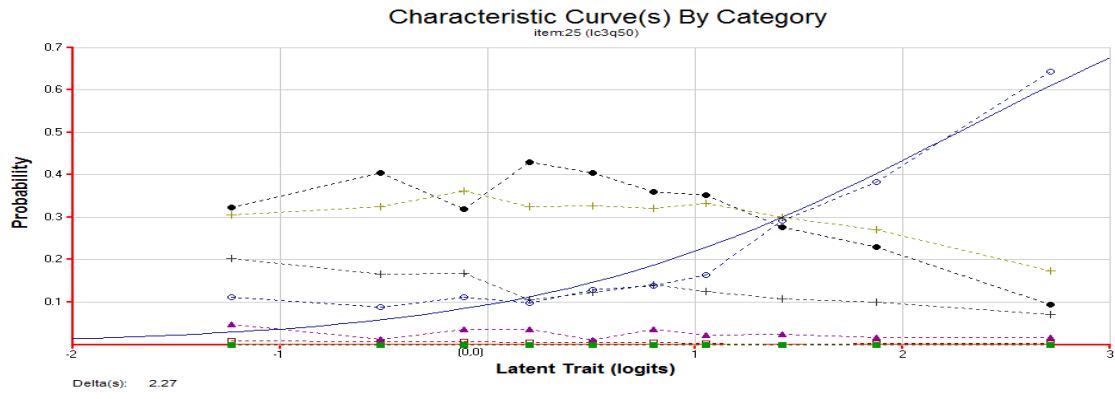




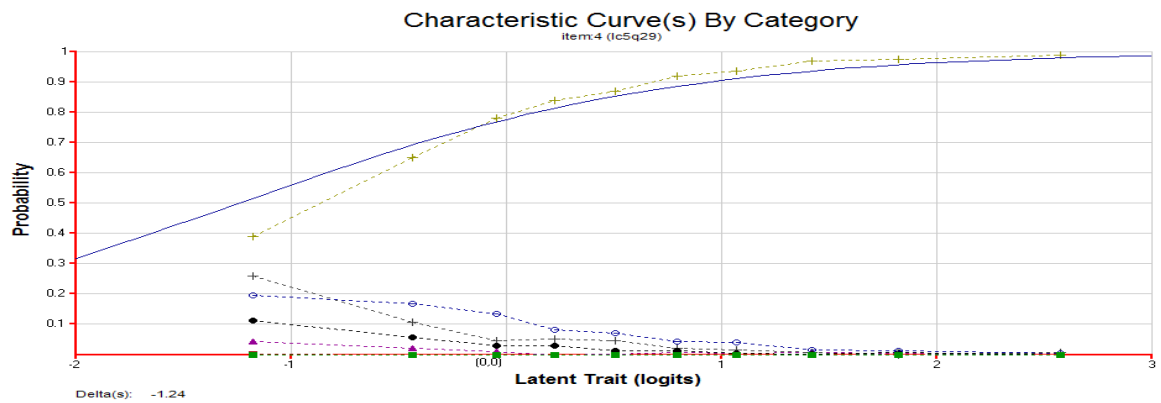
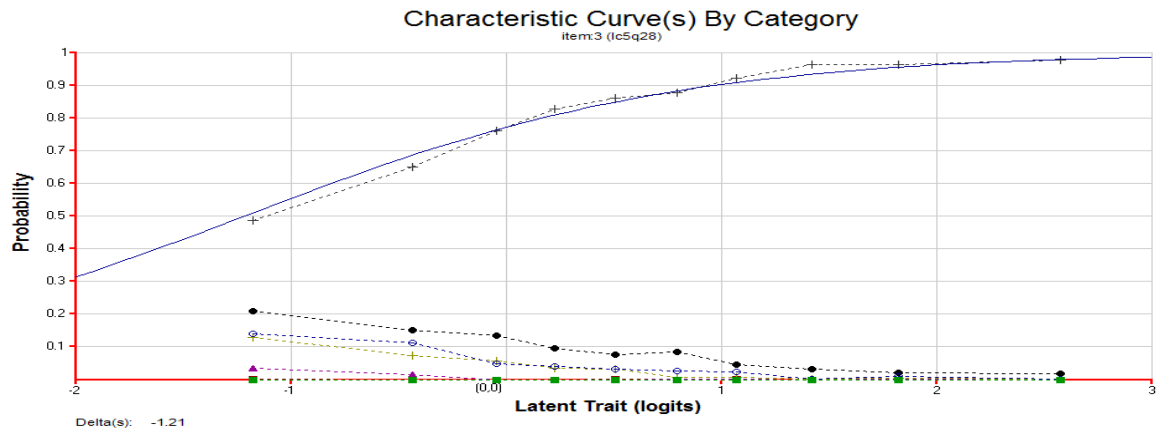
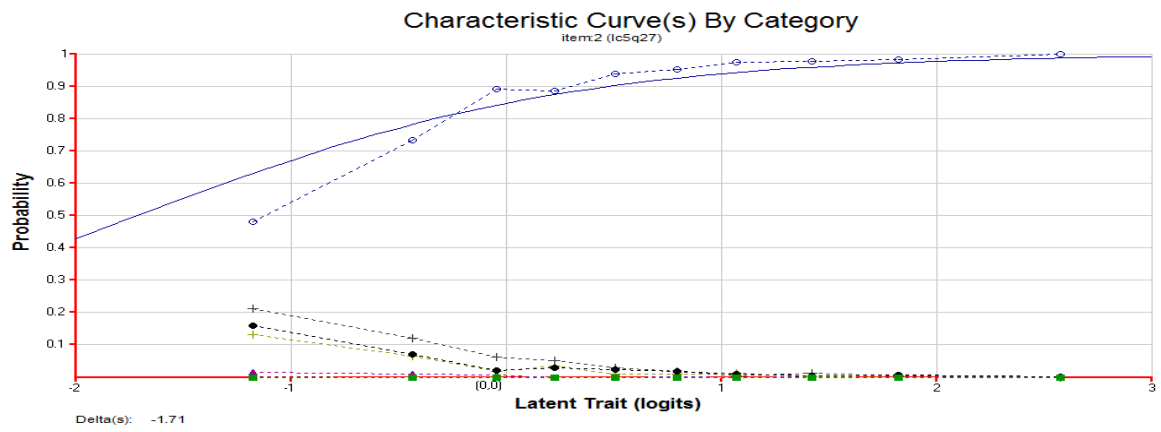
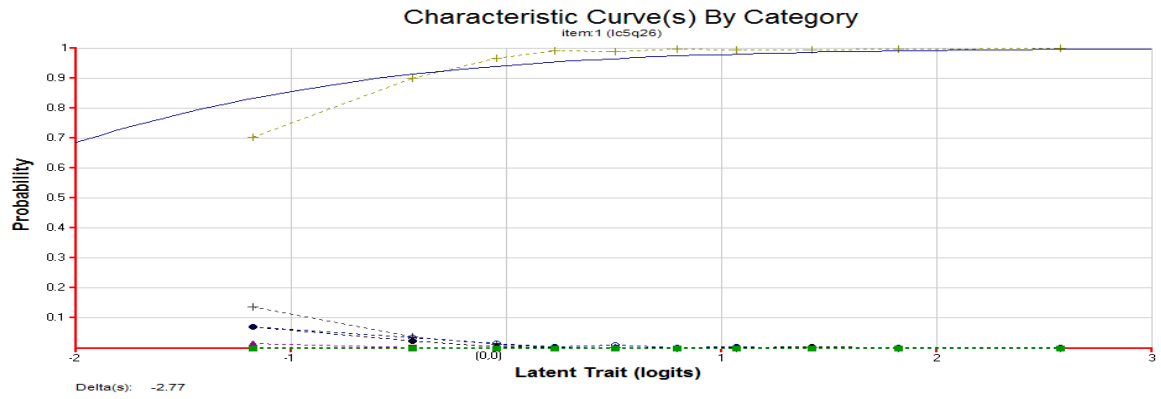


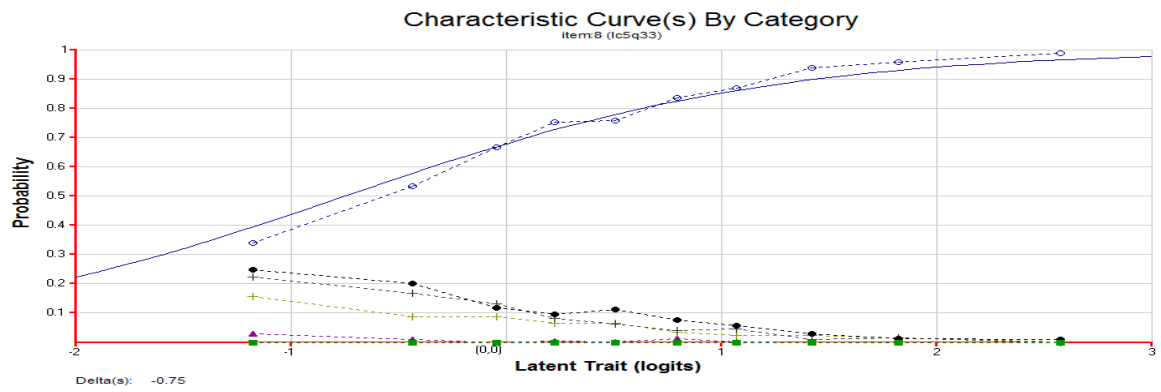
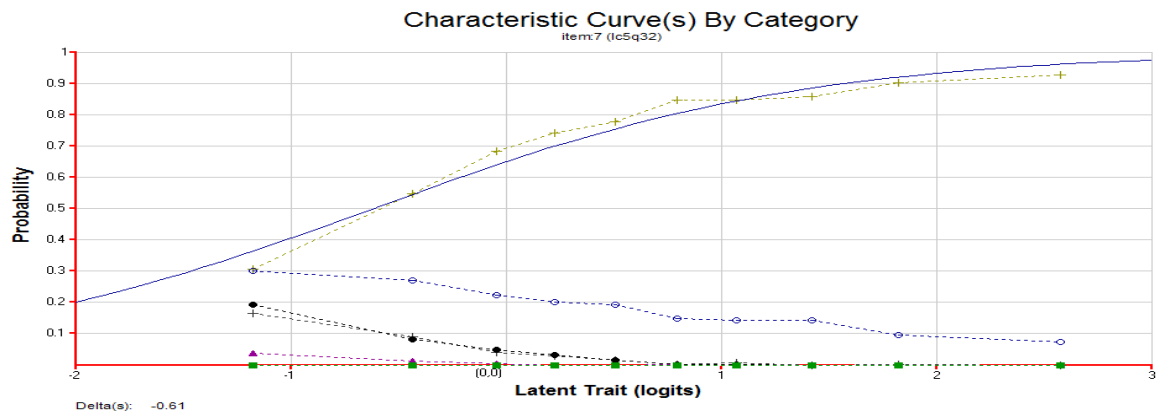
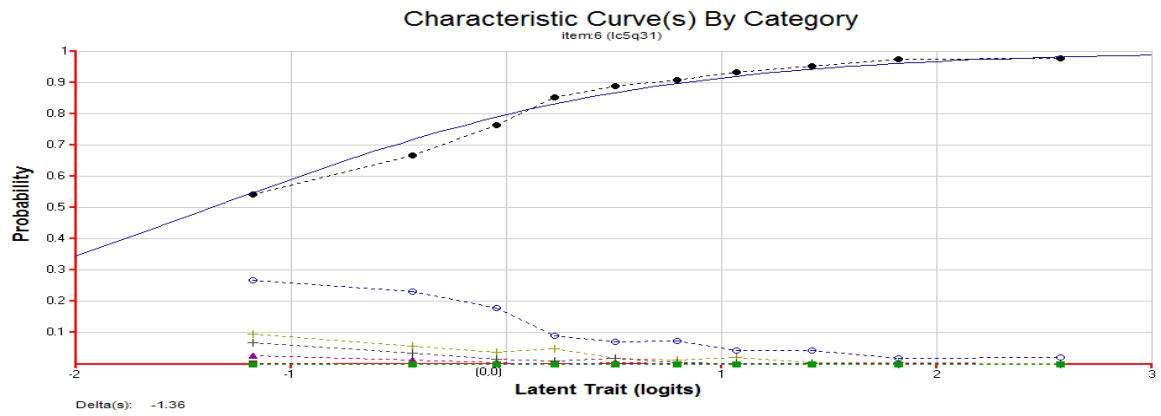
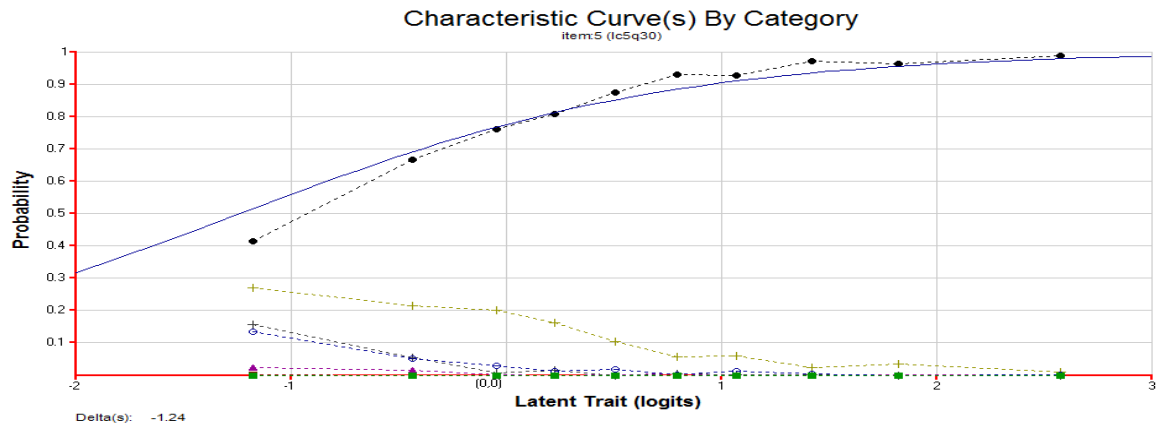


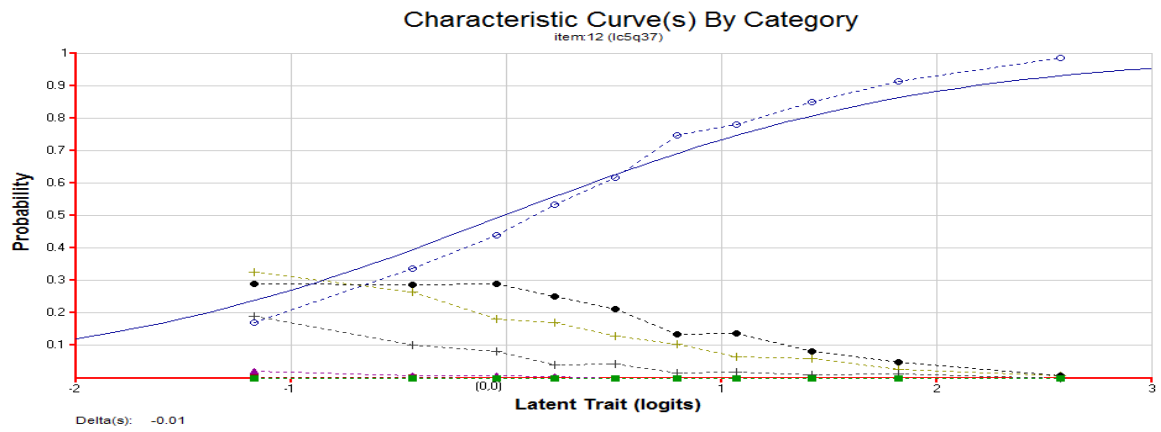
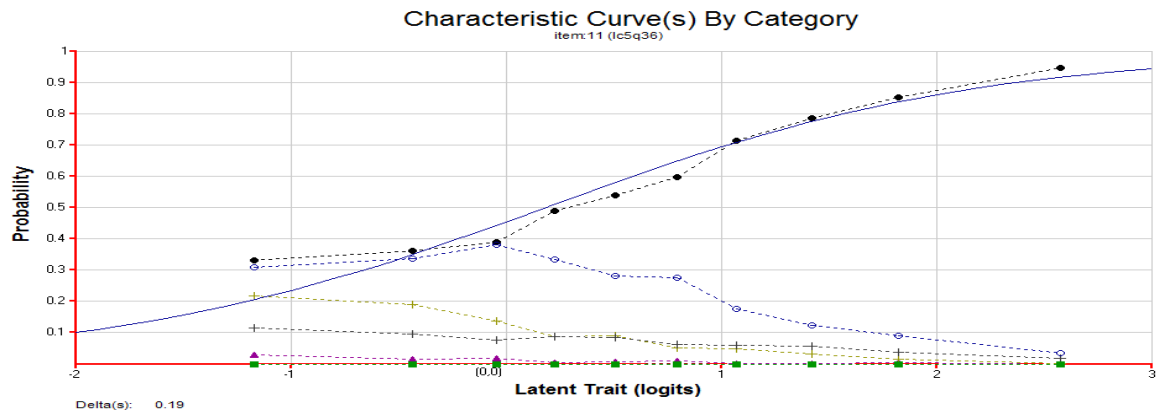
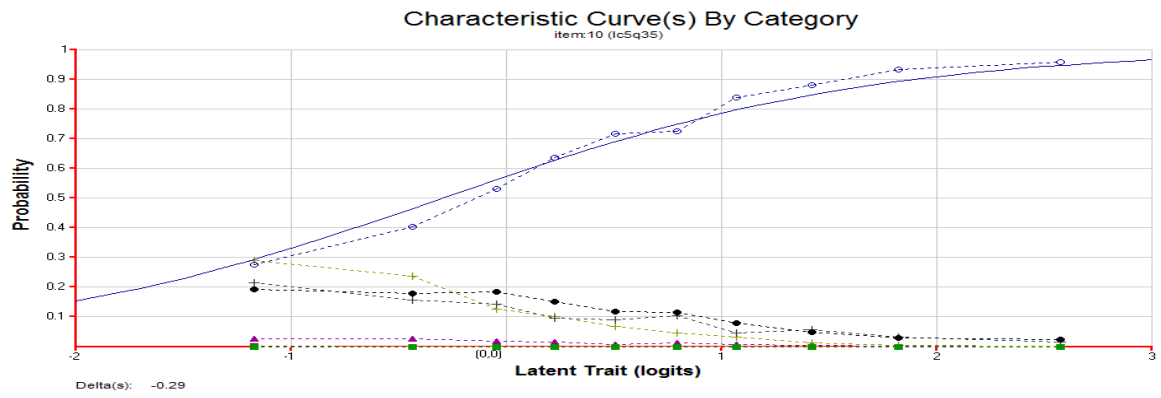
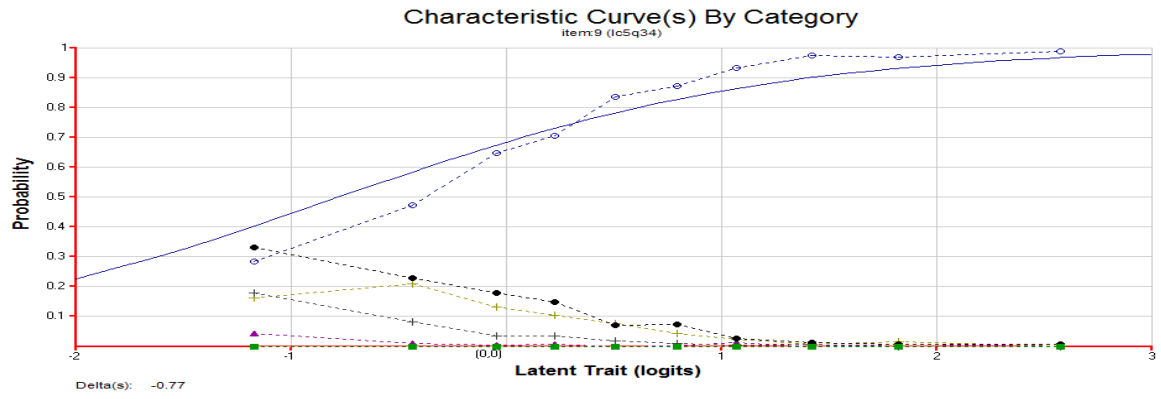


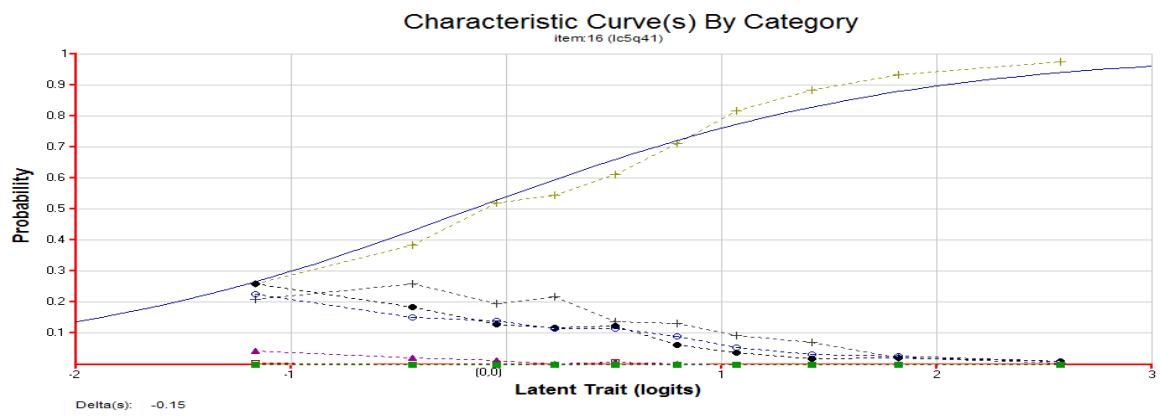
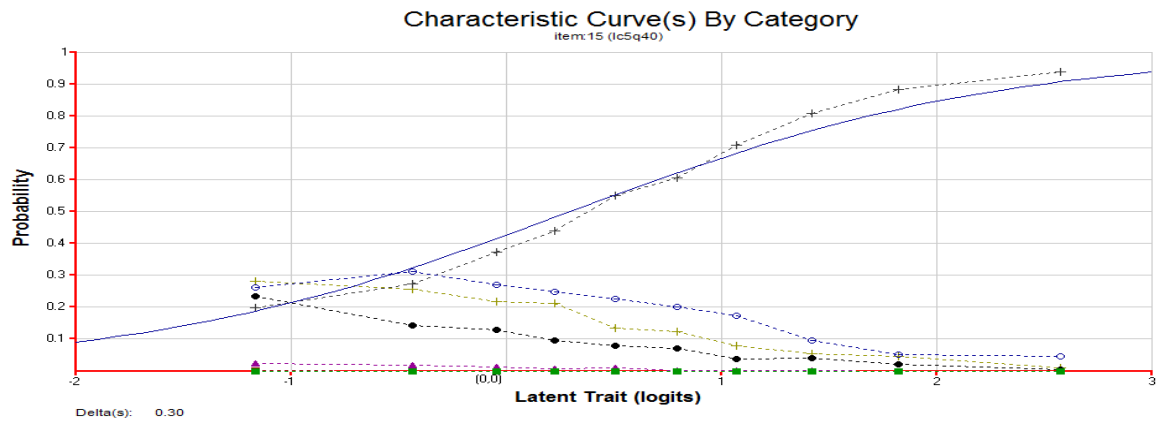
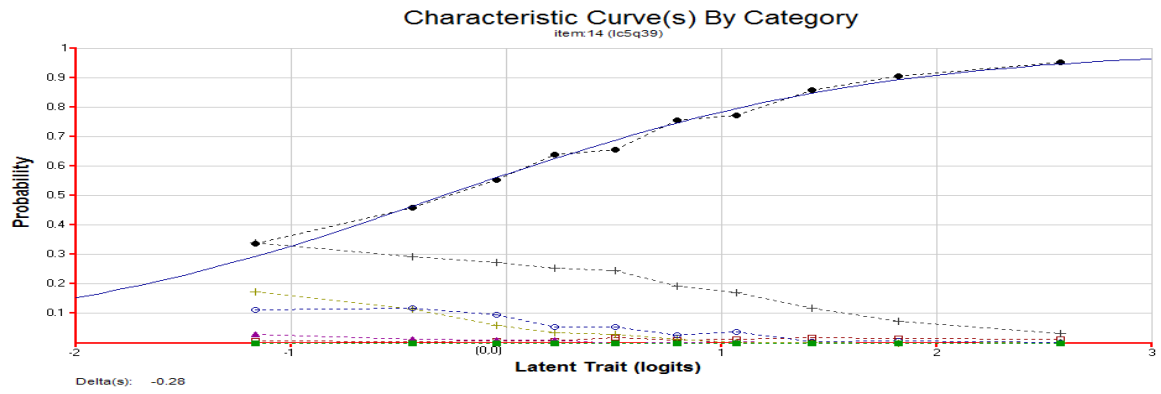
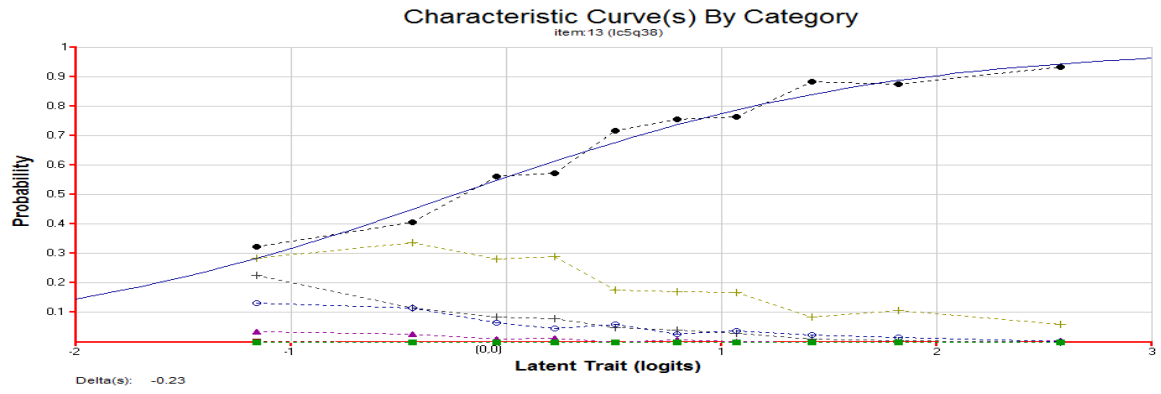


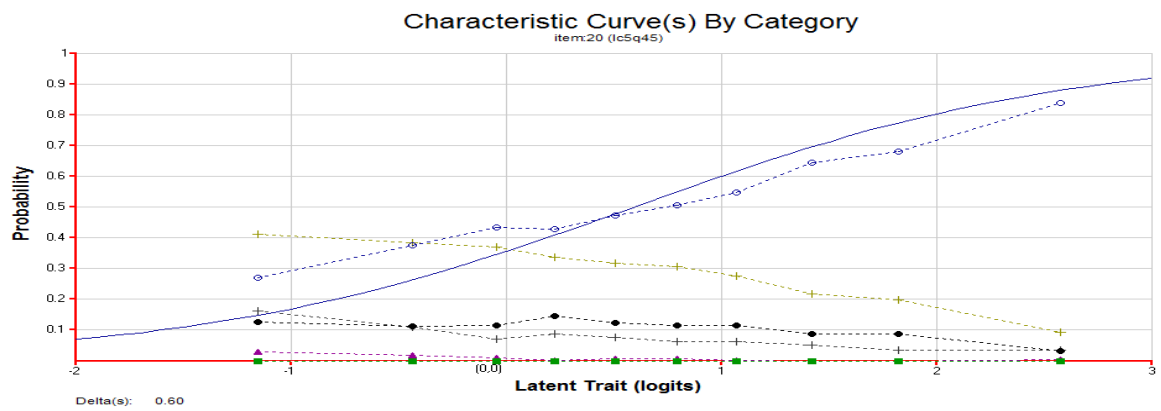
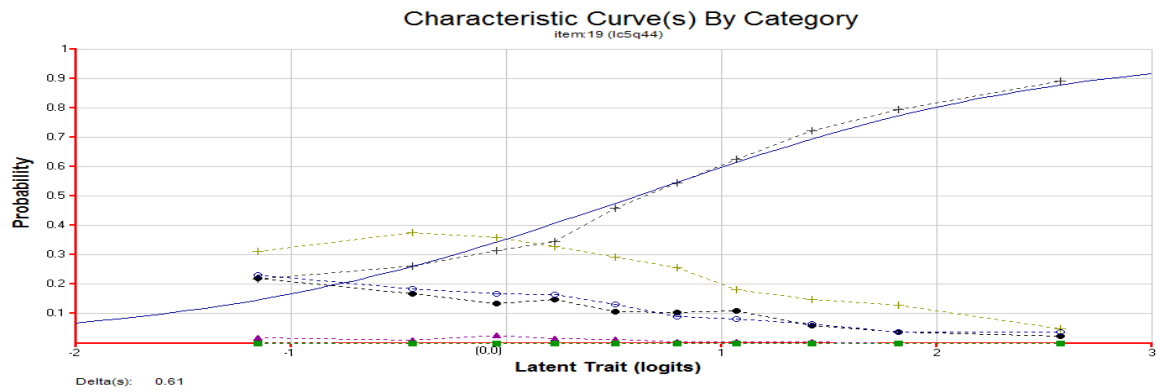
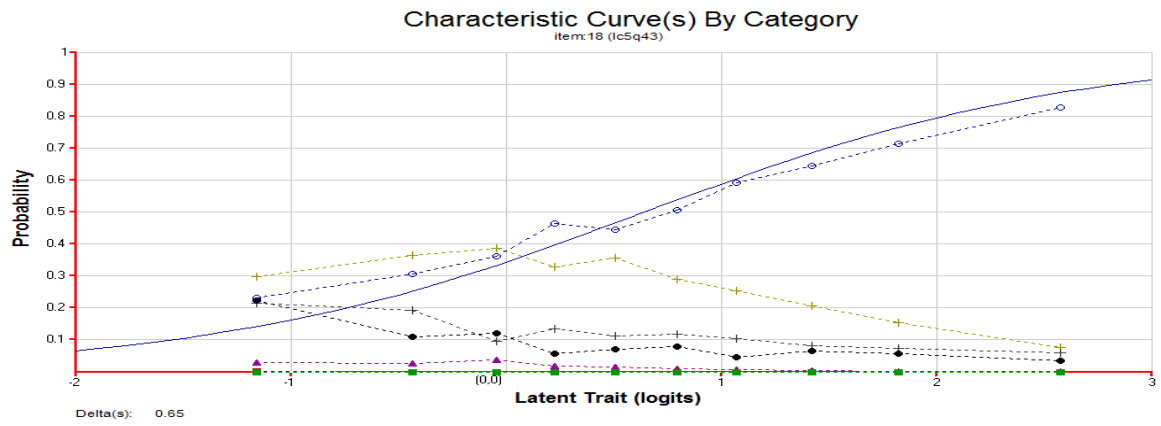
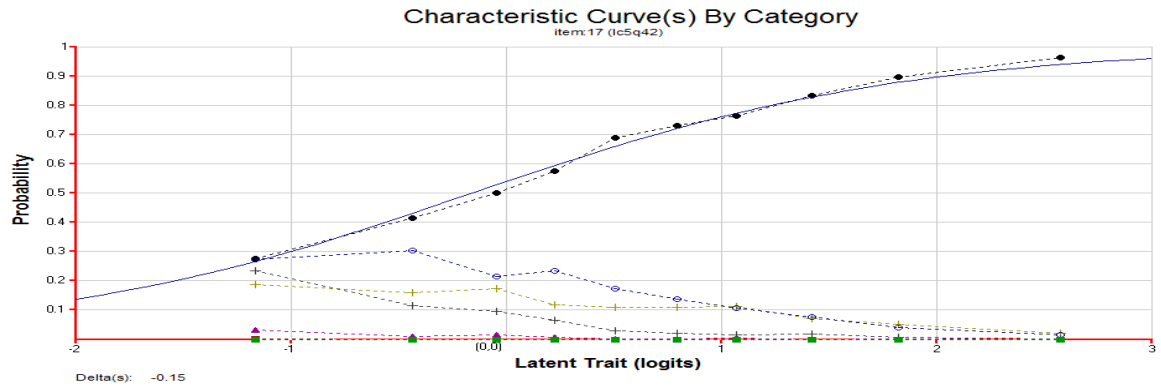
Year 5 Grammar and Punctuation

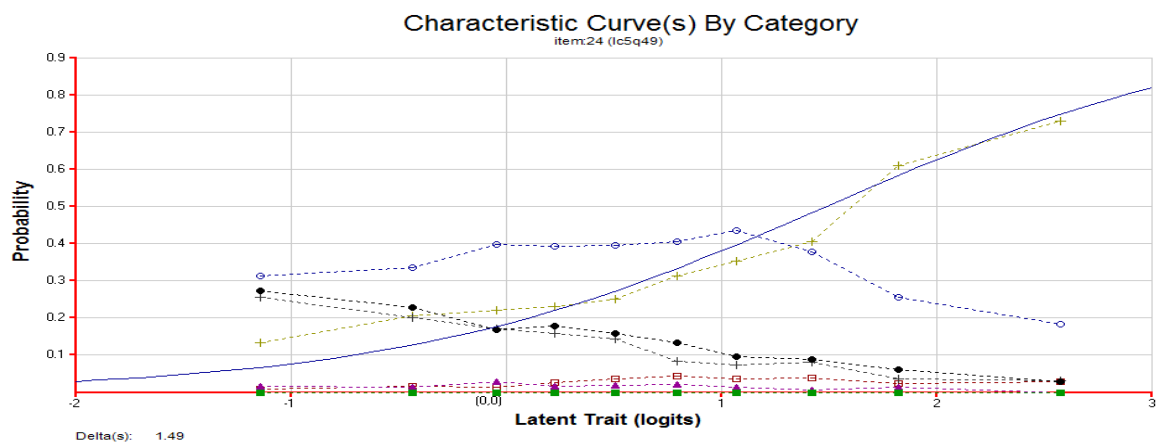
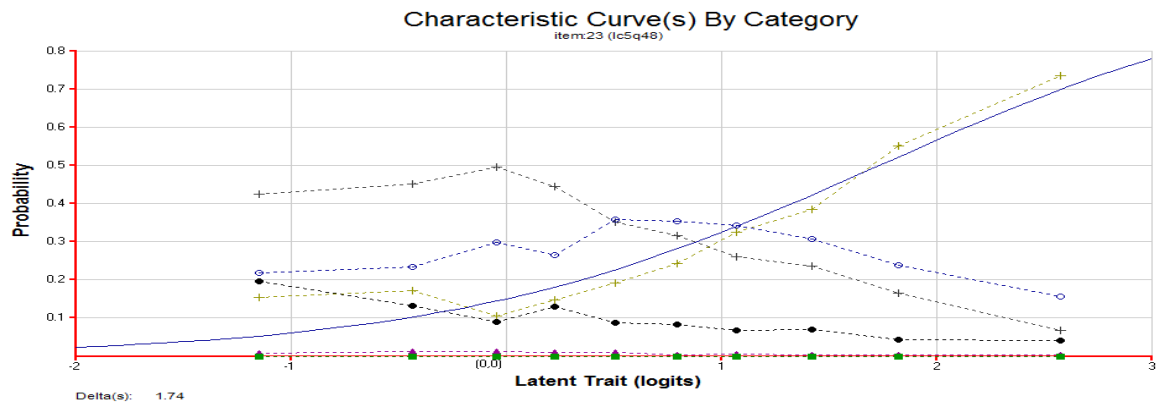
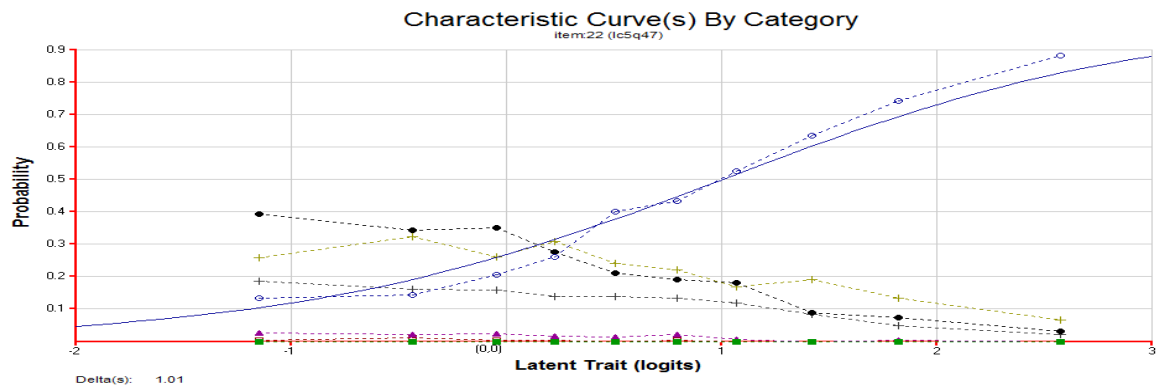
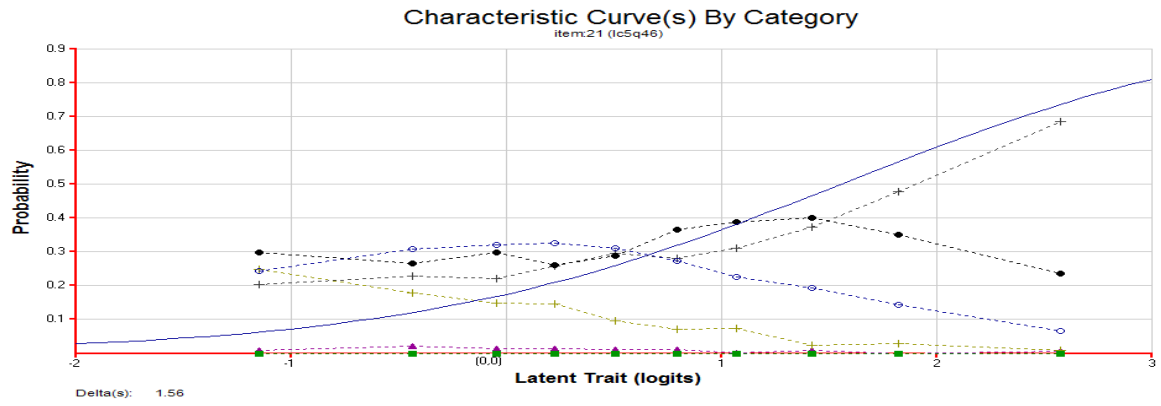


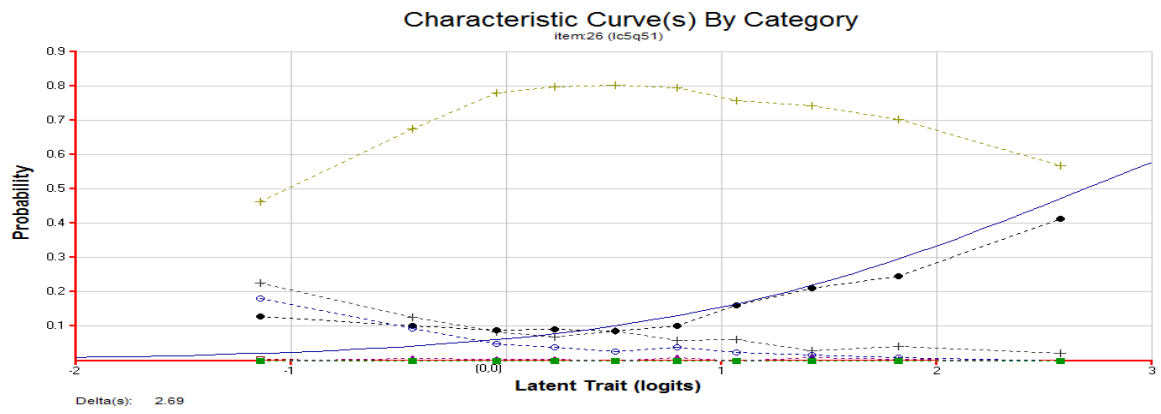
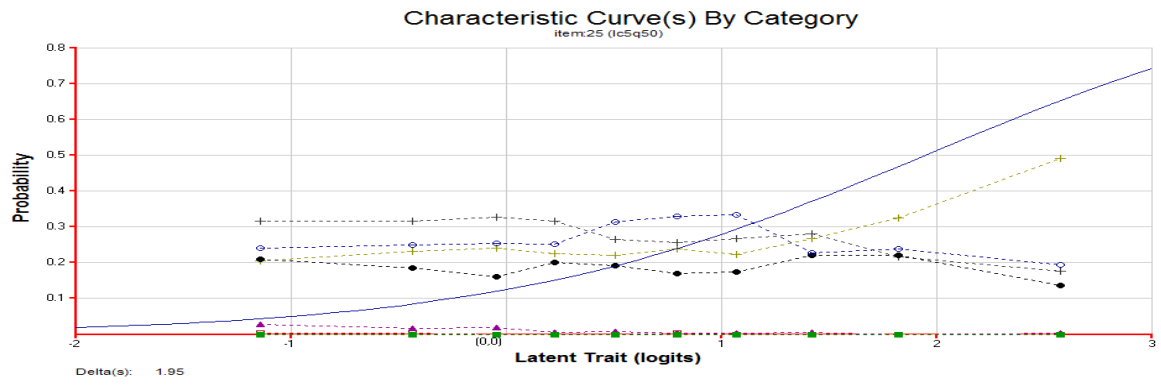




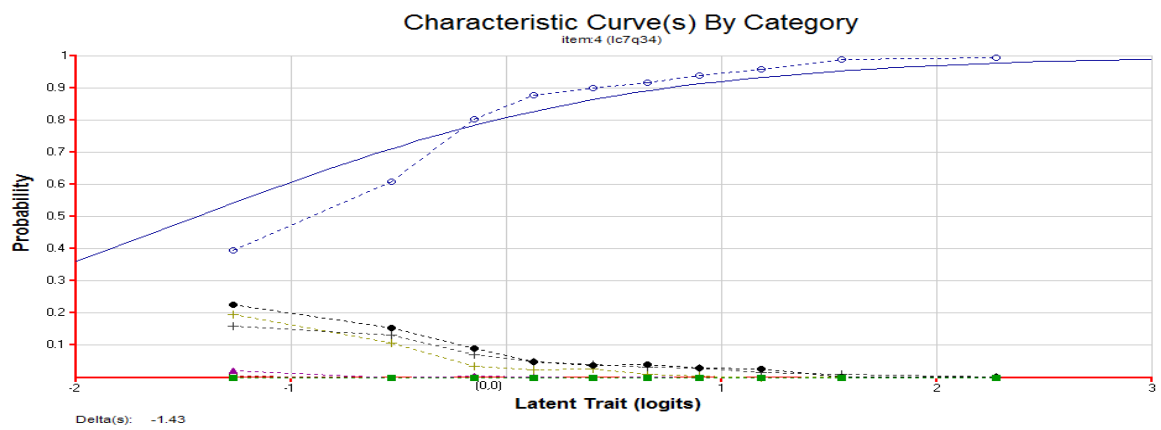
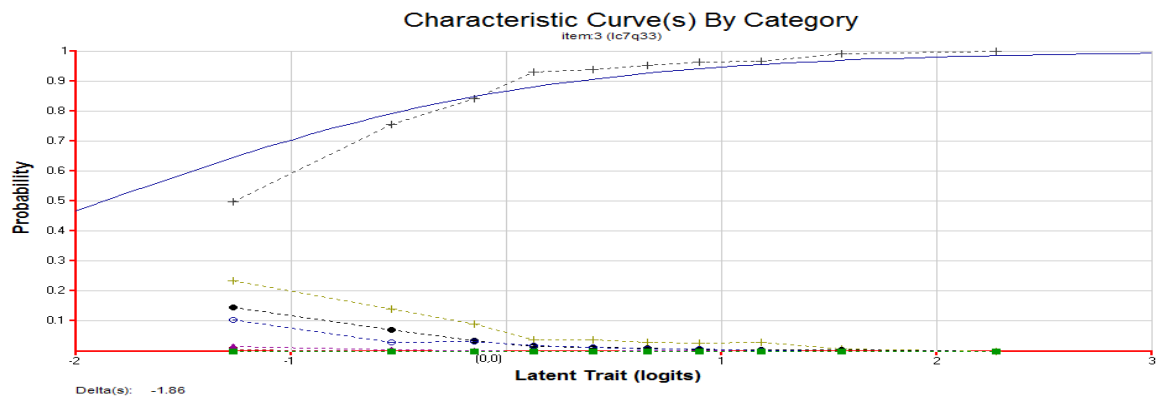
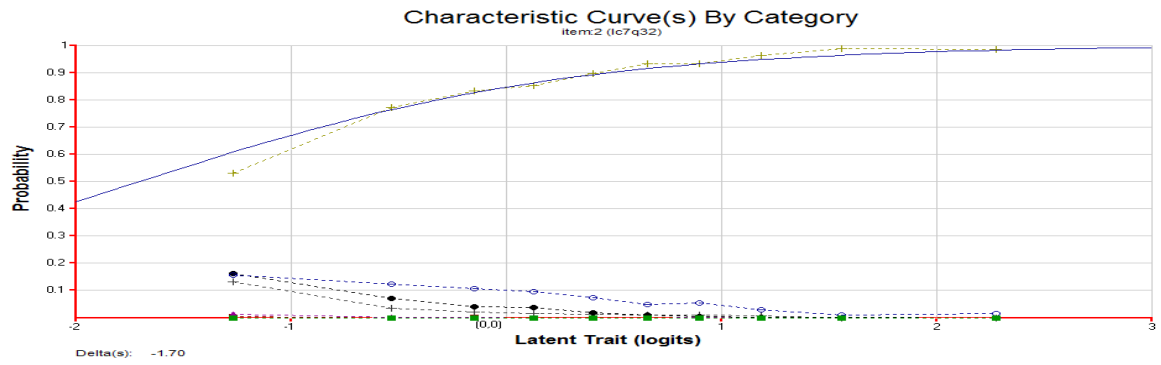
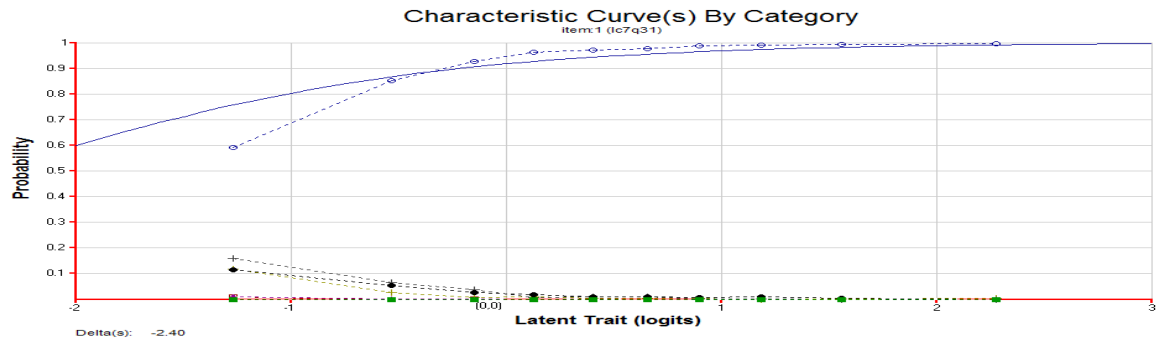


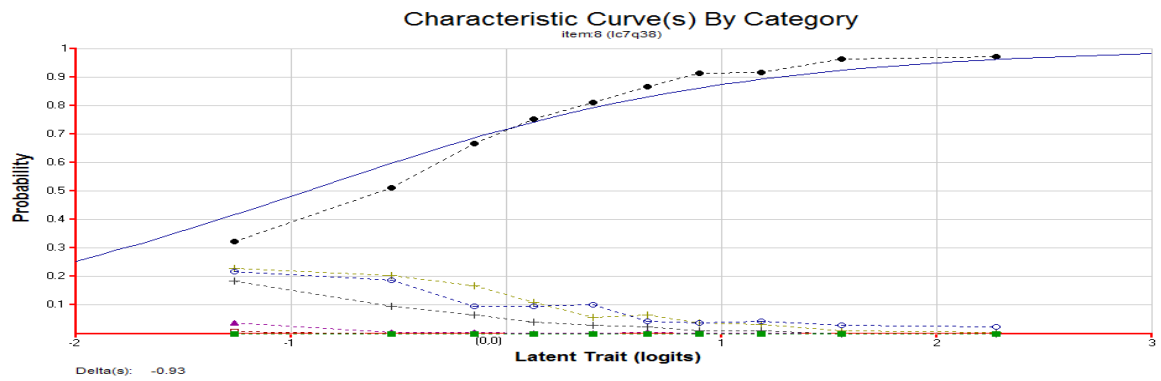
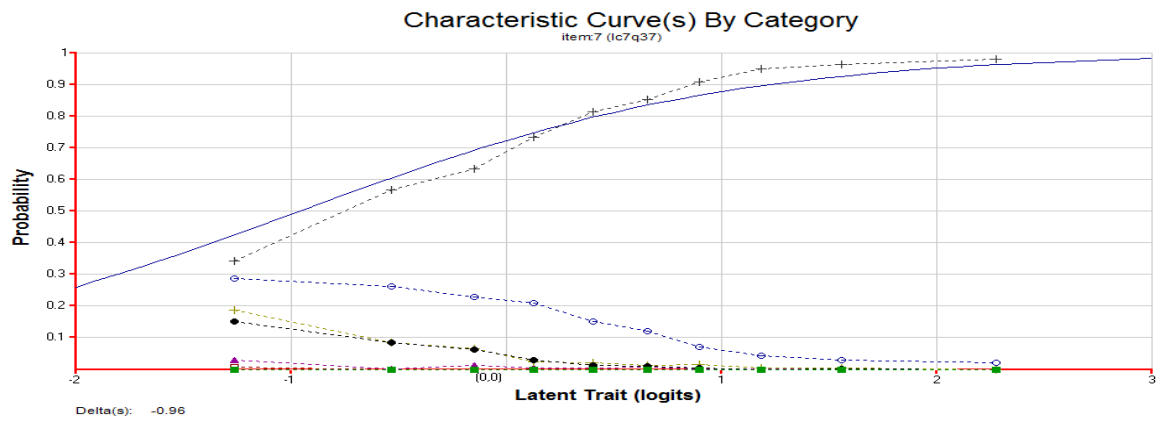
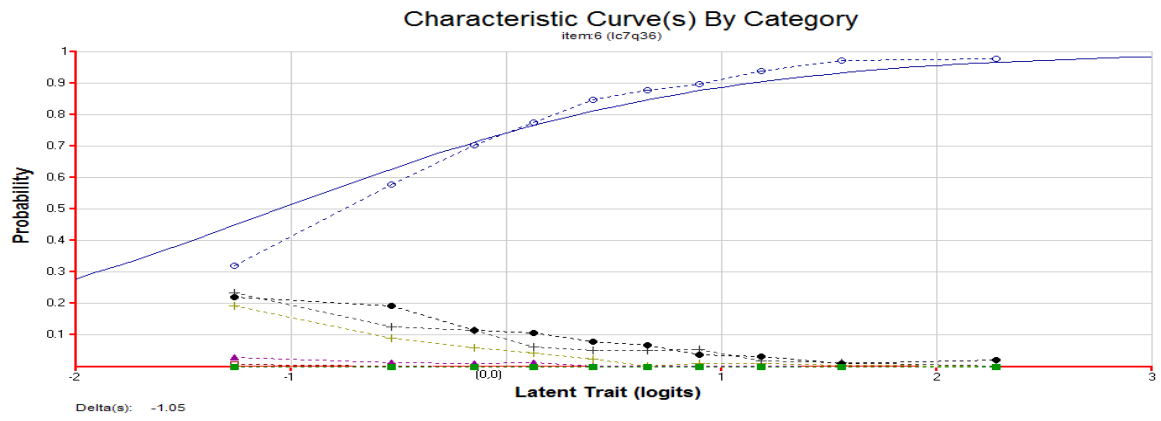
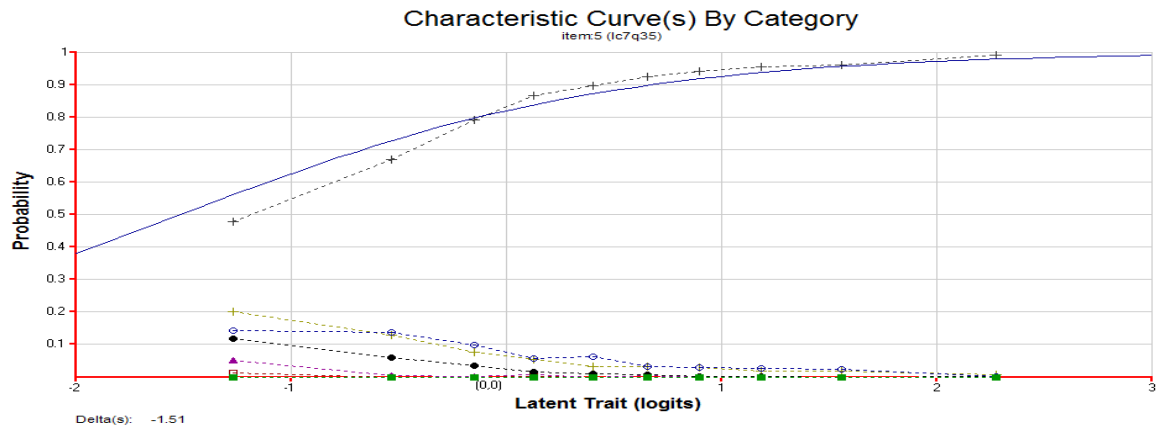


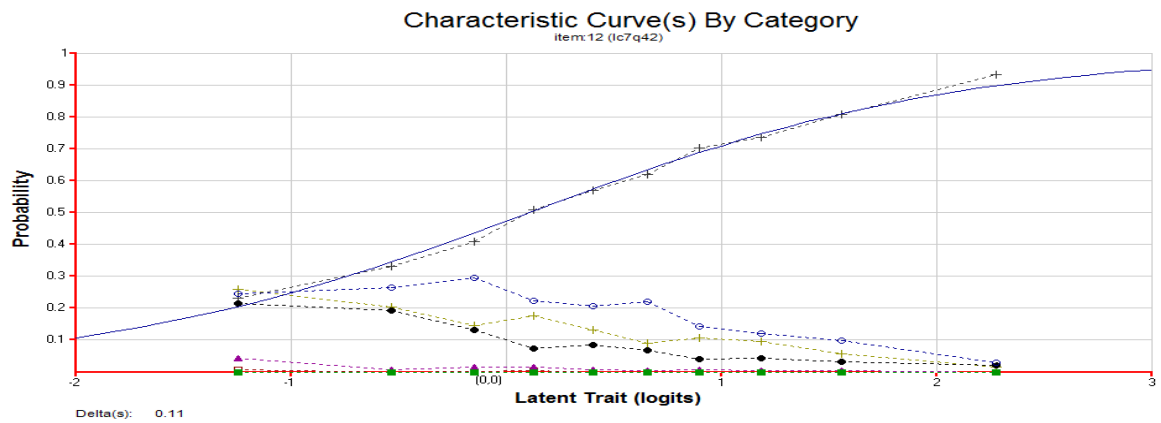
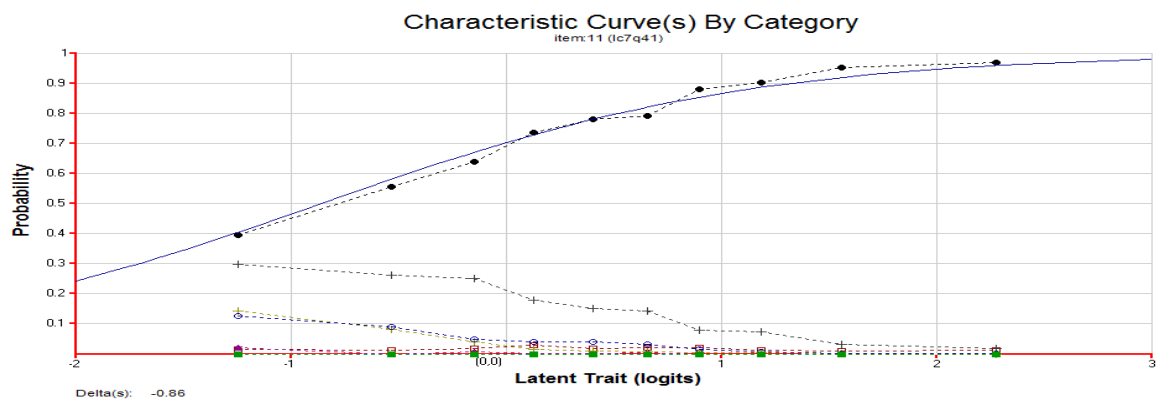
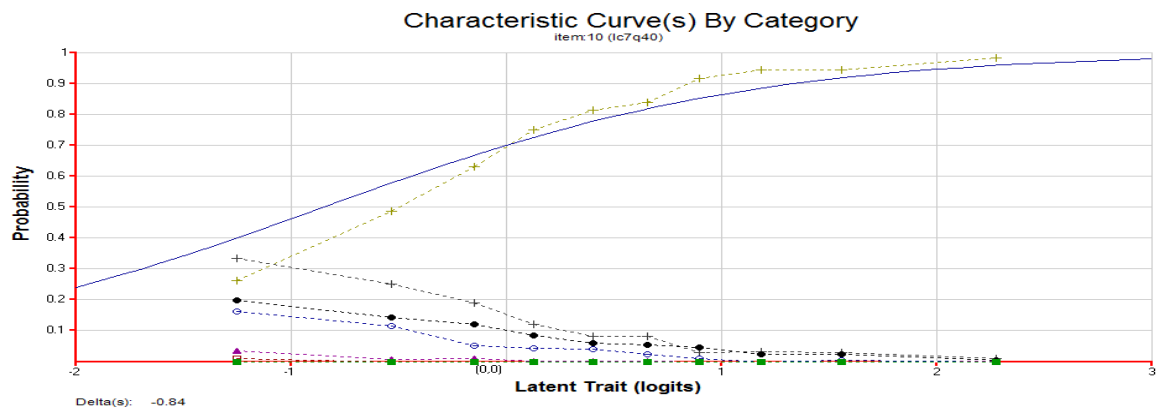
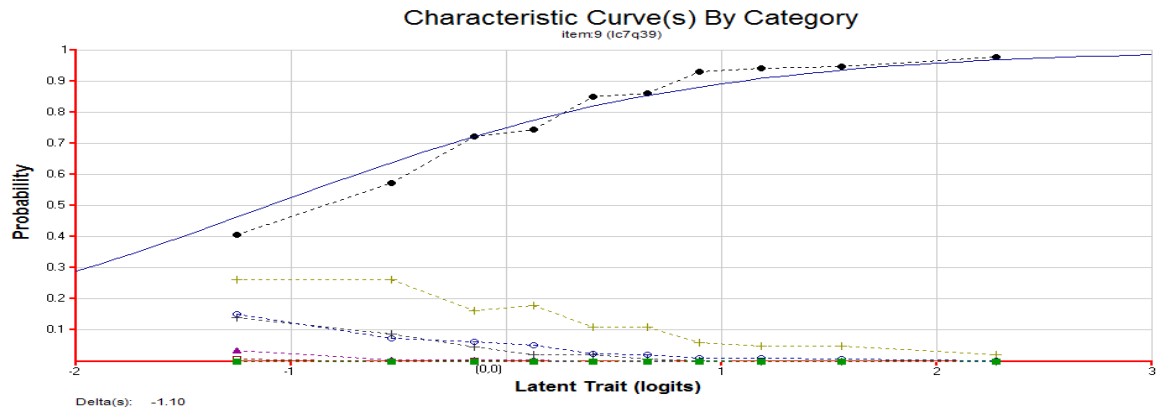


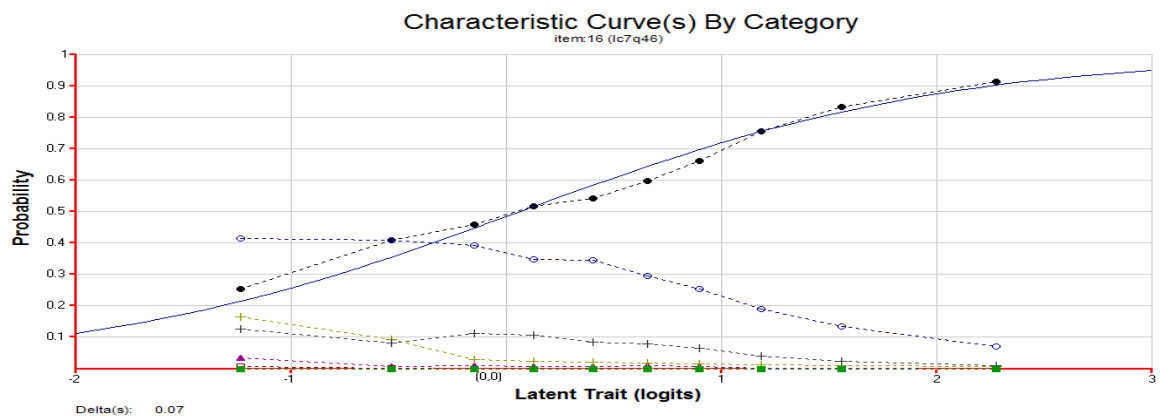
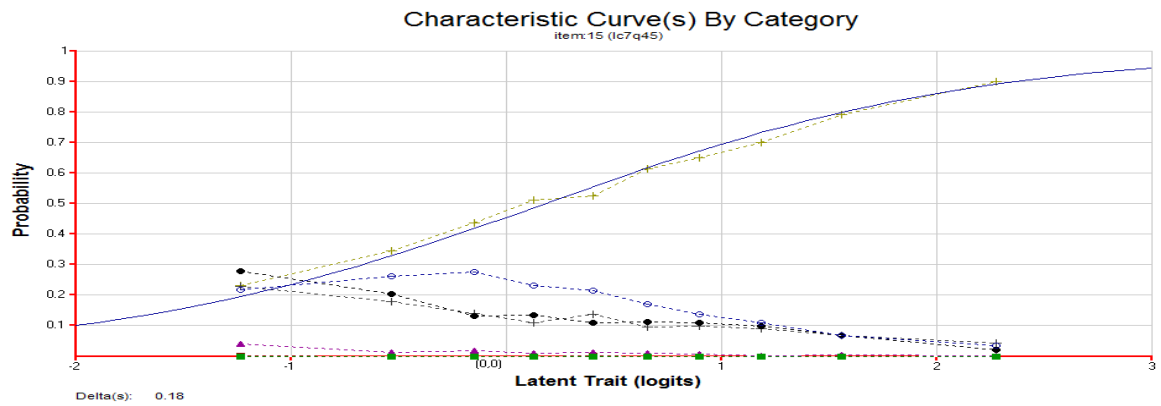
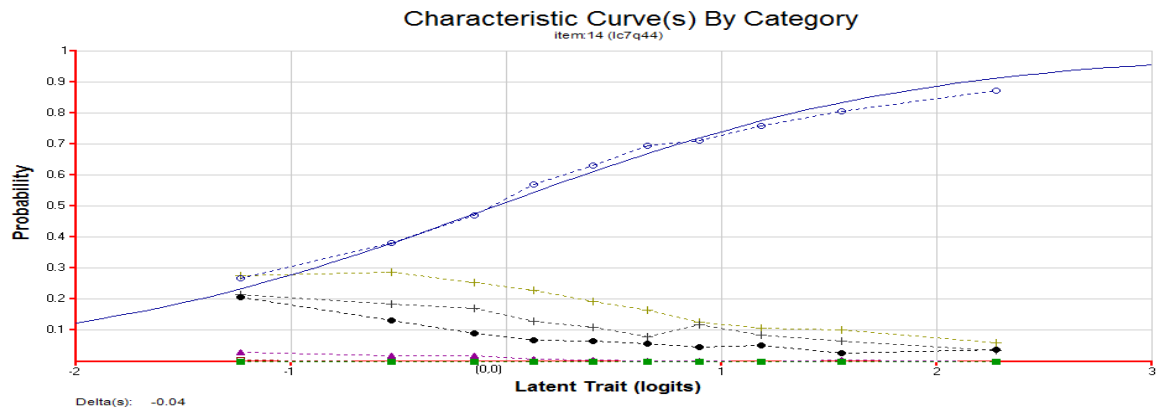
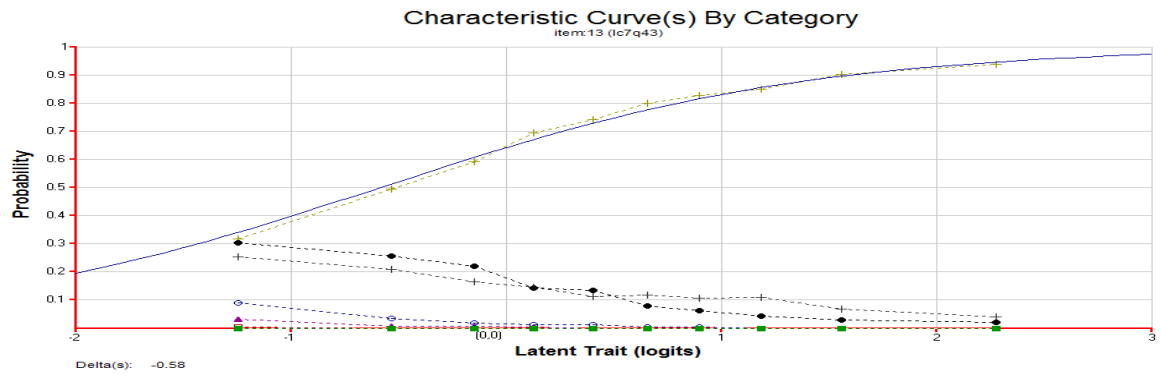


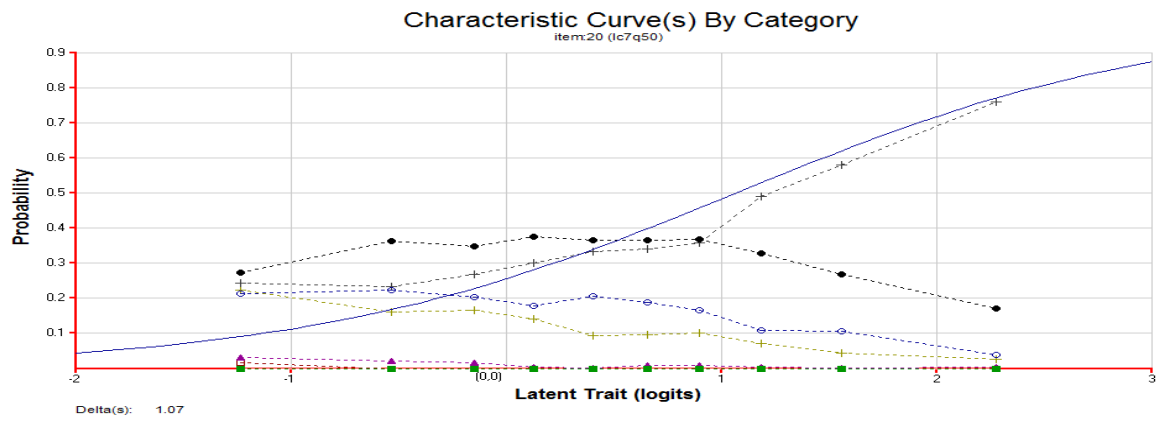
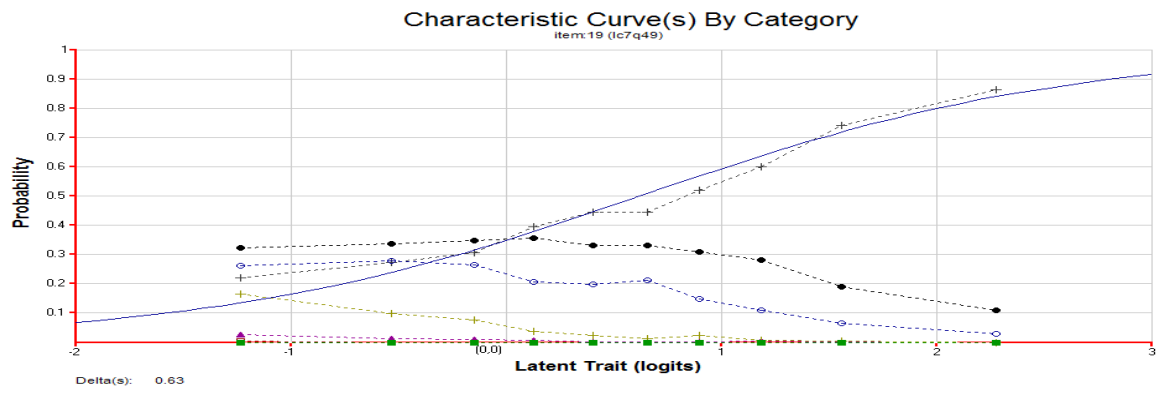
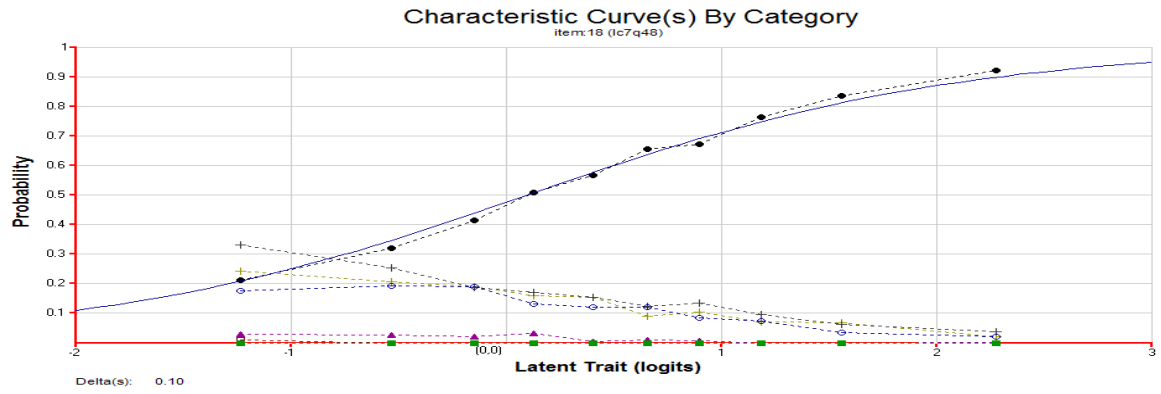
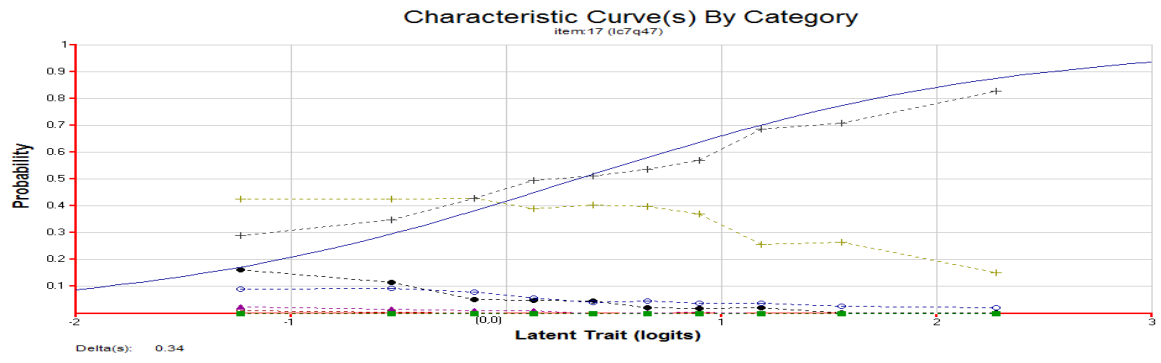
Year 7 Grammar and Punctuation

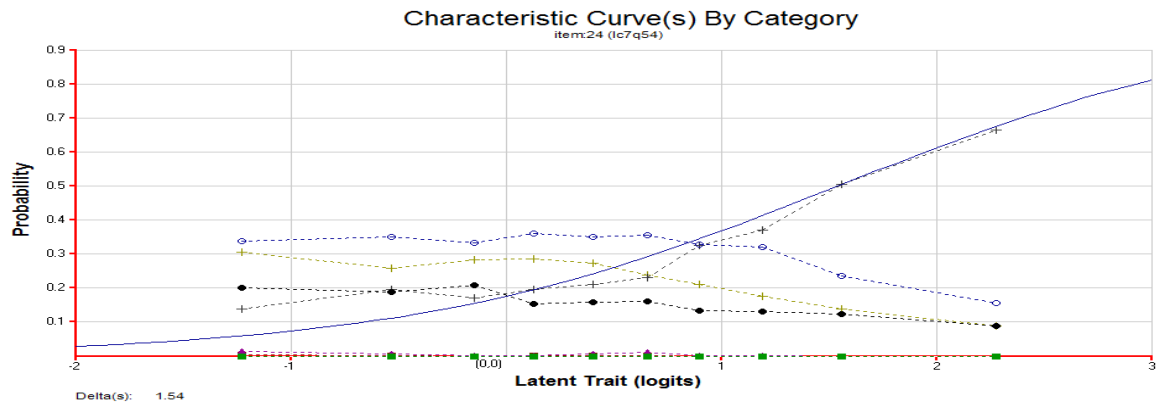
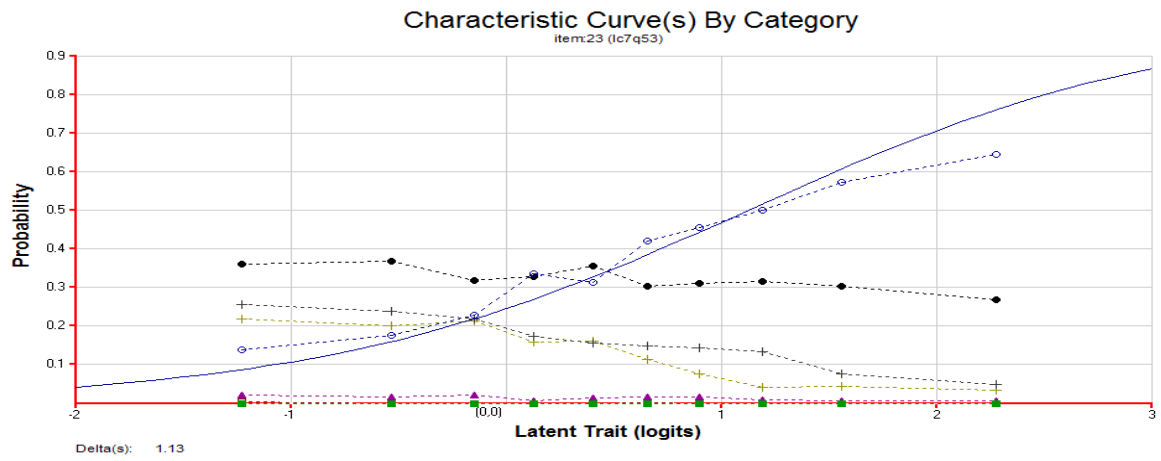
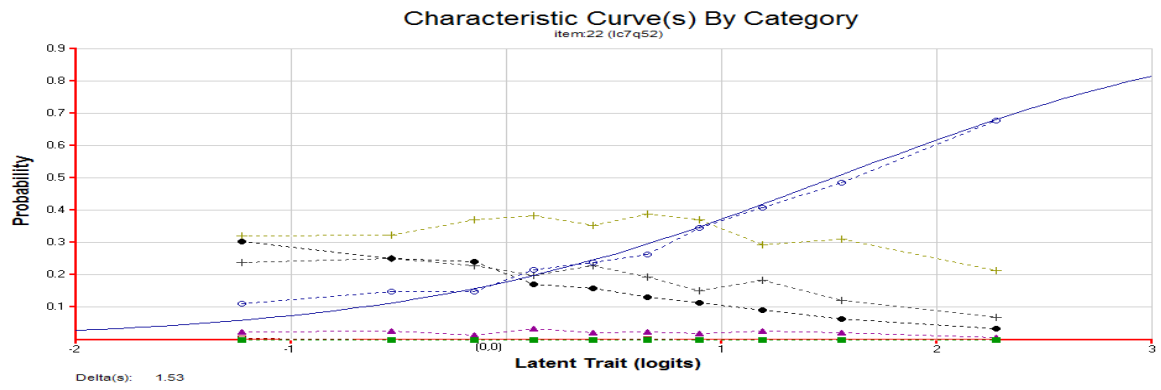
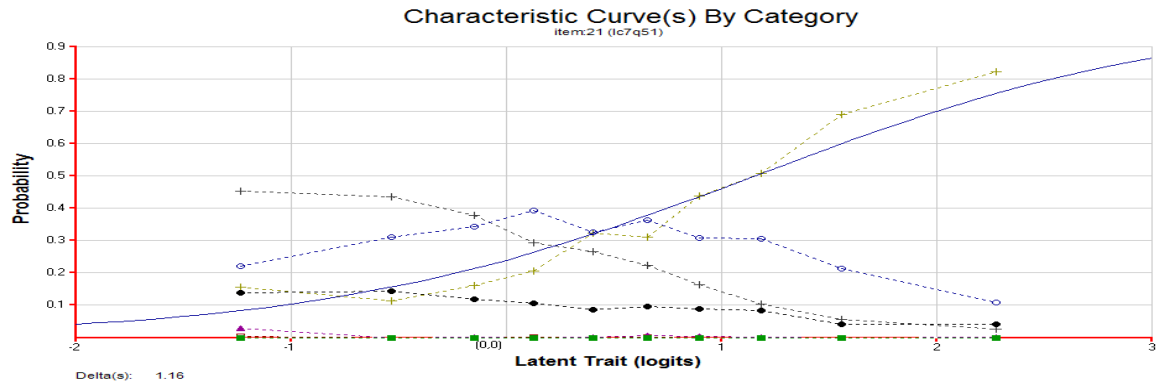


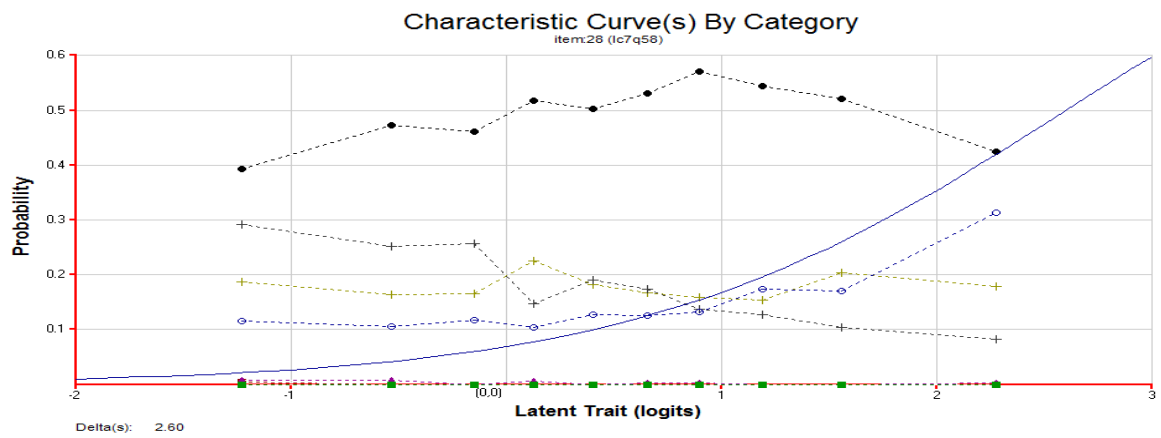
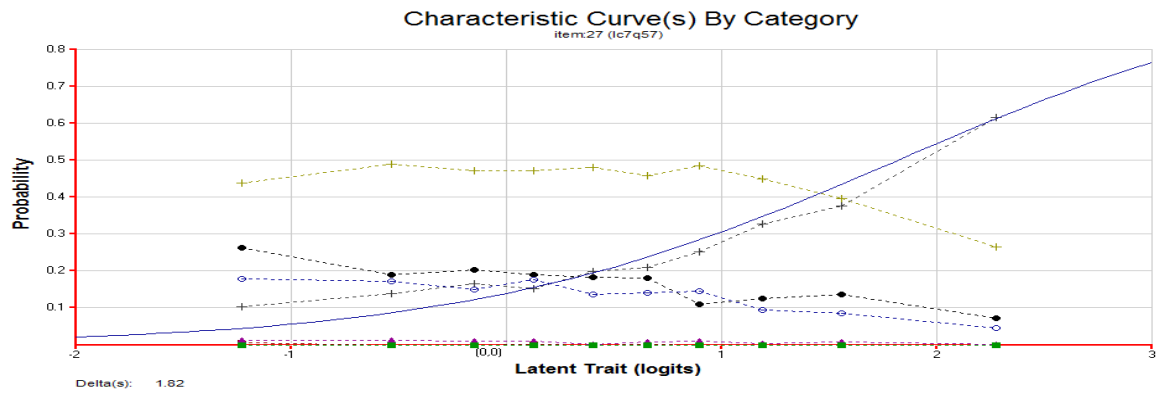
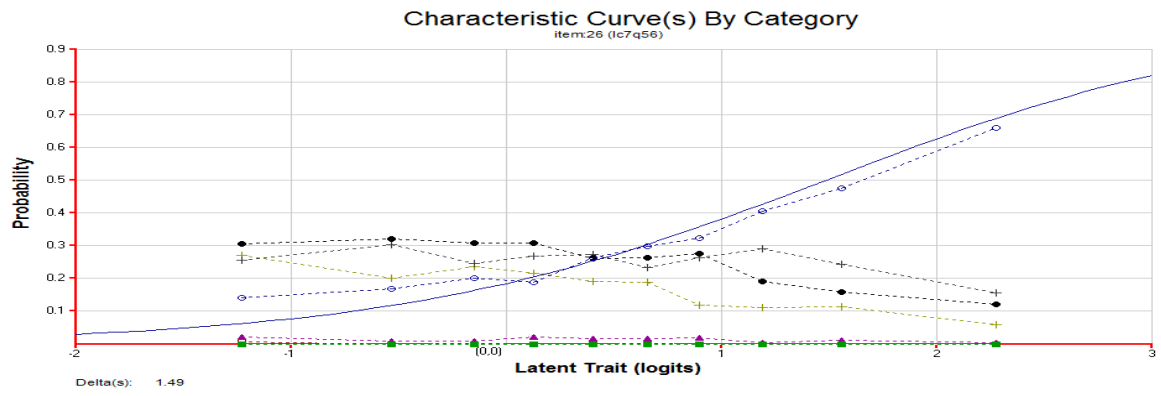
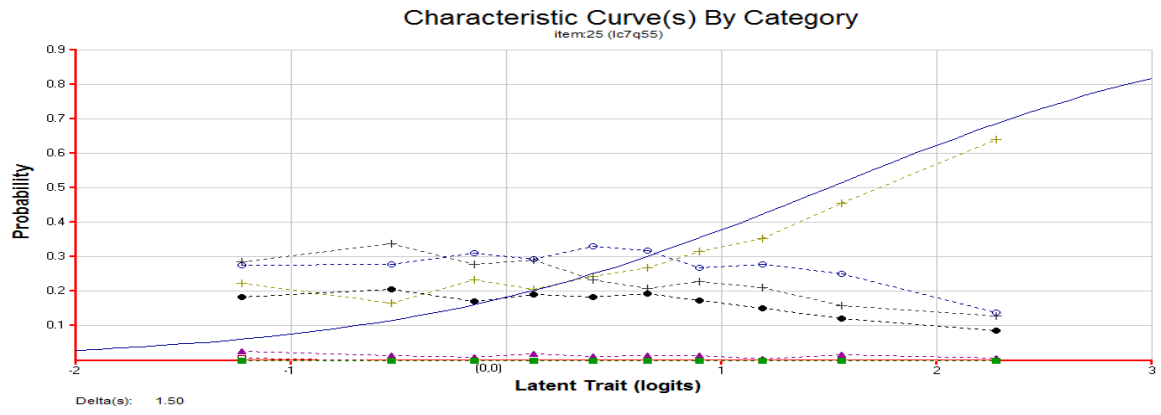




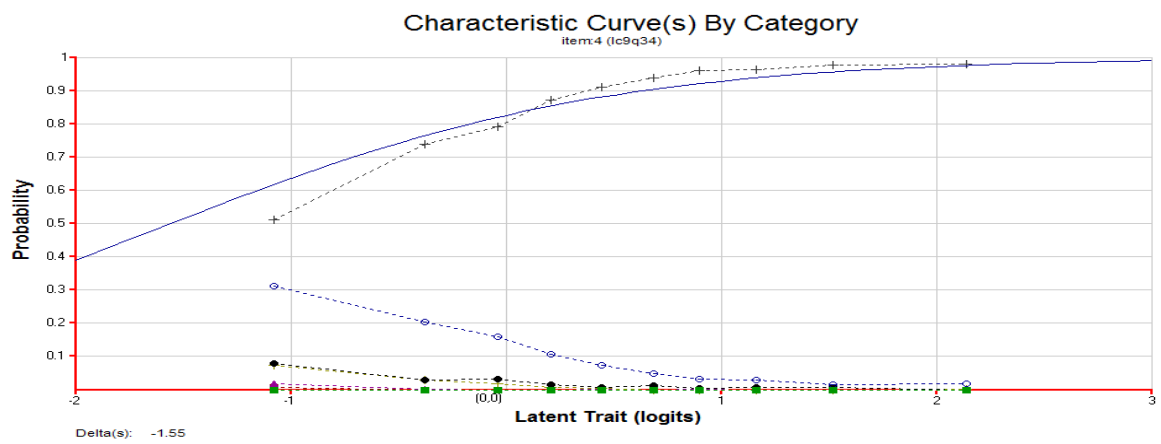
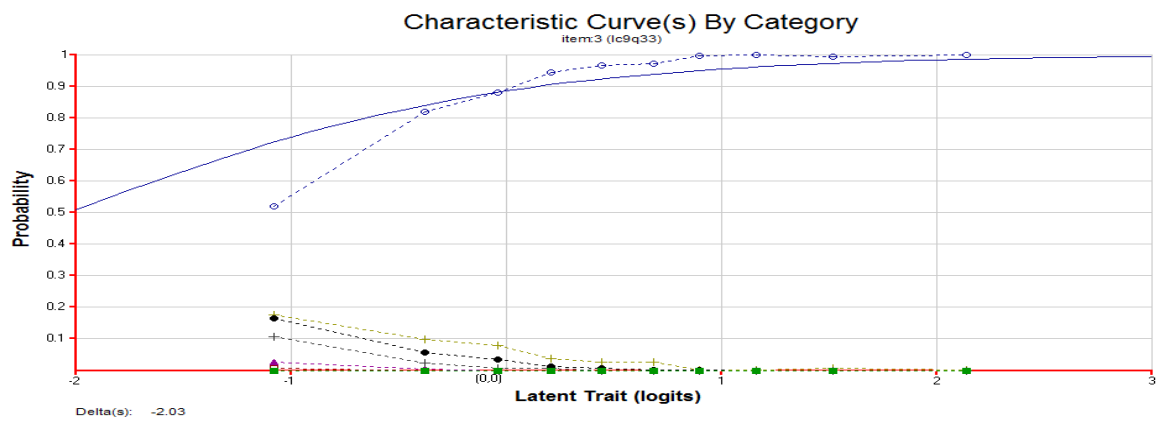
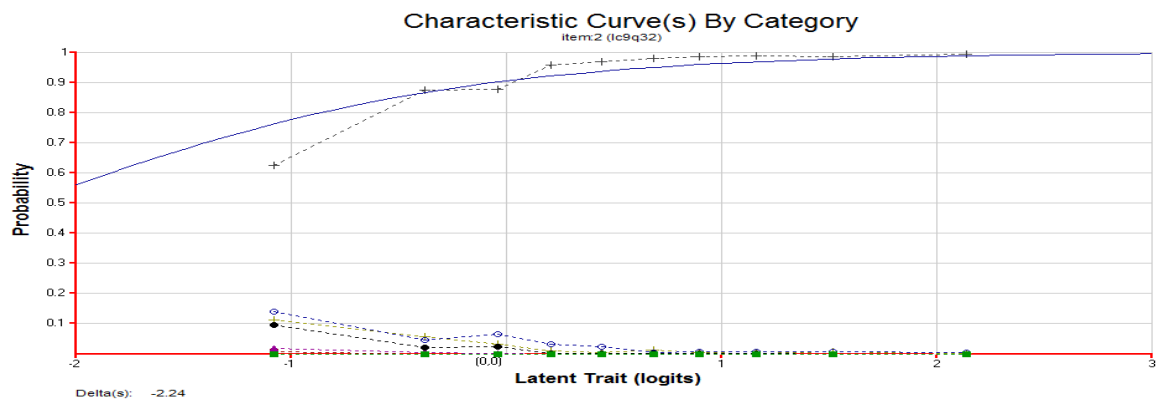
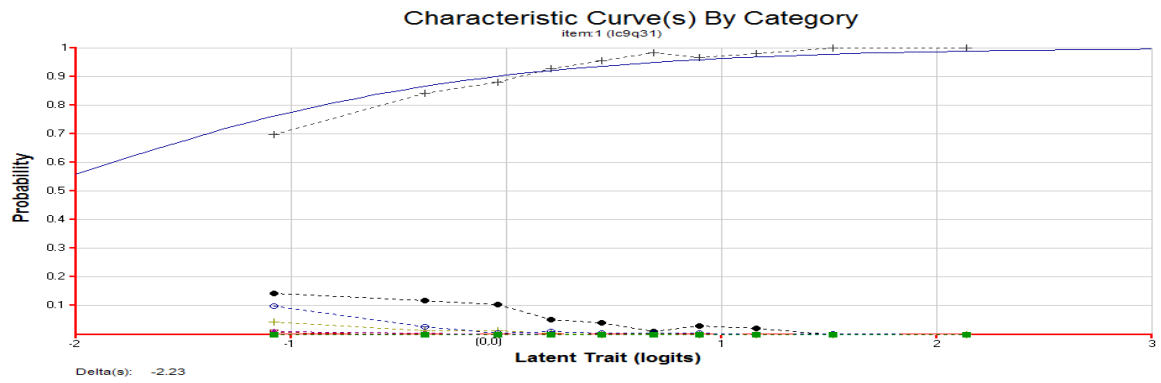


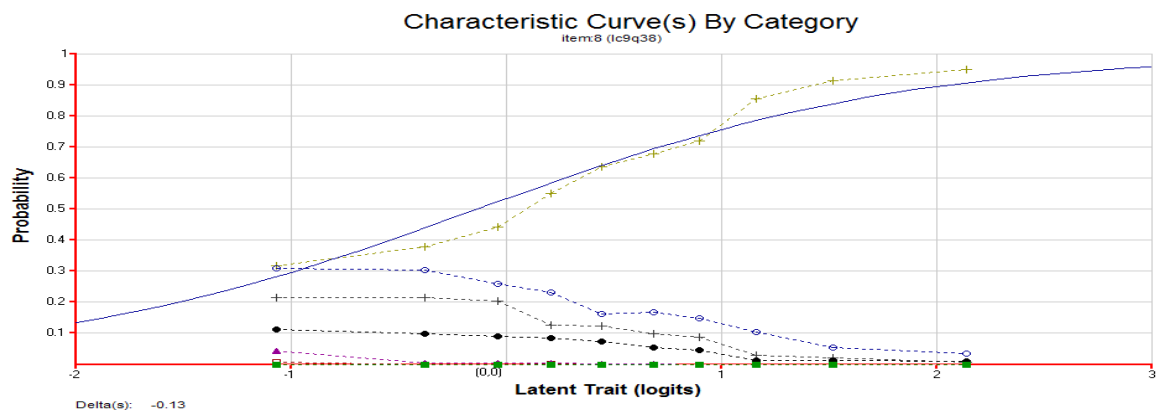
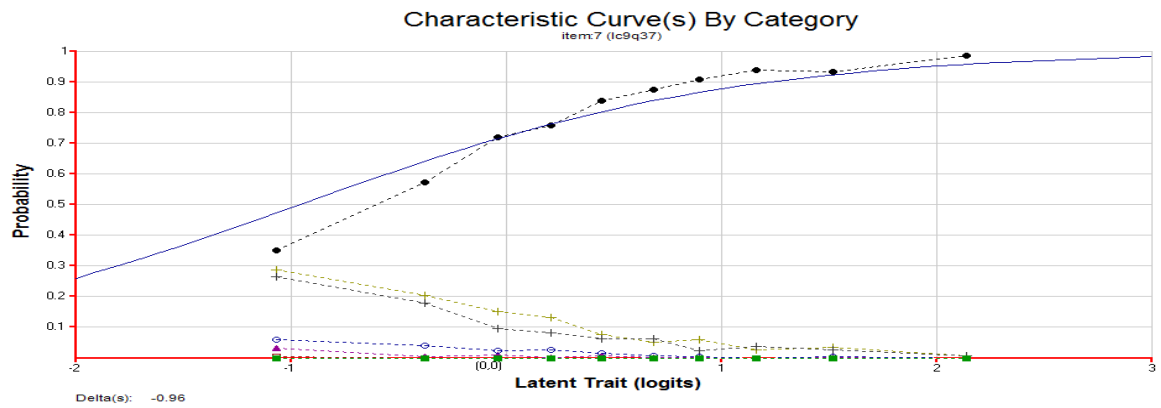
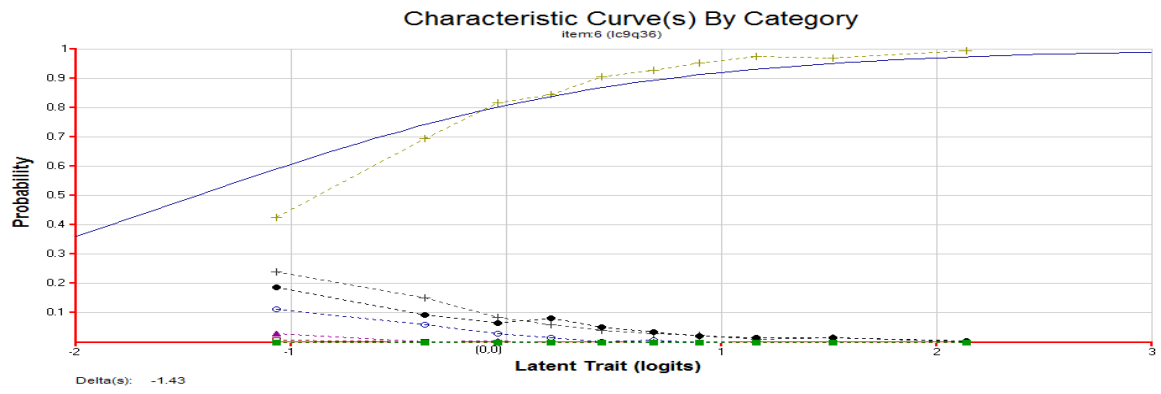
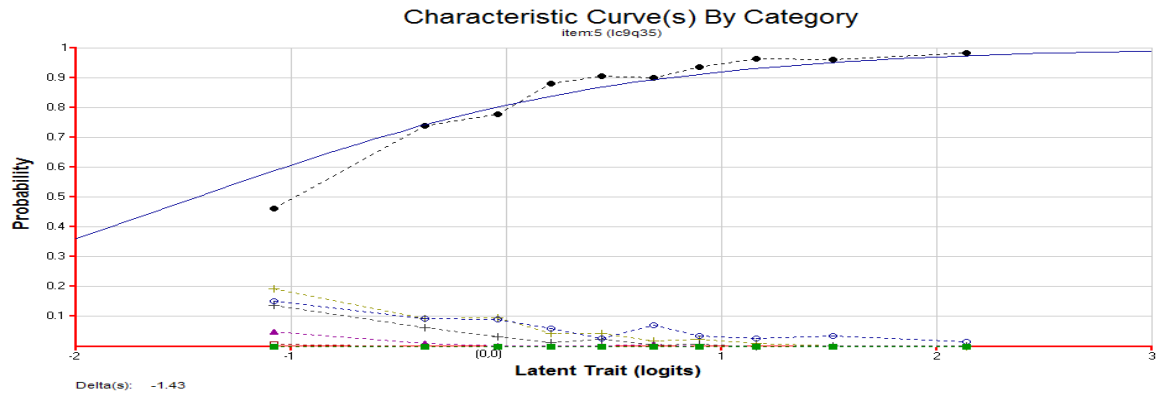


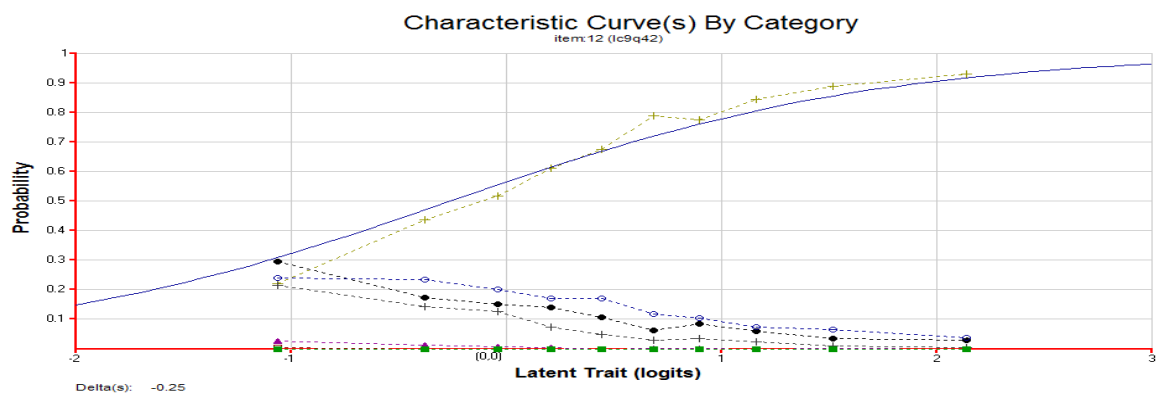
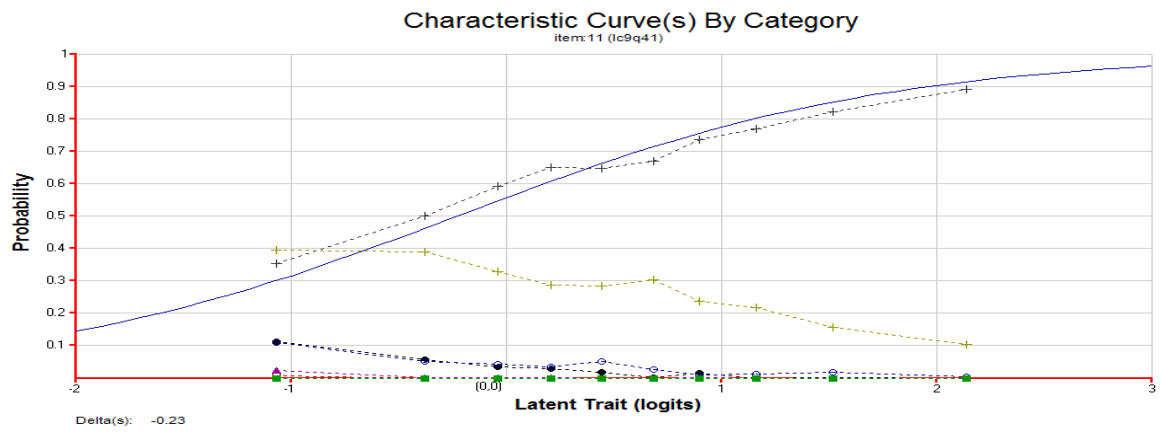
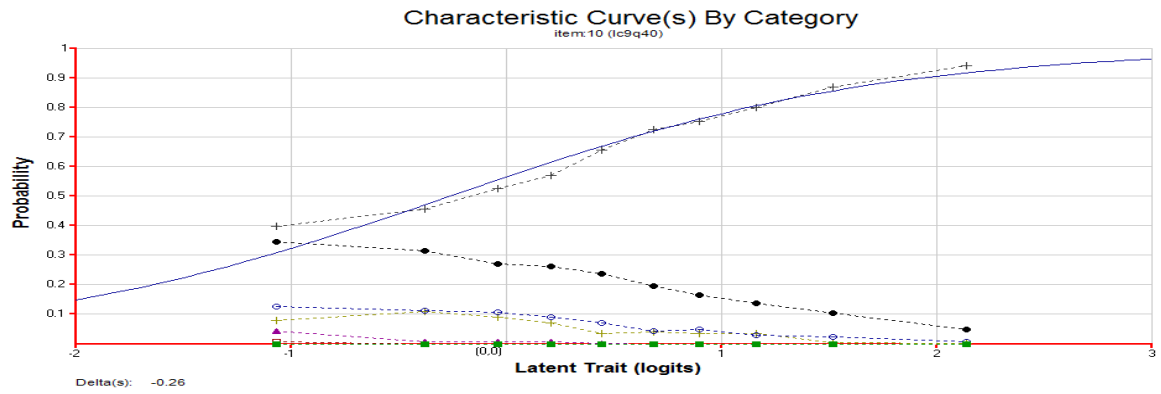
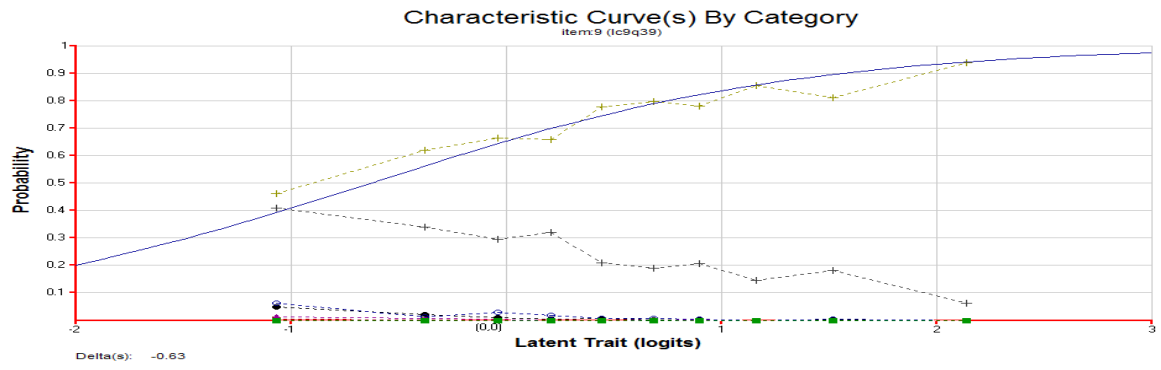


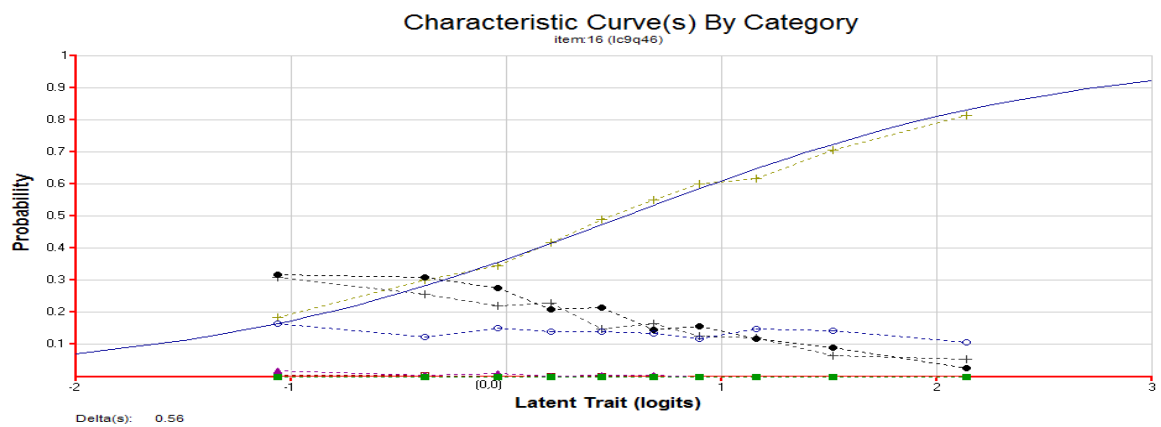
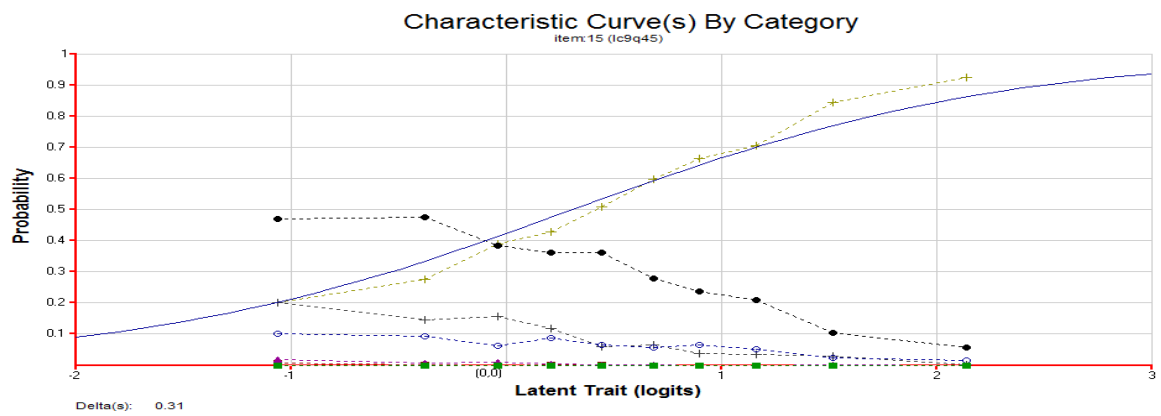
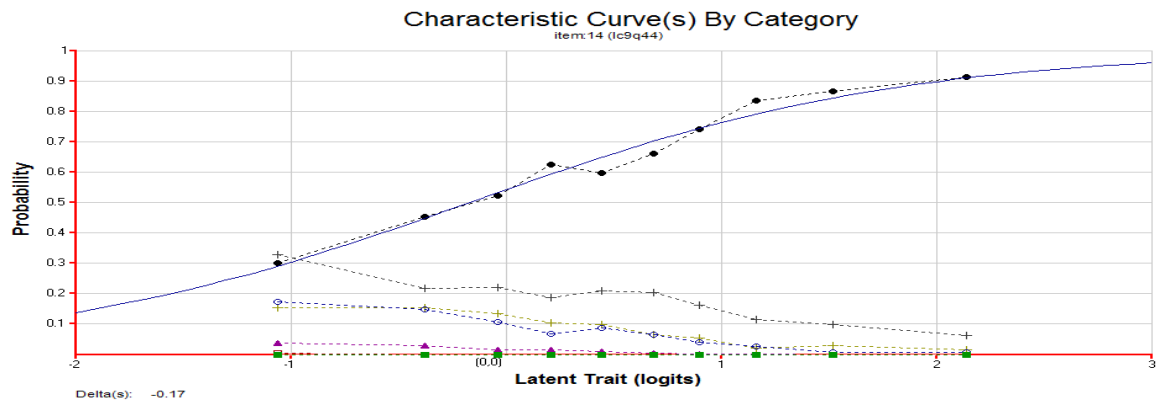
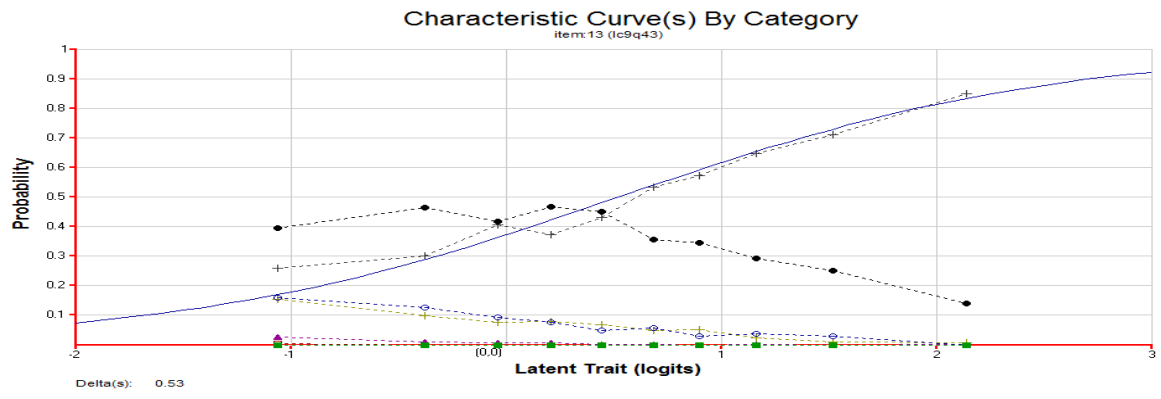


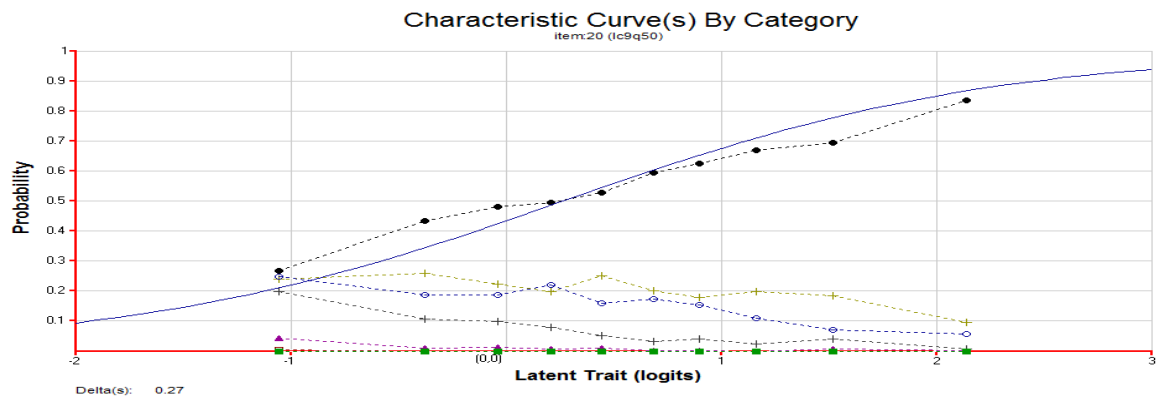
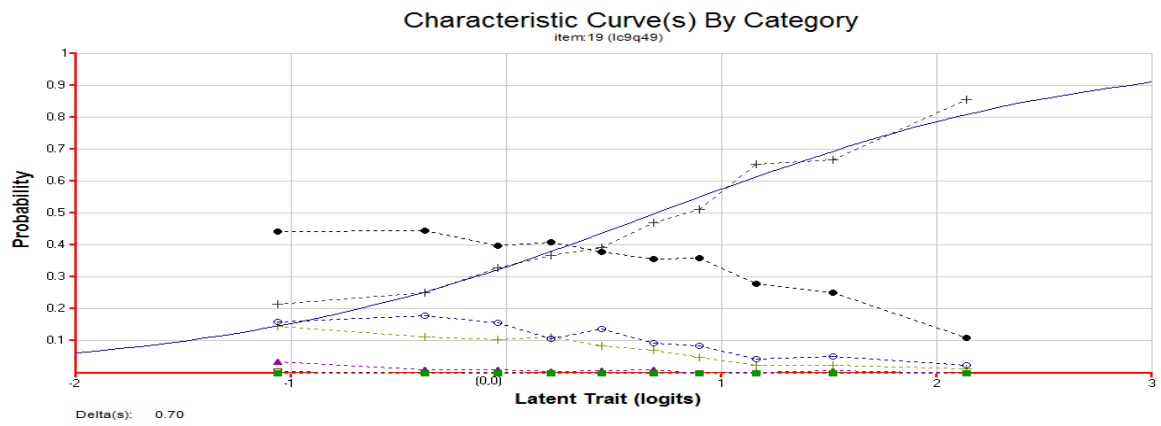
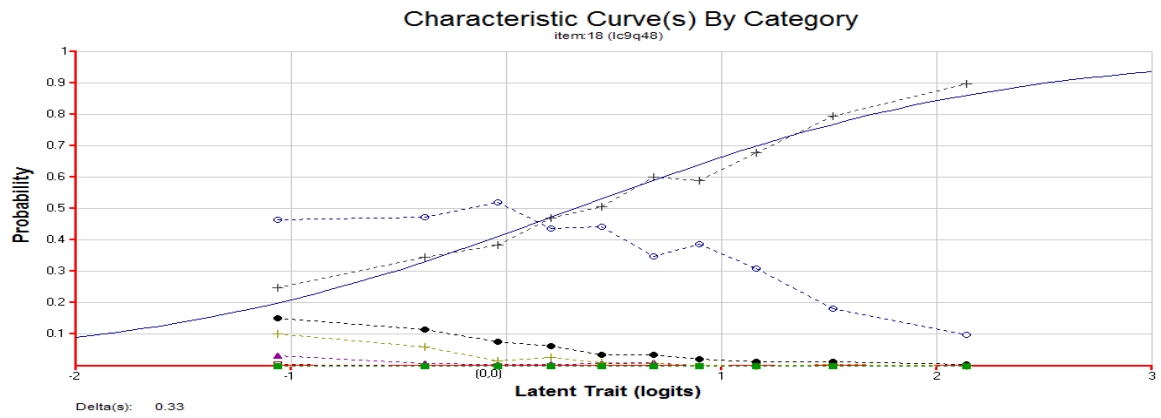
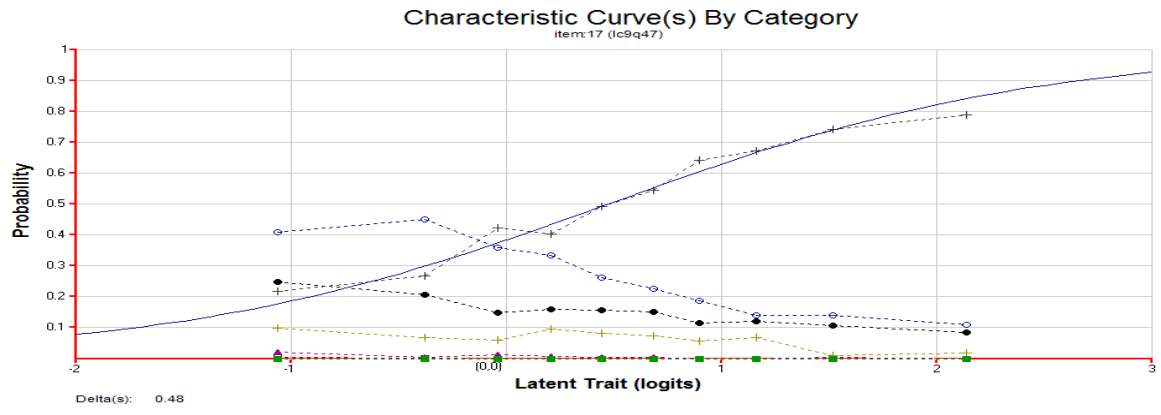
Year 9 Grammar and Punctuation

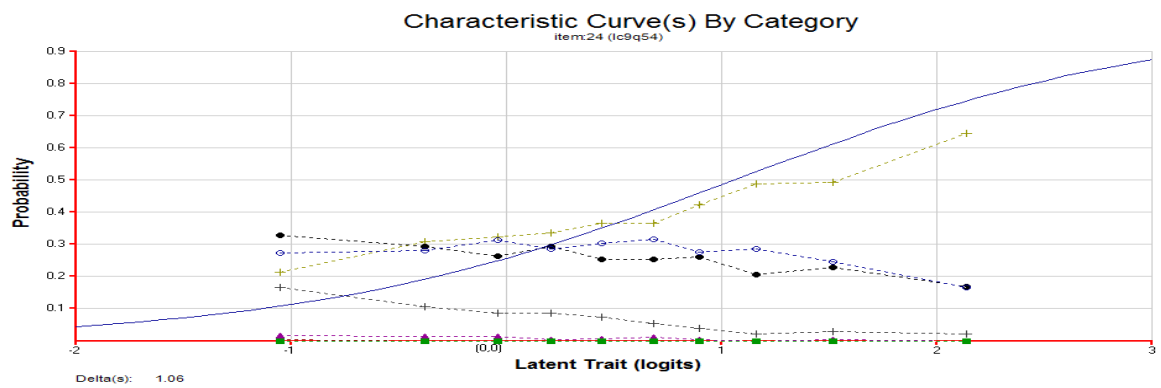
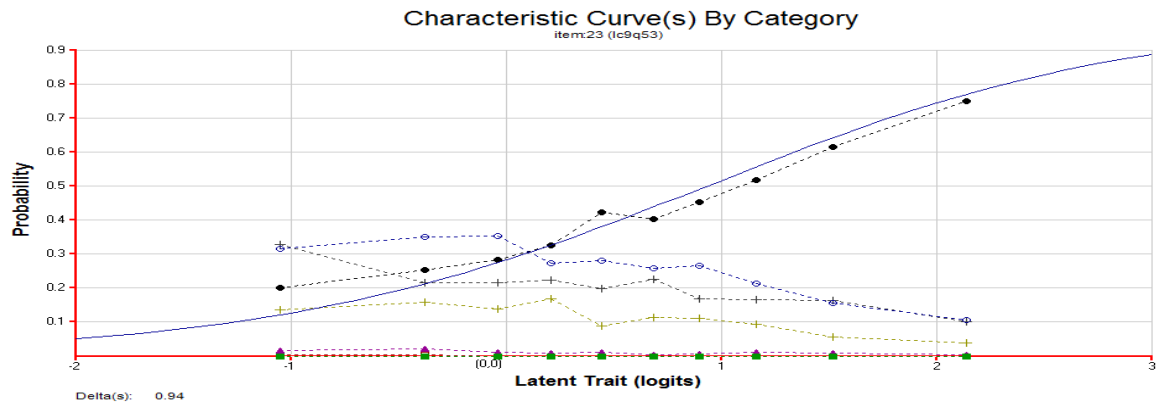
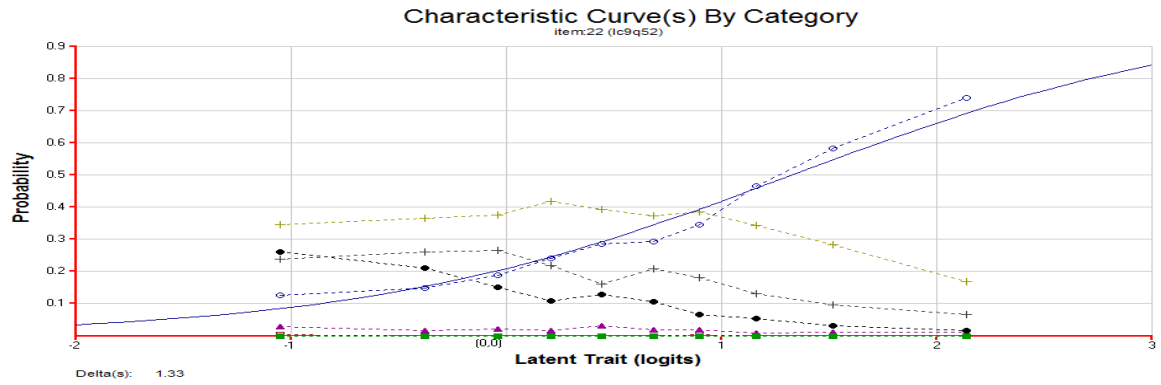
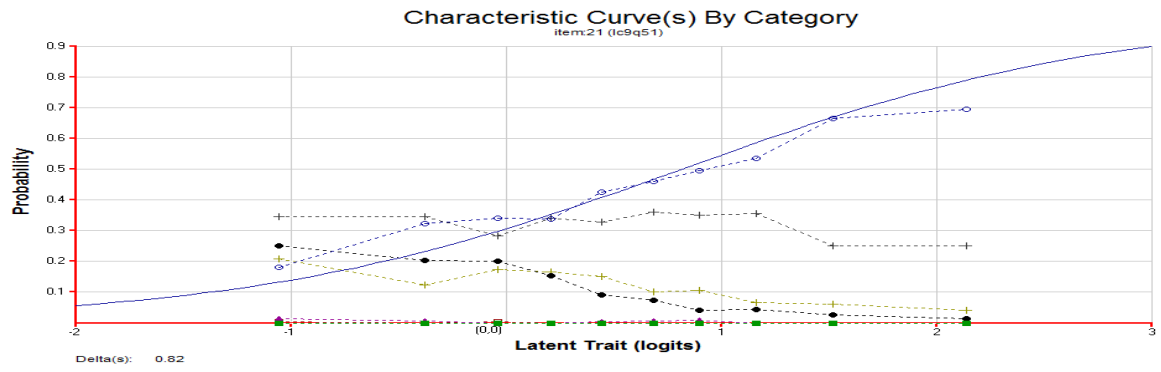


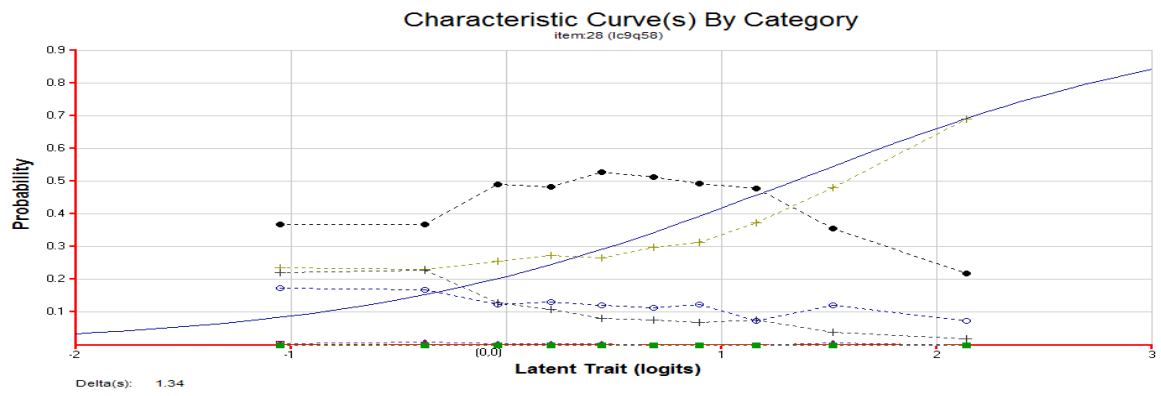
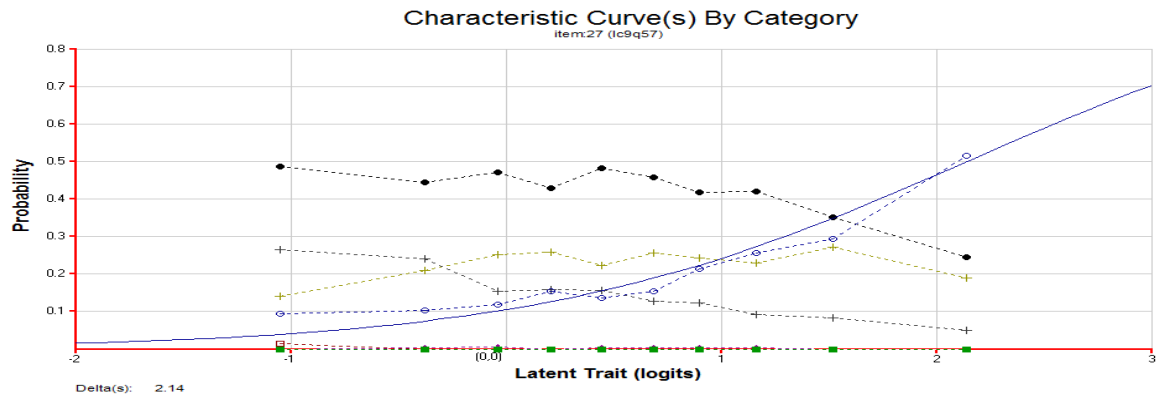
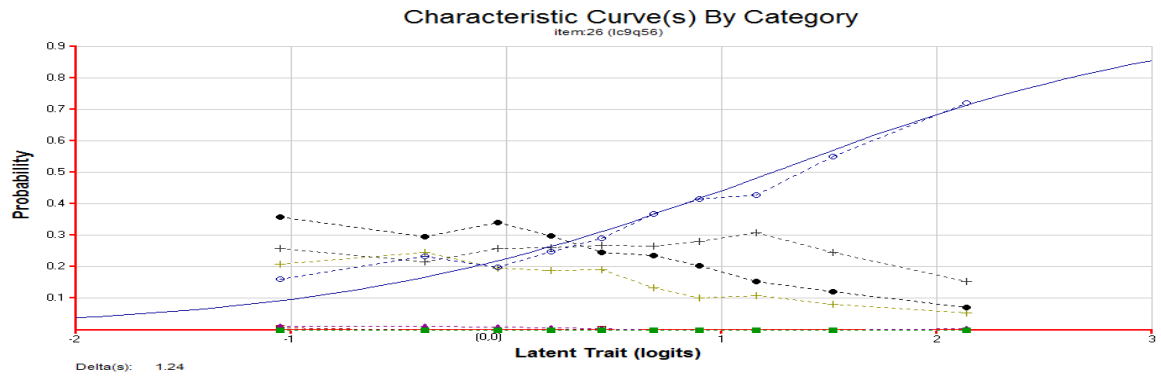
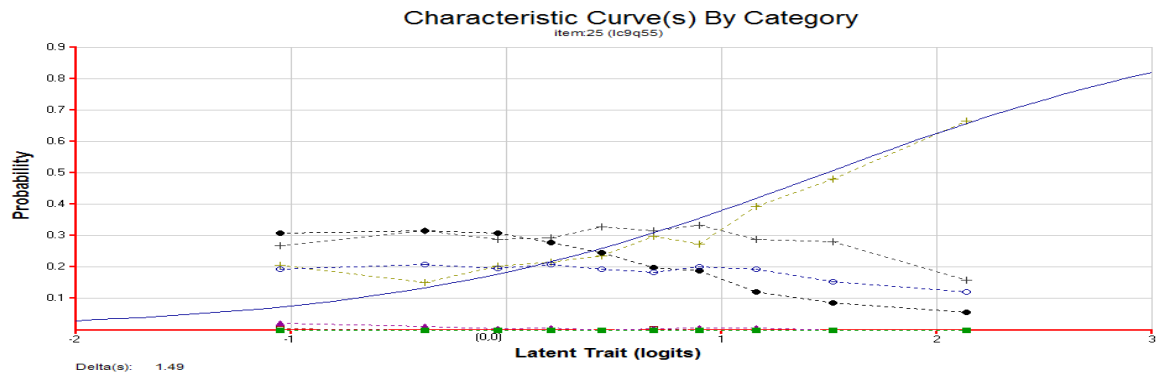




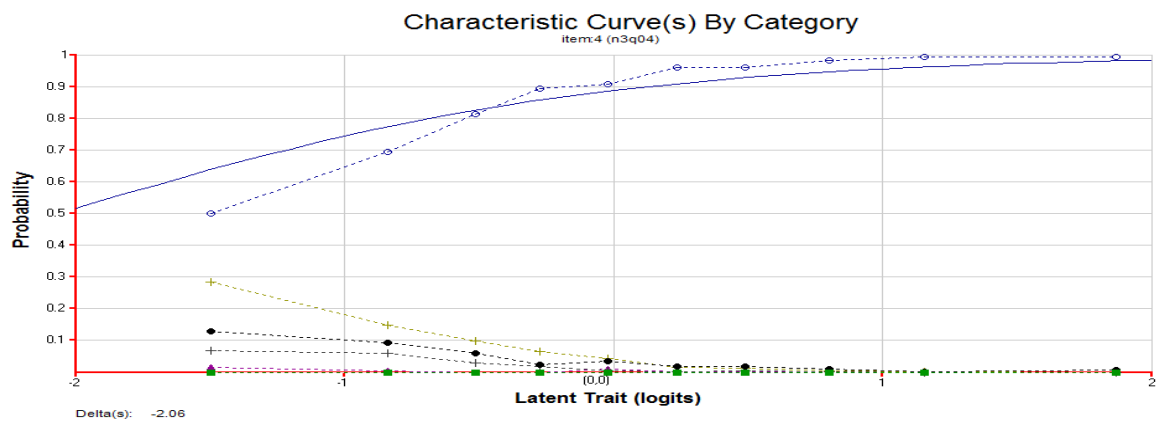
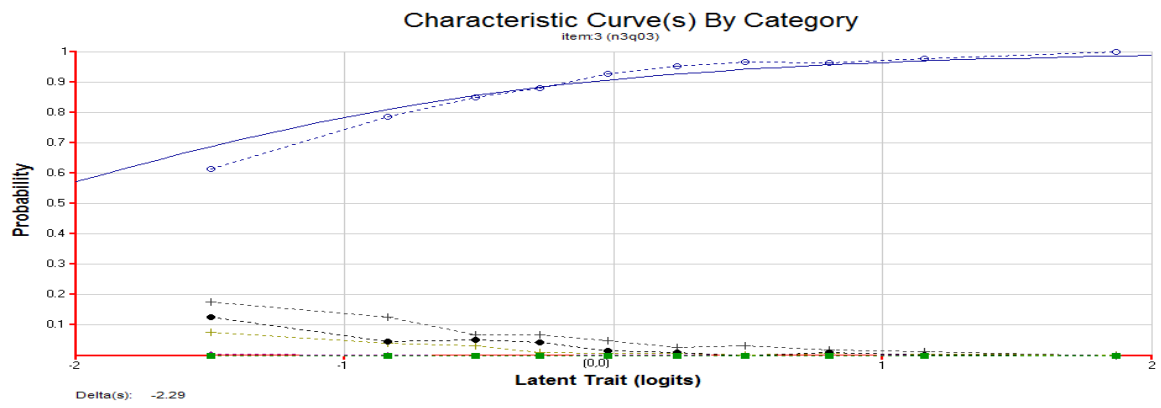
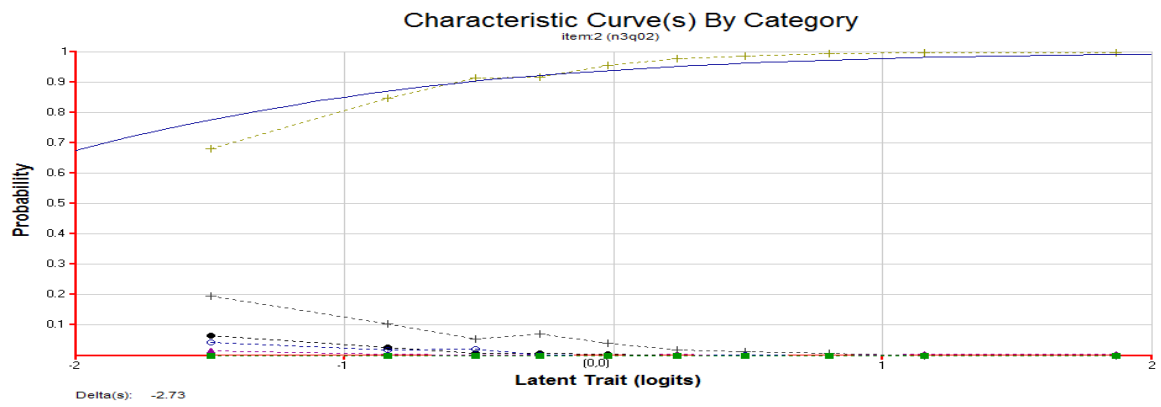
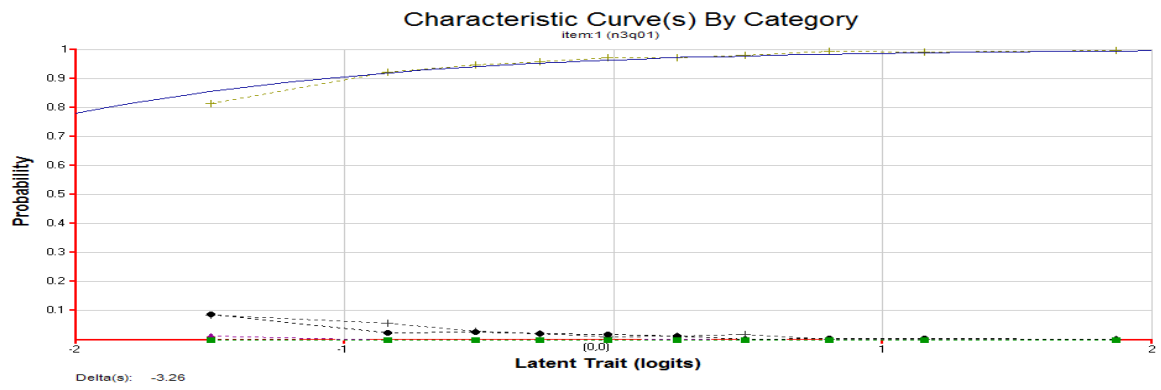


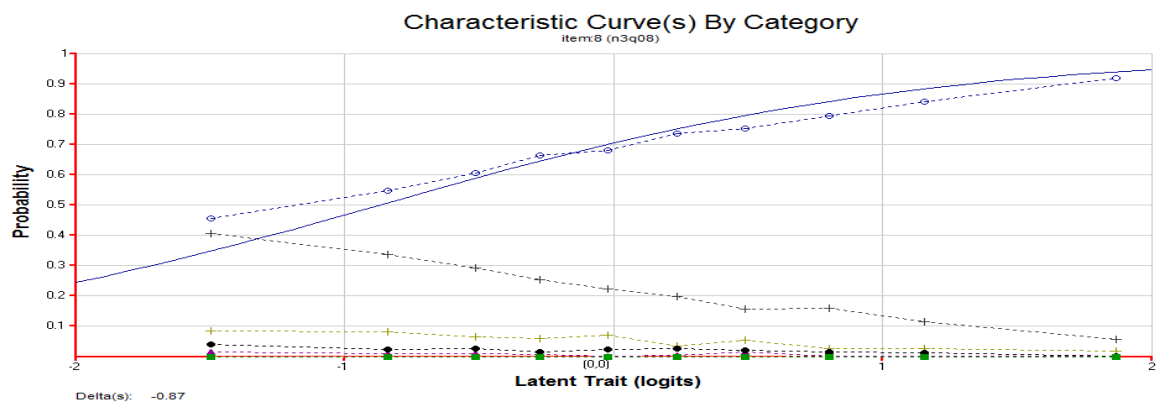
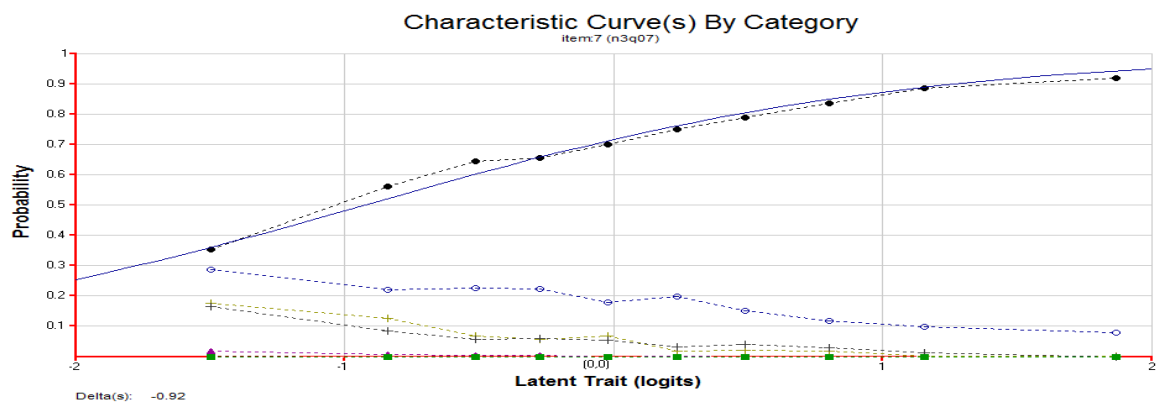
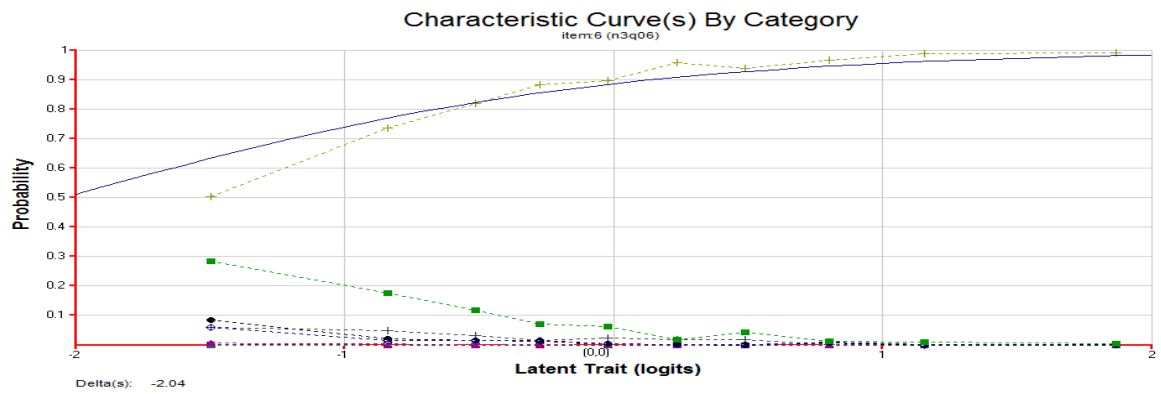
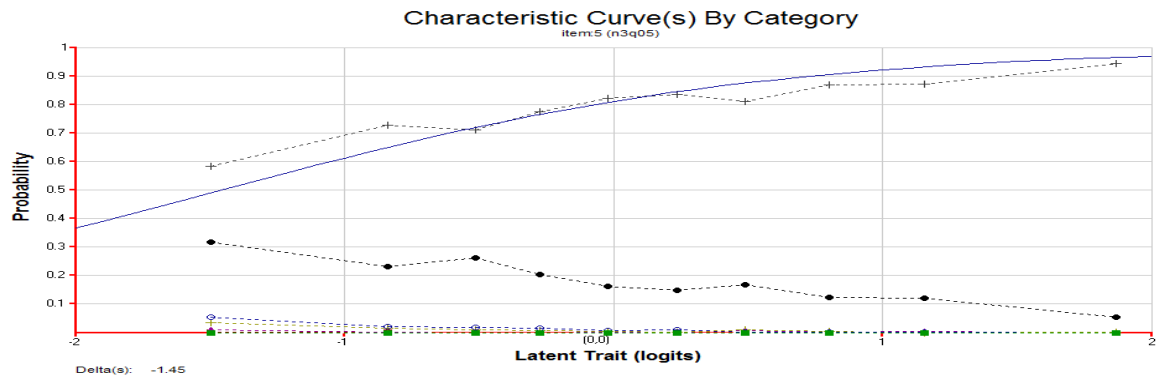


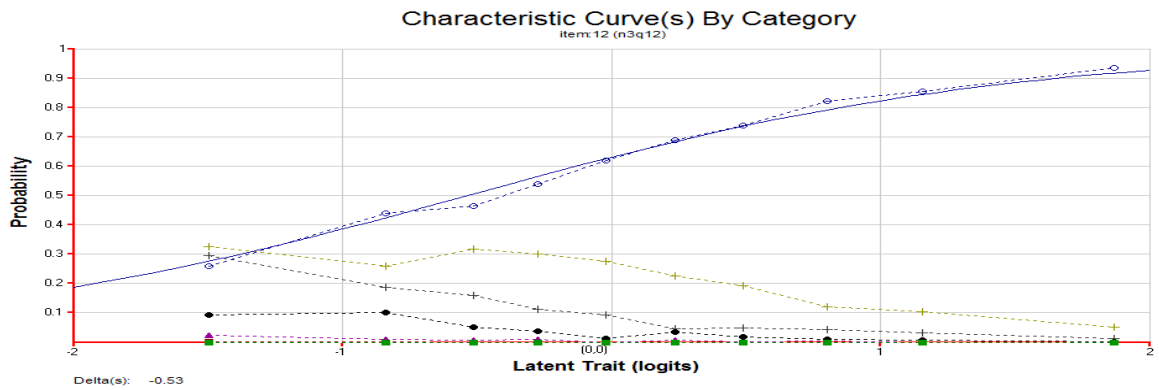
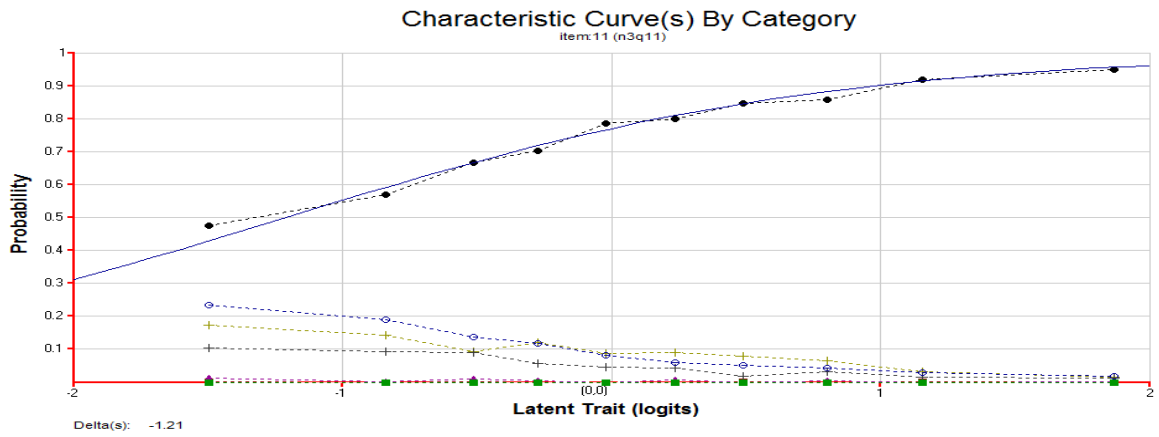
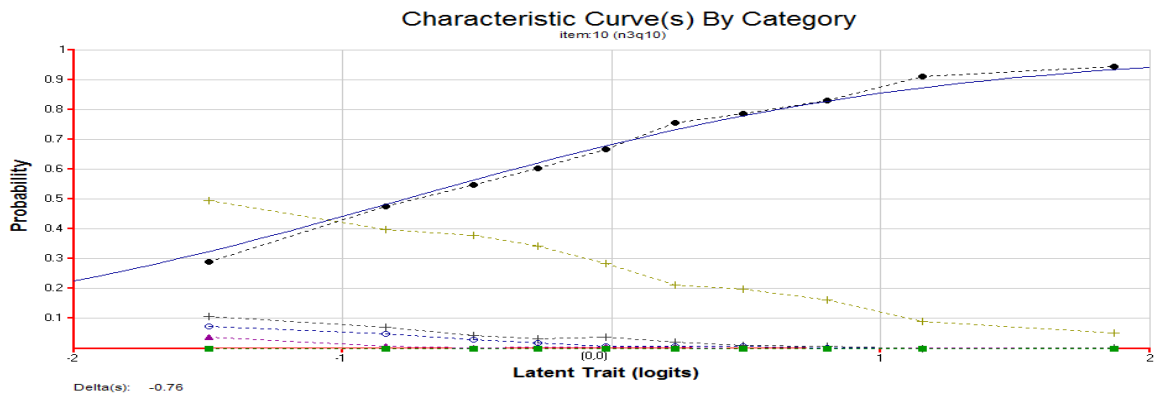
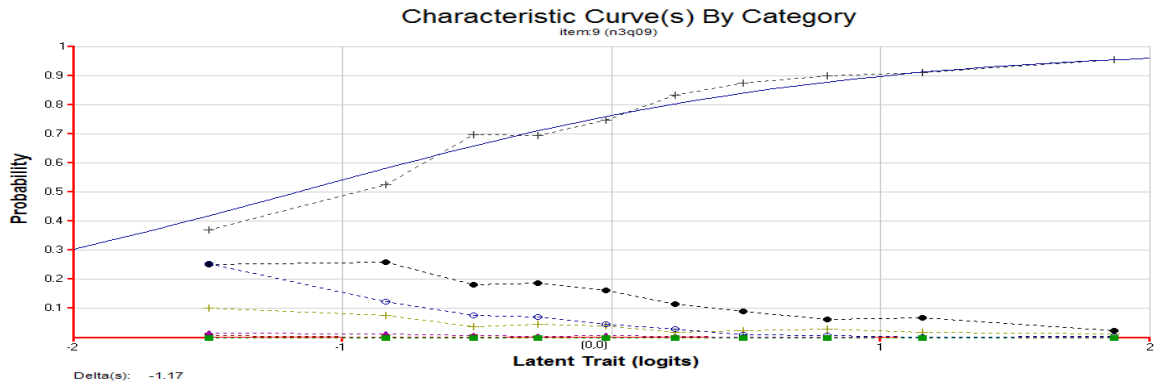


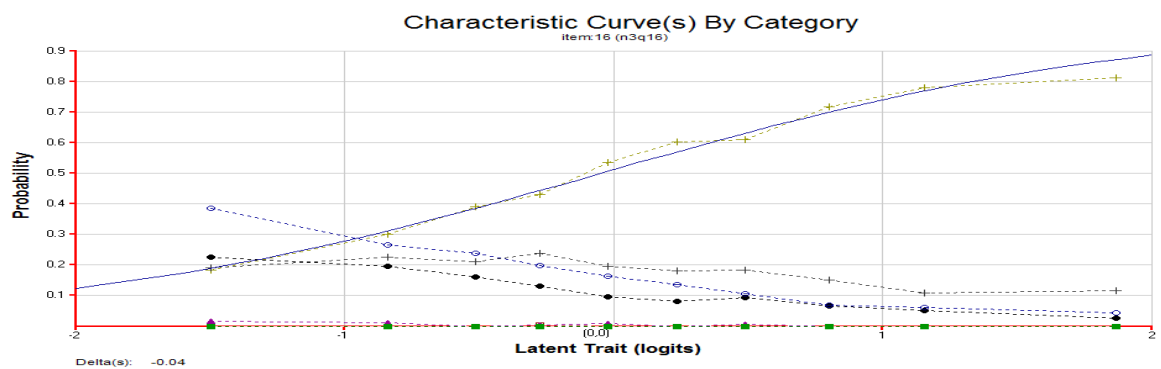
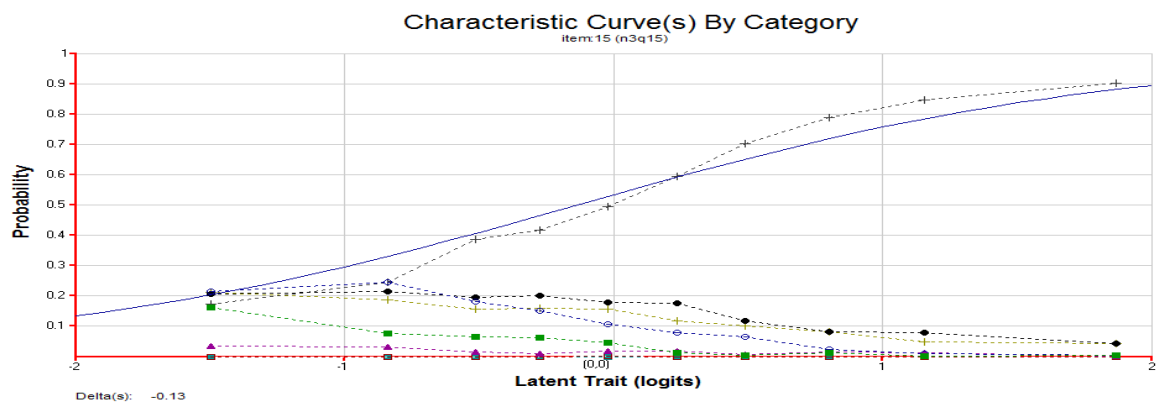
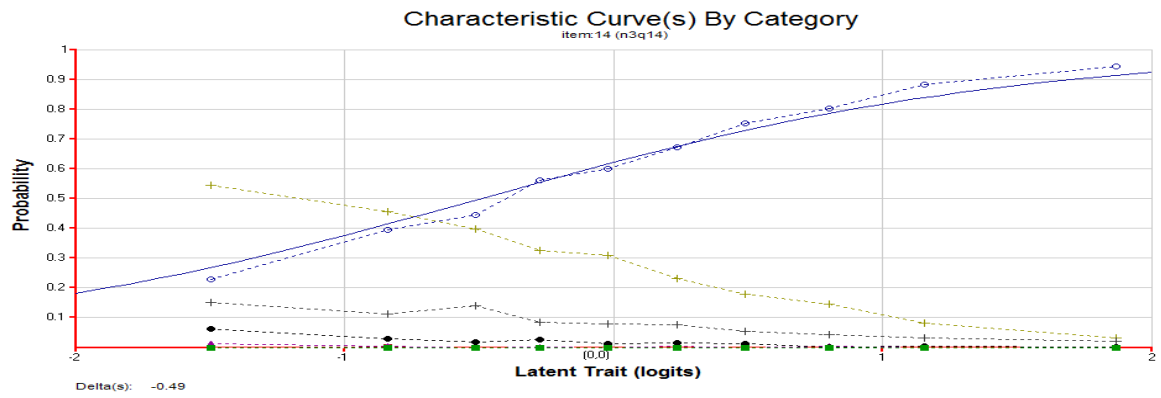
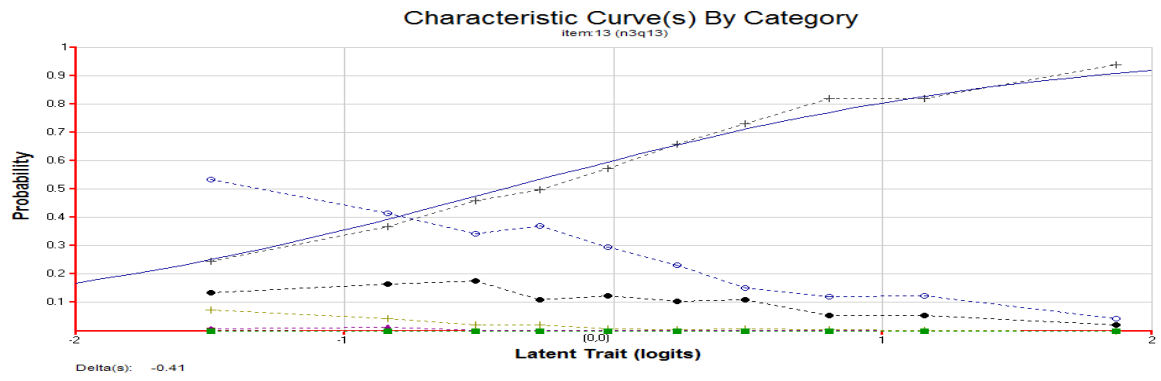


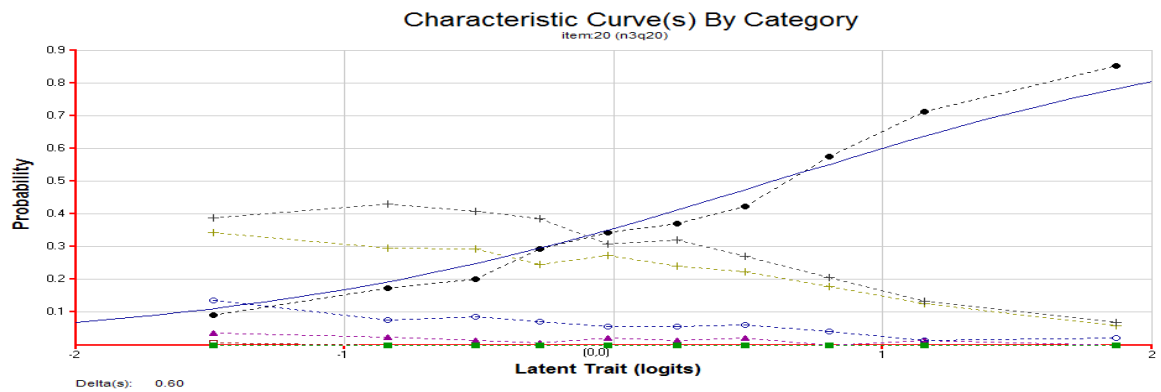
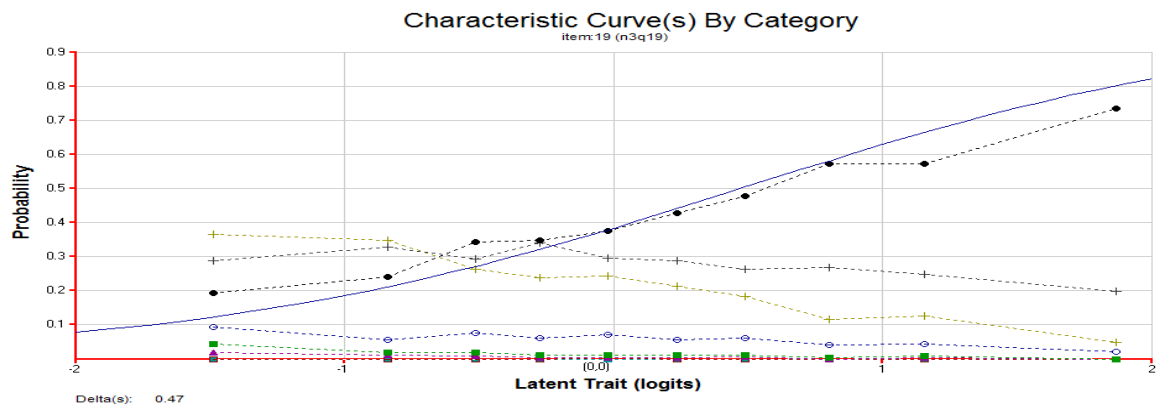
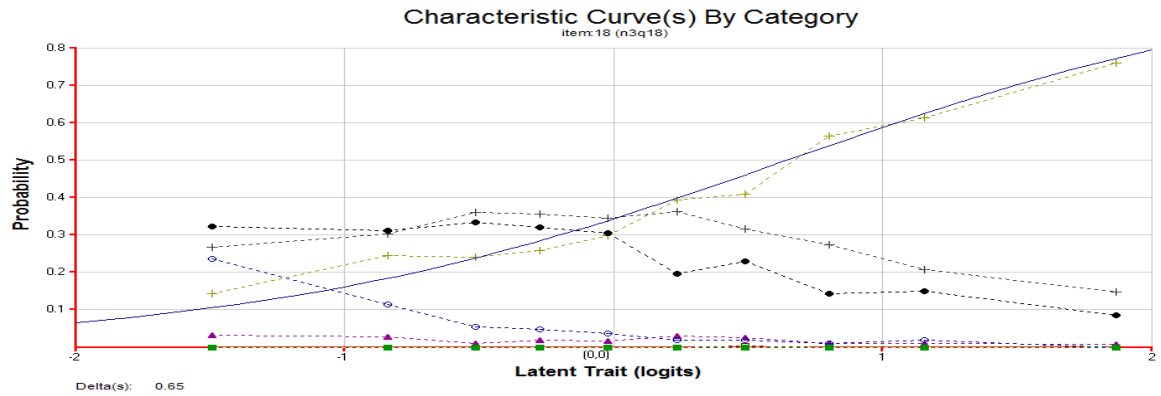
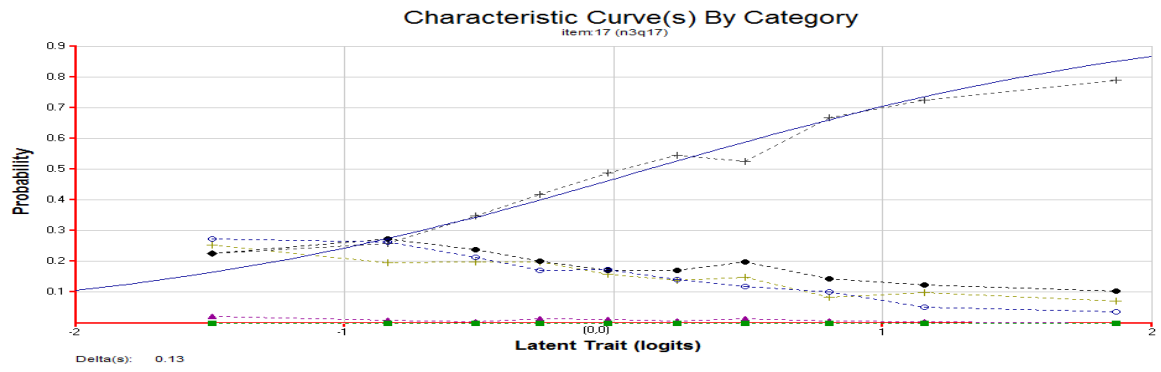
Year 3 Numeracy

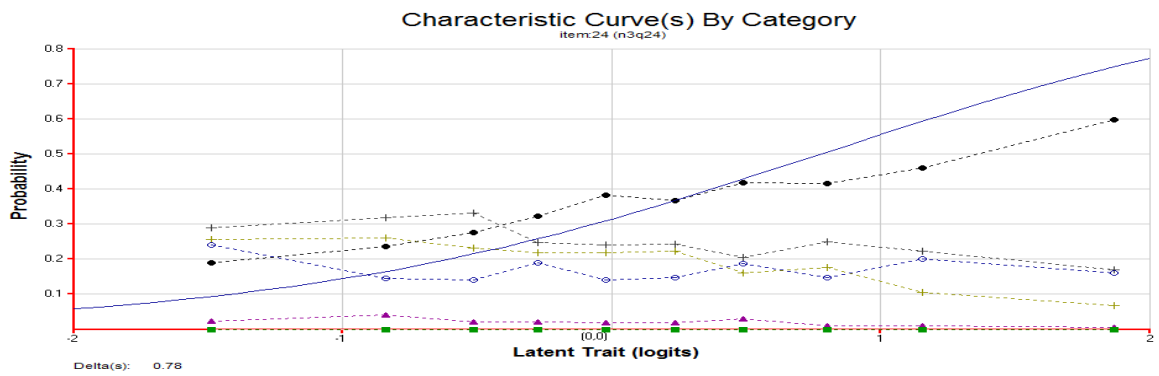
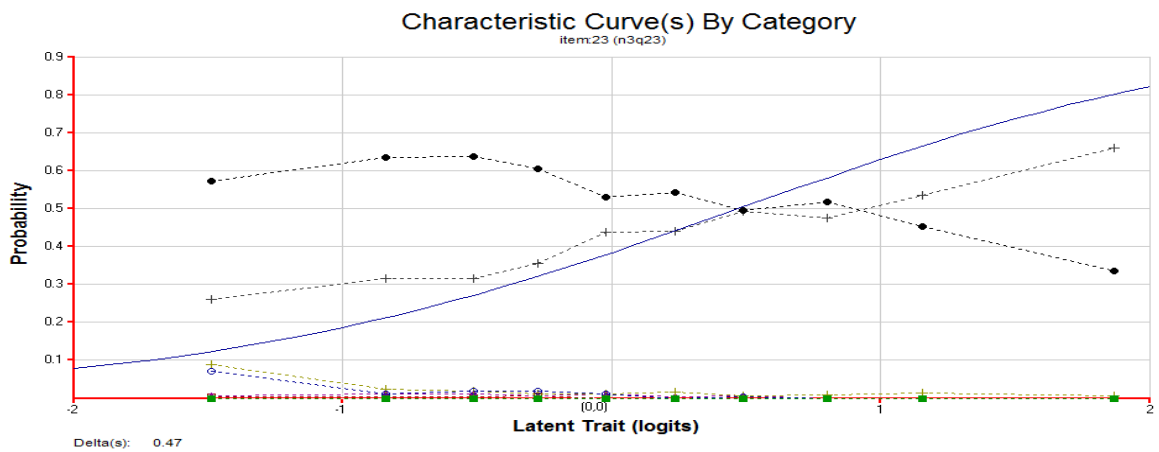
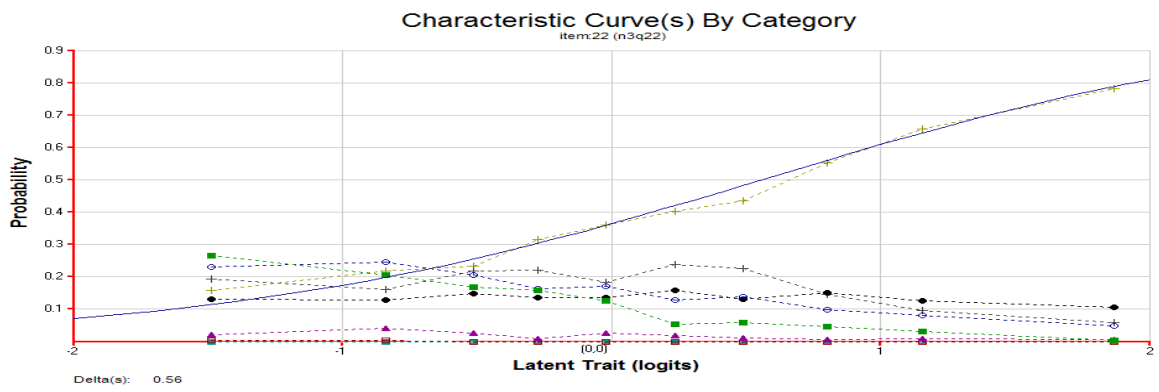
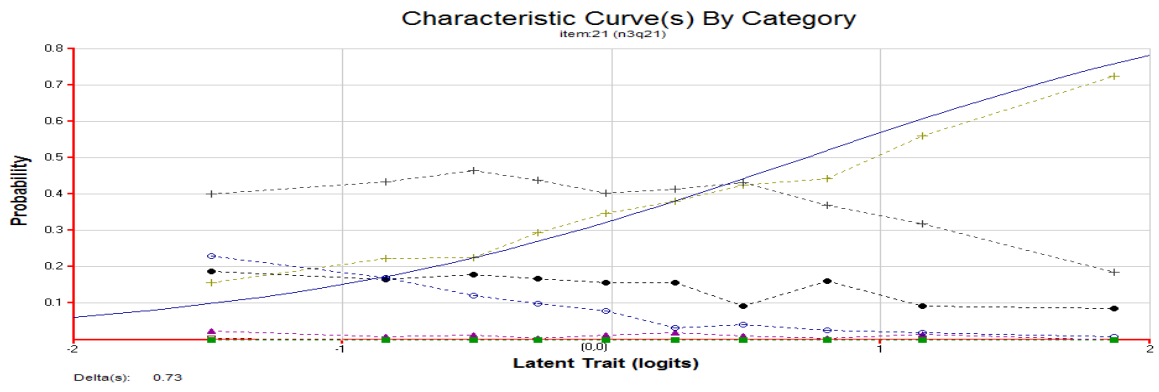


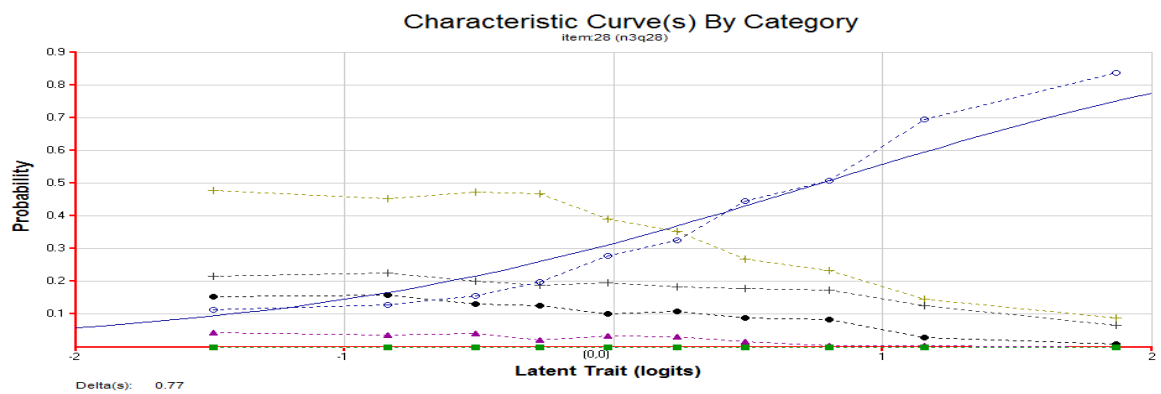
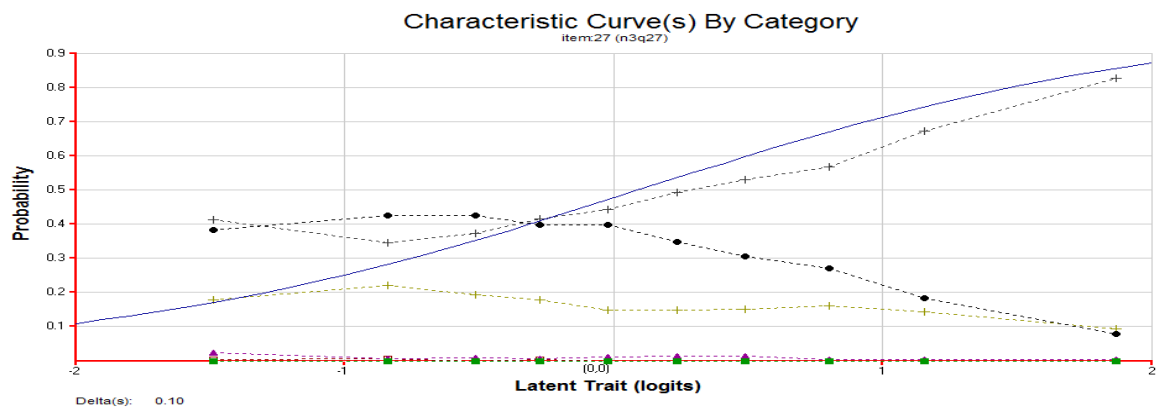
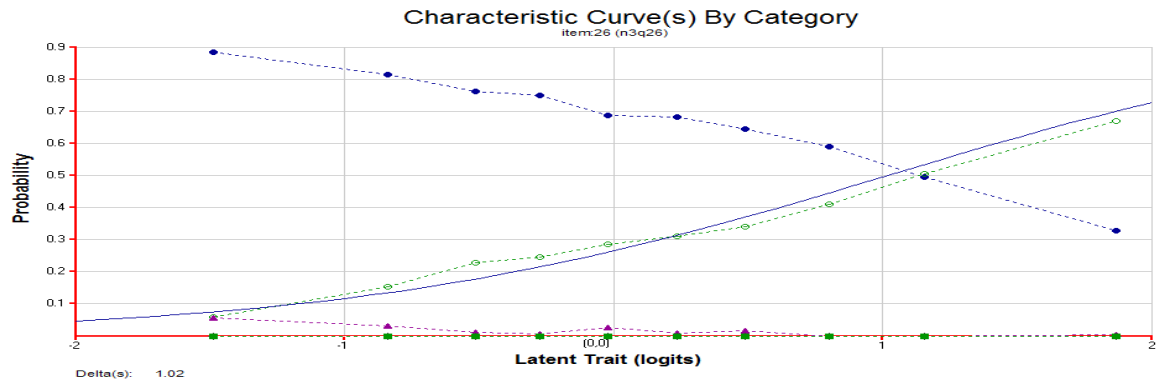
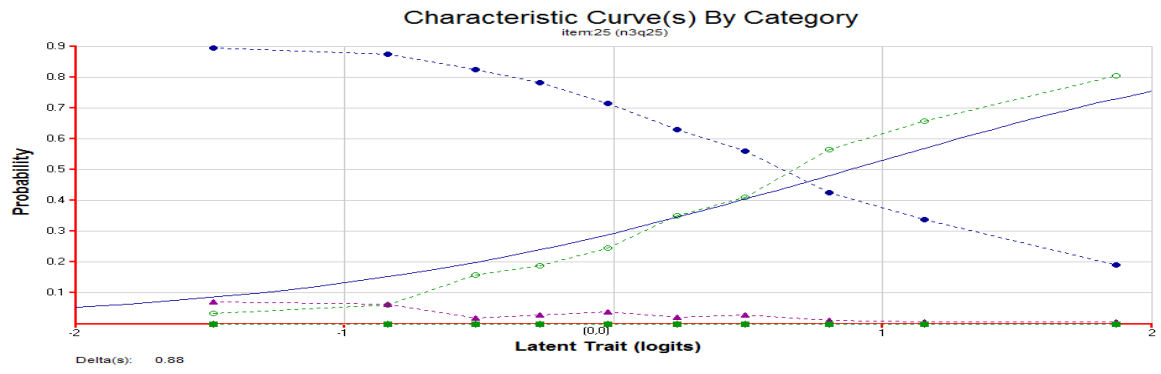


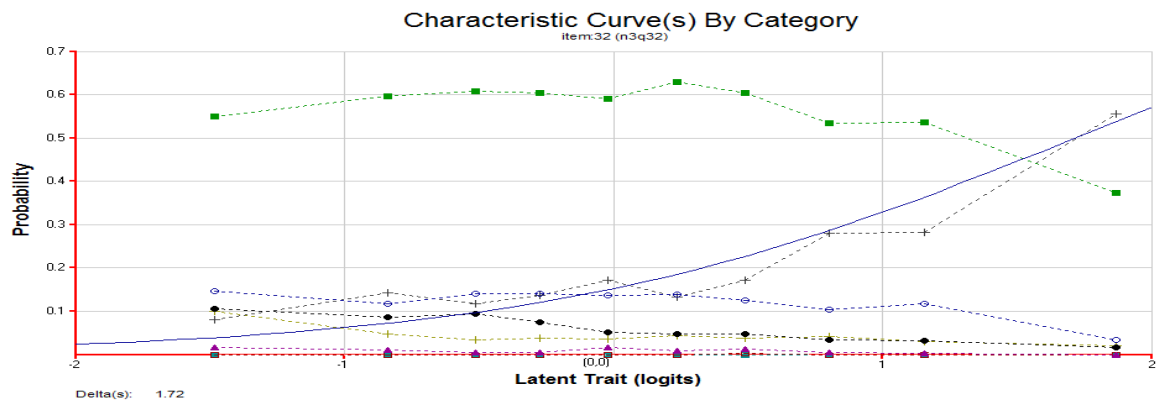
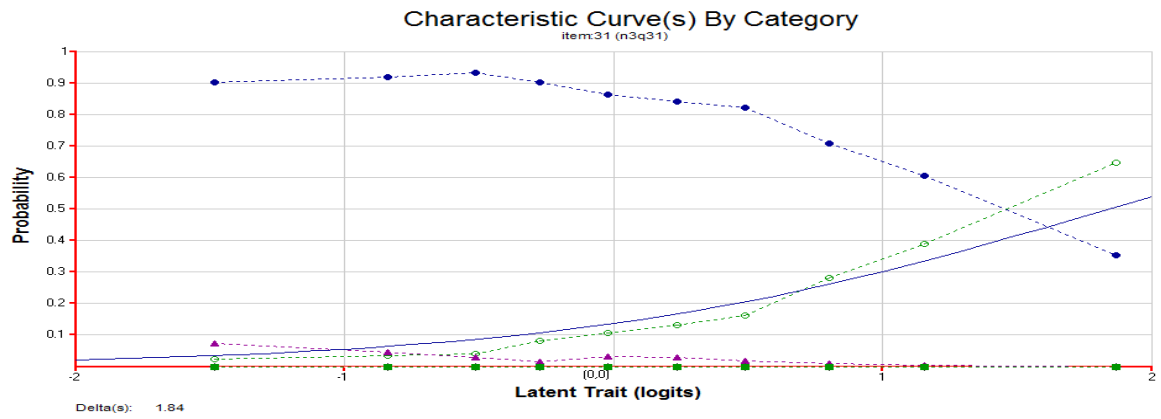
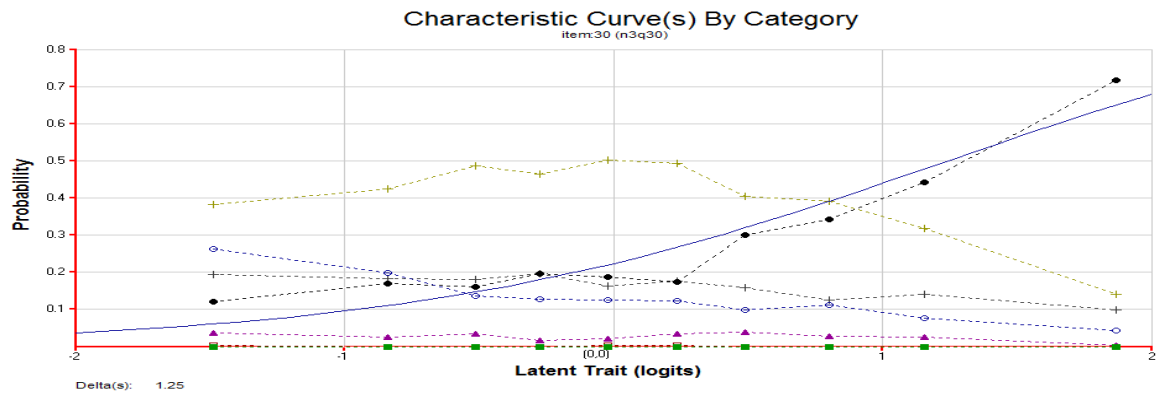
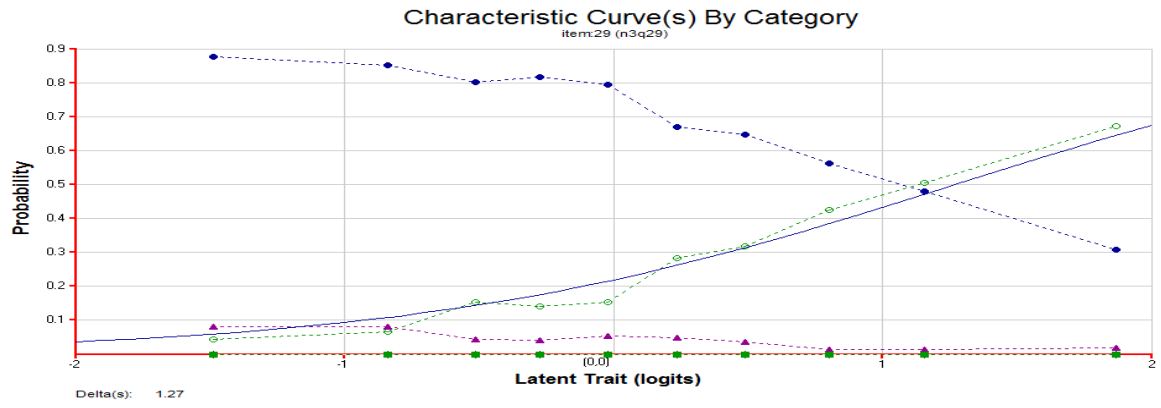


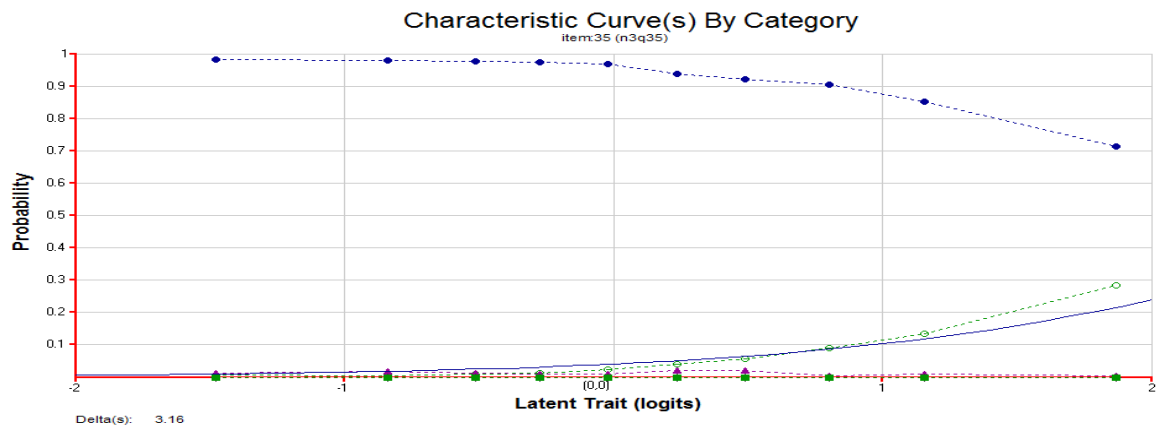
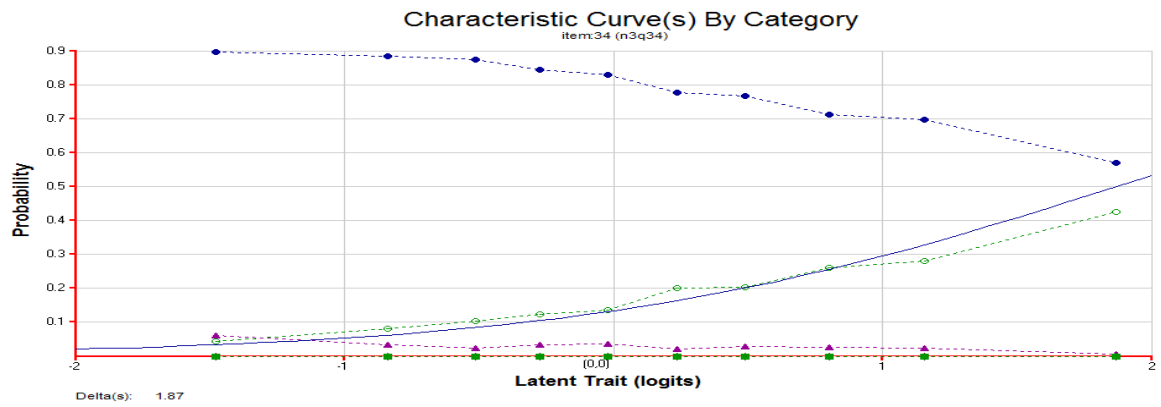
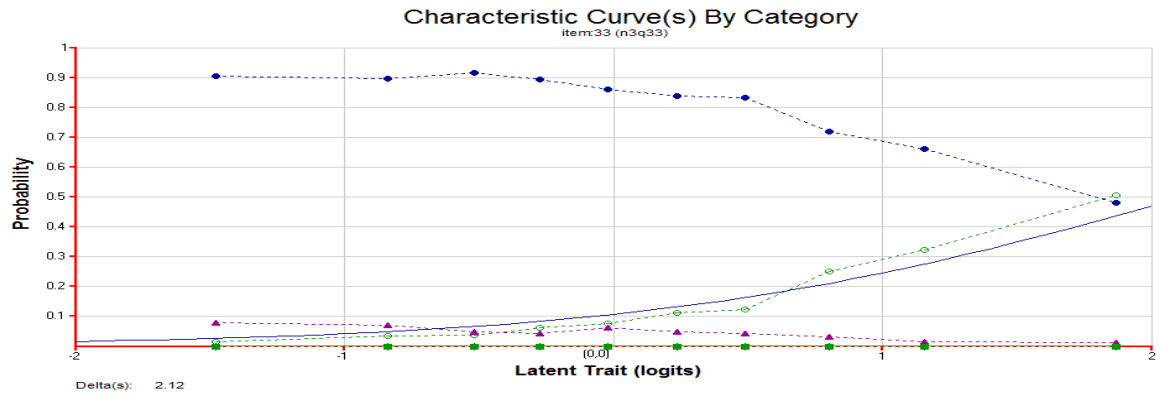




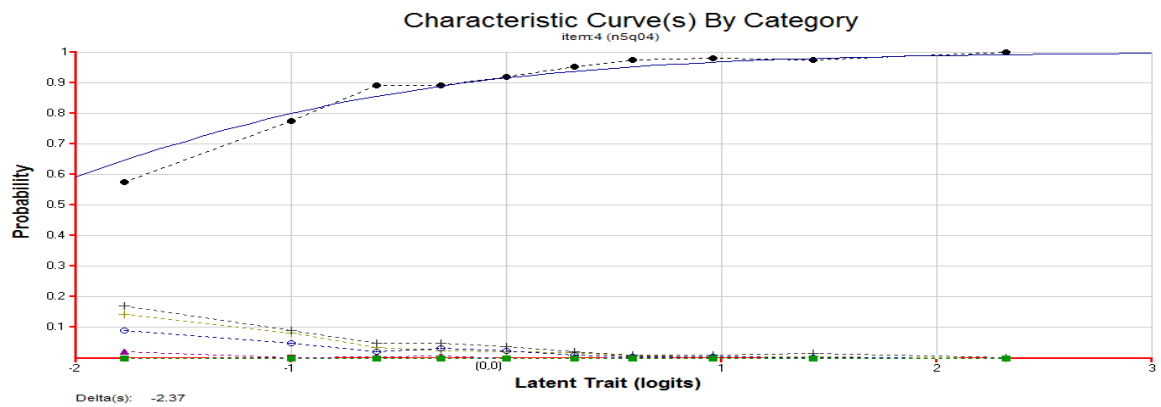
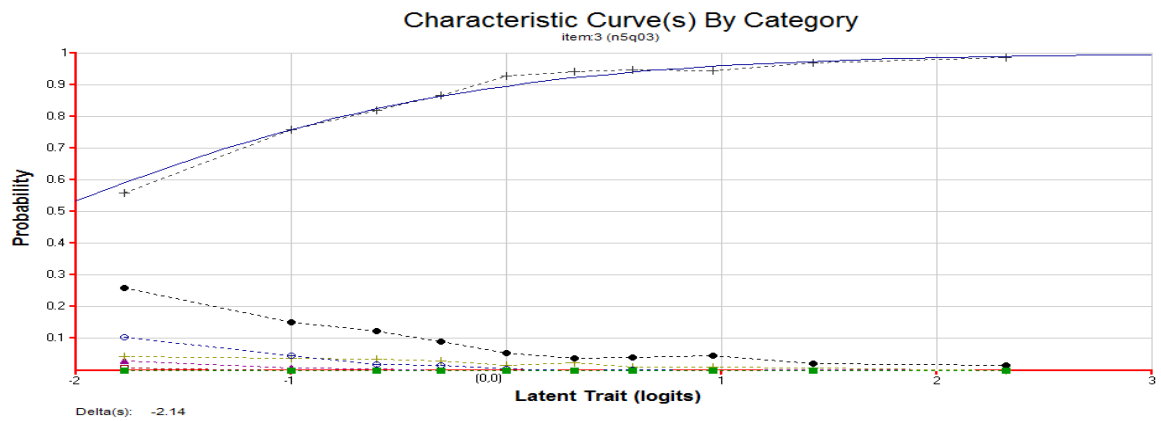
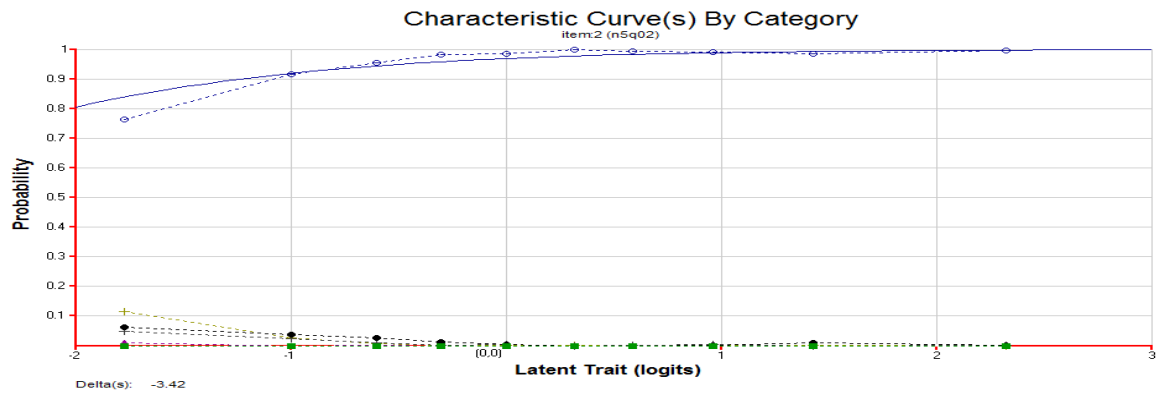
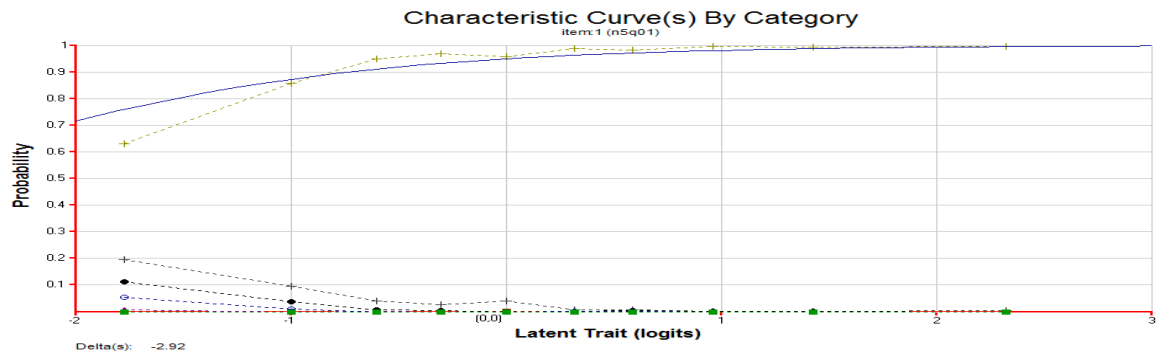


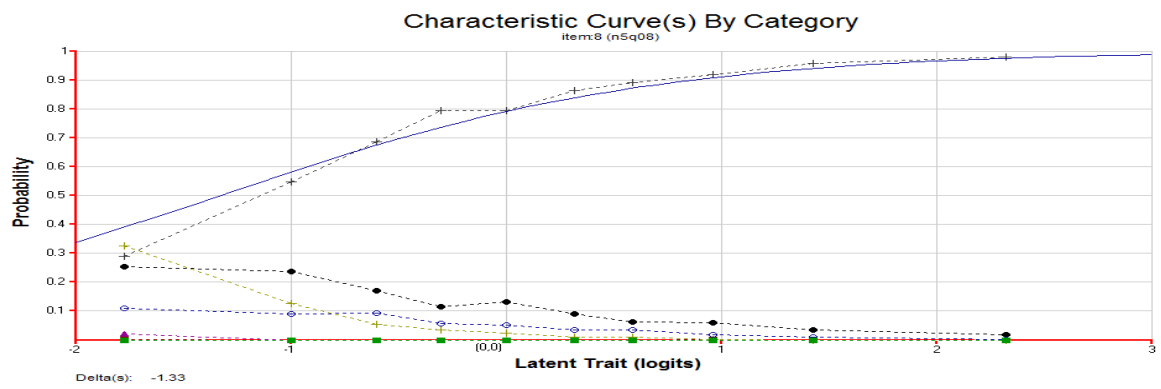
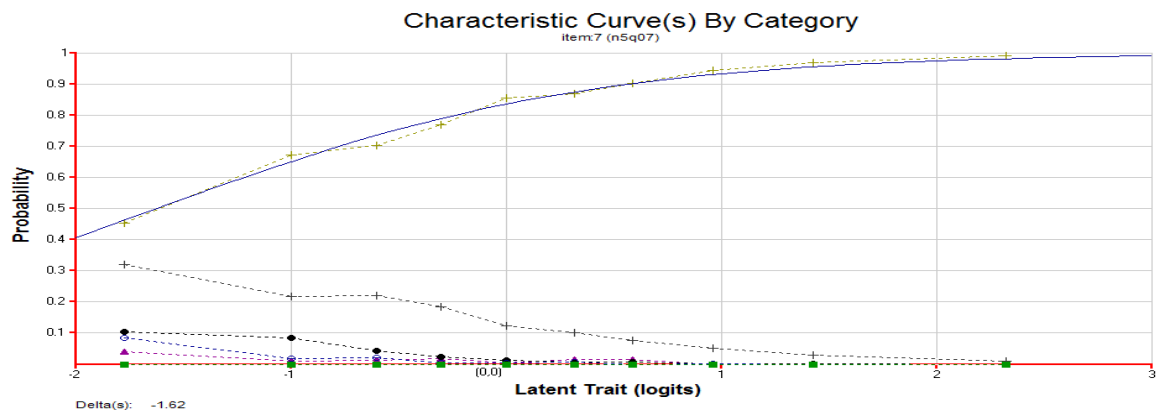
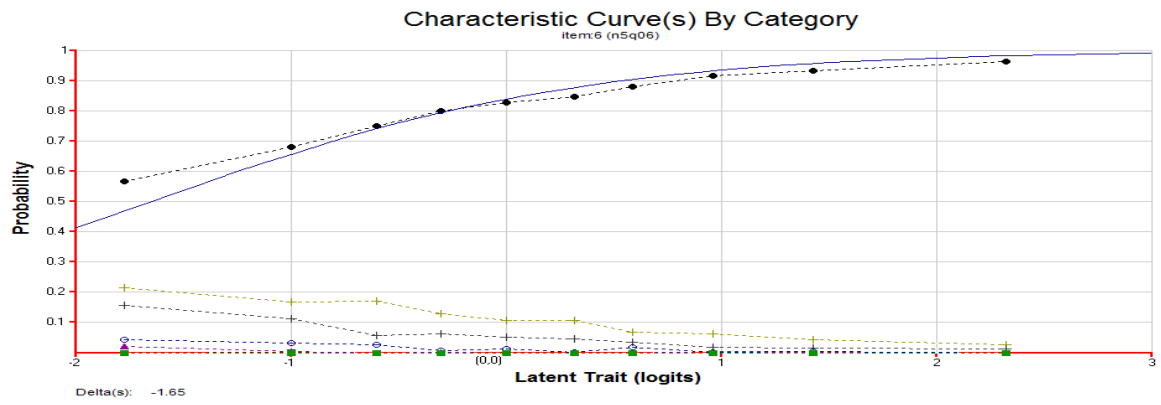
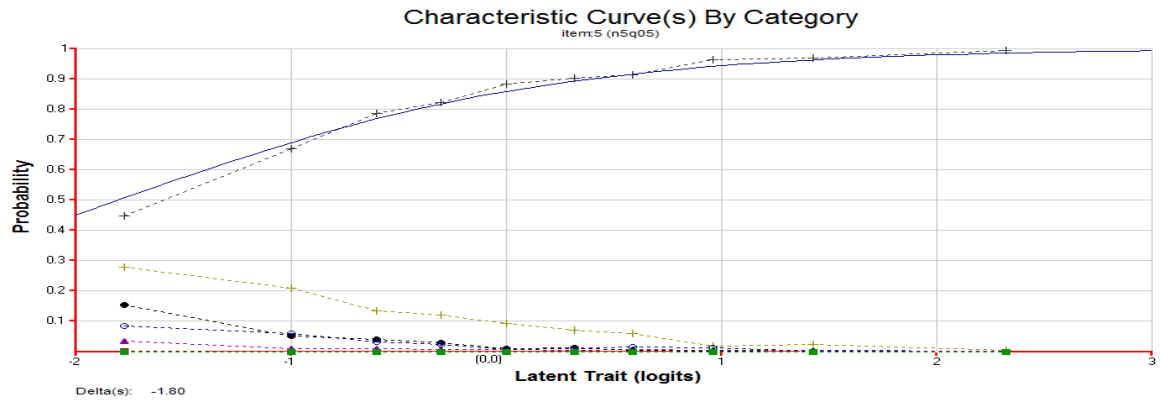


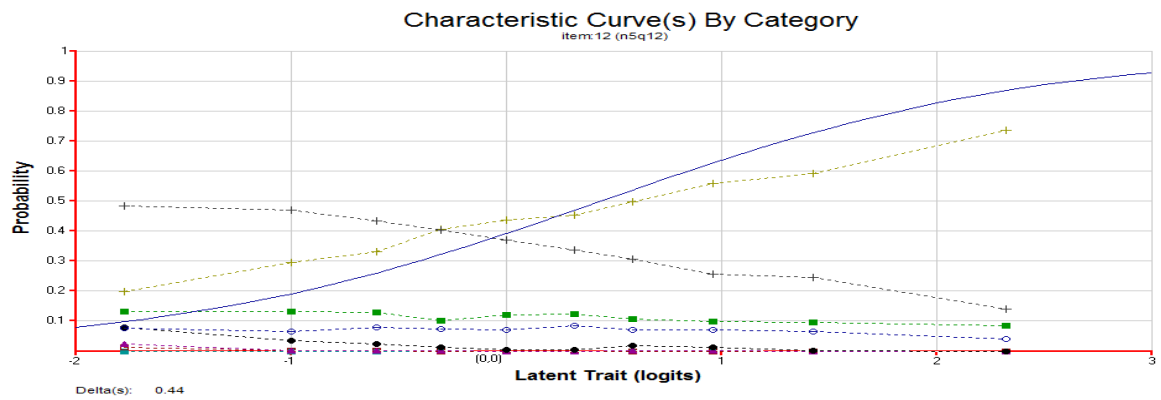
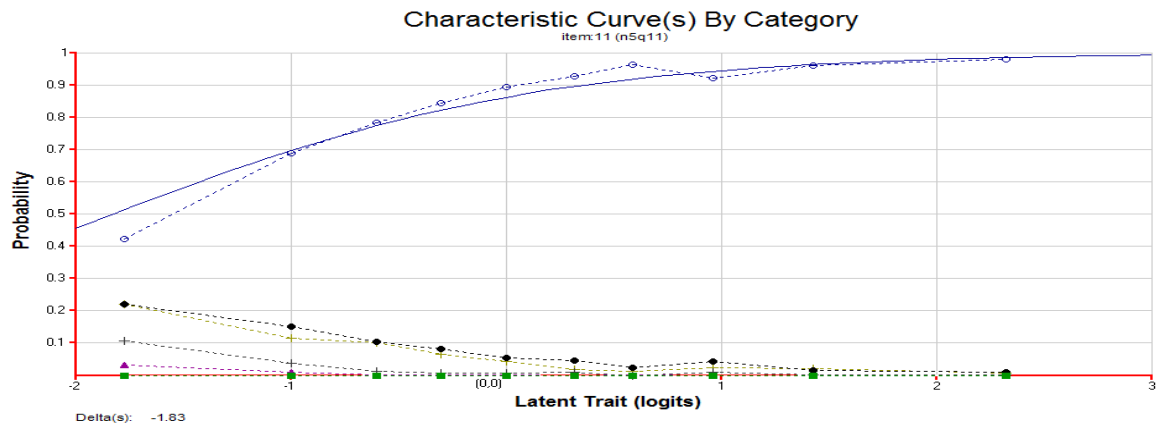
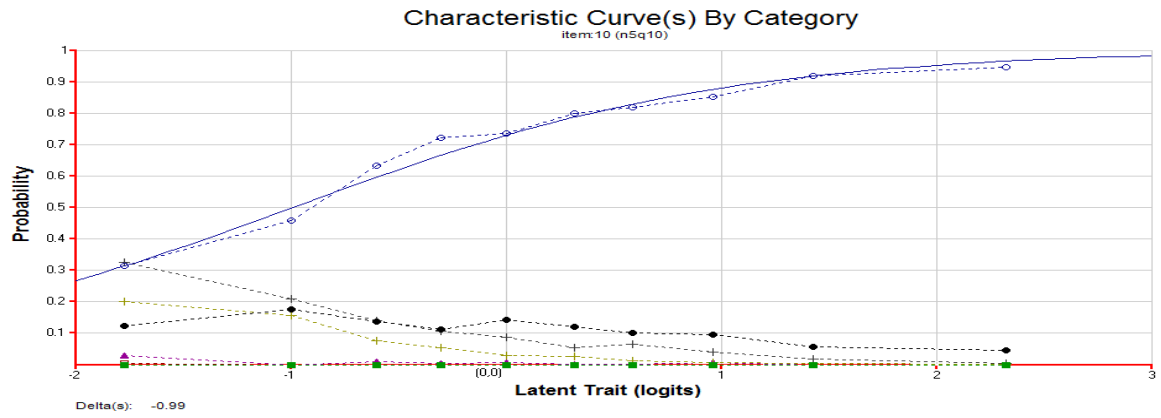
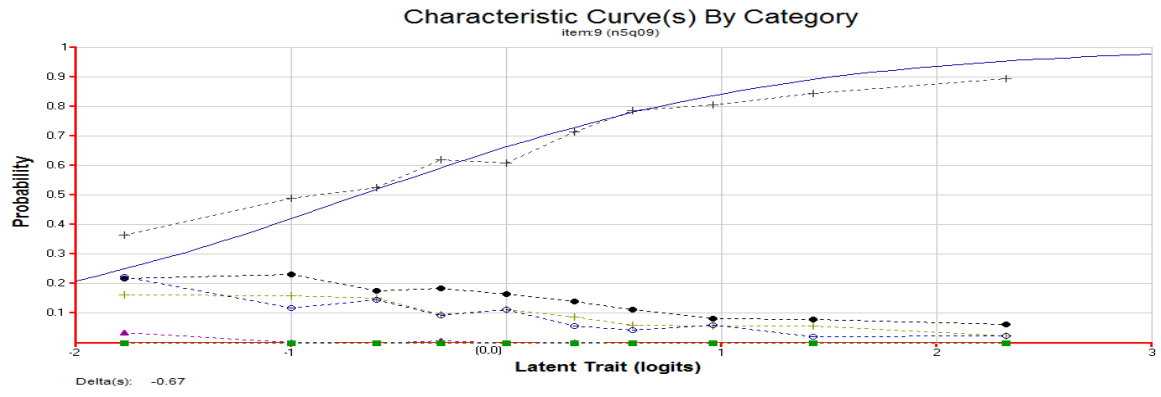


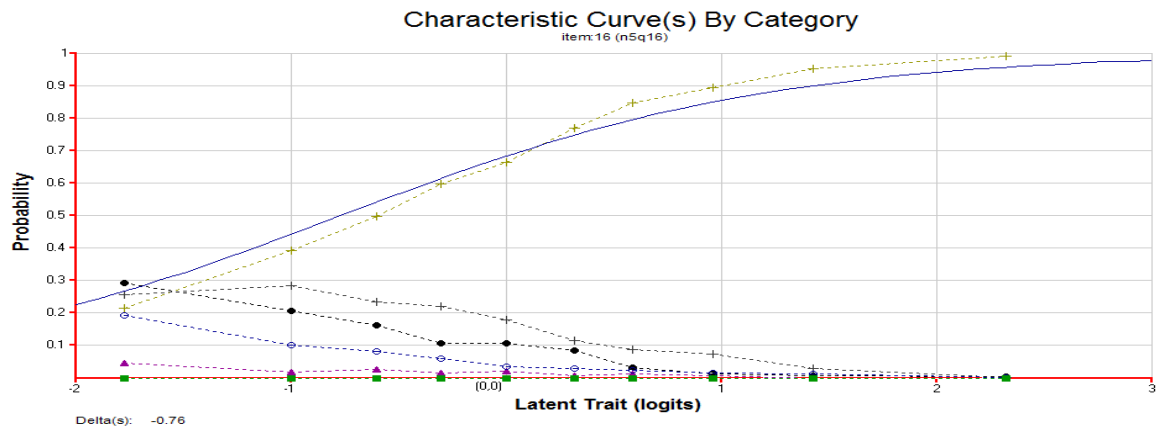
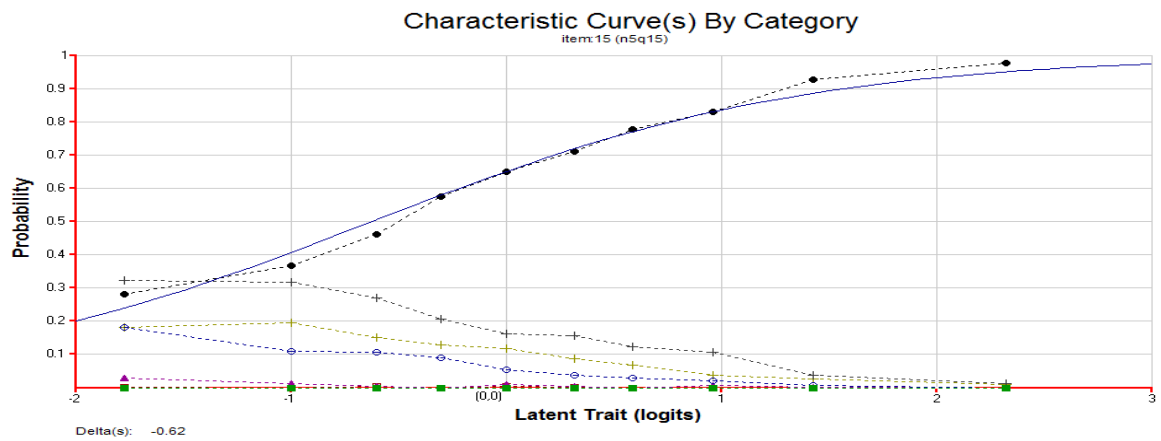
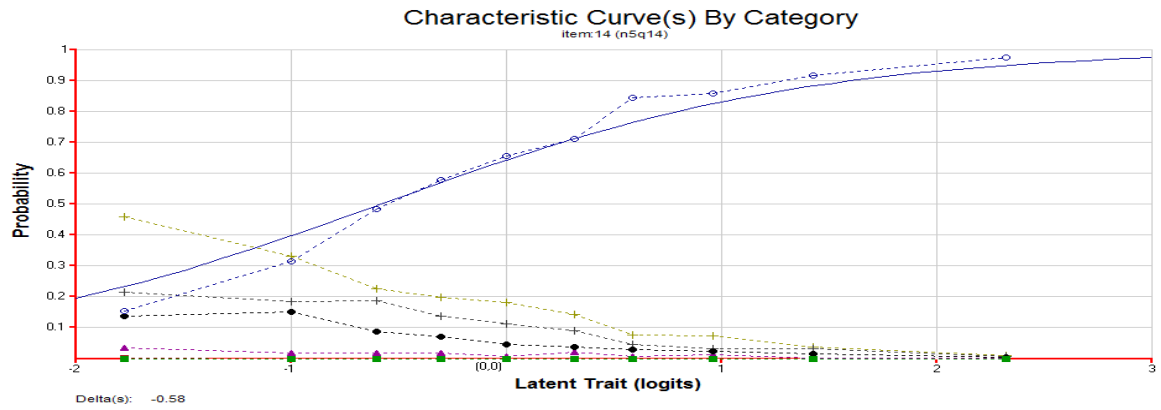
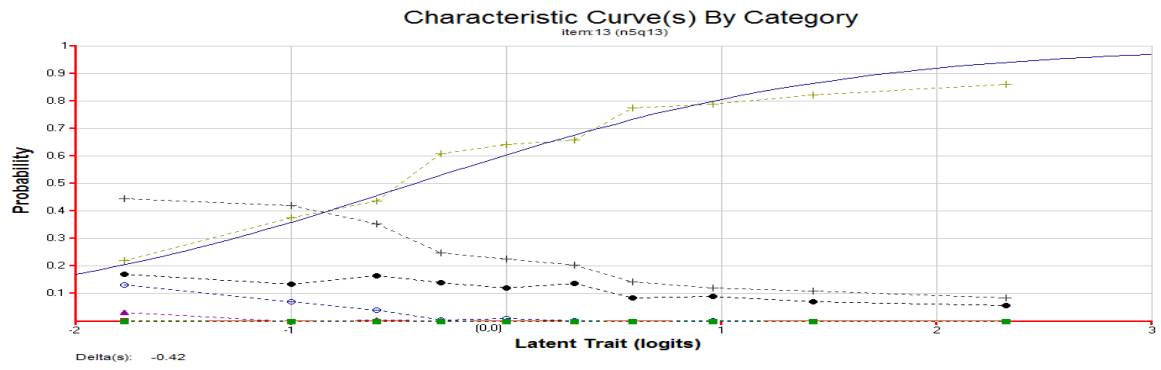


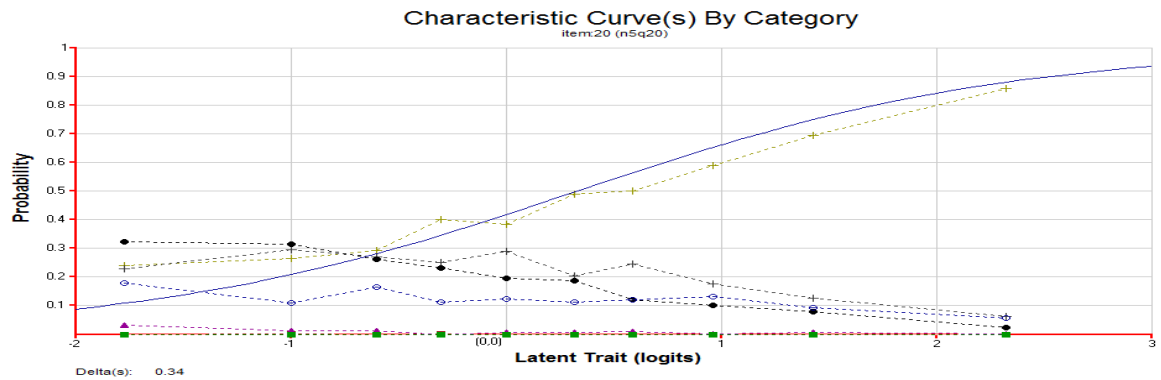
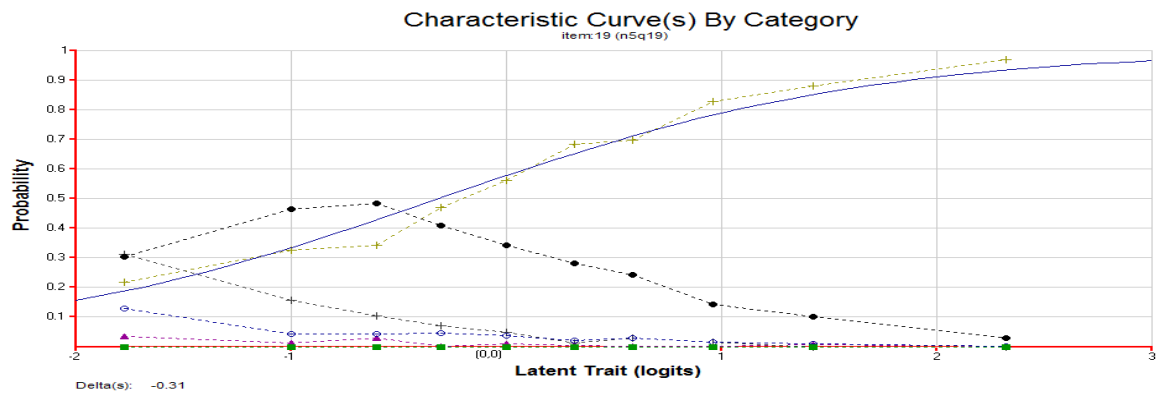
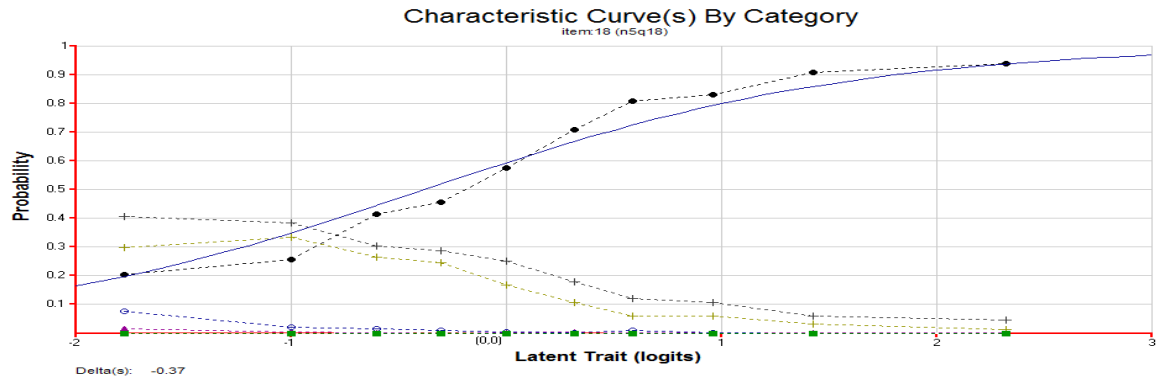
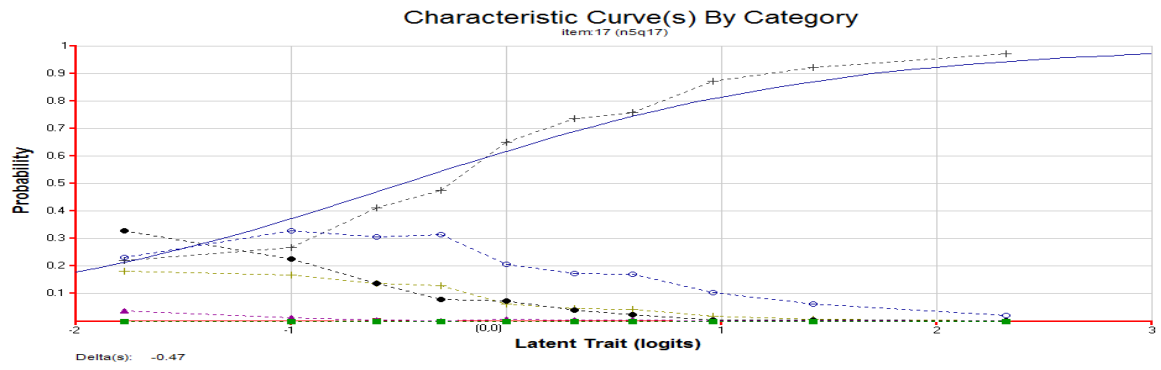
Year 5 Numeracy

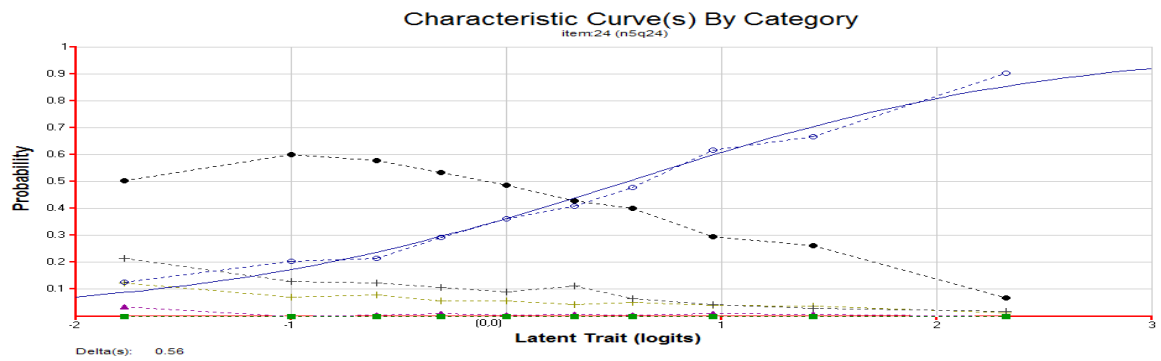
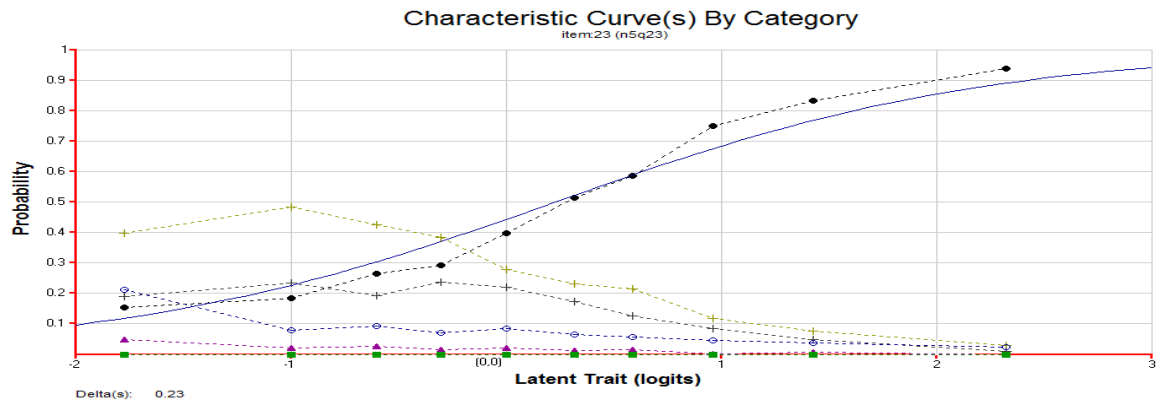
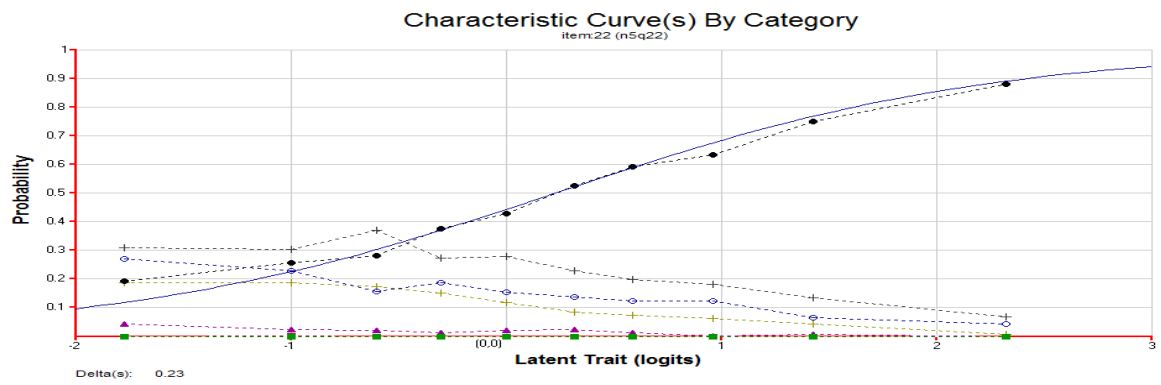
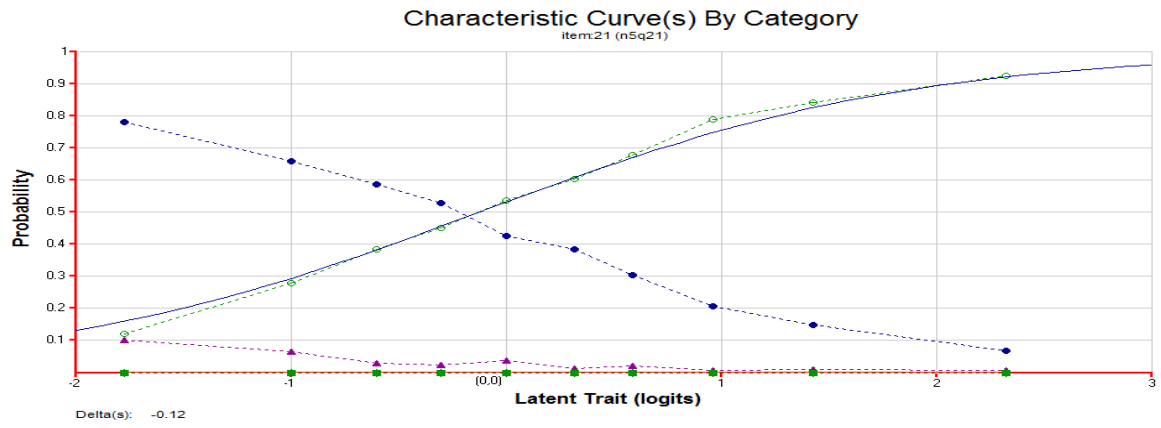


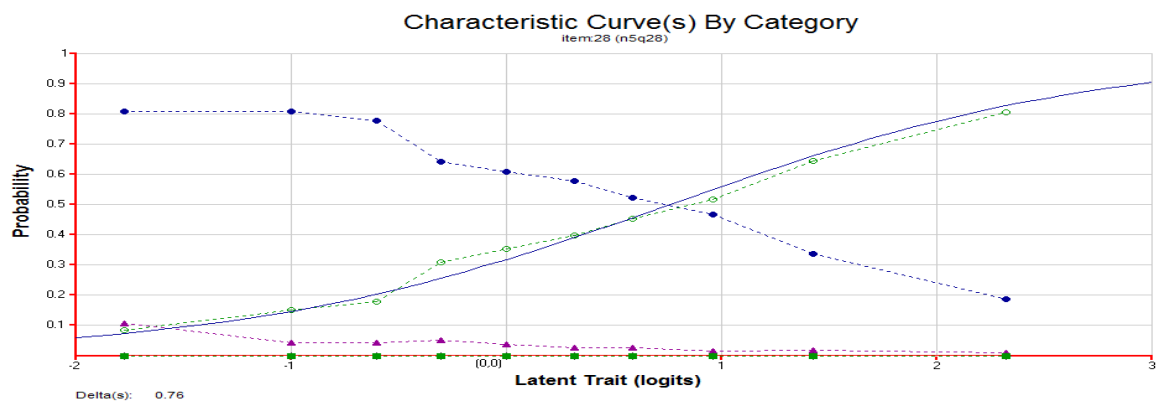
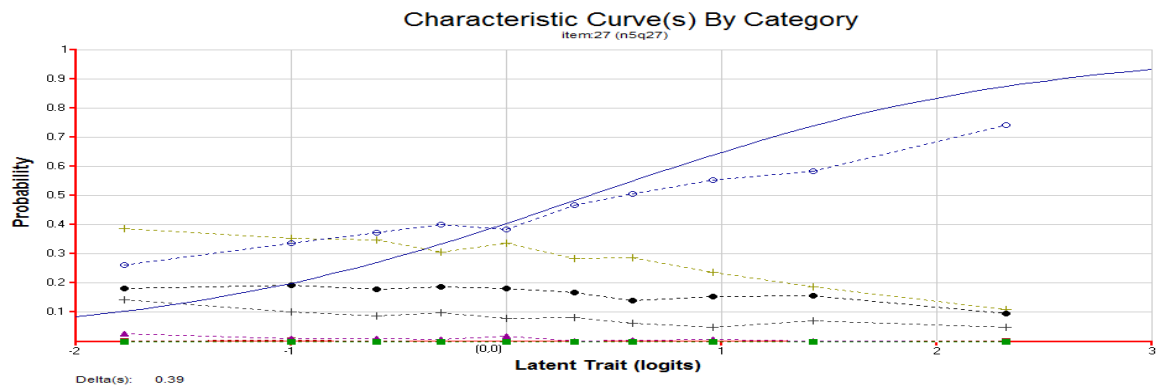
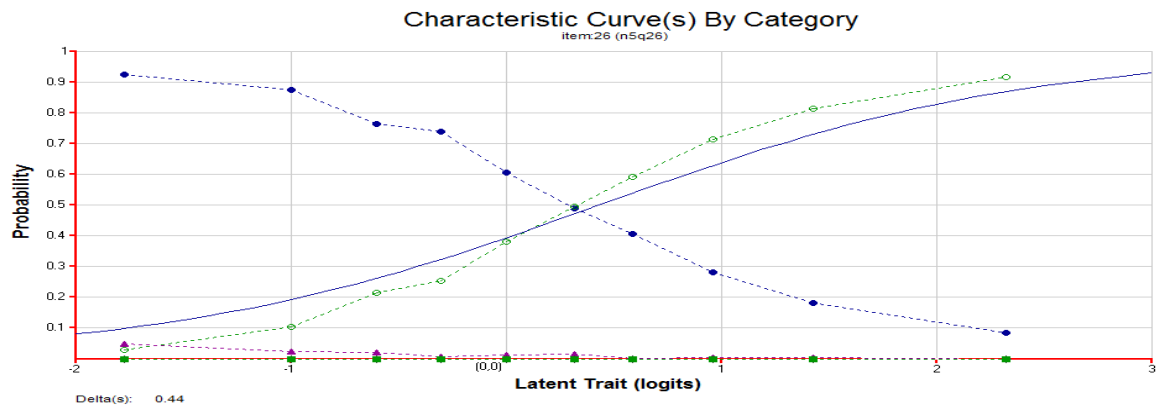
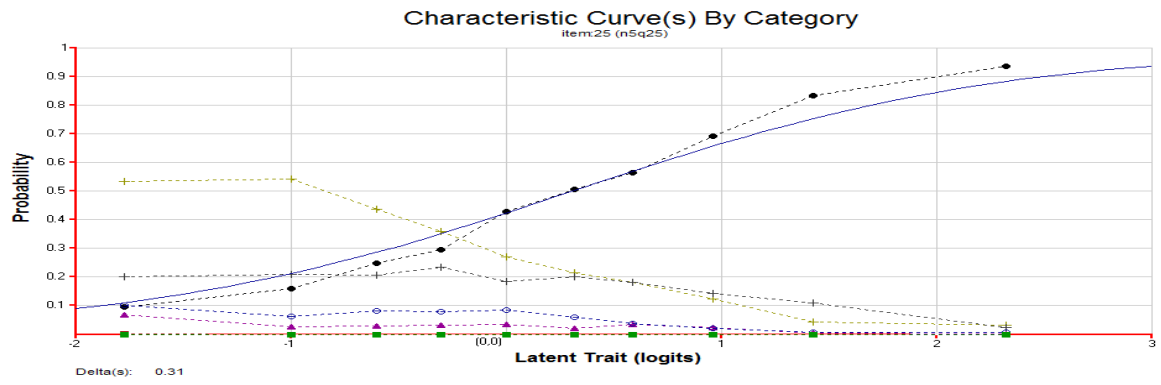


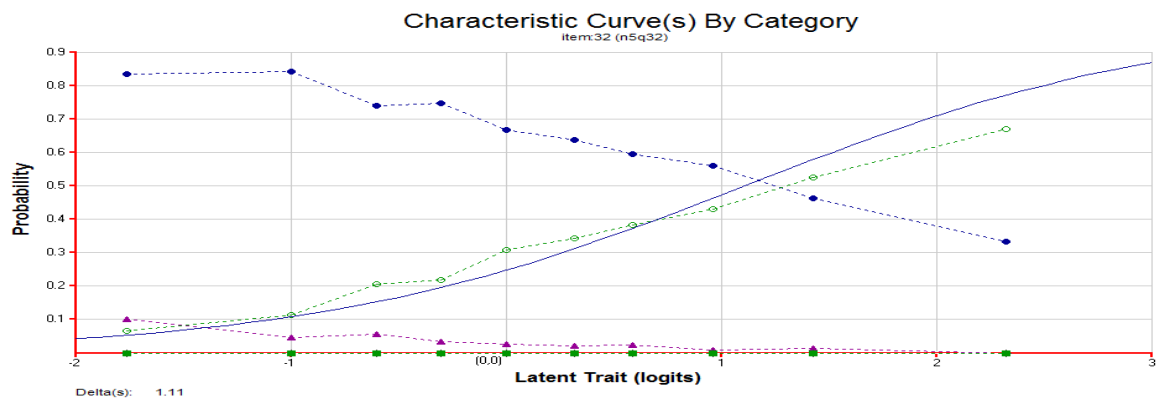
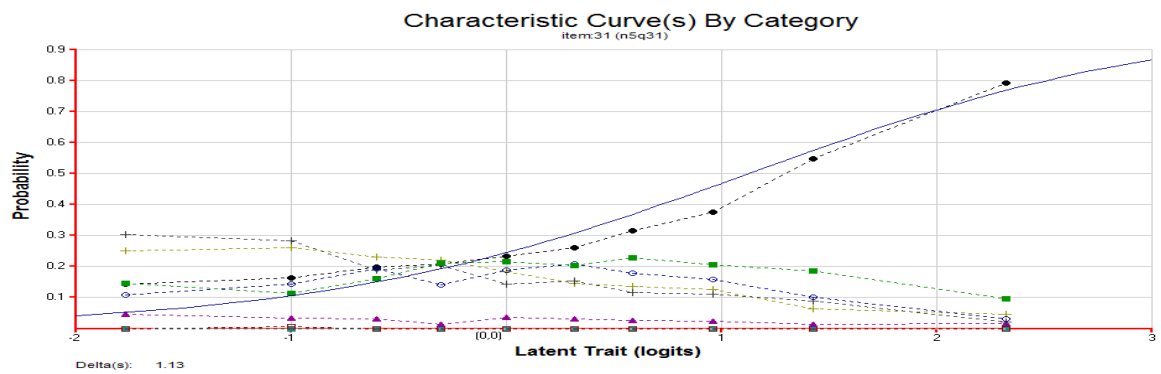
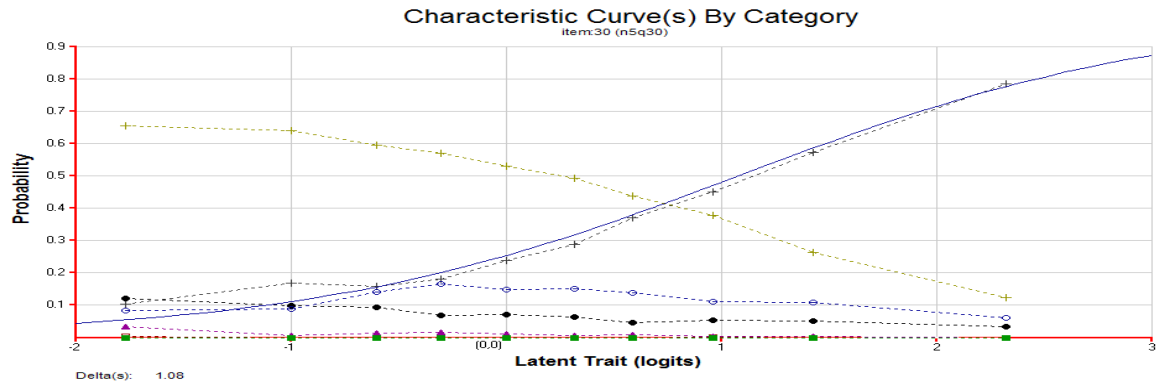
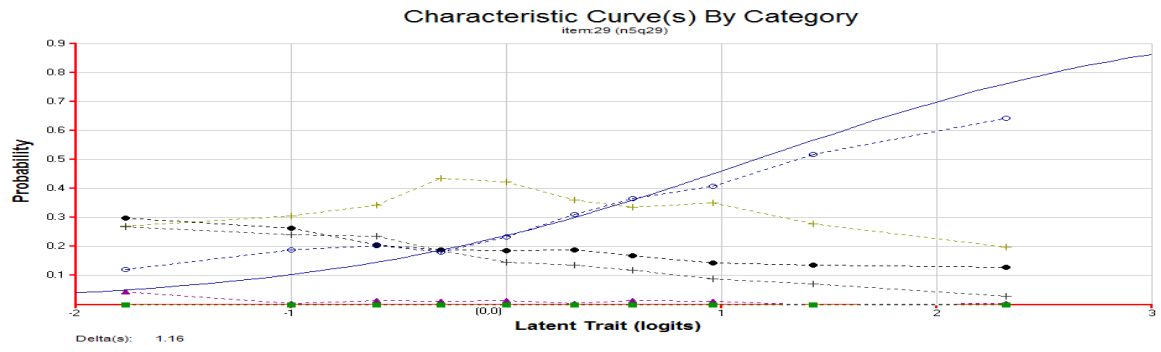


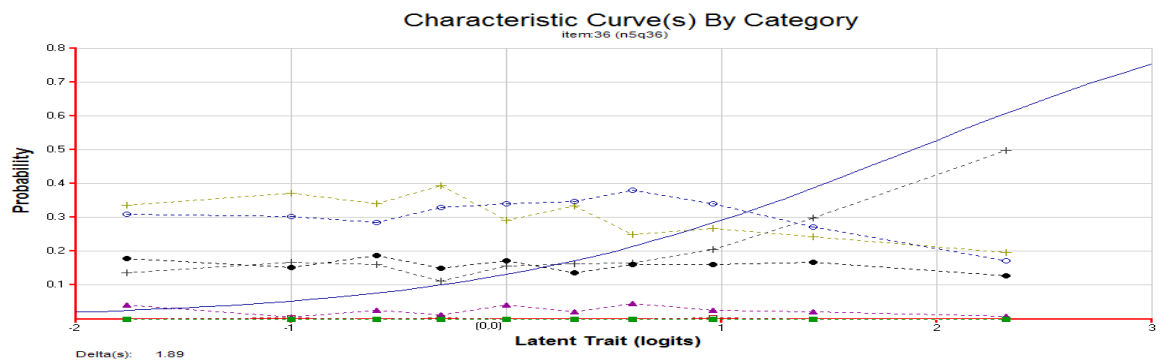
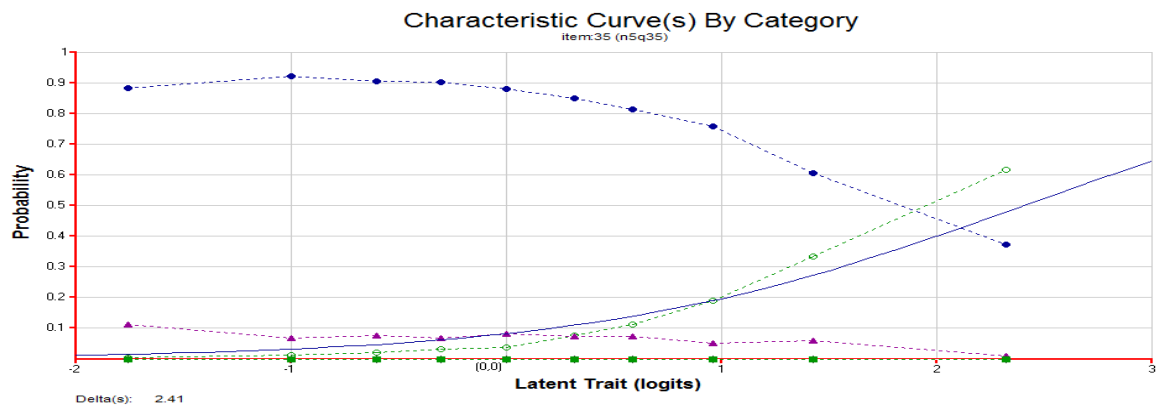
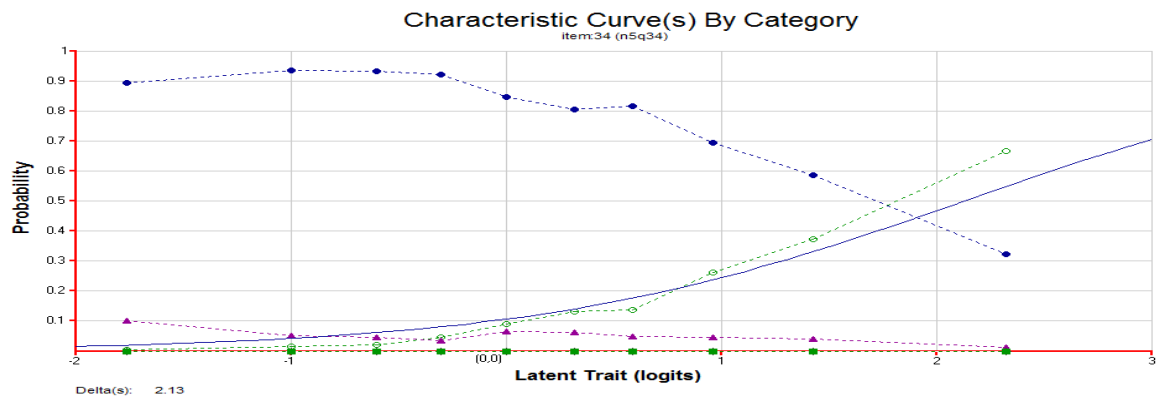
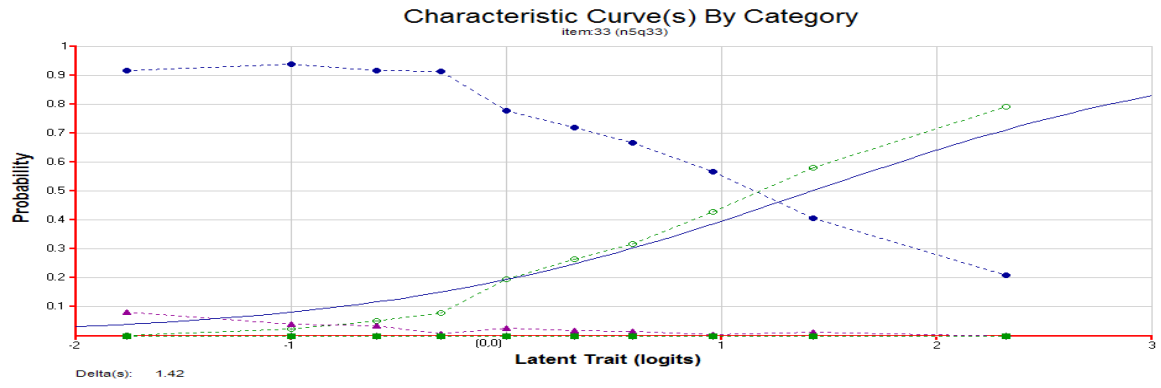


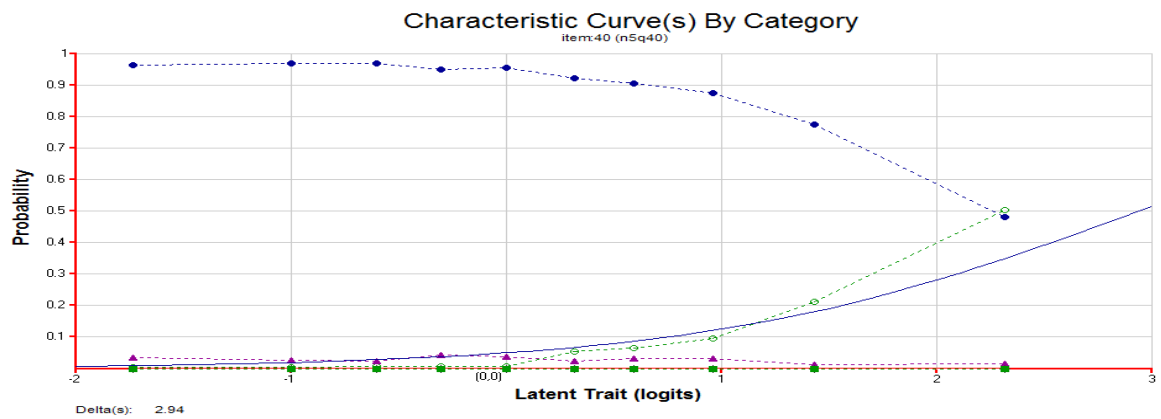
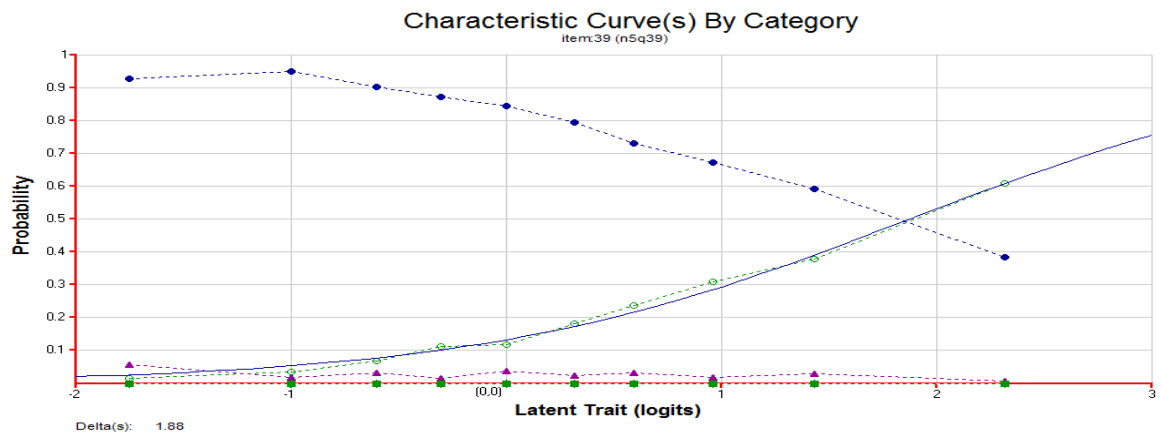
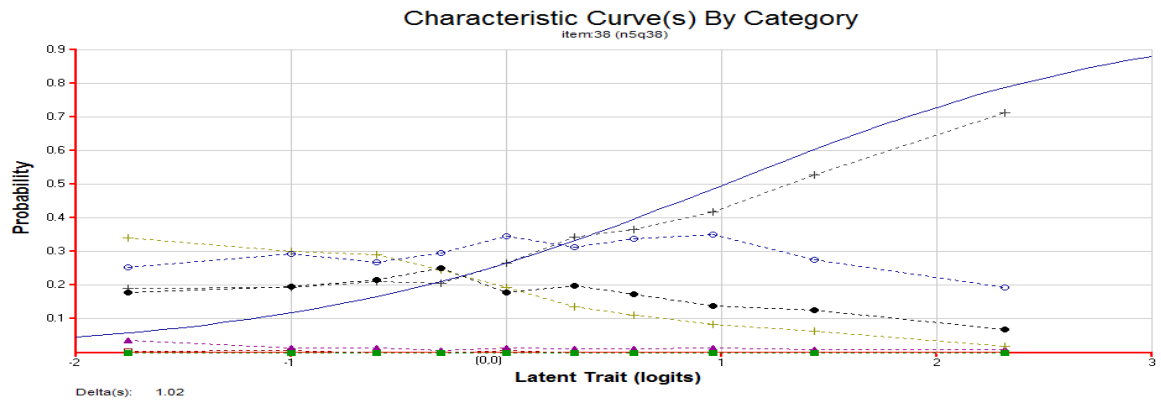
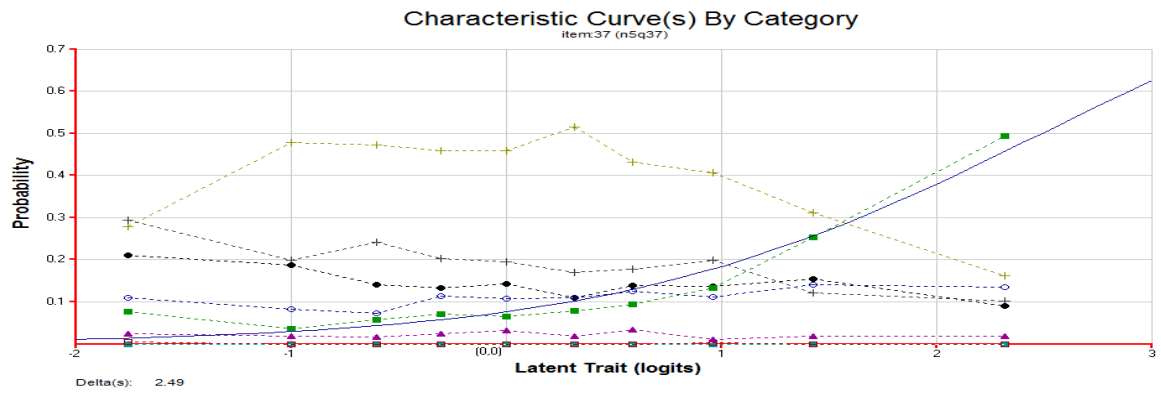






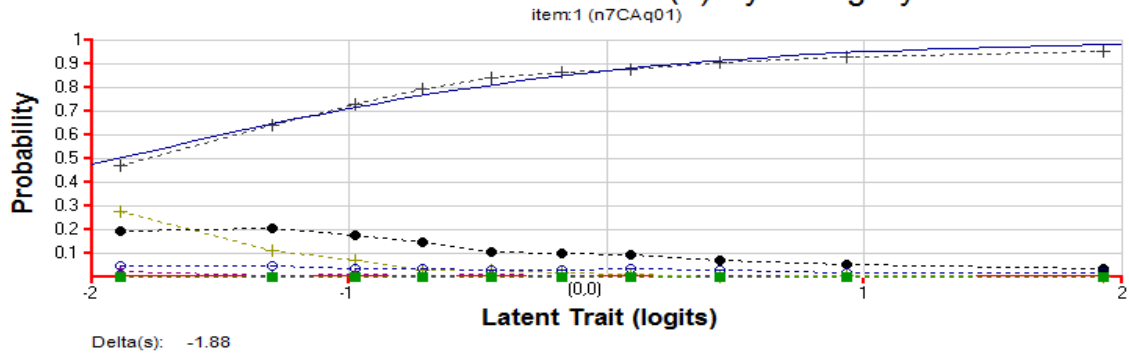




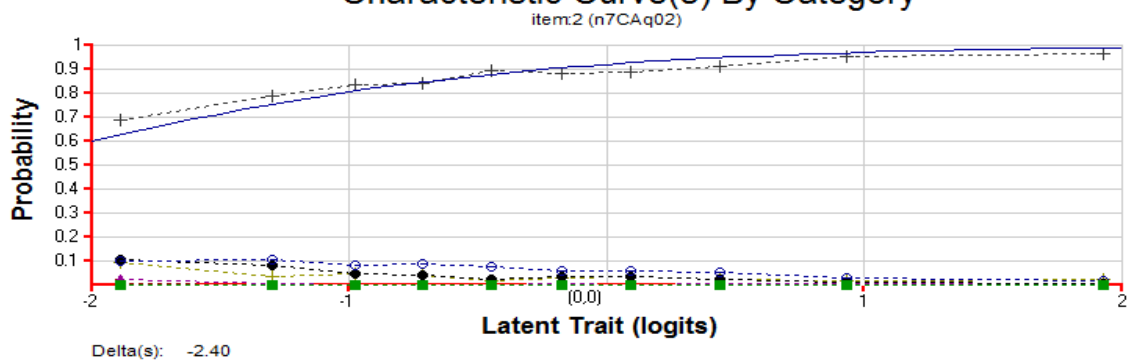


Year 7 Numeracy

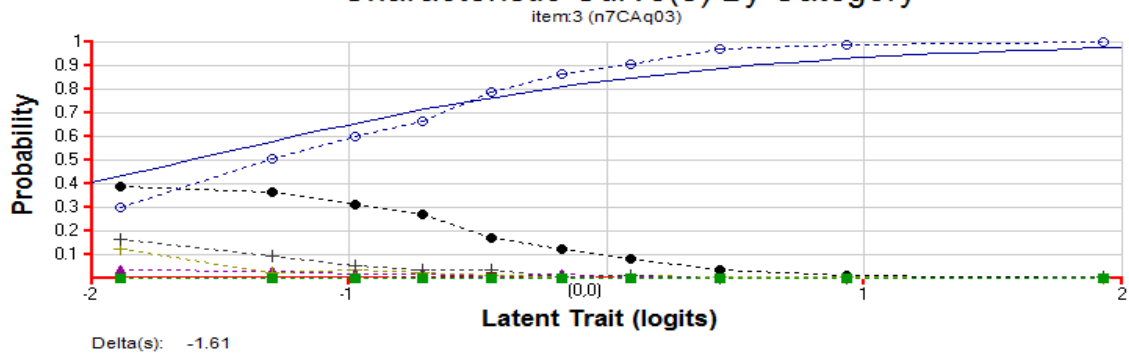
Characteristic Curve(s) By Category



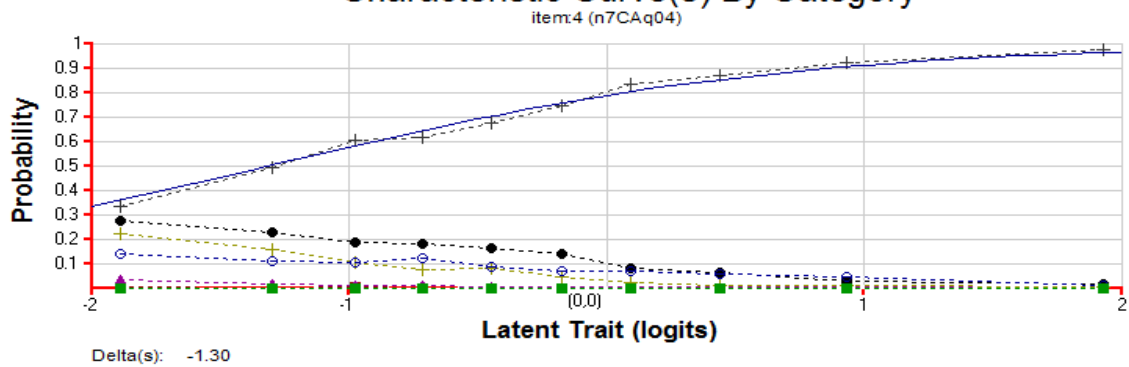
Characteristic Curve(s) By Category

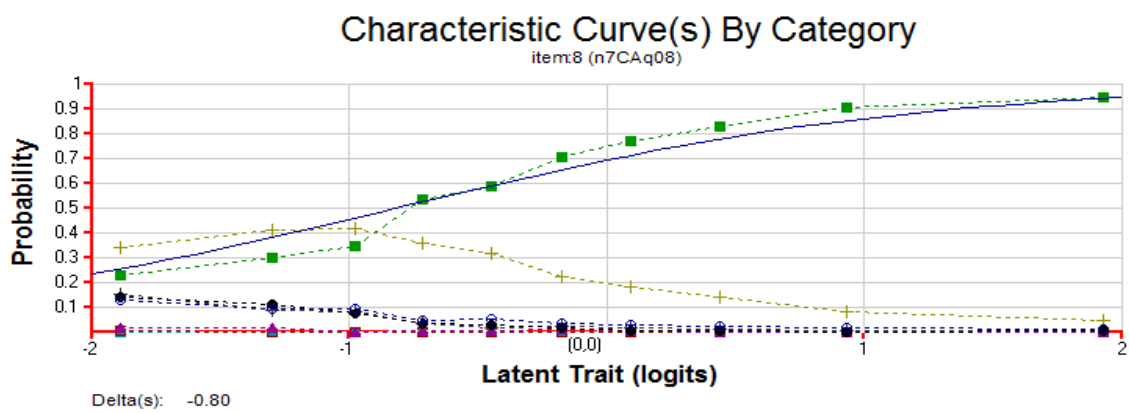
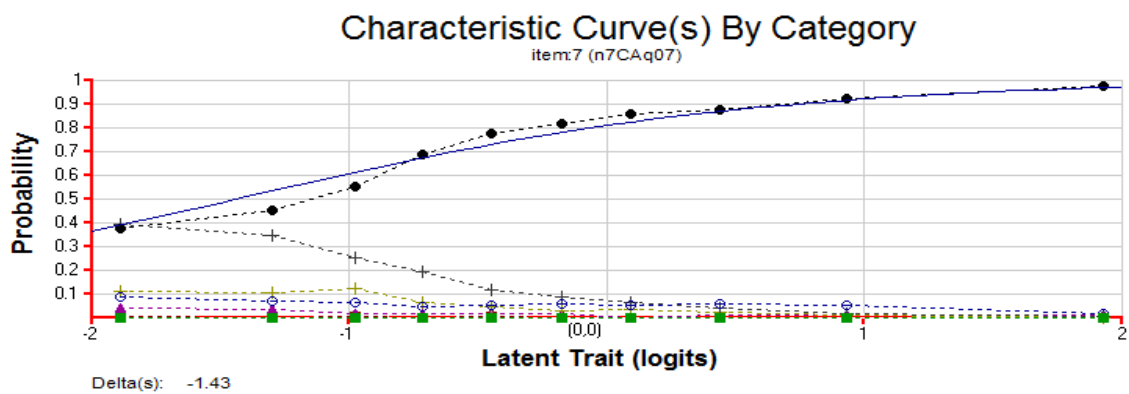
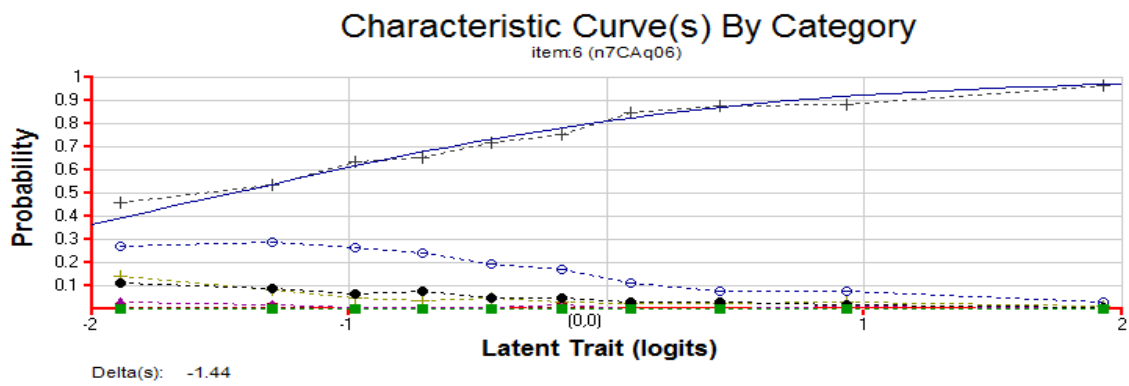
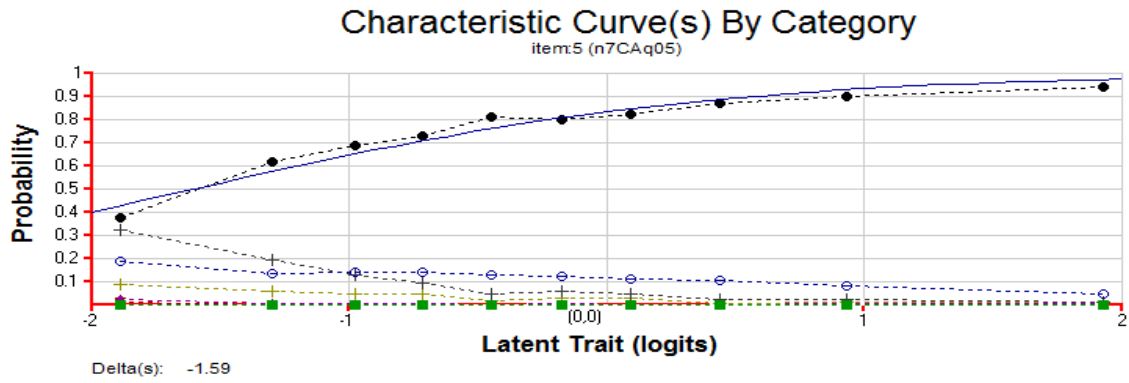


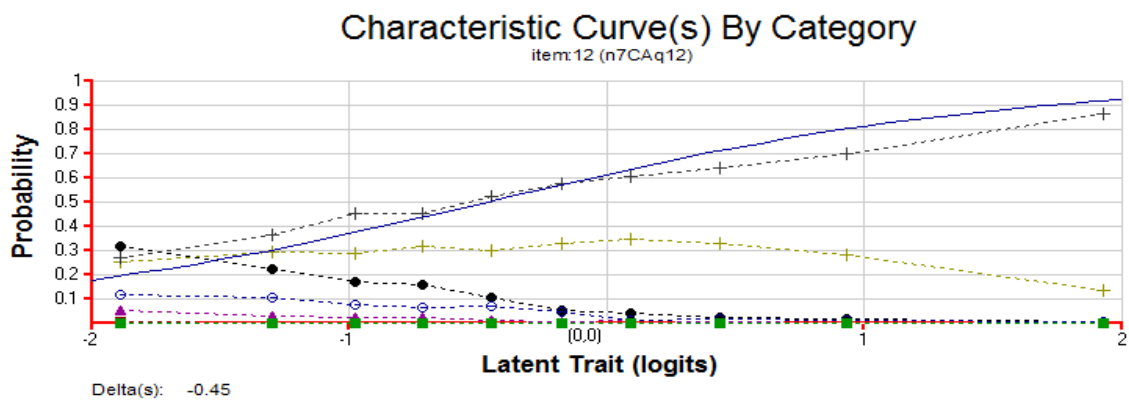
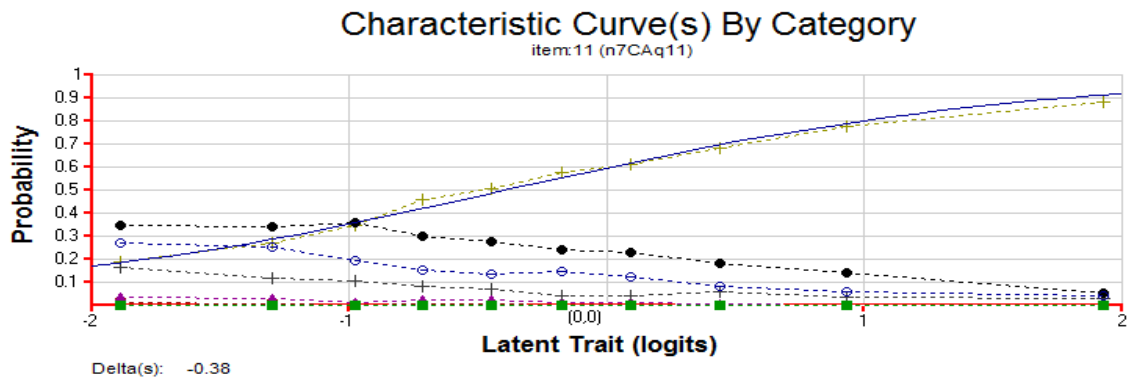
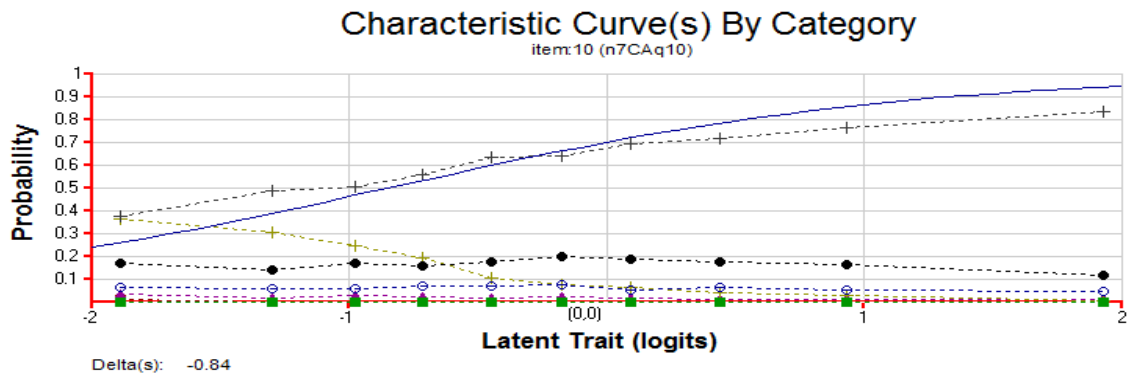
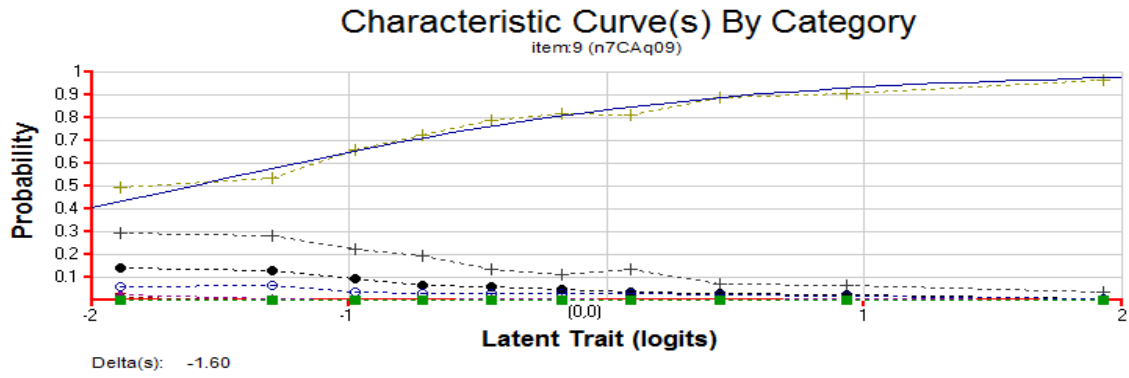
Characteristic Curve(s) By Category



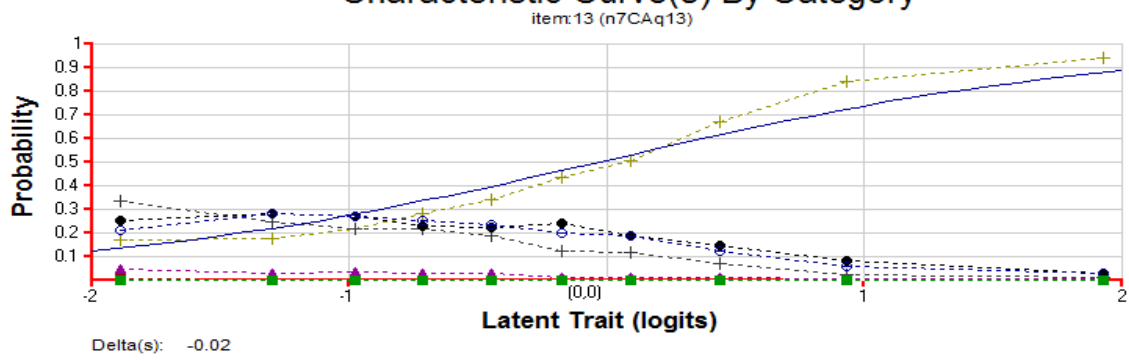
Characteristic Curve(s) By Category



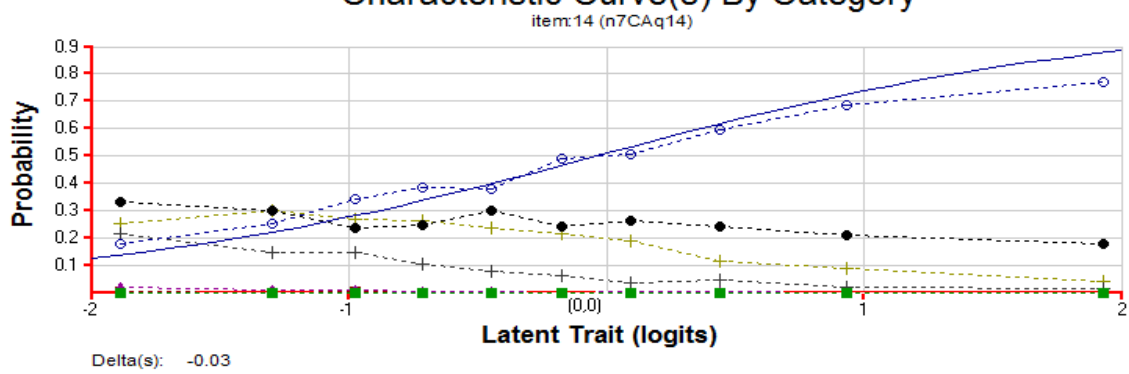




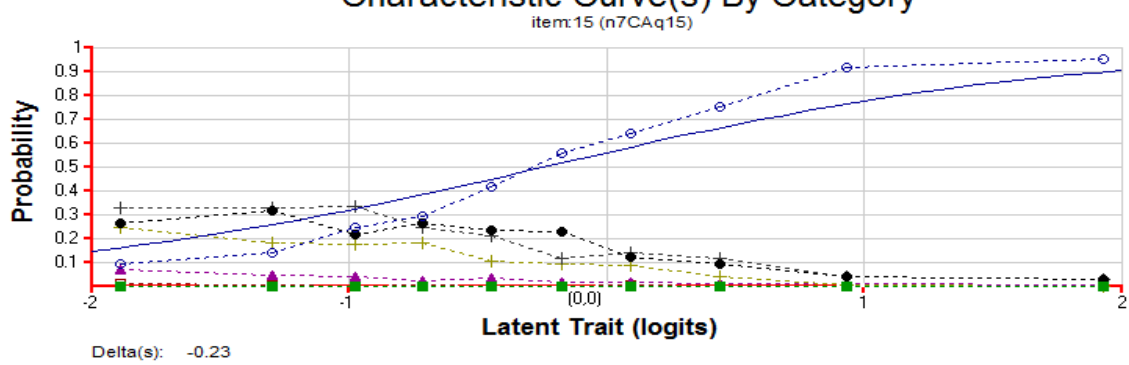
Characteristic Curve(s) By Category



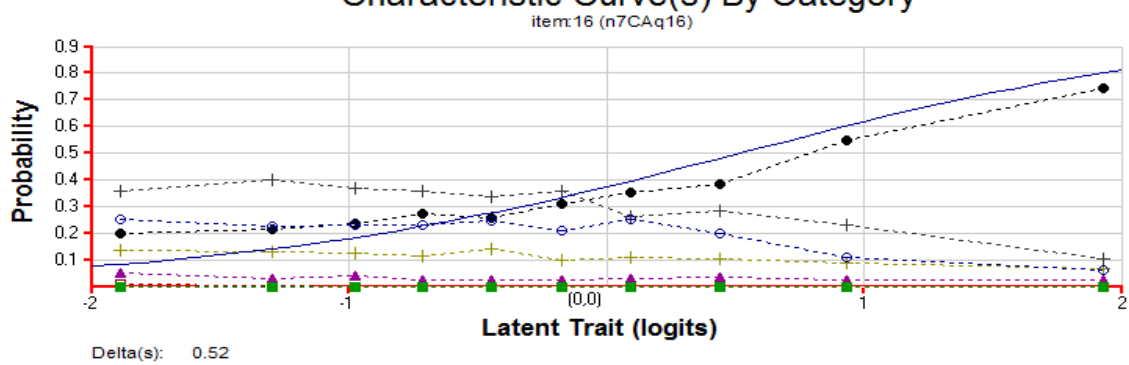
Characteristic Curve(s) By Category



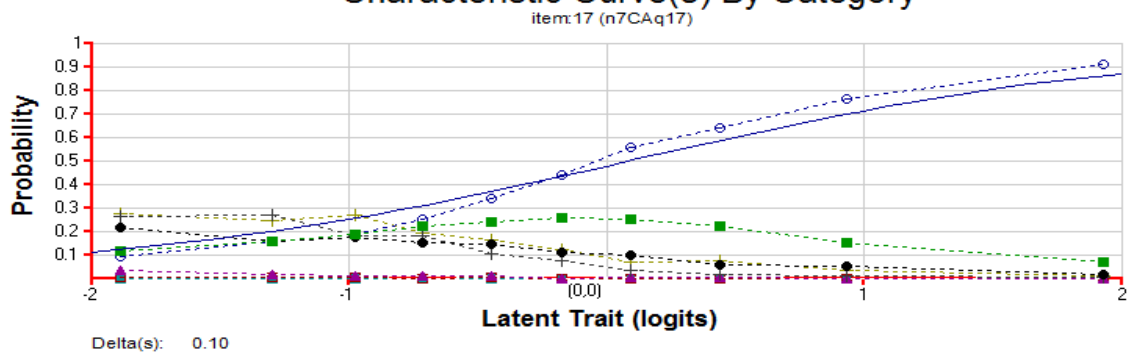
Characteristic Curve(s) By Category



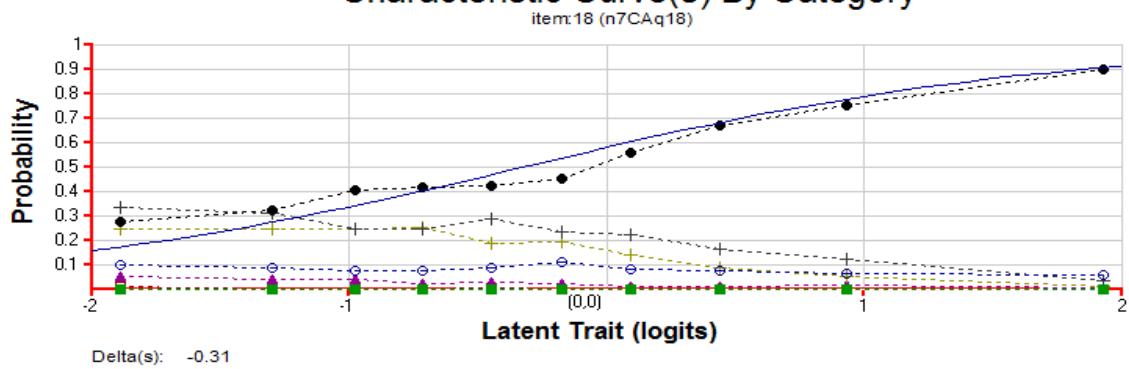
Characteristic Curve(s) By Category



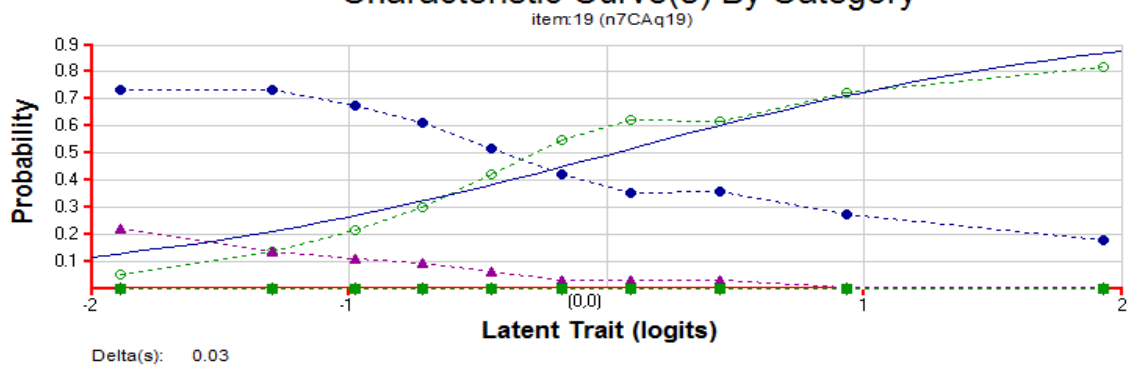
Characteristic Curve(s) By Category



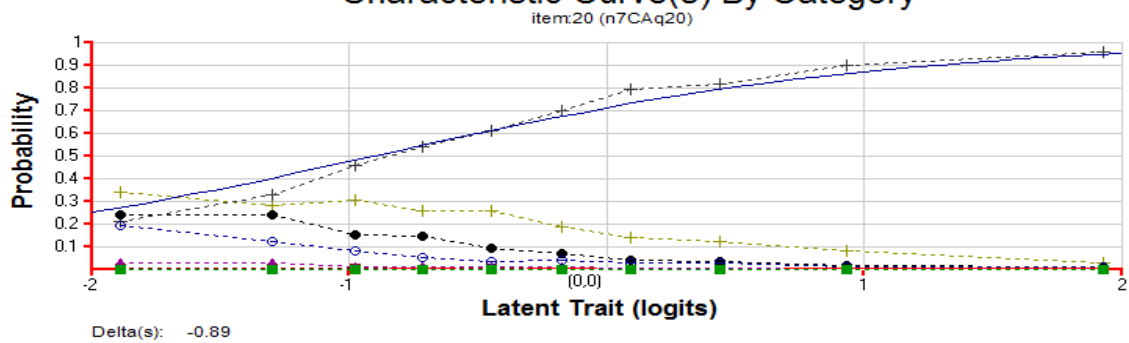
Characteristic Curve(s) By Category

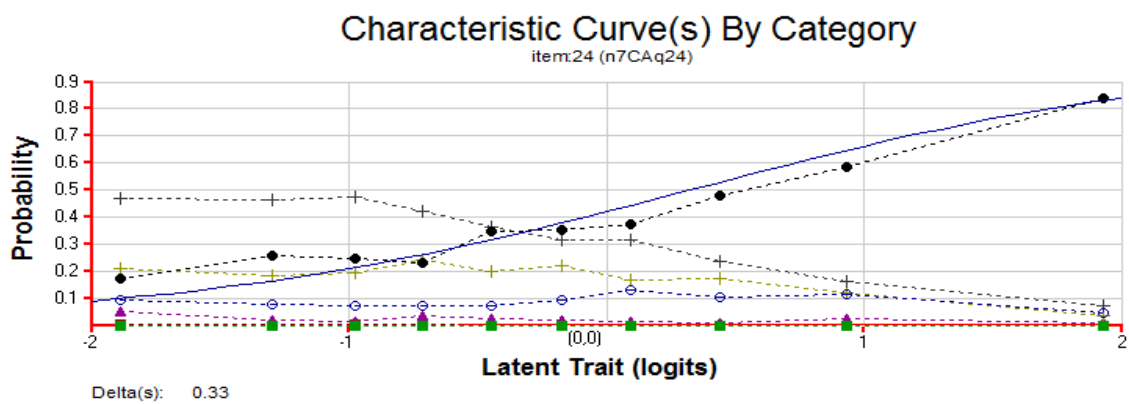
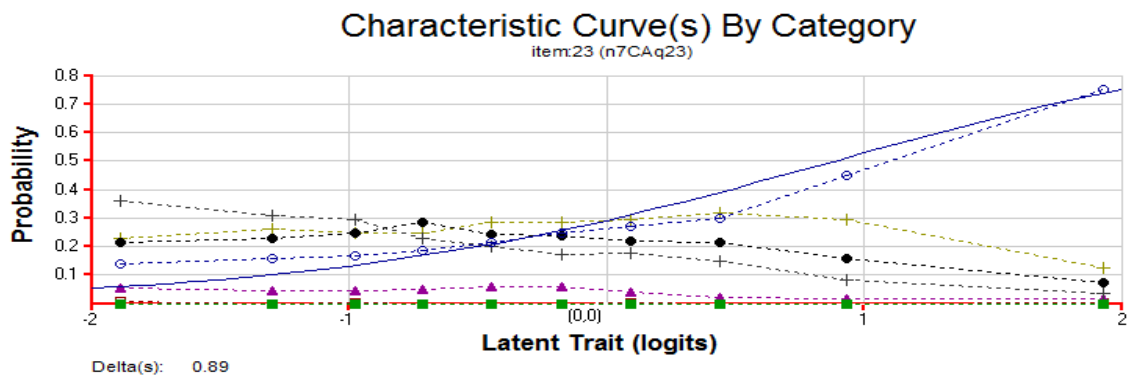
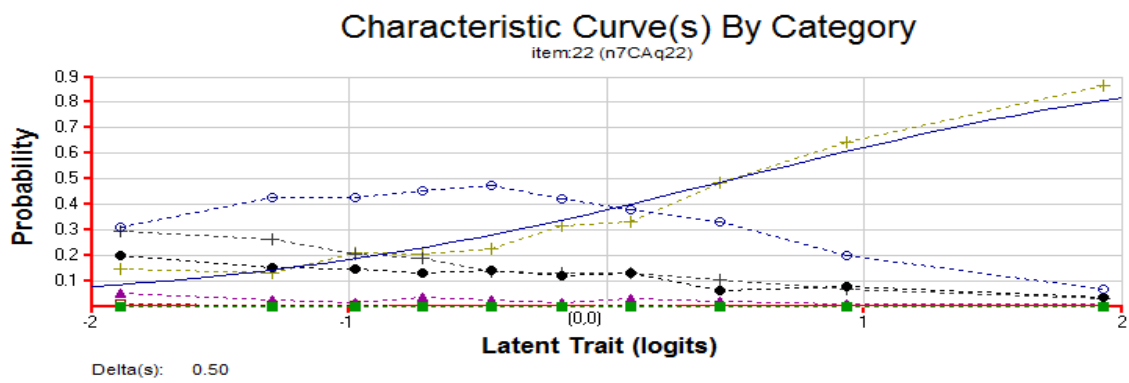
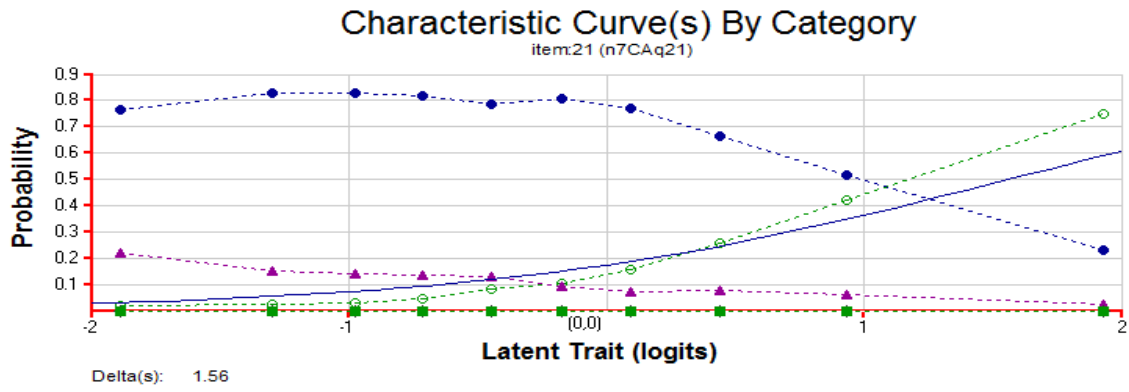


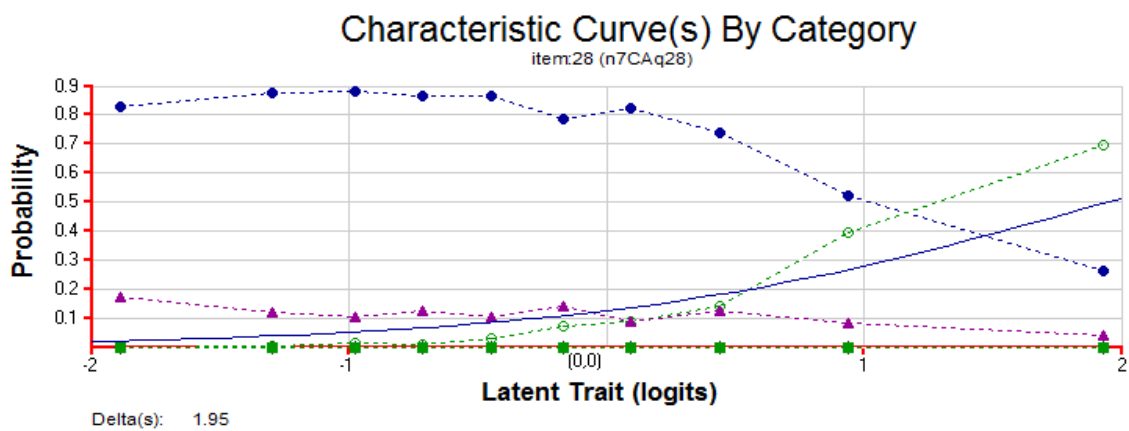
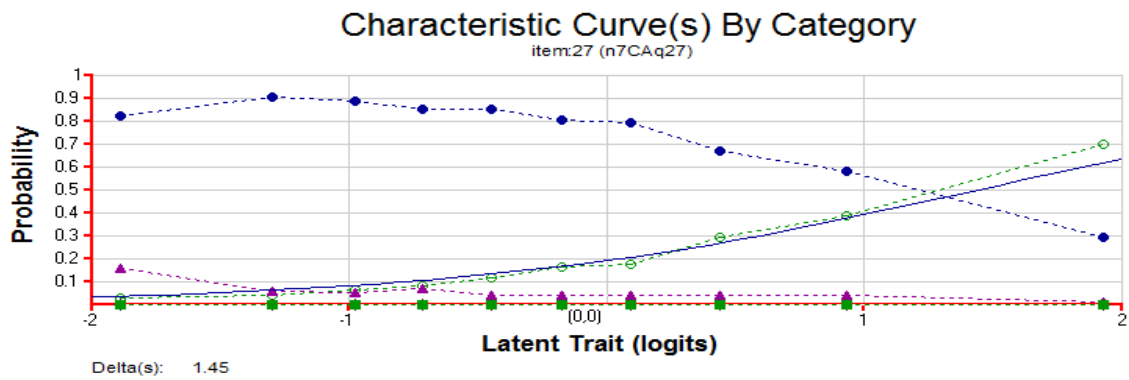
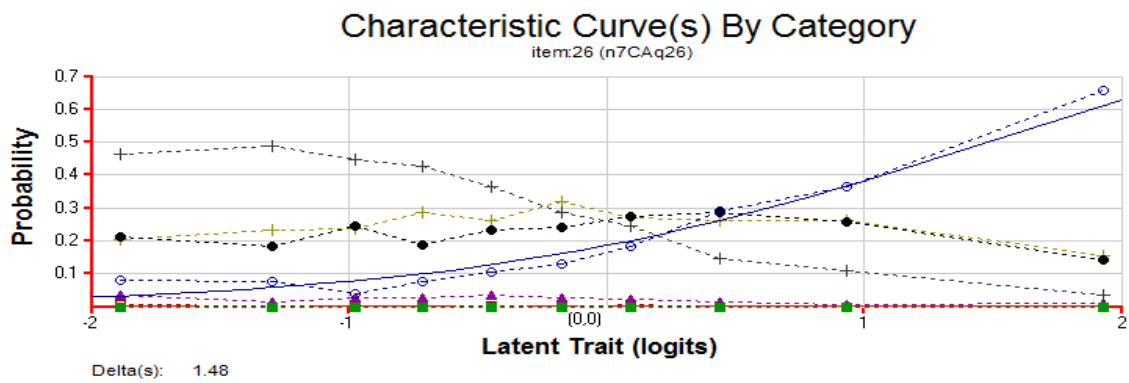
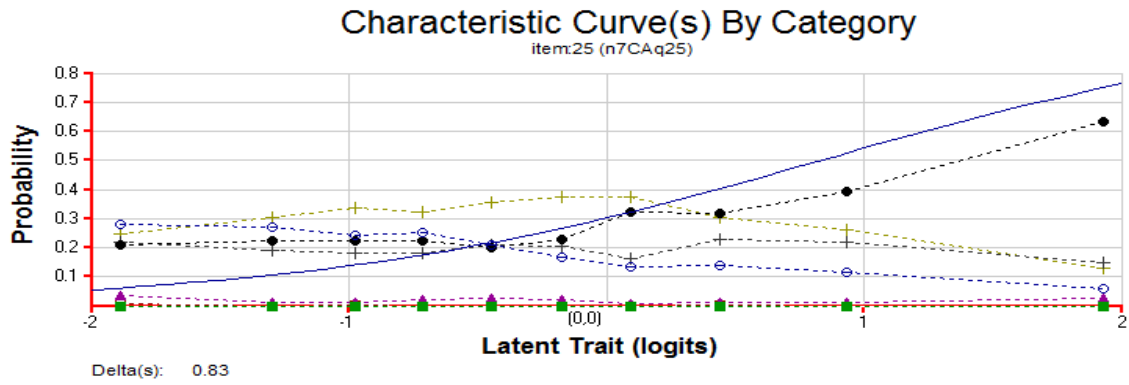
Characteristic Curve(s) By Category

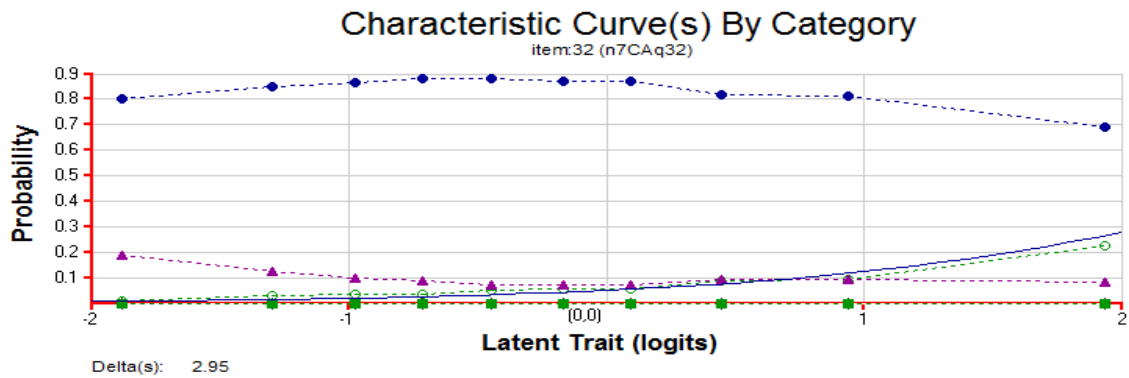
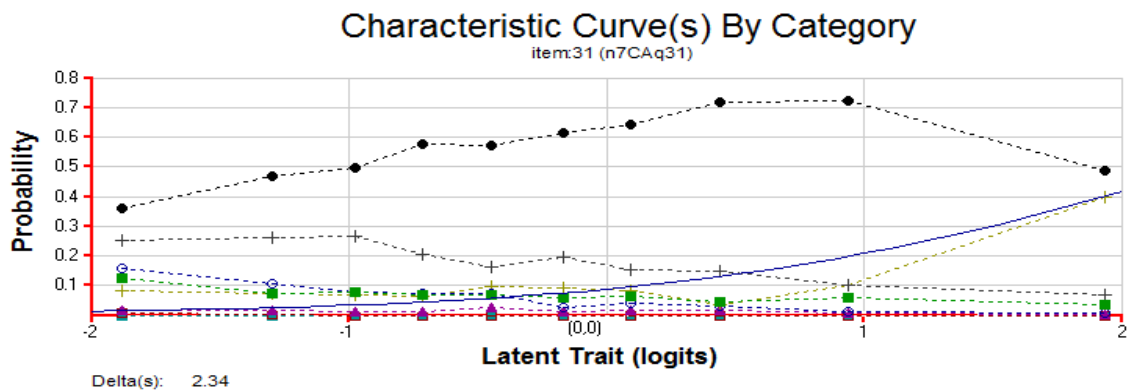
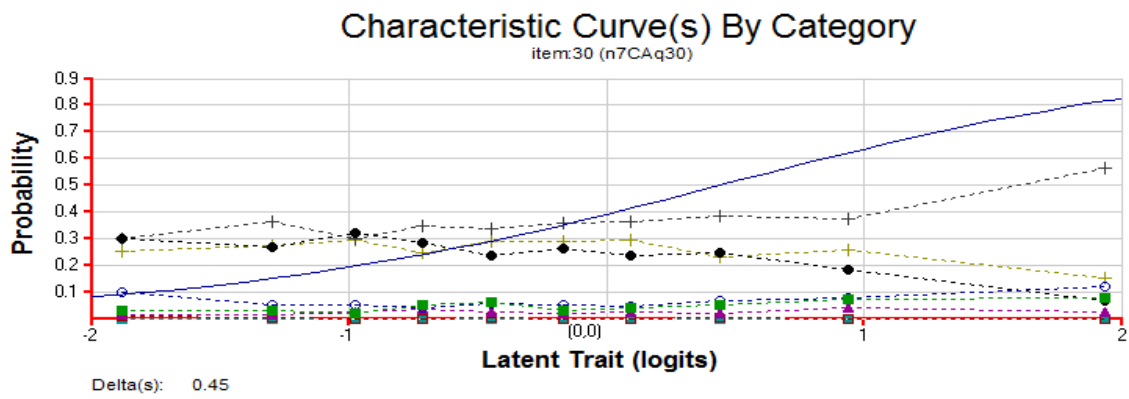
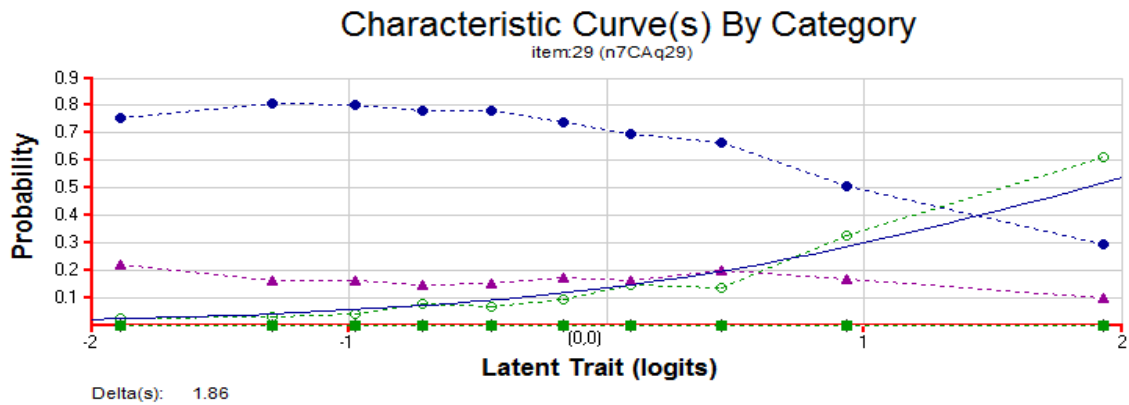


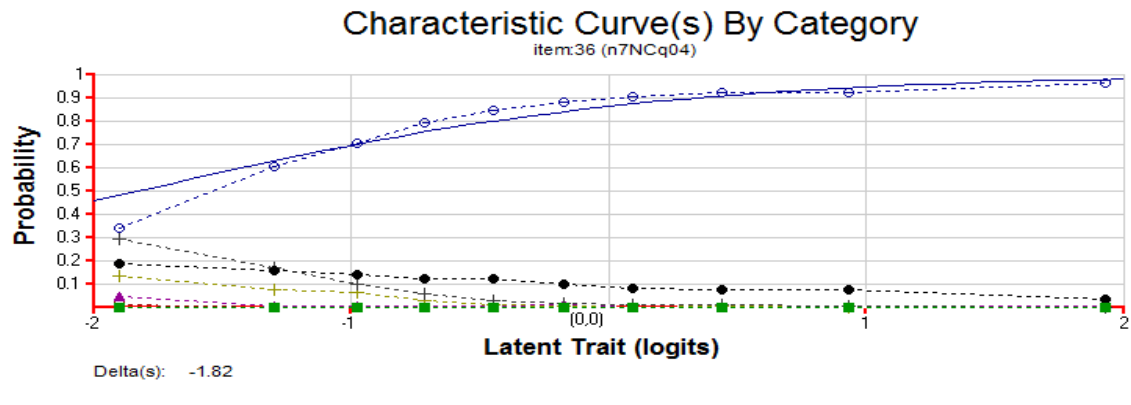
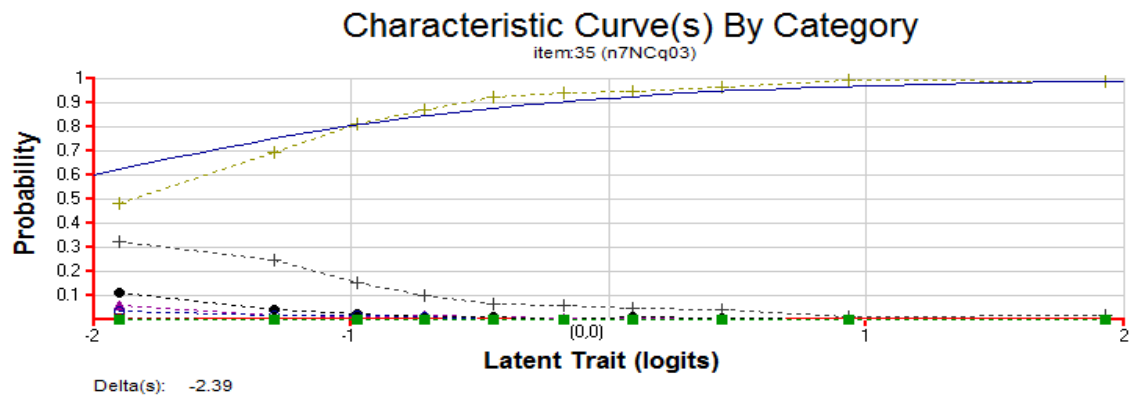
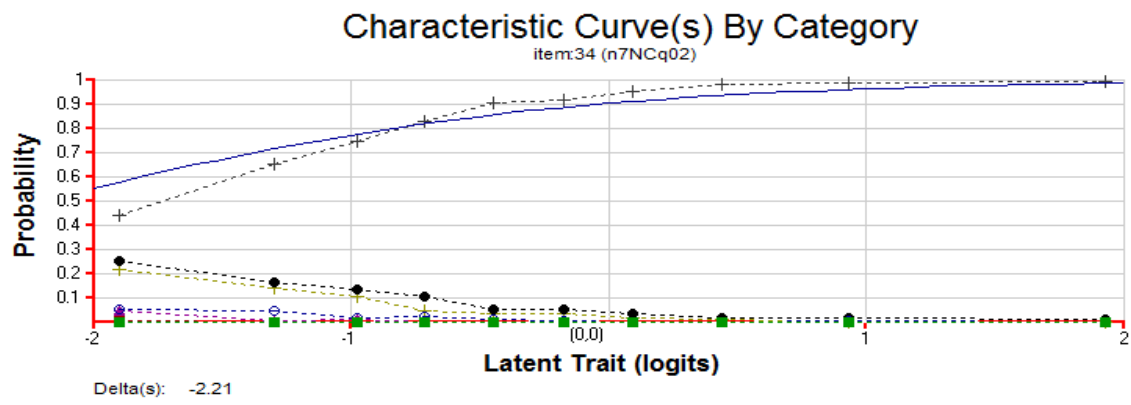
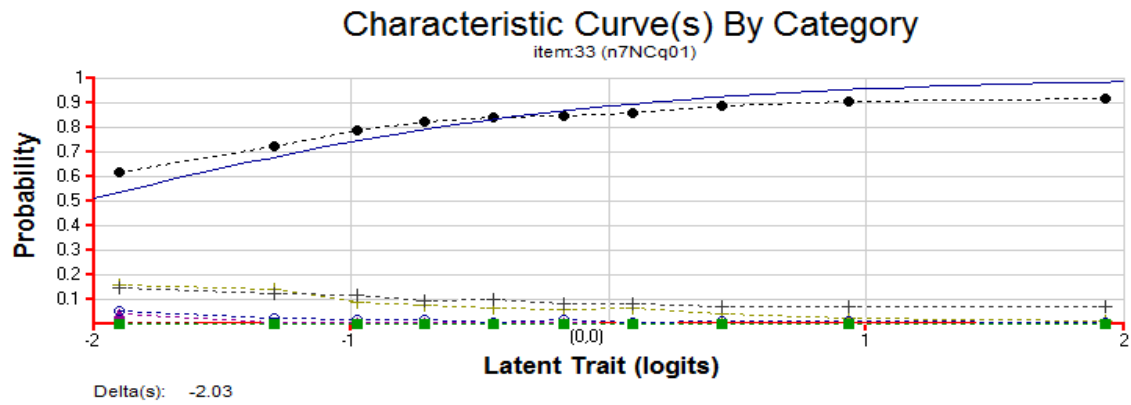
Characteristic Curve(s) By Category



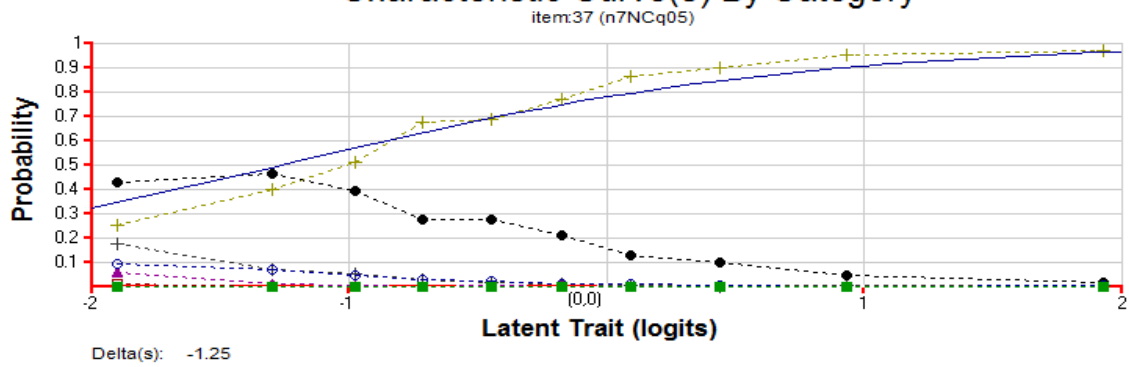




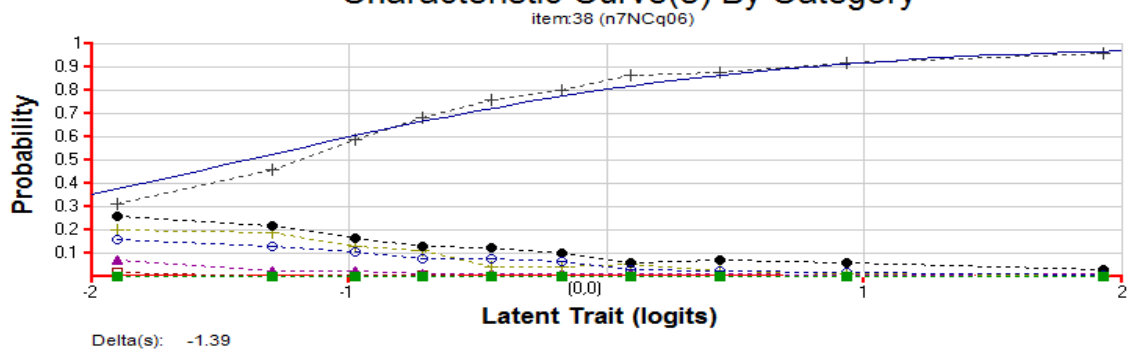




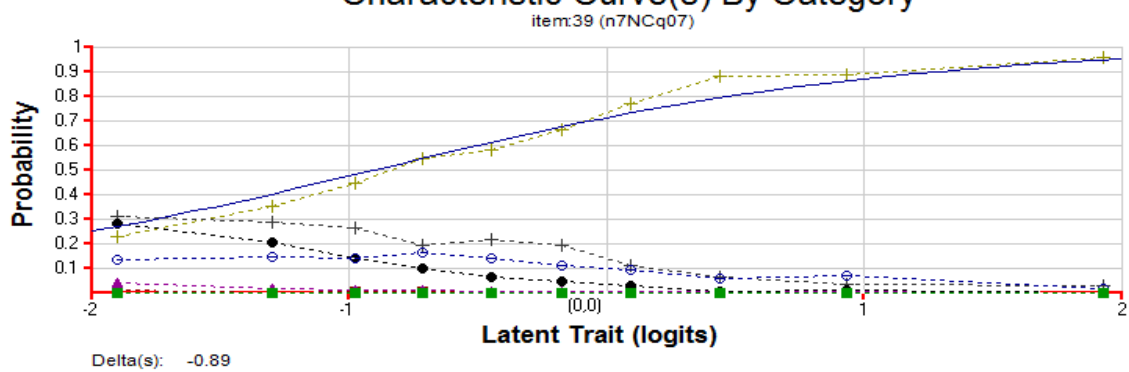
Characteristic Curve(s) By Category



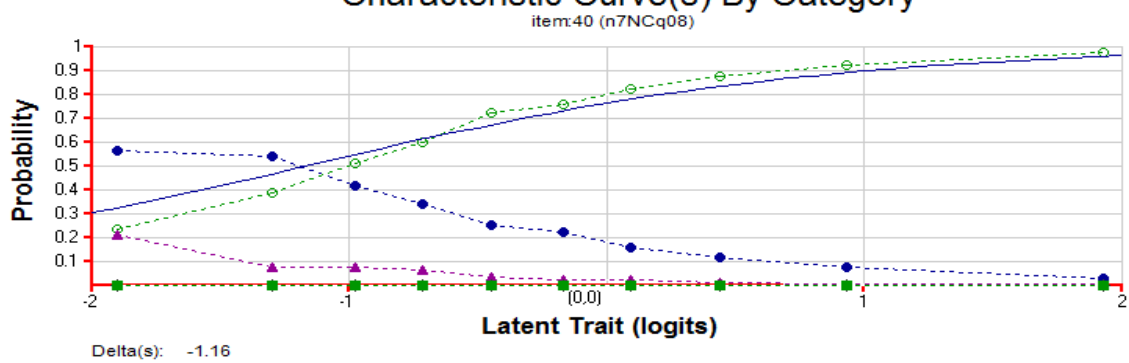
Characteristic Curve(s) By Category



Characteristic Curve(s) By Category

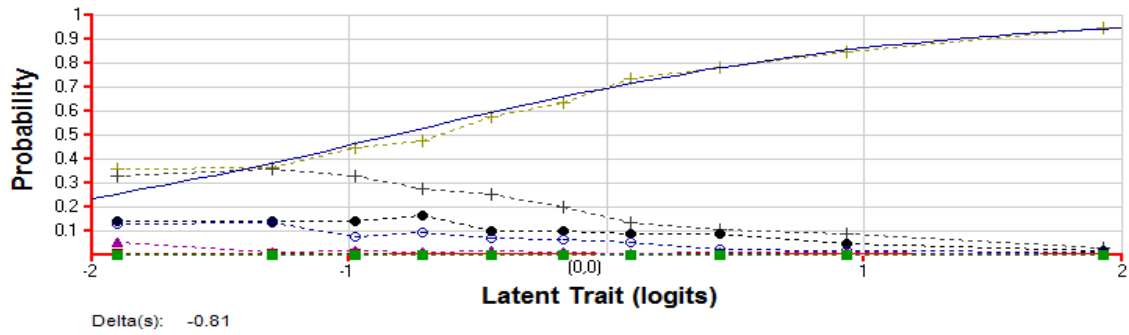


Characteristic Curve(s) By Category



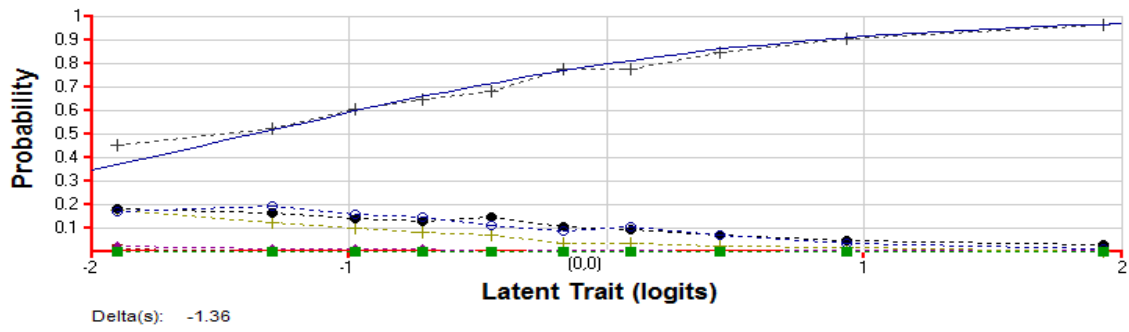
Characteristic Curve(s) By Category

item:41 (n7NCq09)



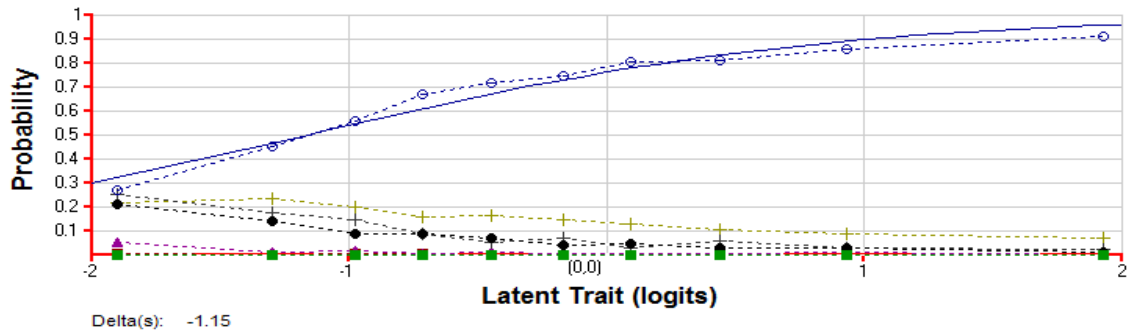
Characteristic Curve(s) By Category

item:42 (n7NCq10)



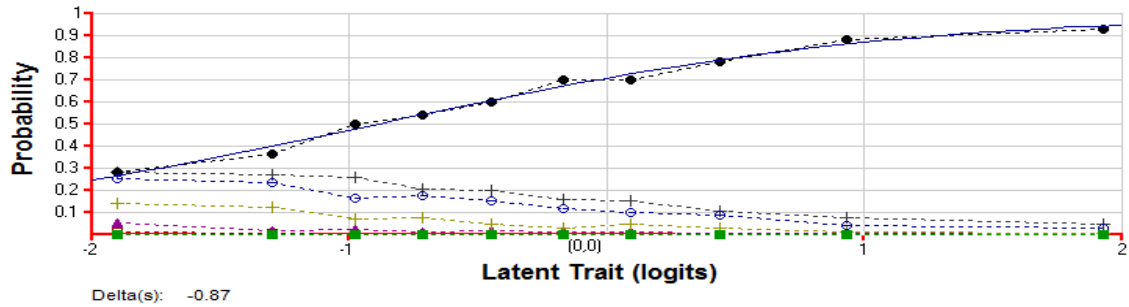
Characteristic Curve(s) By Category

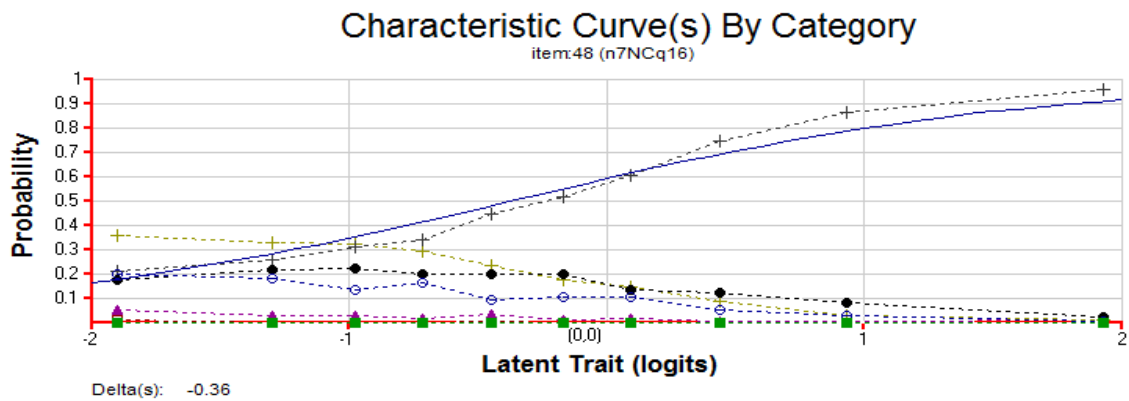
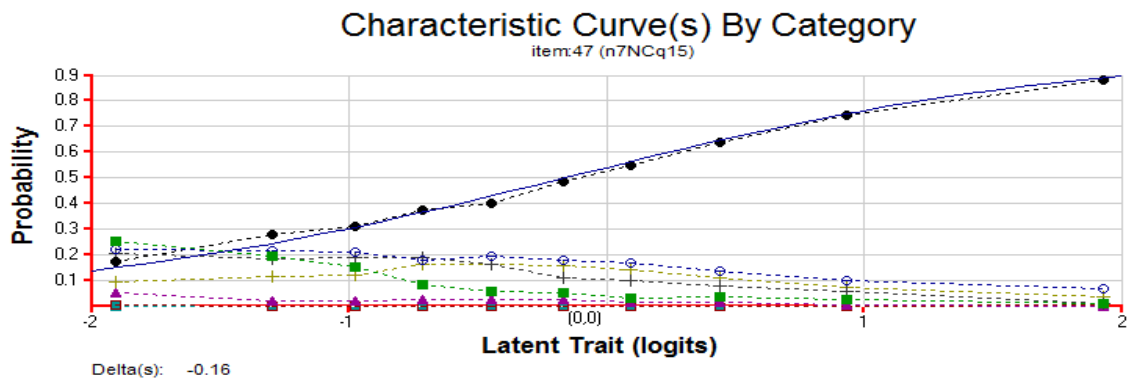
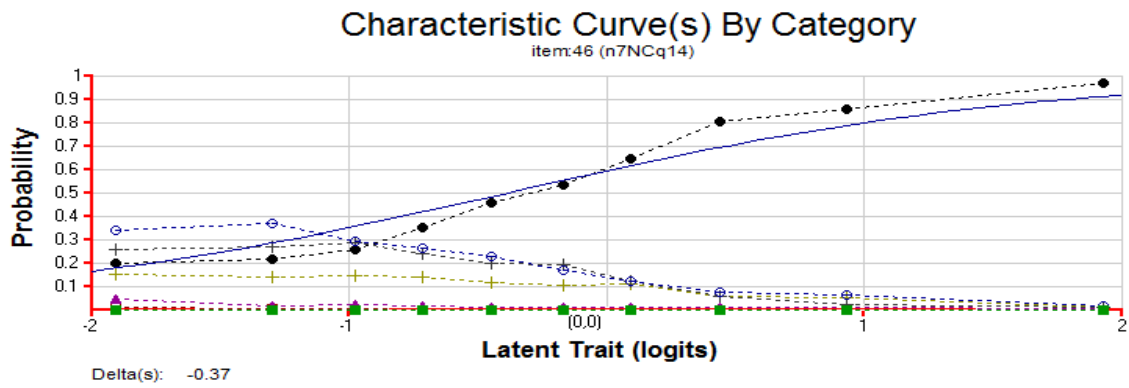
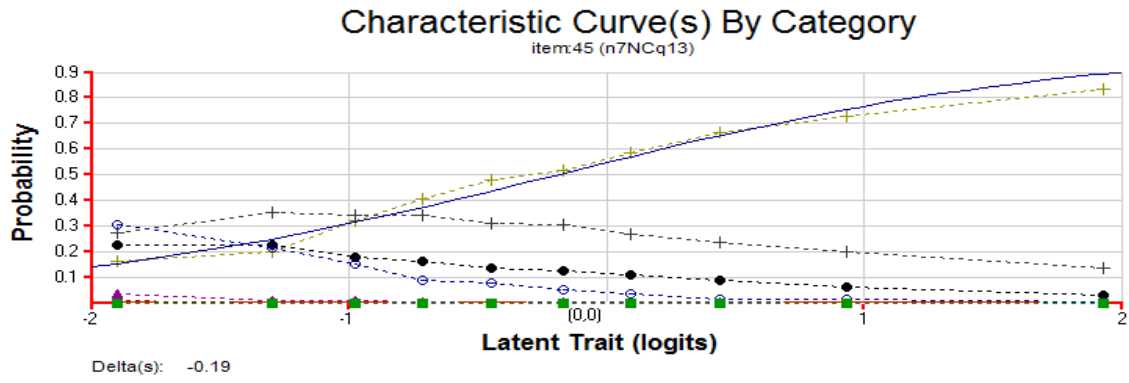
item:43 (n7NCq11)

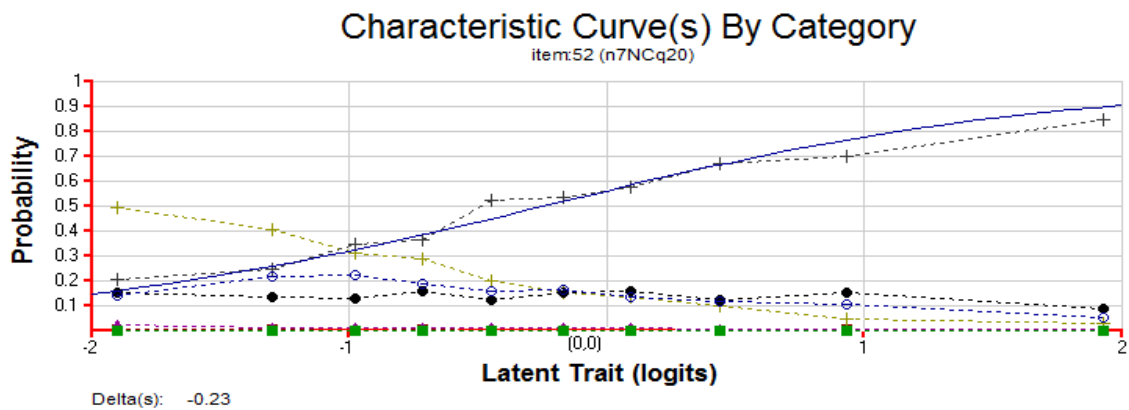
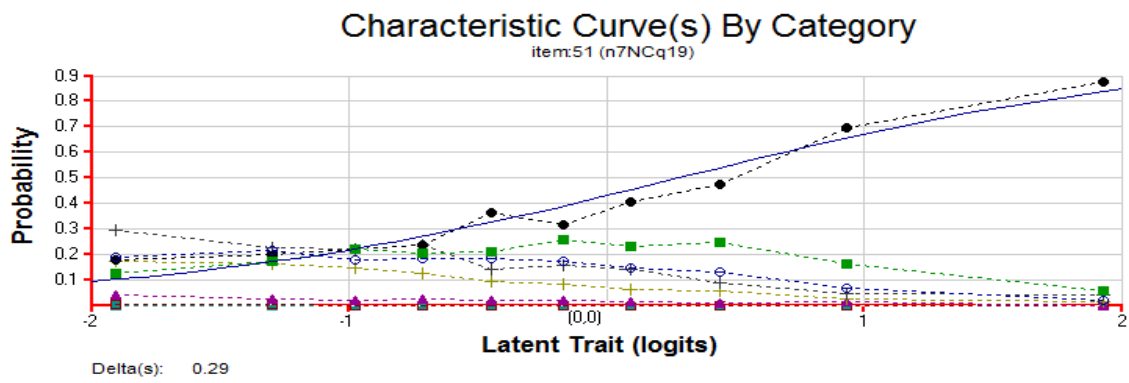
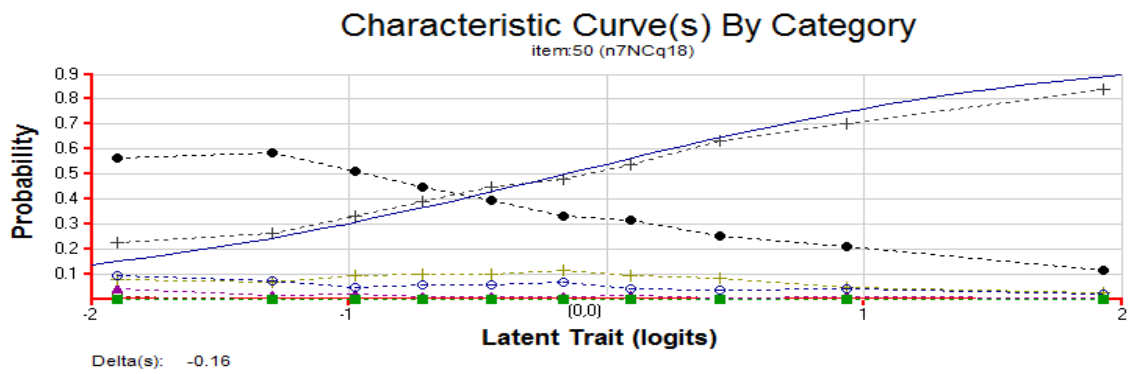
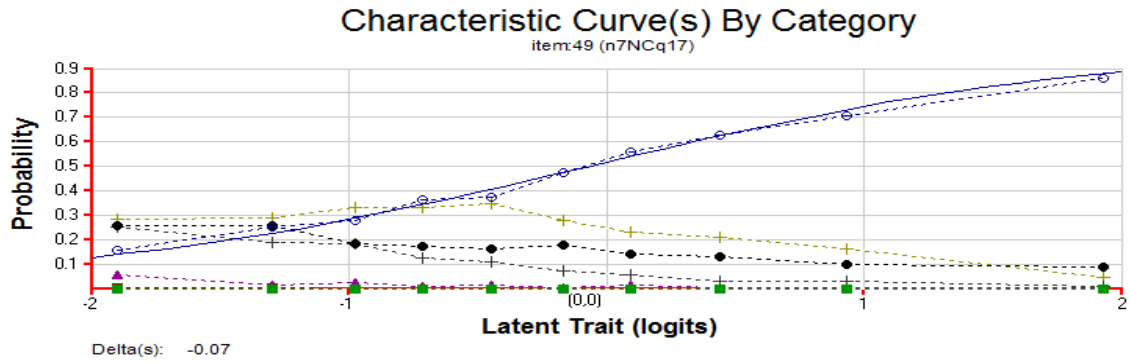


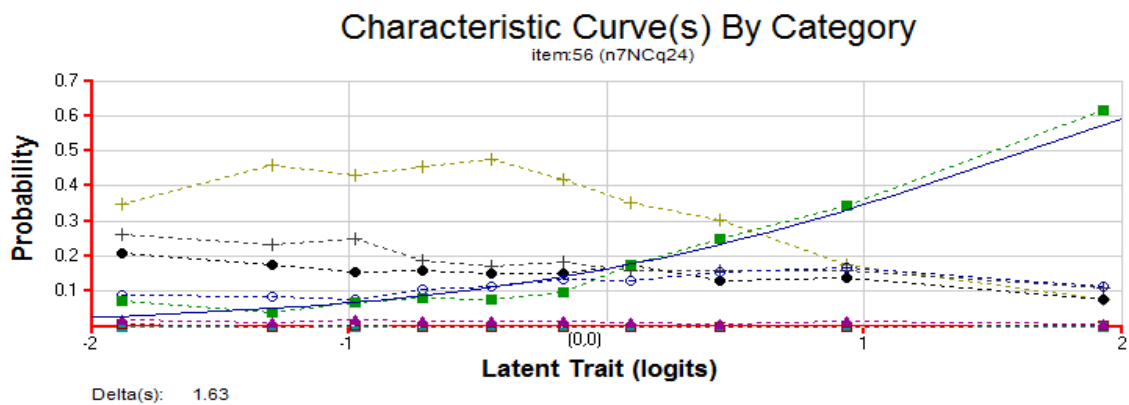
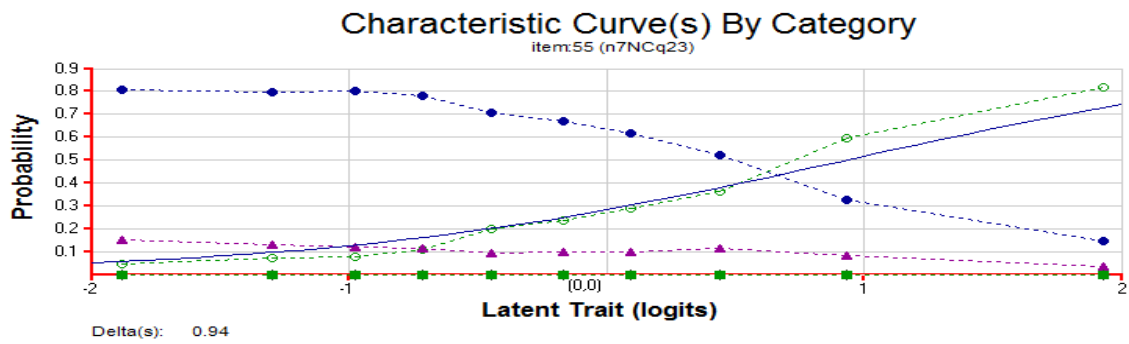
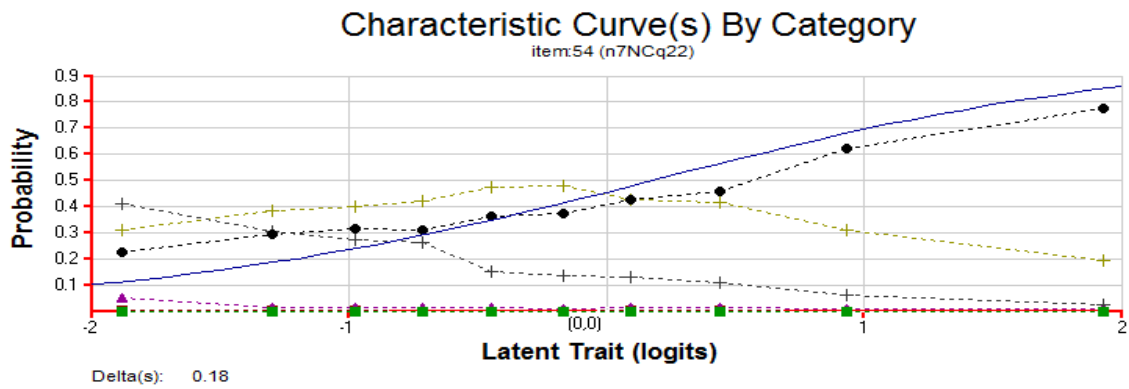
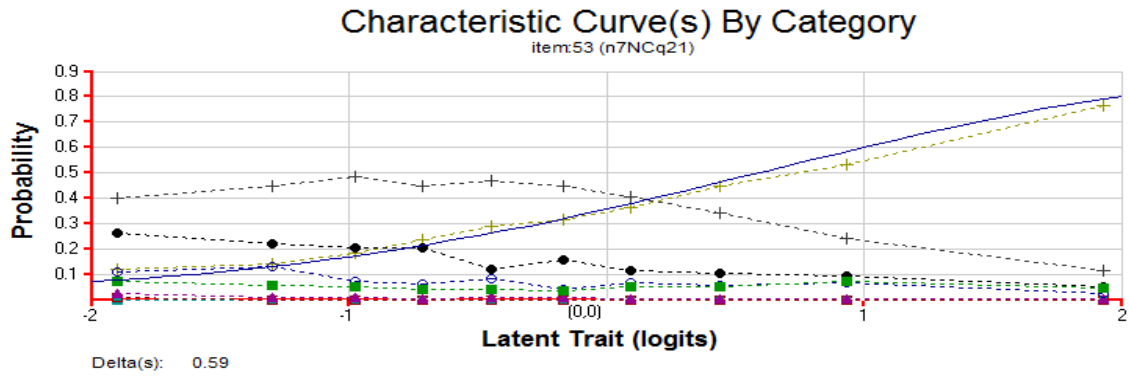
Characteristic Curve(s) By Category

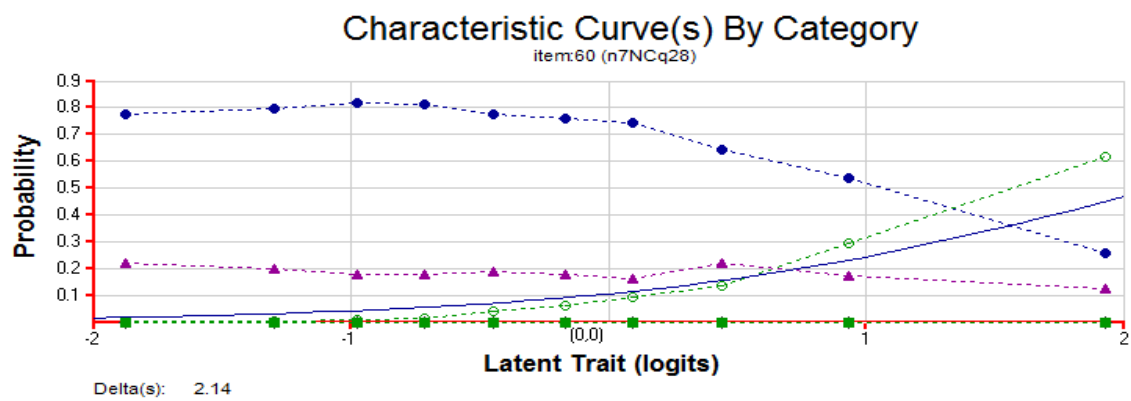
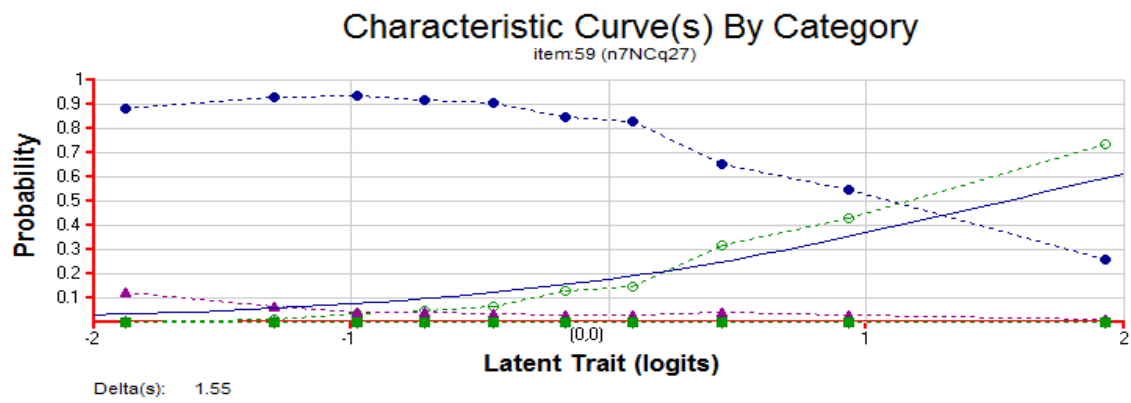
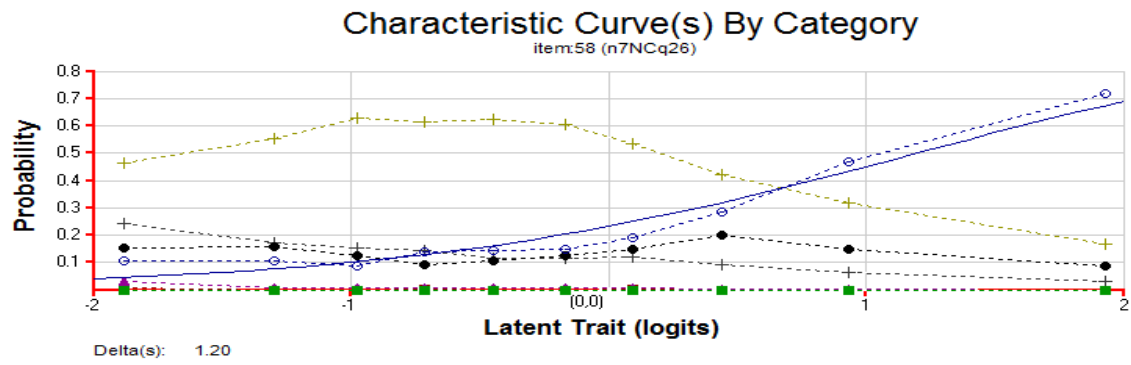
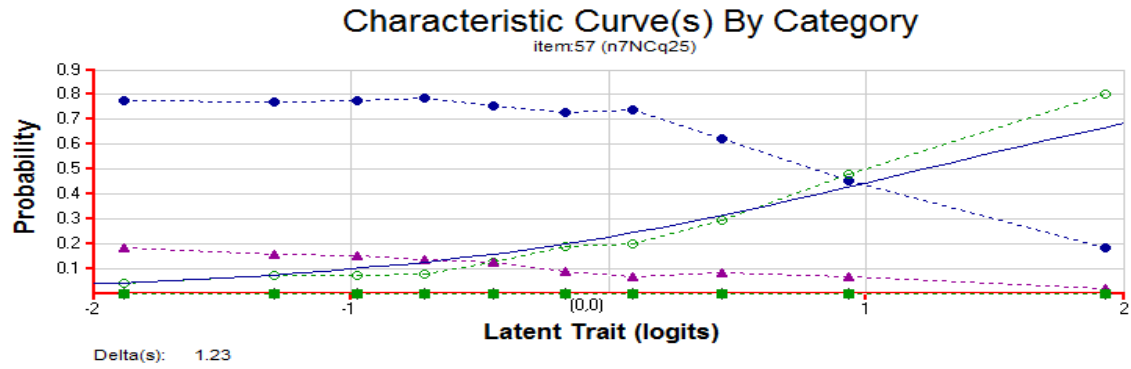
item:44 (n7NCq12)

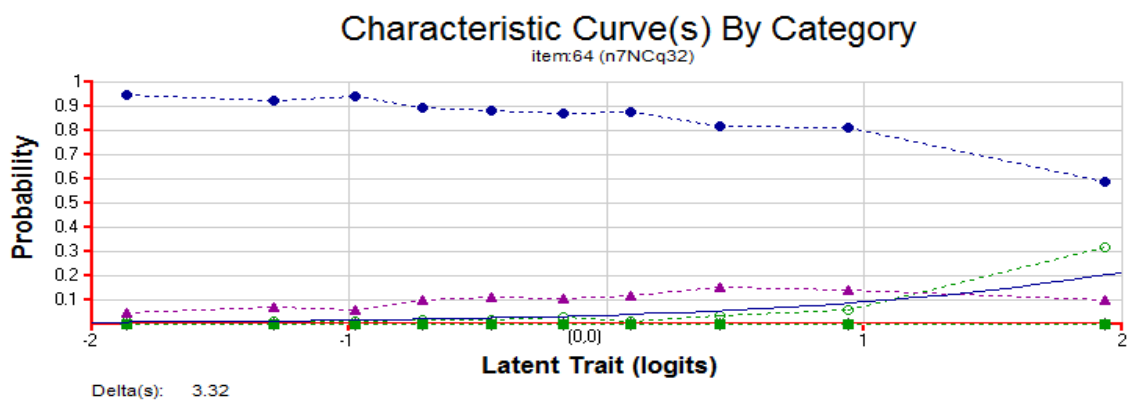
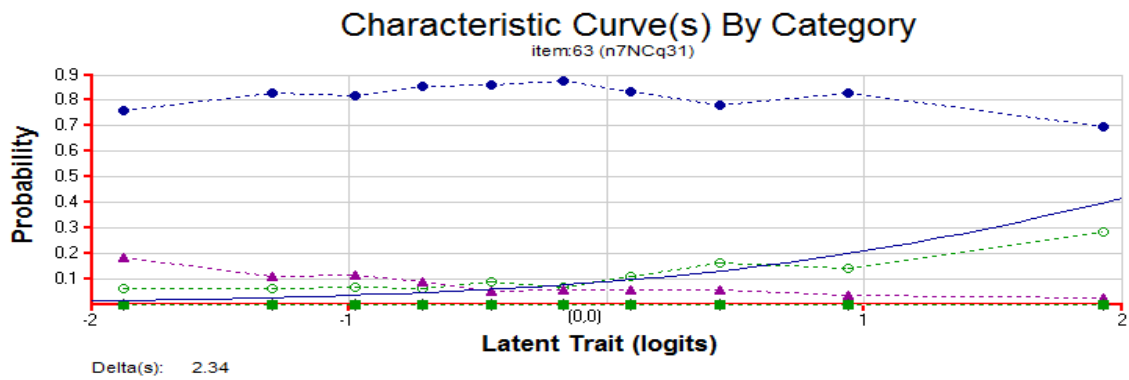
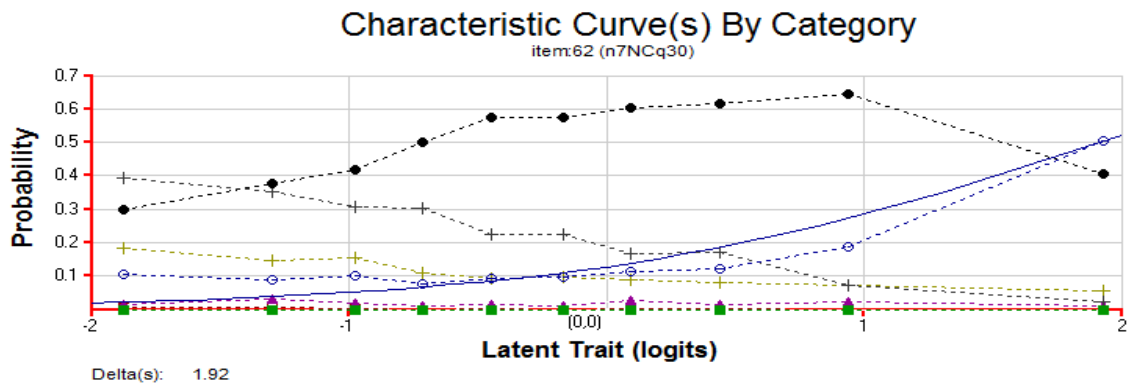
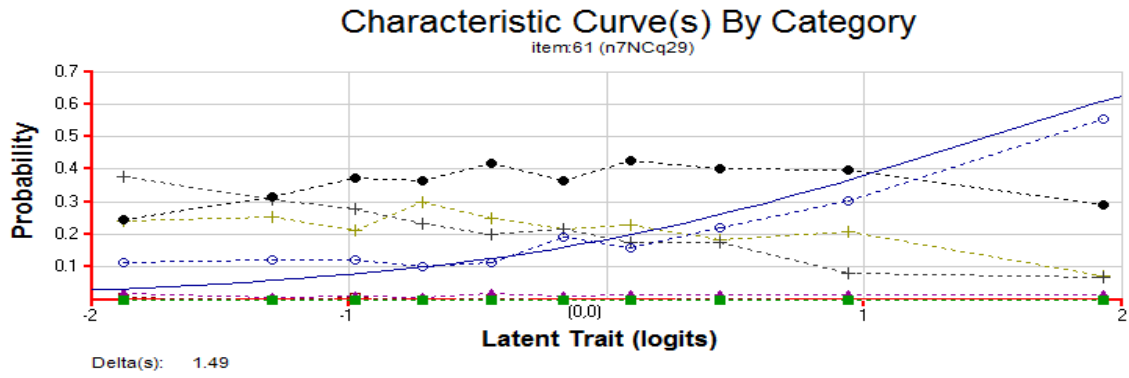




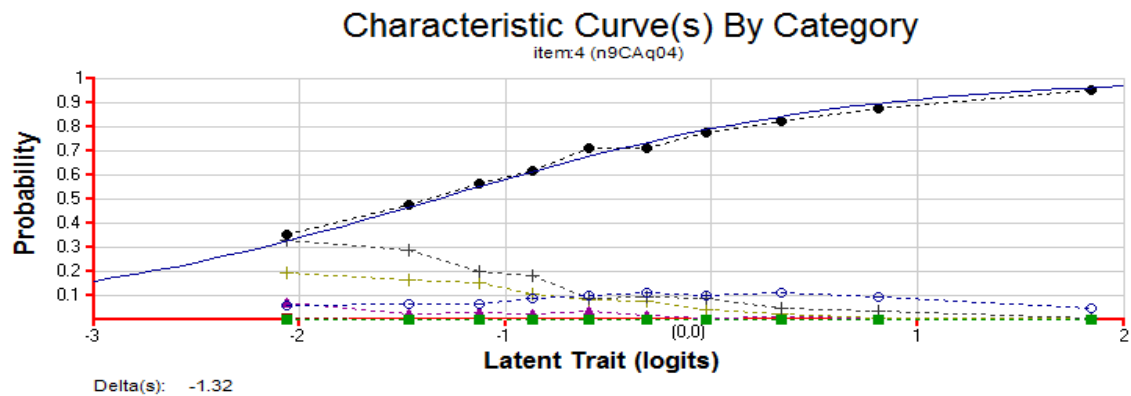
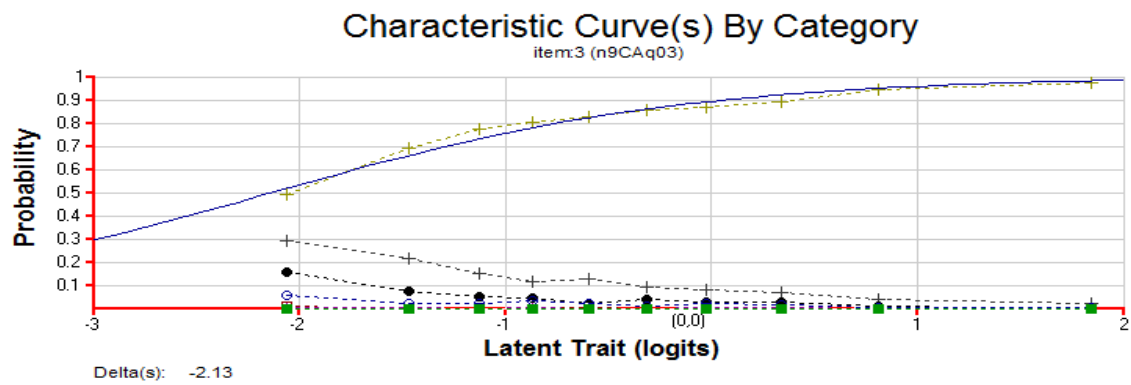
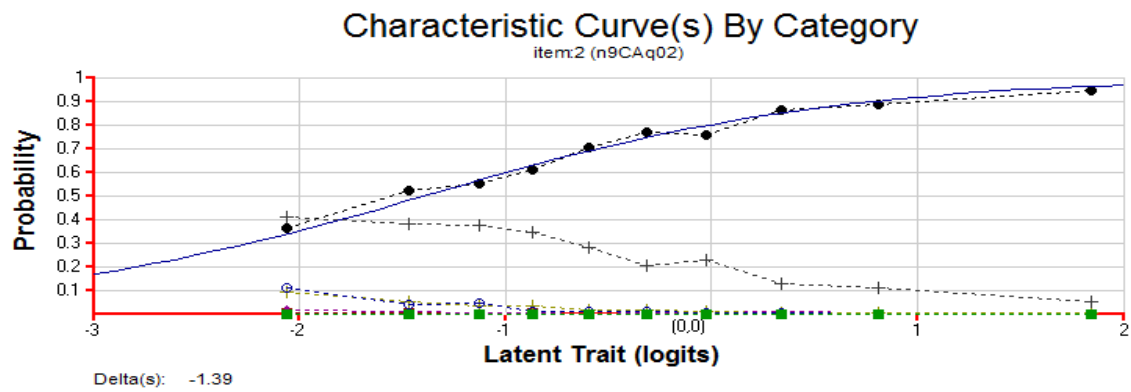
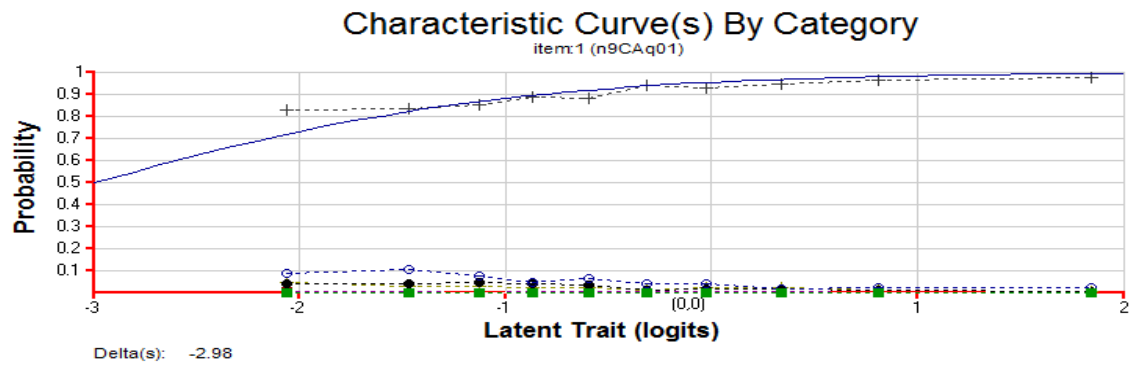




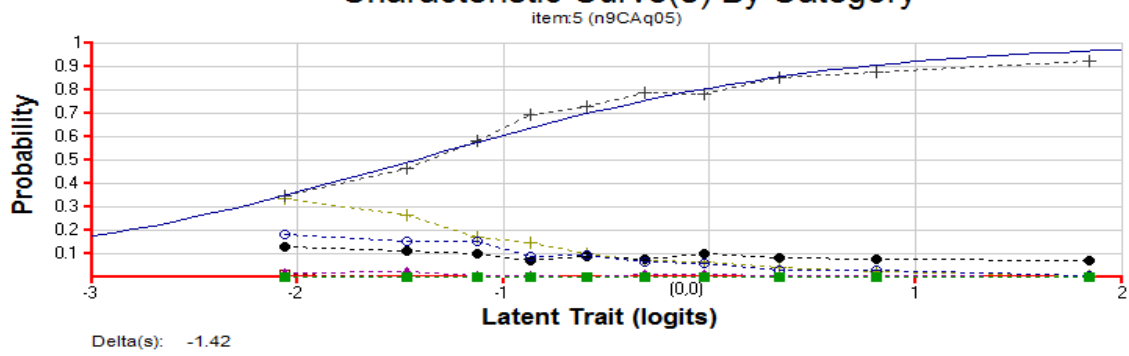




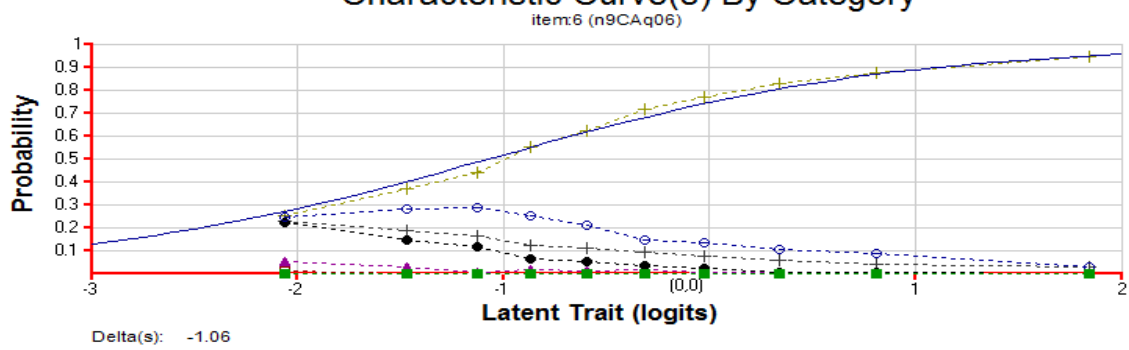
Year 9 Numeracy



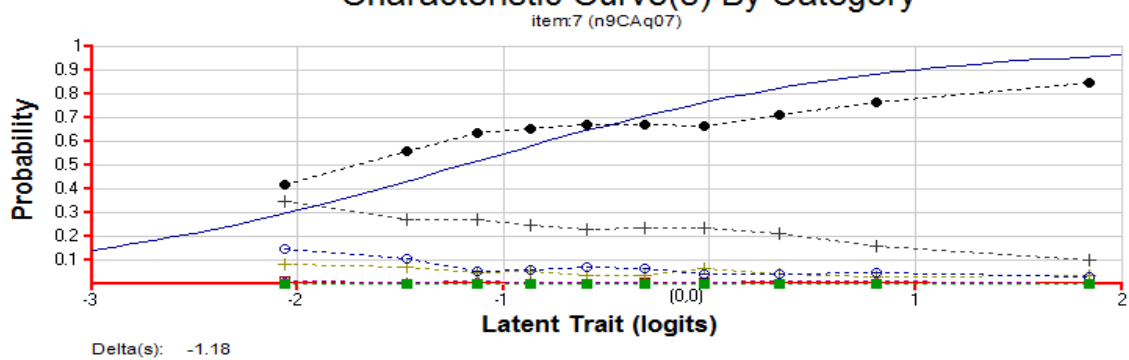
Characteristic Curve(s) By Category



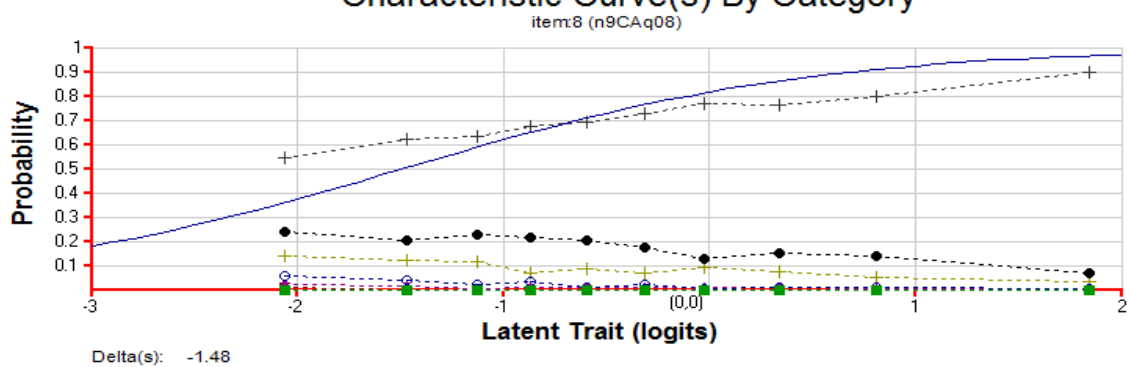
Characteristic Curve(s) By Category

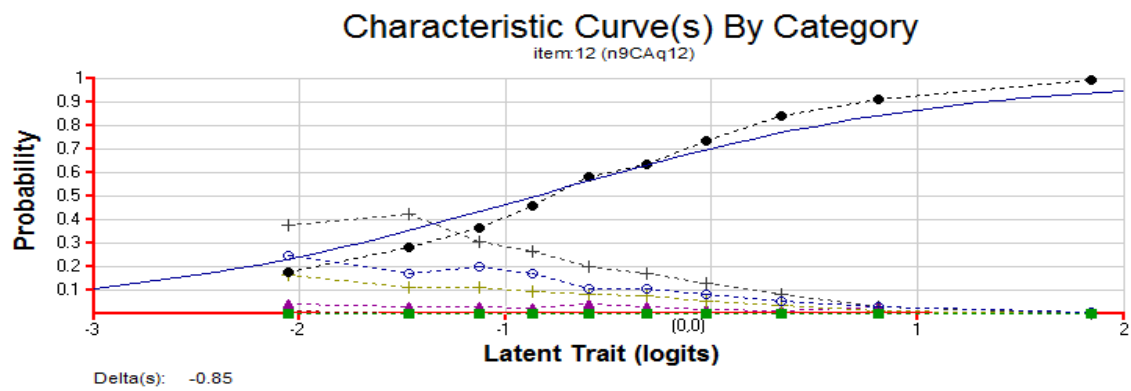
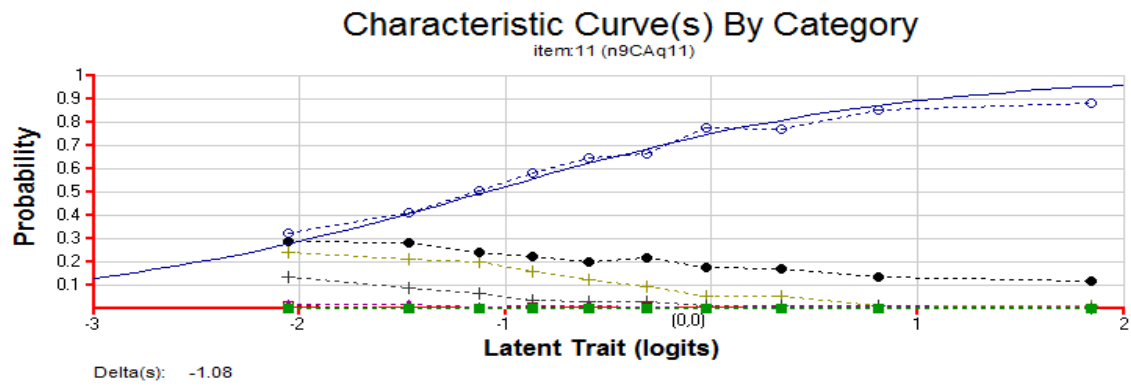
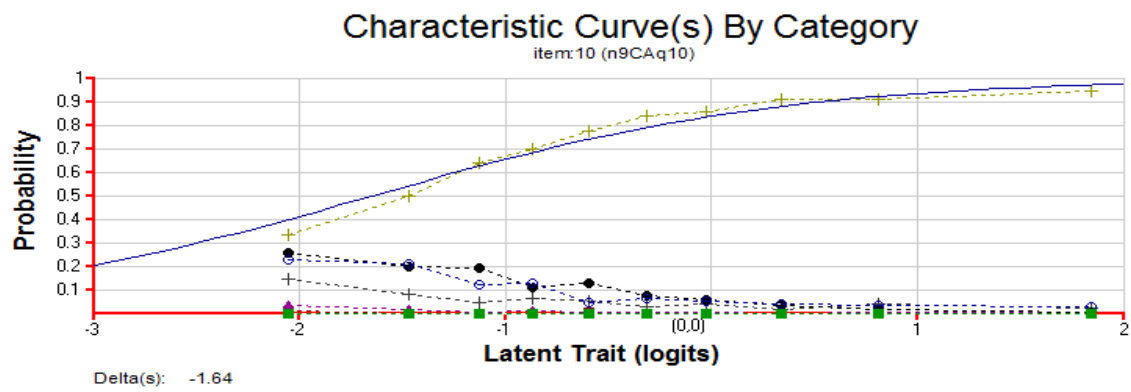
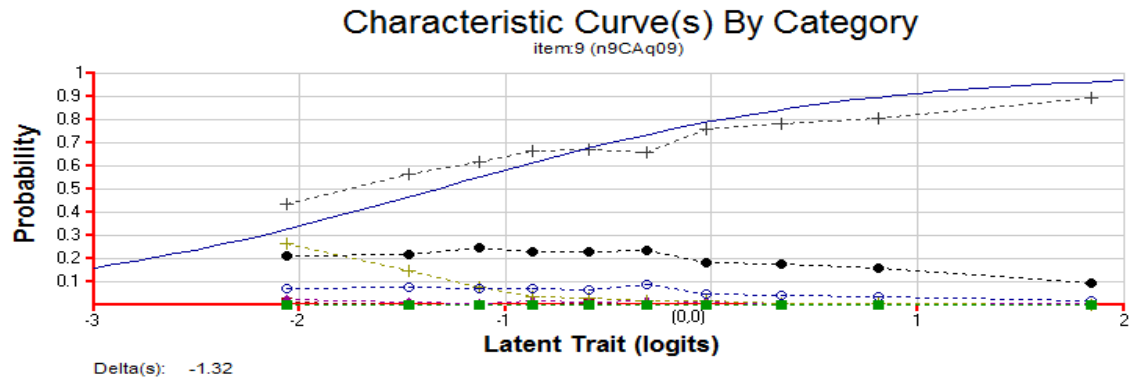


Characteristic Curve(s) By Category

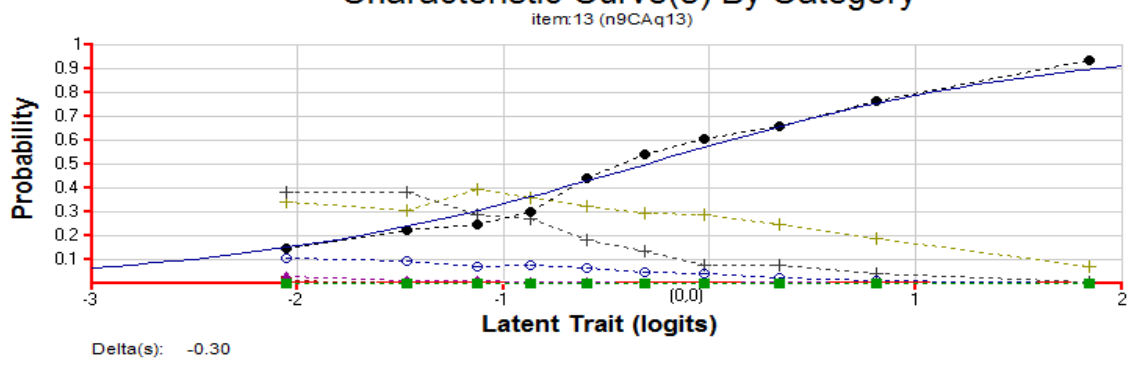


Characteristic Curve(s) By Category

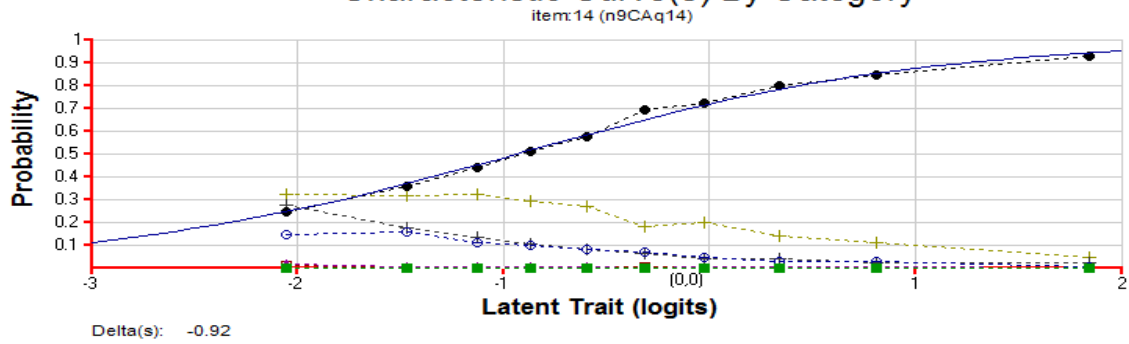




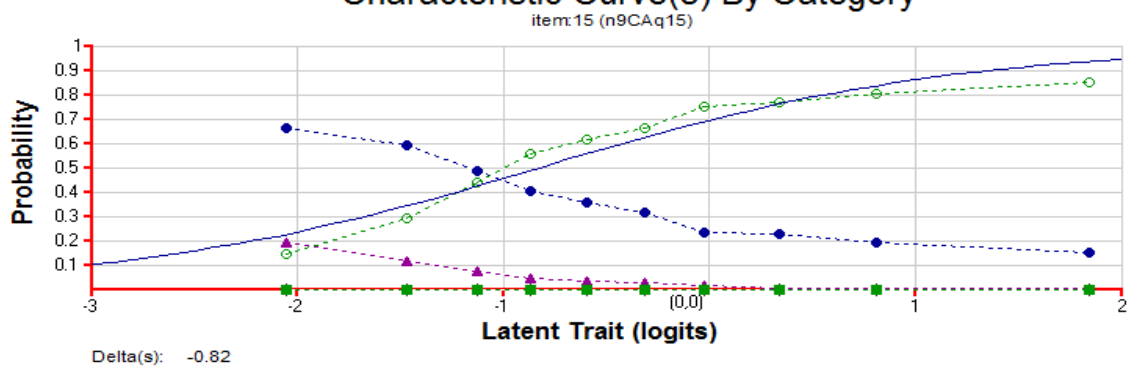
Characteristic Curve(s) By Category



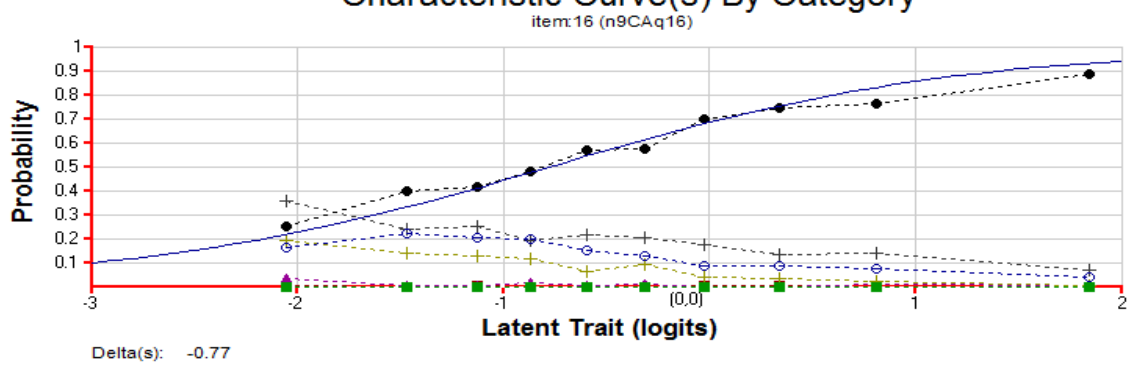
Characteristic Curve(s) By Category

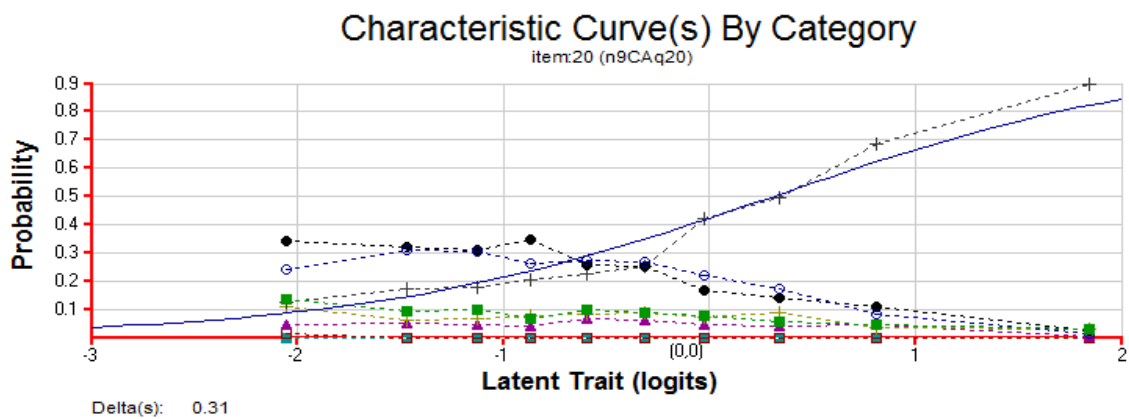
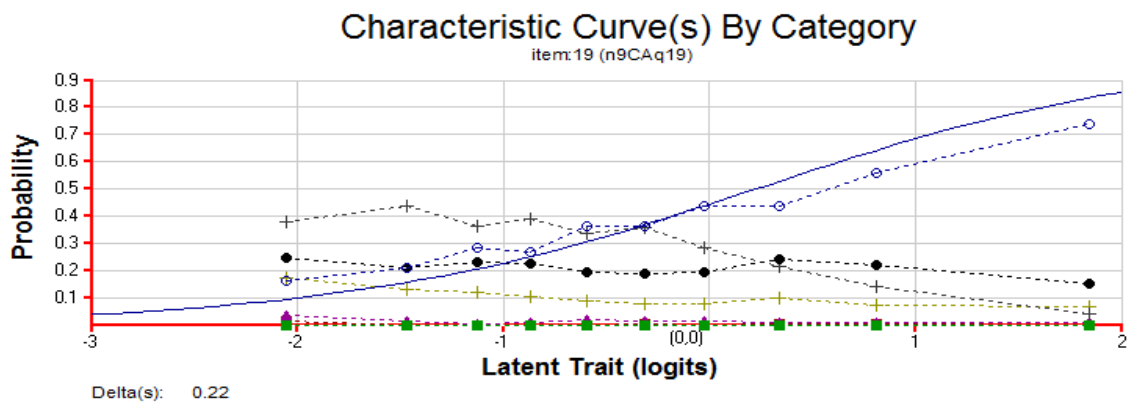
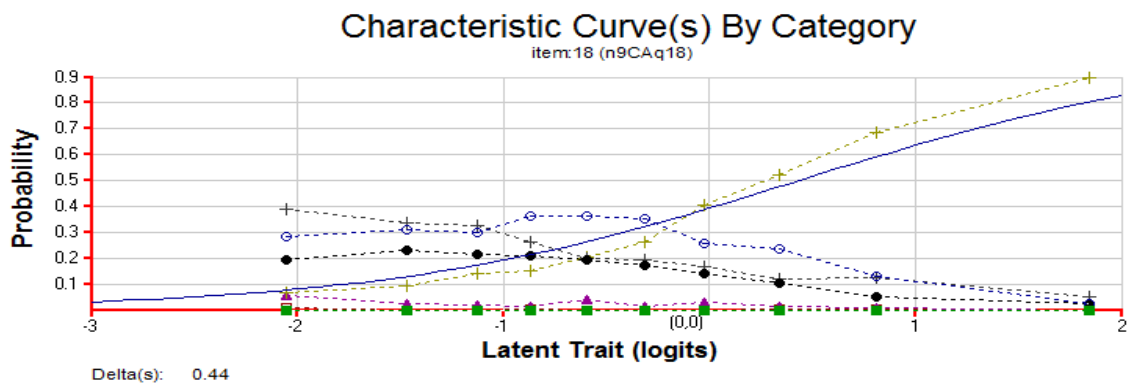
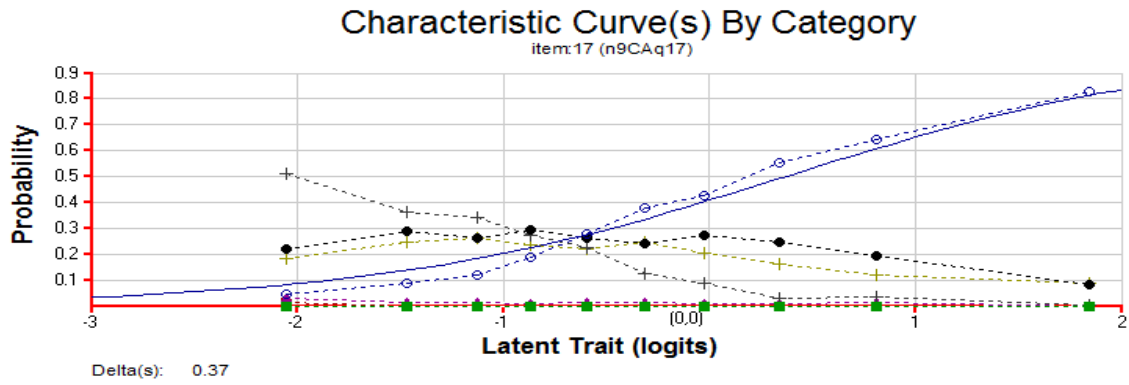


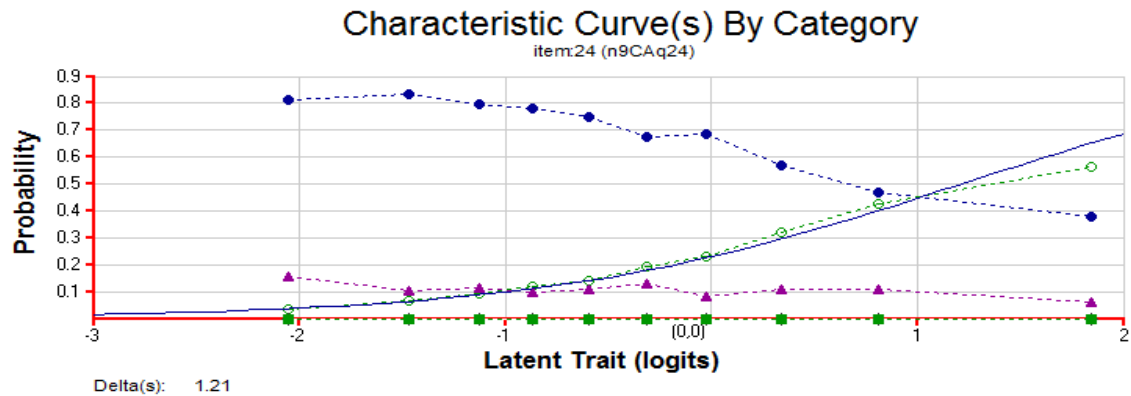
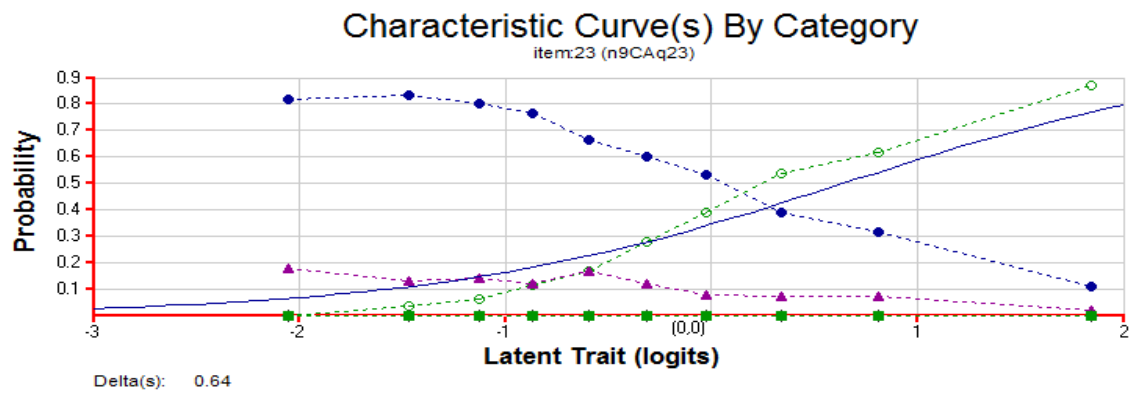
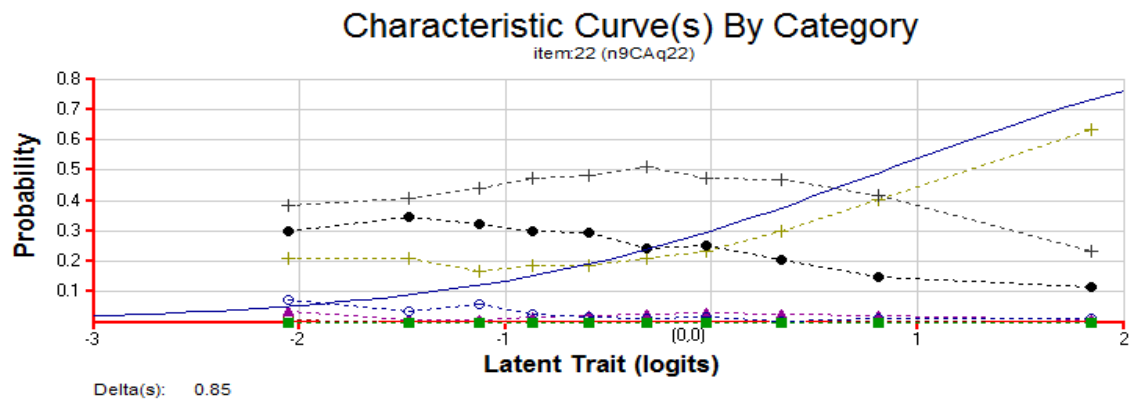
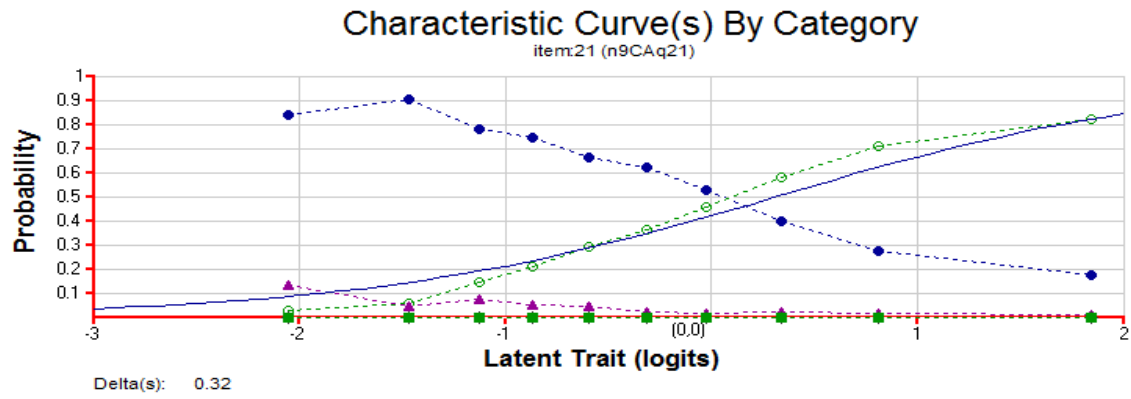
Characteristic Curve(s) By Category

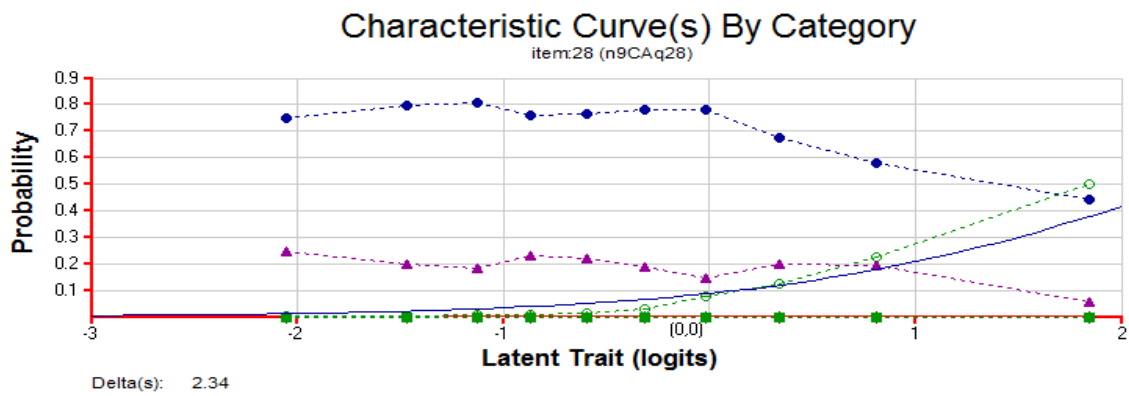
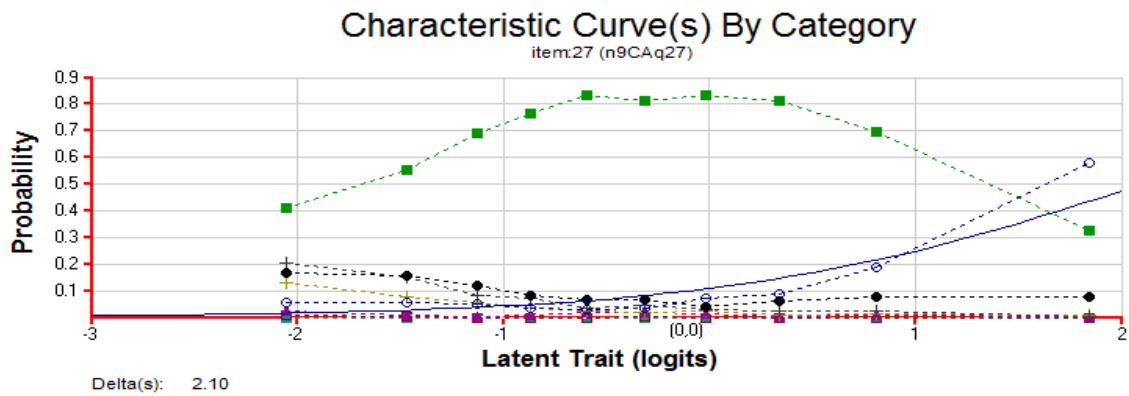
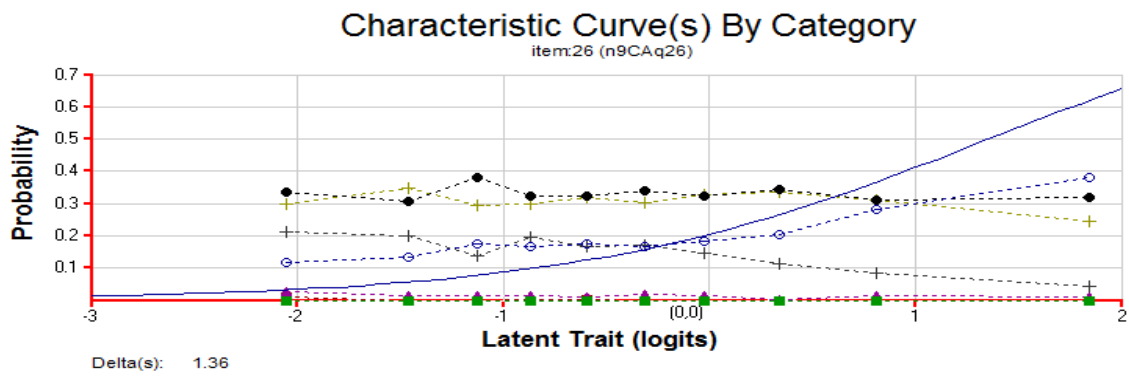
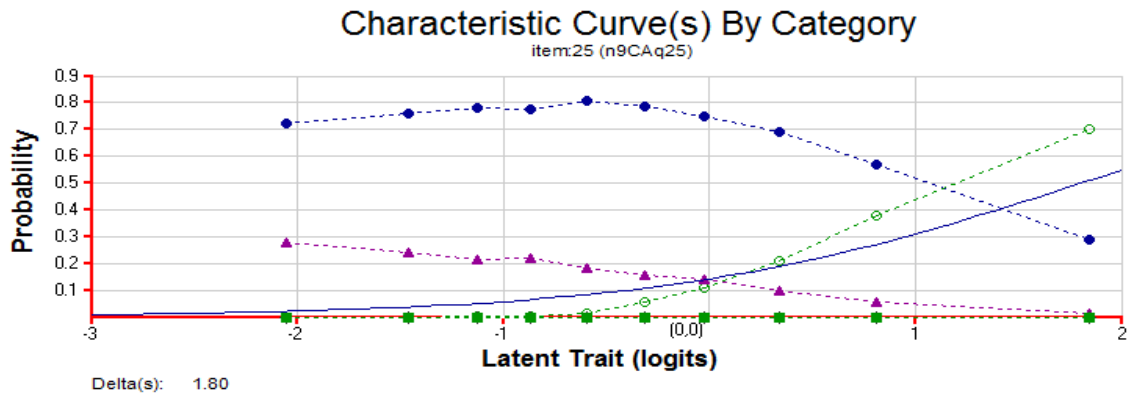


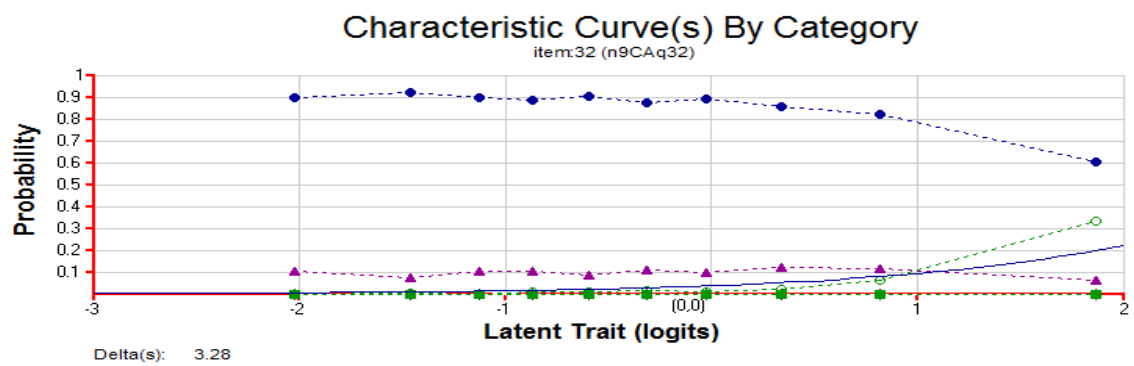
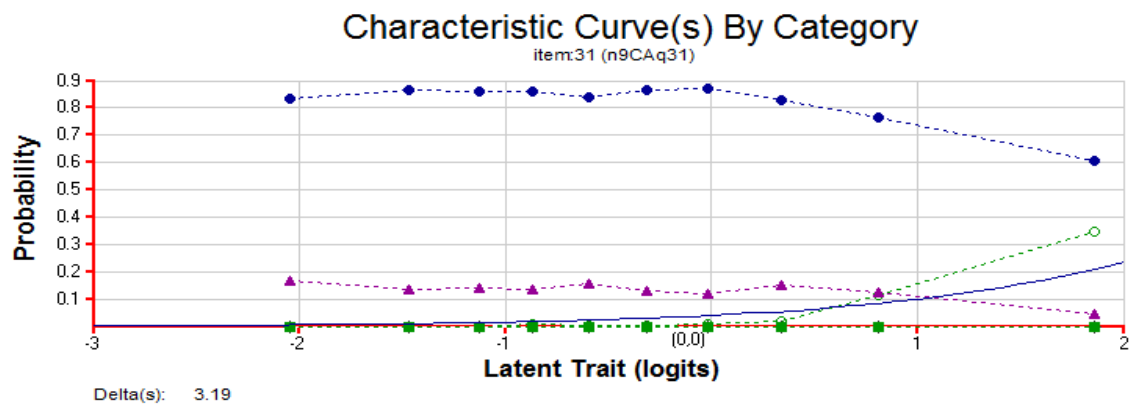
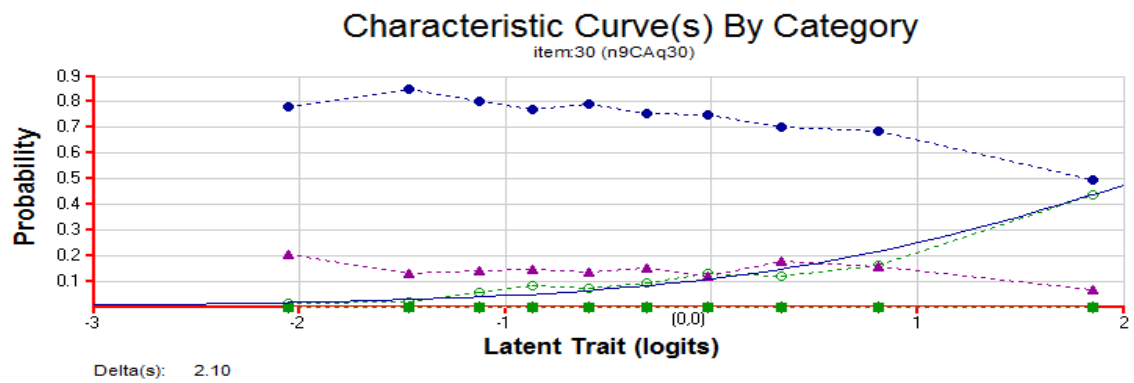
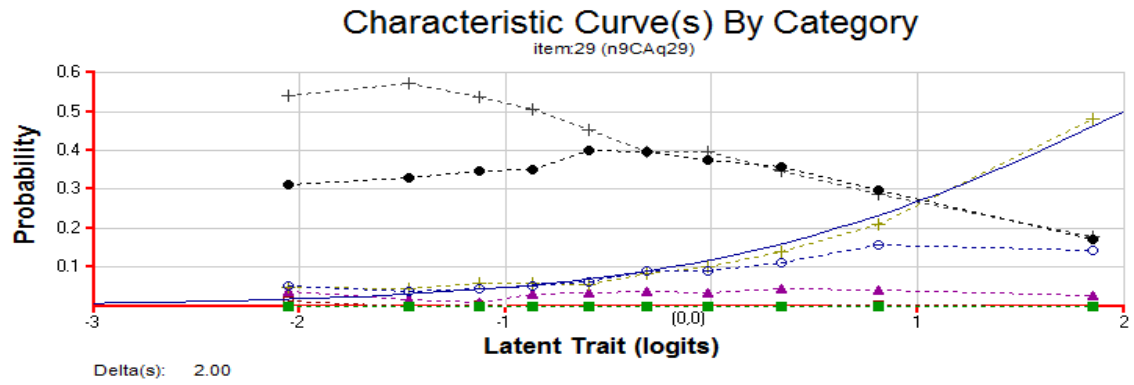
Characteristic Curve(s) By Category

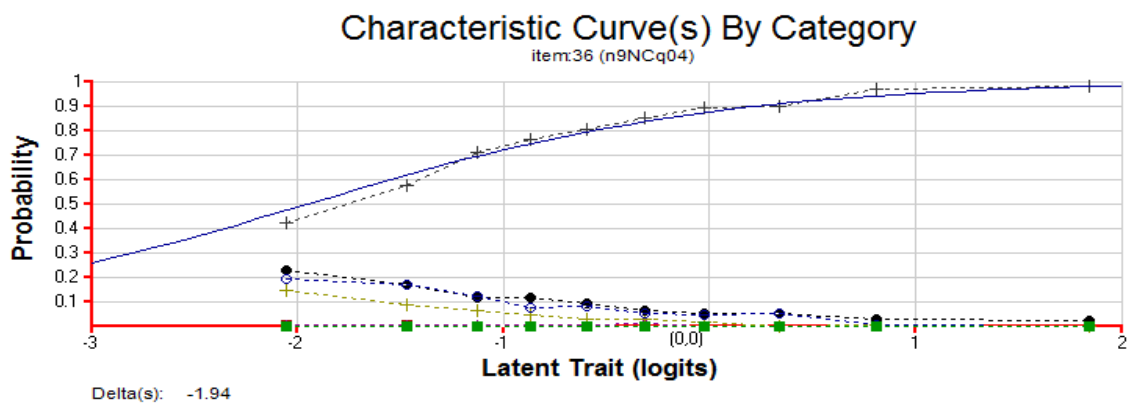
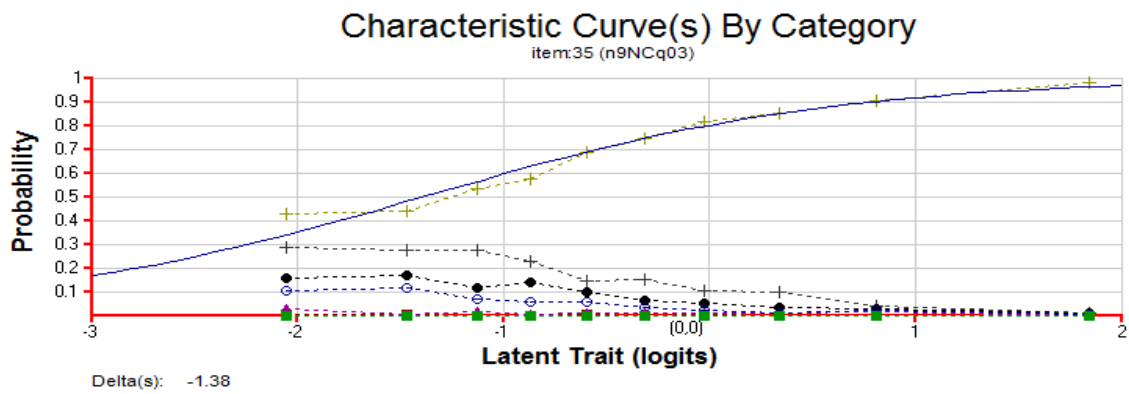
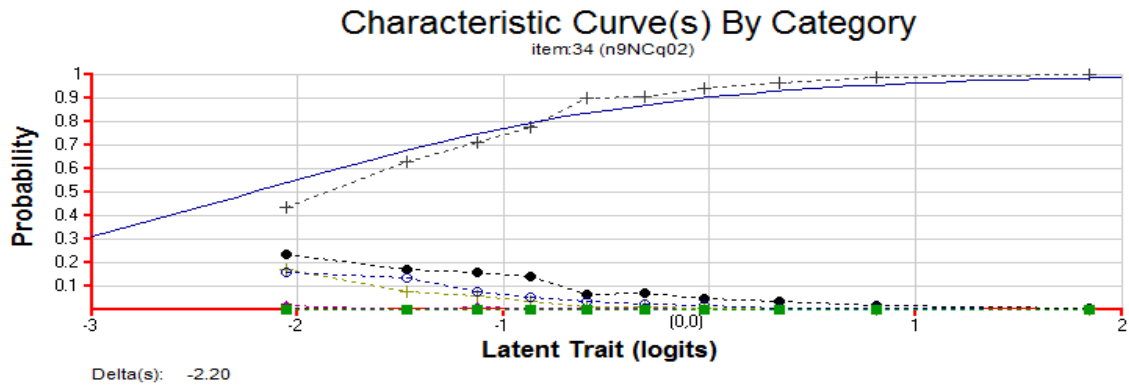
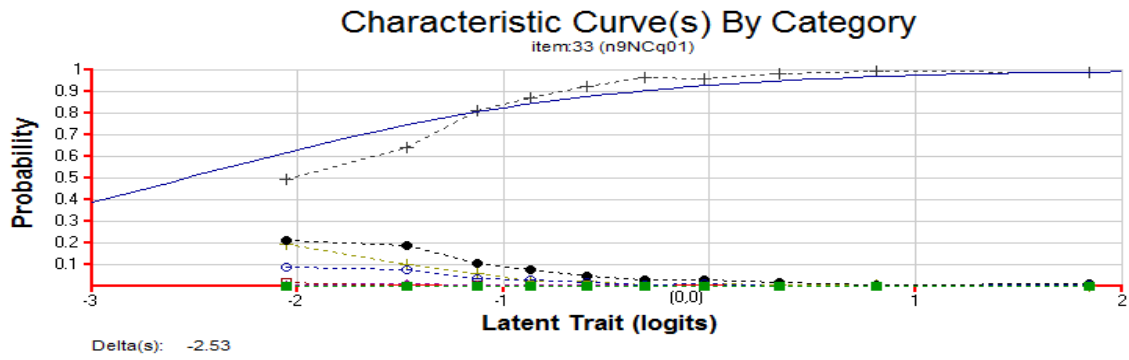




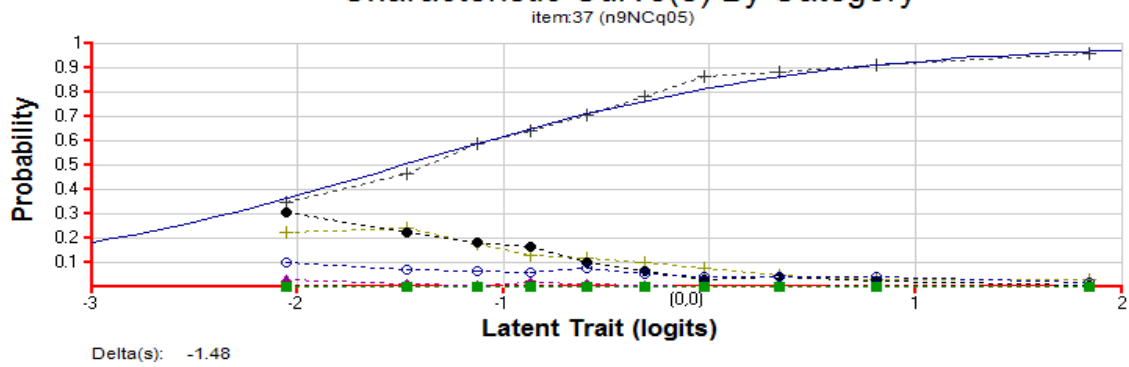




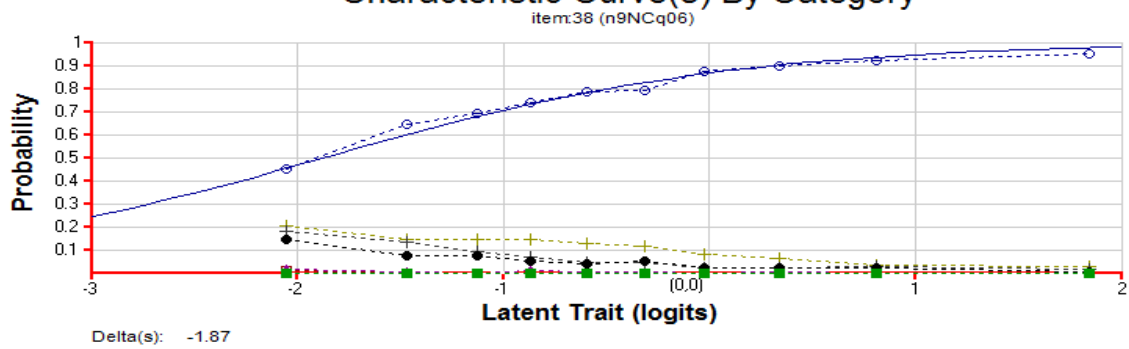




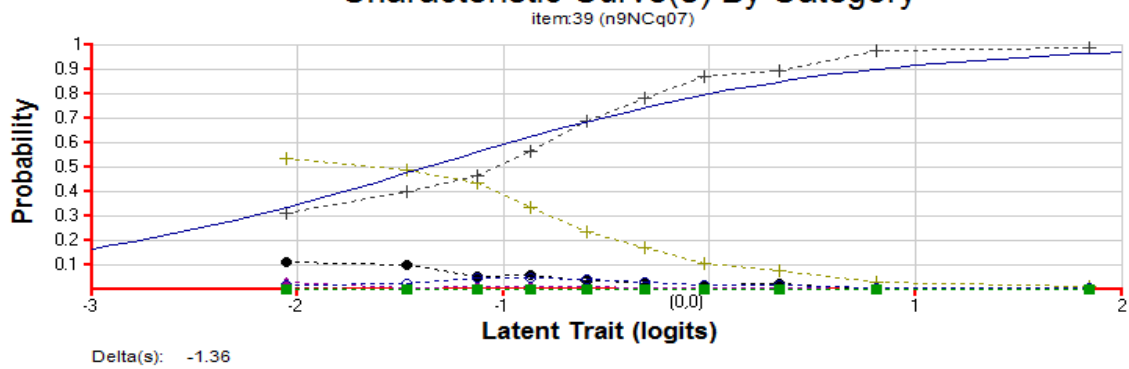
Characteristic Curve(s) By Category



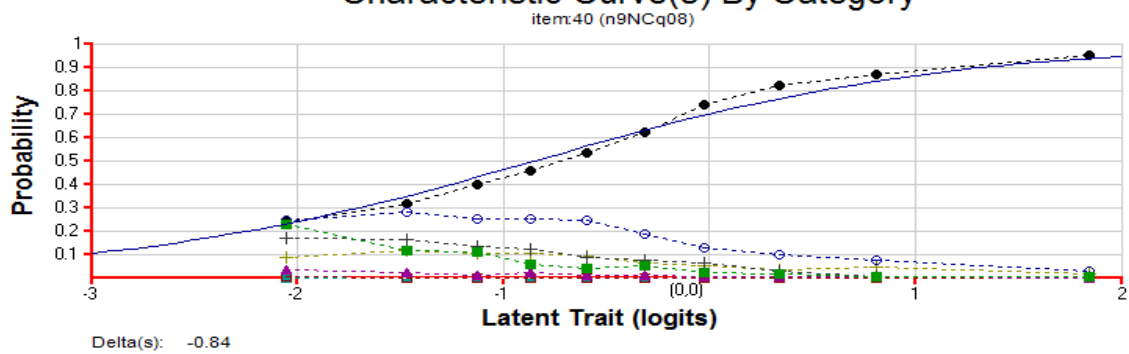
Characteristic Curve(s) By Category

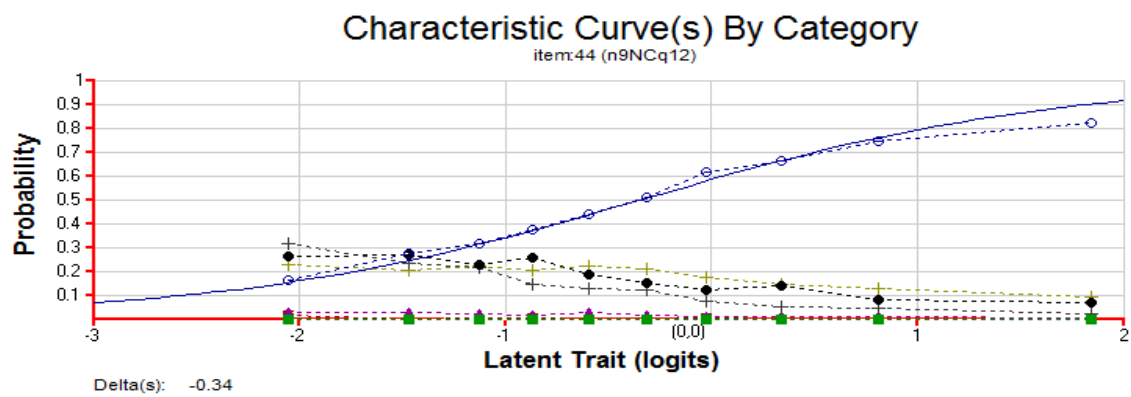
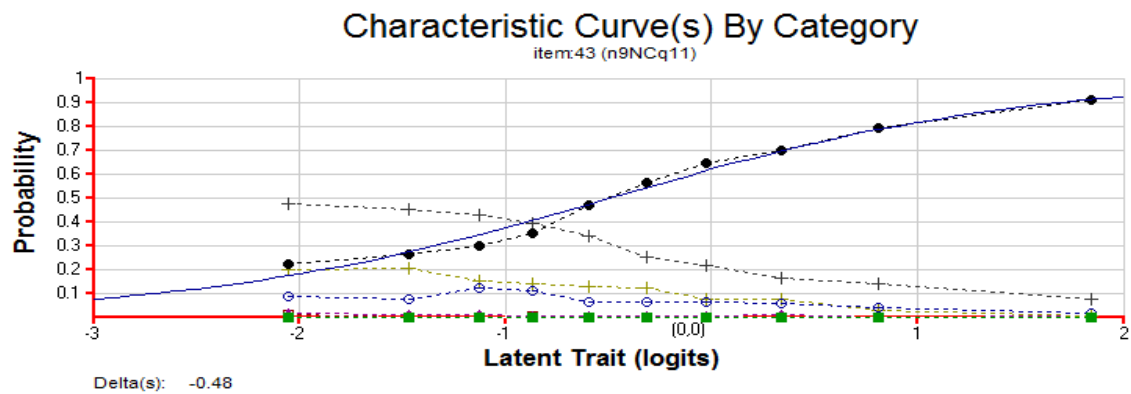
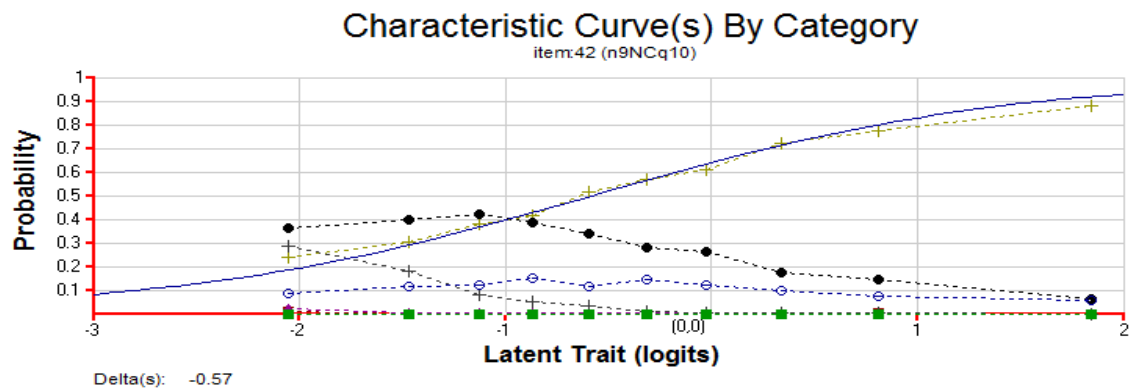
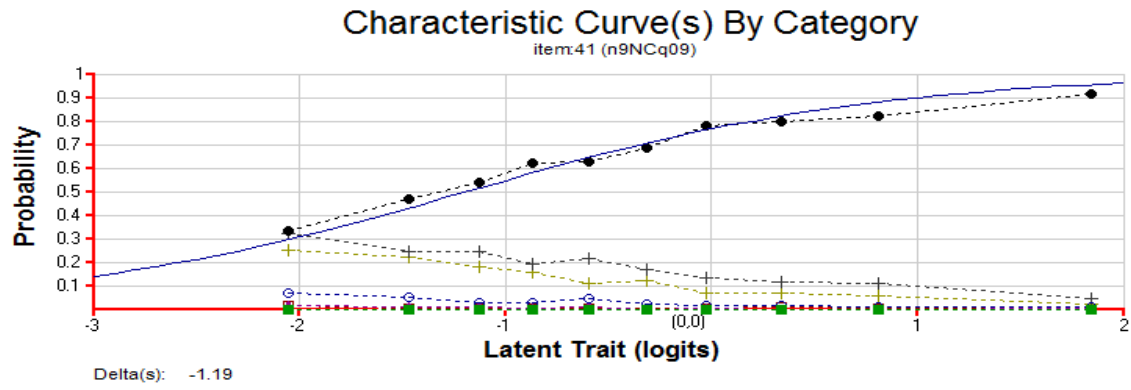


Characteristic Curve(s) By Category

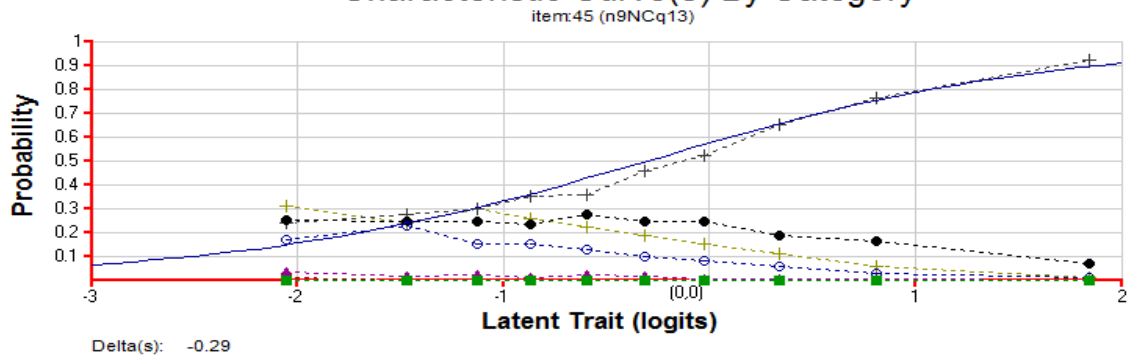


Characteristic Curve(s) By Category

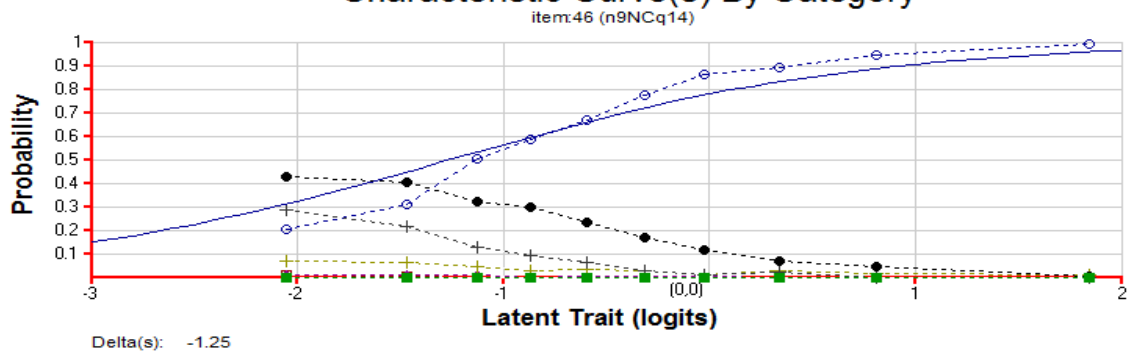




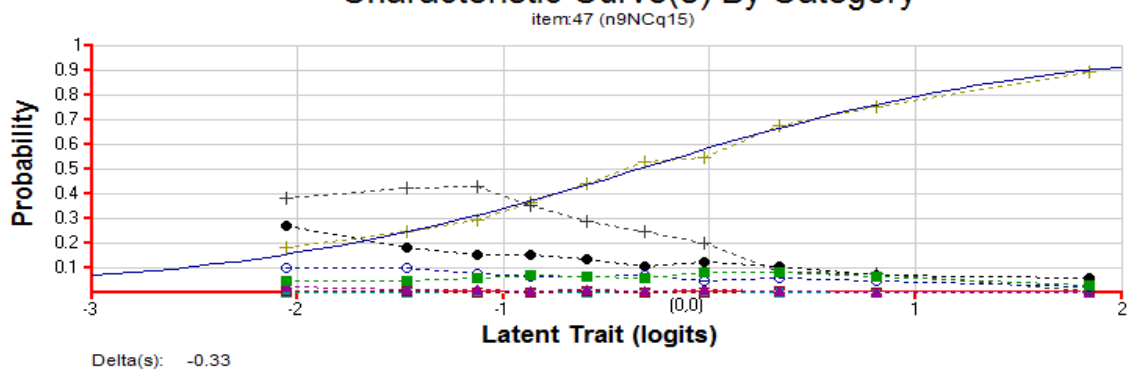
Characteristic Curve(s) By Category



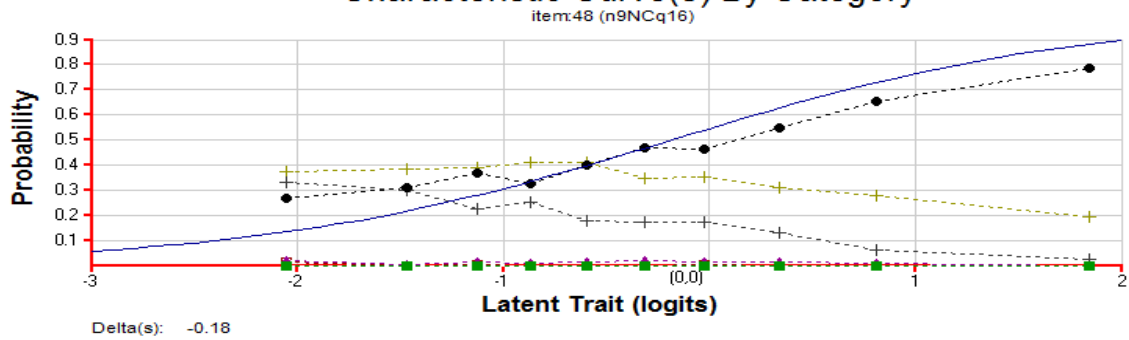
Characteristic Curve(s) By Category

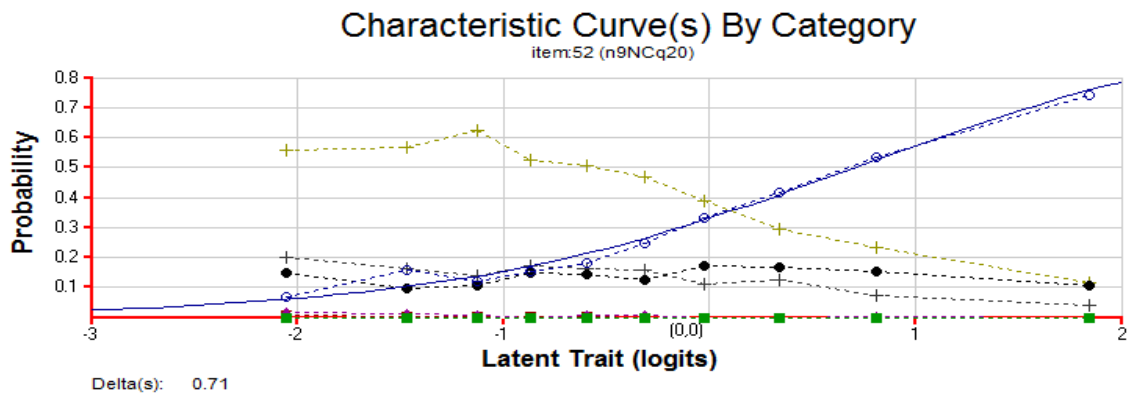
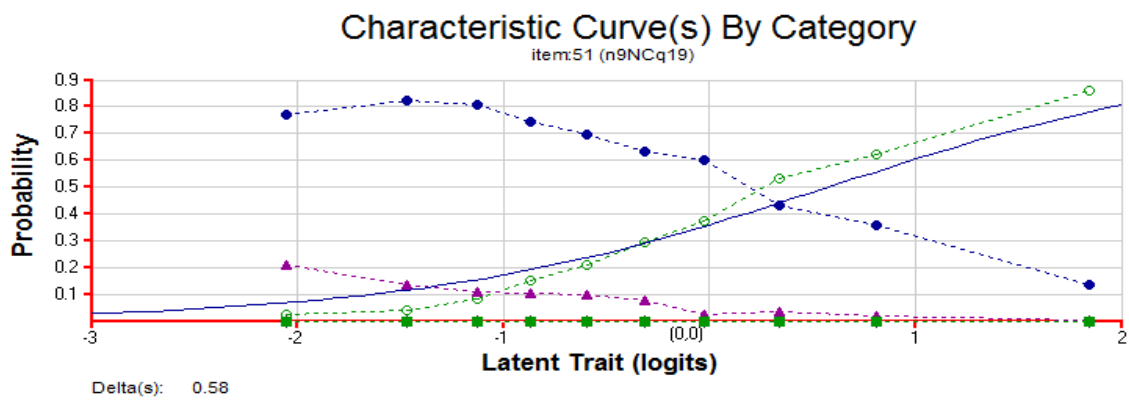
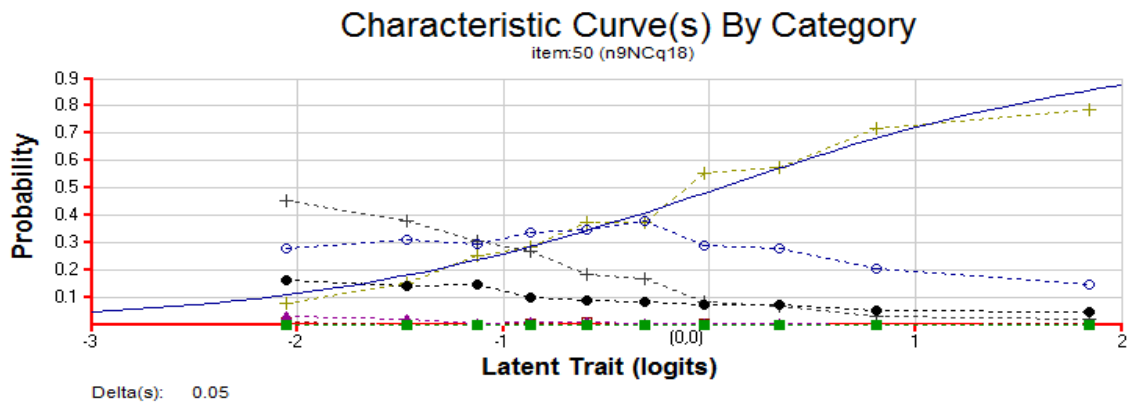
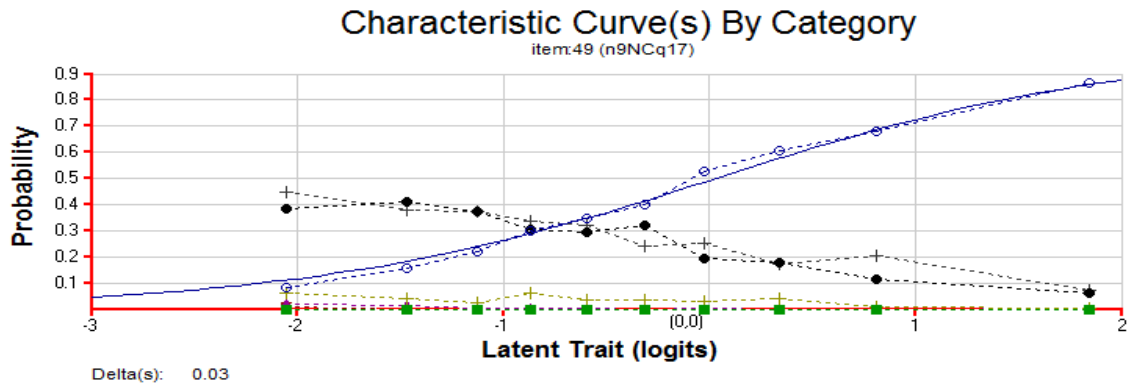


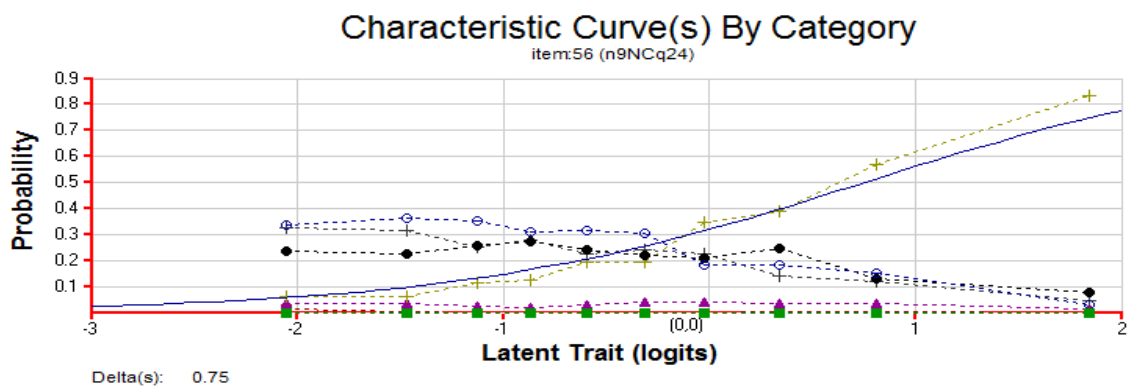
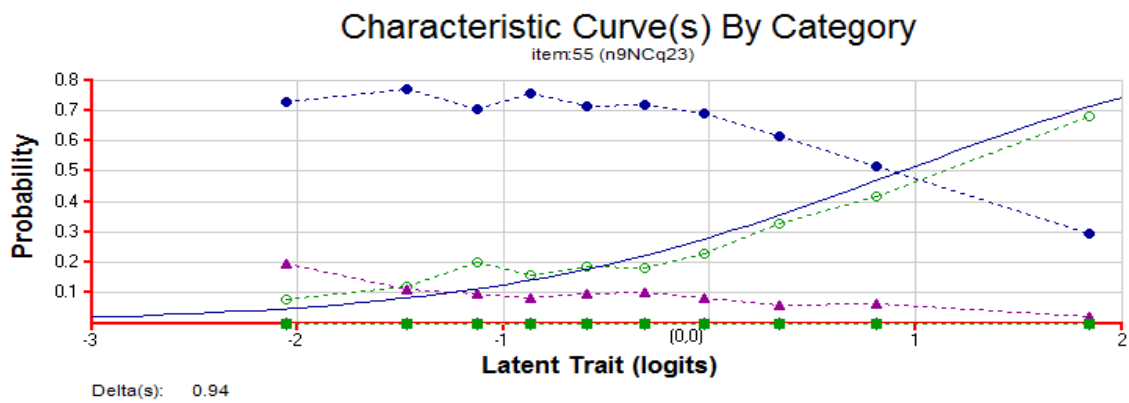
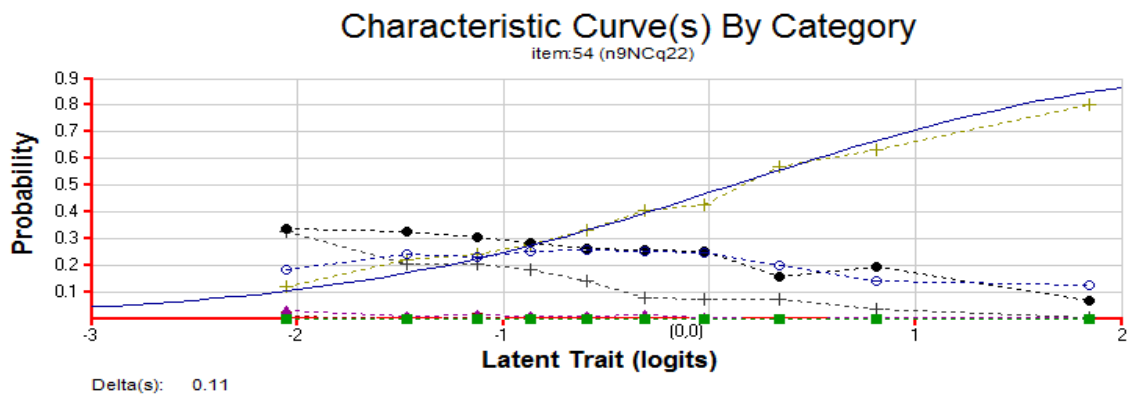
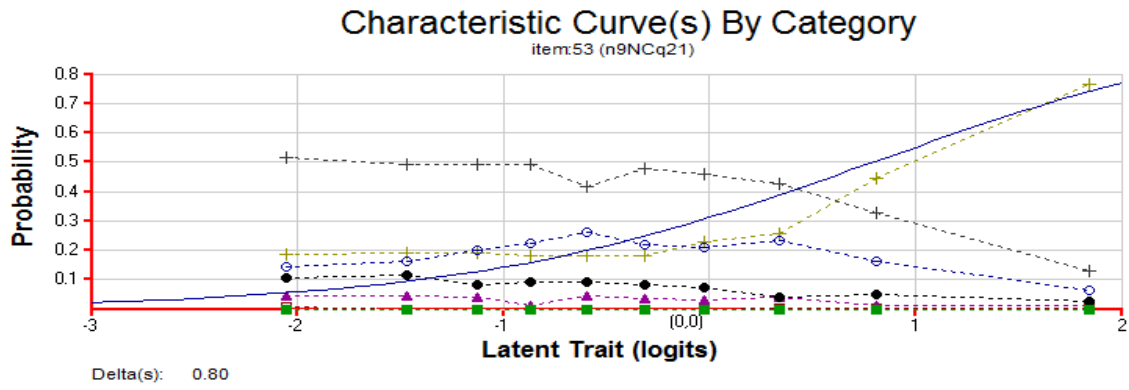
Characteristic Curve(s) By Category



Characteristic Curve(s) By Category

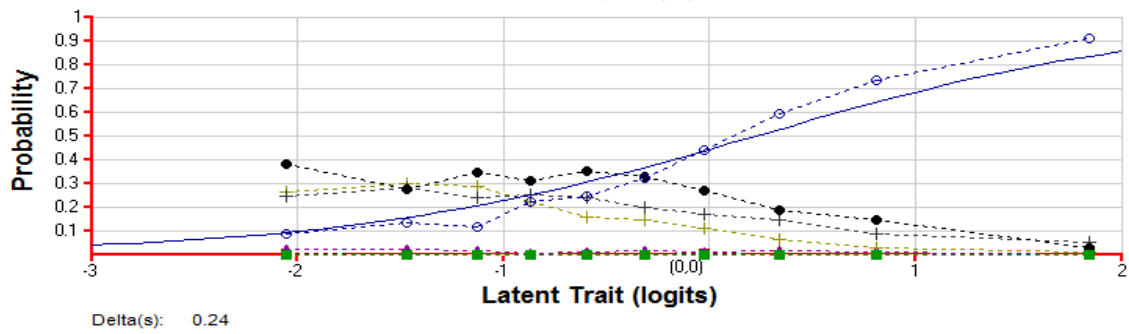






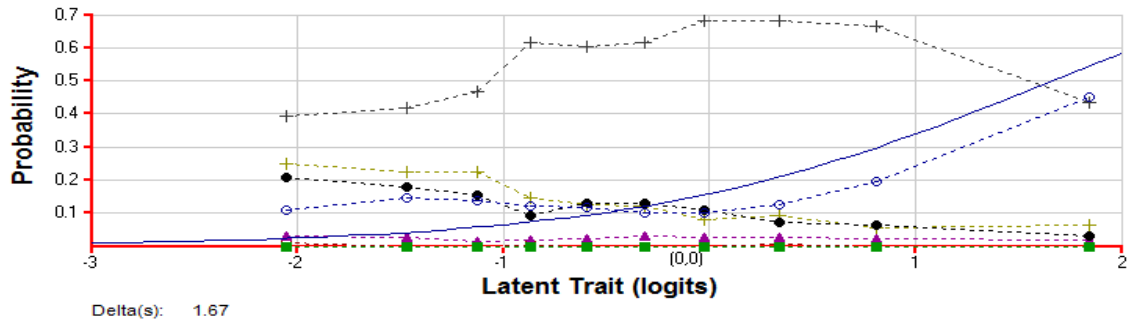
Characteristic Curve(s) By Category

item:57 (n9NCq25)



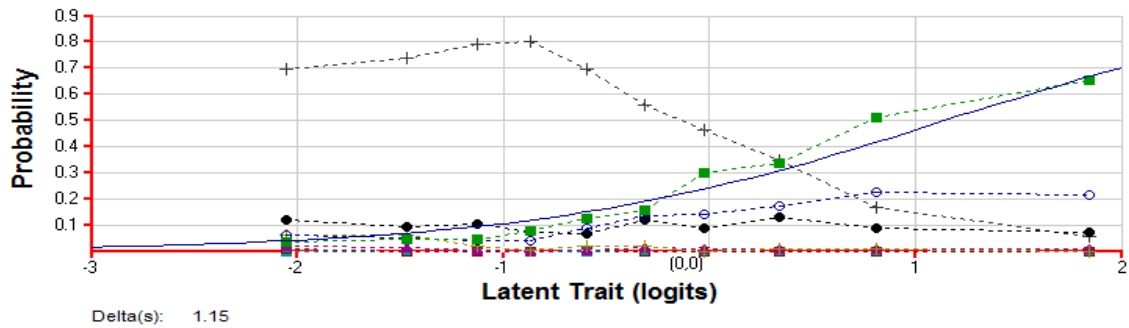
Characteristic Curve(s) By Category

item:58 (n9NCq26)



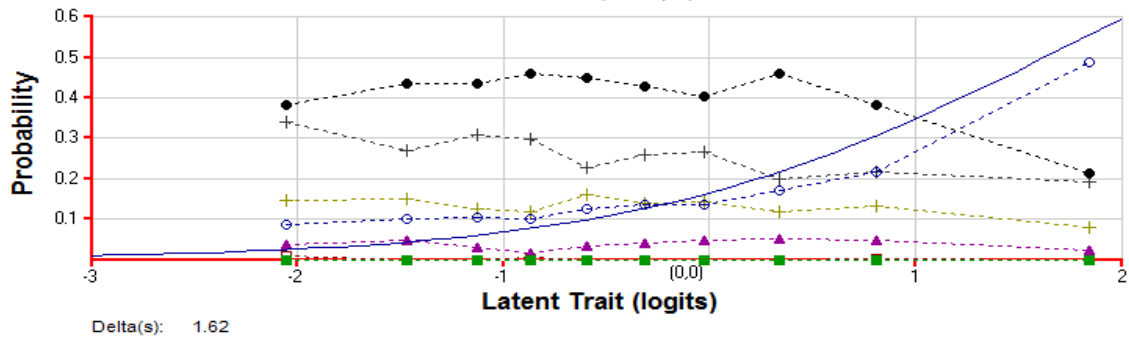
Characteristic Curve(s) By Category

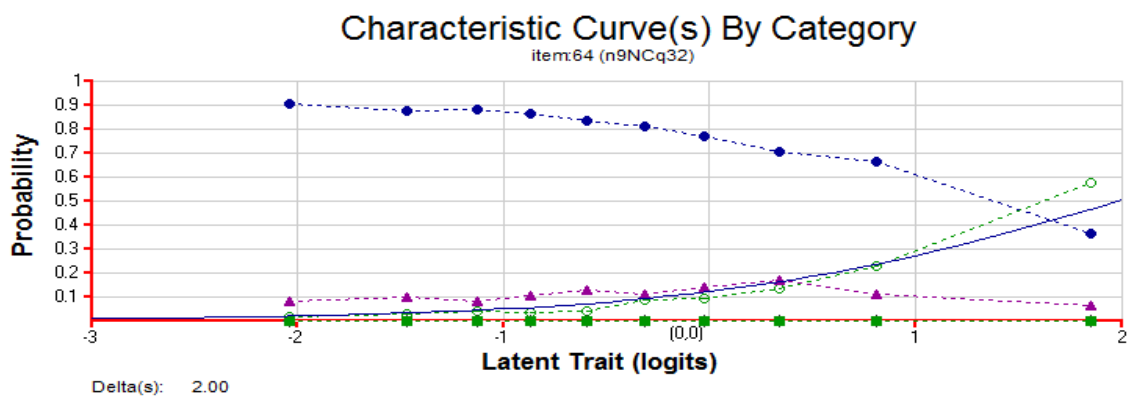
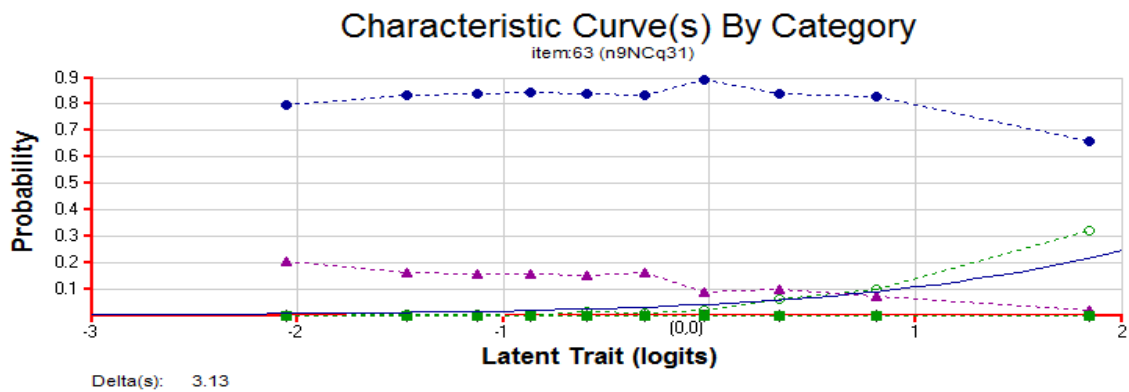
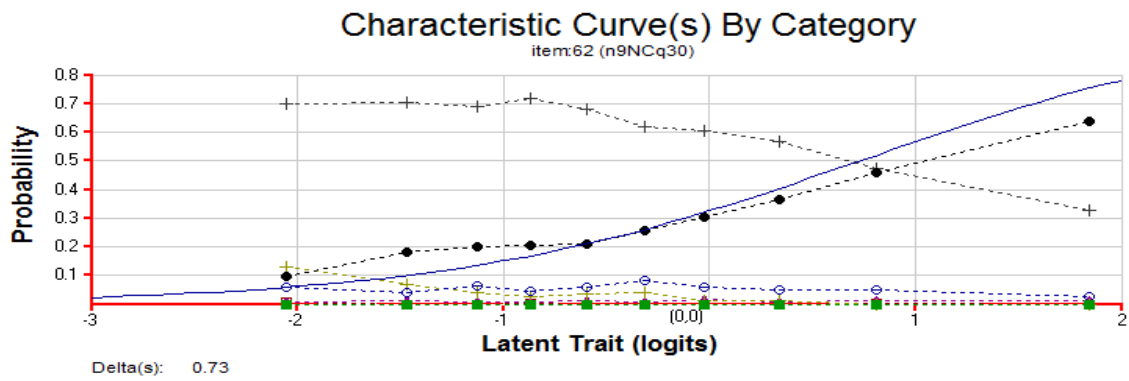
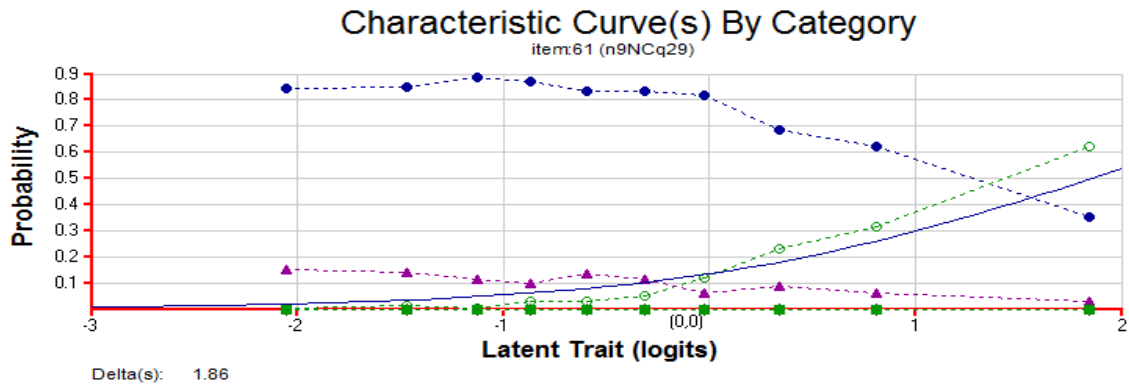
item:59 (n9NCq27)



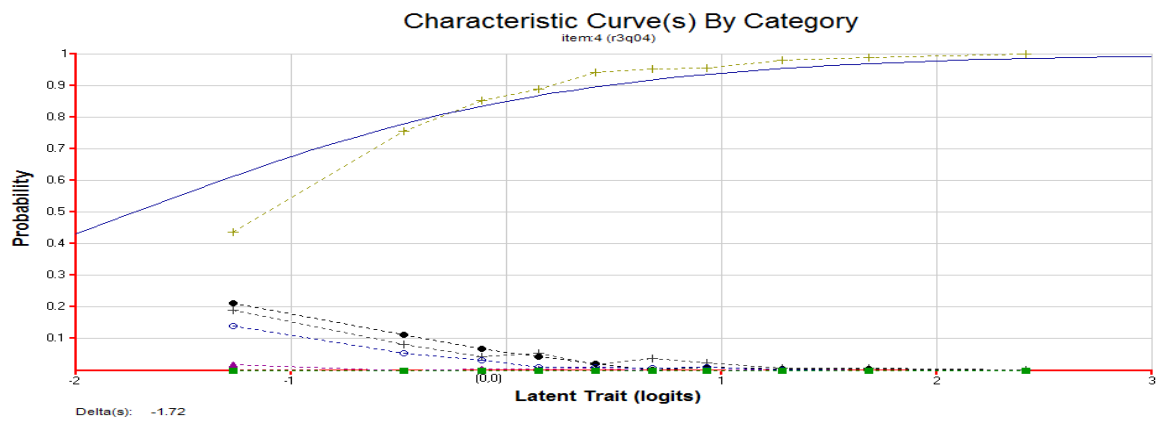
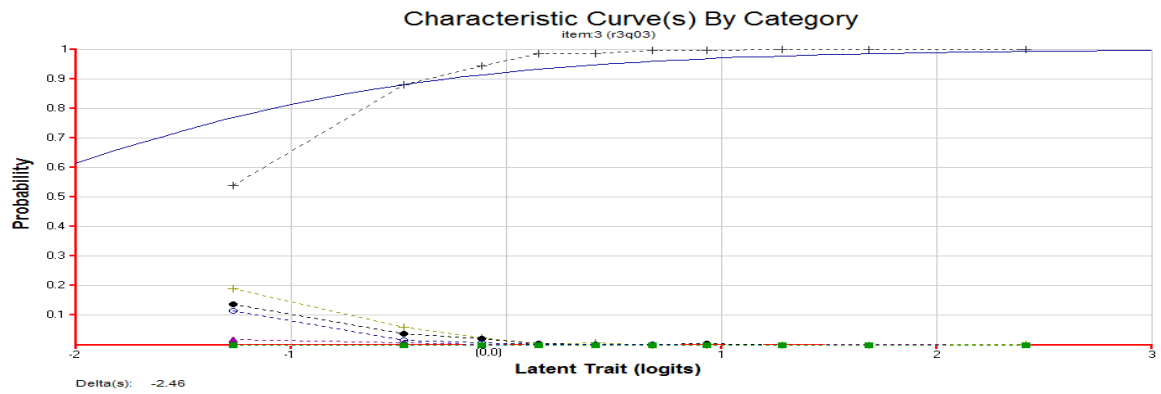
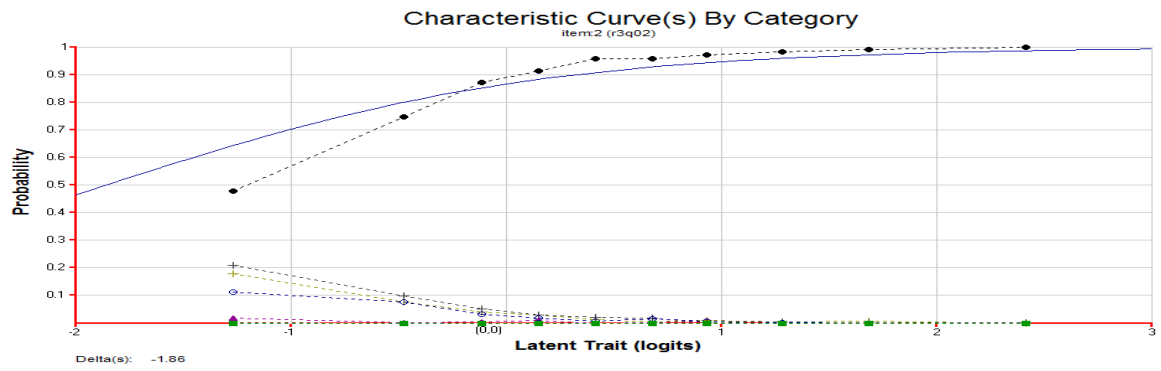
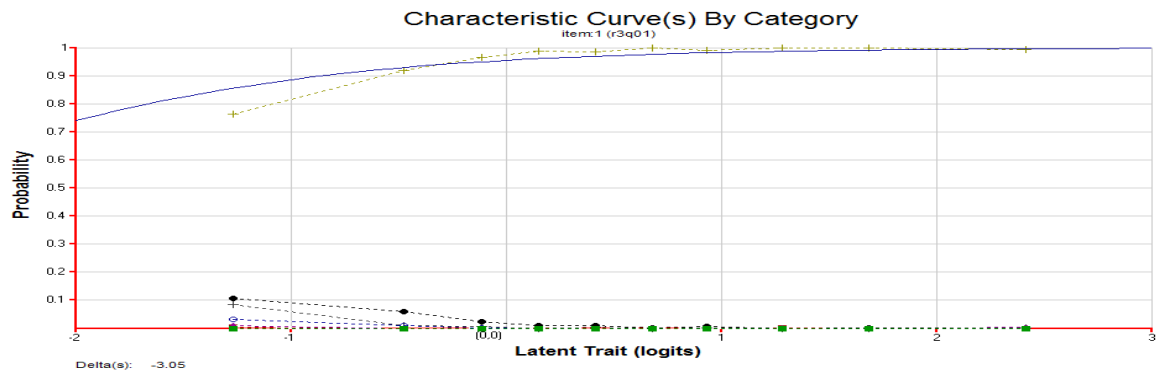
Characteristic Curve(s) By Category

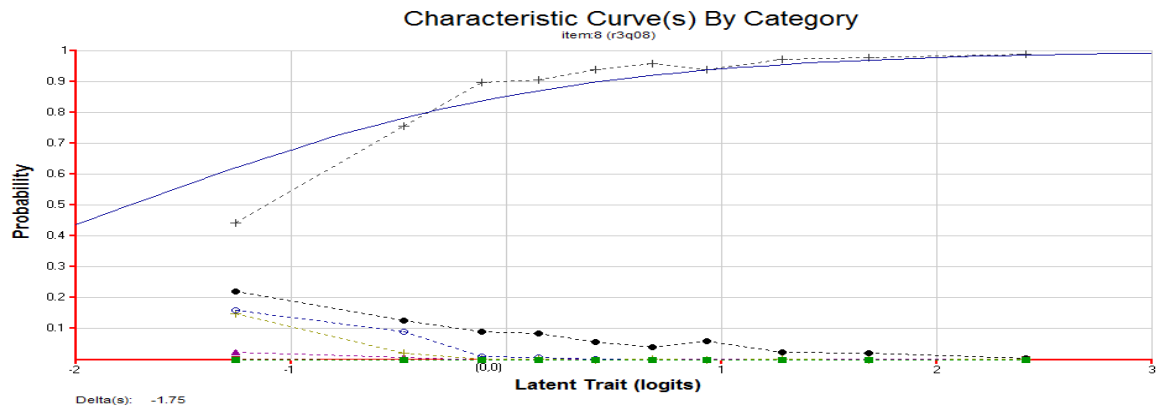
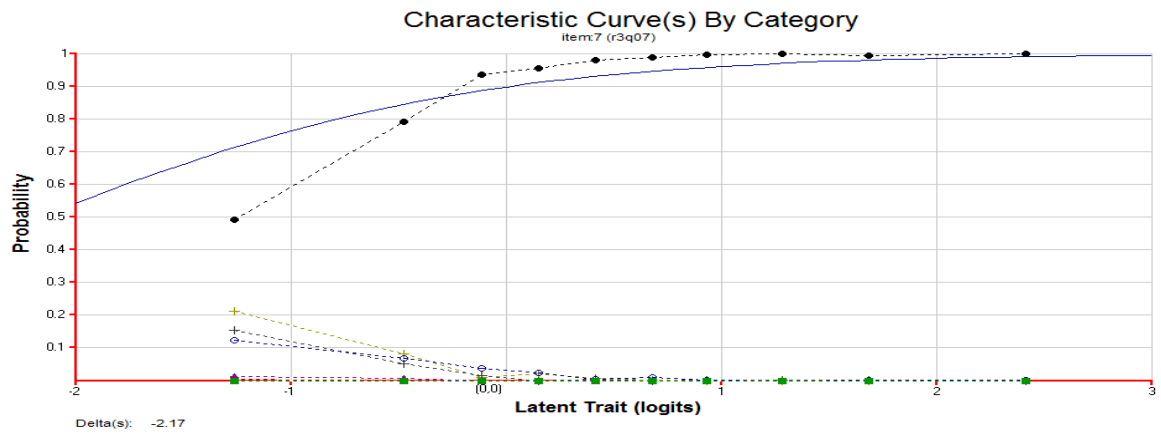
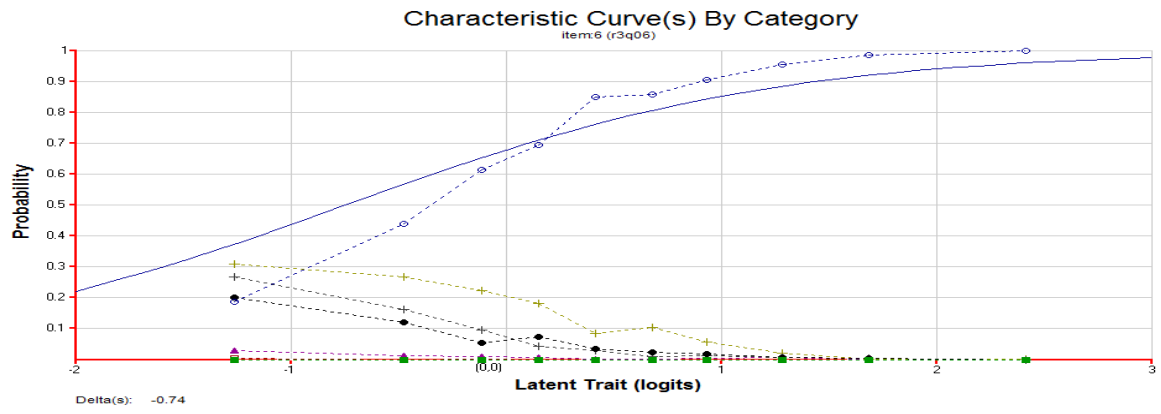
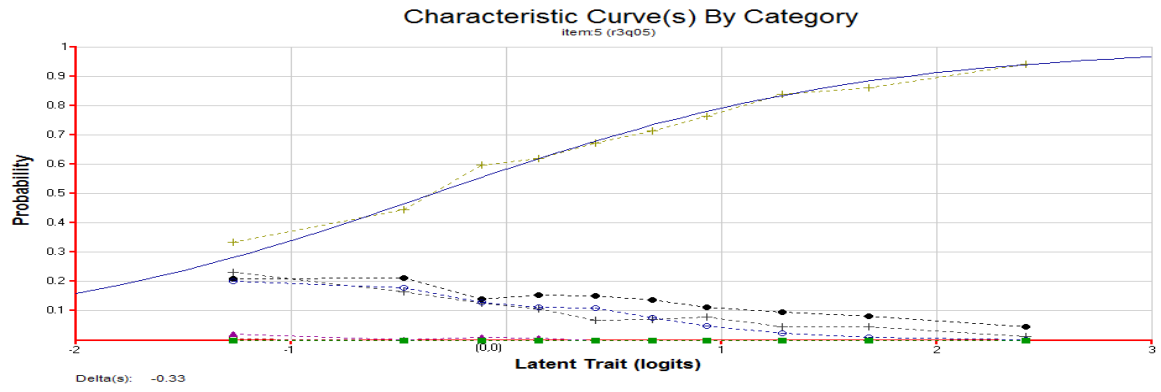
item:60 (n9NCq28)

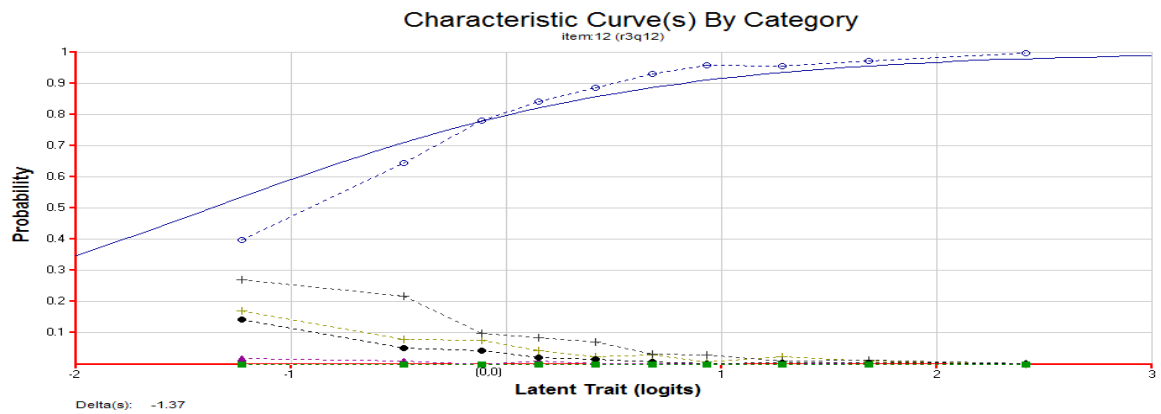
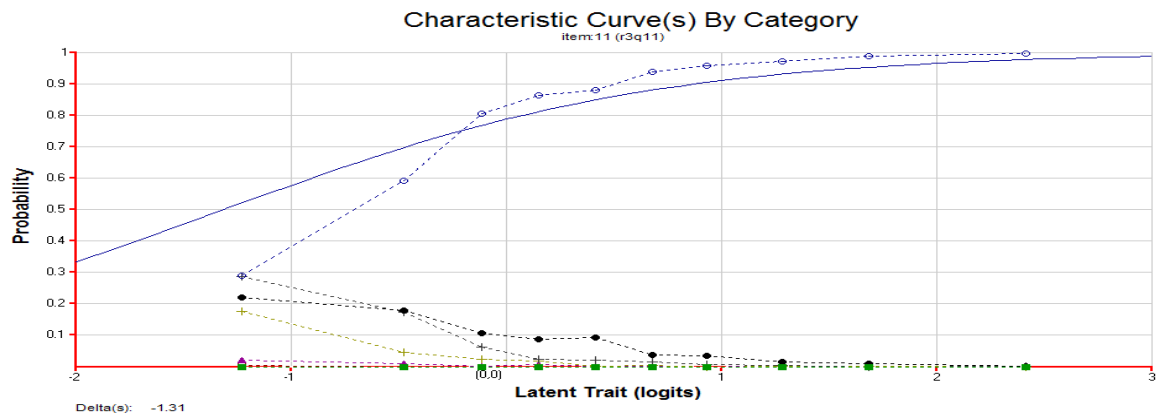
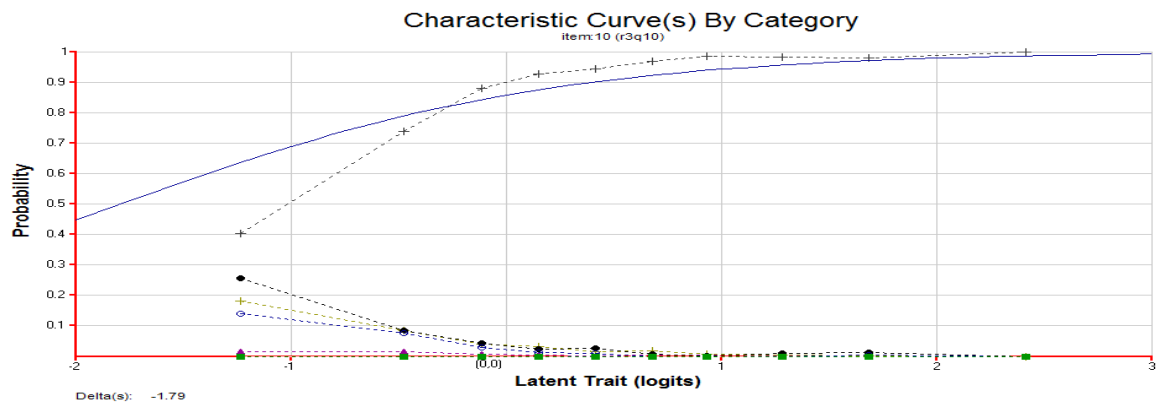
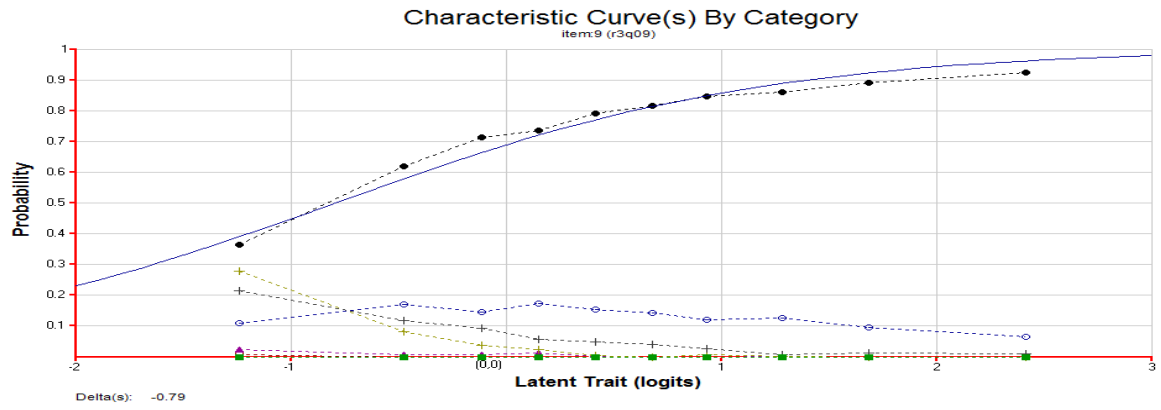


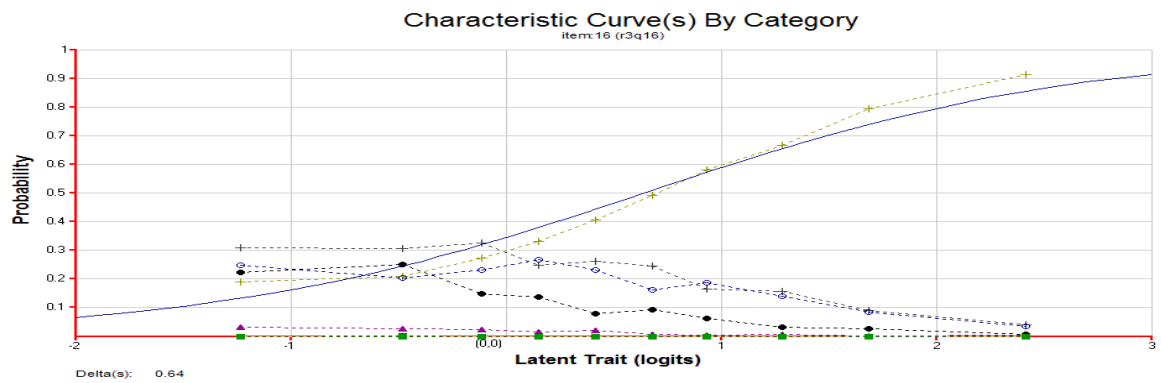
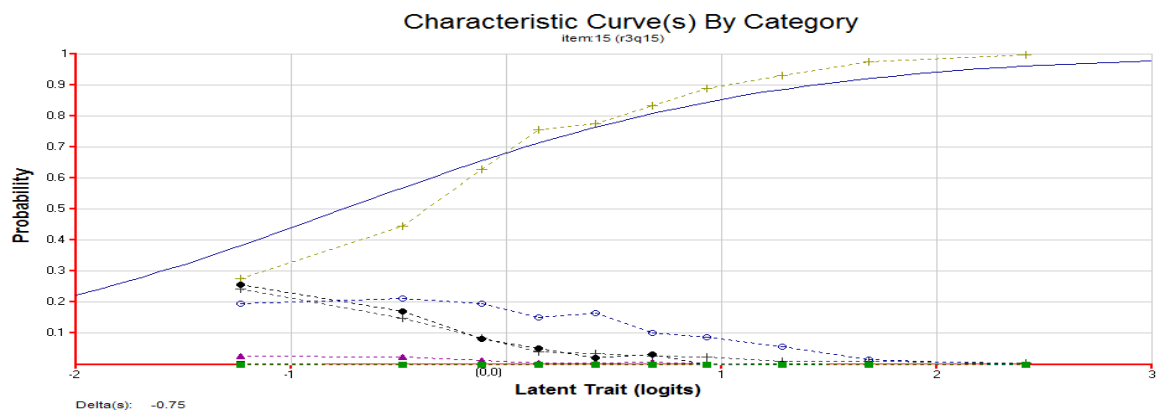
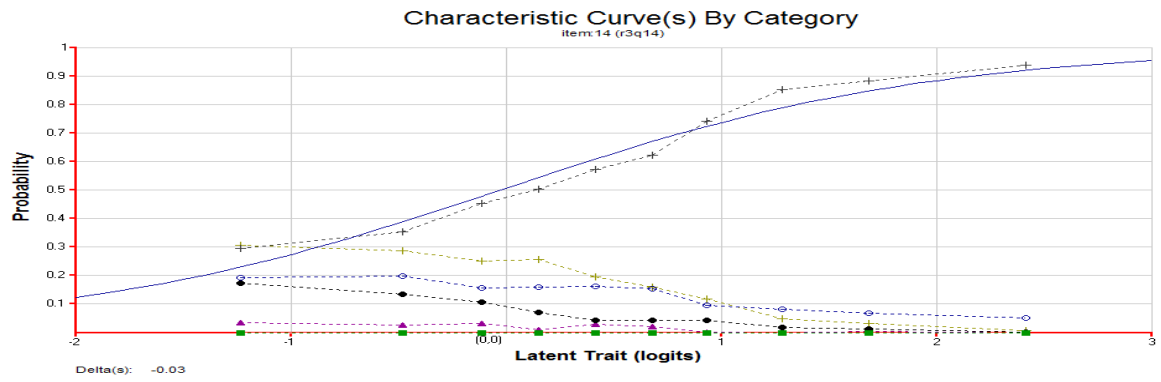
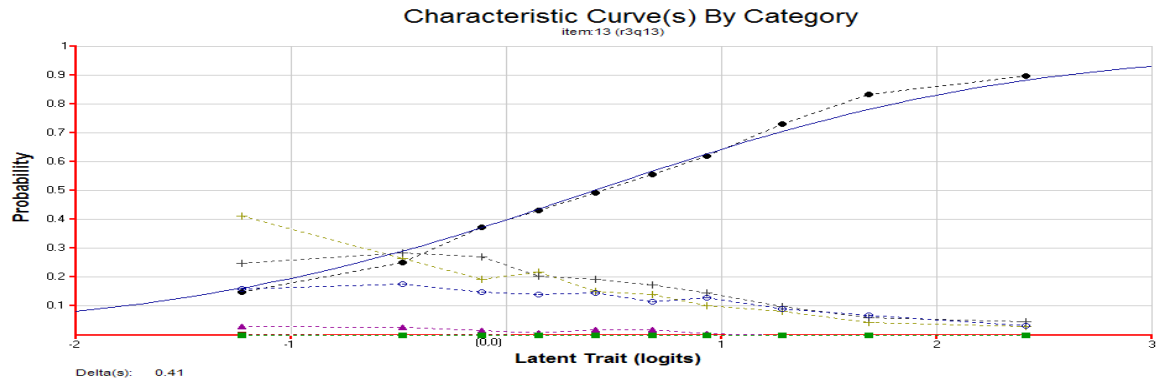


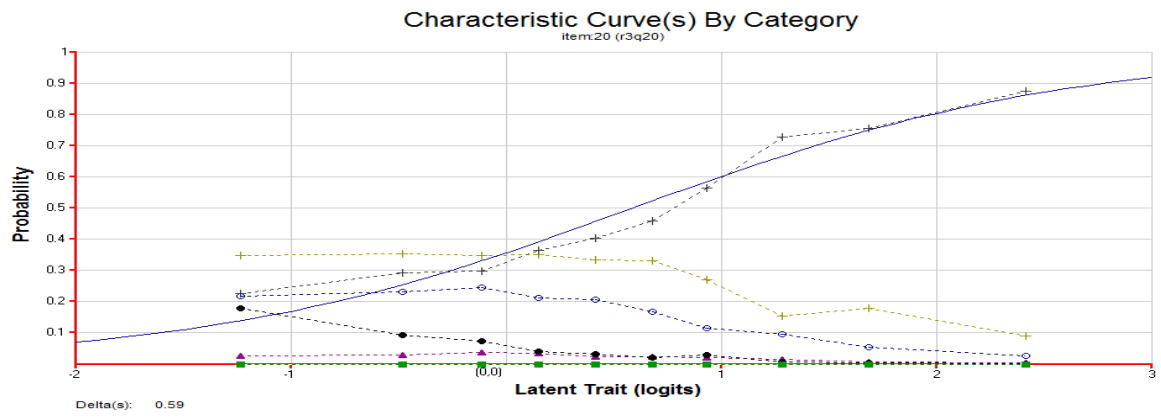
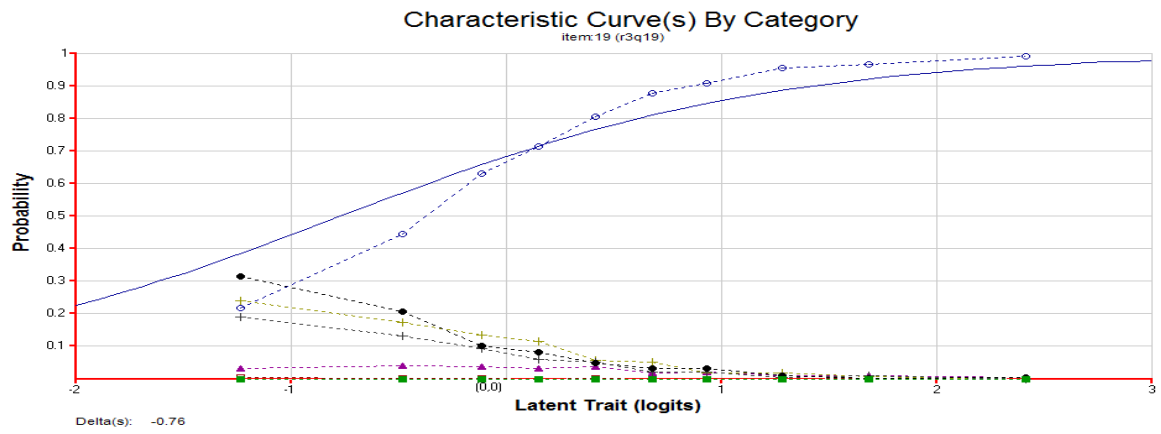
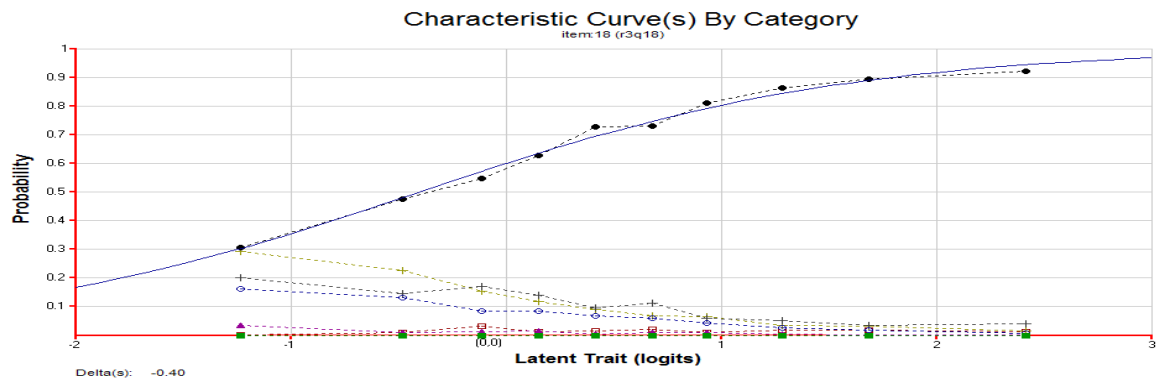
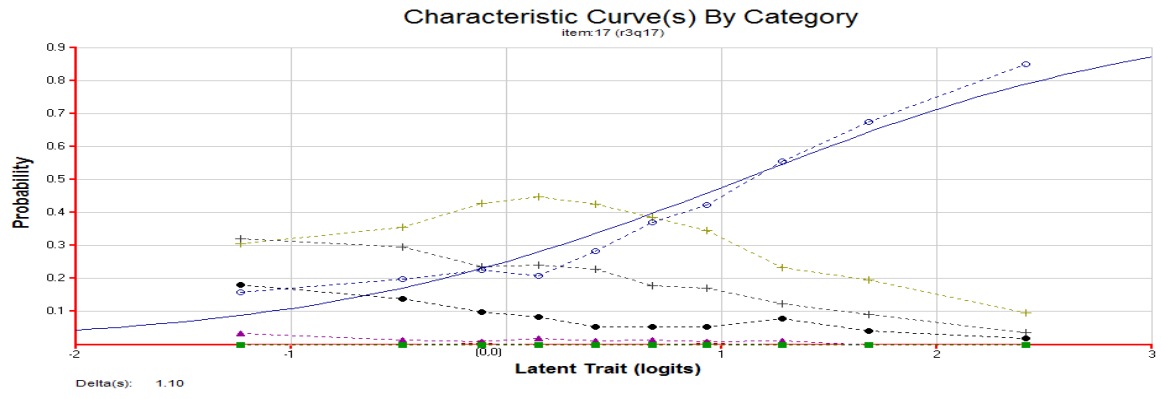
Year 3 Reading

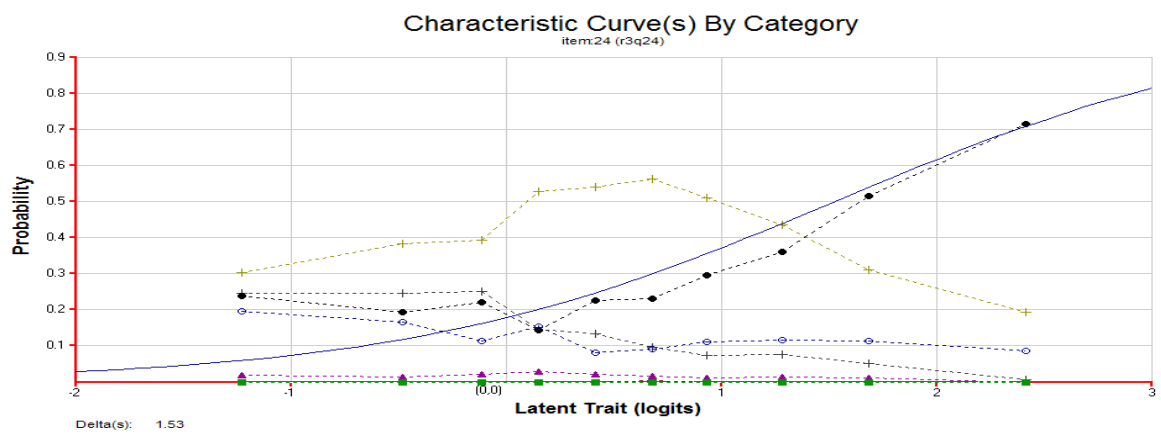
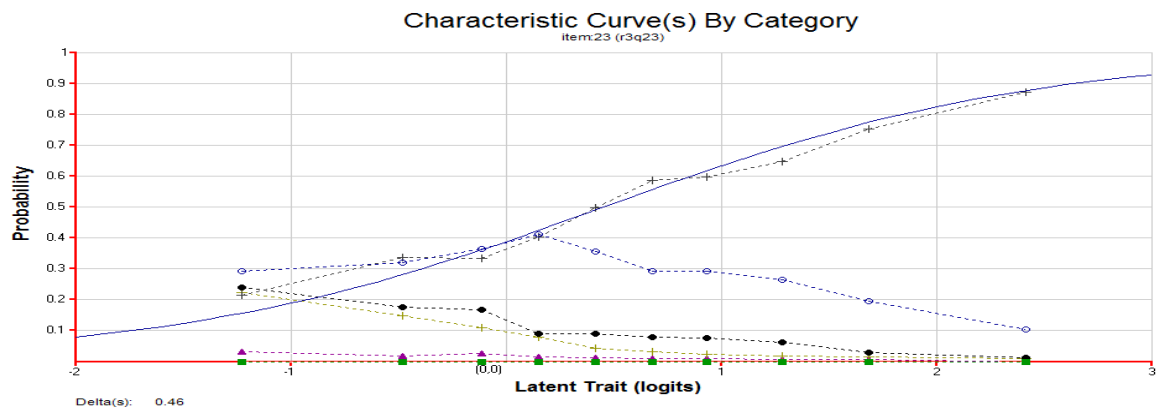
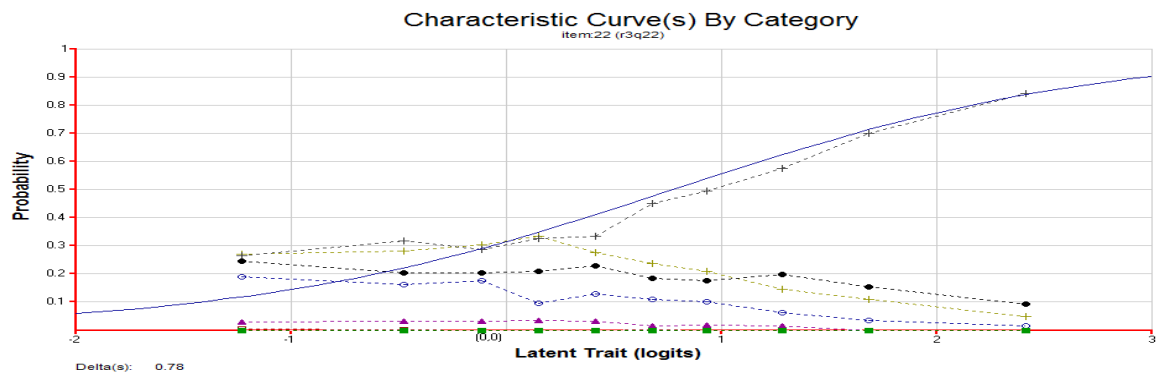
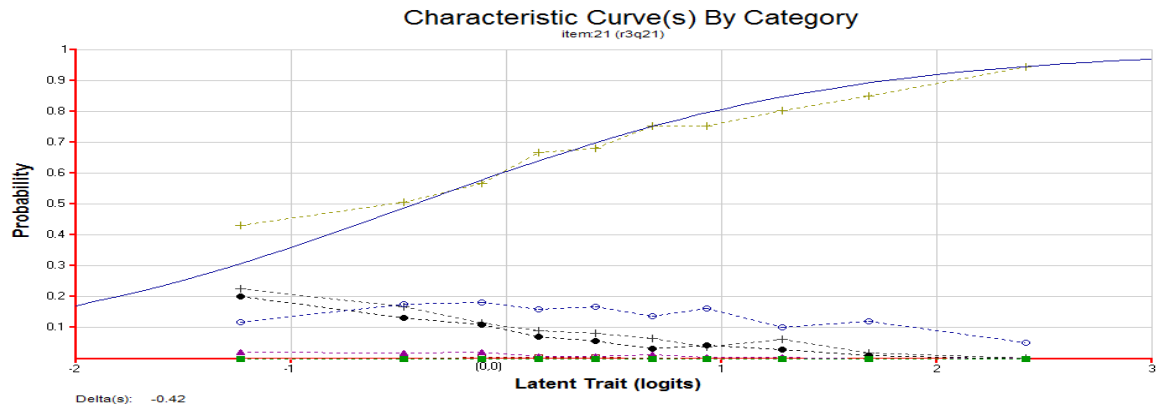


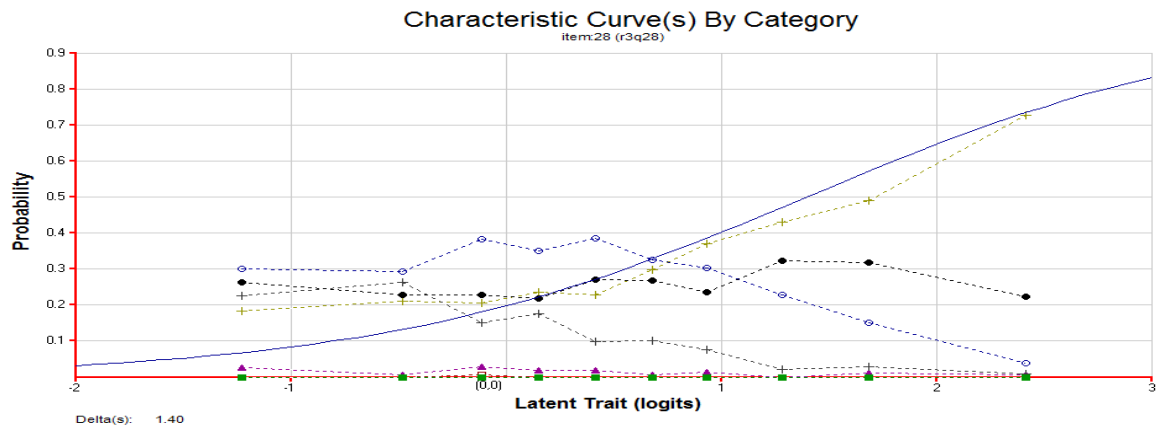
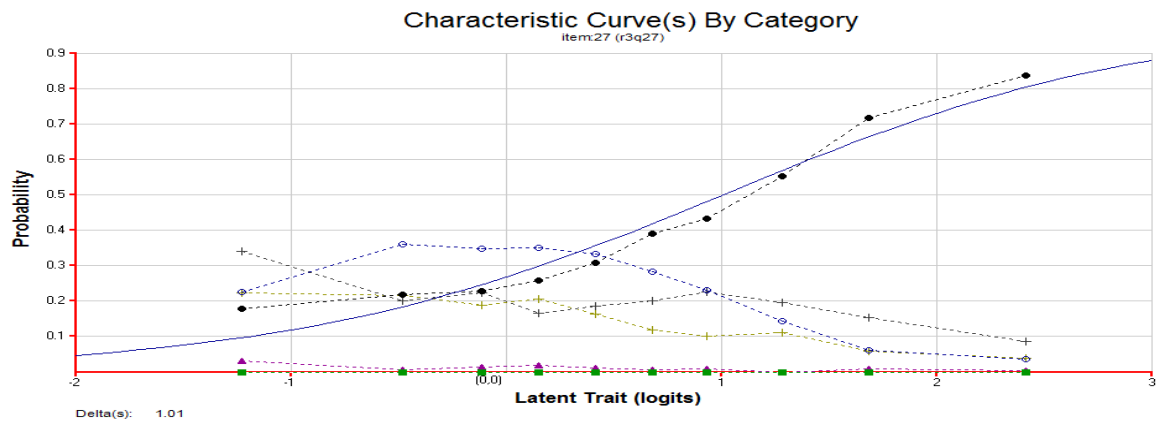
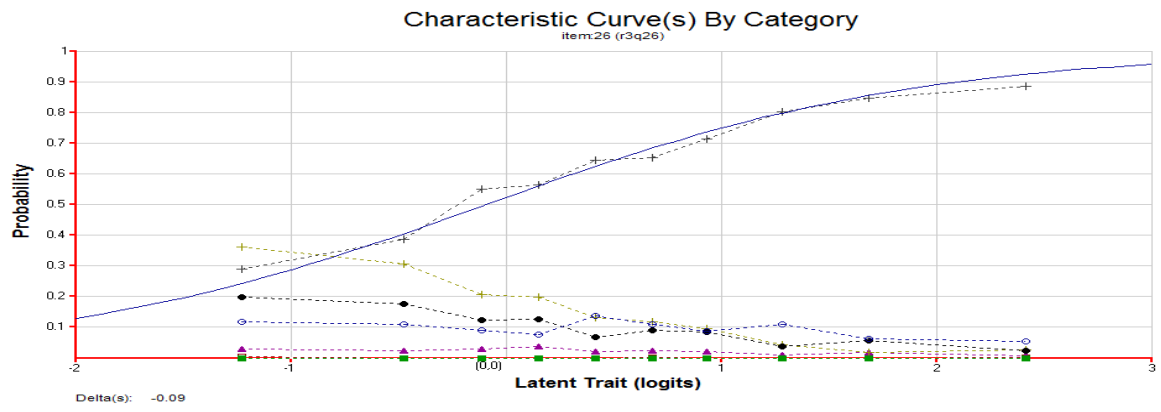
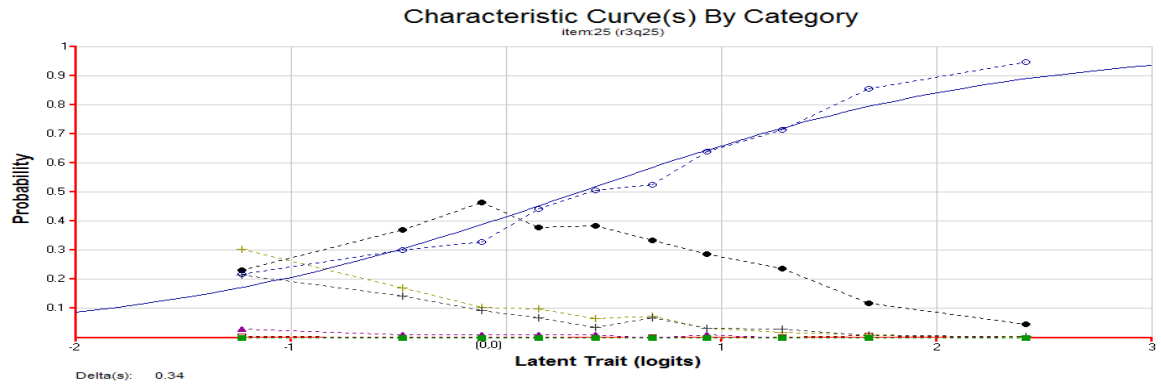


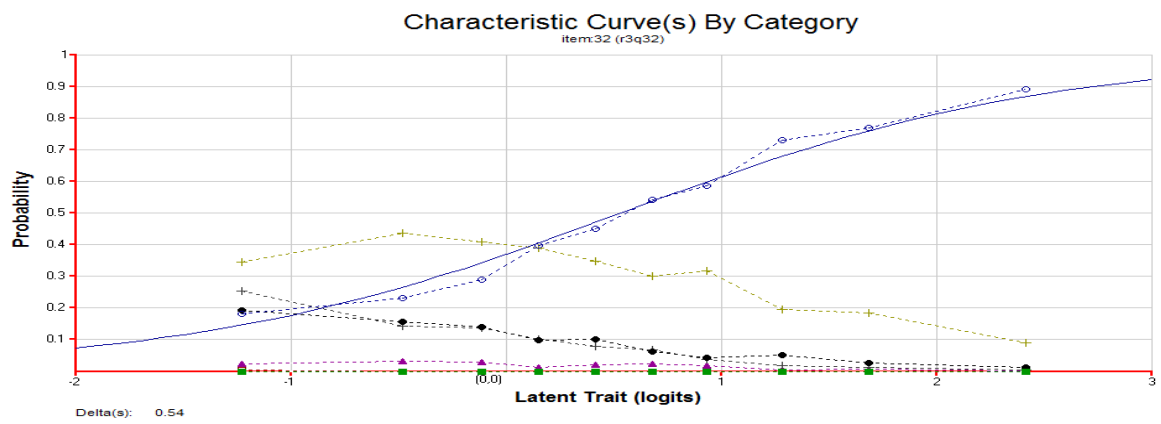
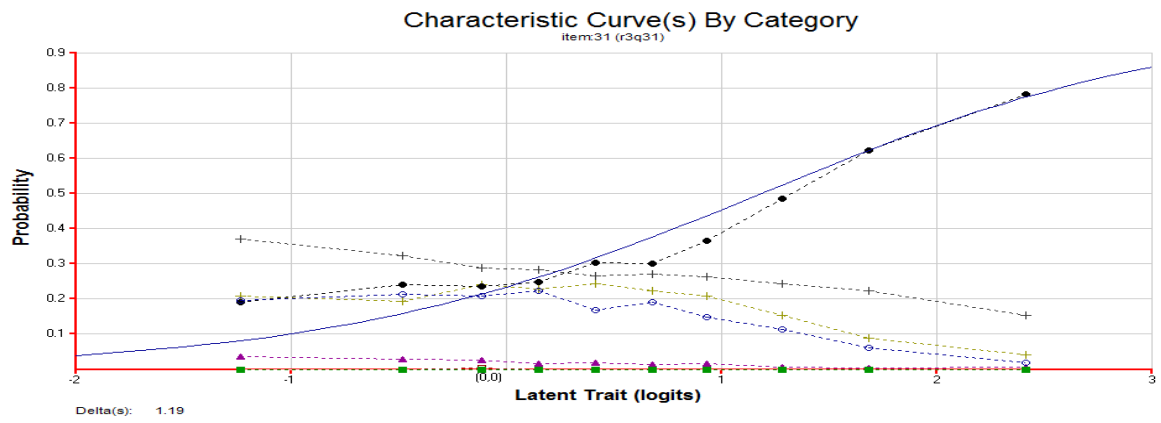
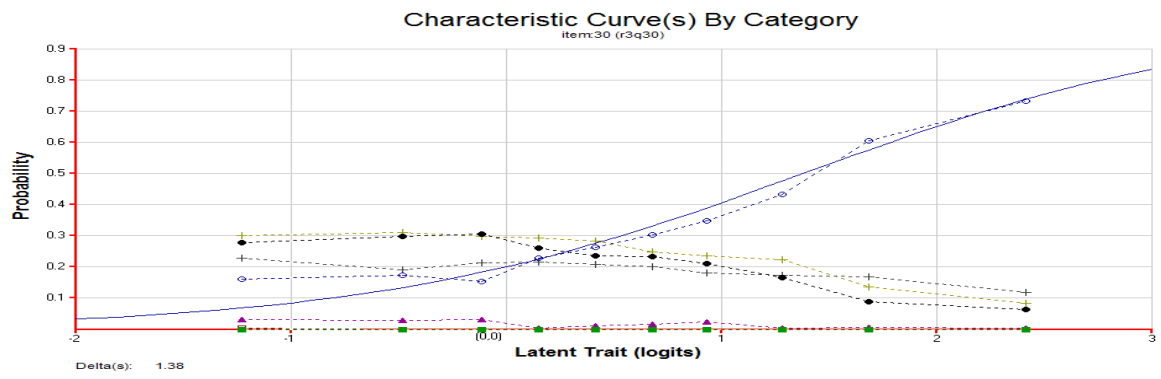
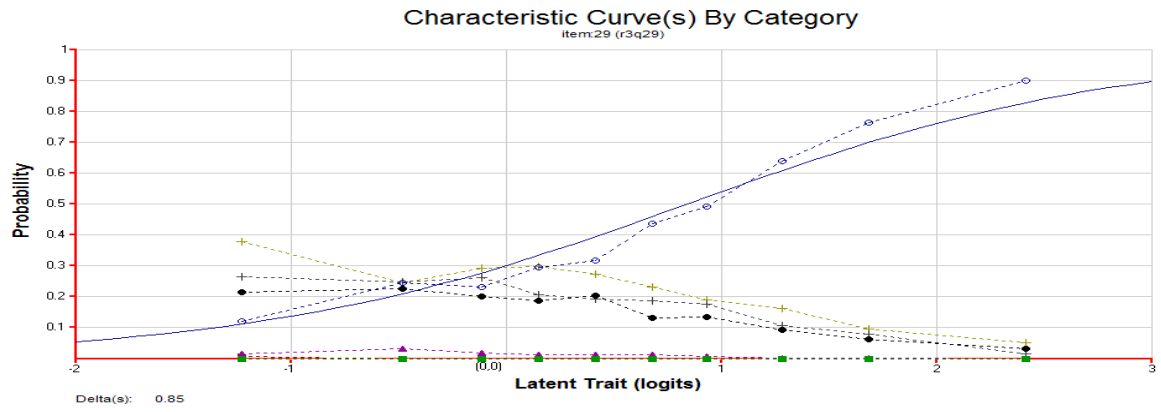


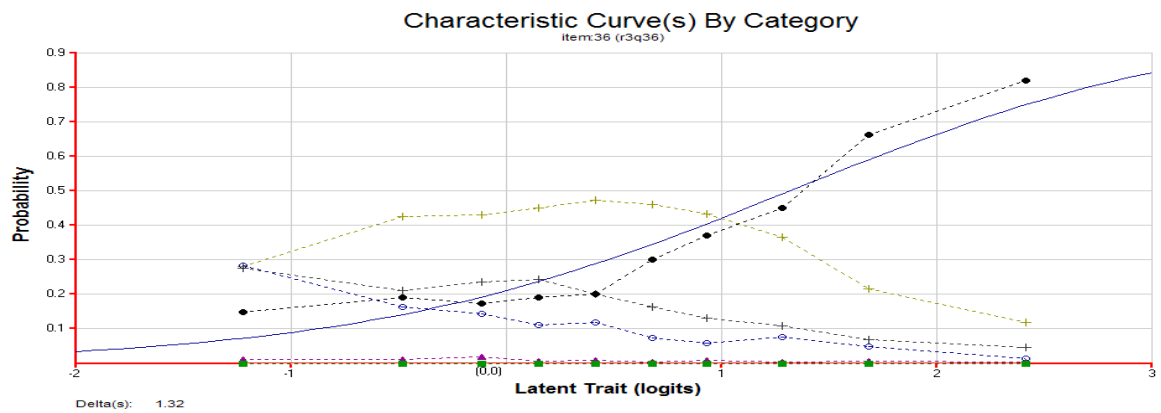
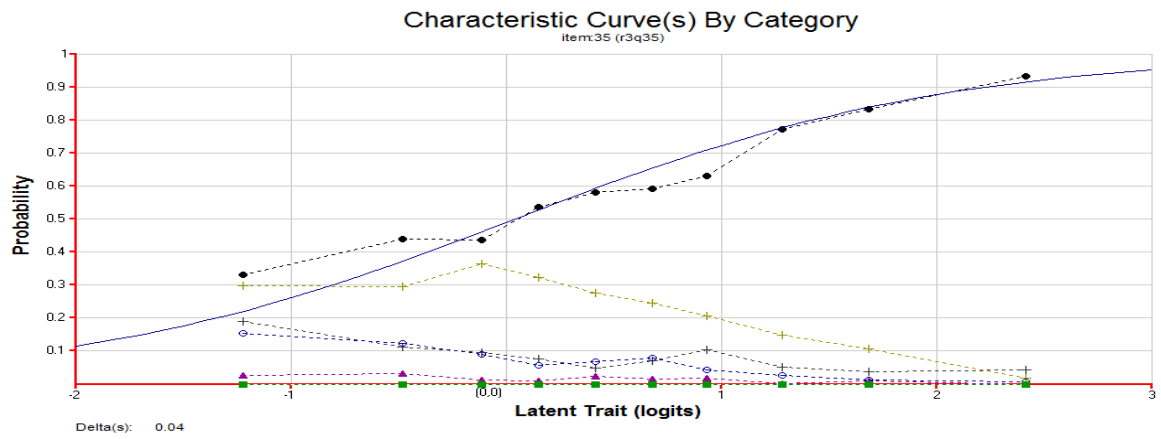
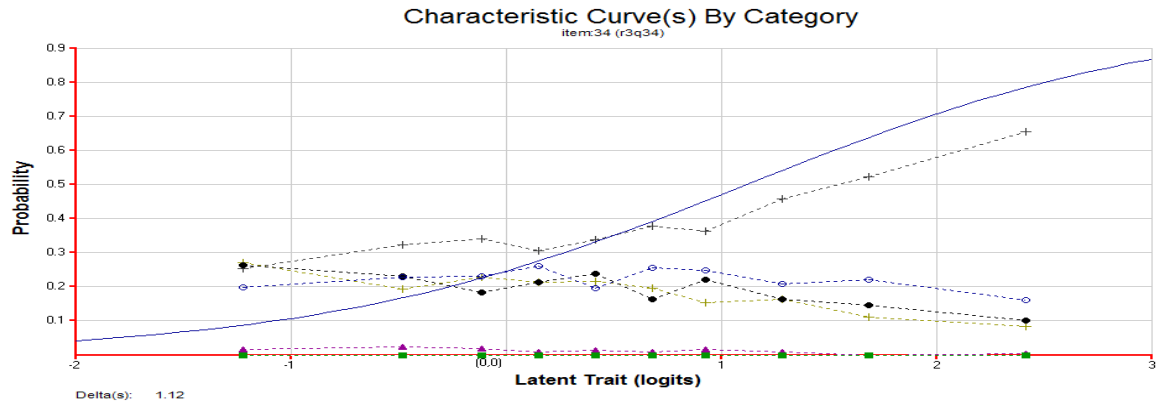
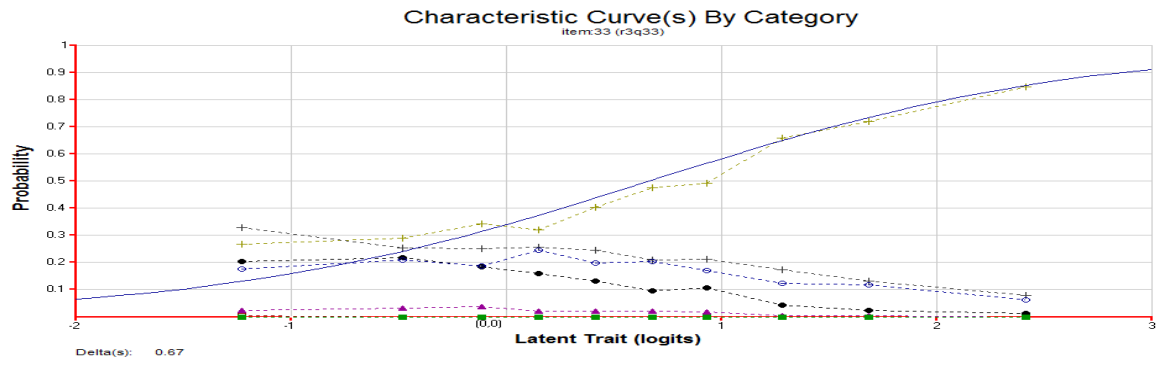


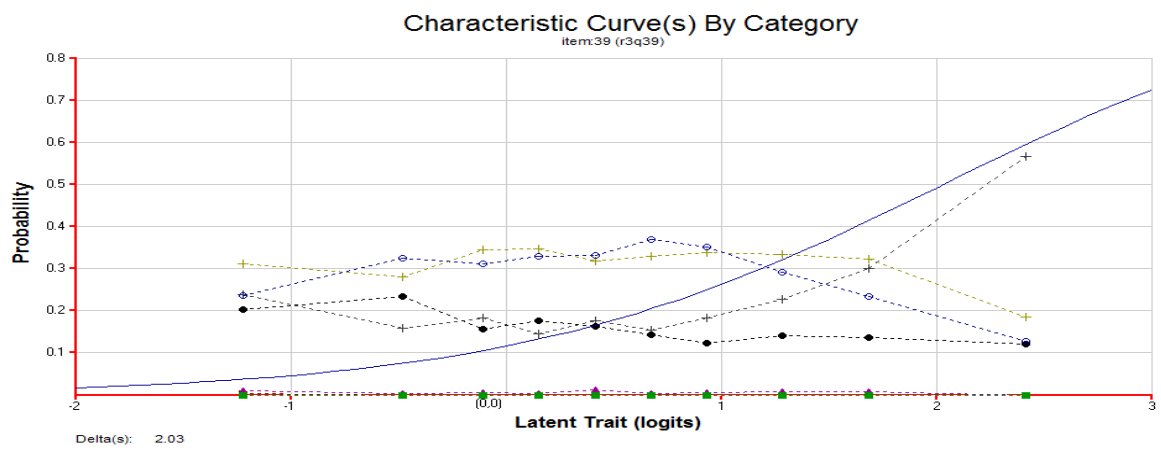
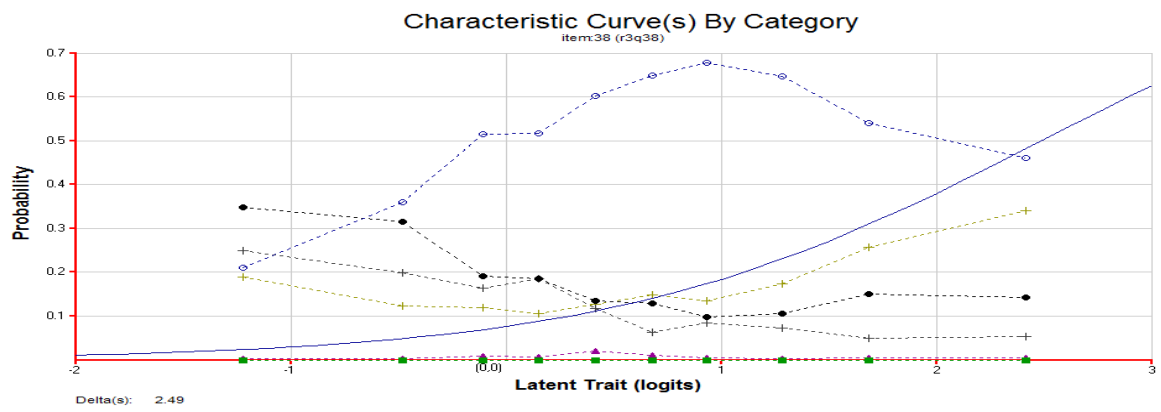
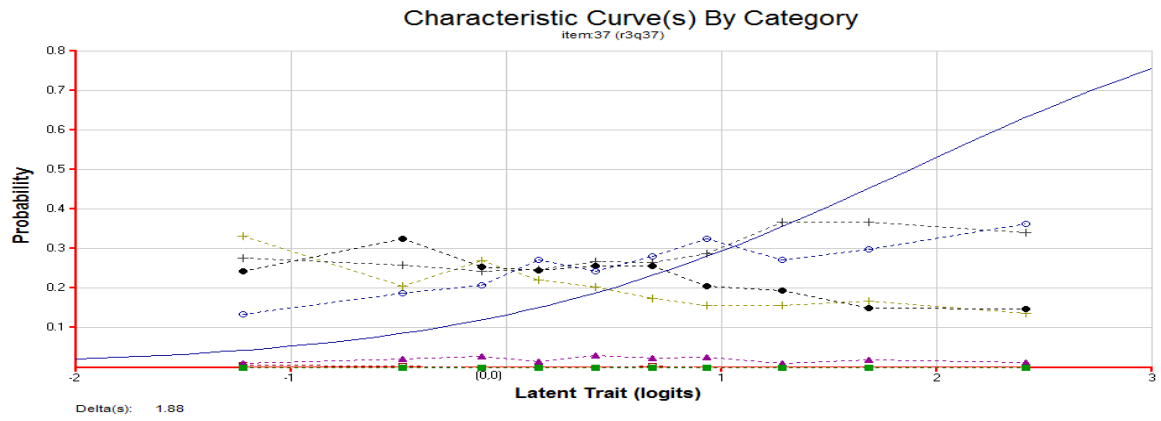




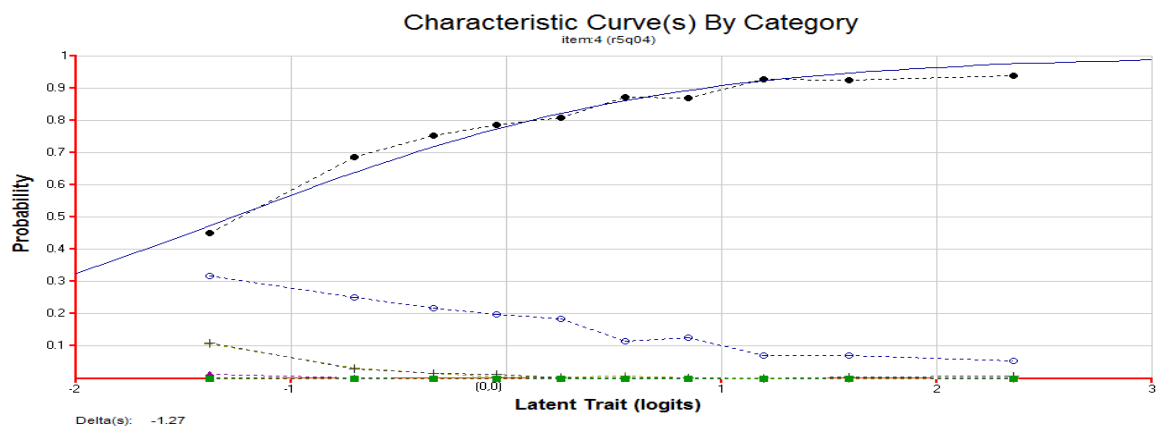
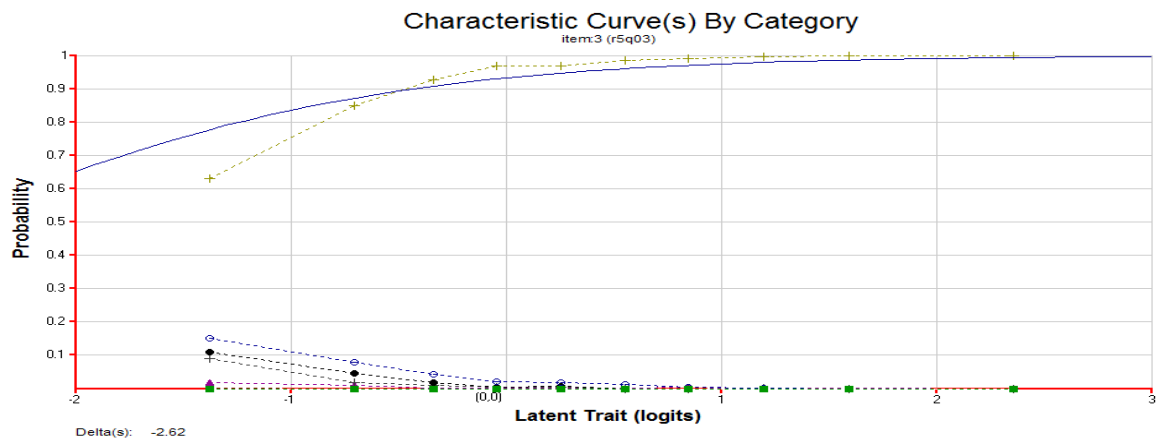
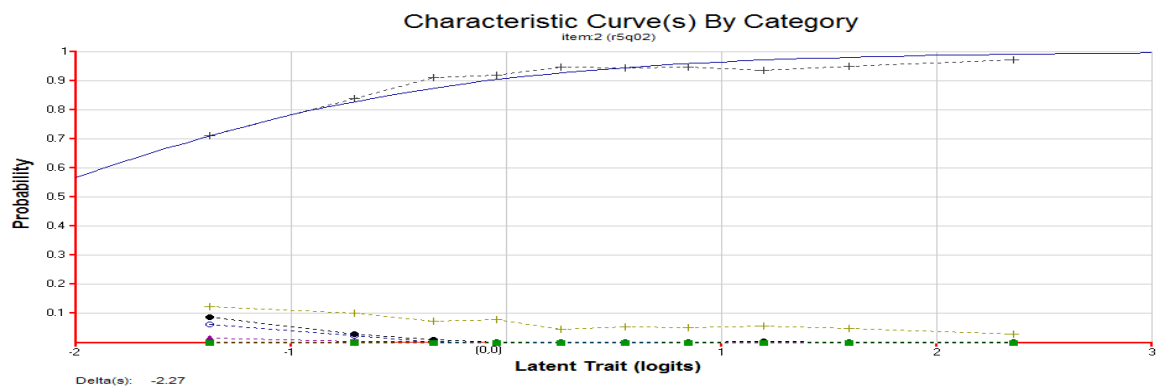
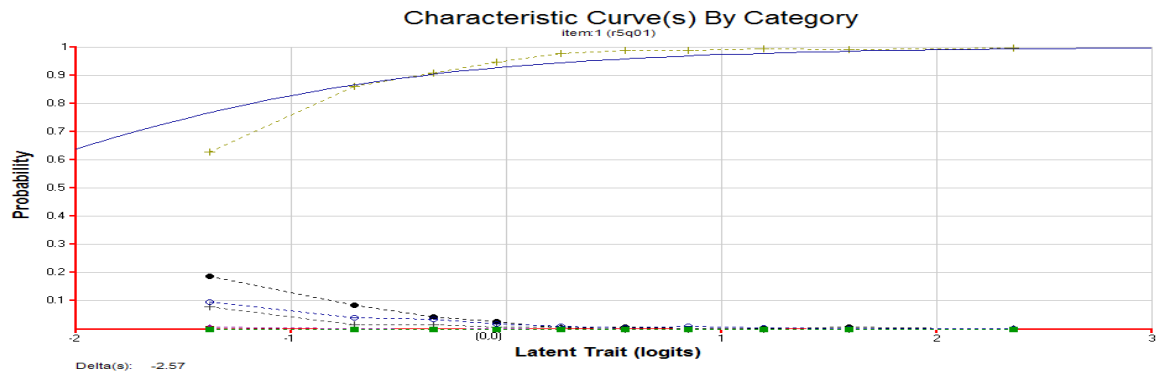


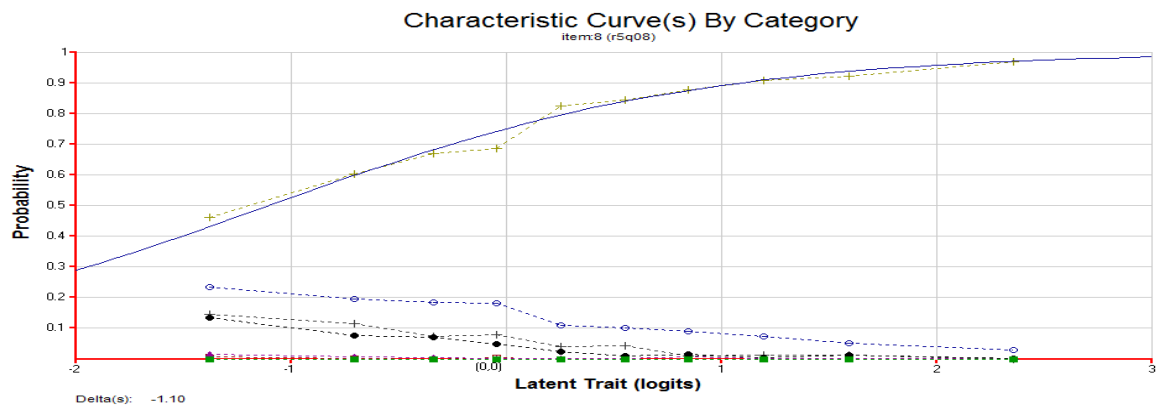
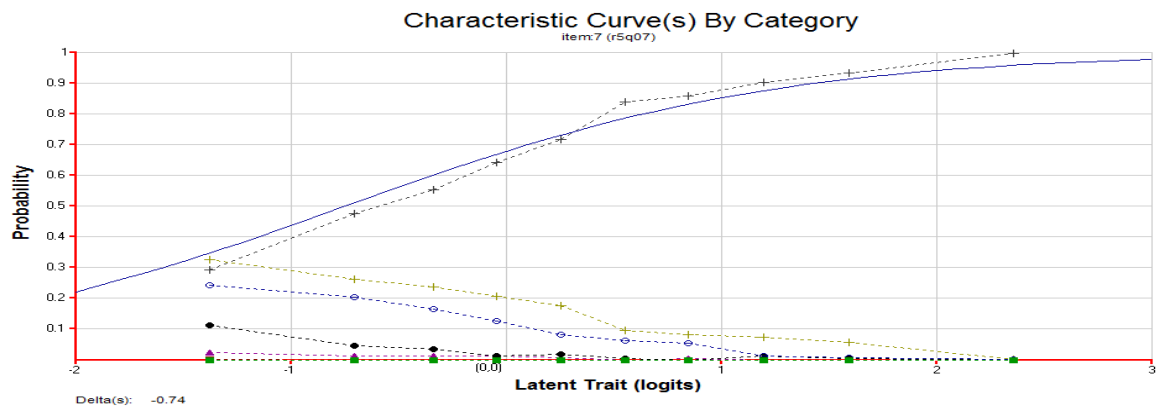
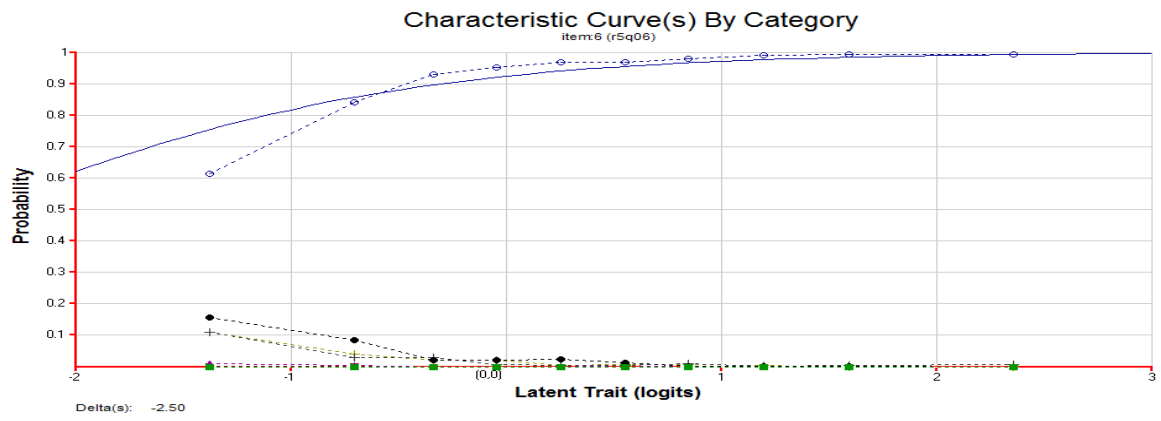
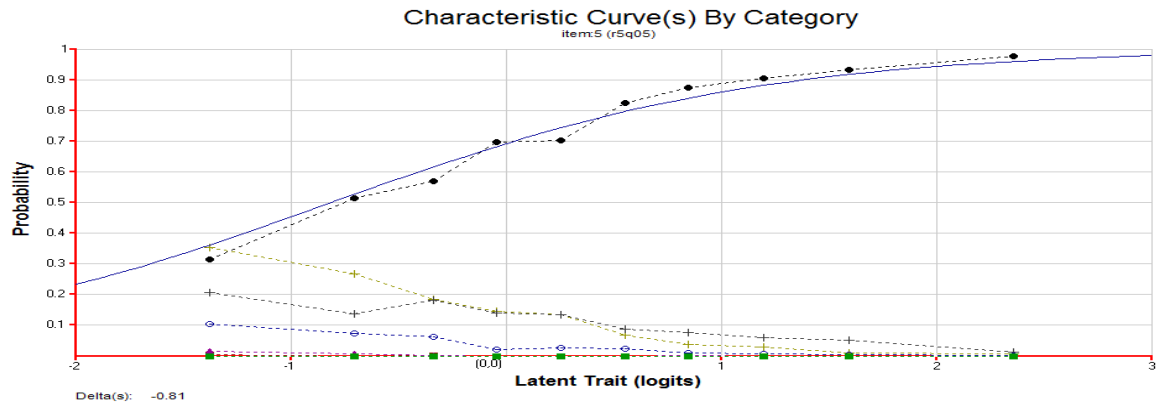


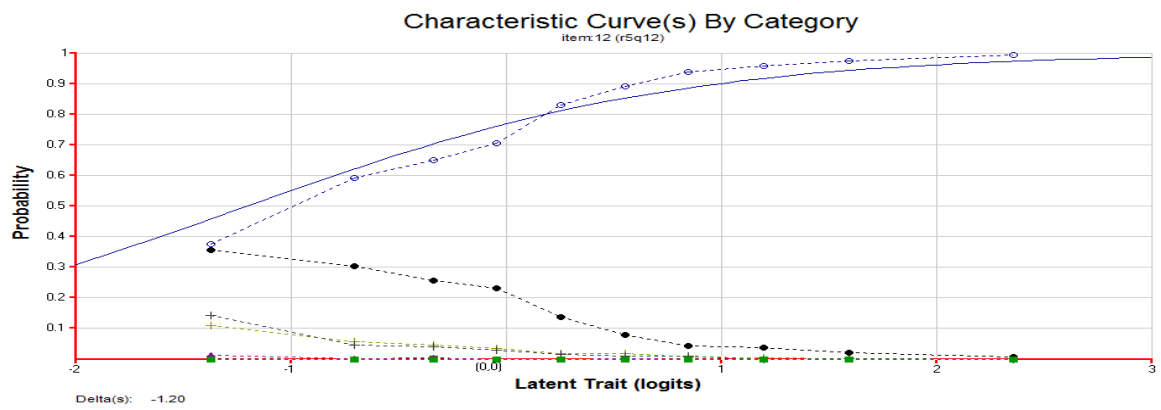
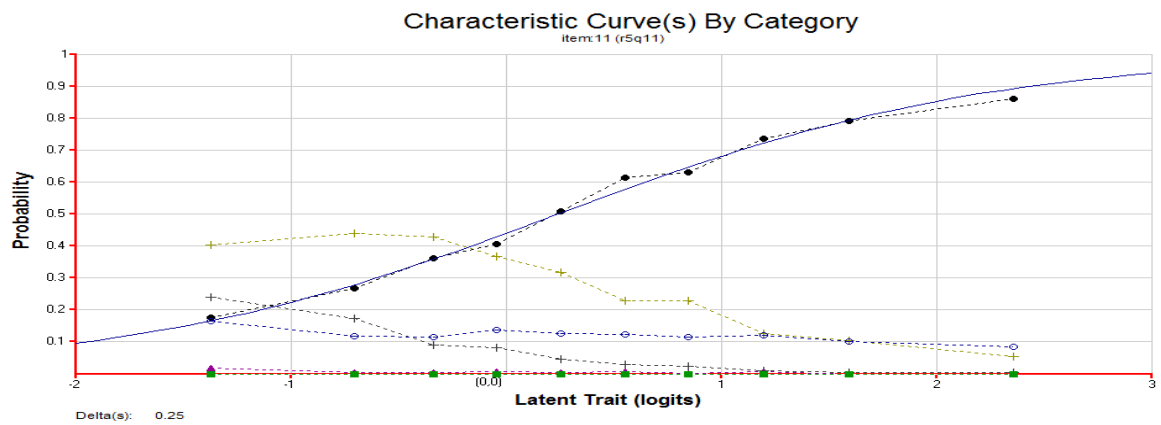
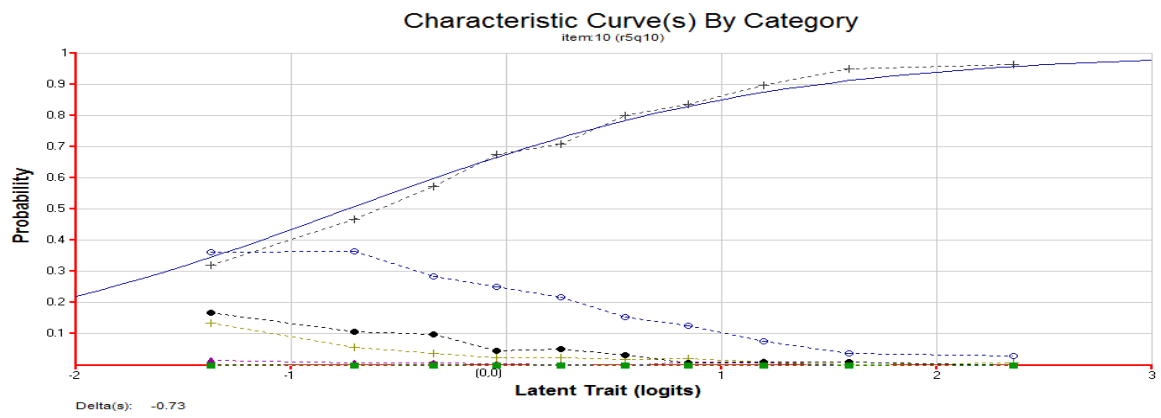
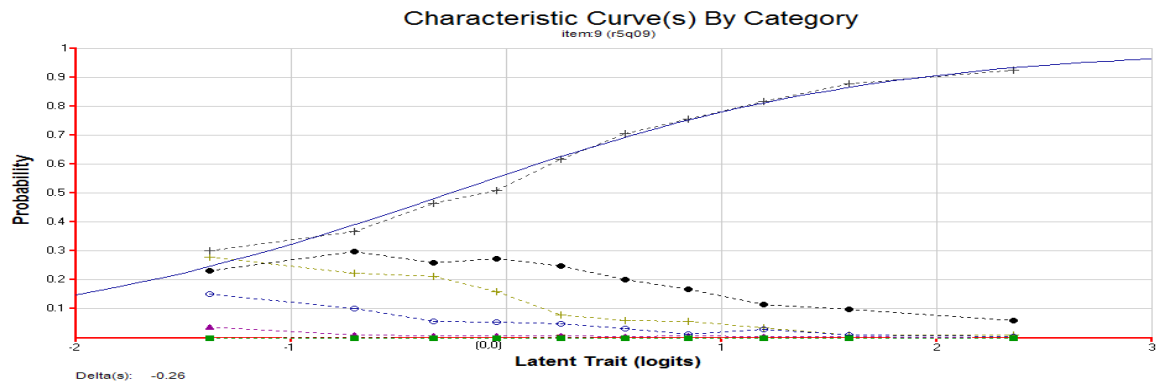


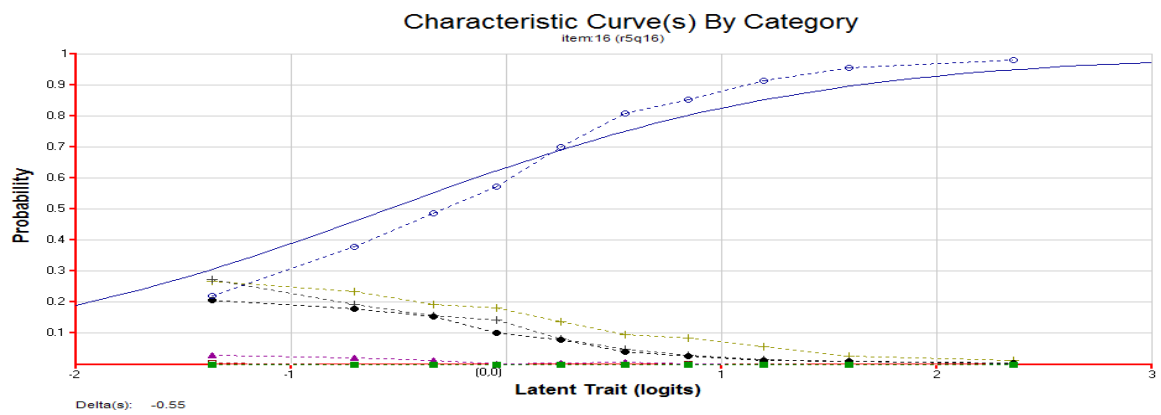
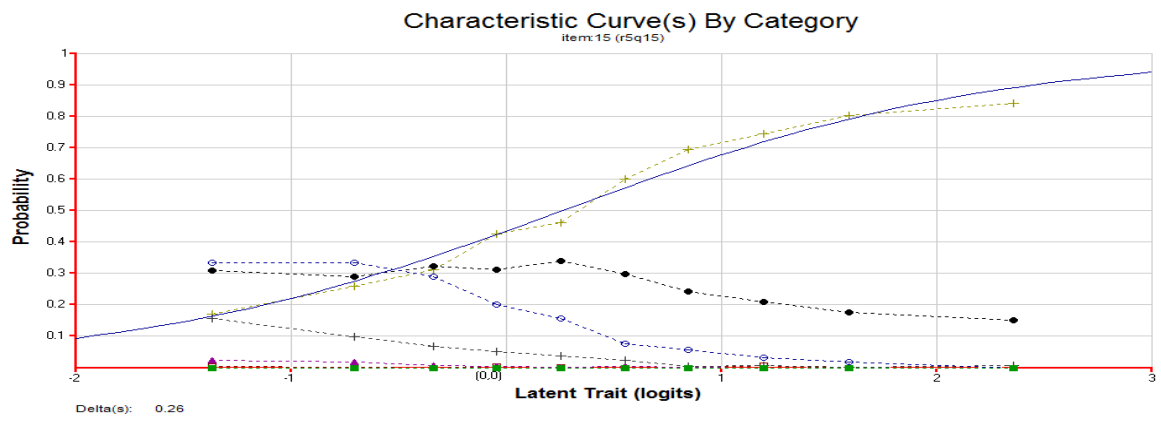
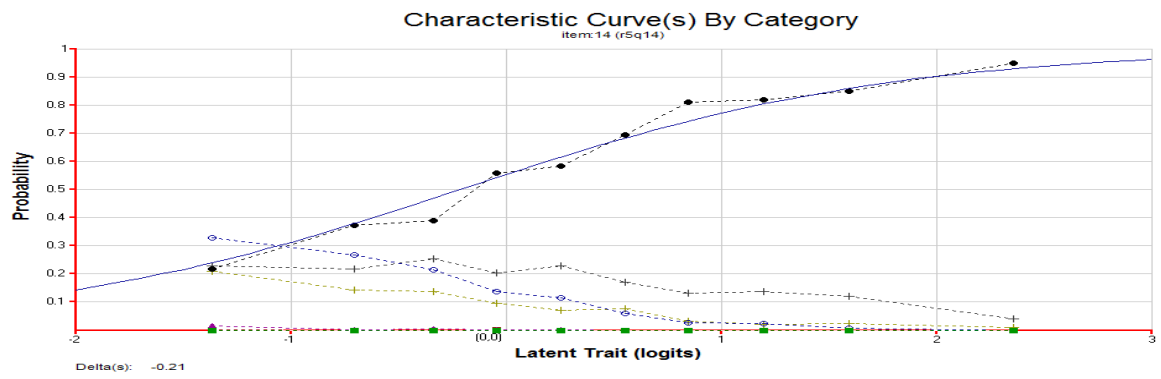
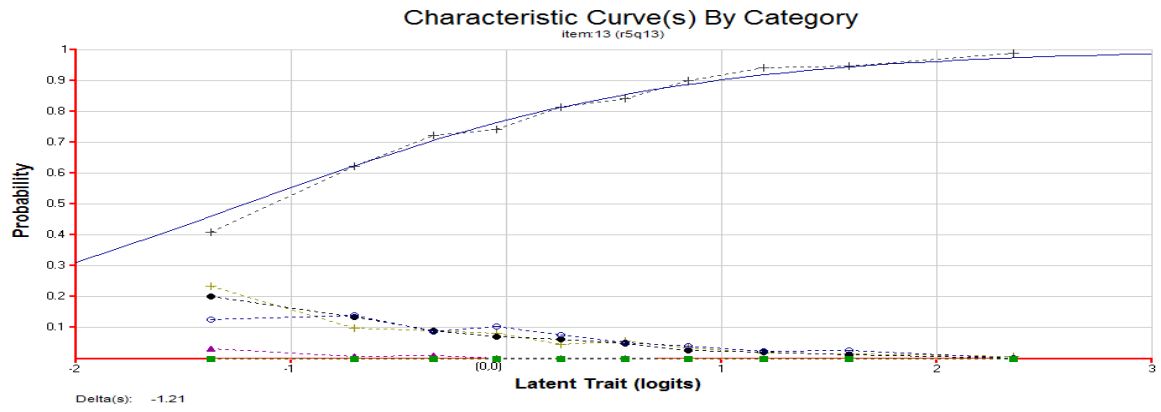


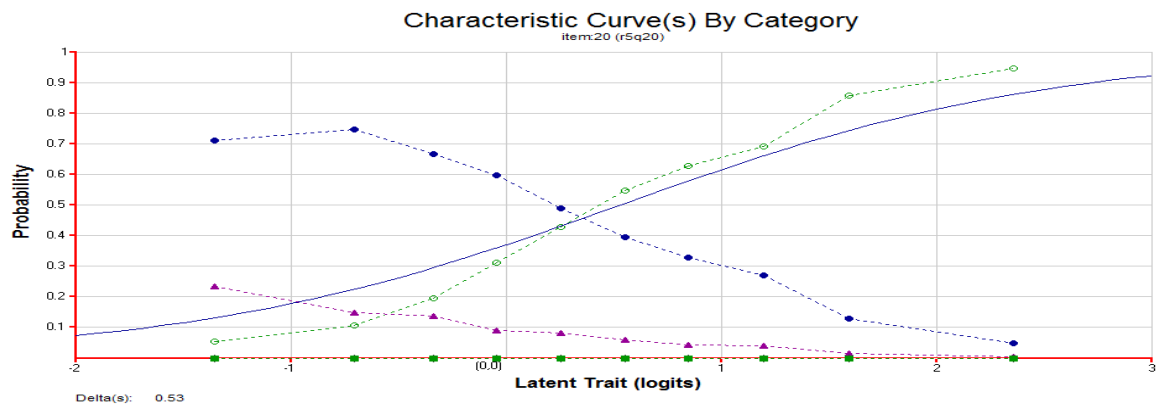
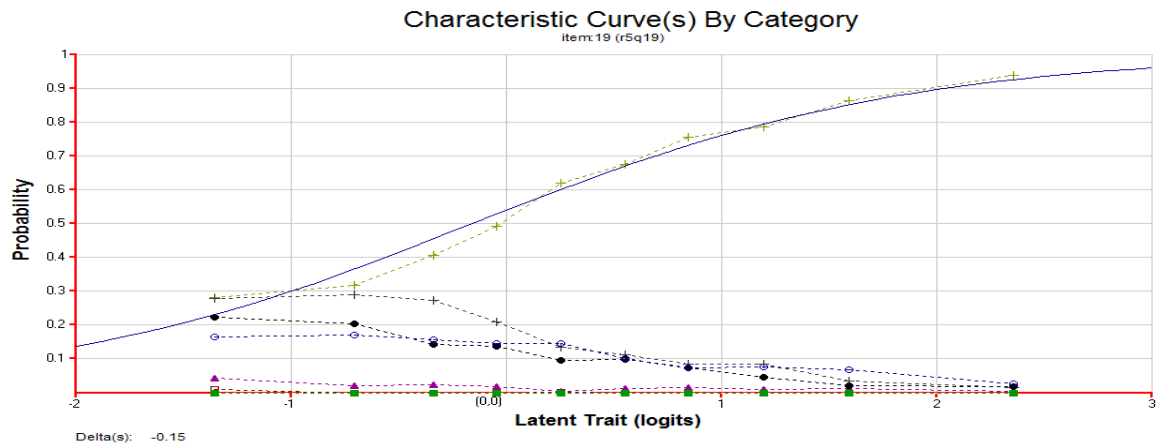
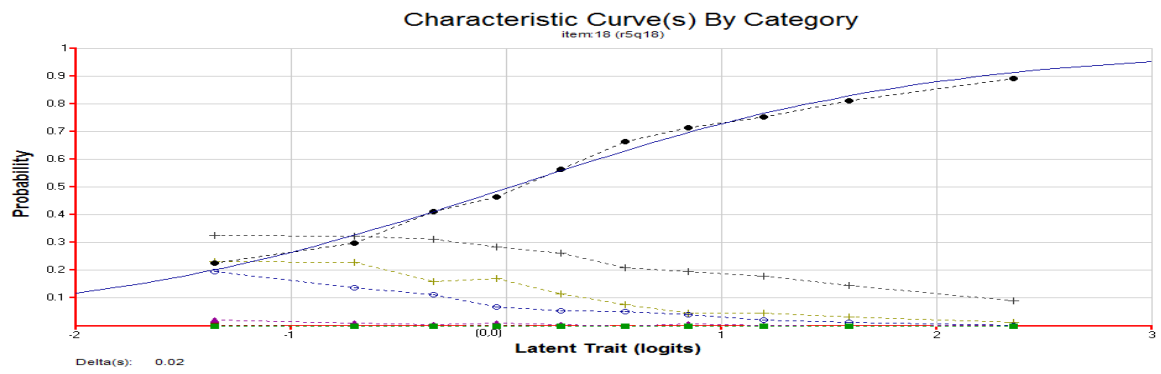
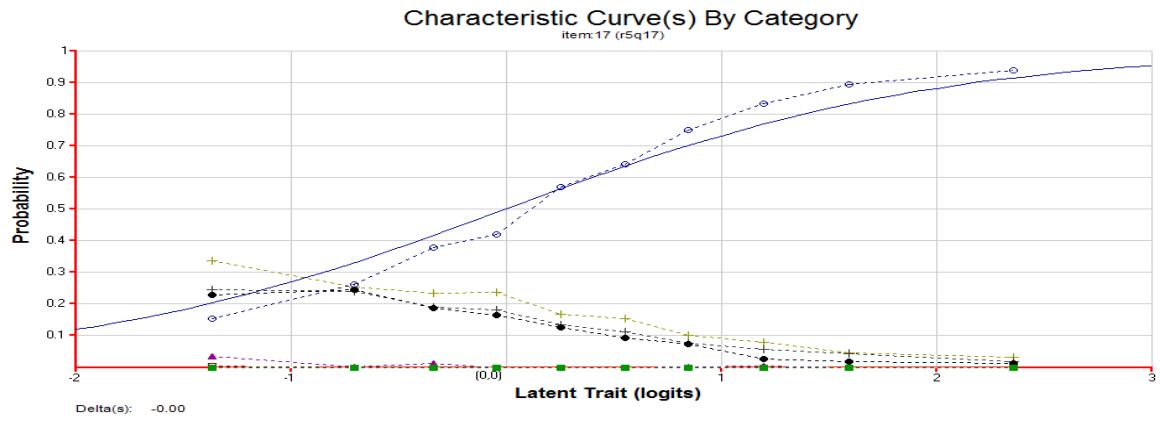
Year 5 Reading

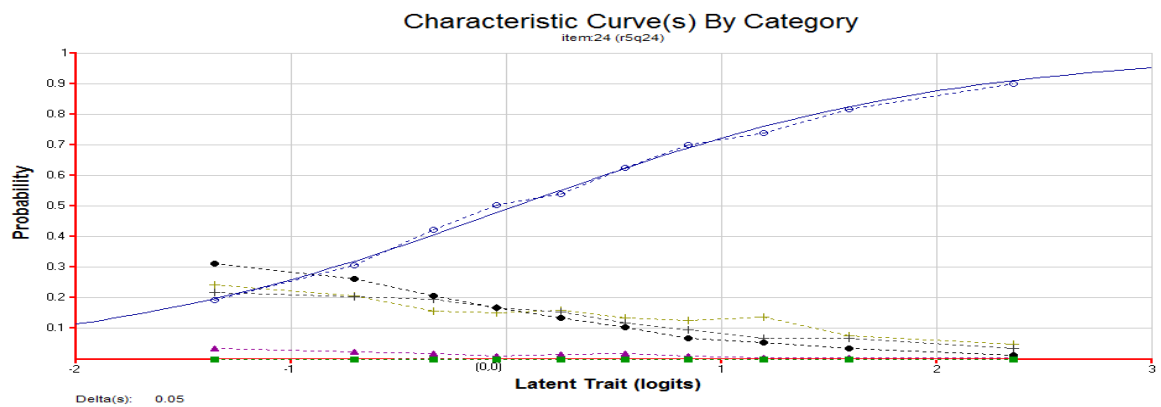
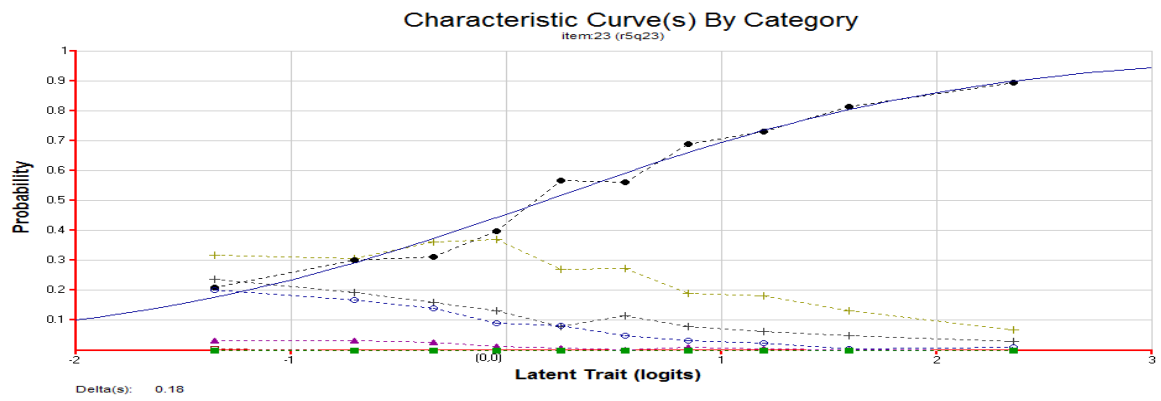
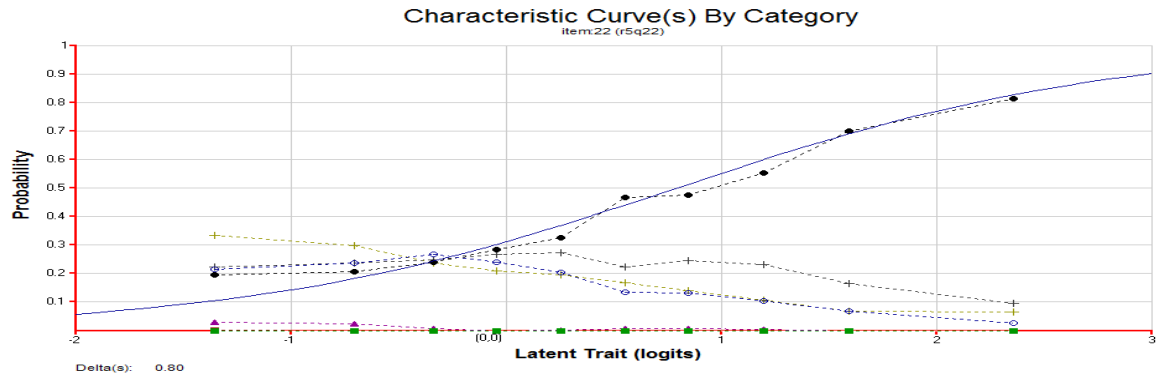
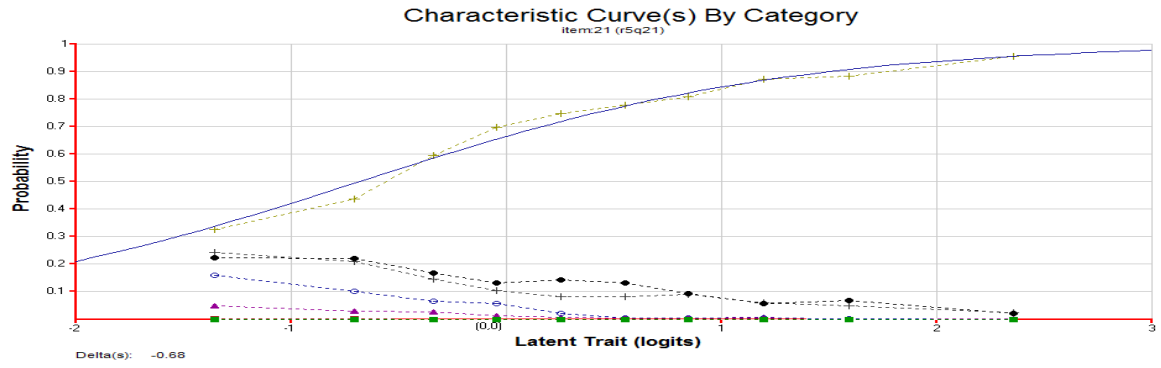


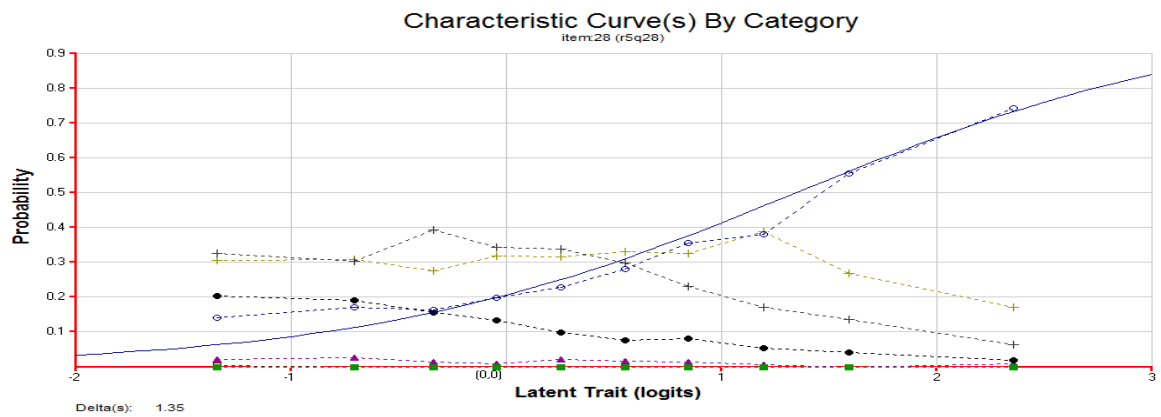
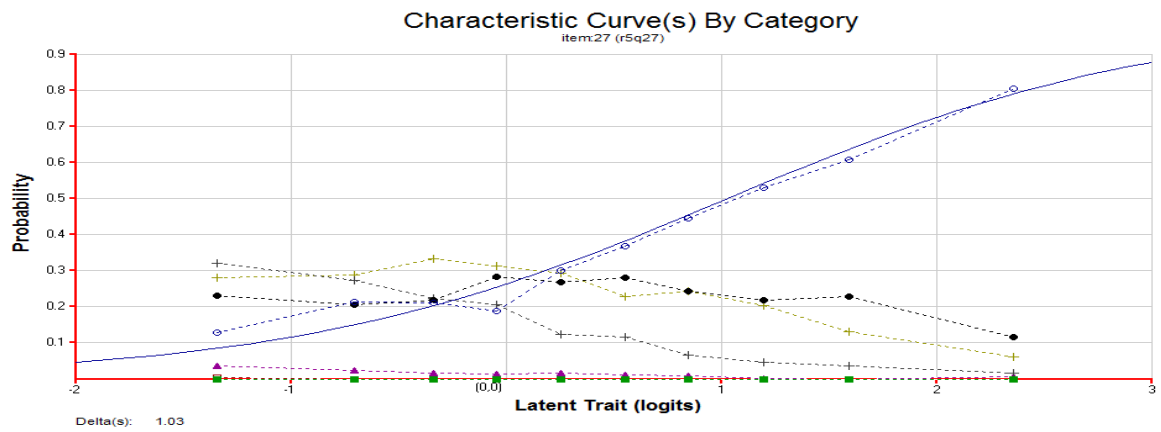
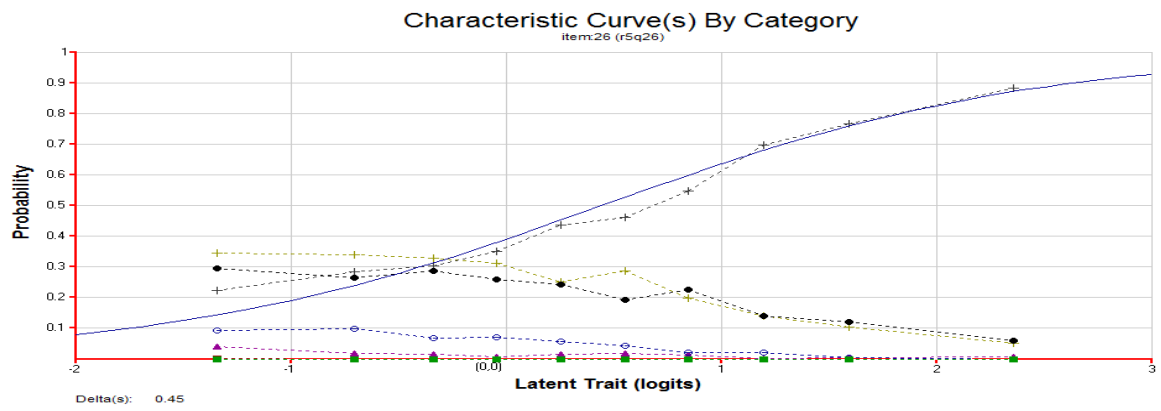
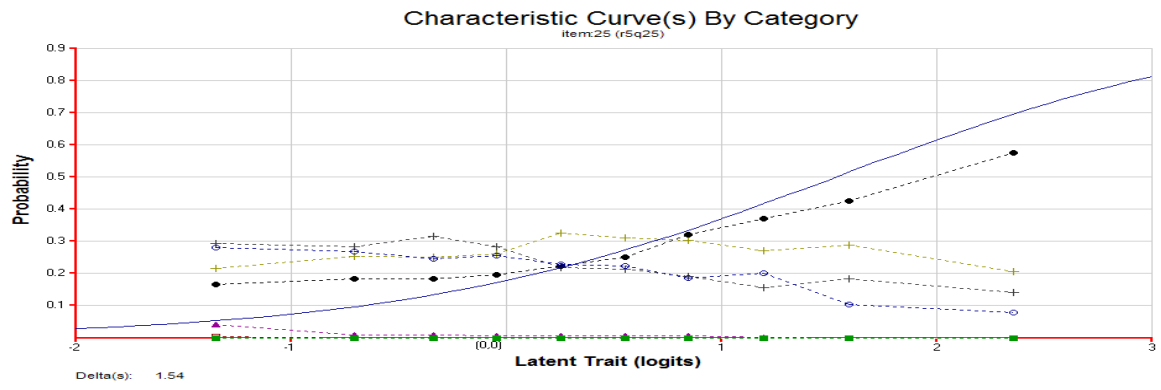


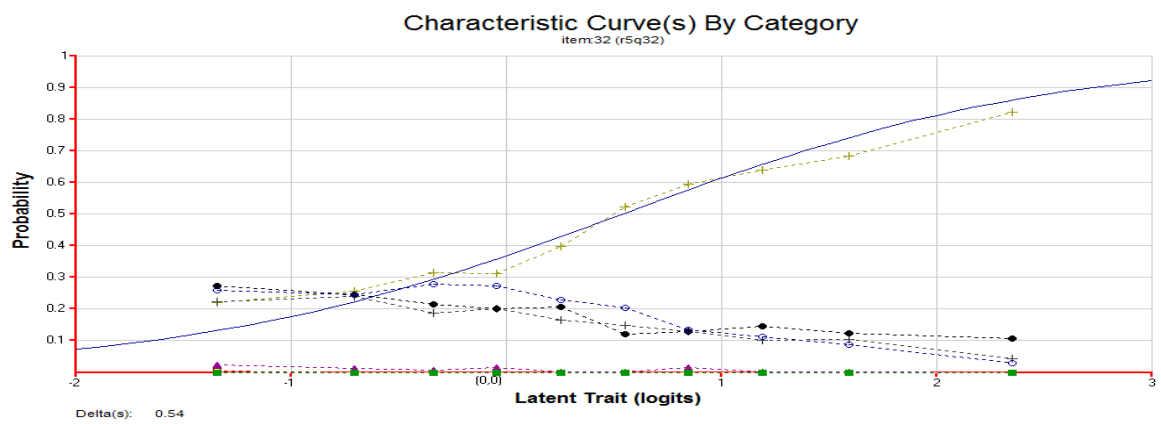
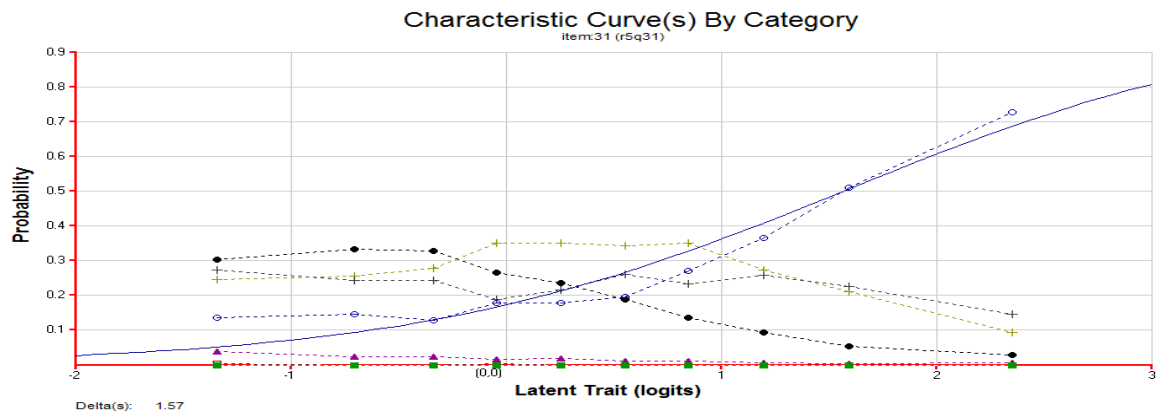
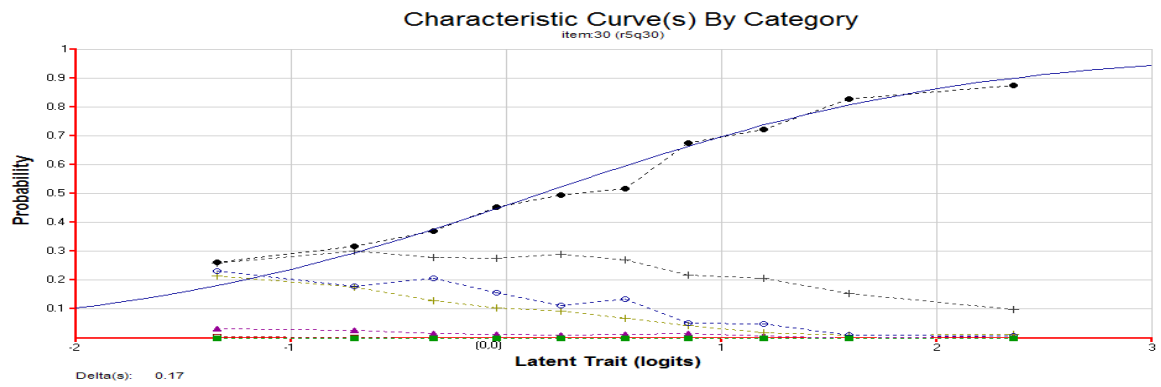
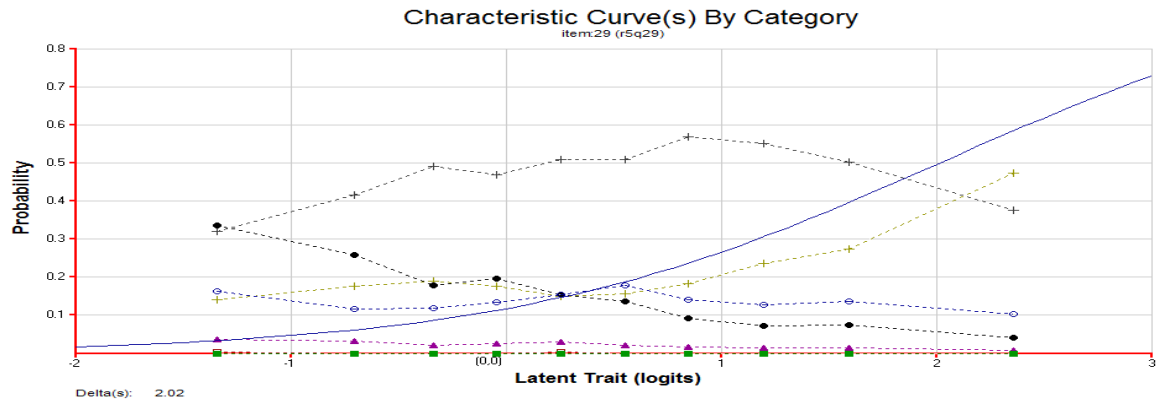


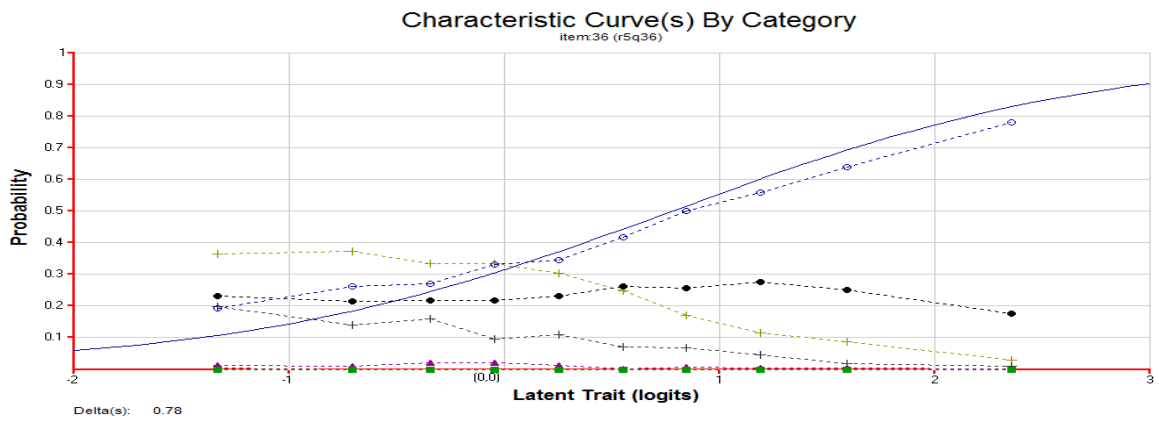
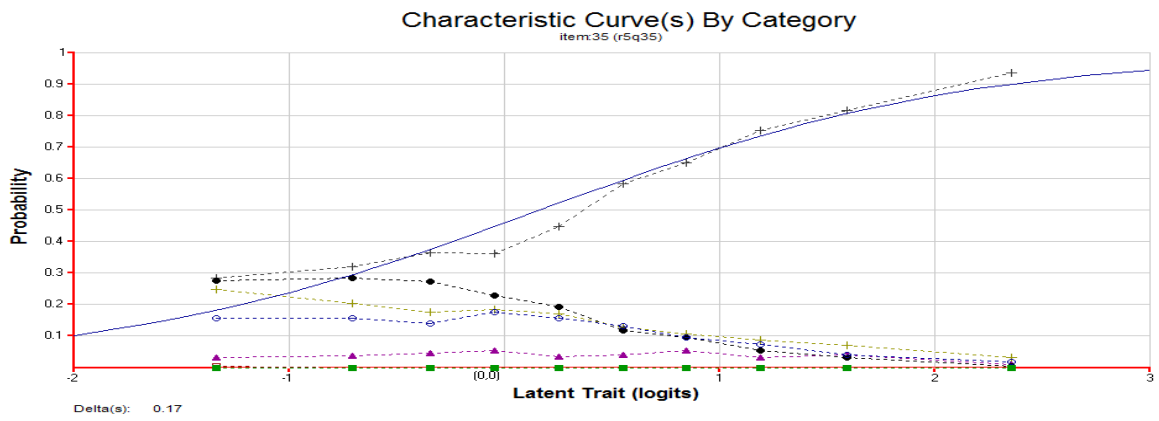
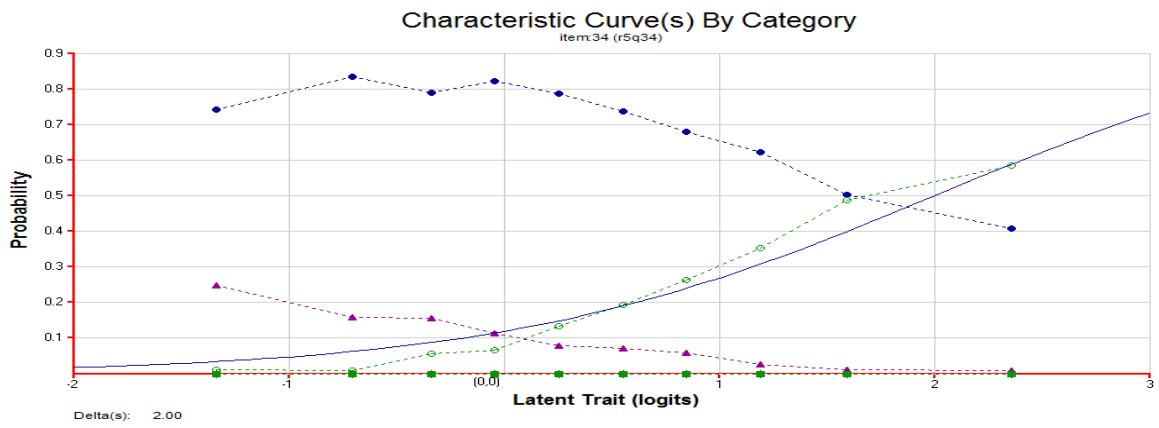
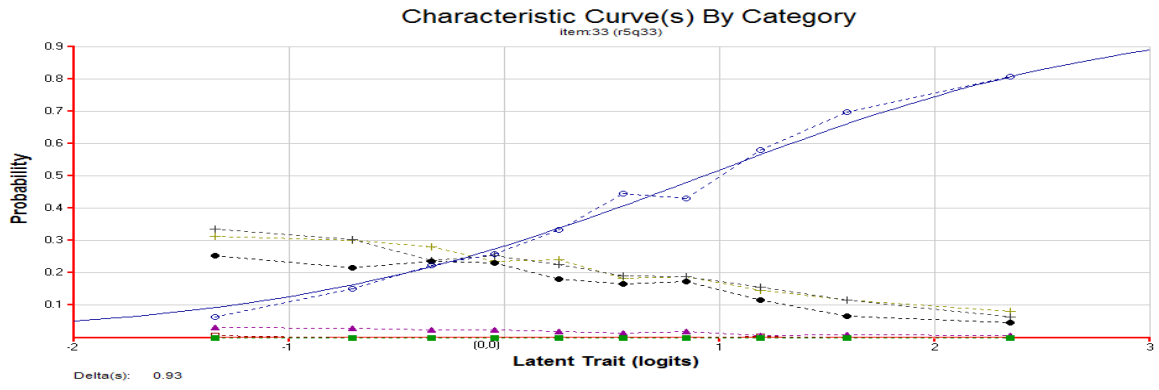


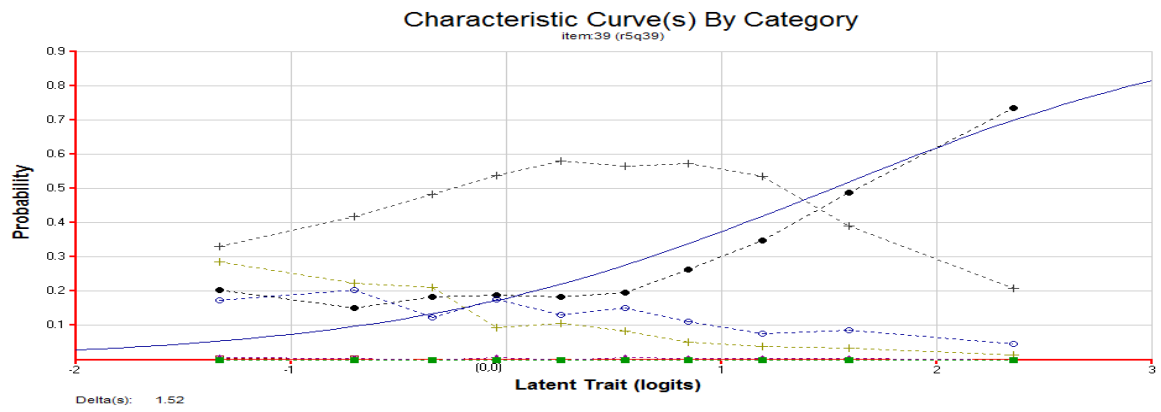
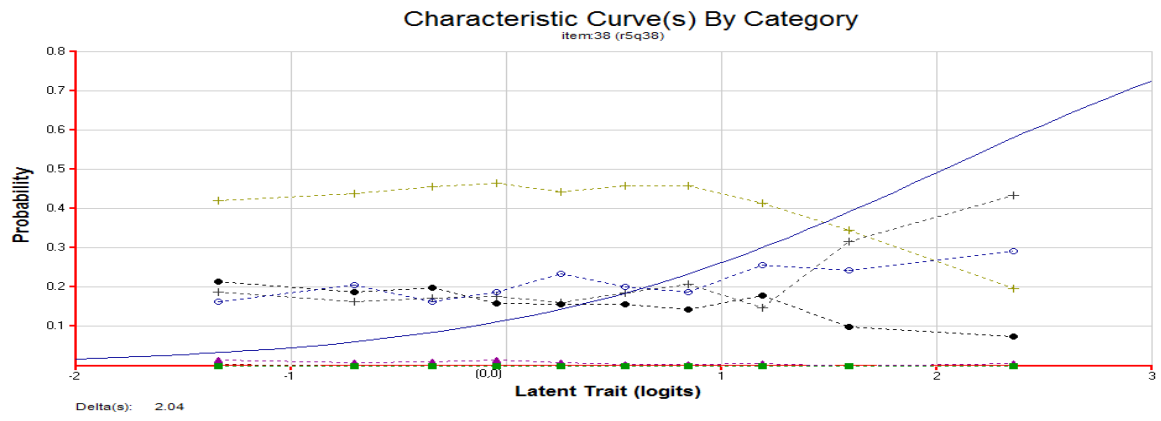
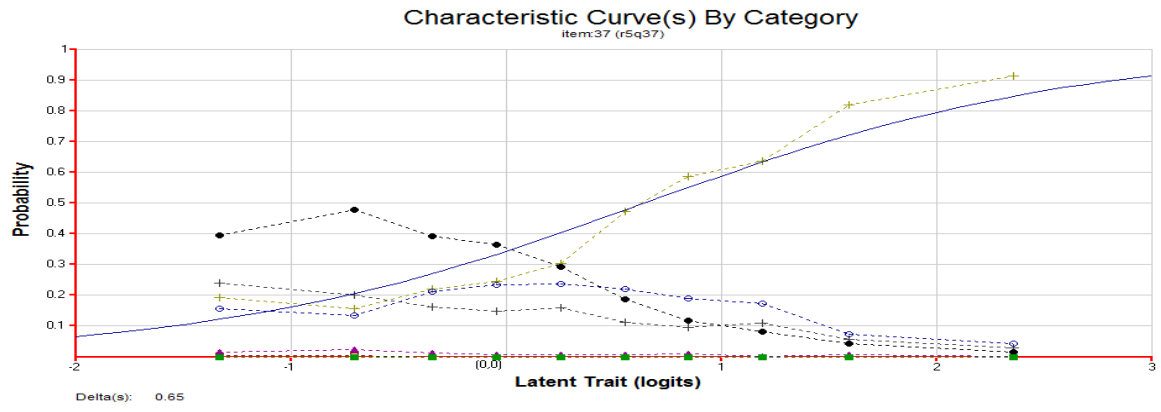




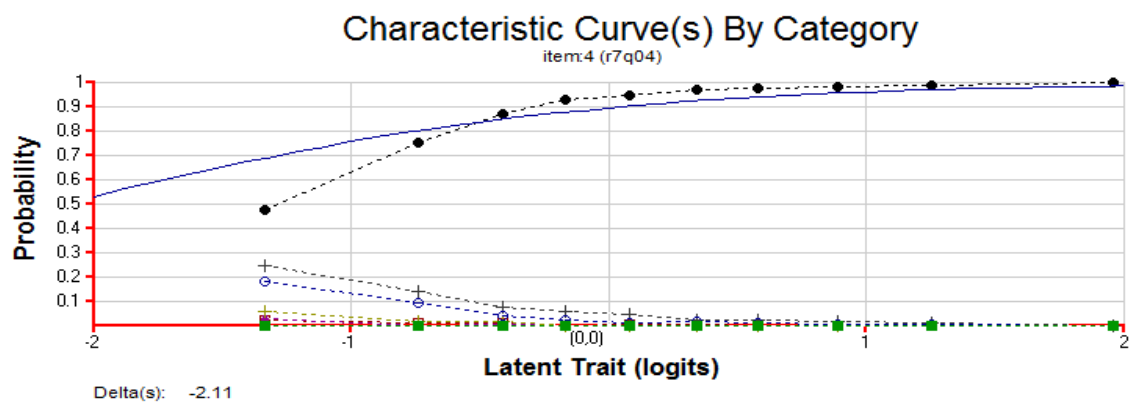
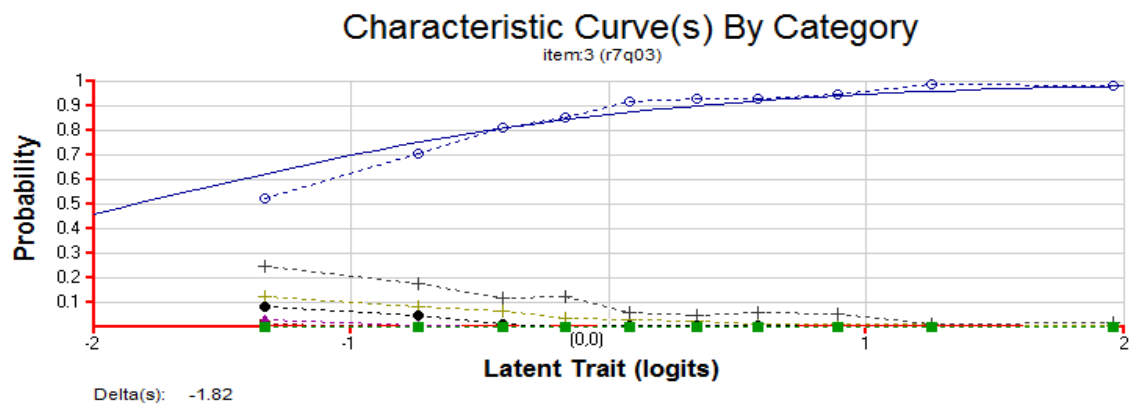
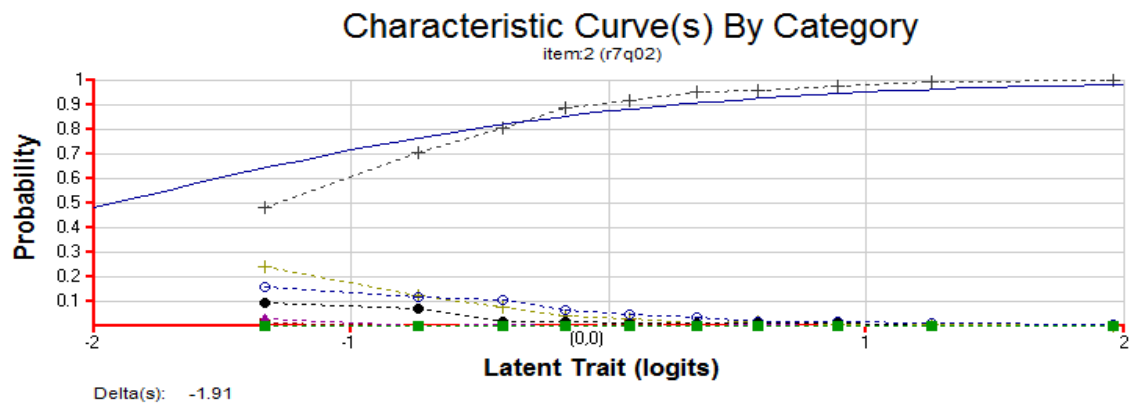
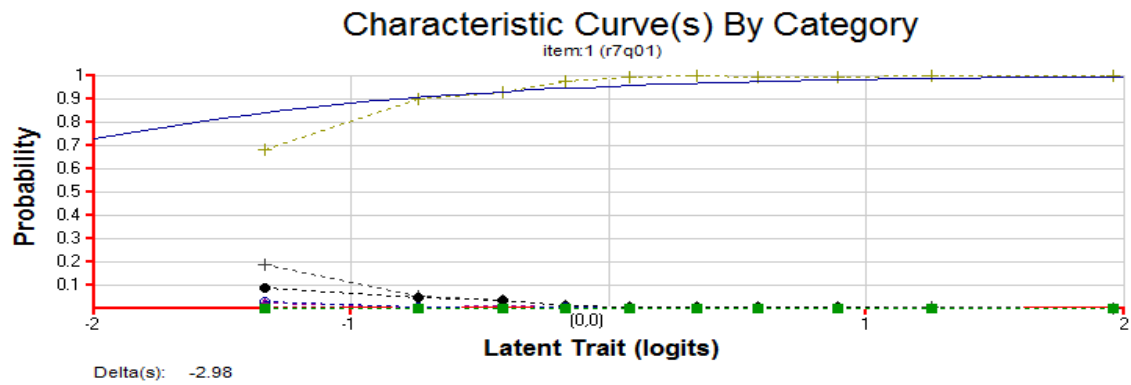


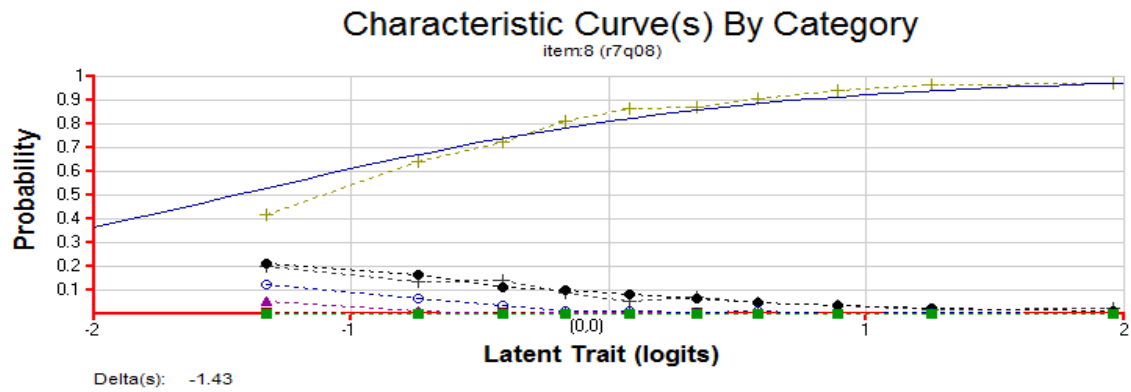
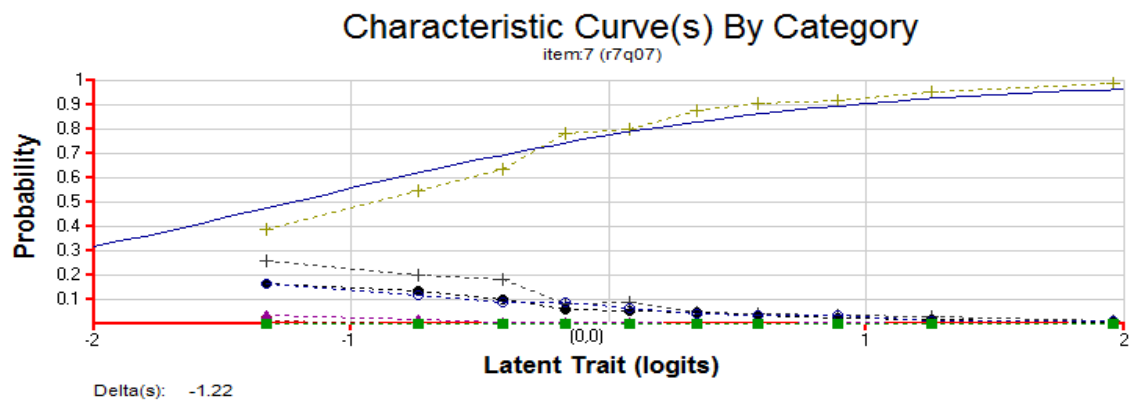
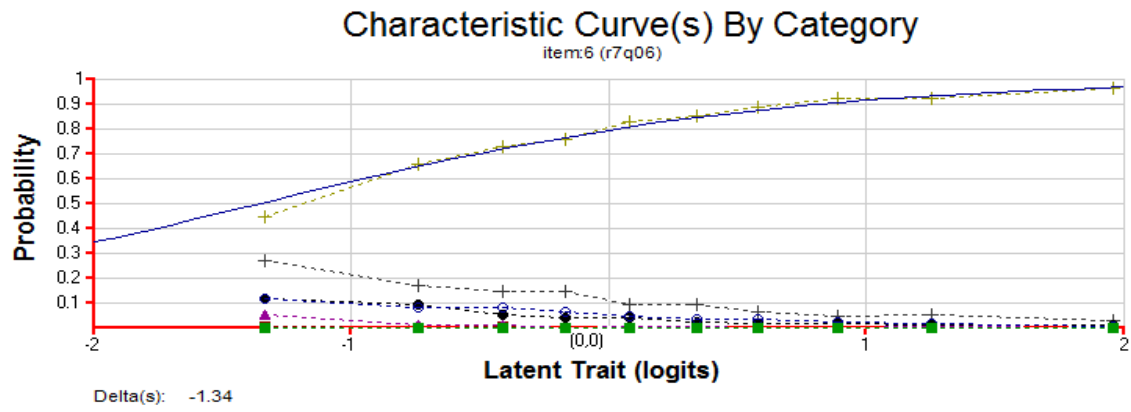
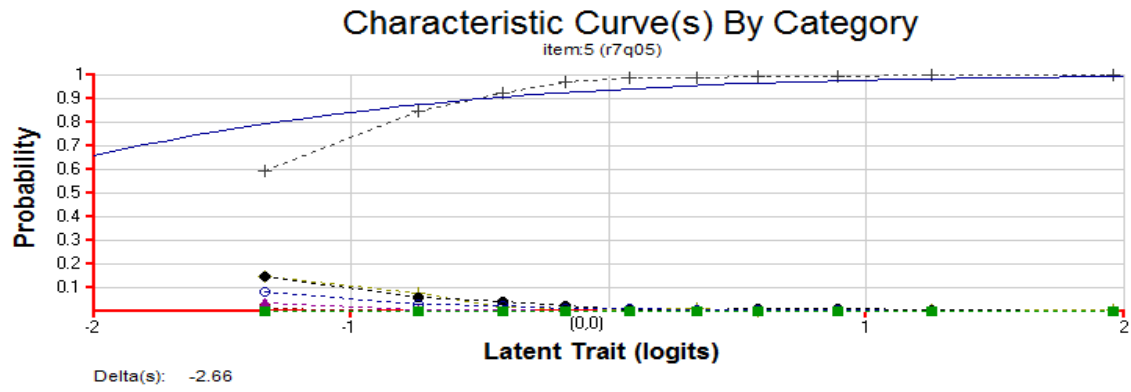




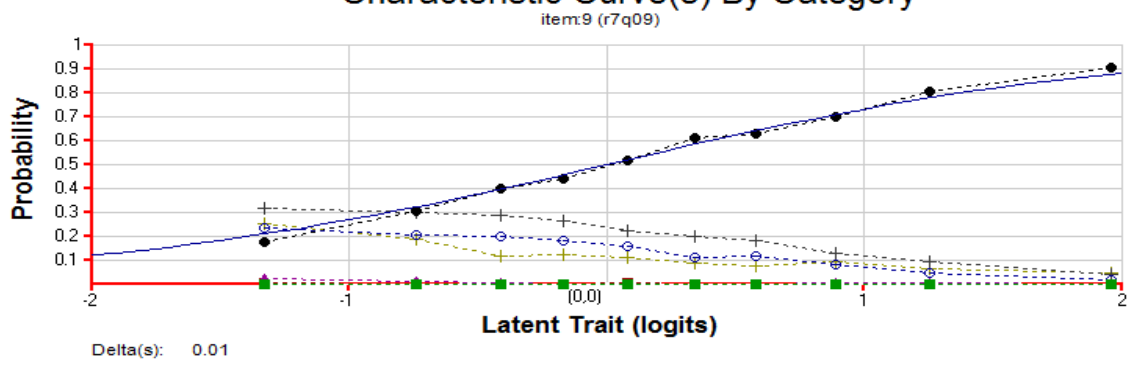


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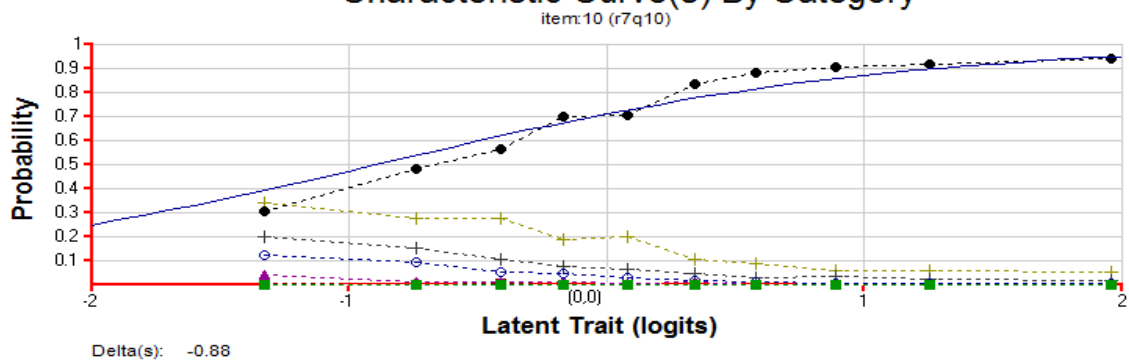




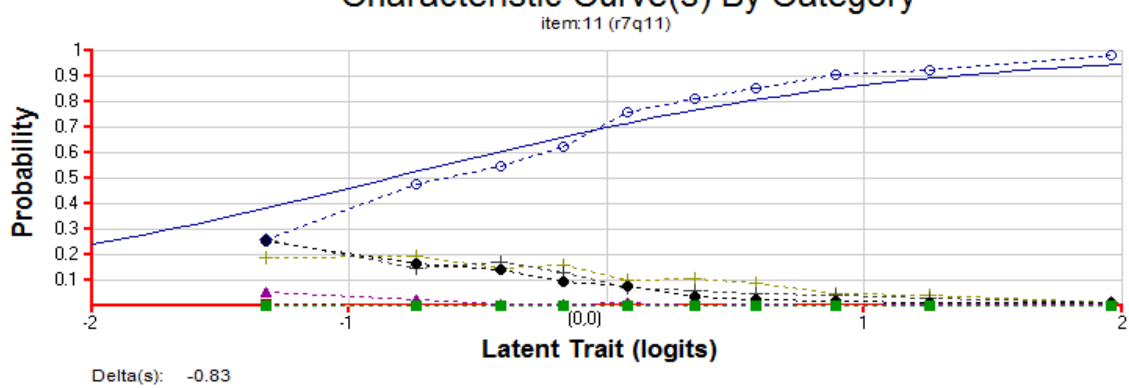
Characteristic Curve(s) By Category



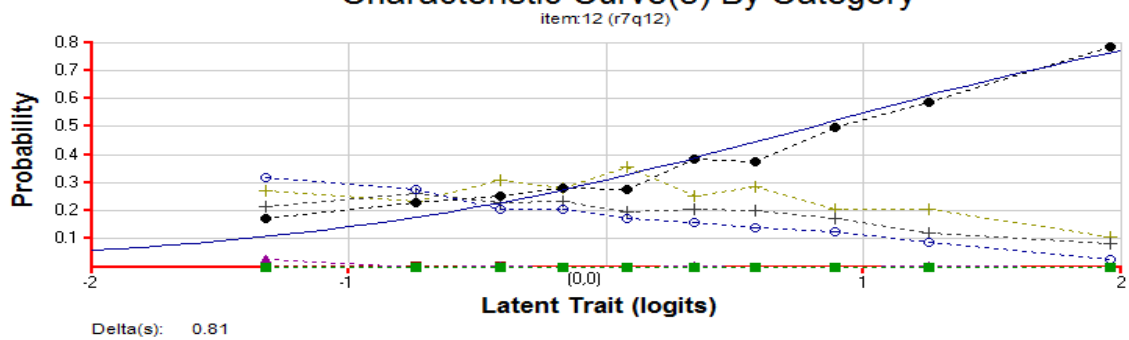
Characteristic Curve(s) By Category



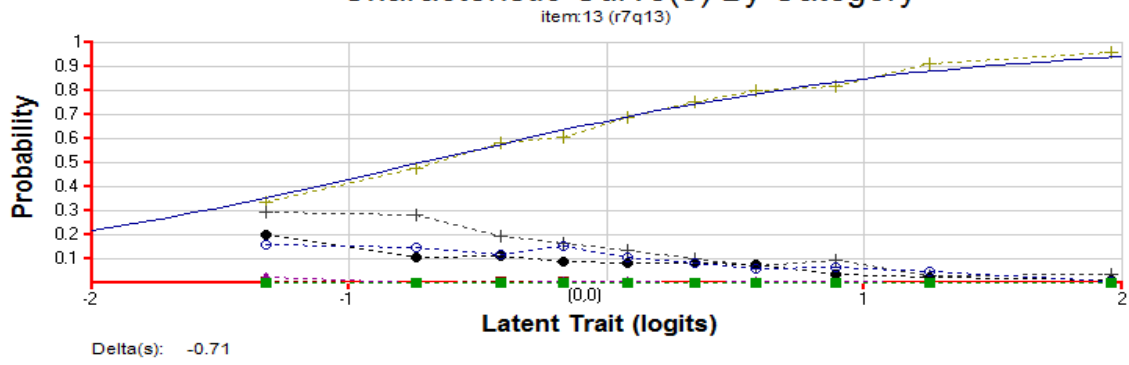
Characteristic Curve(s) By Category



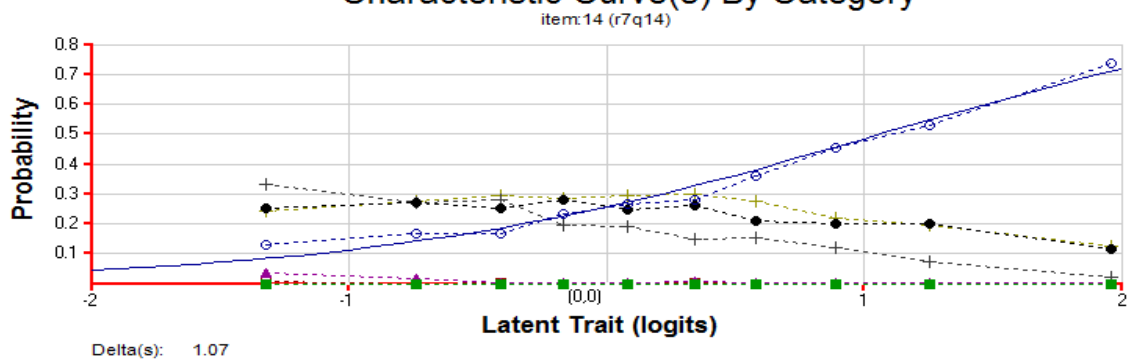
Characteristic Curve(s) By Category



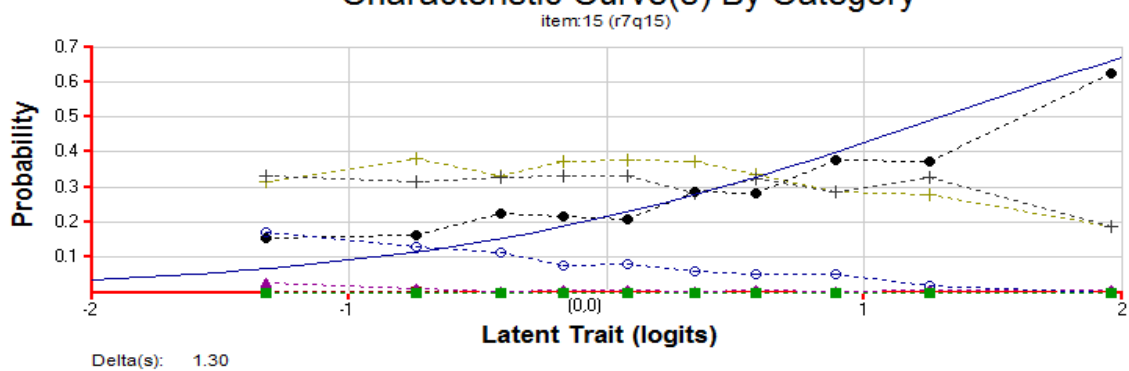
Characteristic Curve(s) By Category



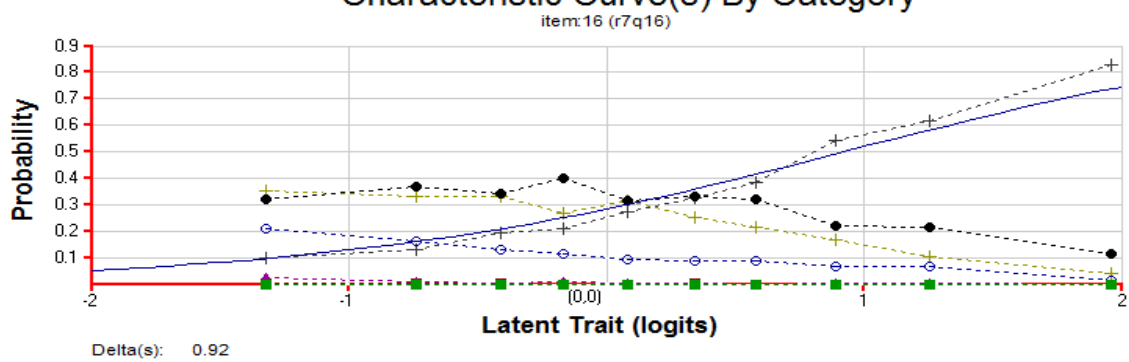
Characteristic Curve(s) By Category



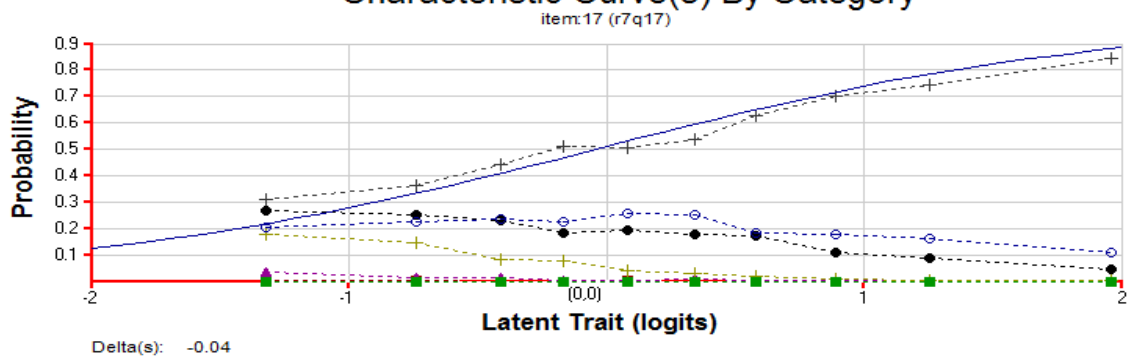
Characteristic Curve(s) By Category



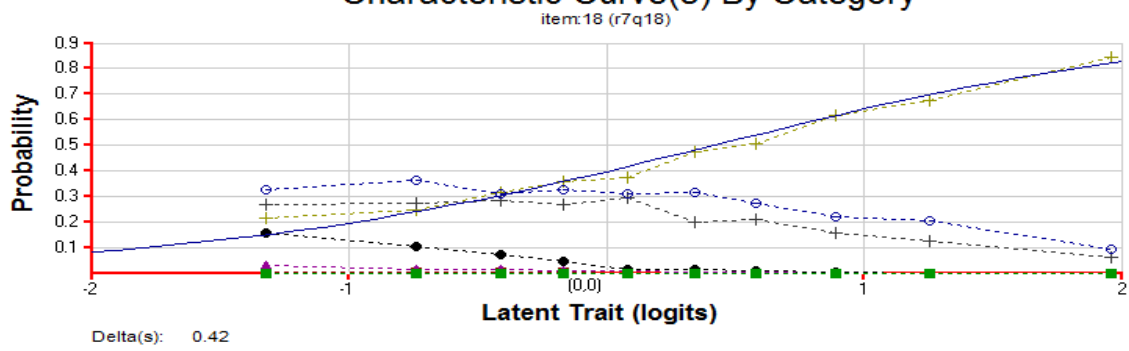
Characteristic Curve(s) By Category



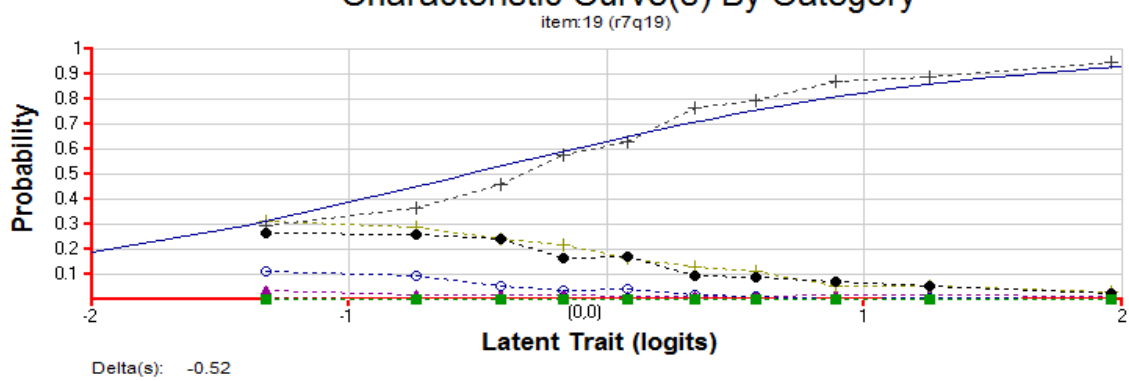
Characteristic Curve(s) By Category



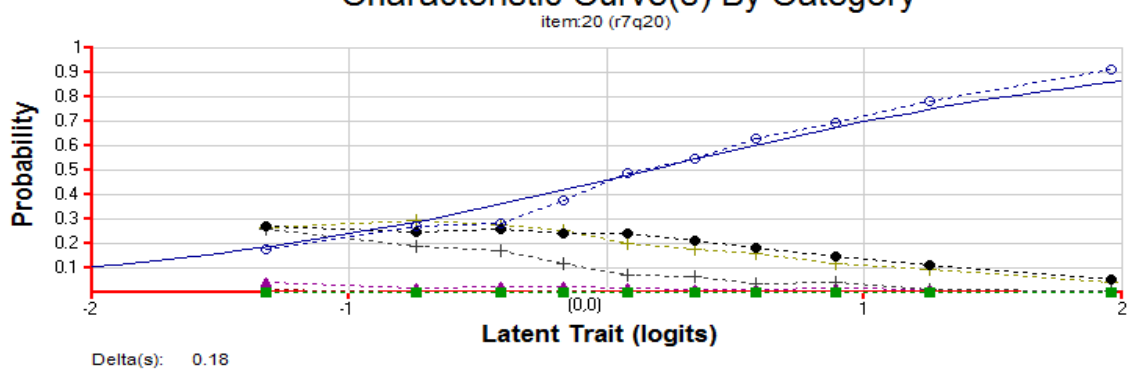
Characteristic Curve(s) By Category



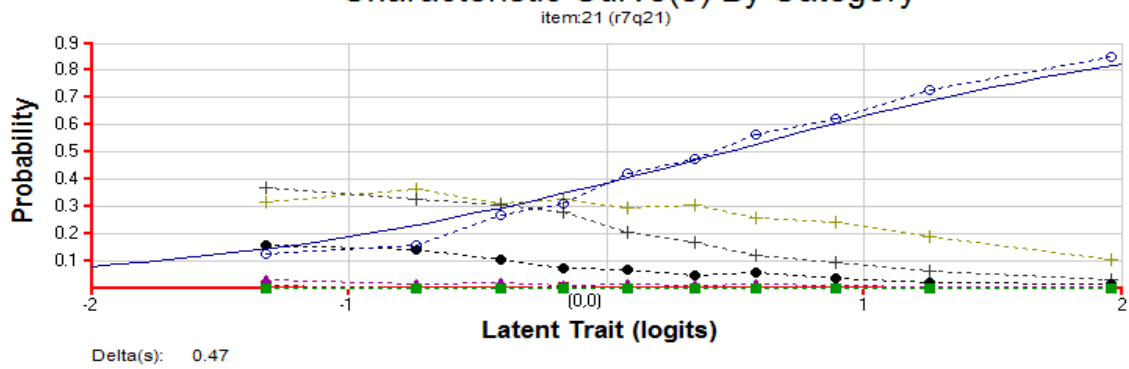
Characteristic Curve(s) By Category



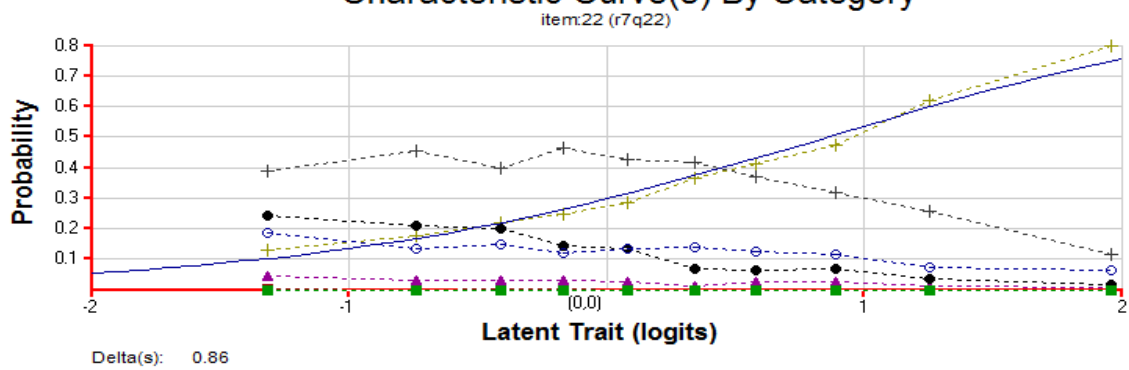
Characteristic Curve(s) By Category



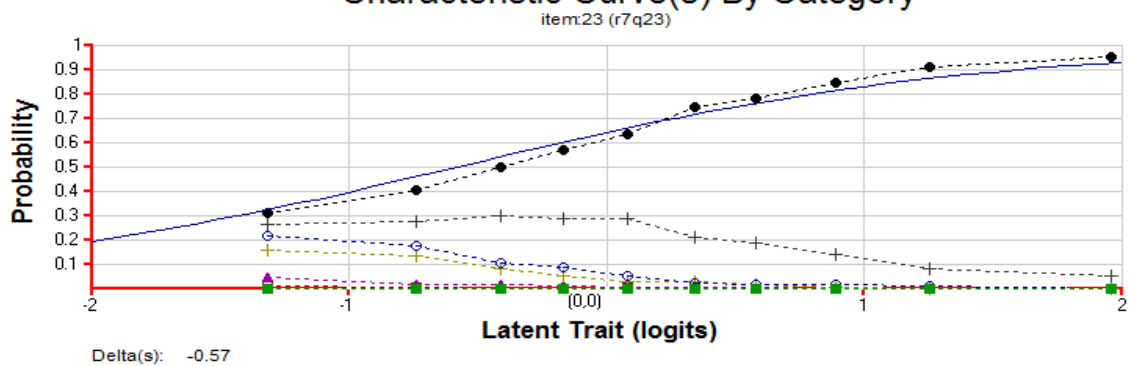
Characteristic Curve(s) By Category



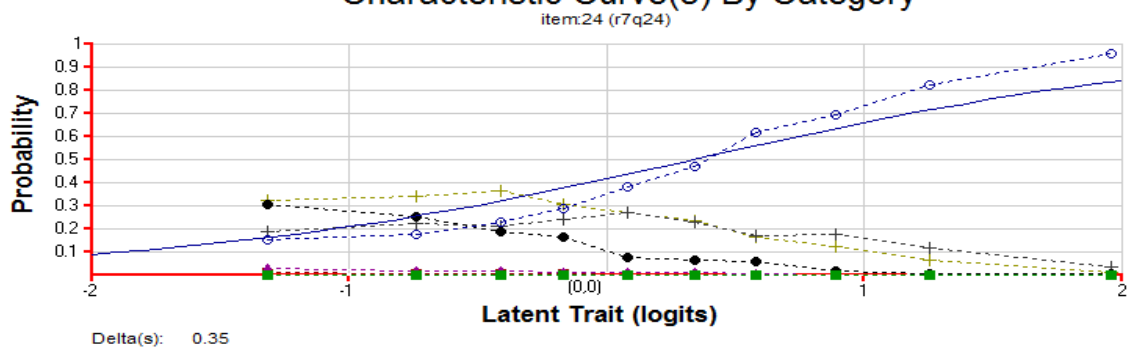
Characteristic Curve(s) By Category



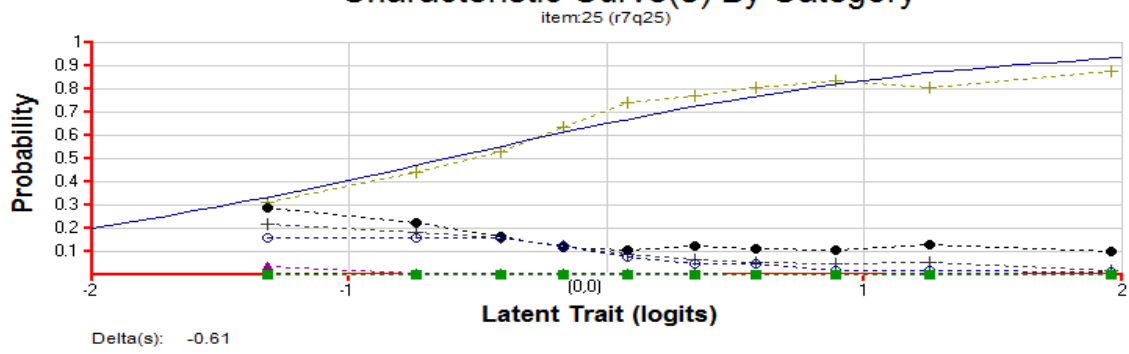
Characteristic Curve(s) By Category



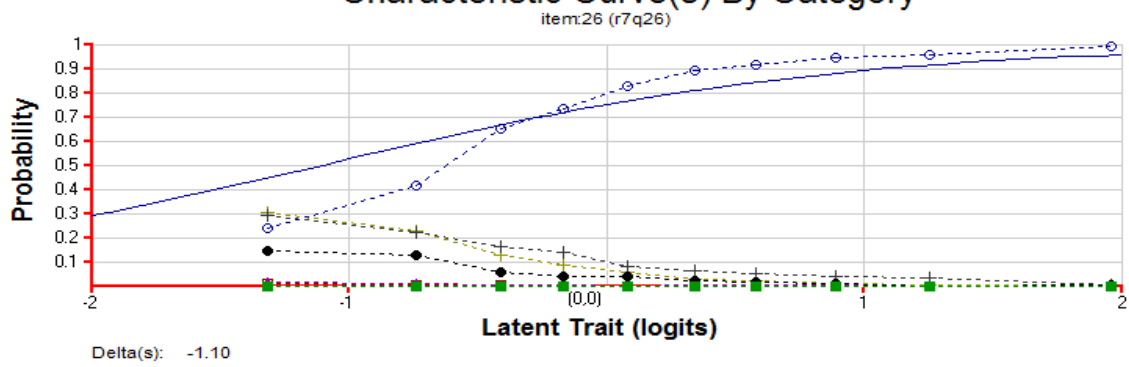
Characteristic Curve(s) By Category



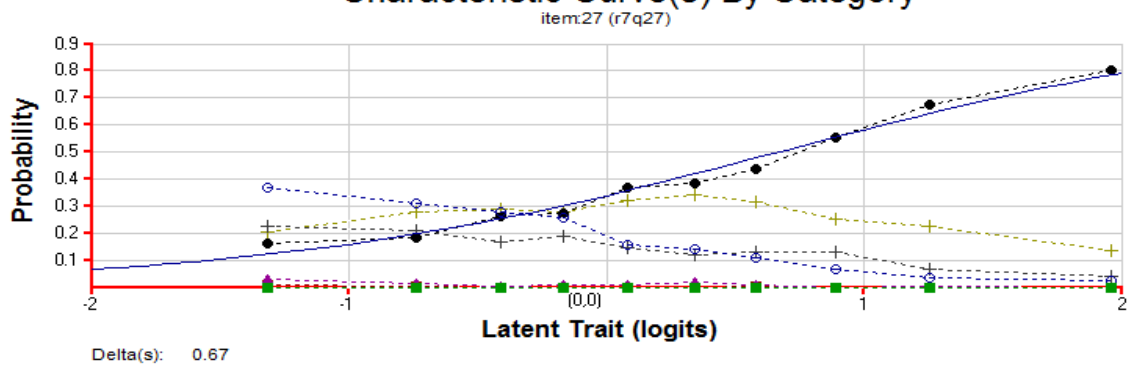
Characteristic Curve(s) By Category



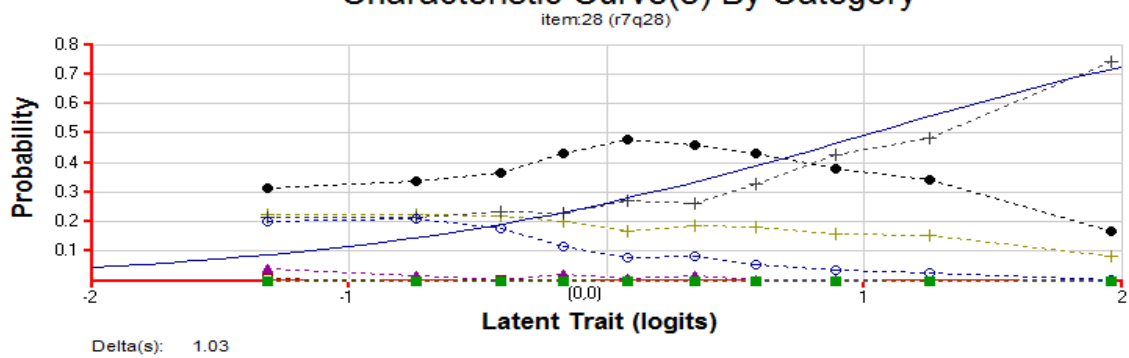
Characteristic Curve(s) By Category



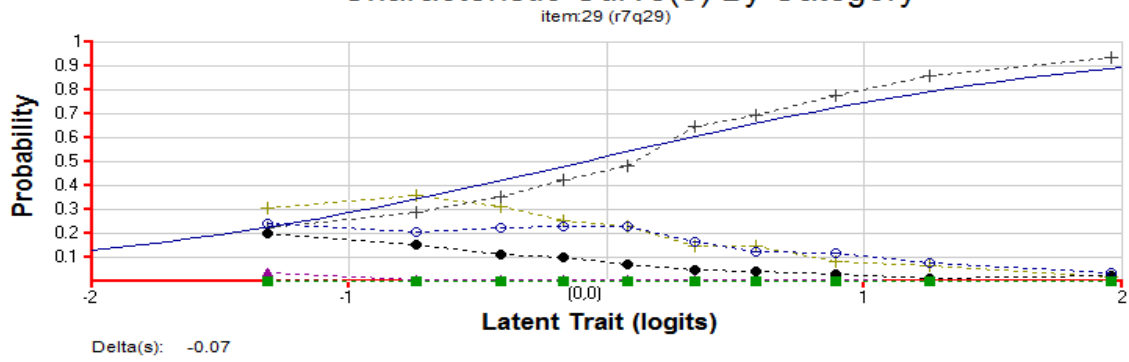
Characteristic Curve(s) By Category



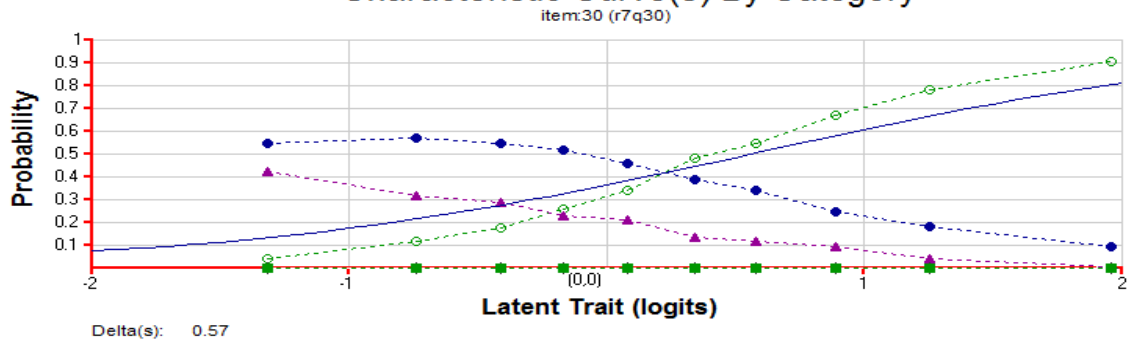
Characteristic Curve(s) By Category



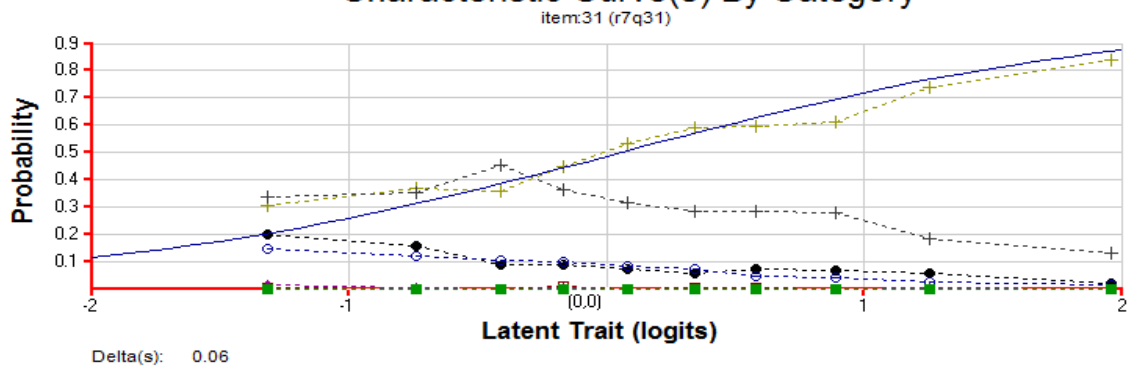
Characteristic Curve(s) By Category



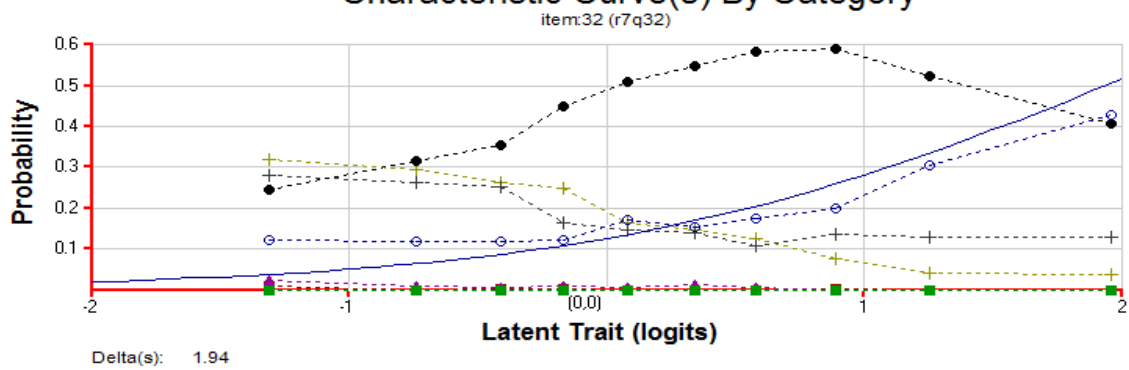
Characteristic Curve(s) By Category



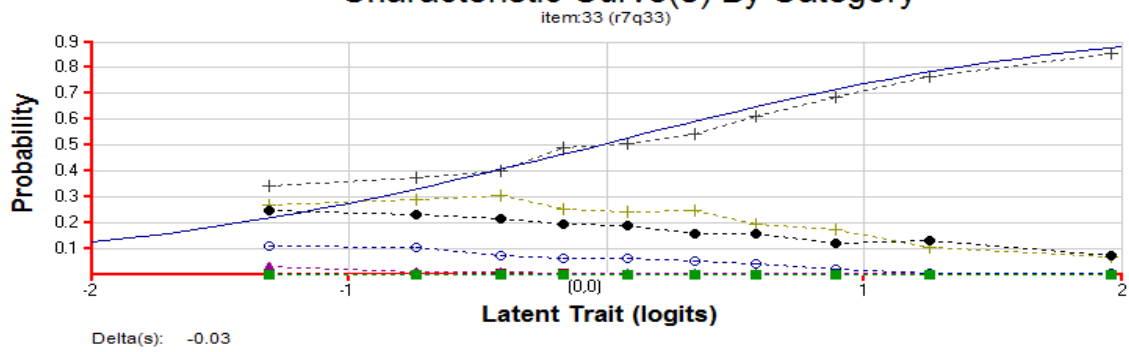
Characteristic Curve(s) By Category



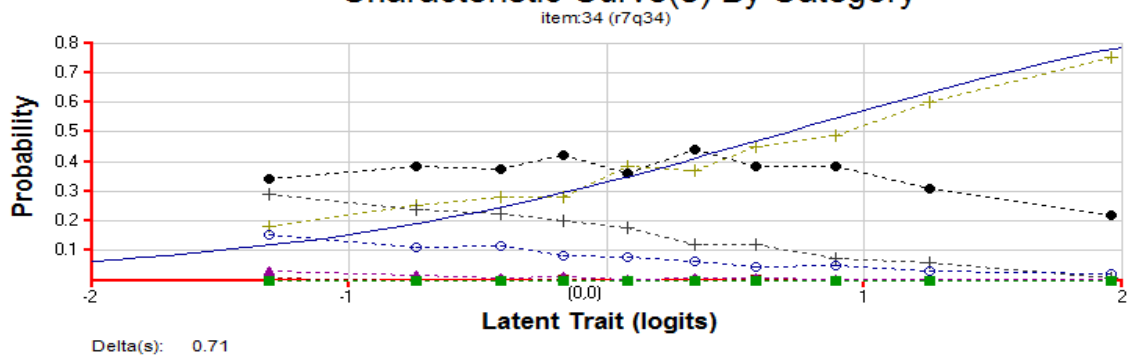
Characteristic Curve(s) By Category



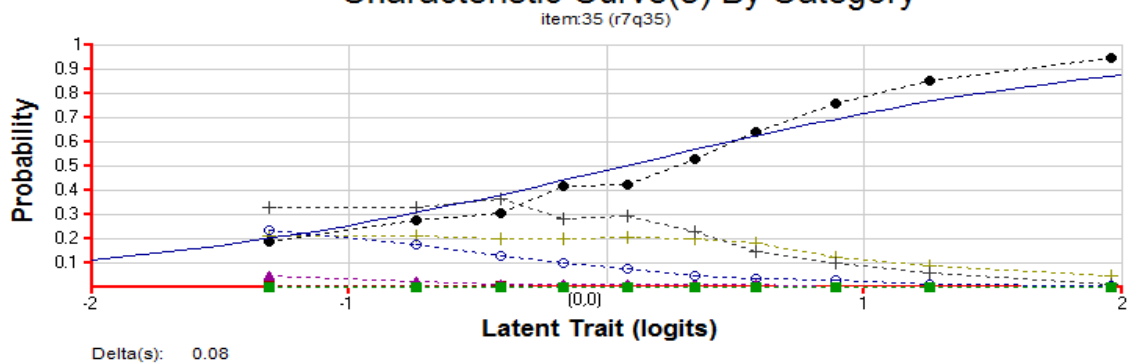
Characteristic Curve(s) By Category



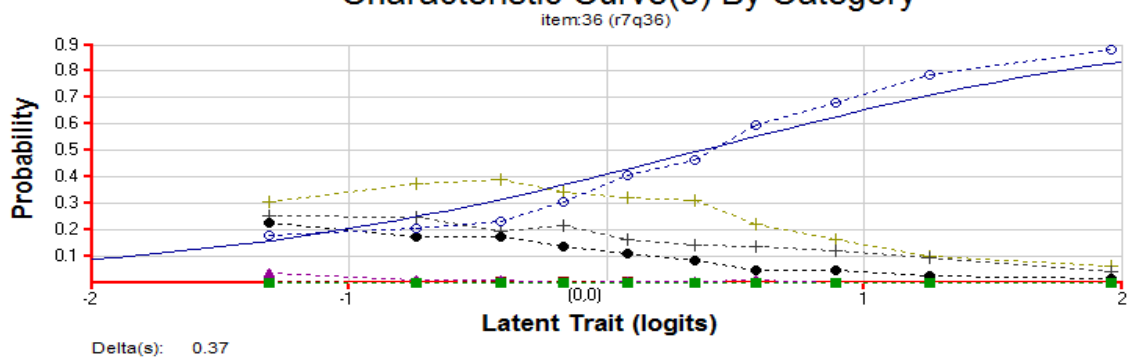
Characteristic Curve(s) By Category

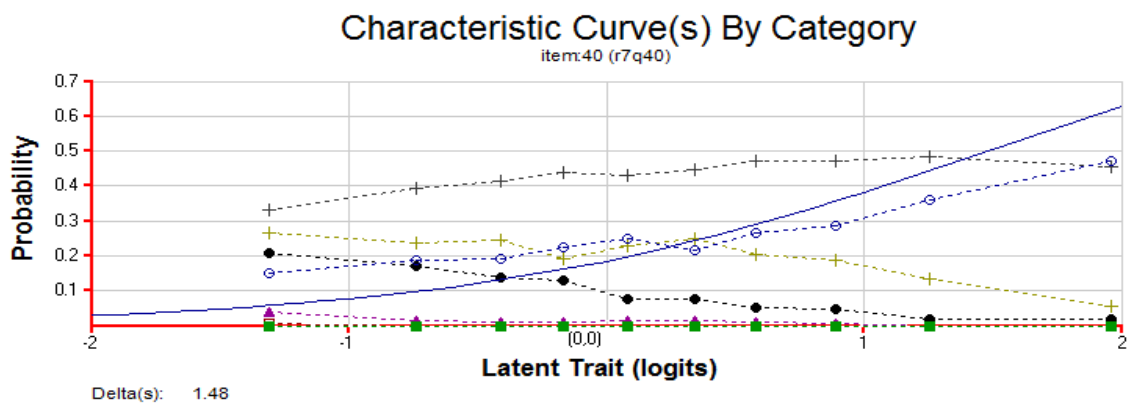
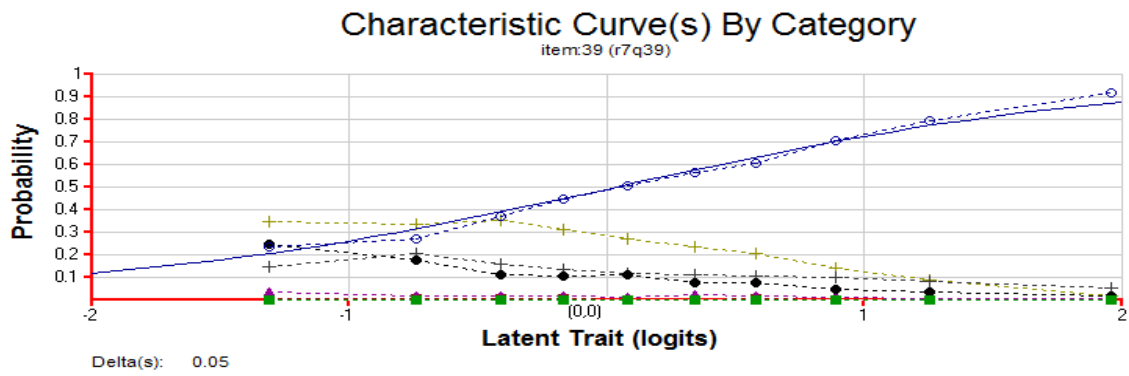
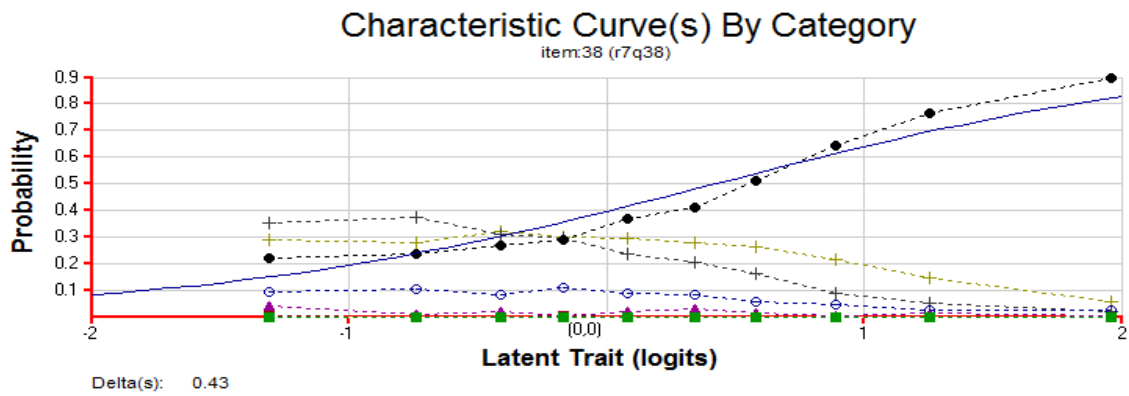
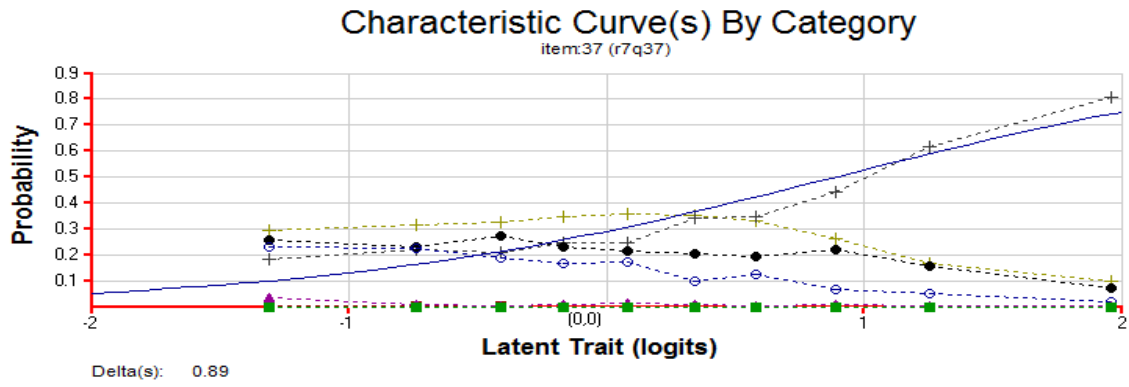


Characteristic Curve(s) By Category

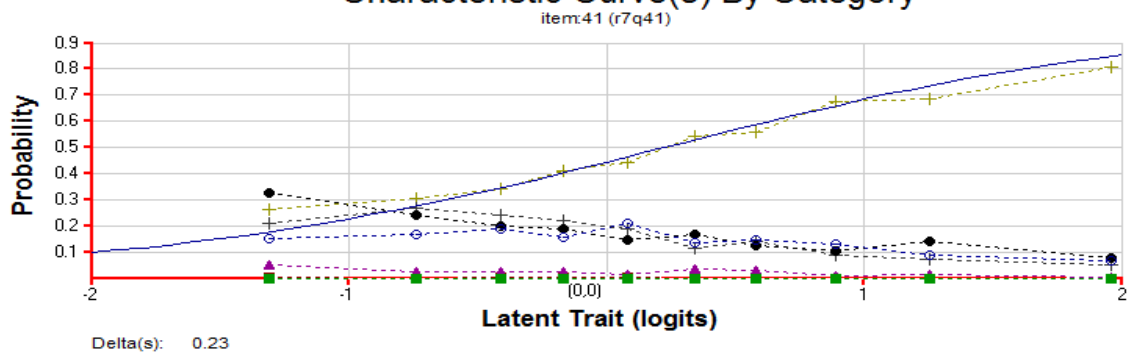


Characteristic Curve(s) By Category

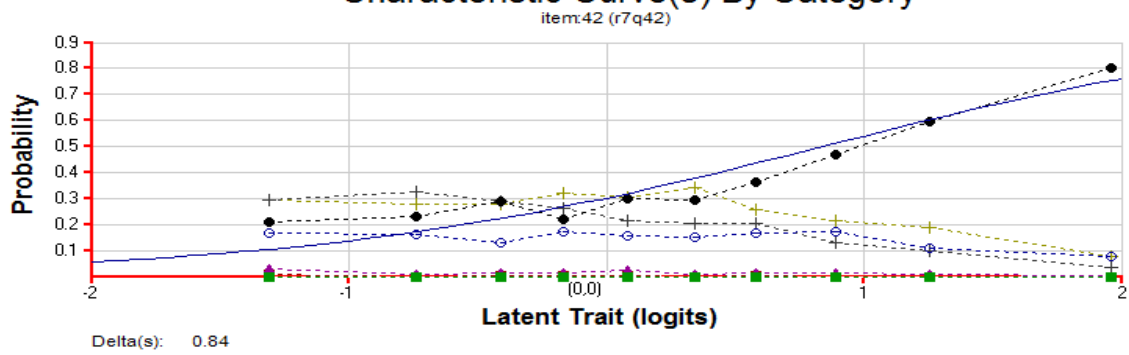




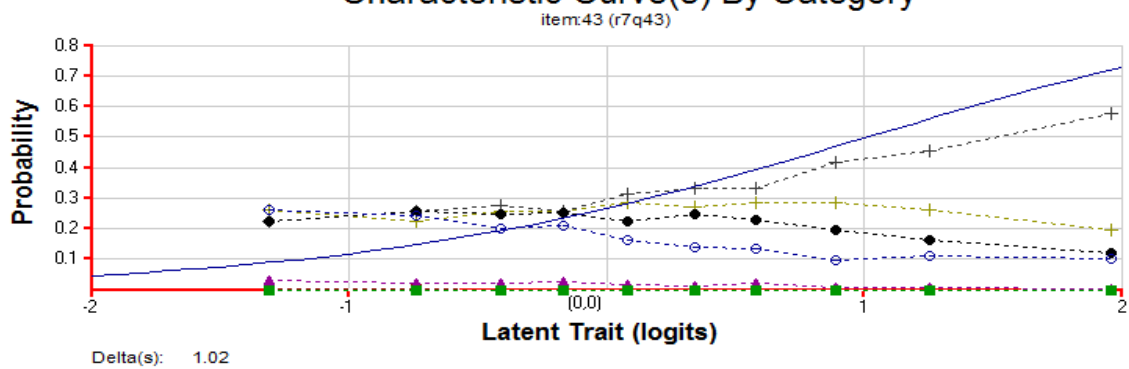
Characteristic Curve(s) By Category



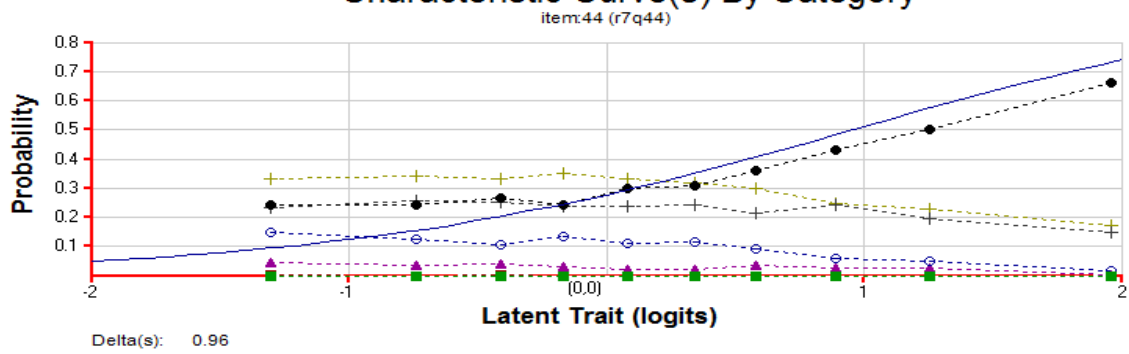
Characteristic Curve(s) By Category

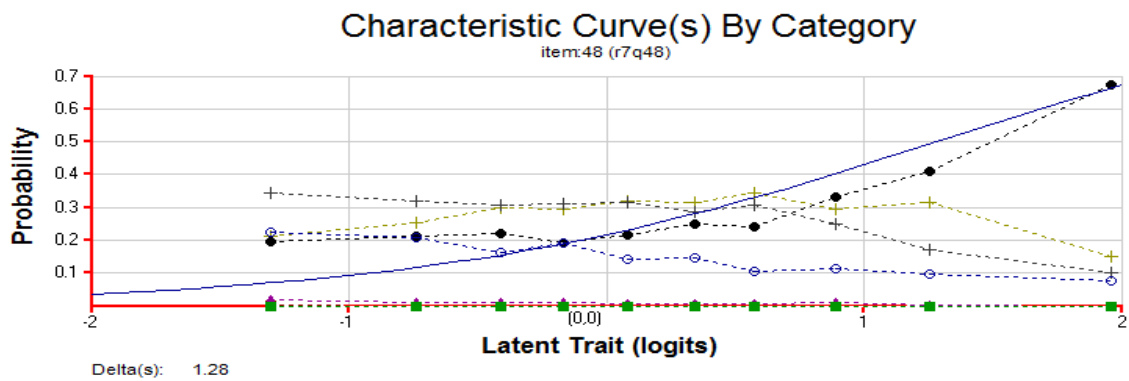
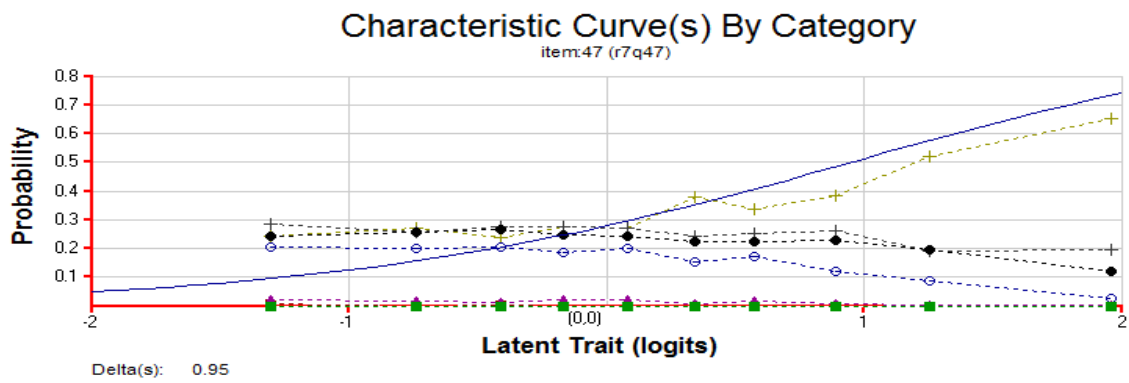
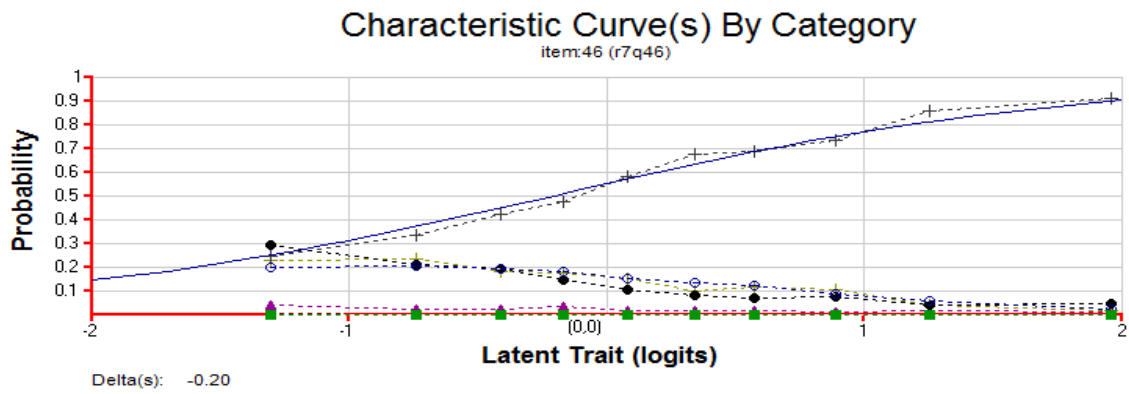
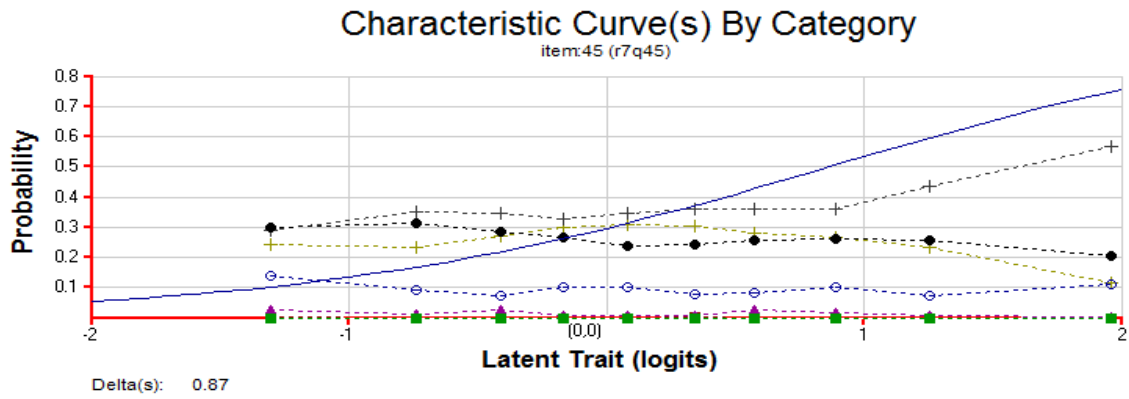


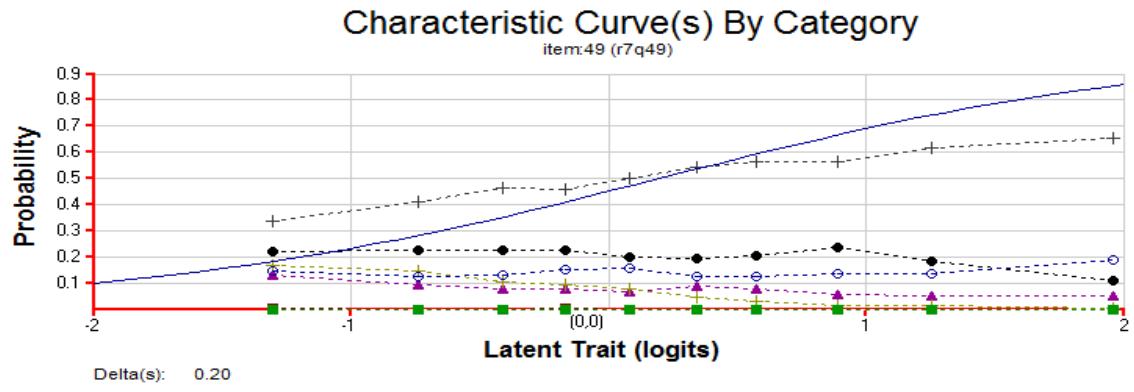
Characteristic Curve(s) By Category



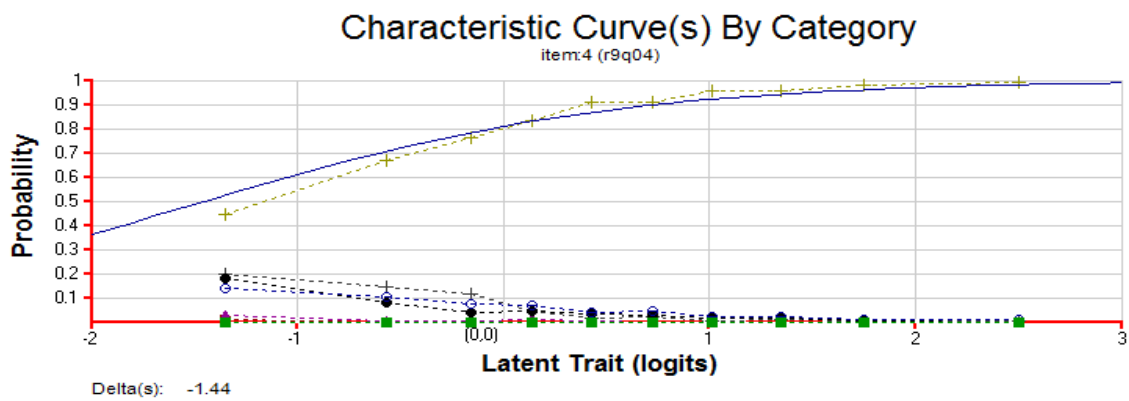
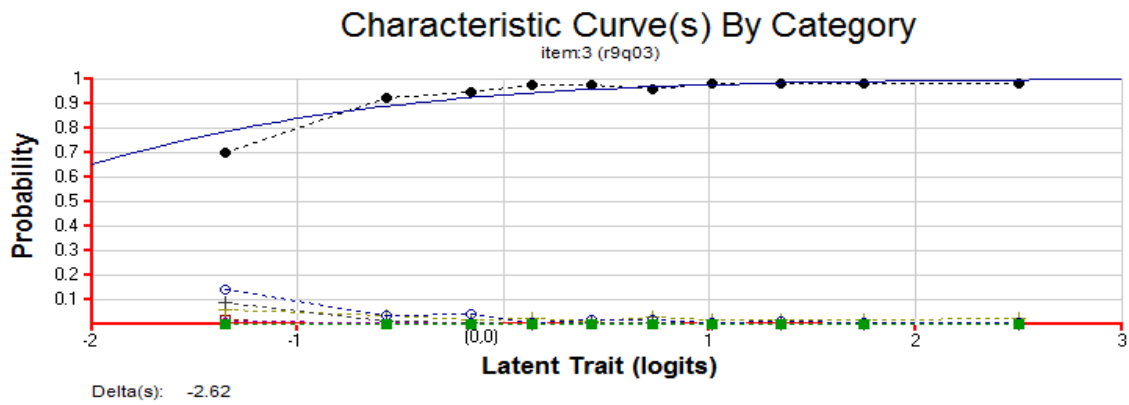
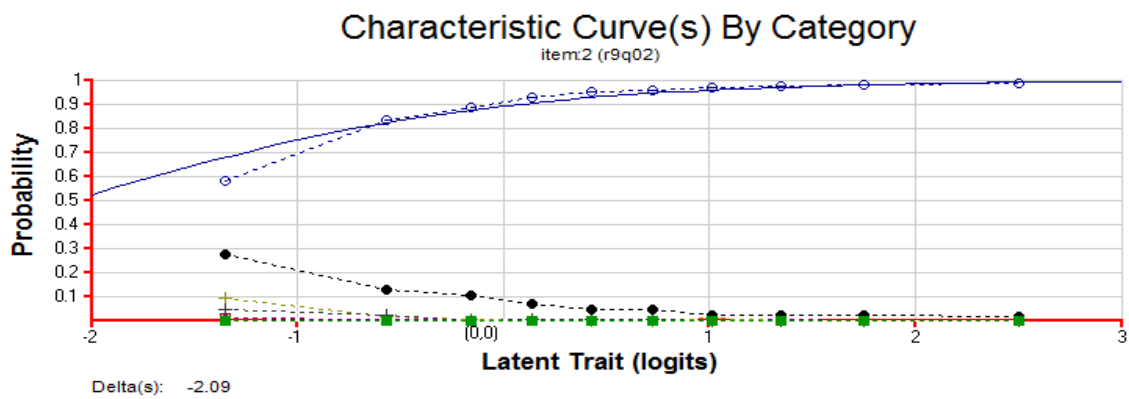
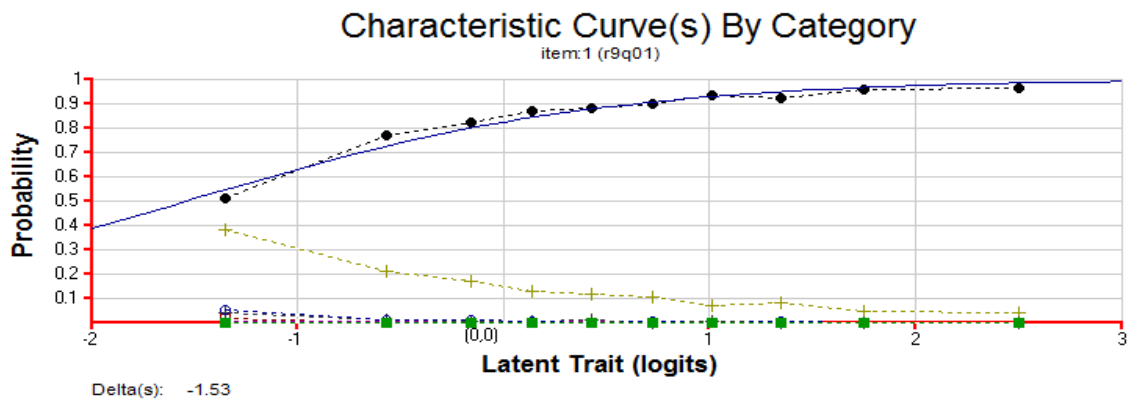
Characteristic Curve(s) By Category

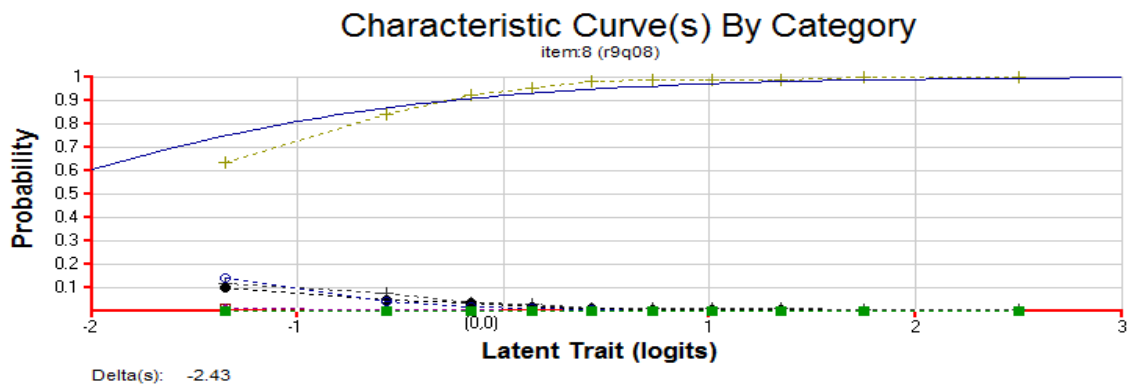
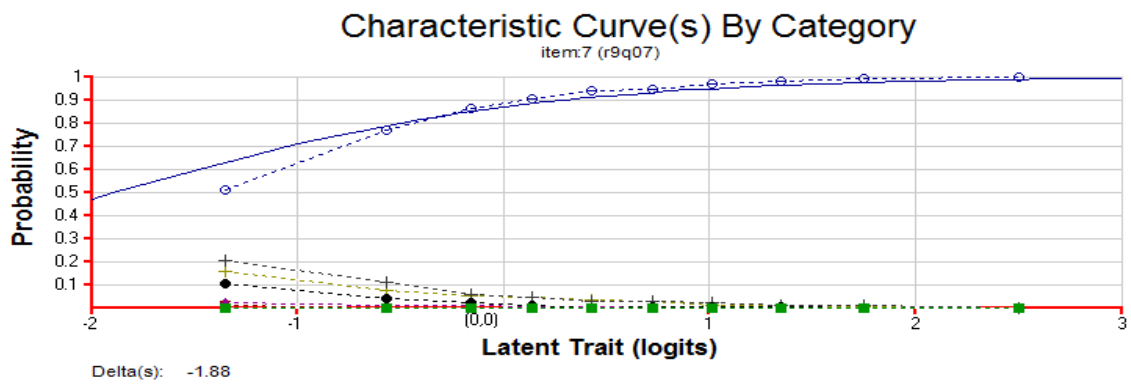
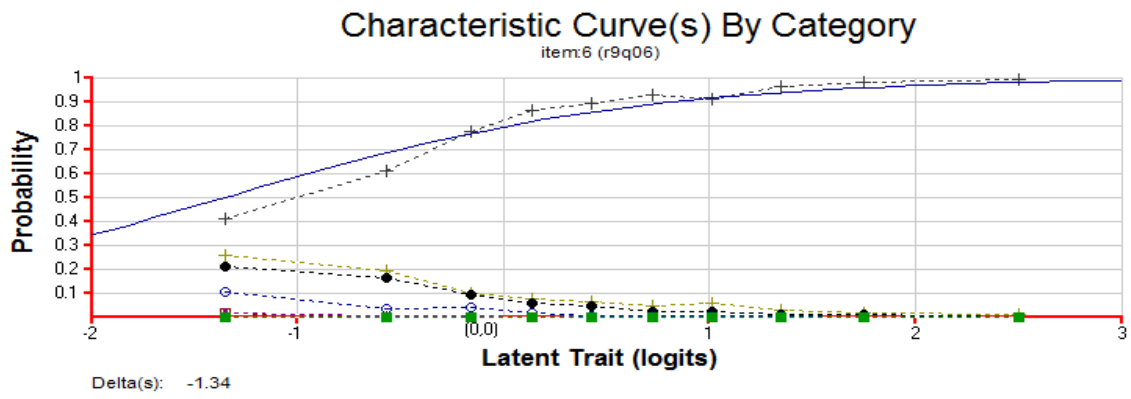
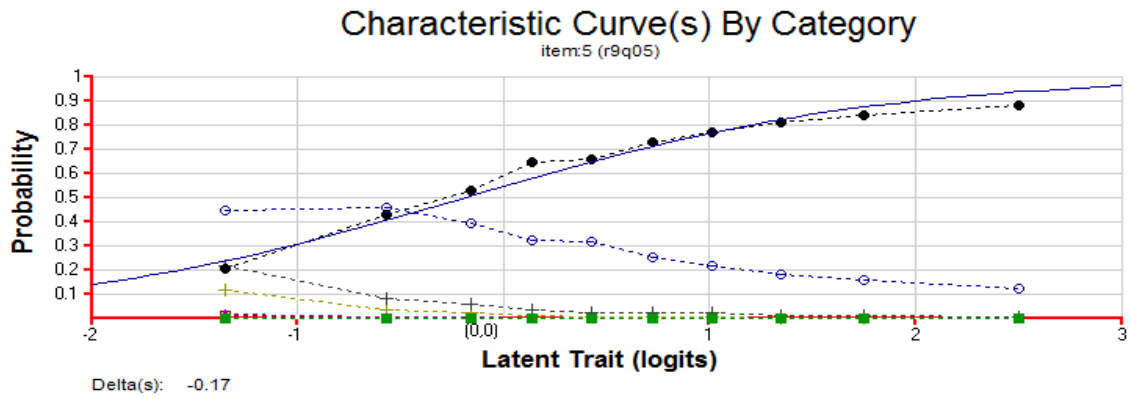


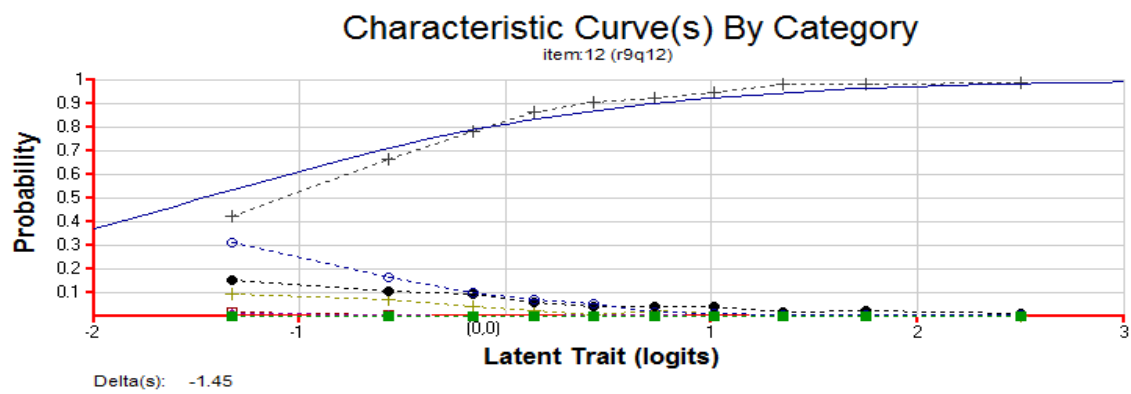
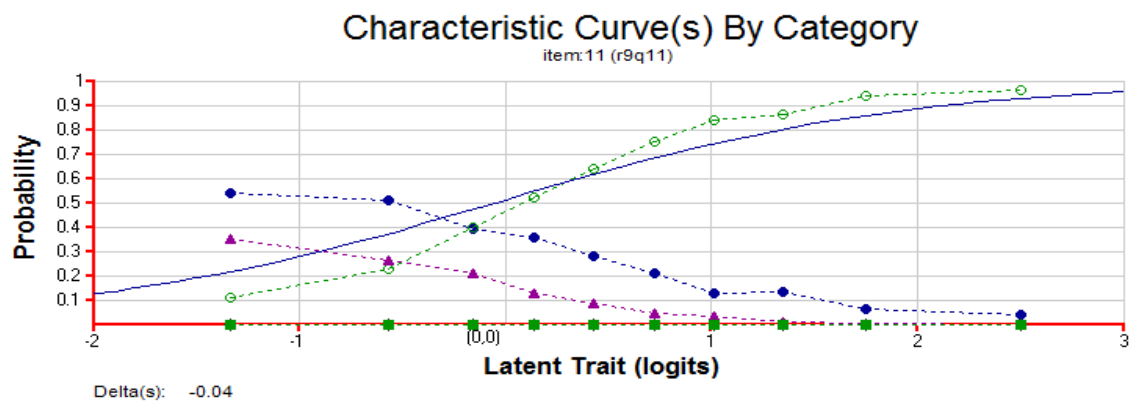
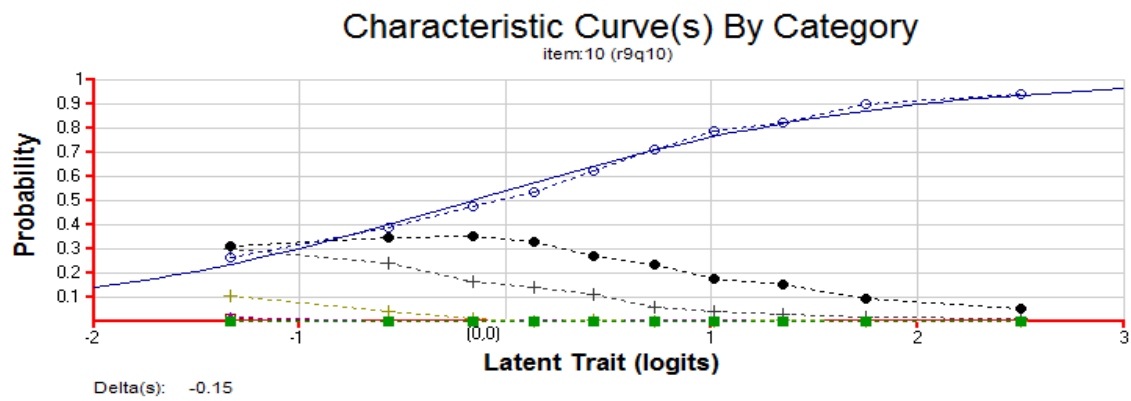
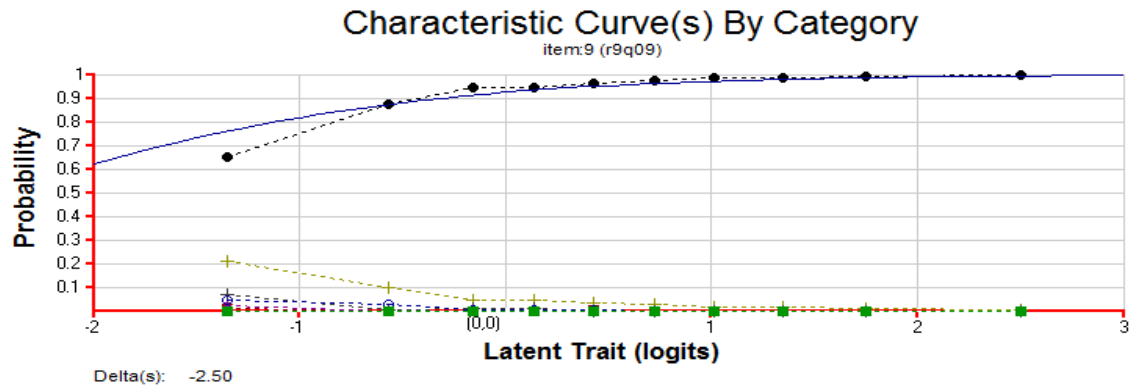


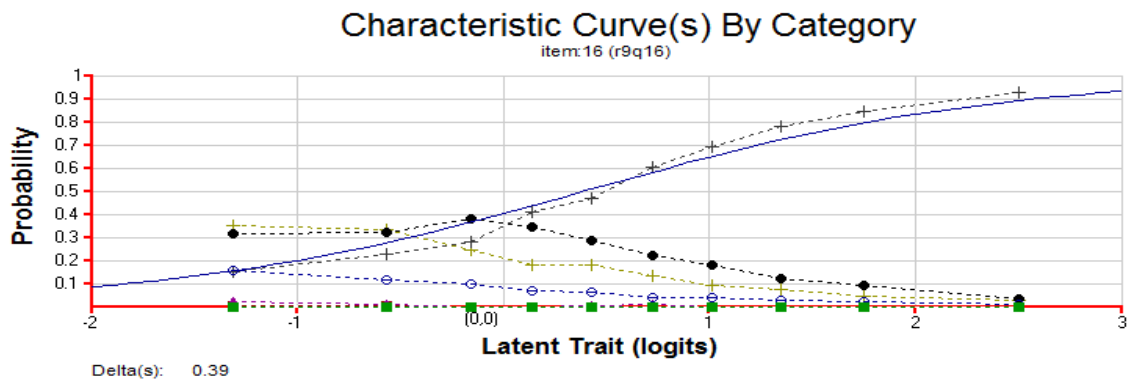
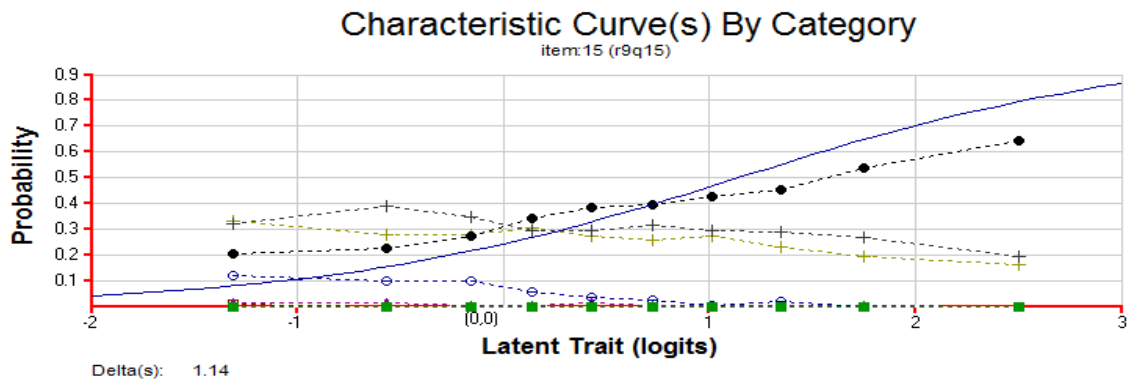
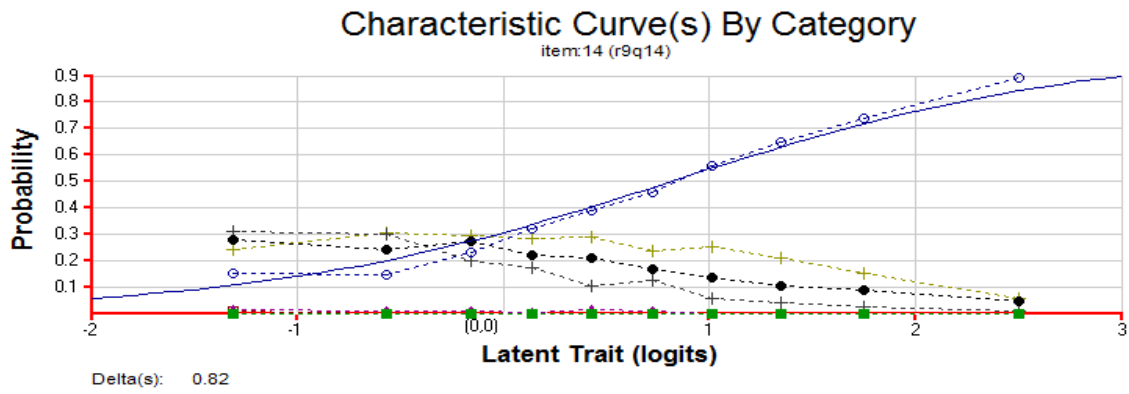
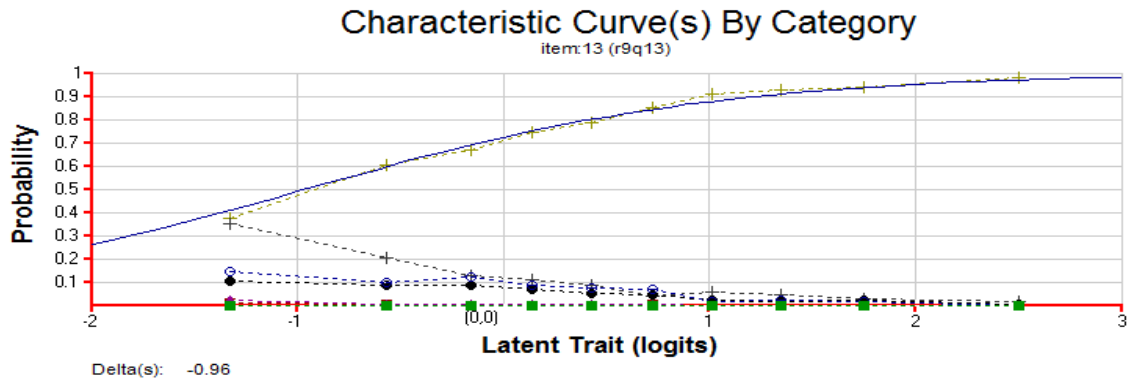


Year 9 Reading

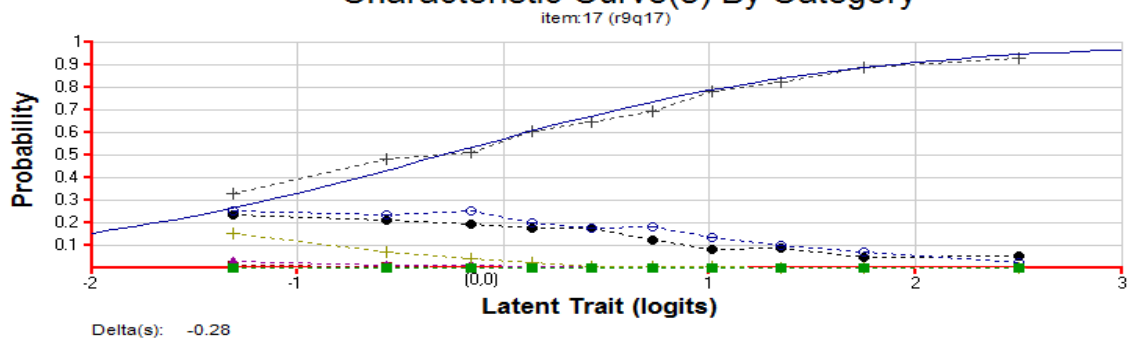




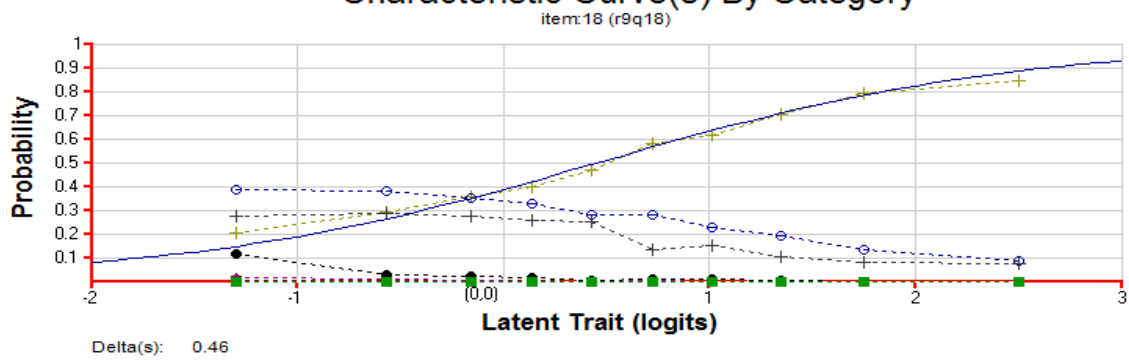




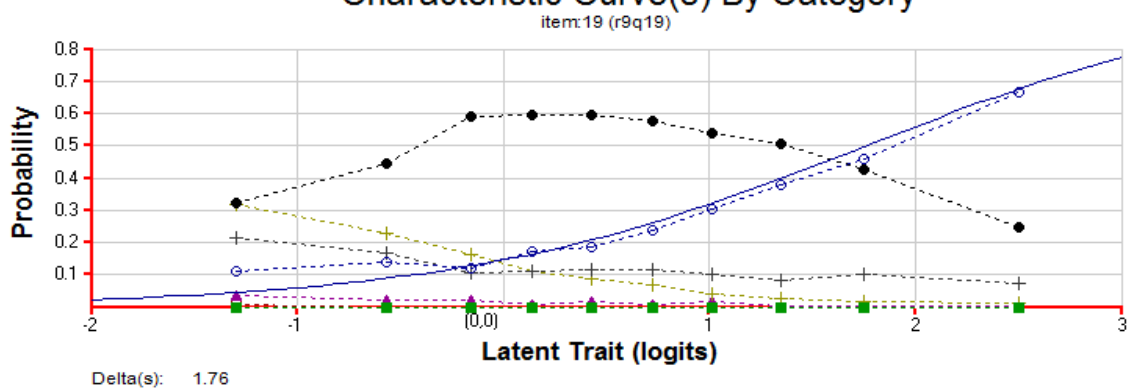
Characteristic Curve(s) By Category



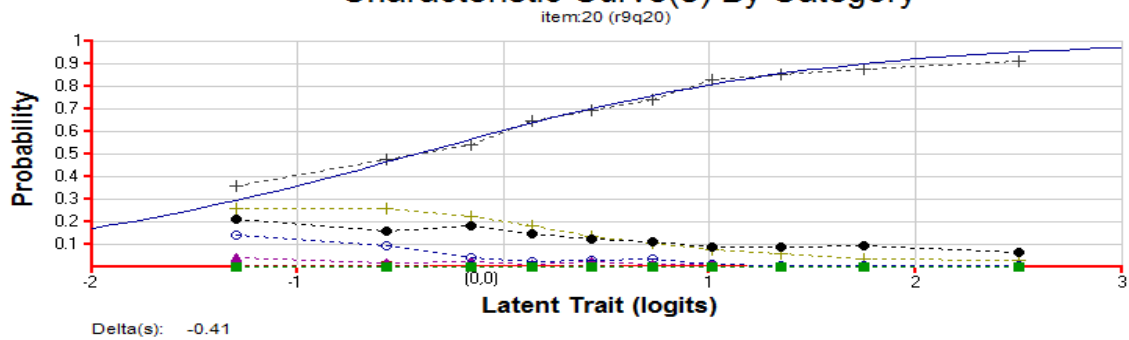
Characteristic Curve(s) By Category

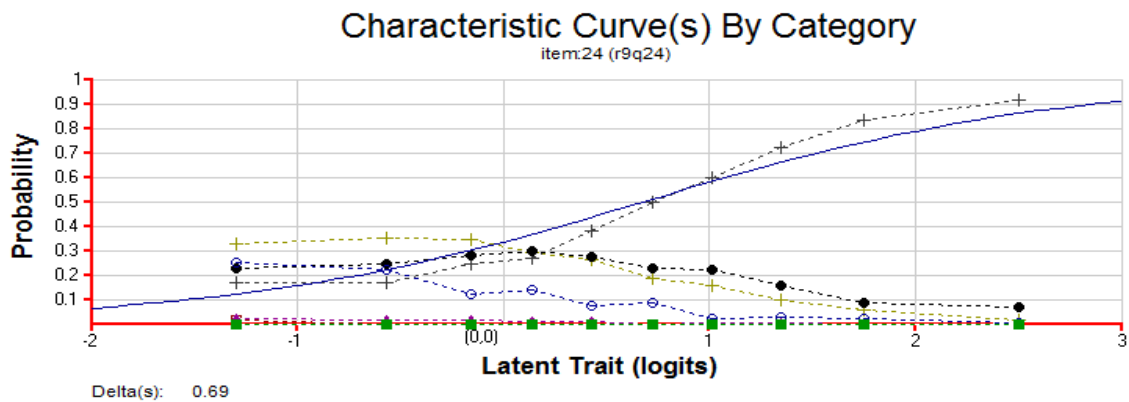
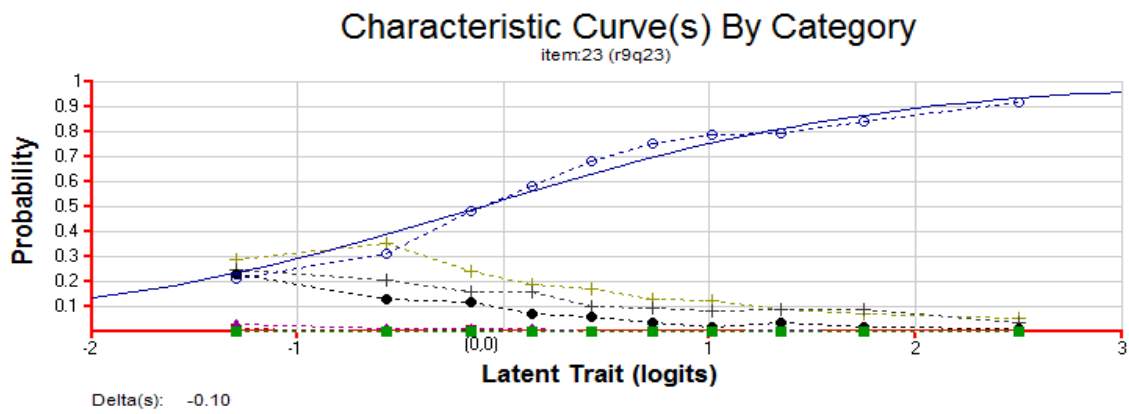
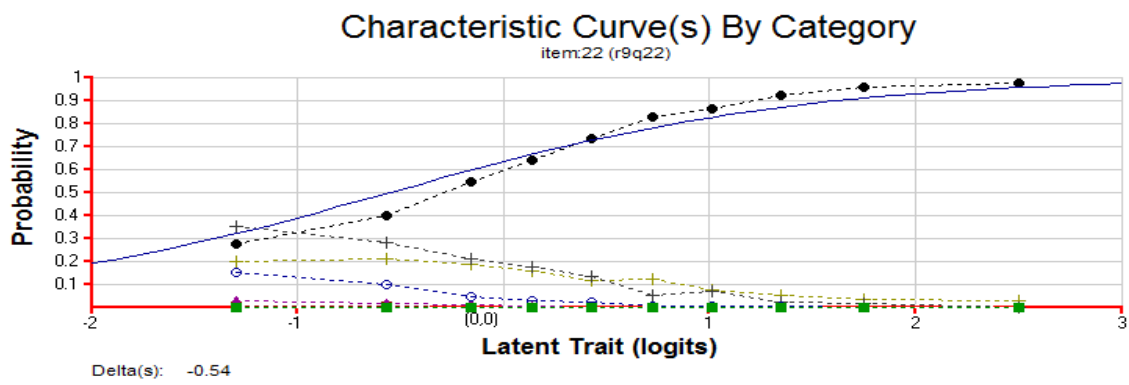
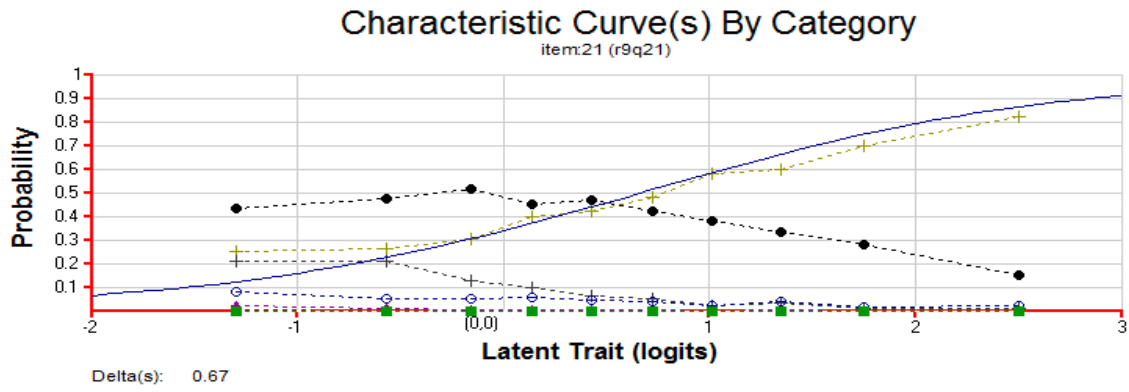


Characteristic Curve(s) By Category

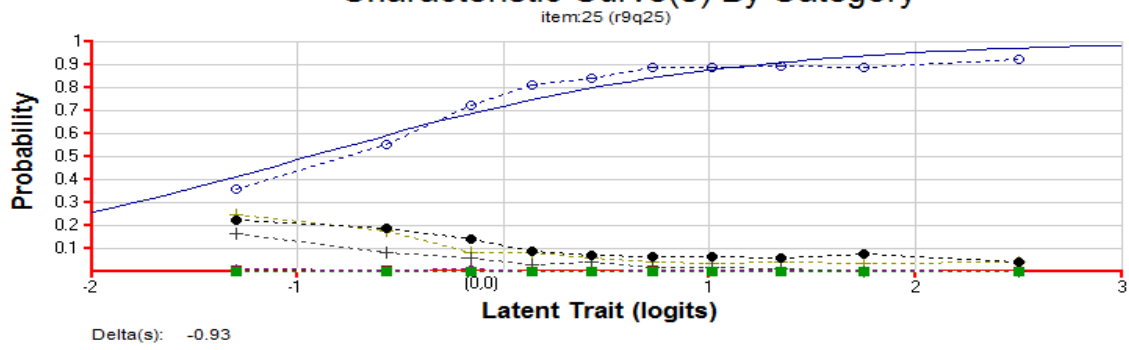


Characteristic Curve(s) By Category

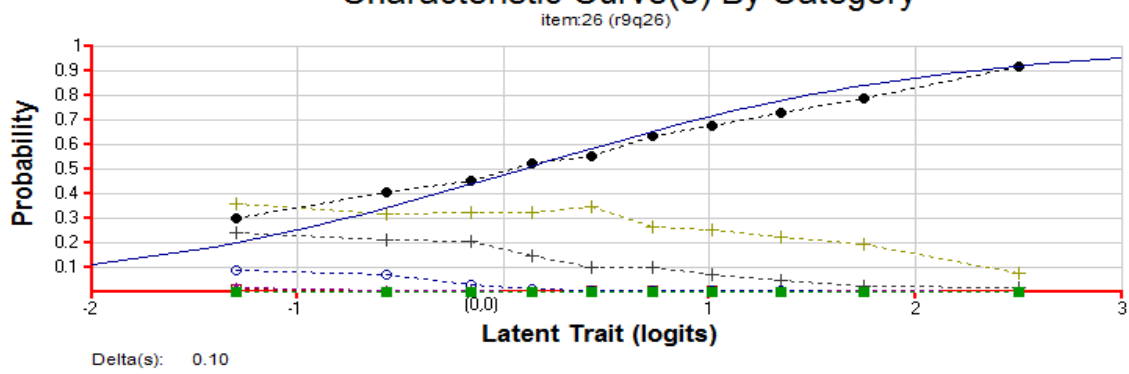




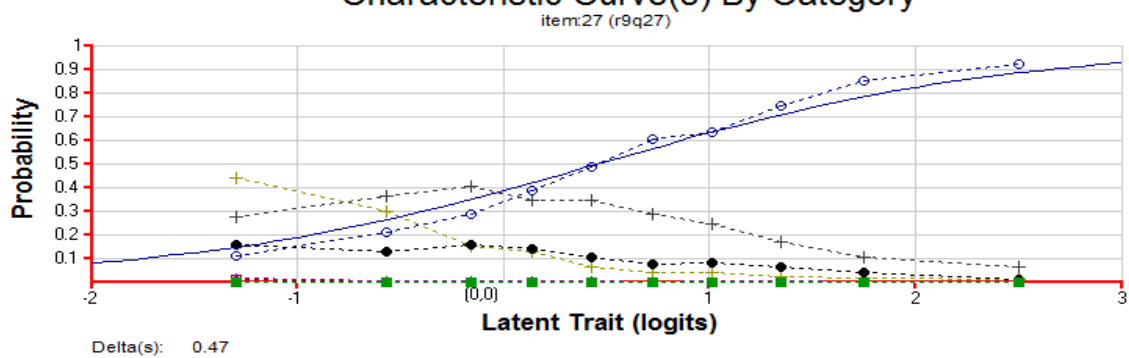
Characteristic Curve(s) By Category



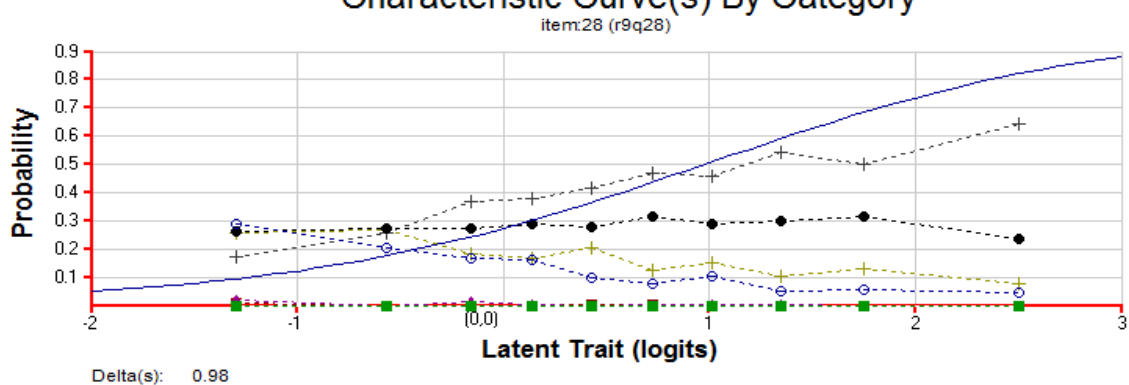
Characteristic Curve(s) By Category

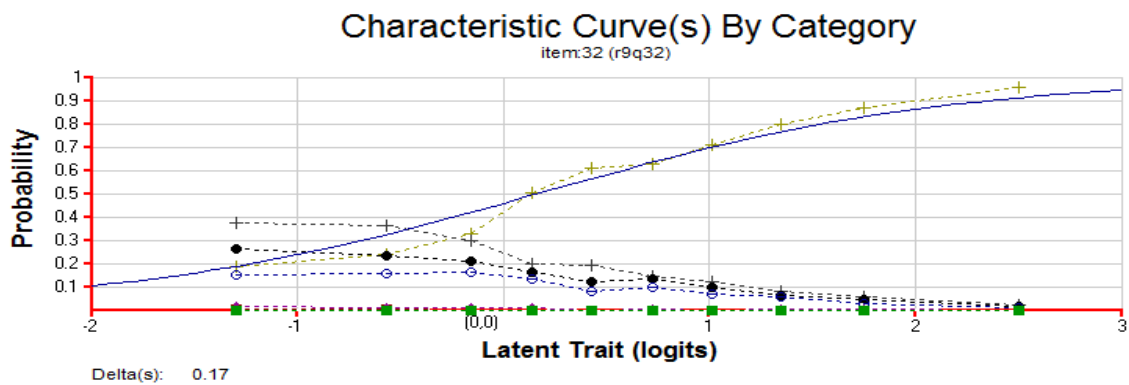
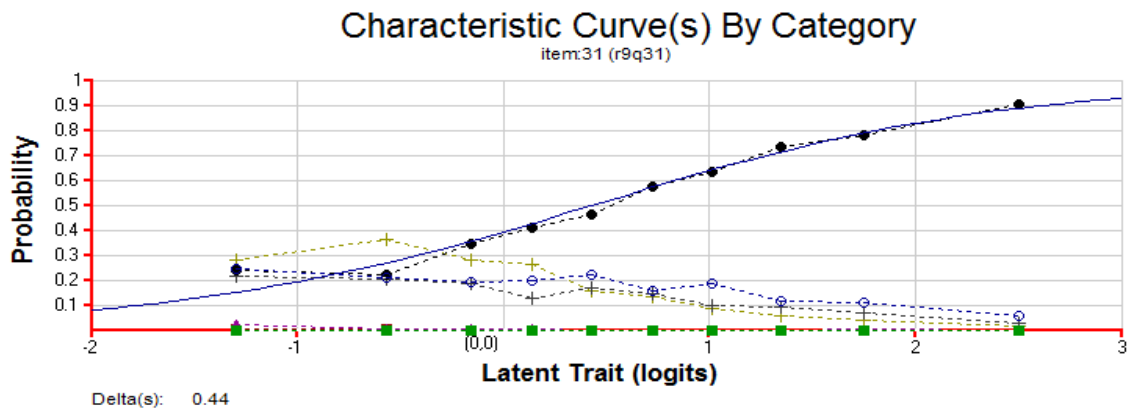
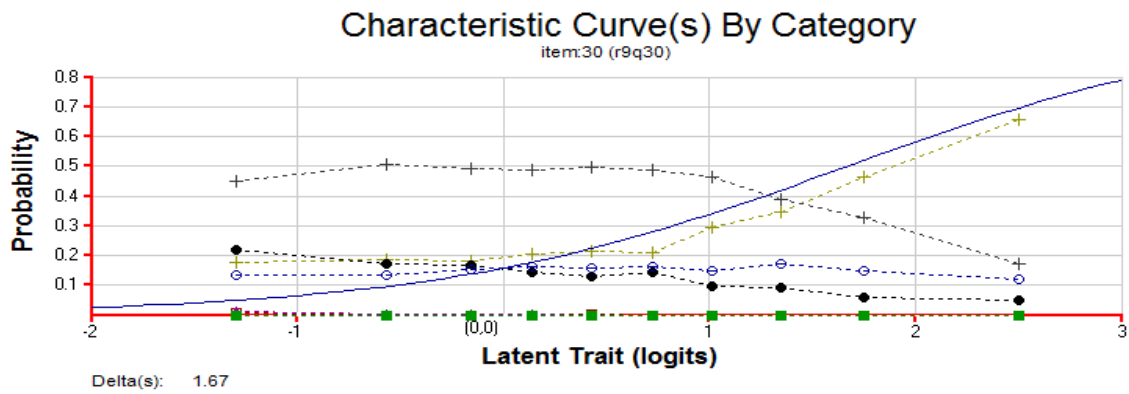
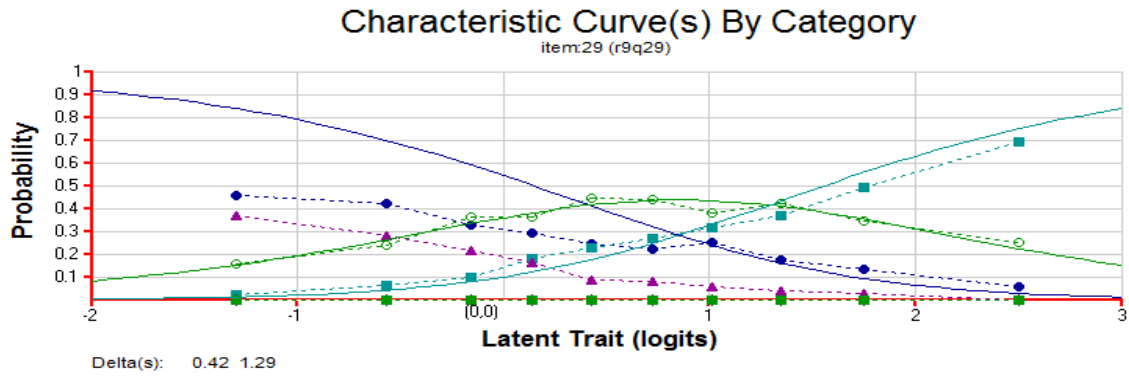


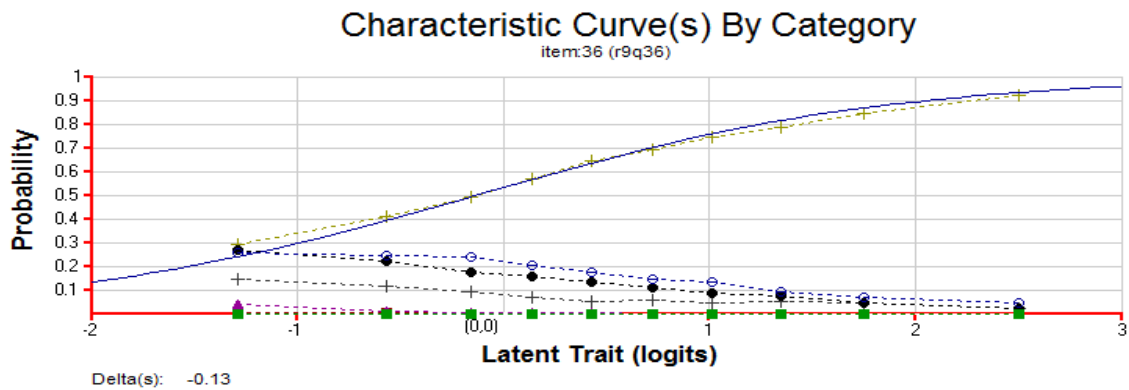
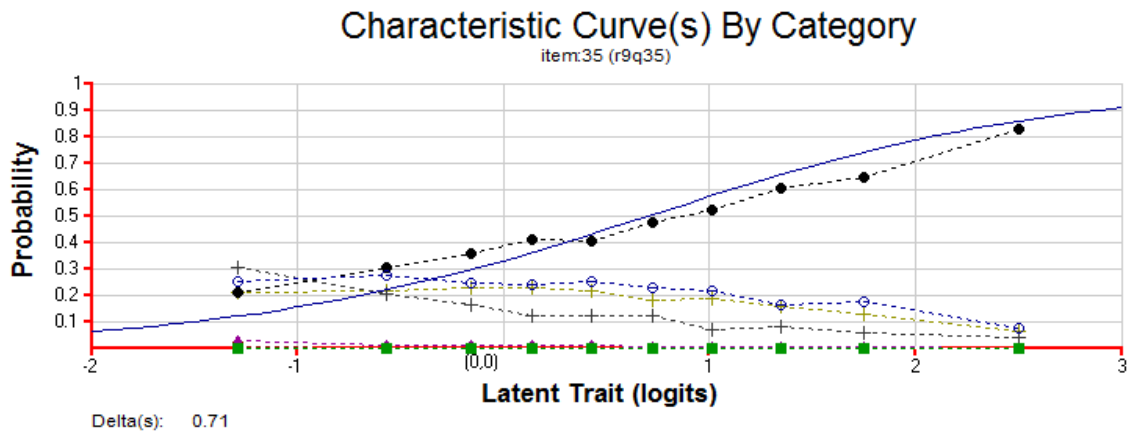
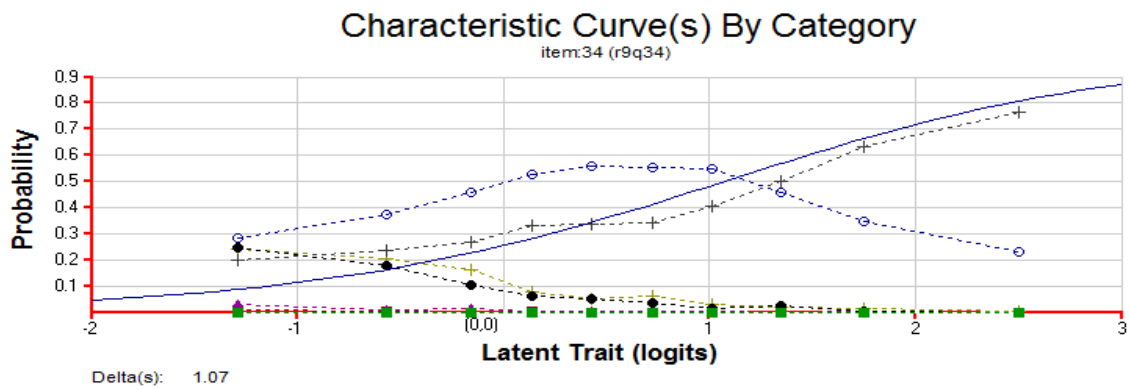
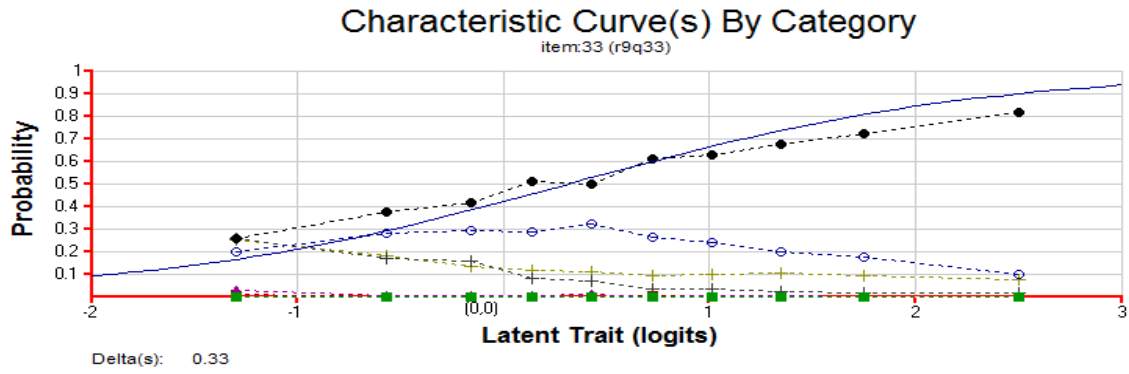
Characteristic Curve(s) By Category



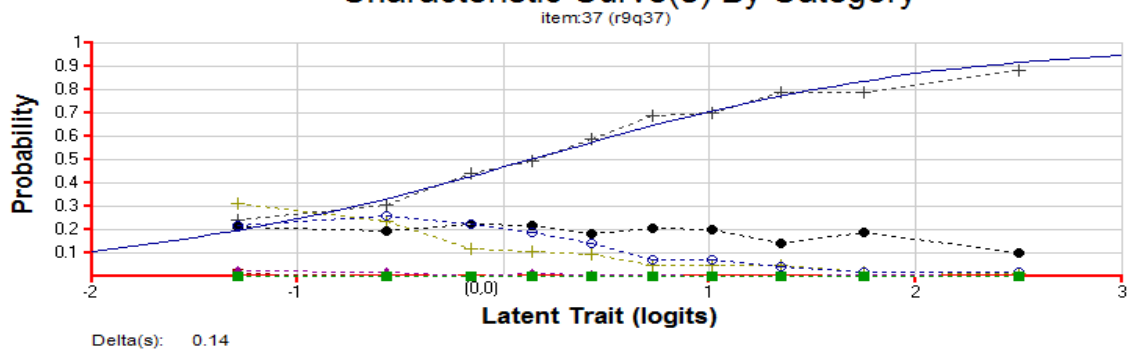
Characteristic Curve(s) By Category



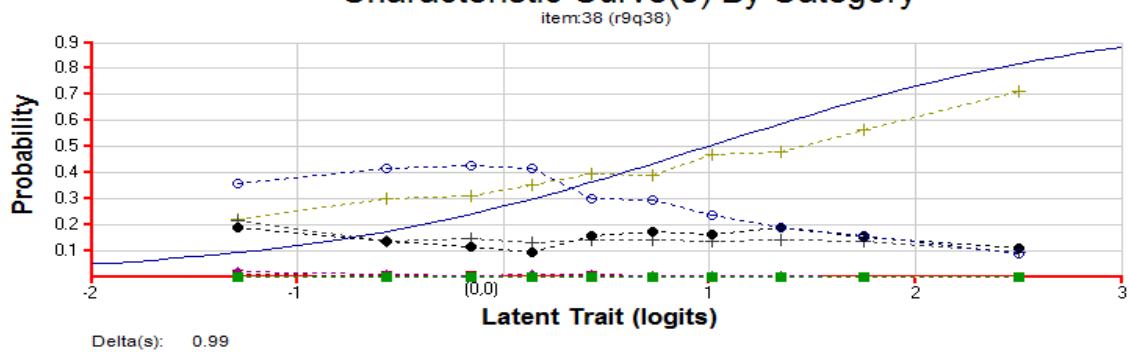




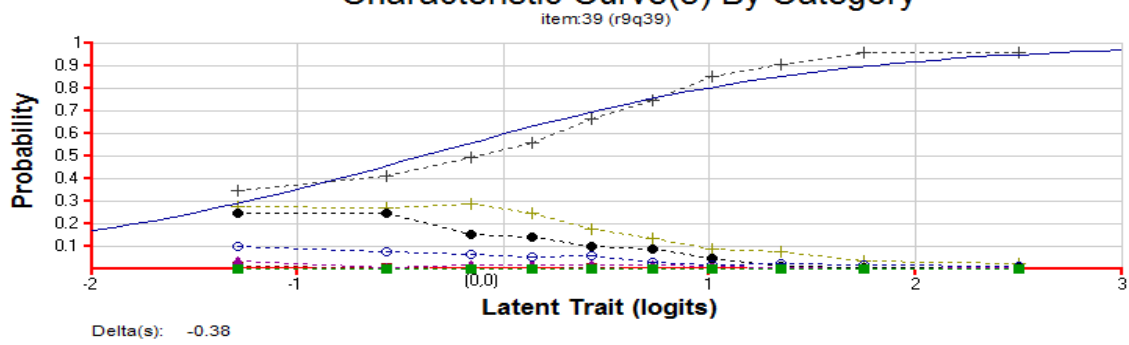
Characteristic Curve(s) By Category



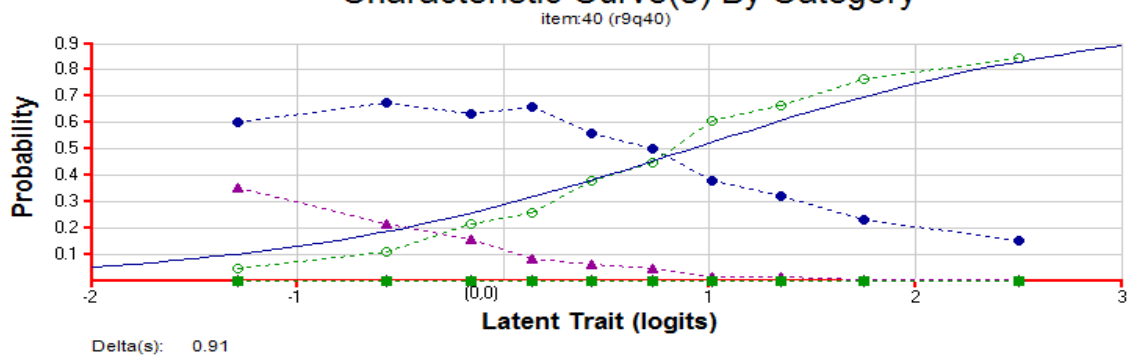
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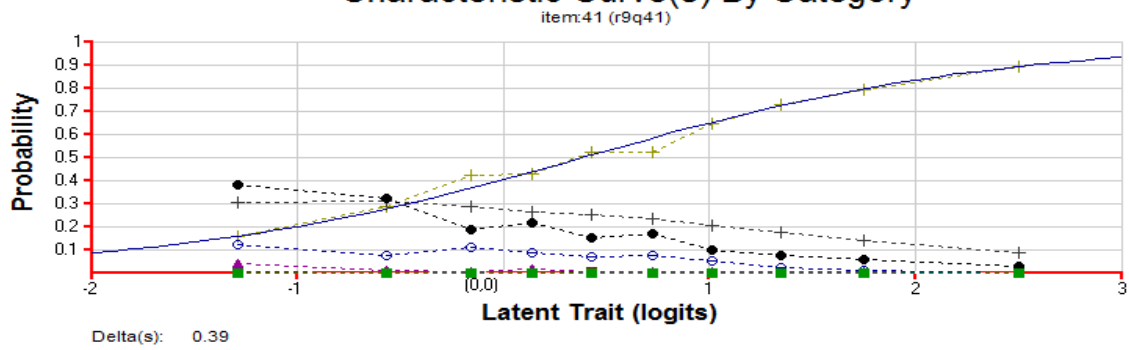
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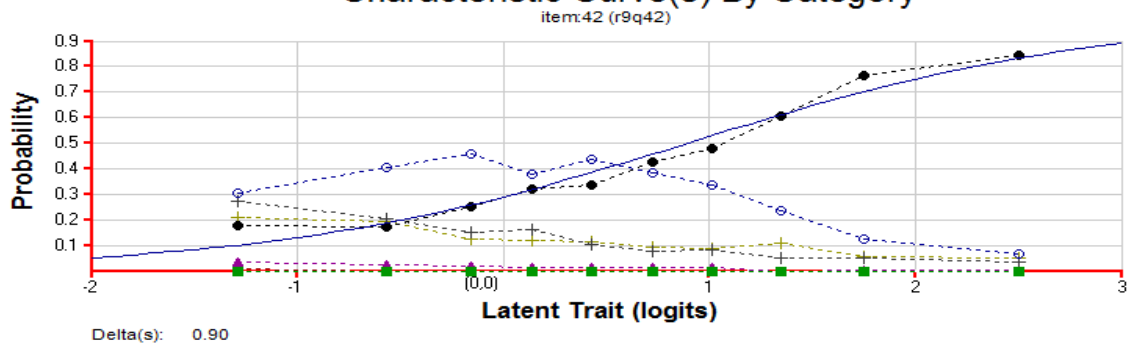
Characteristic Curve(s) By Category



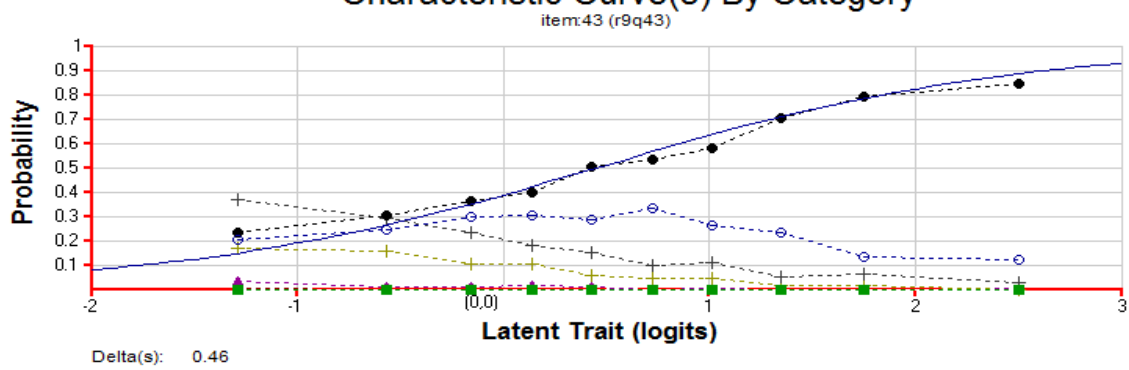
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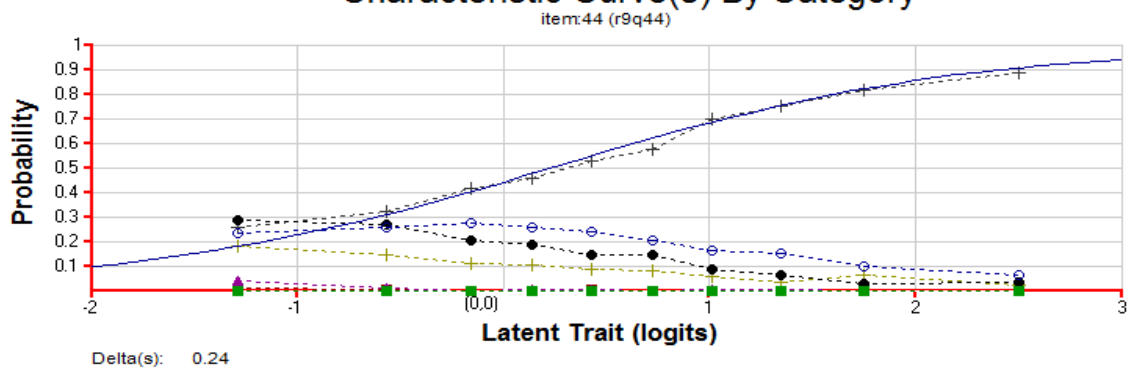
Characteristic Curve(s) By Category

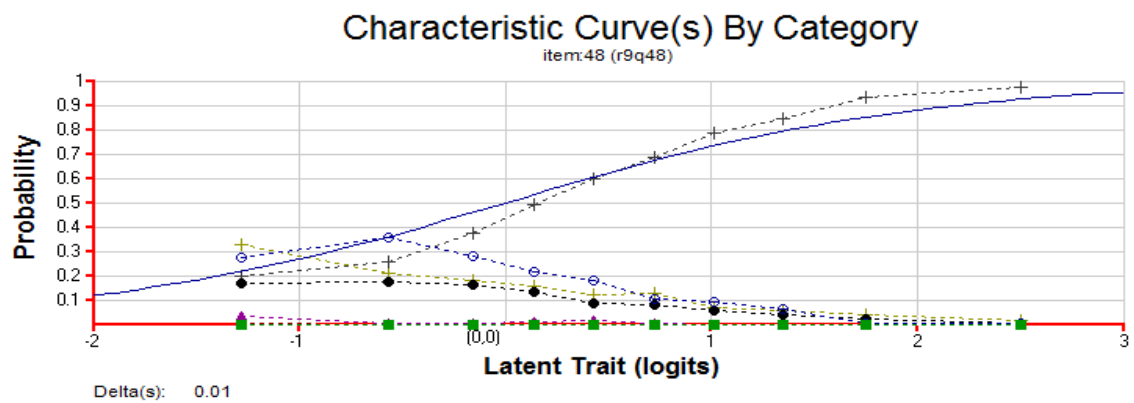
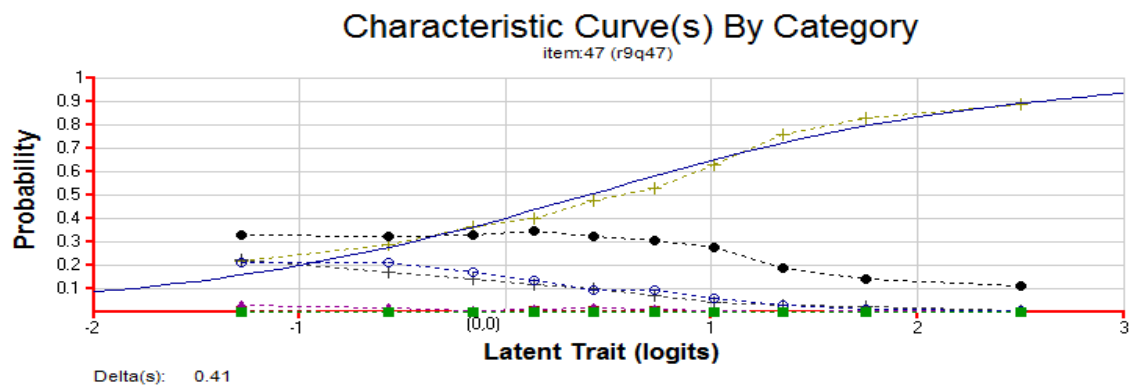
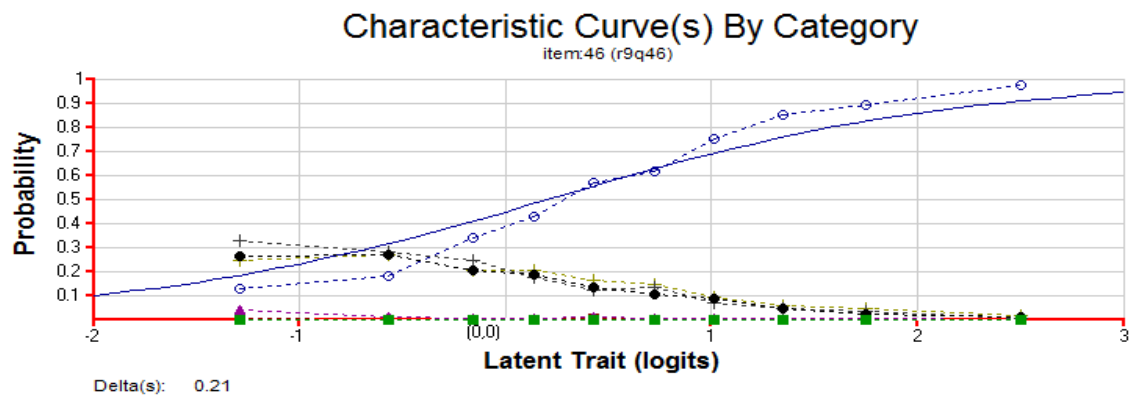
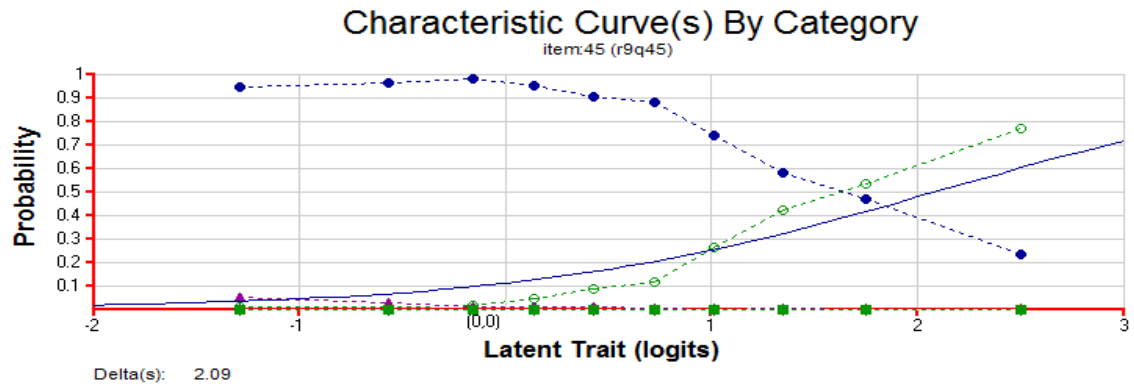


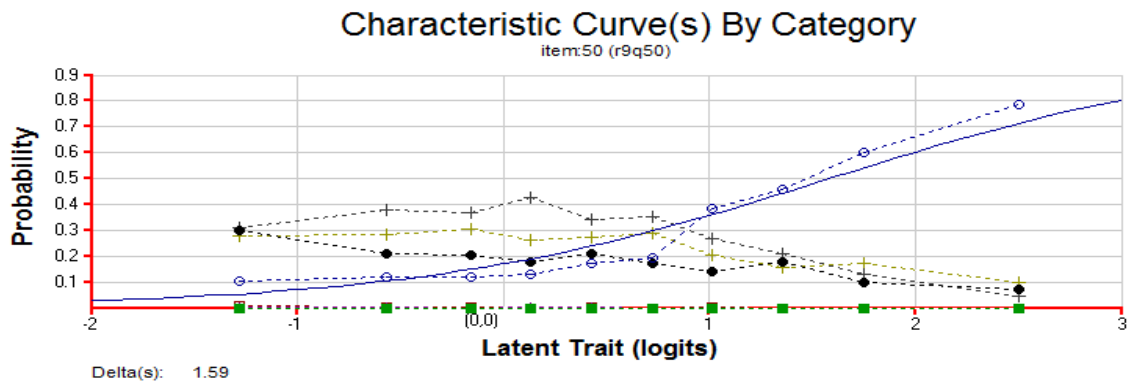
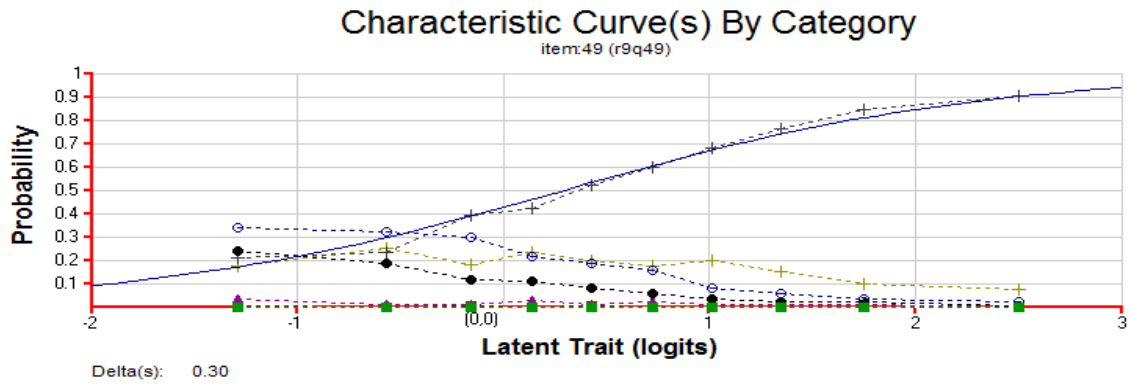
Characteristic Curve(s) By Category



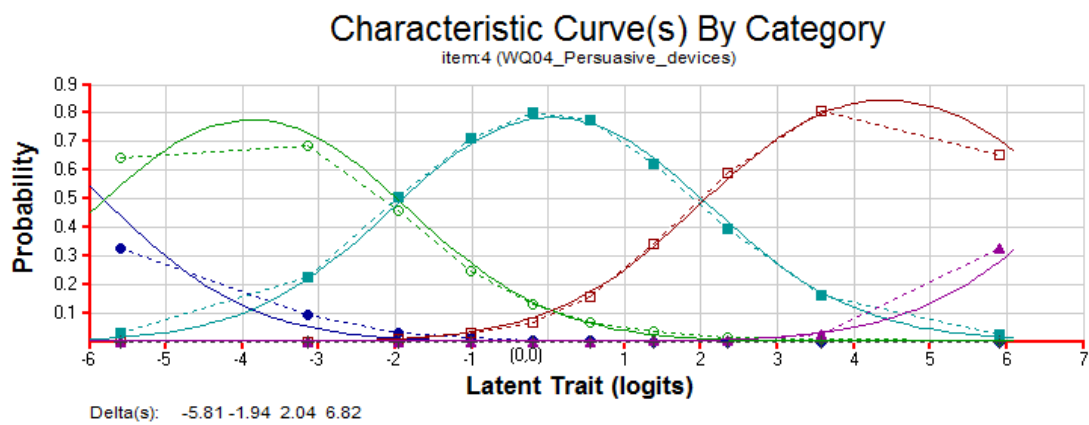
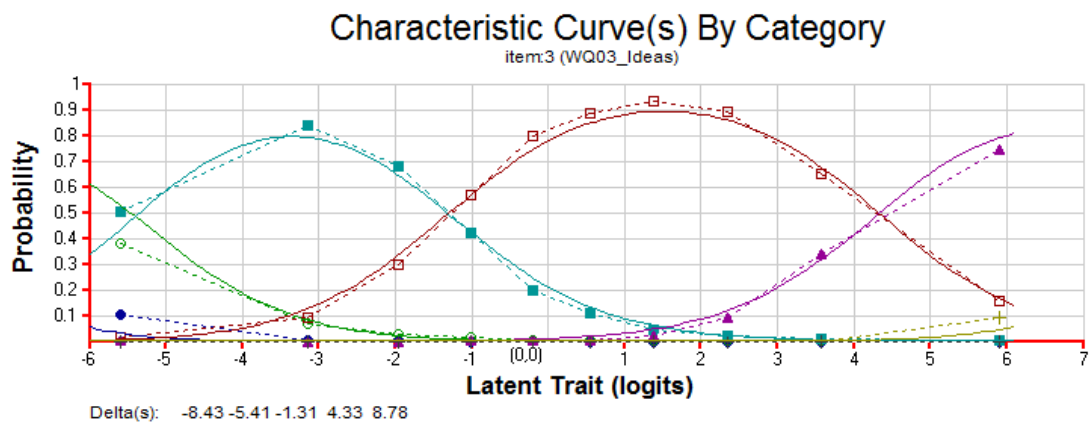
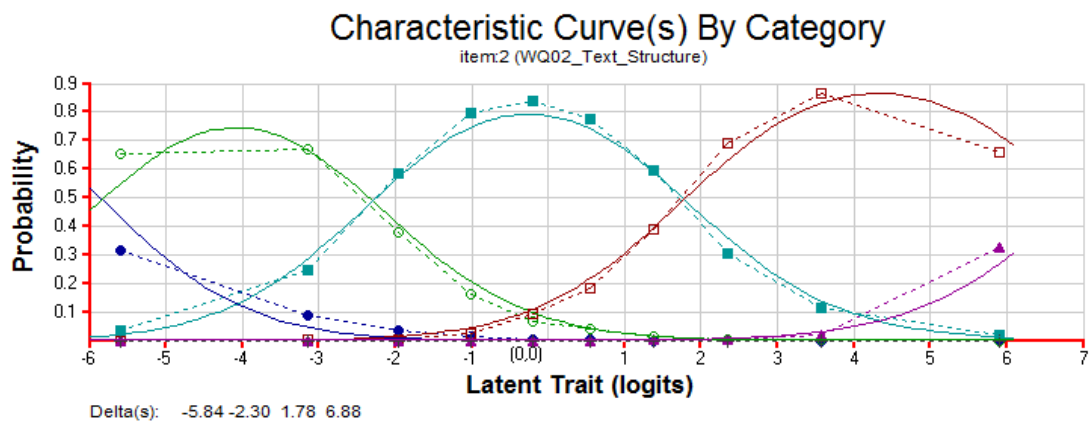
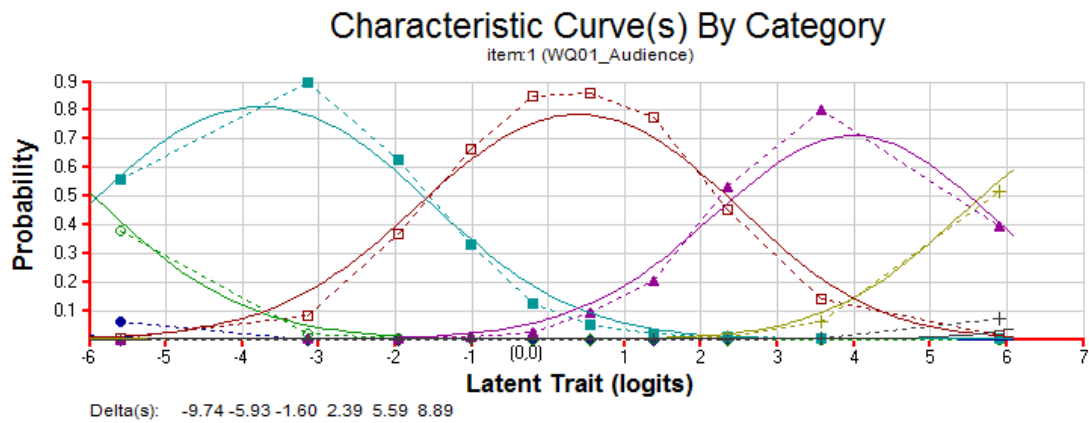
Characteristic Curve(s) By Category





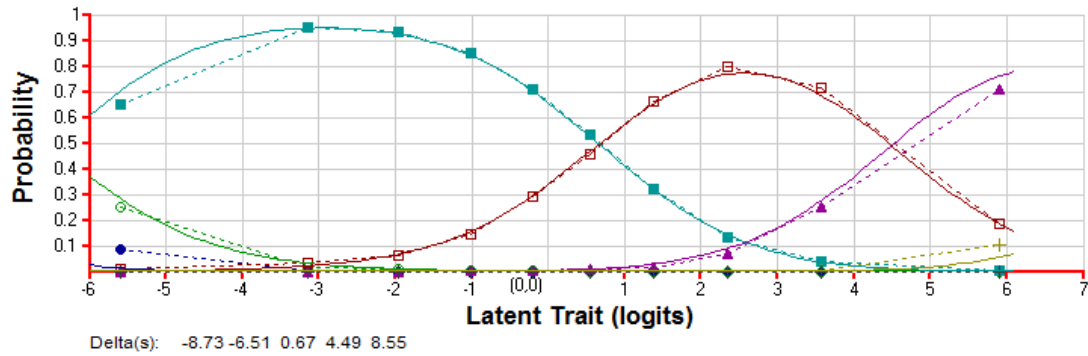


Writing



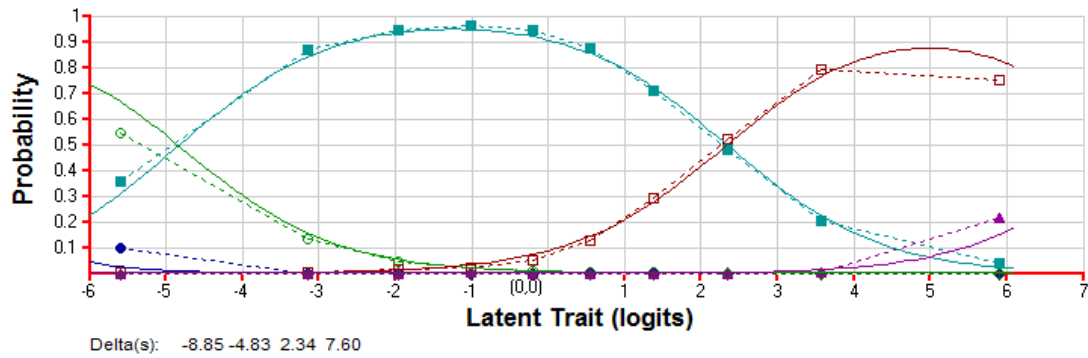
Characteristic Curve(s) By Category

item5 (WQ05_Vocabulary)



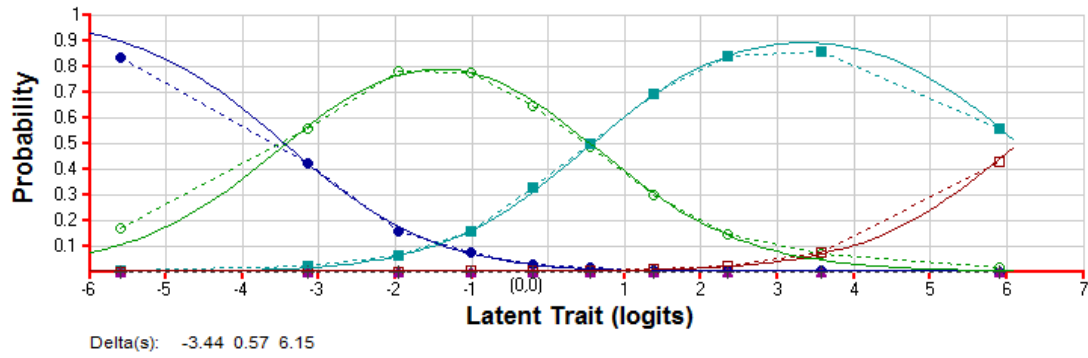
Characteristic Curve(s) By Category

item6 (WQ06_Cohesion)



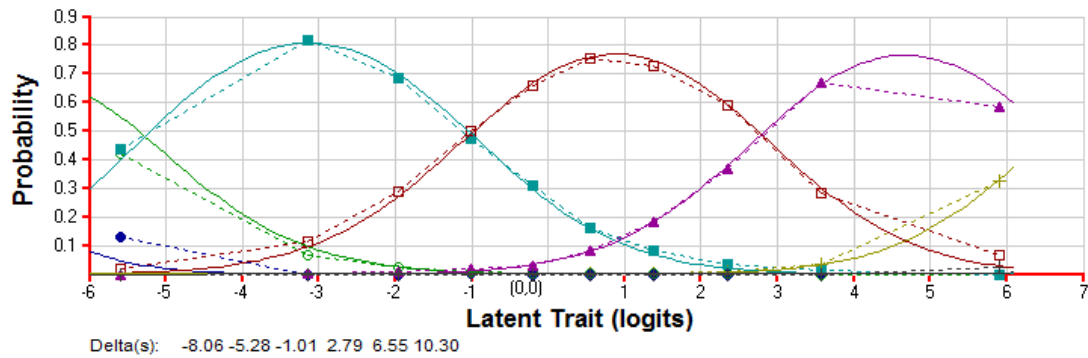
Characteristic Curve(s) By Category

item7 (WQ07_Paragraphing)



Characteristic Curve(s) By Category

item8 (WQ08_Sentence_Structure)



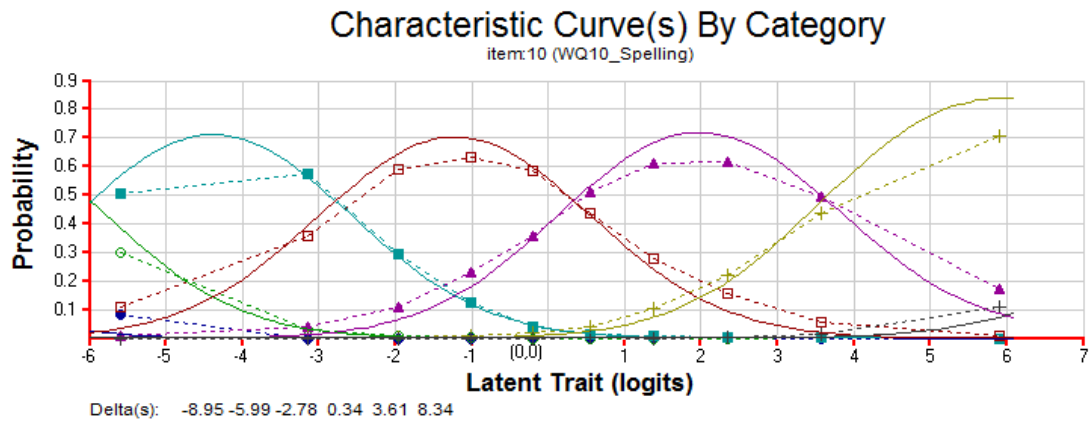
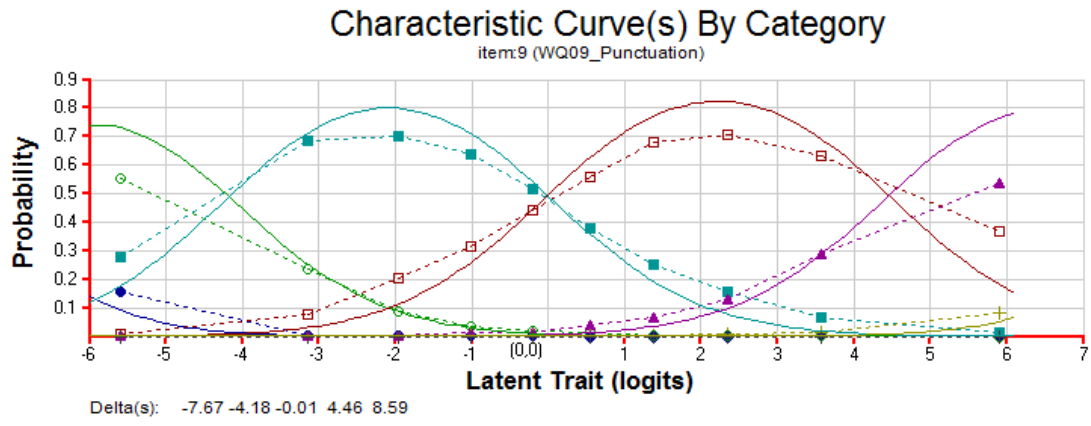


Figure E.5 Years 3, 5, 7 and 9 Writing Variable Map

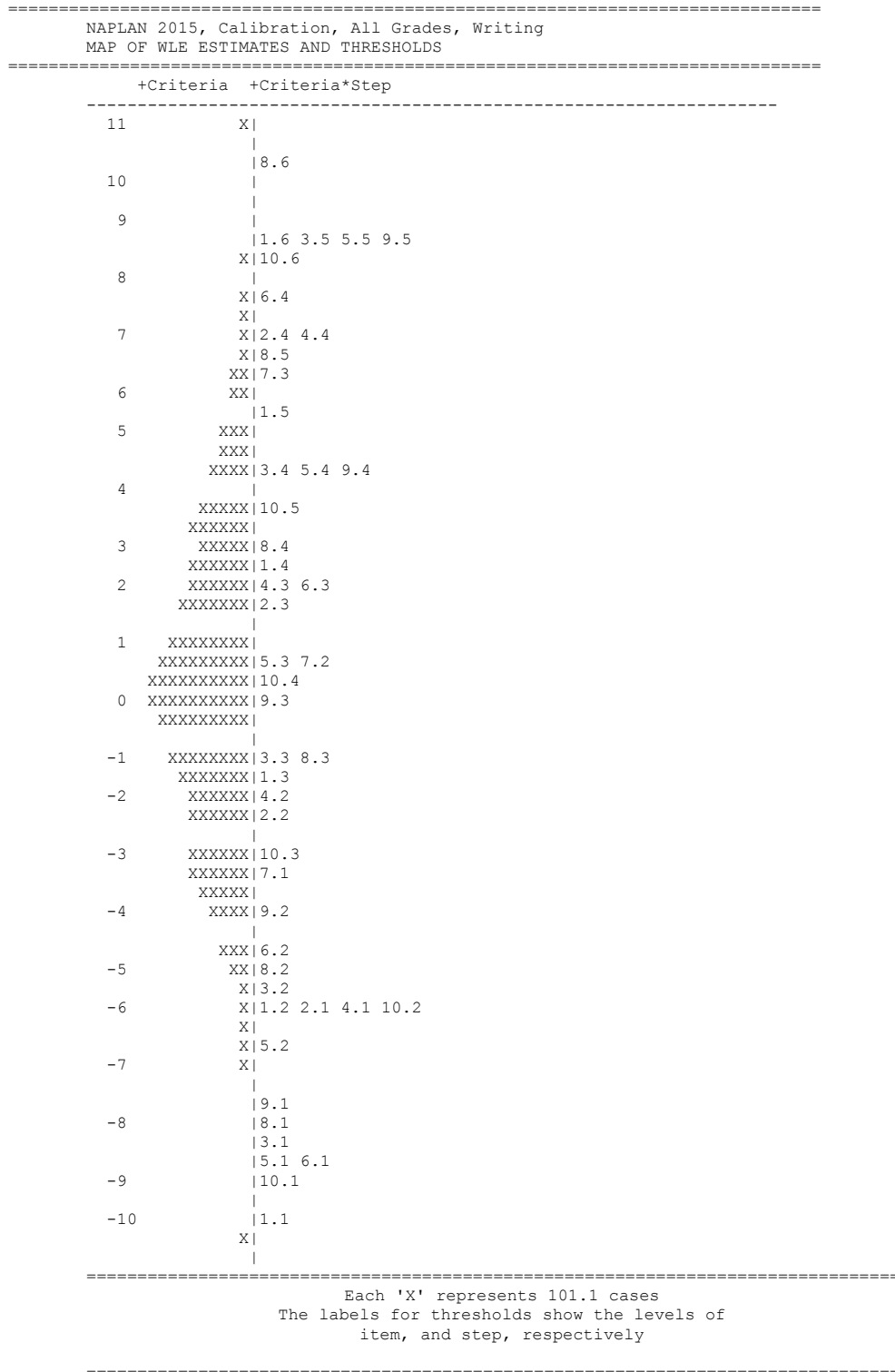


Figure E.7 Year 5 Spelling Variable Map

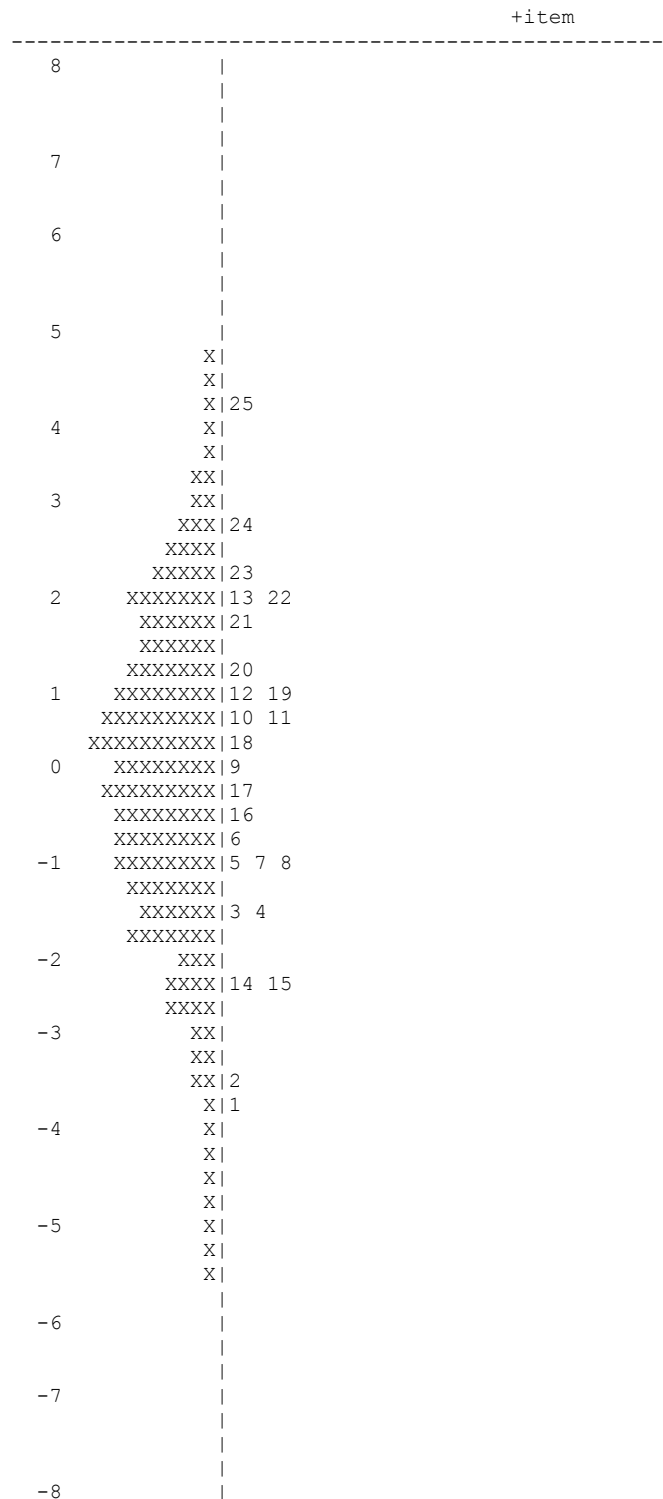
=====

NAPLAN 2015, Calibration, Grade 5, spelling

MAP OF LATENT DISTRIBUTIONS AND RESPONSE MODEL PARAMETER ESTIMATES

=====

Terms in the Model (excl Step terms)



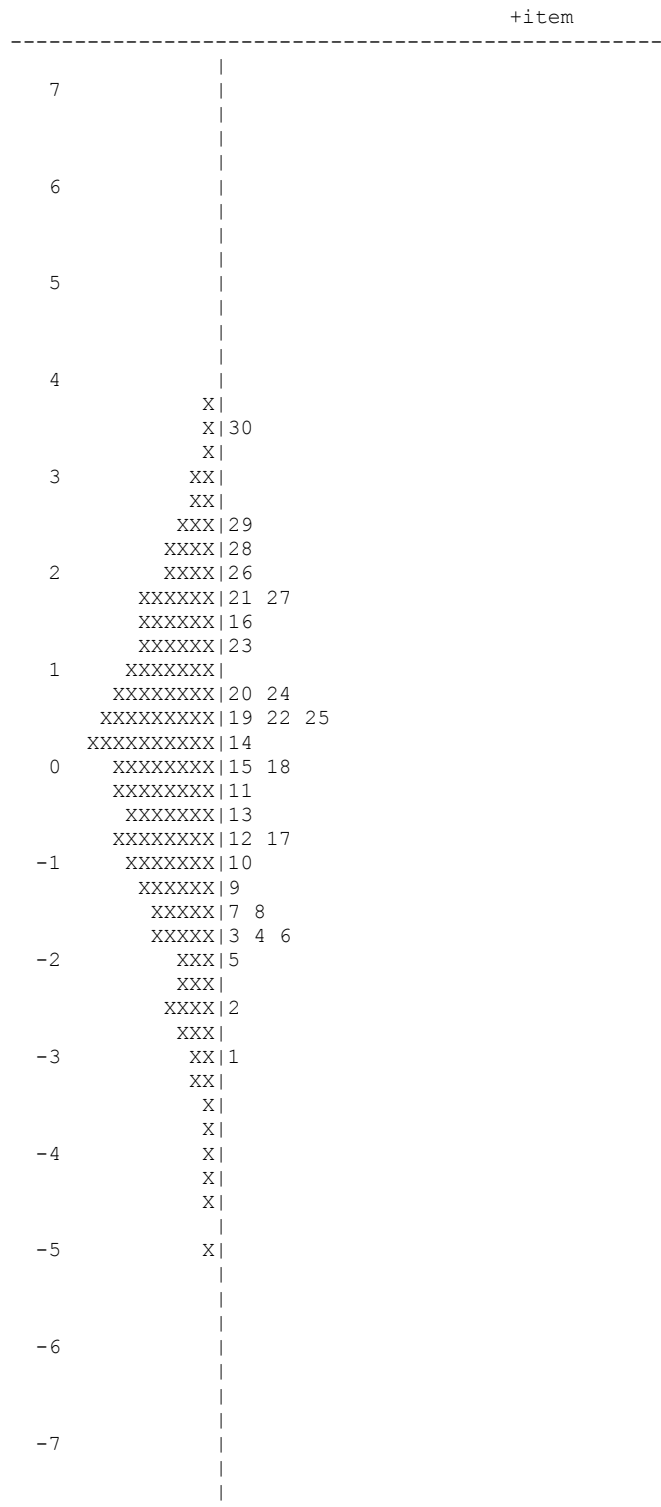
Each 'X' represents 26.2 cases

=====

Figure E.8 Year 7 Spelling Variable Map

=====
 NAPLAN 2015, Calibration, Grade 7, spelling Tue Jun 23 20:27 2015
 MAP OF LATENT DISTRIBUTIONS AND RESPONSE MODEL PARAMETER ESTIMATES
 =====

Terms in the Model (excl Step terms)



=====
 Each 'X' represents 32.9 cases
 =====

Figure E.9 Year 9 Spelling Variable Map

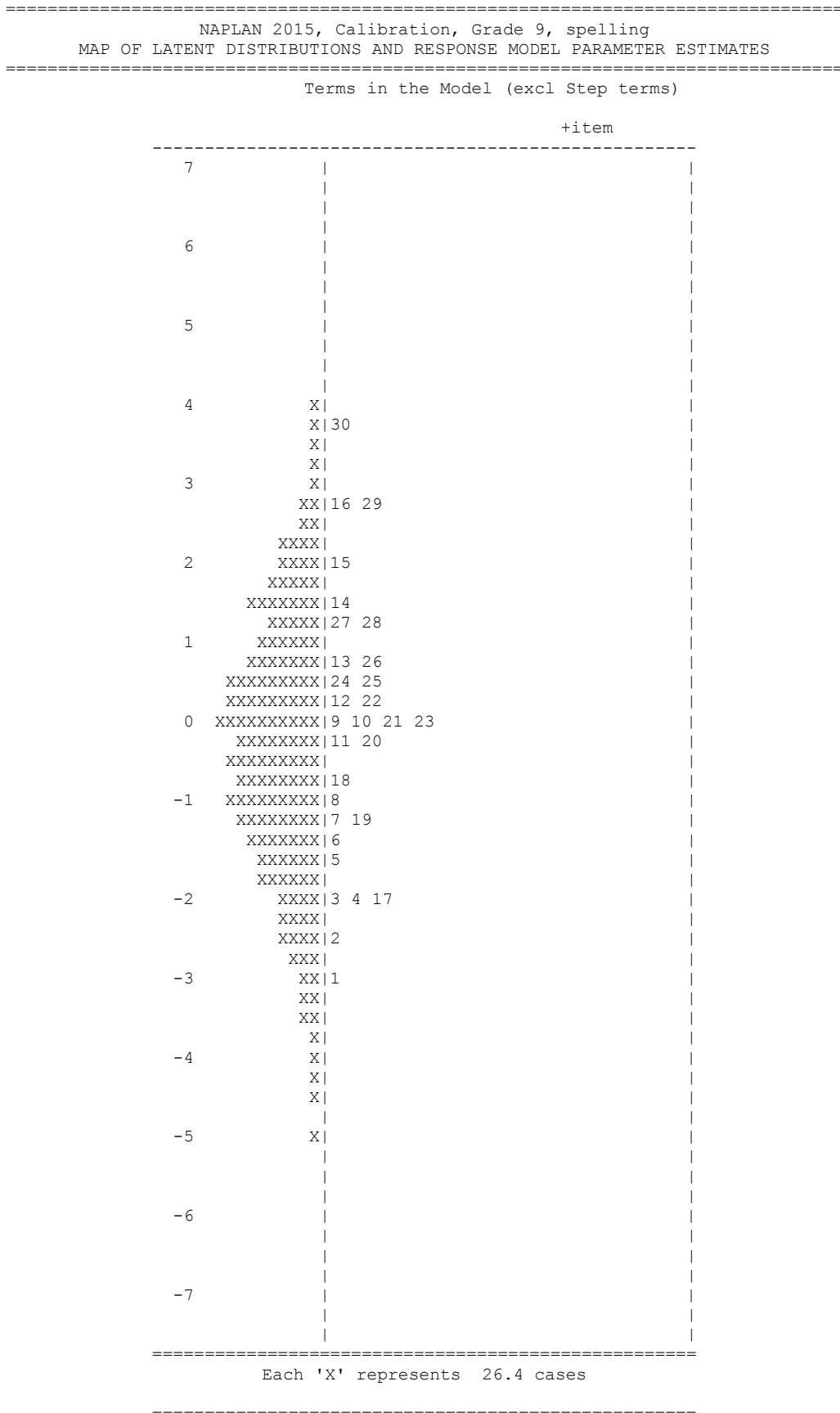


Figure E.11 Year 5 Grammar and Punctuation Variable Map

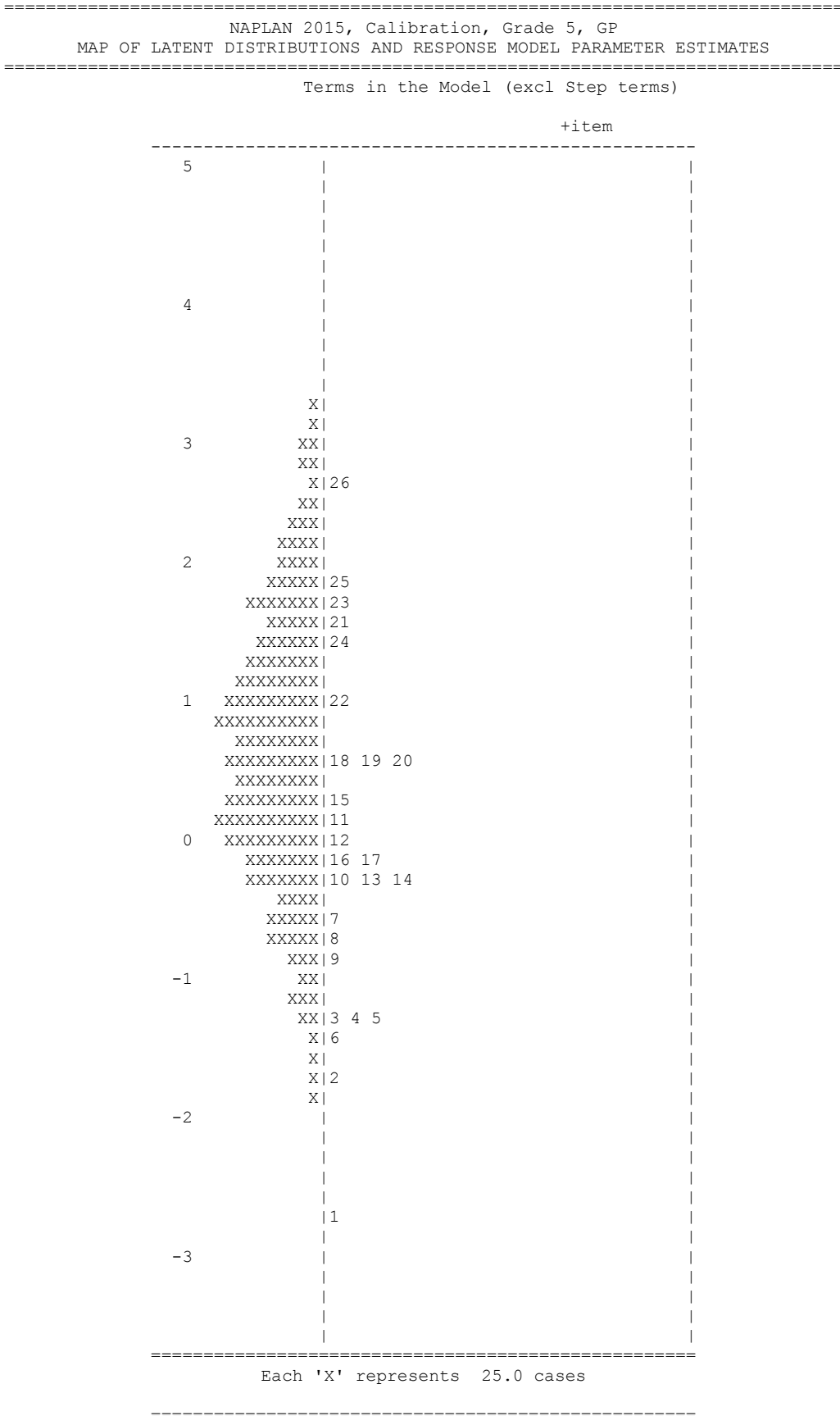


Figure E.12 Year 7 Grammar and Punctuation Variable Map

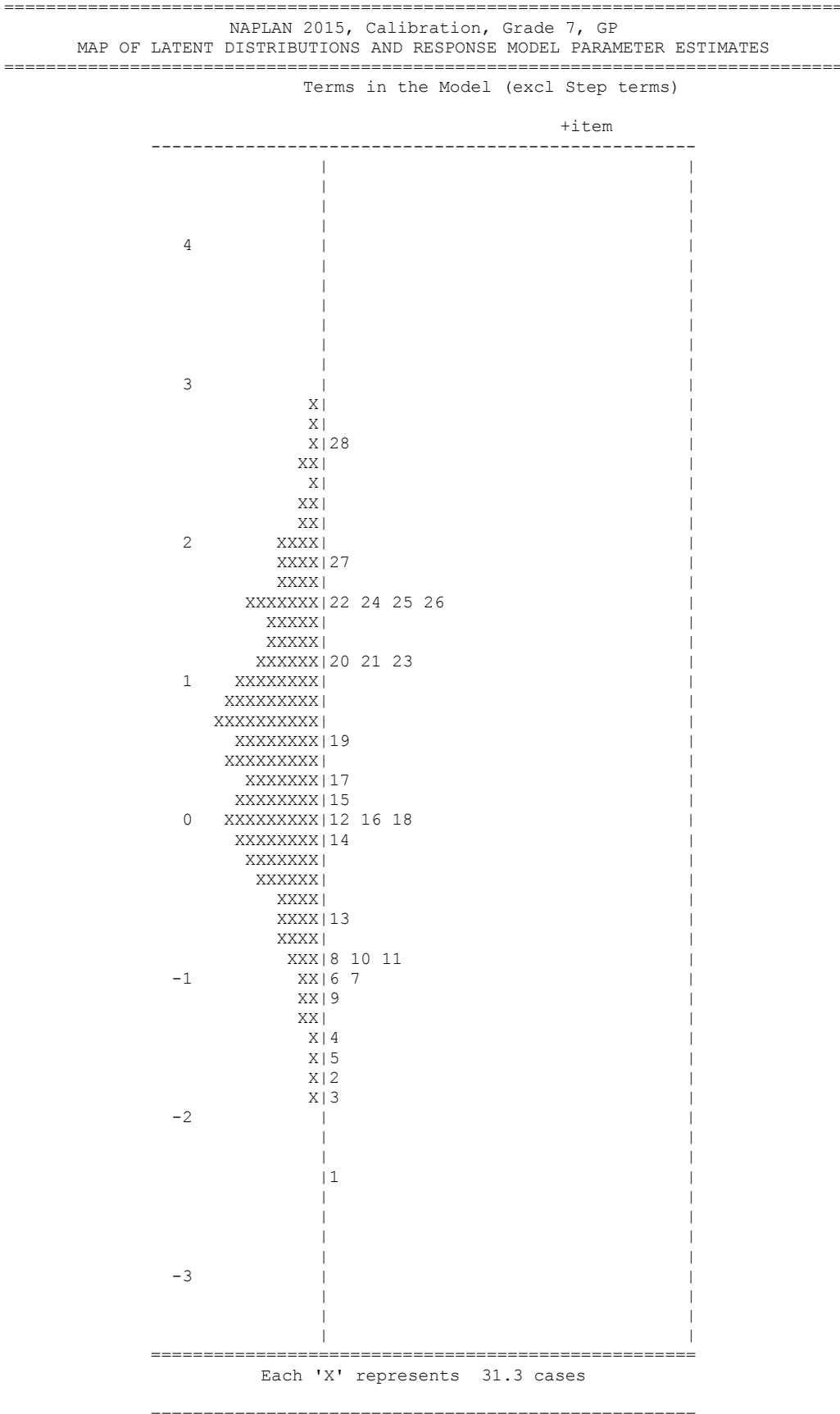


Figure E.13 Year 9 Grammar and Punctuation Variable Map

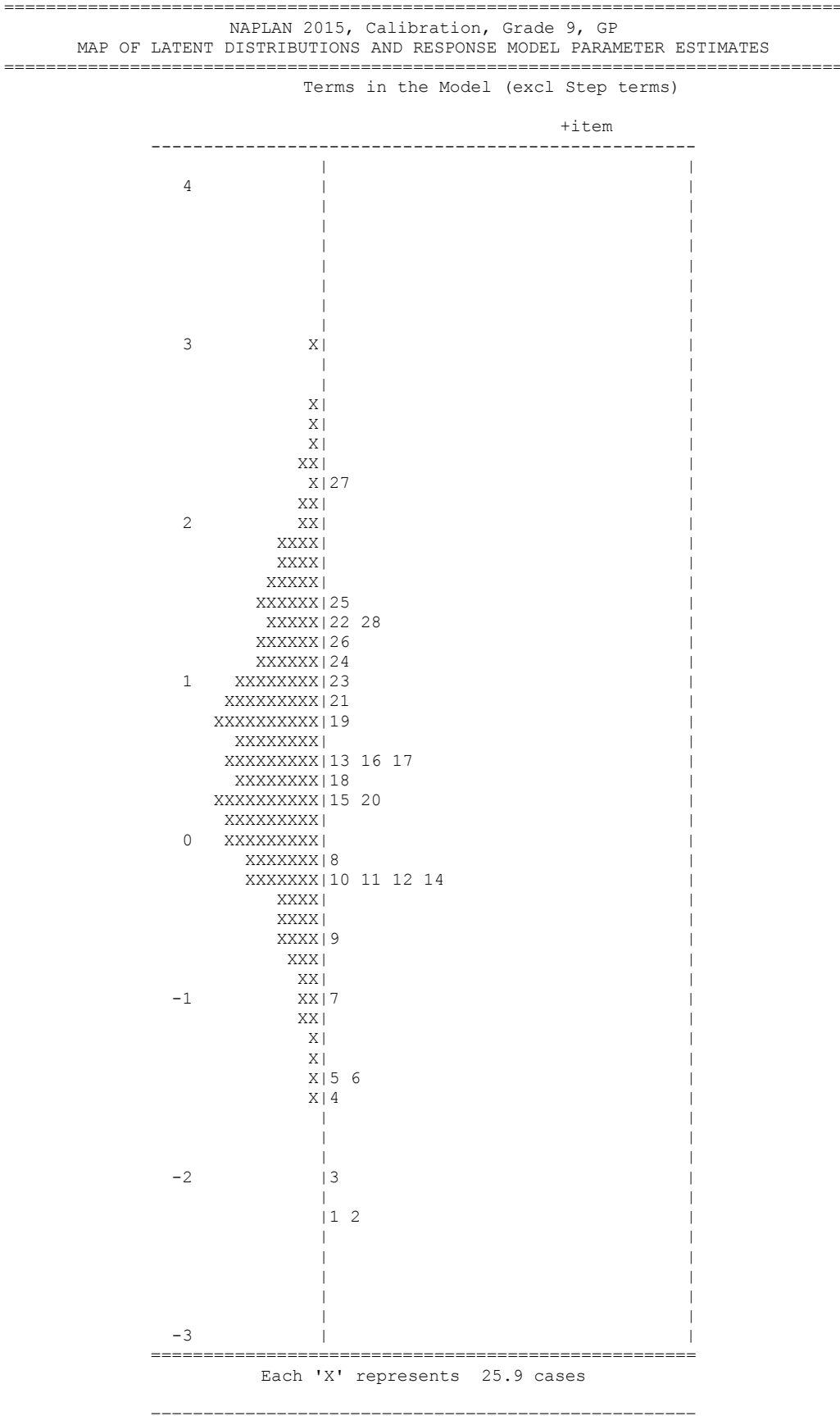


Figure E.14 Year 3 Numeracy Variable Map

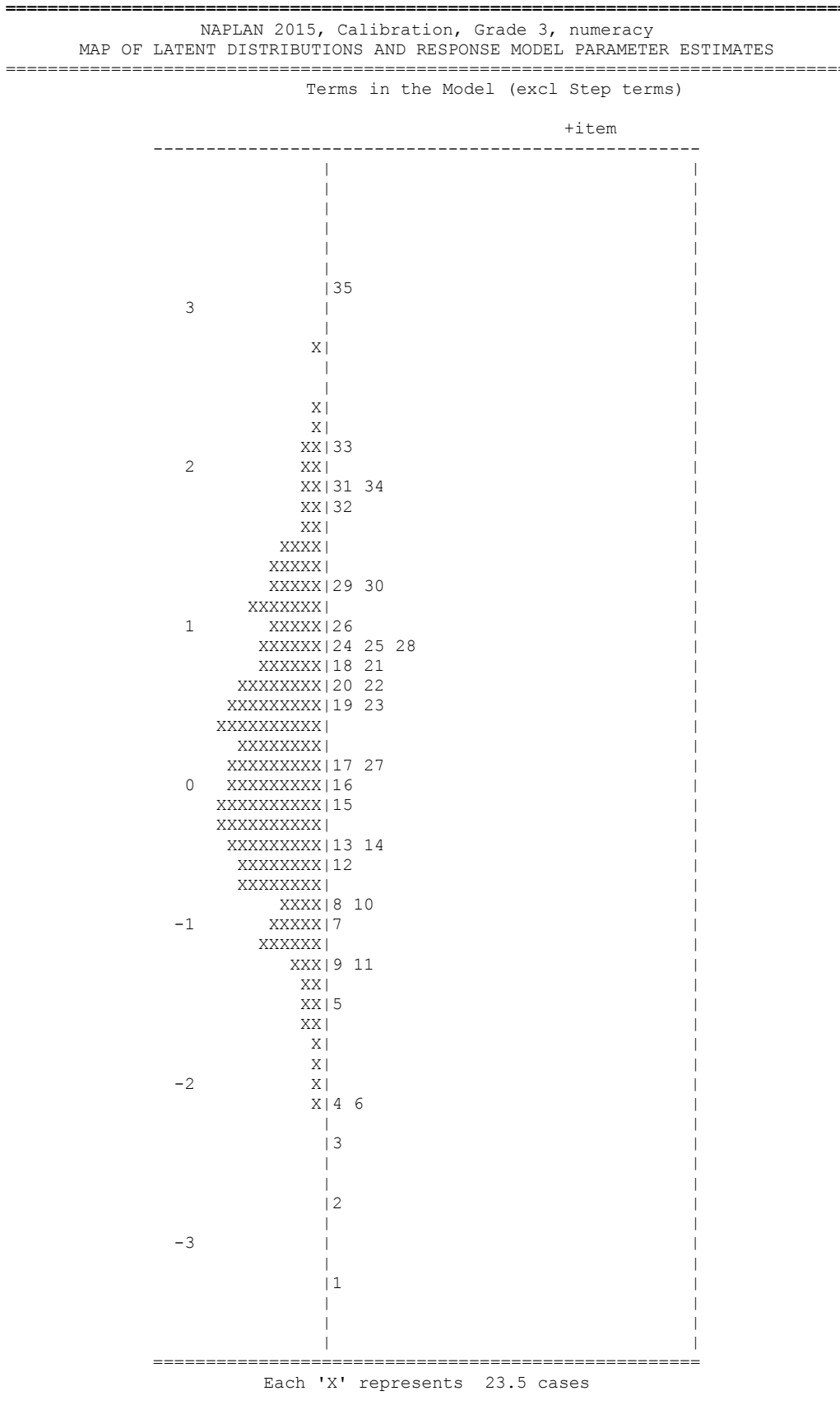


Figure E.16 Year 7 Numeracy Variable Map

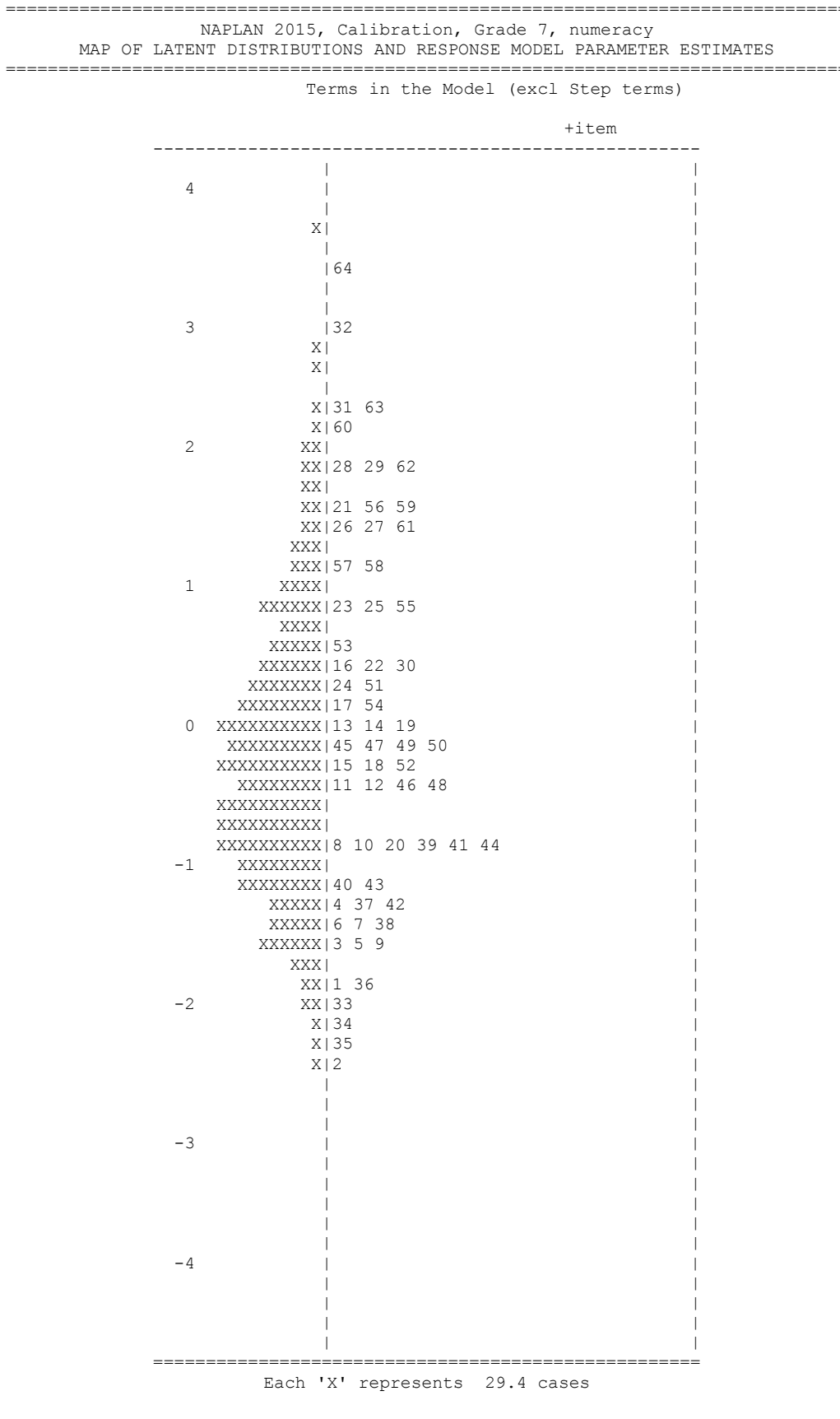
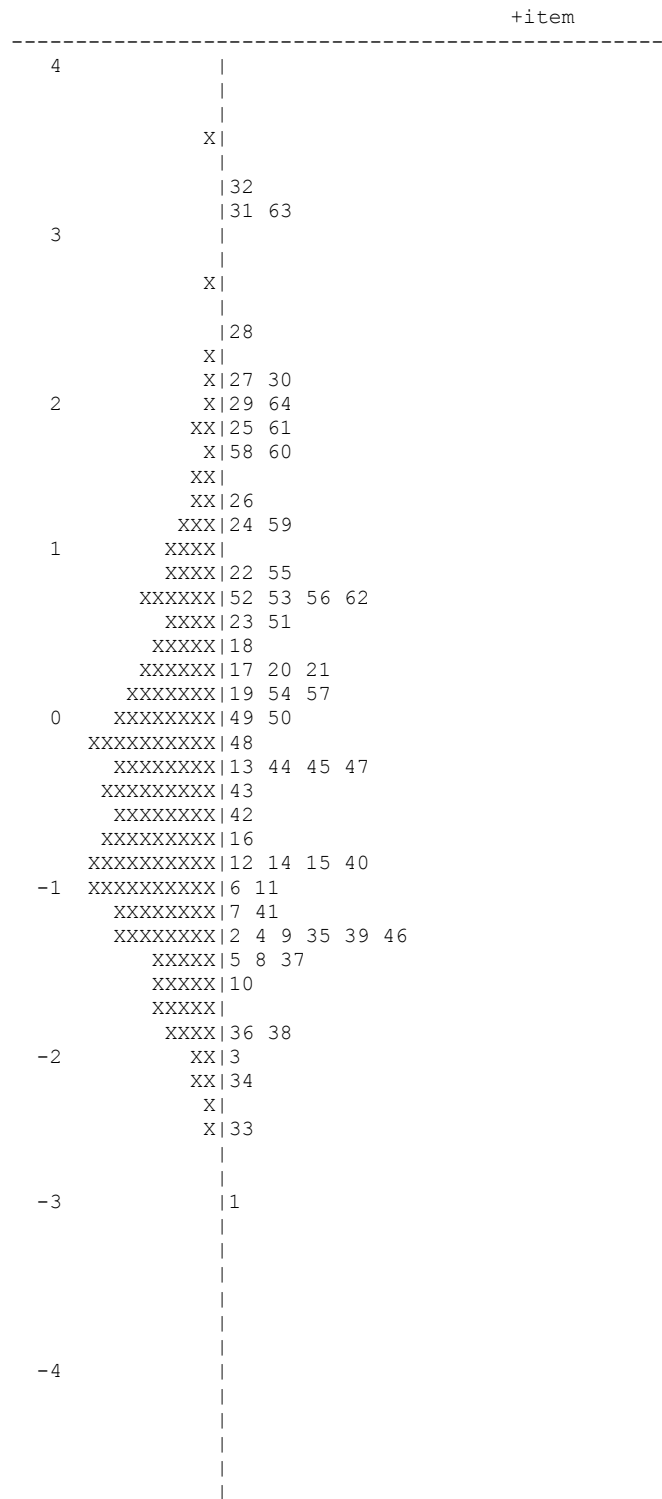


Figure E.17 Year 9 Numeracy Variable Map

=====
 NAPLAN 2015, Calibration, Grade 9, numeracy
 MAP OF LATENT DISTRIBUTIONS AND RESPONSE MODEL PARAMETER ESTIMATES
 =====

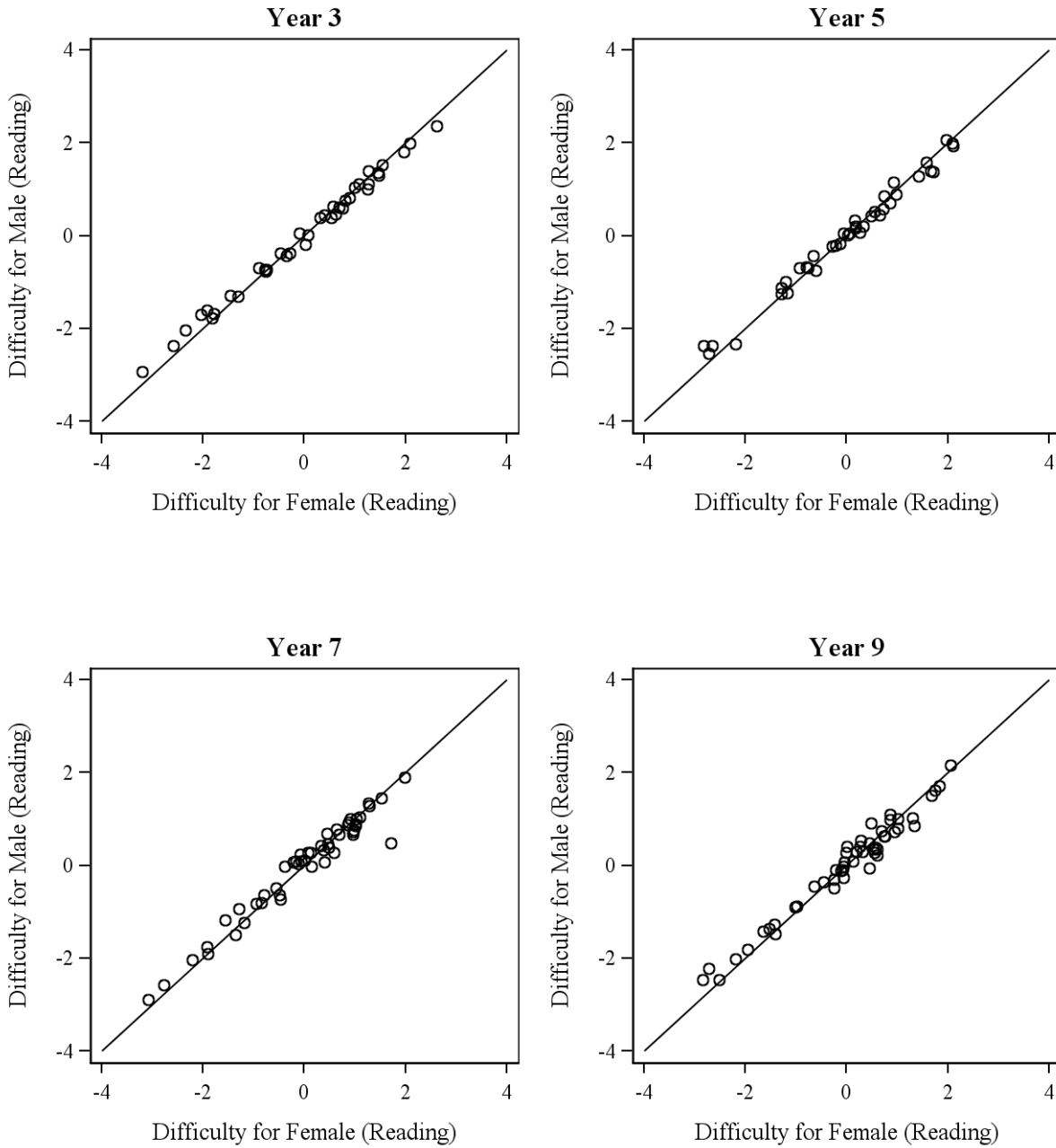
Terms in the Model (excl Step terms)

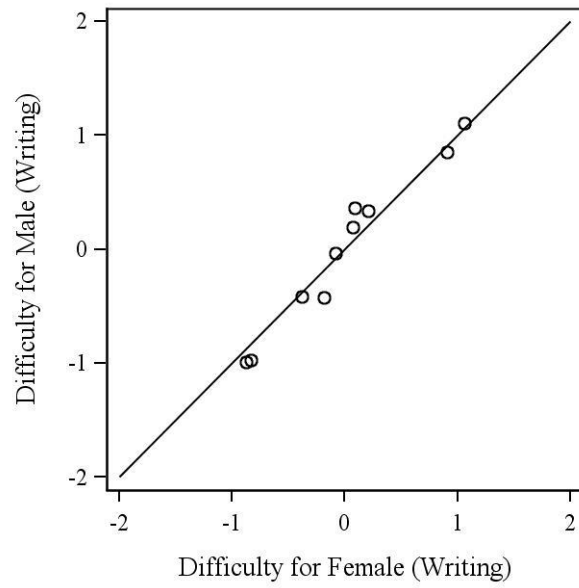


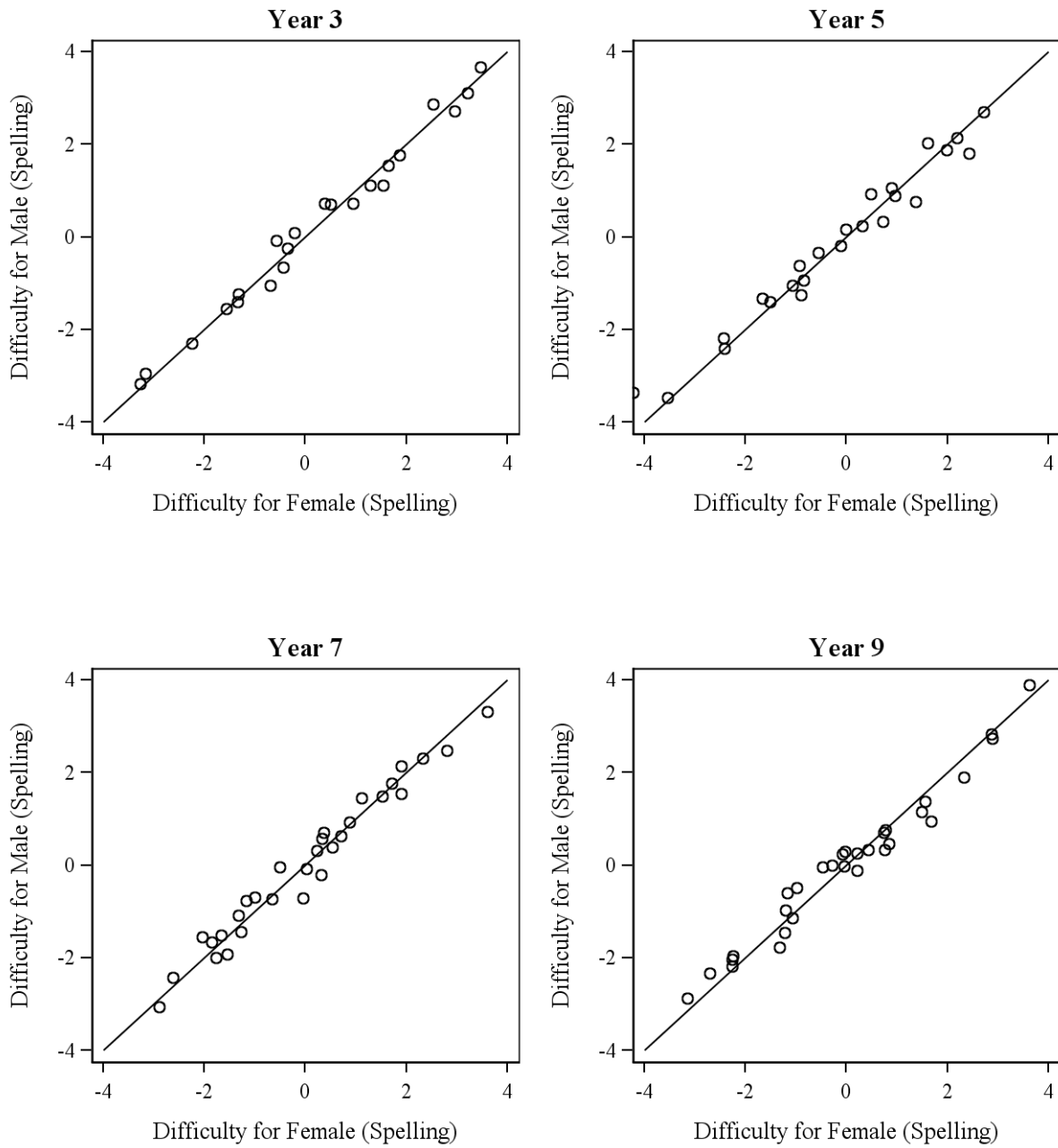
=====
 Each 'X' represents 26.1 cases
 =====

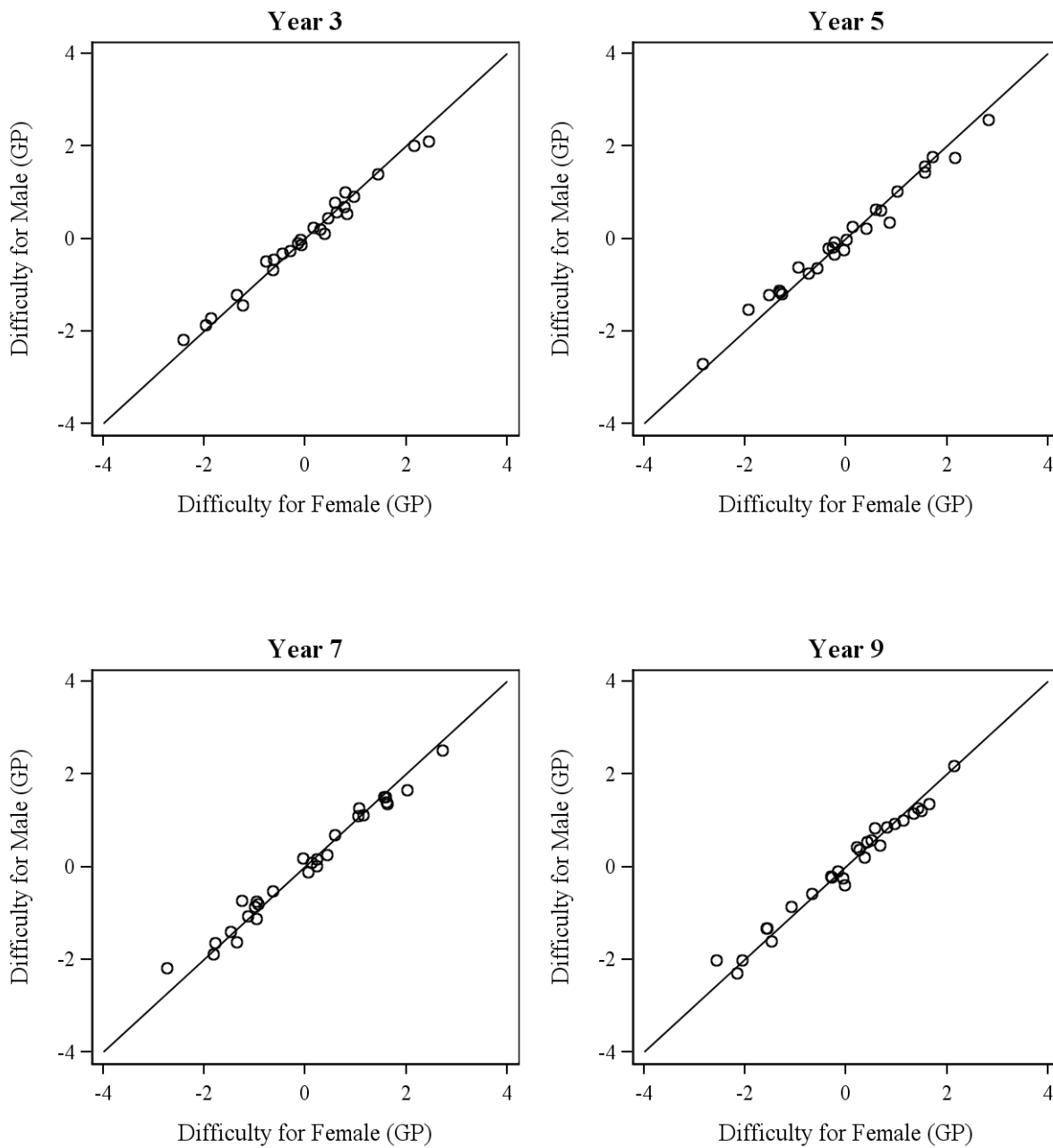
APPENDIX F. GENDER DIF ANALYSIS

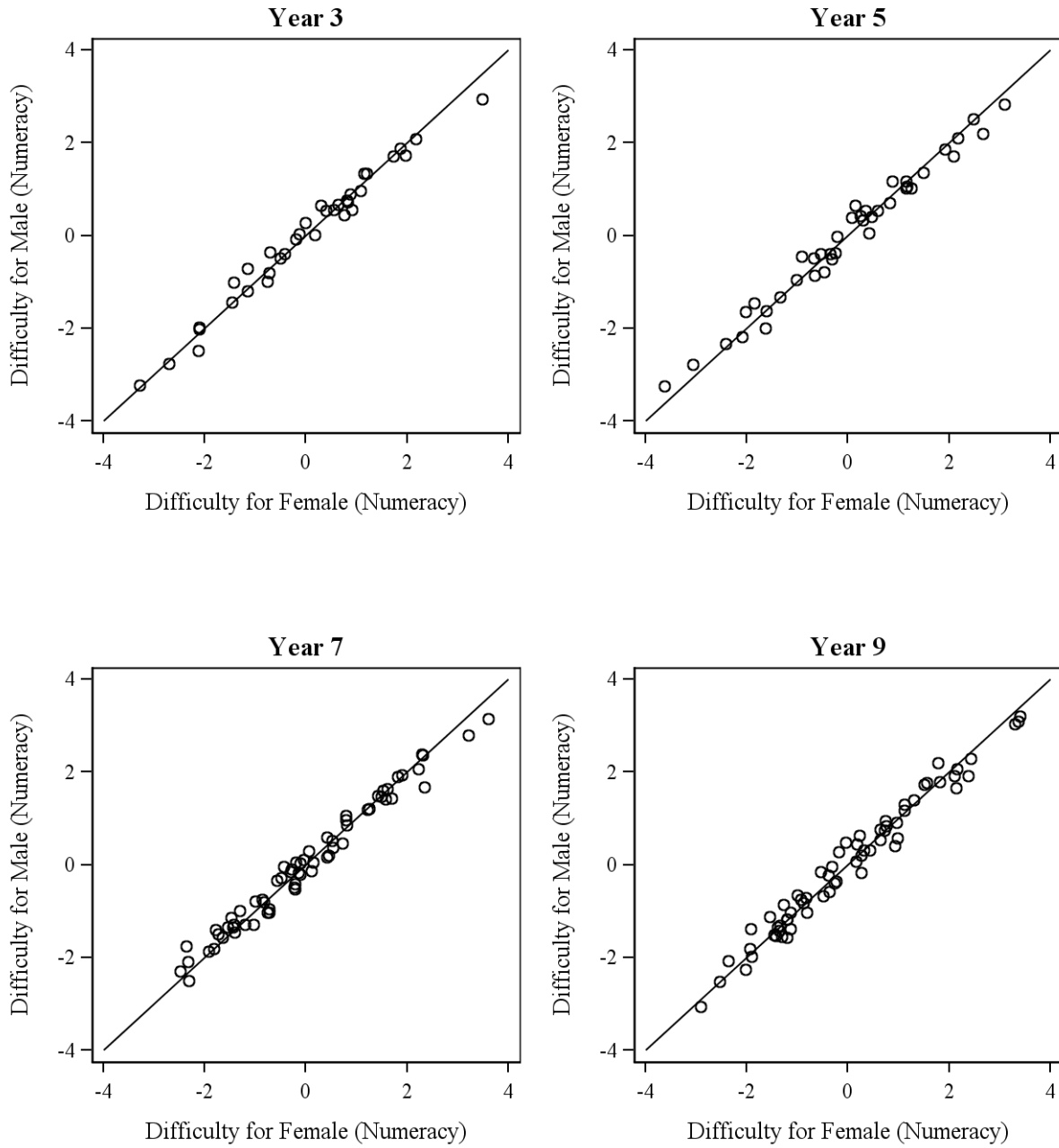
F.1 Centred Item Locations of Male and Female Students in Reading (2015)



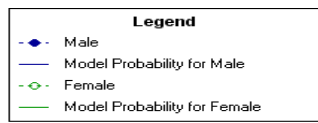
F.2 Centred Item Locations of Male and Female Students Years 3, 5, 7, and 9 Writing (2015)

F.3 Centred Item Locations of Male and Female Students in Spelling (2015)

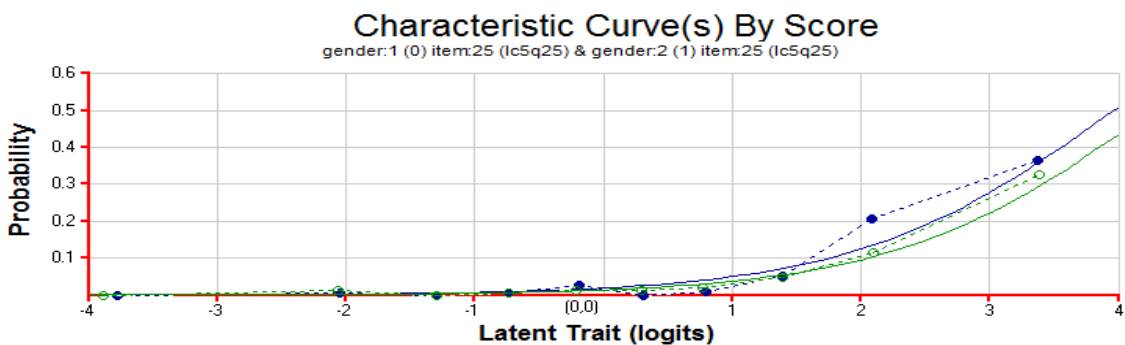
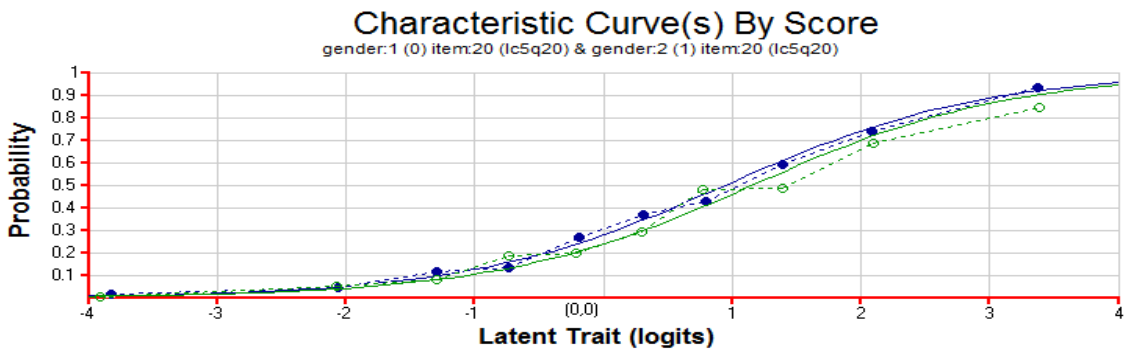
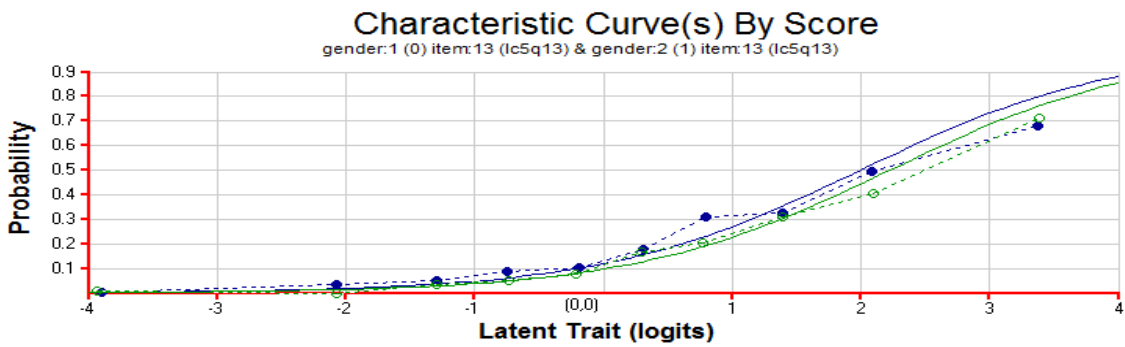
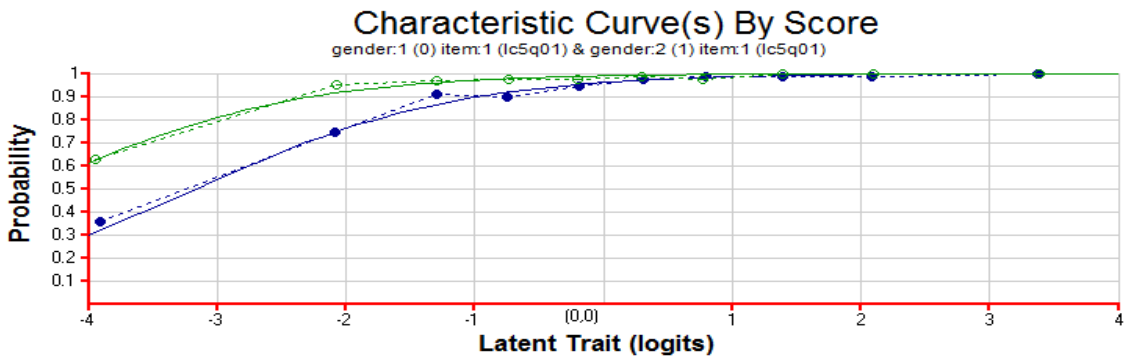
F.4 Centred Item Locations of Male and Female Students in Grammar and Punctuation (2015)

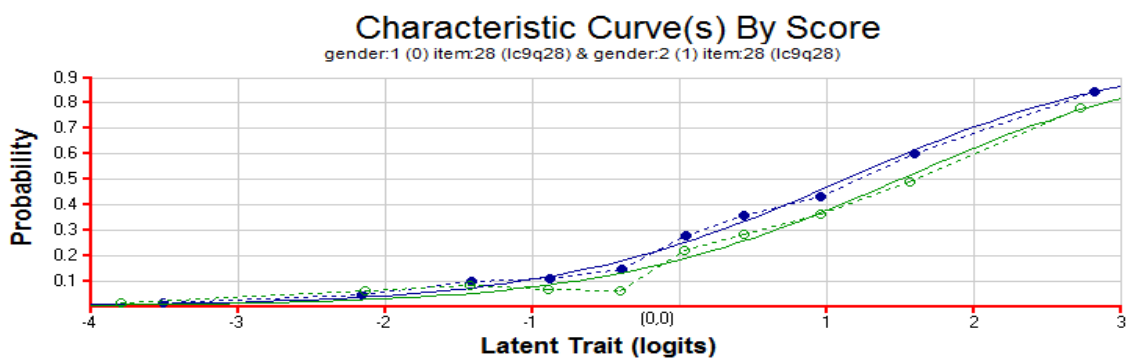
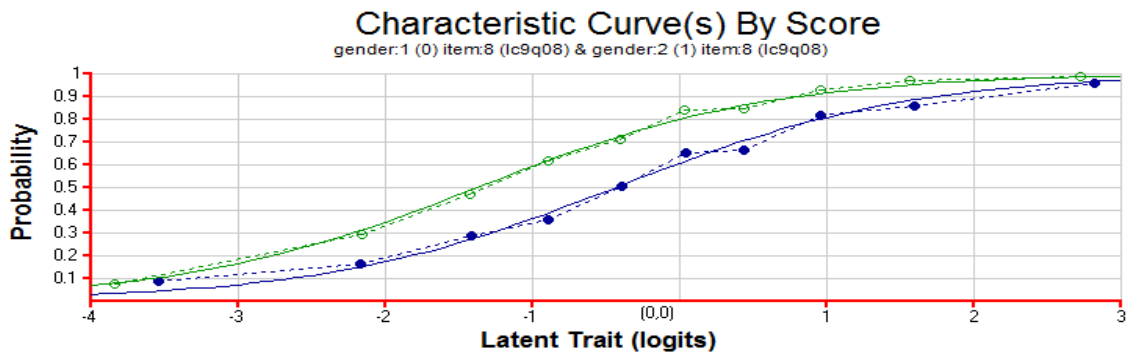
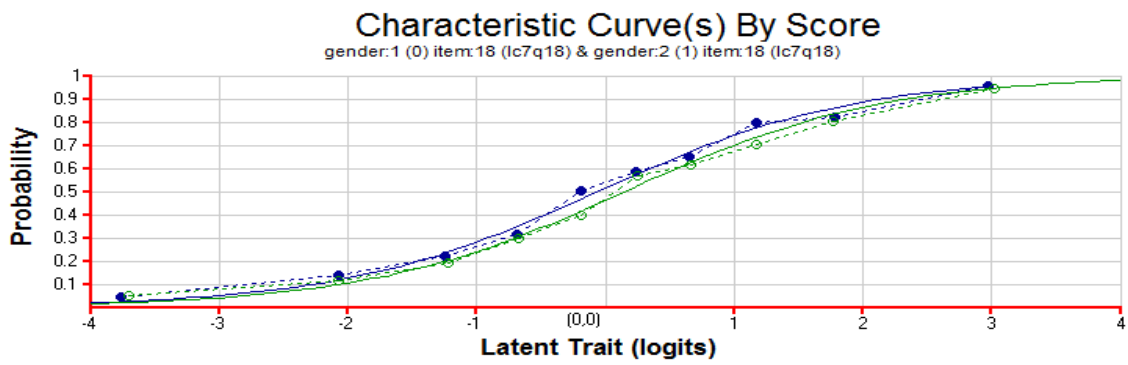
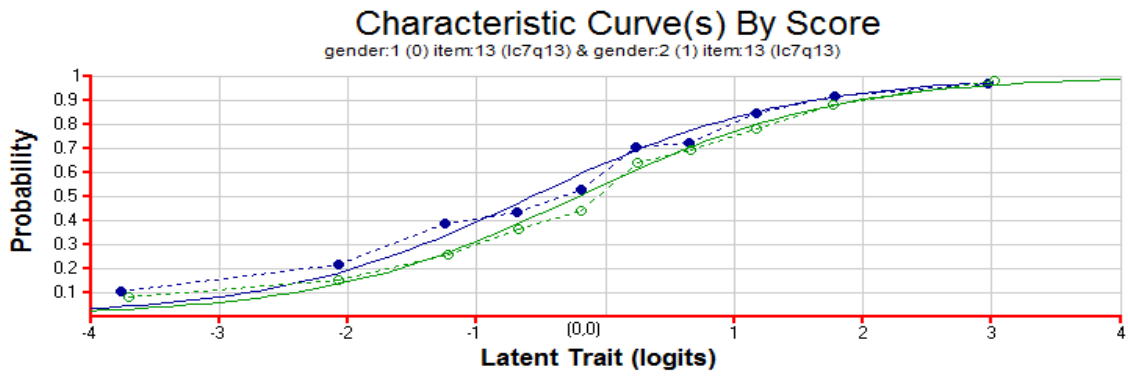
F.5 Centred Item Locations of Male and Female Students in Numeracy (2015)

F.6 Item DIF Plots for Items Showing Gender DIF

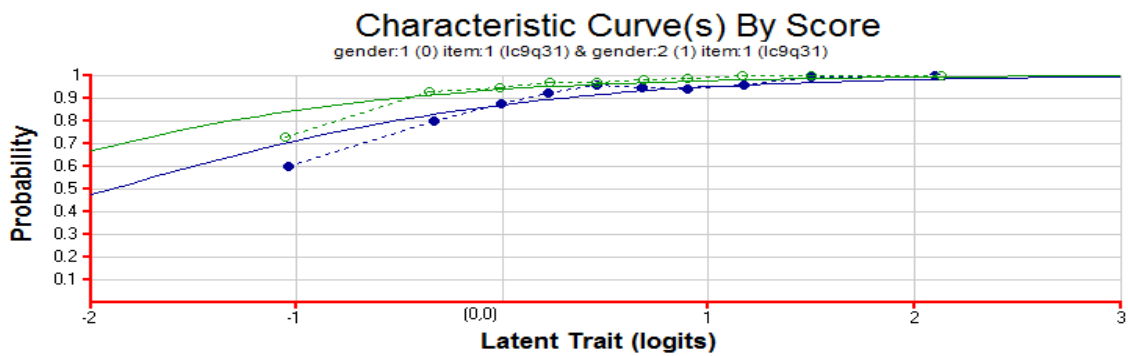
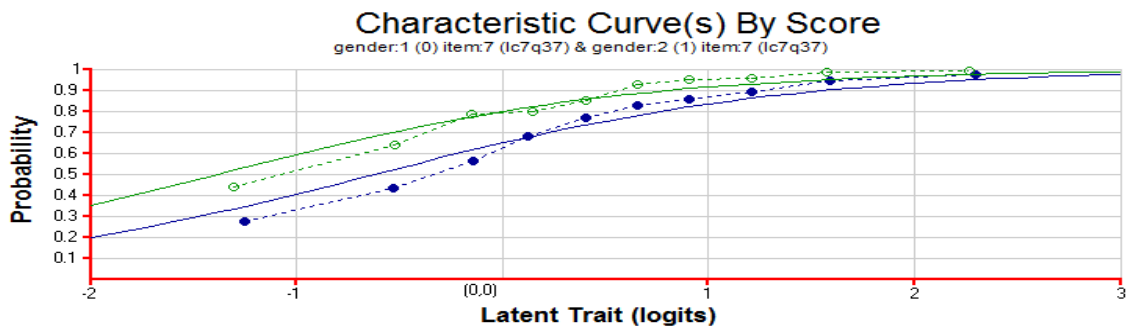
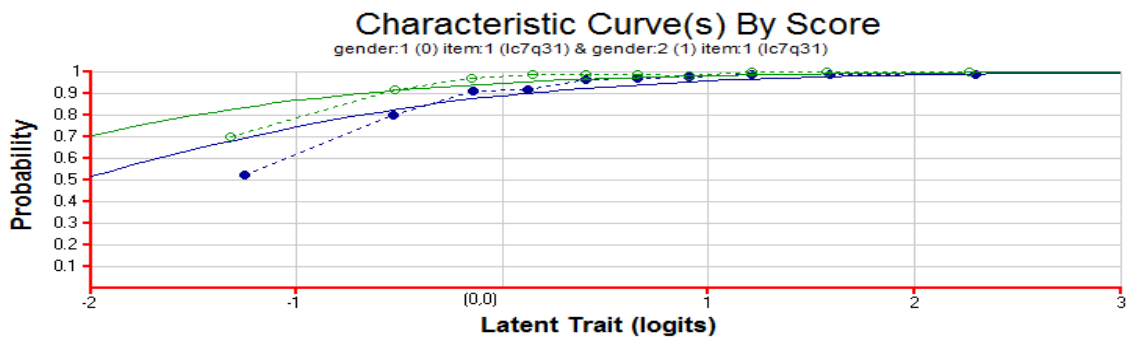
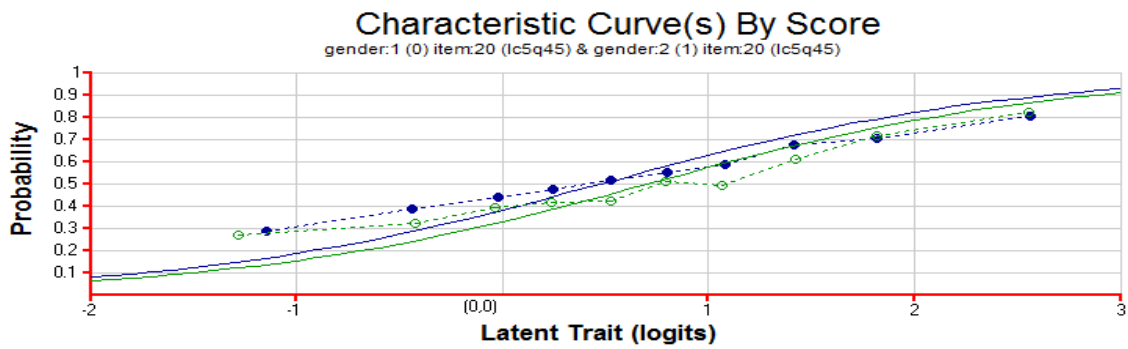


Spelling

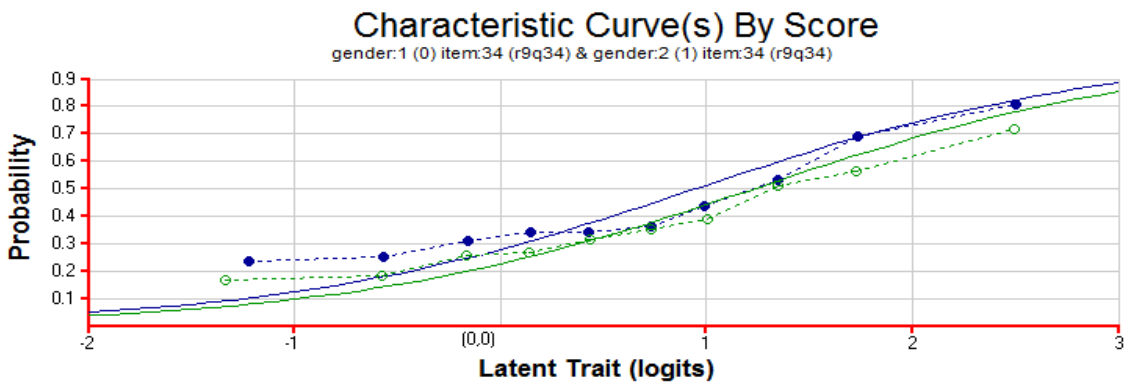
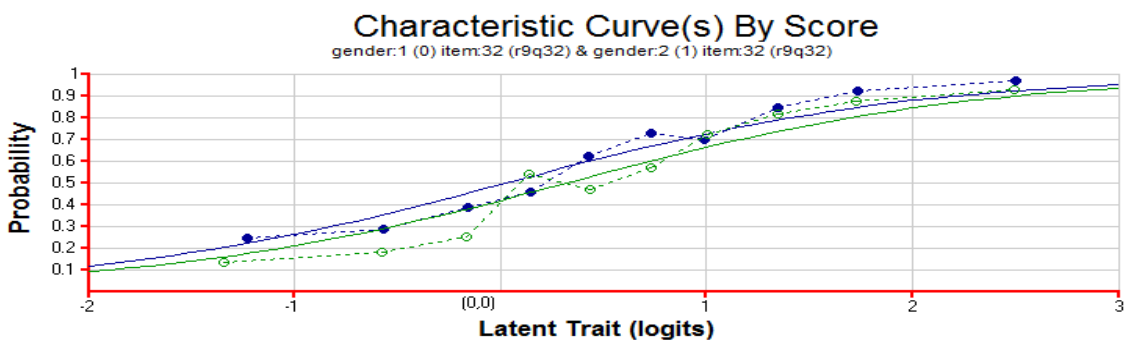
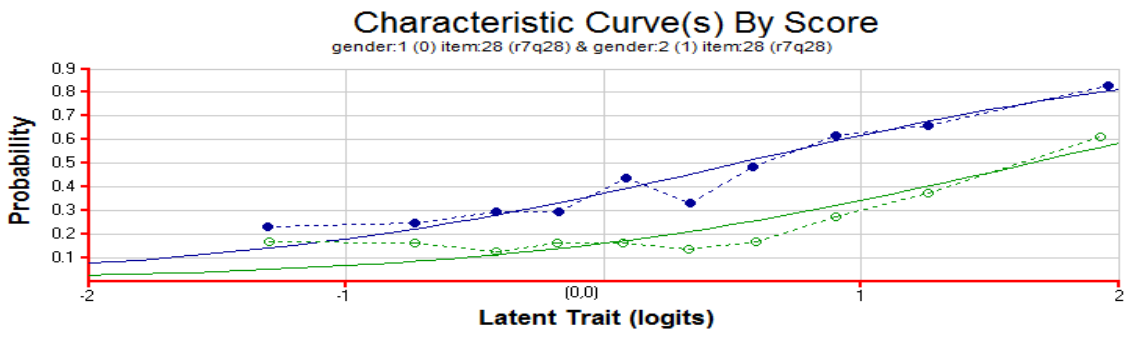




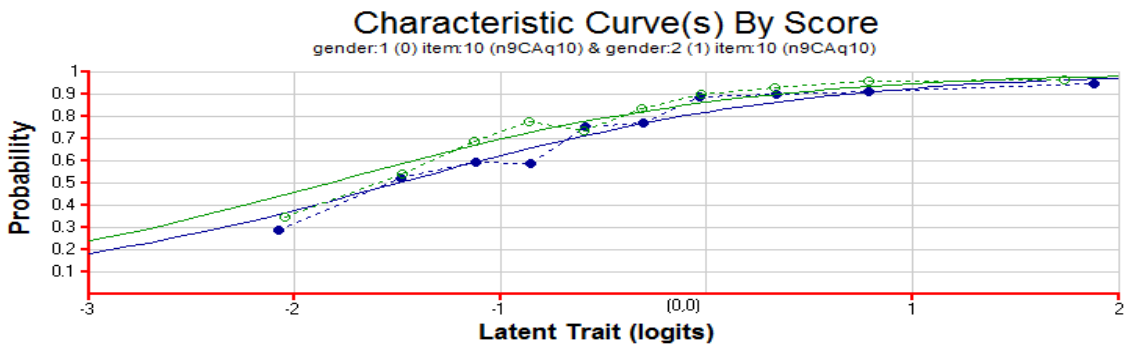
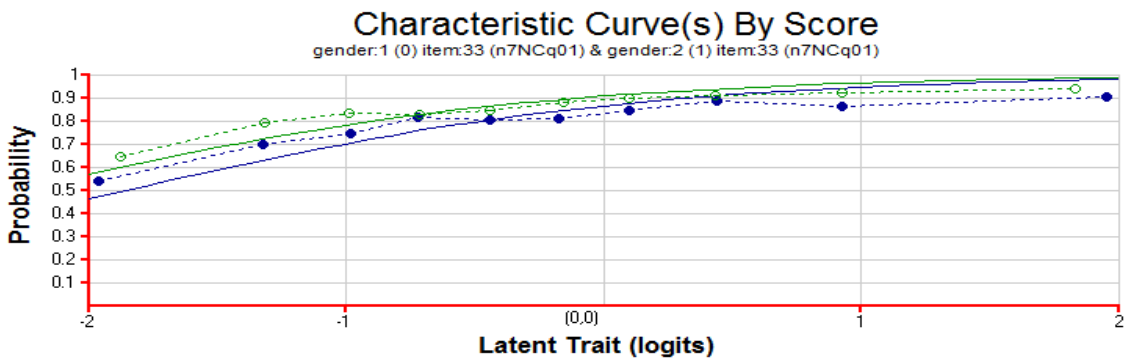
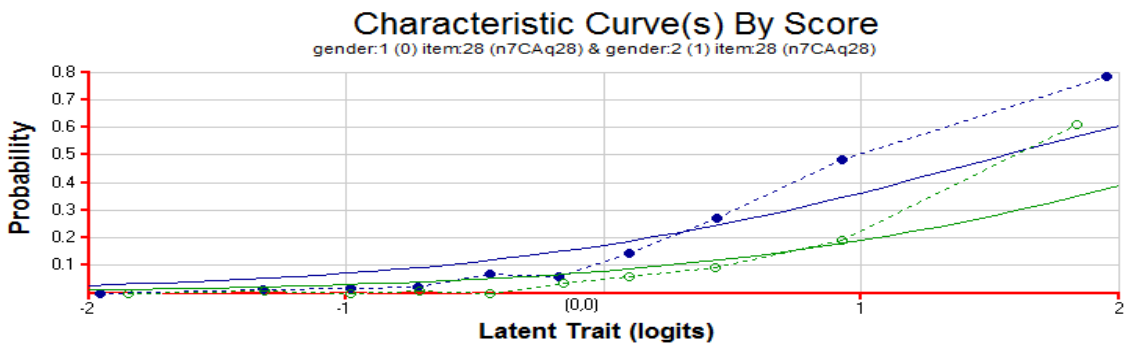
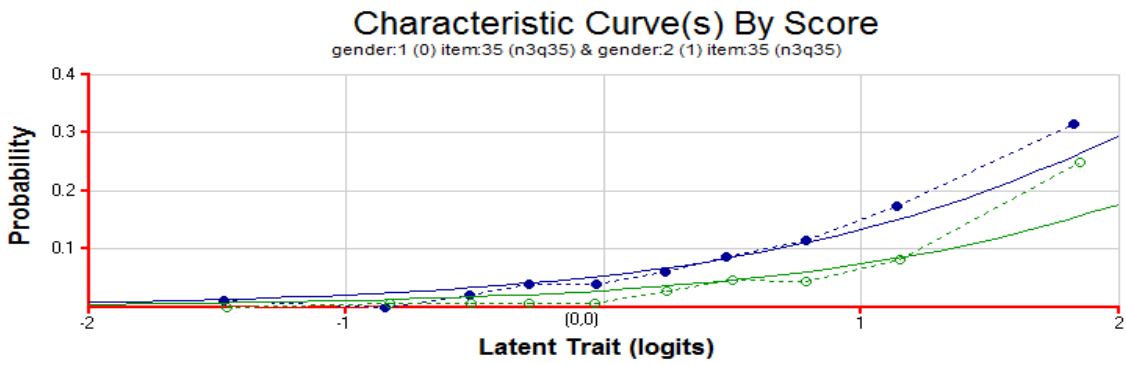
Grammar and Punctuation

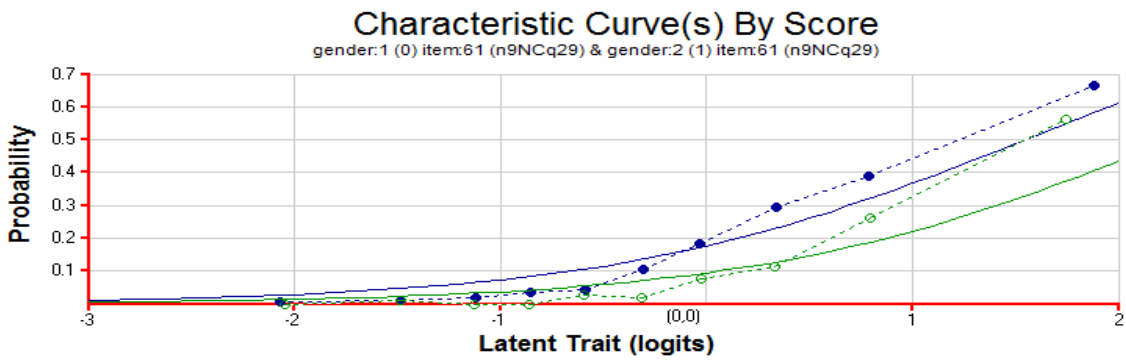
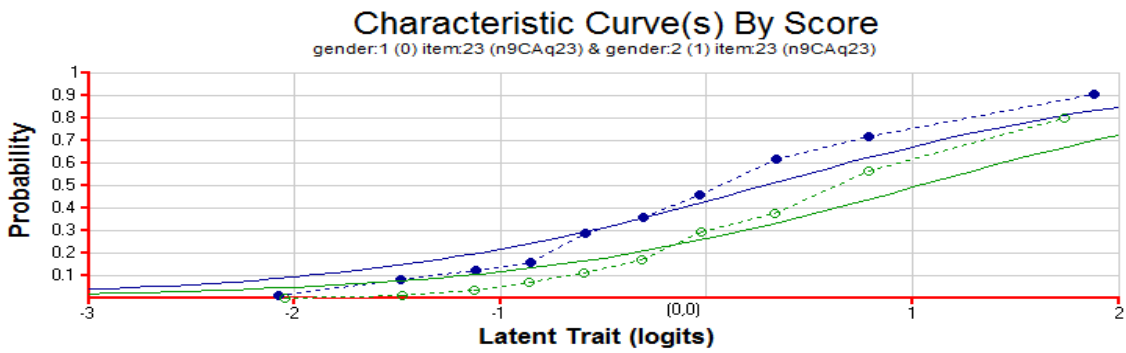
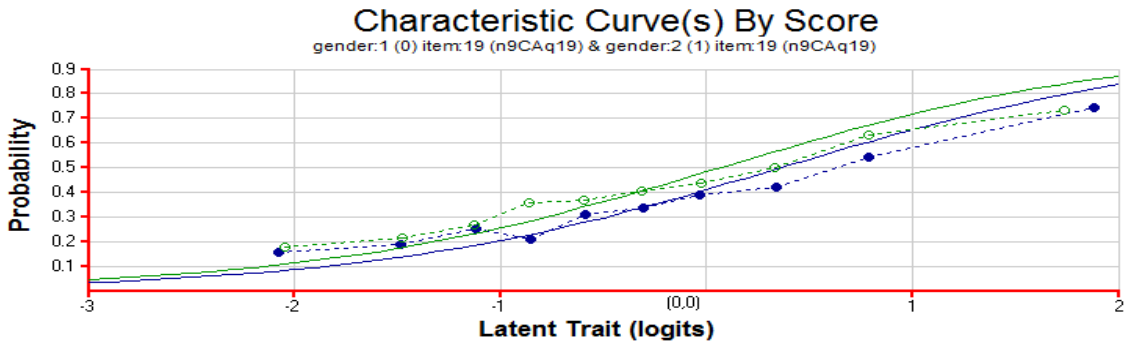


Reading



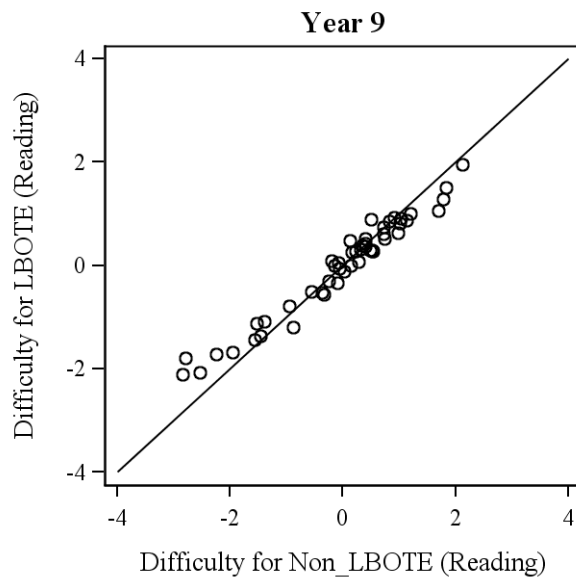
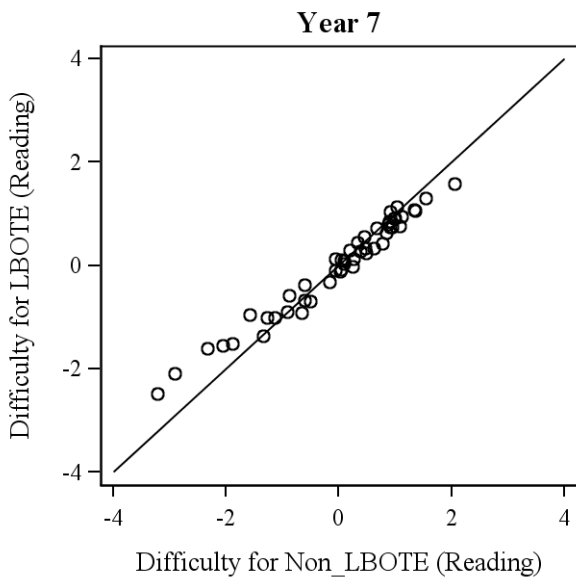
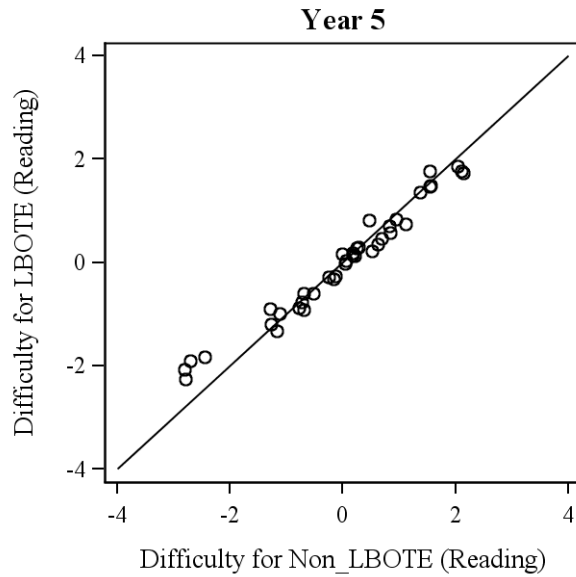
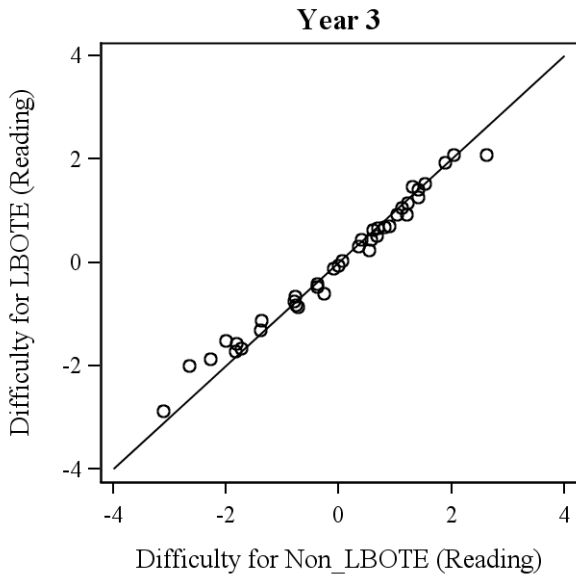
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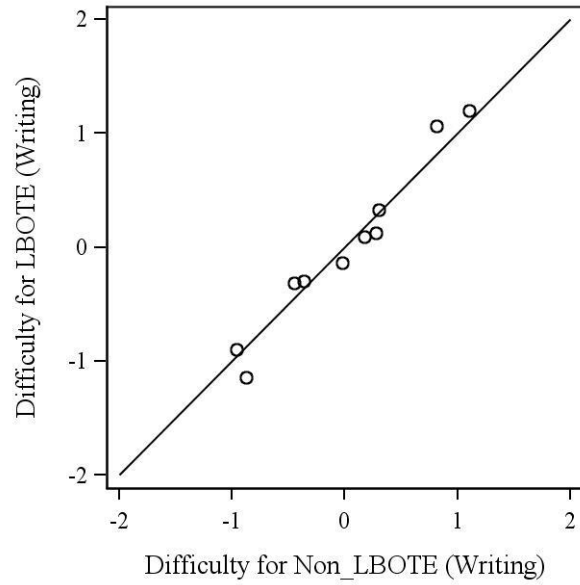


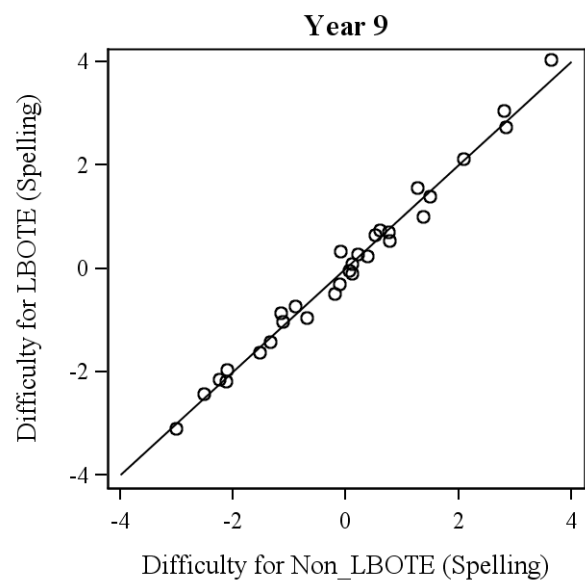
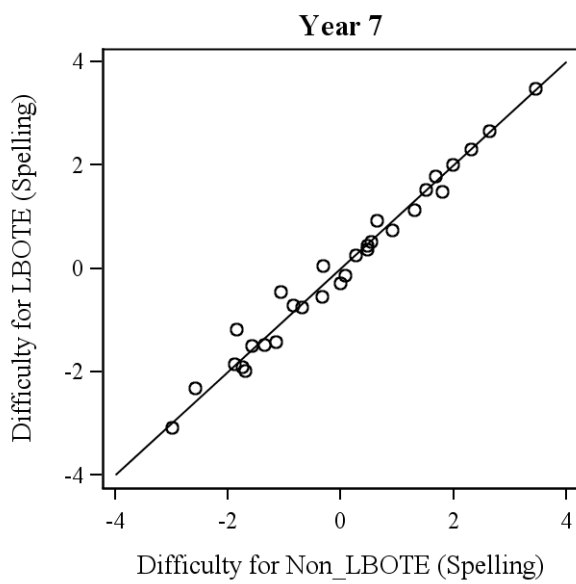
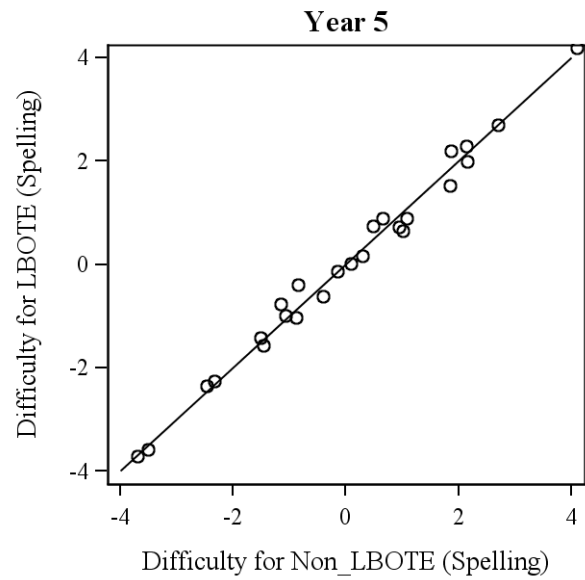
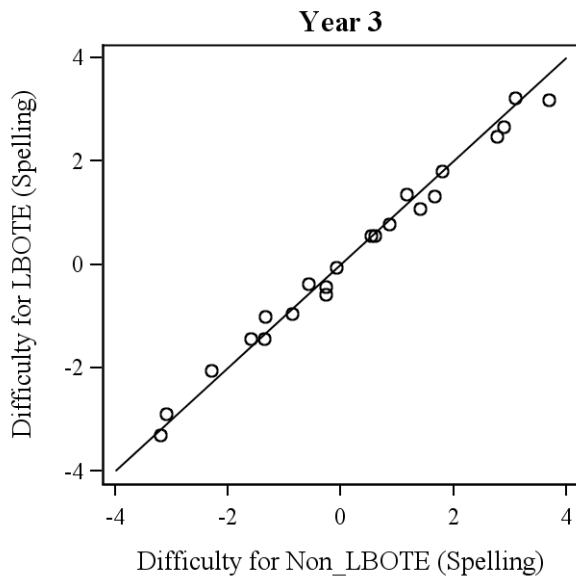


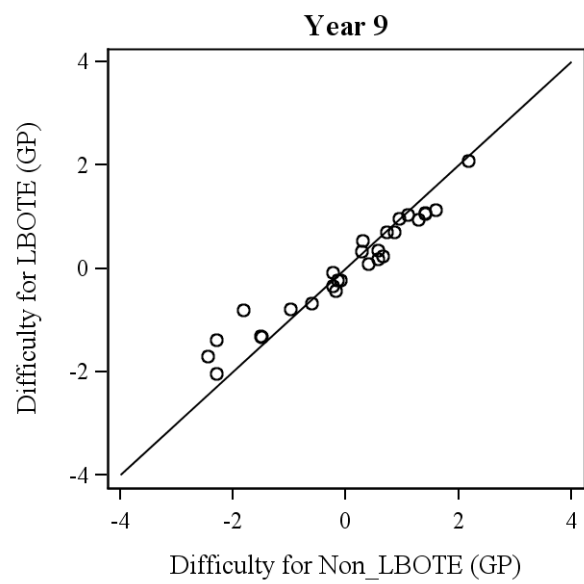
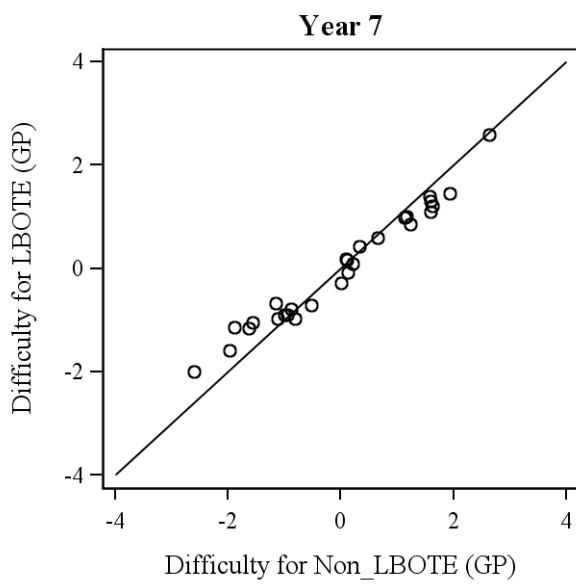
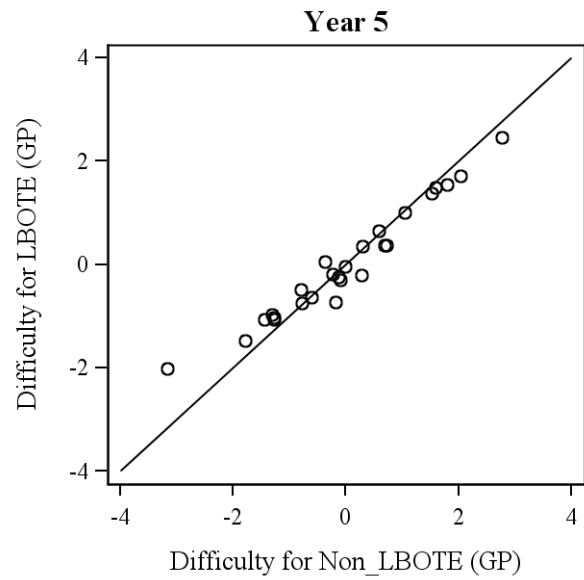
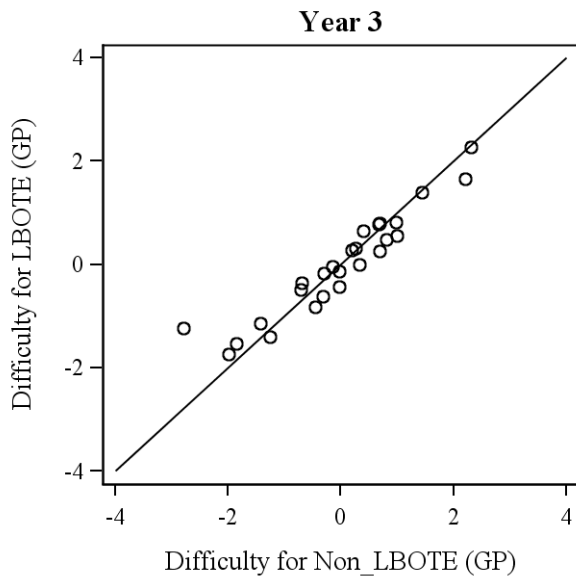
APPENDIX G. LBOTE DIF ANALYSIS

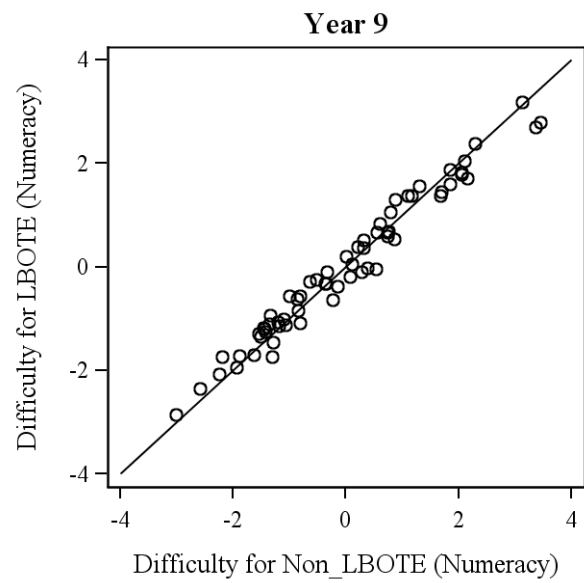
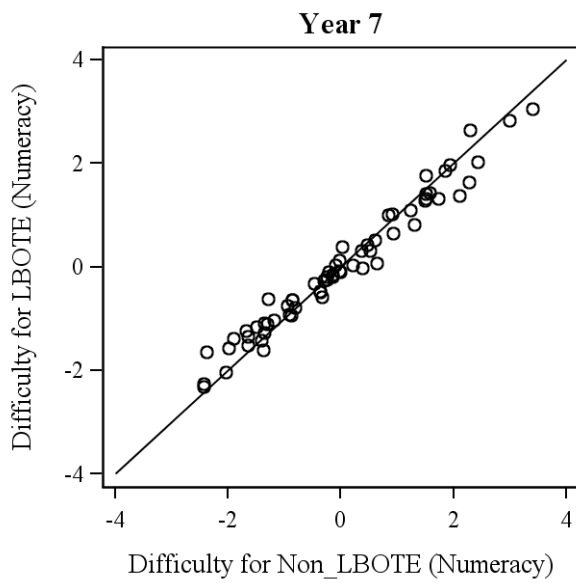
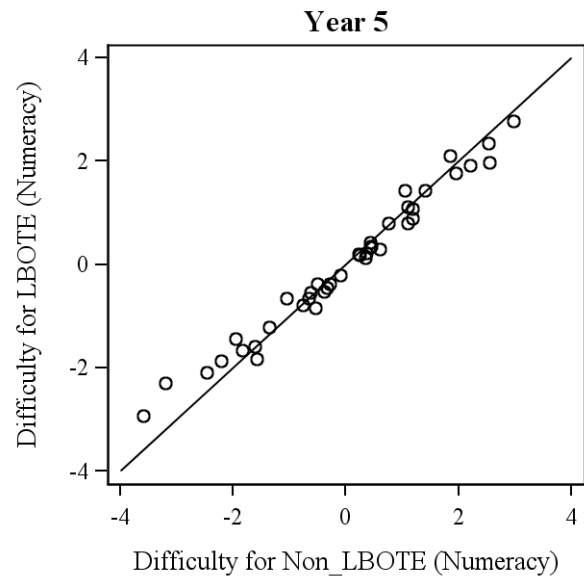
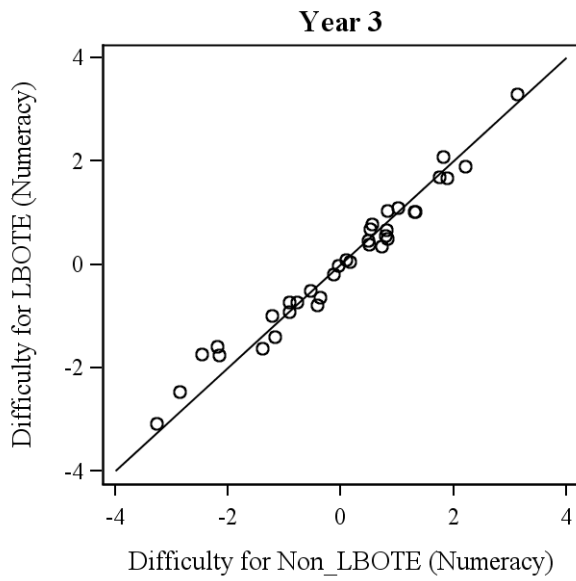
G.1 Centred Item Locations of LBOTE and Non-LBOTE Students in Reading (2015)



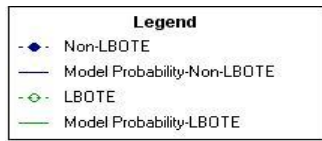
G.2 Centred Item Locations of LBOTE and Non-LBOTE Students Years 3, 5, 7, and 9 Writing (2015)

G.3 Centred Item Locations of LBOTE and Non-LBOTE Students in Spelling (2015)

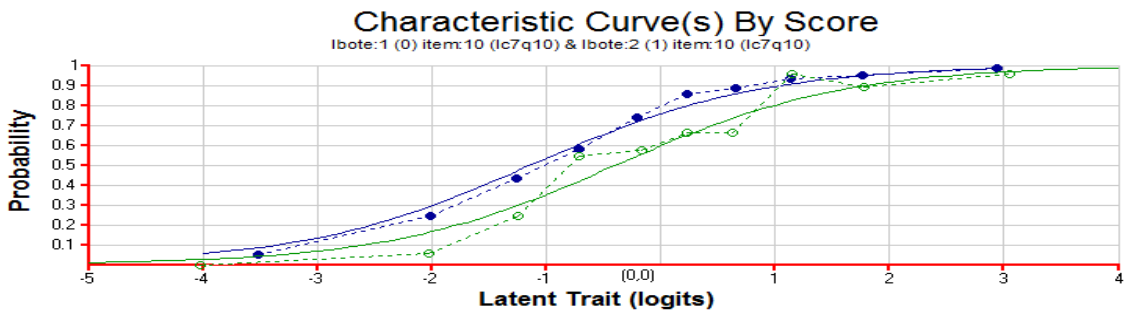
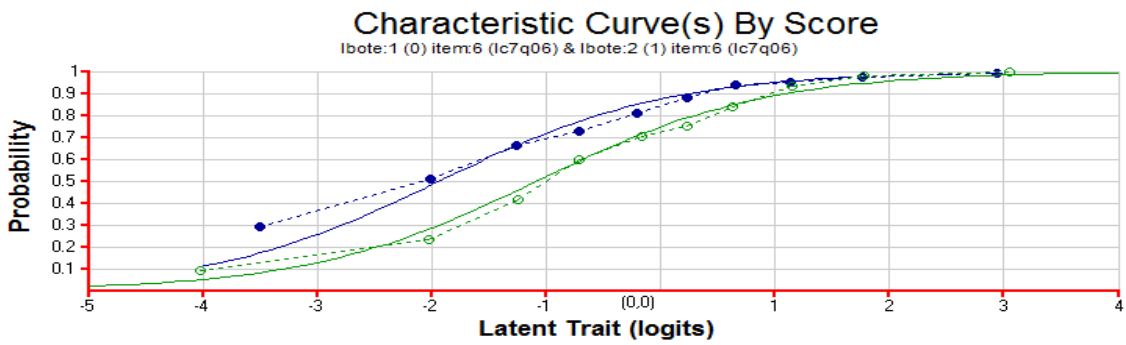
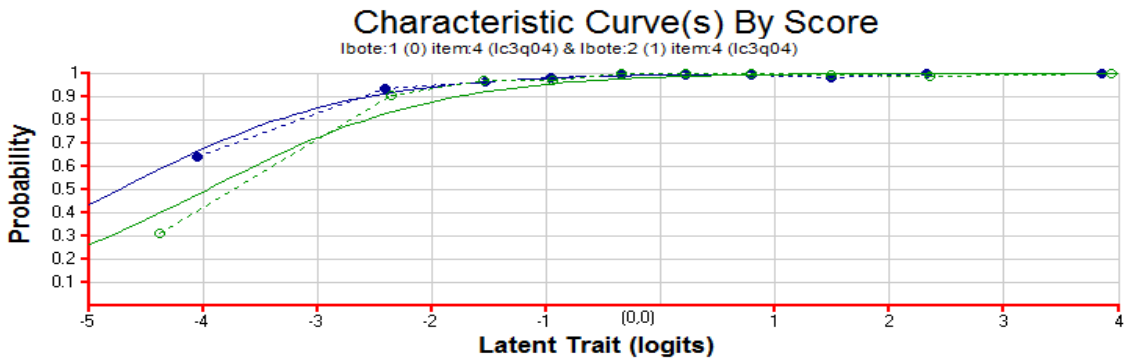
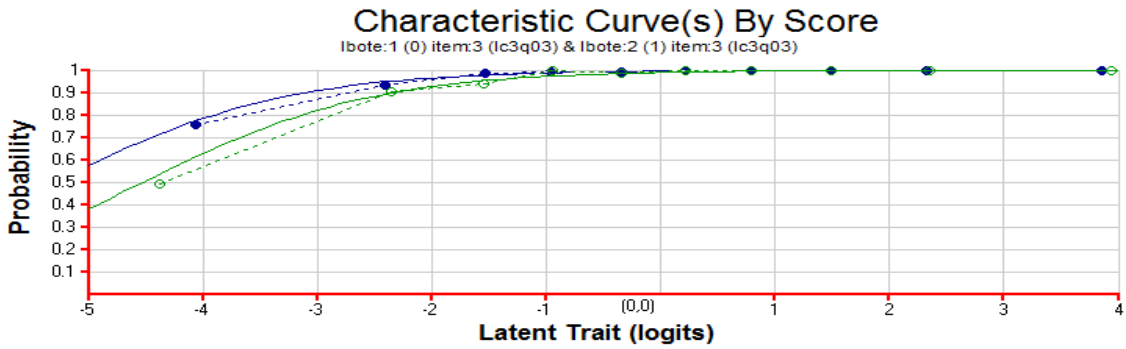
G.4 Centred Item Locations of LBOTE and Non-LBOTE Students in Grammar and Punctuation (2015)

G.5 Centred Item Locations of LBOTE and Non-LBOTE Students in Numeracy (2015)

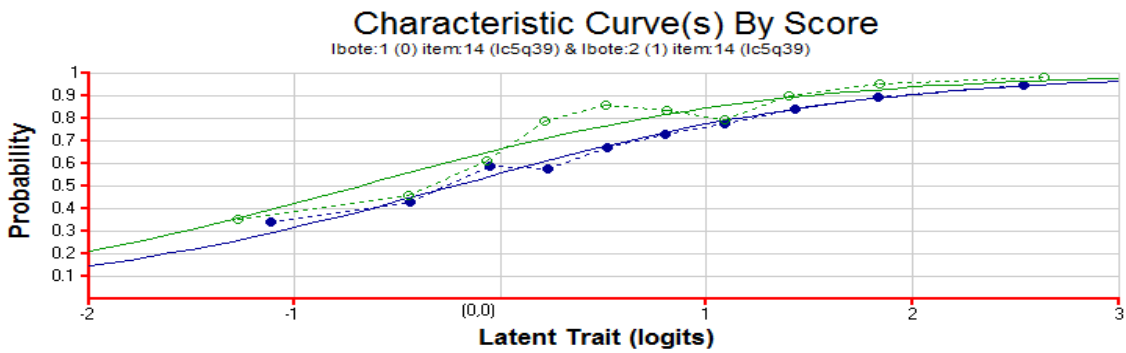
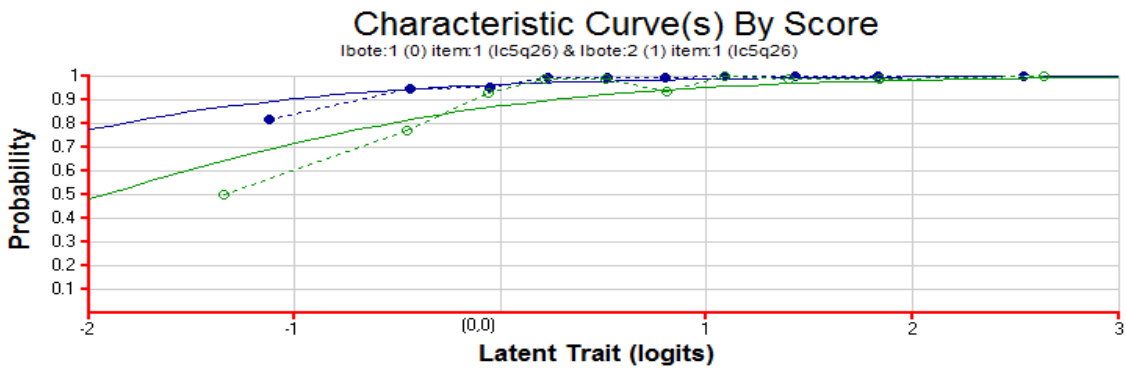
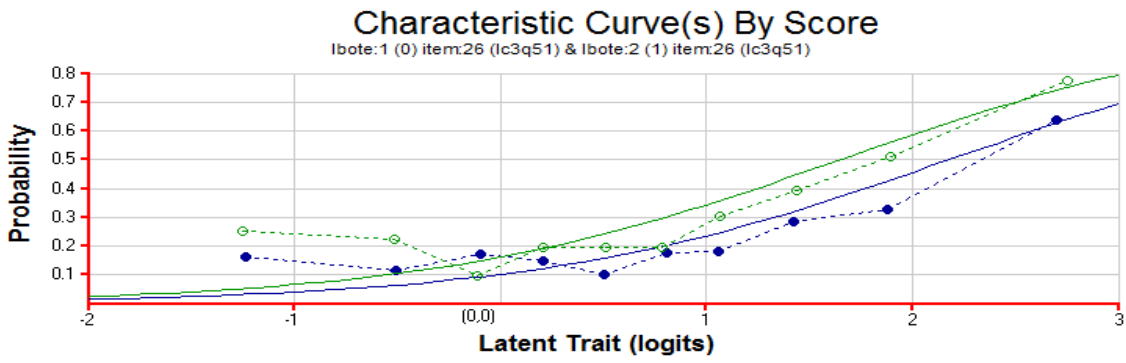
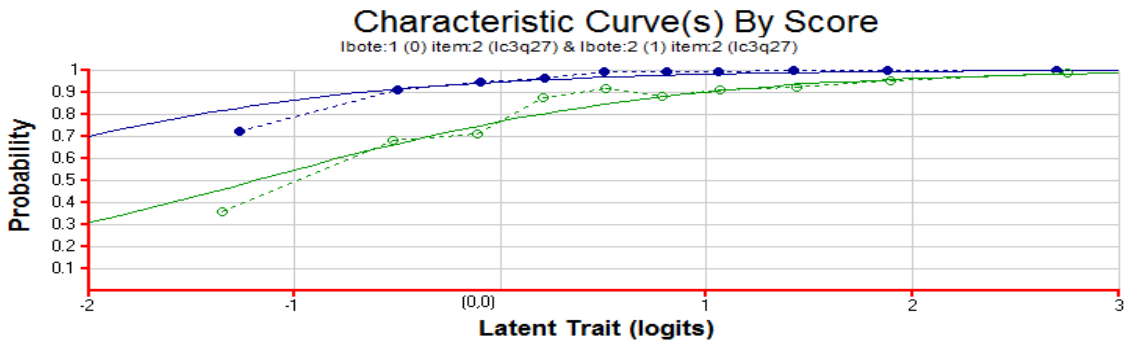
G.6 Item DIF Plots for Items Showing LBOTE DIF

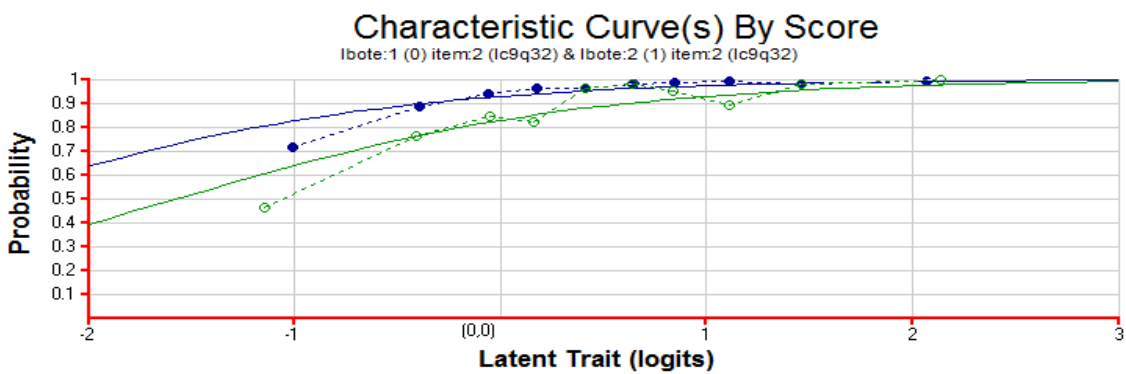
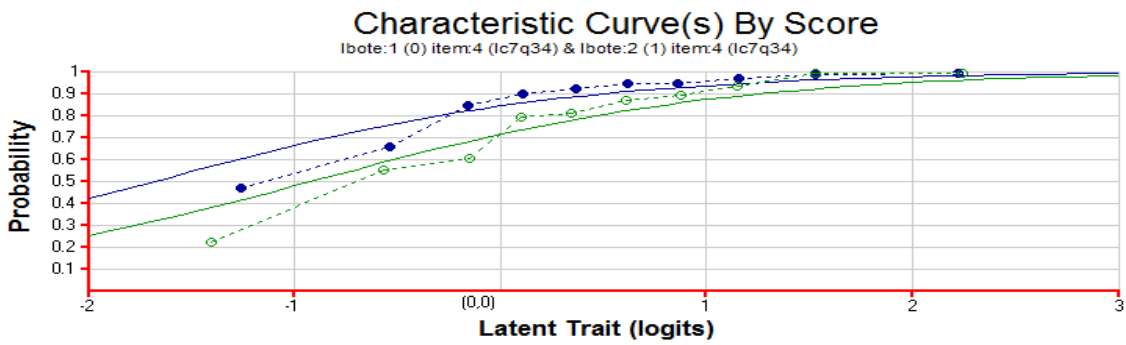
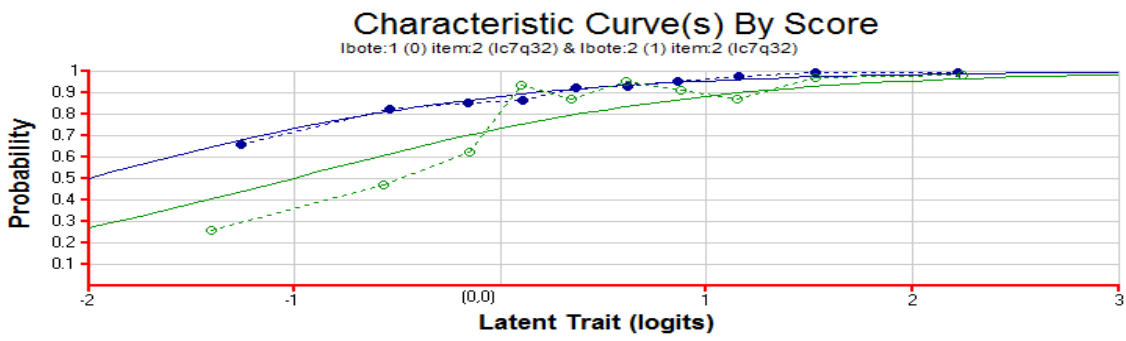
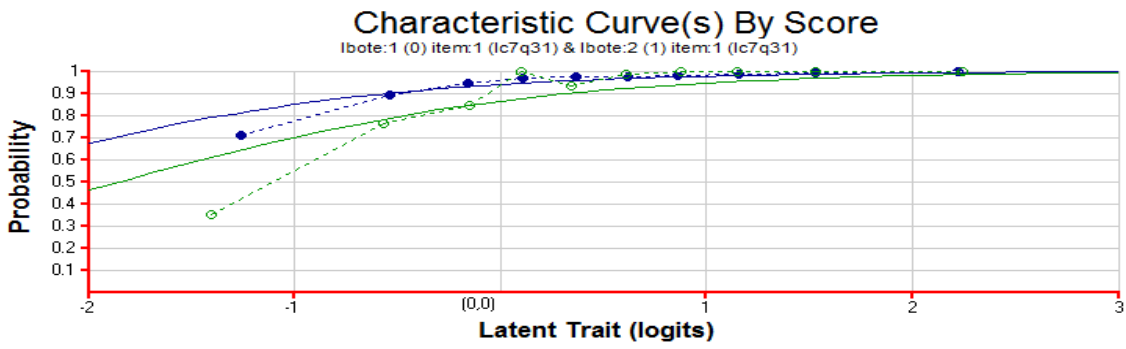


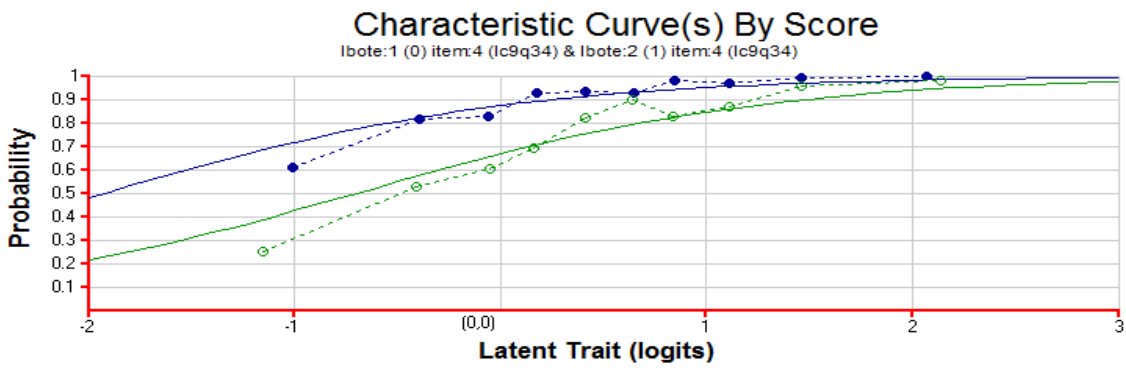
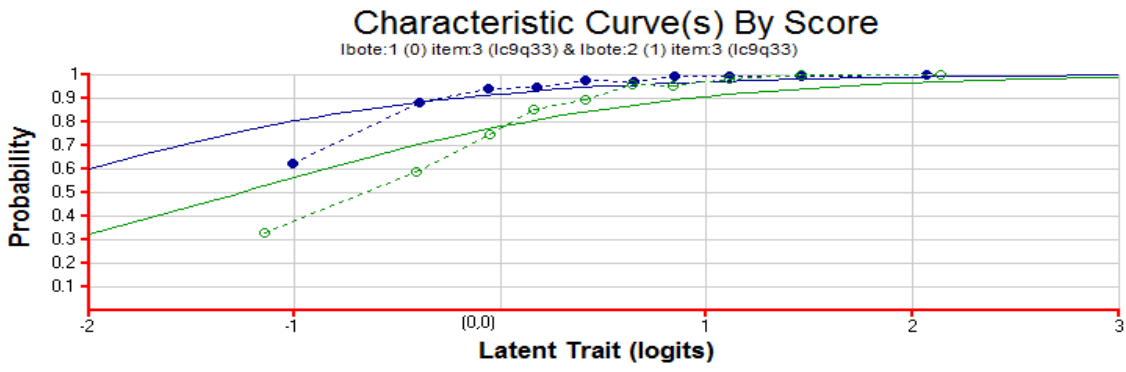
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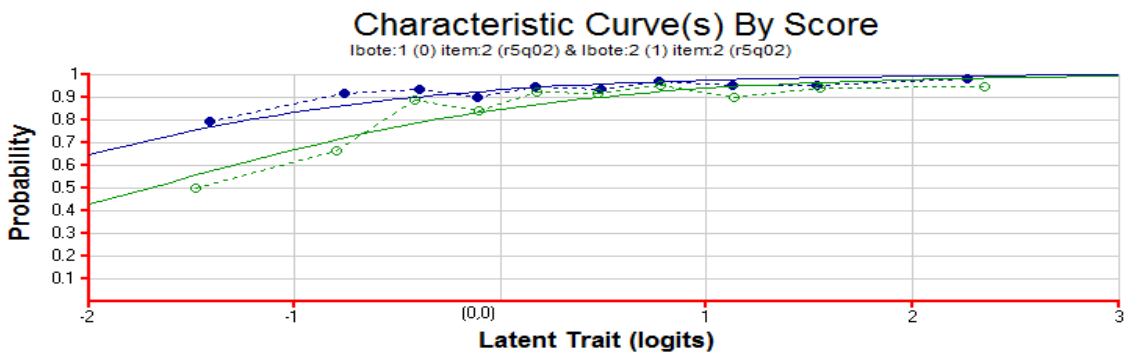
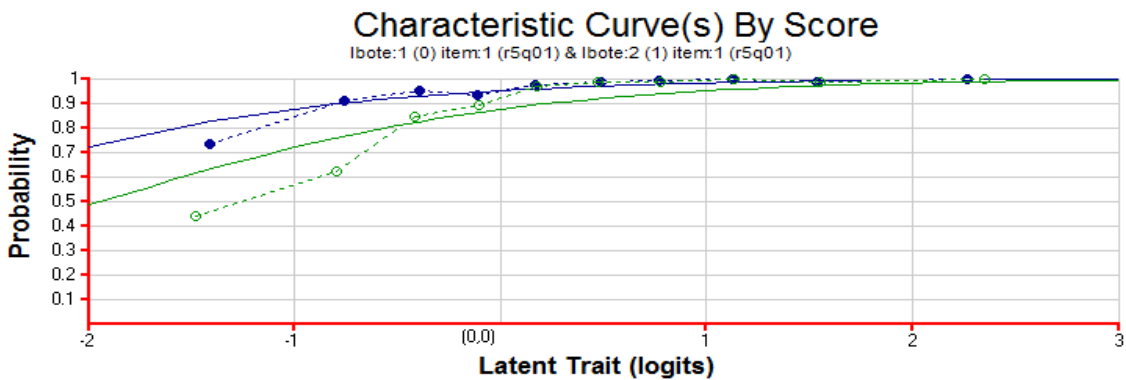
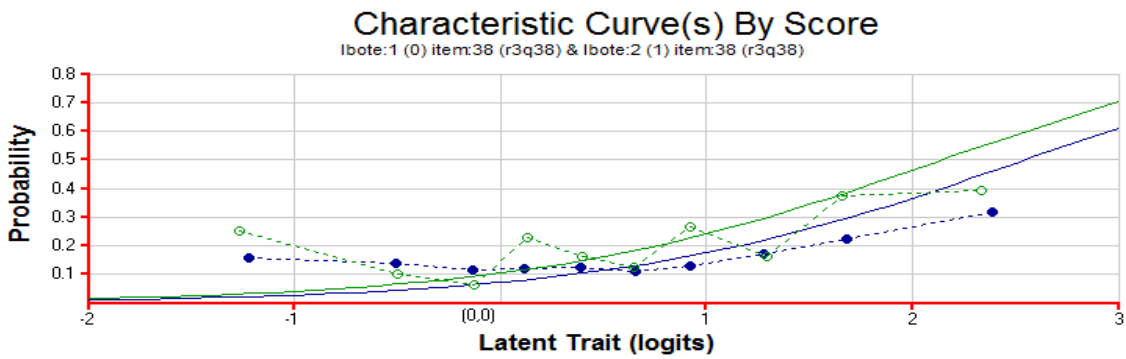
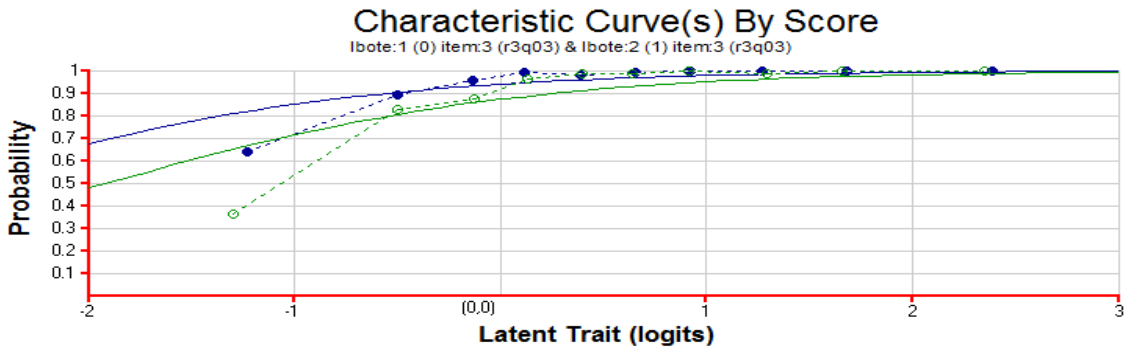
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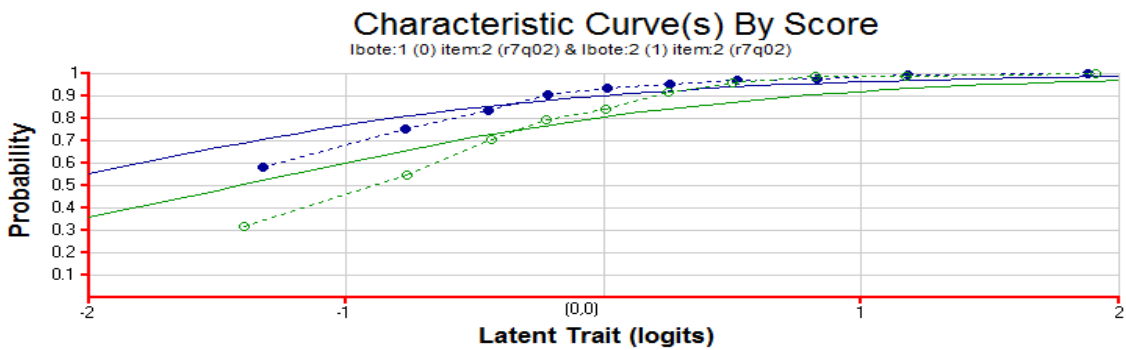
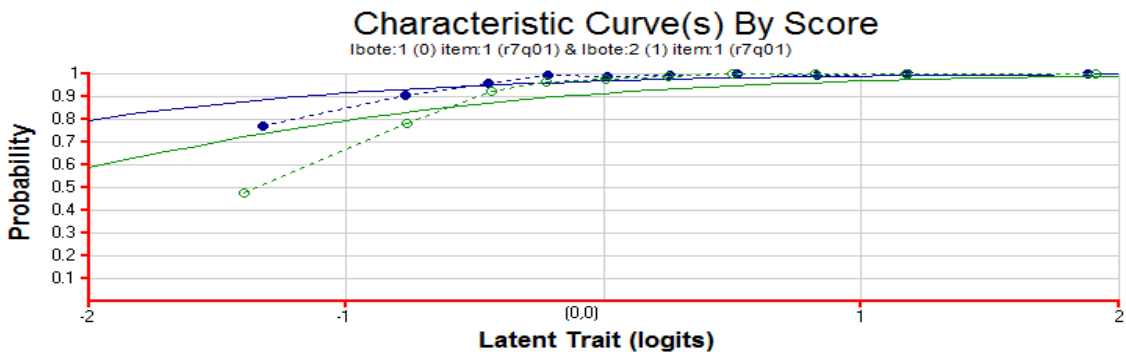
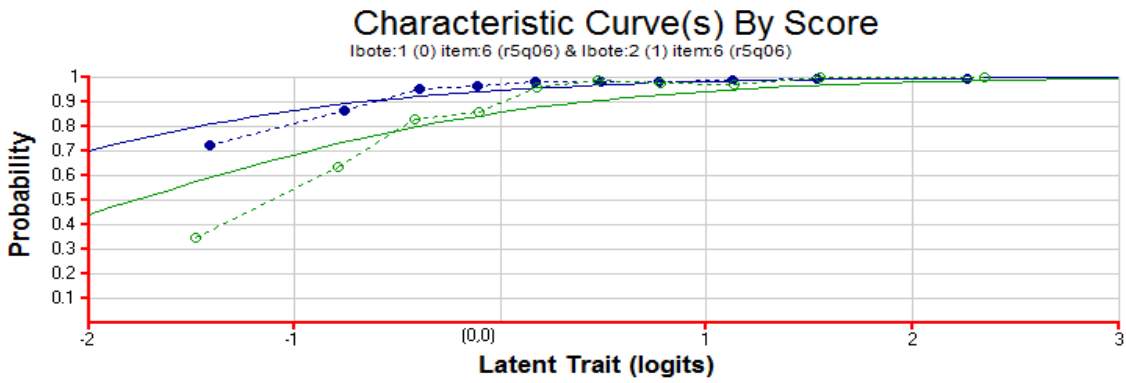
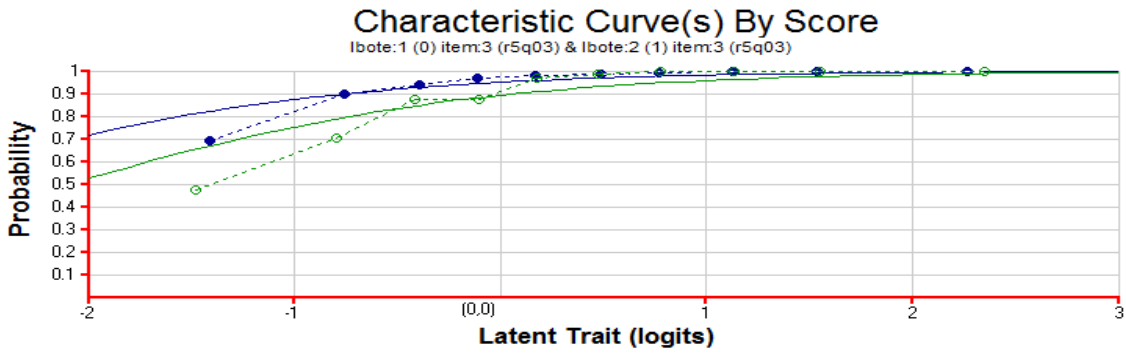


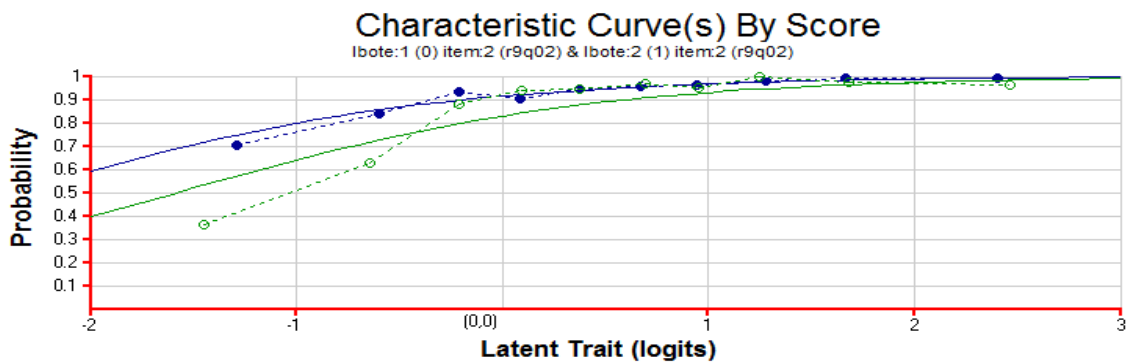
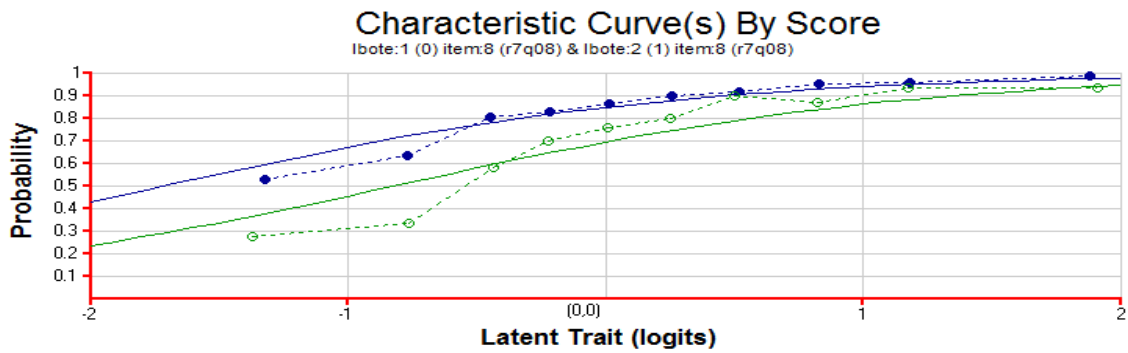
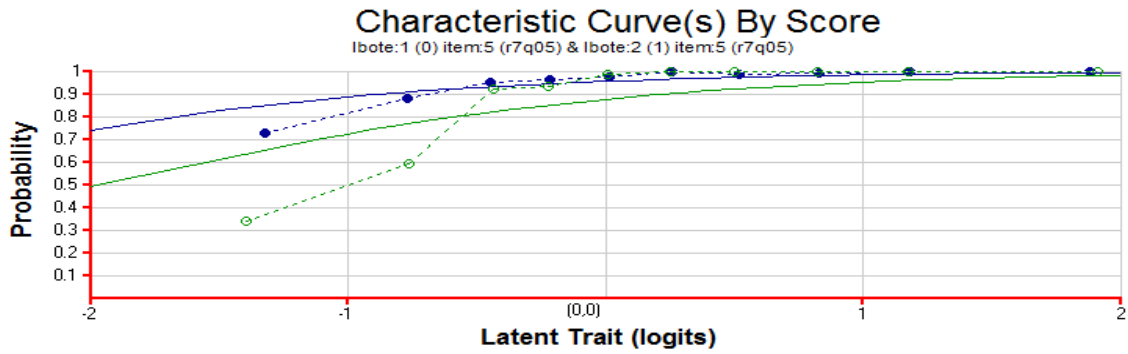
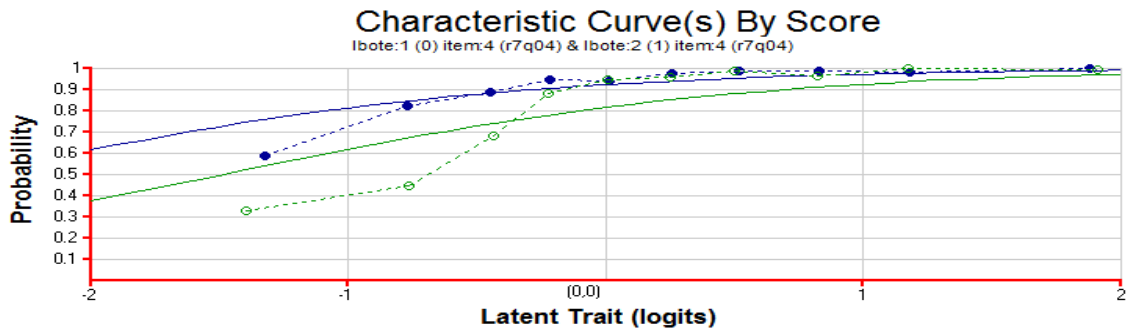


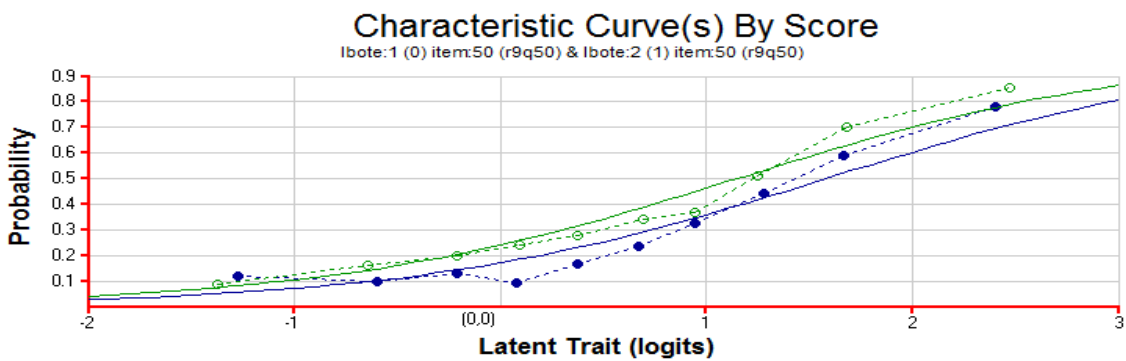
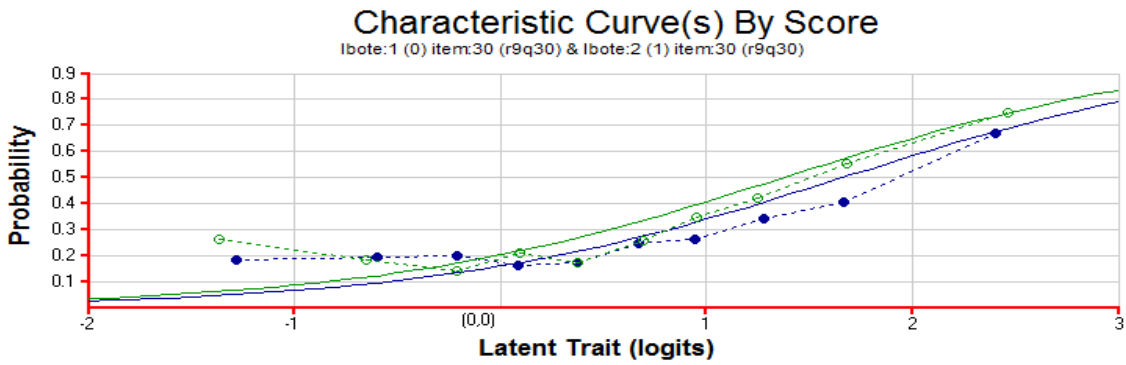
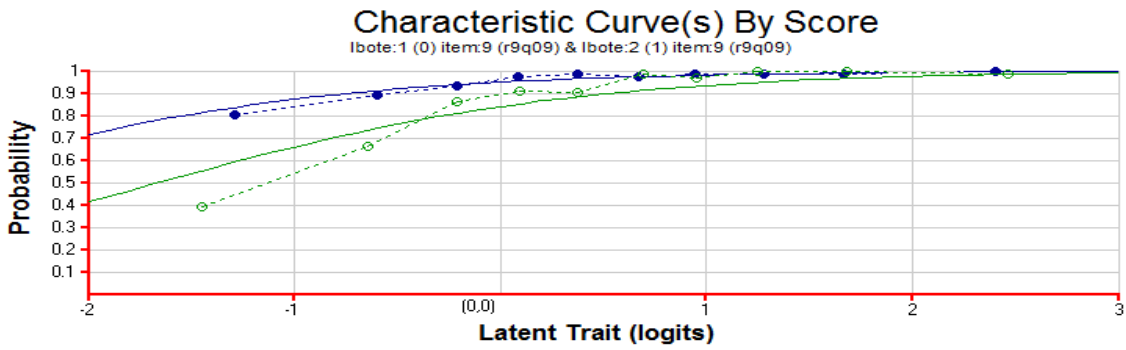
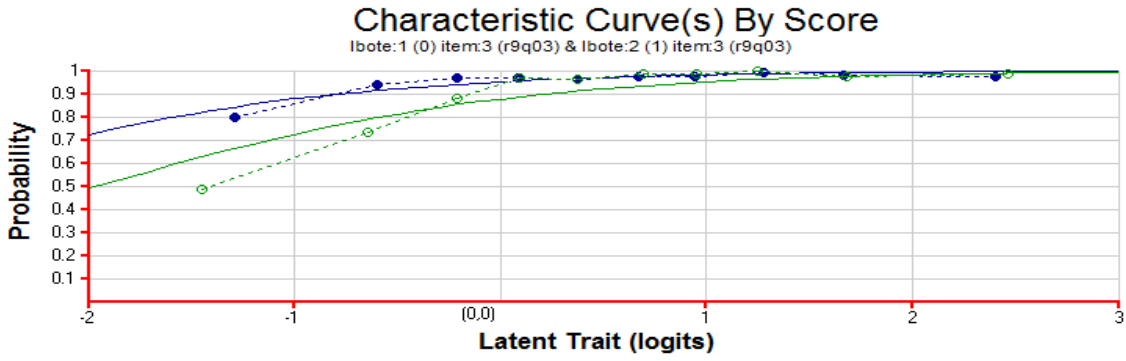


Reading

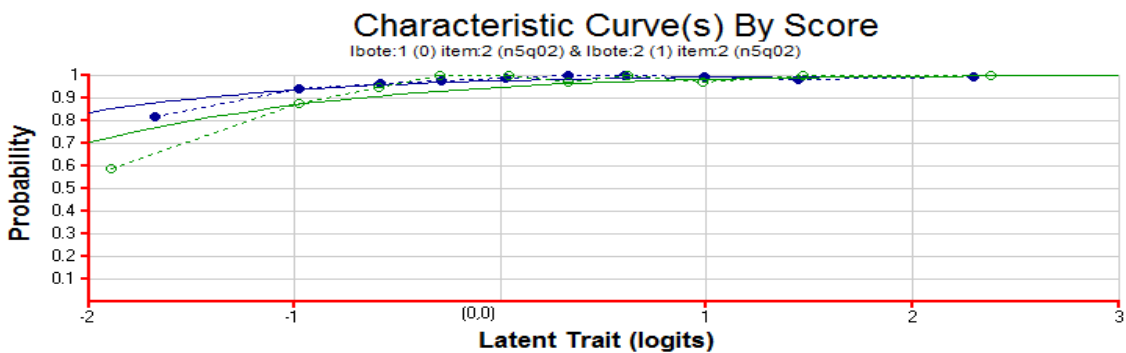
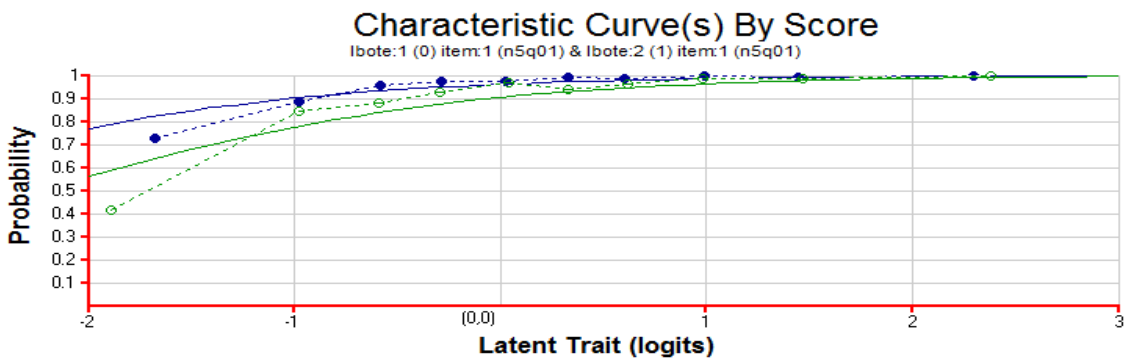
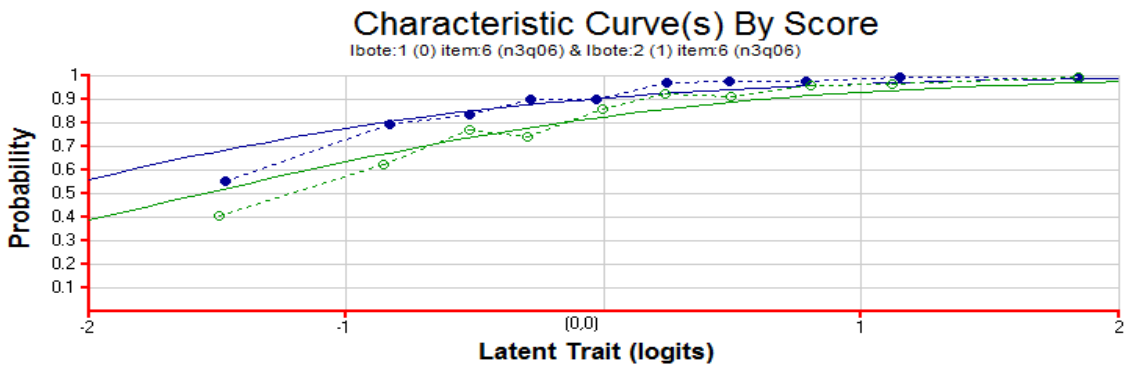
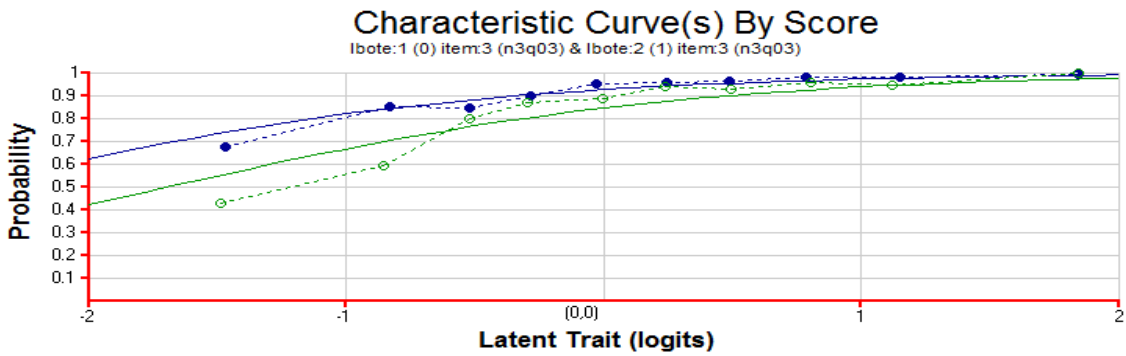


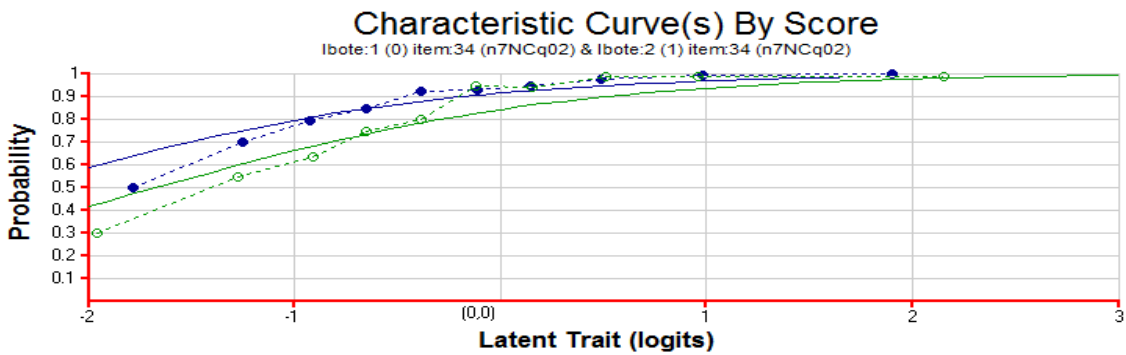
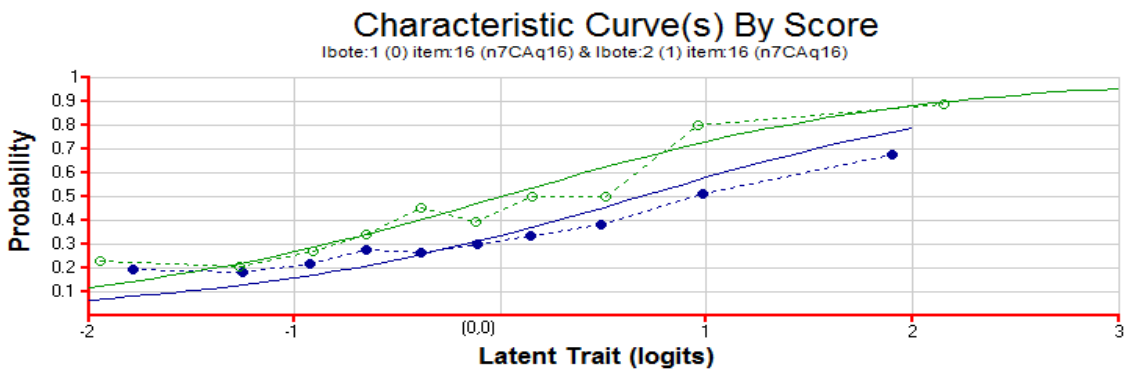
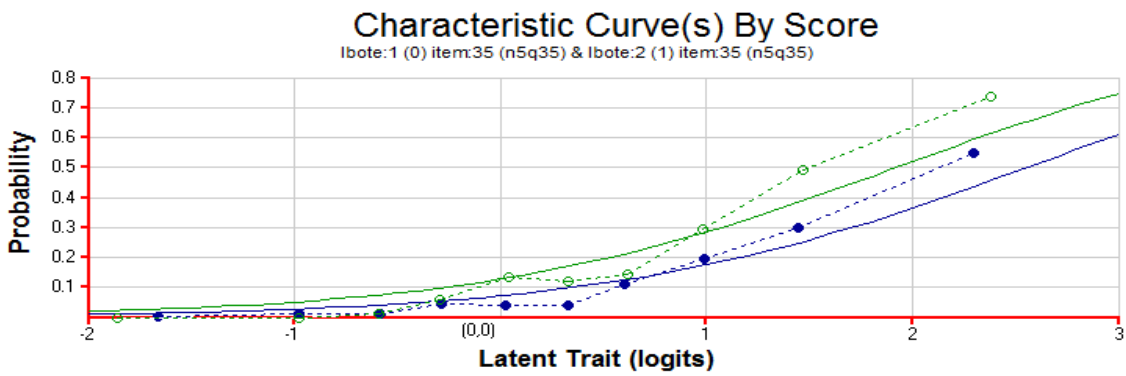
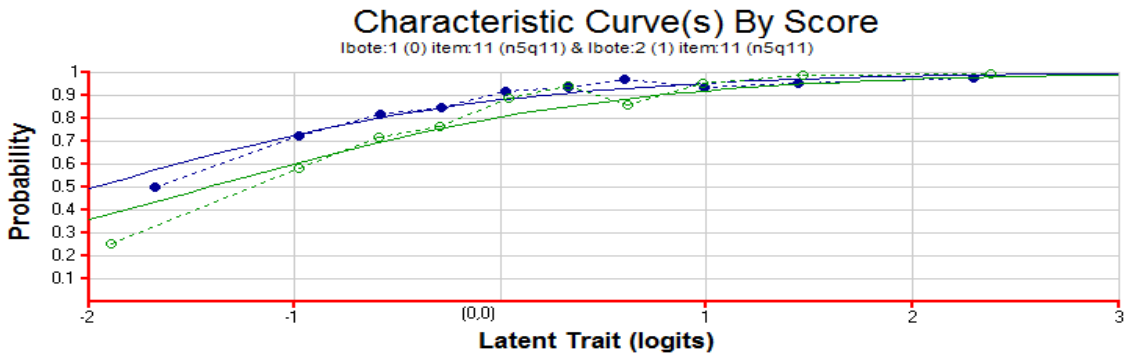


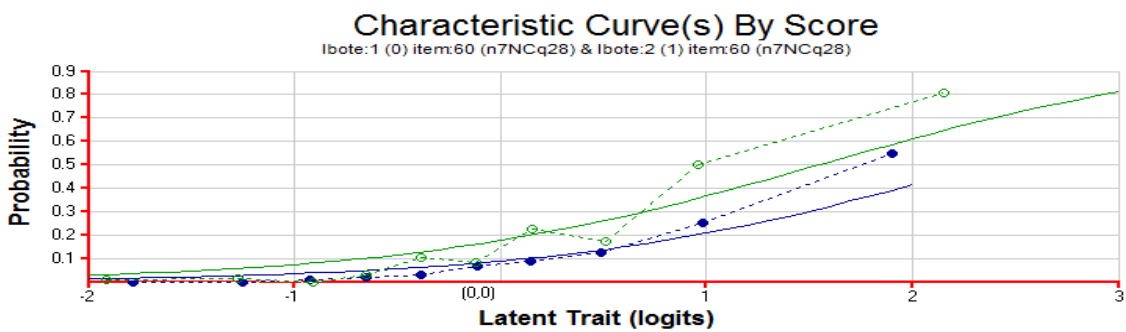
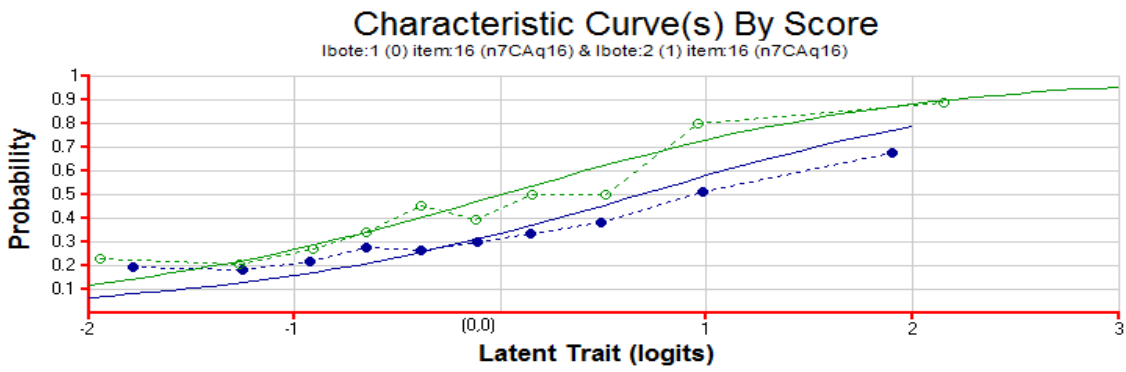
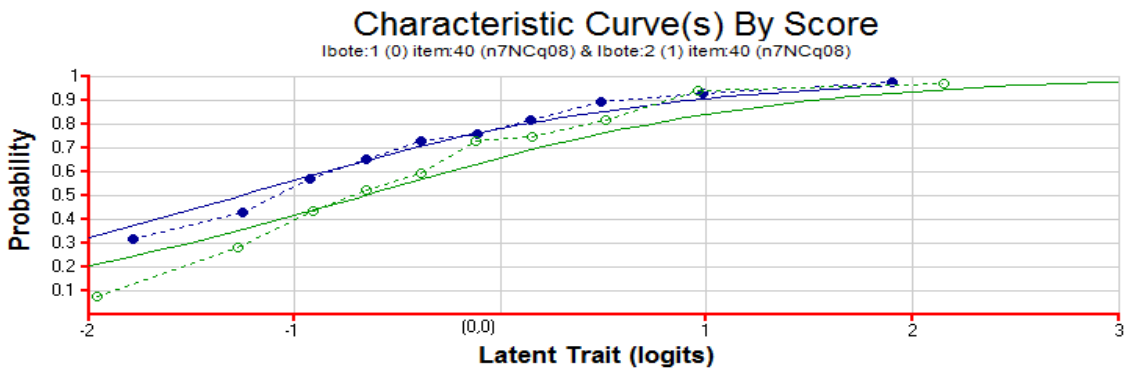
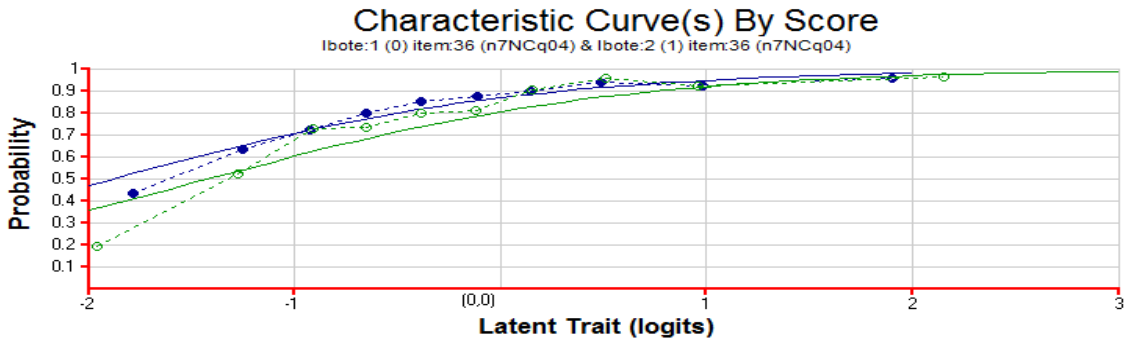


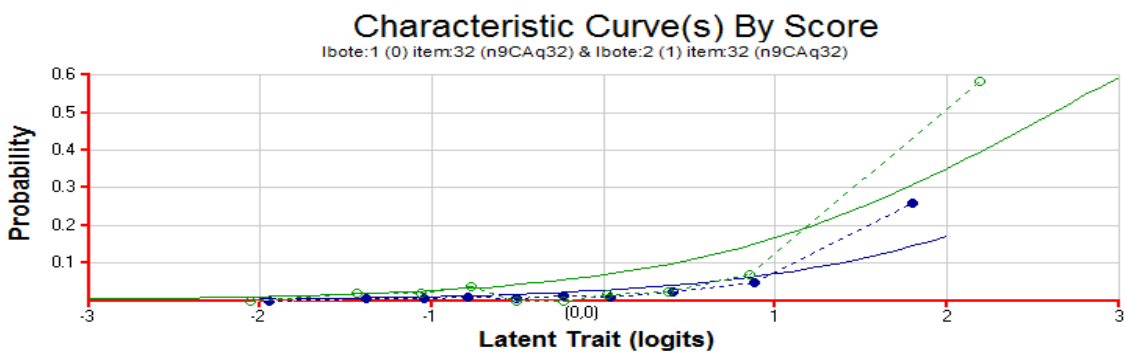
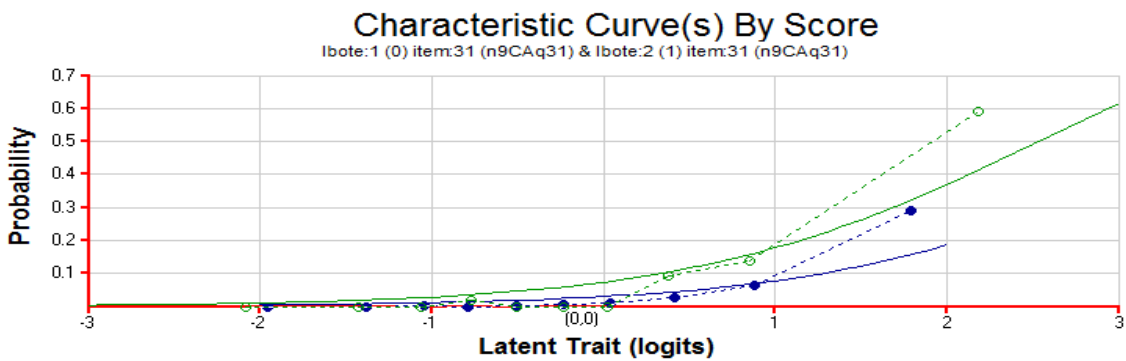
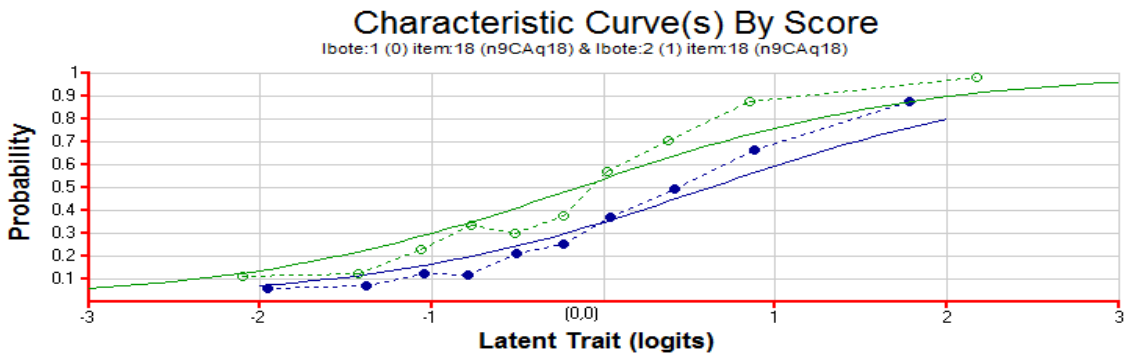
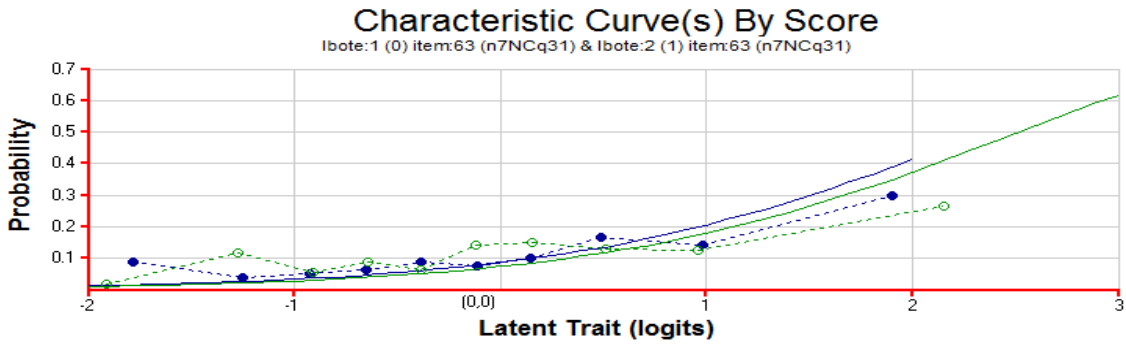


Numeracy



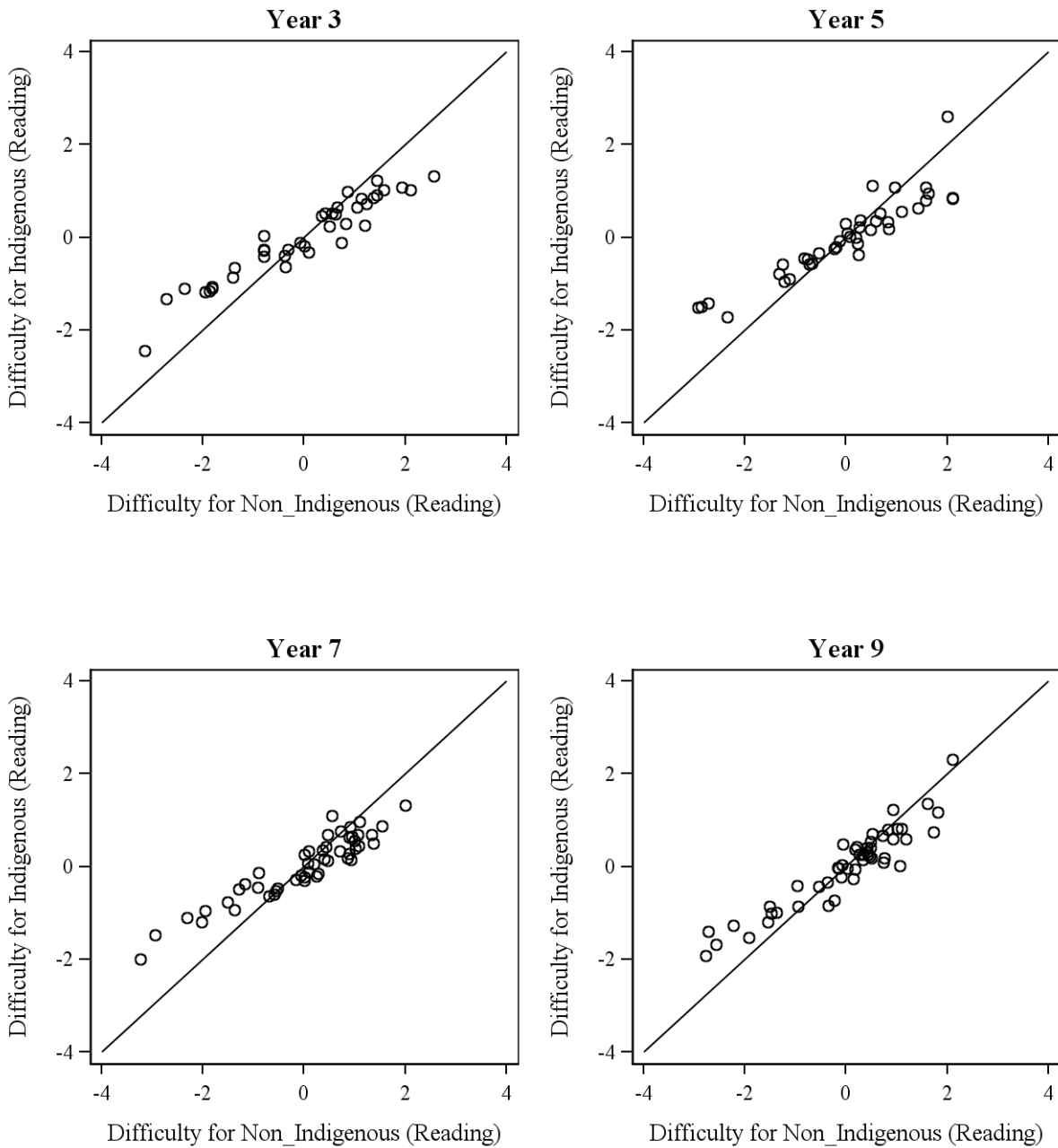


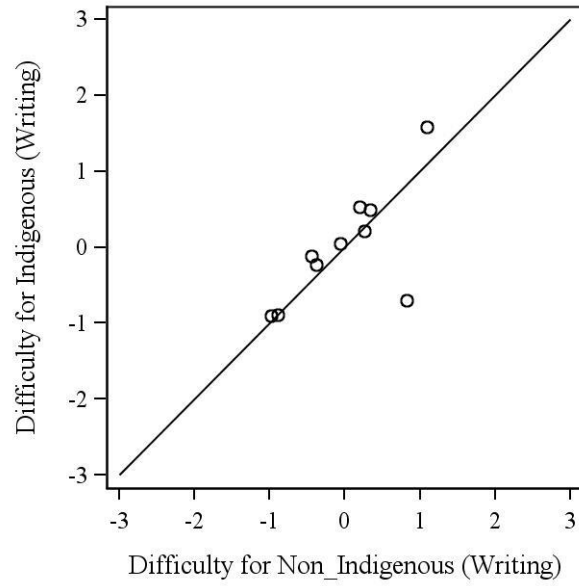


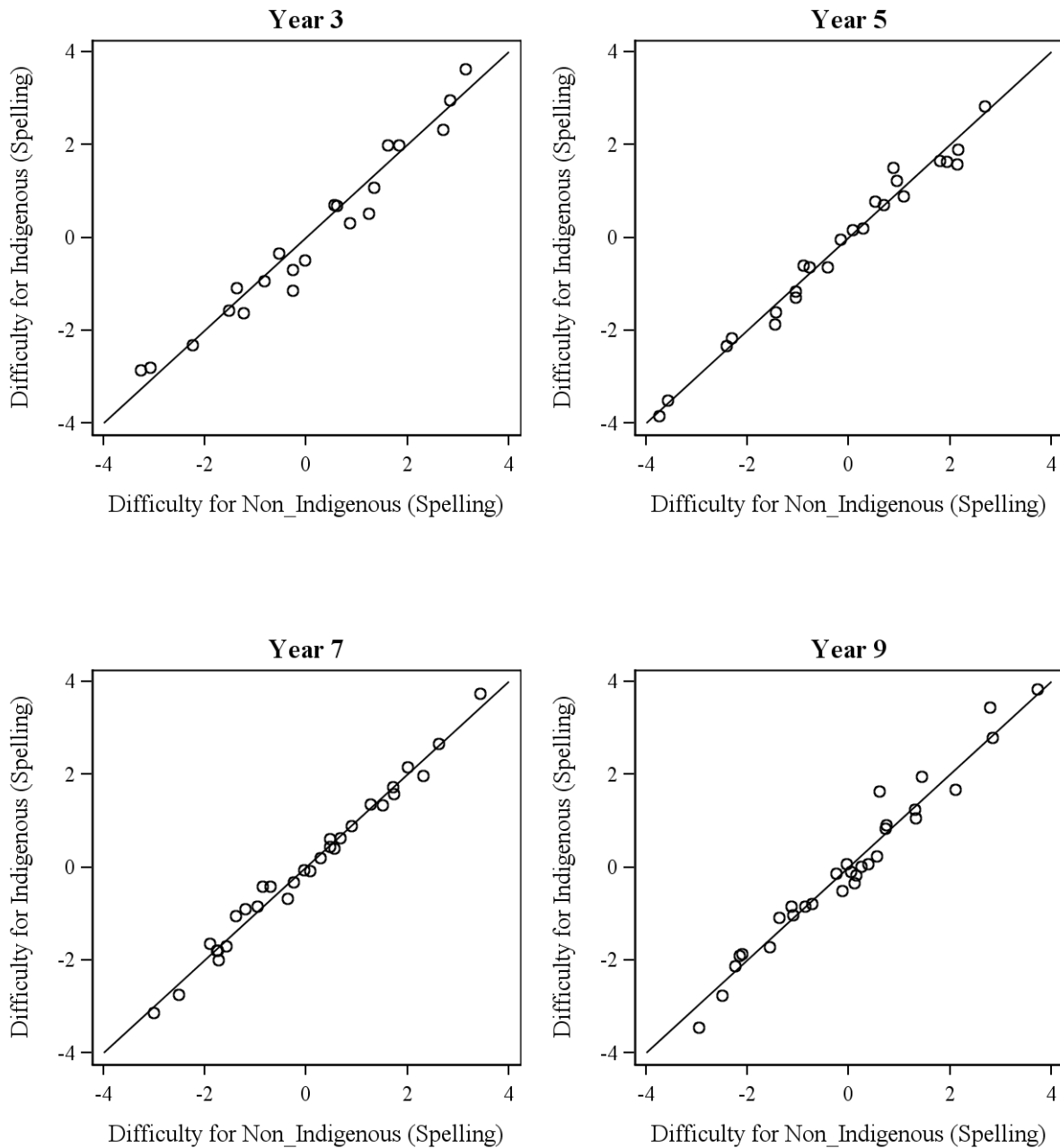


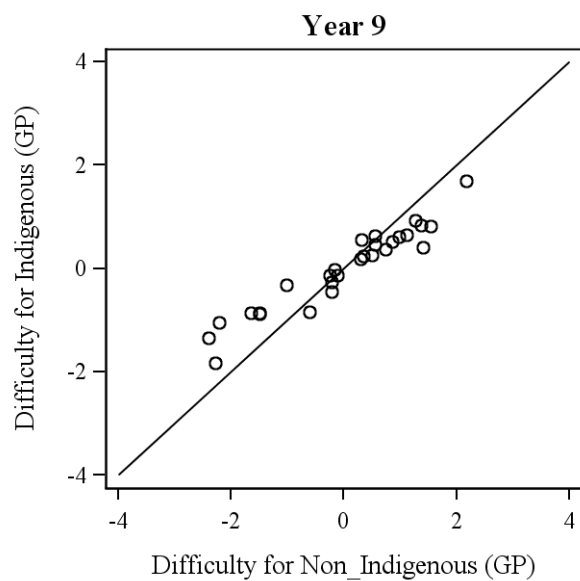
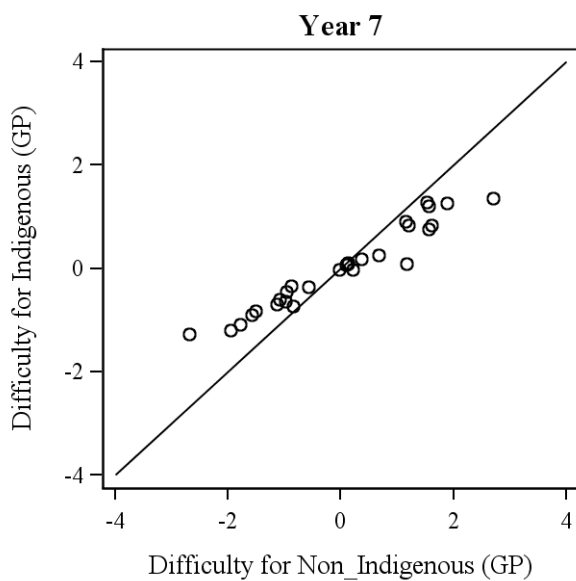
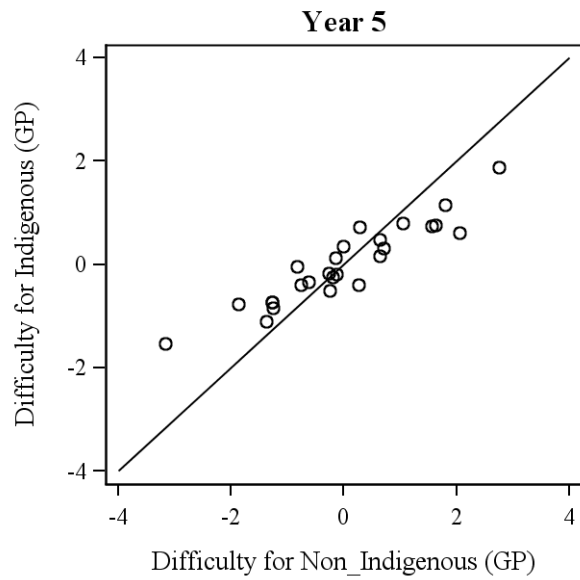
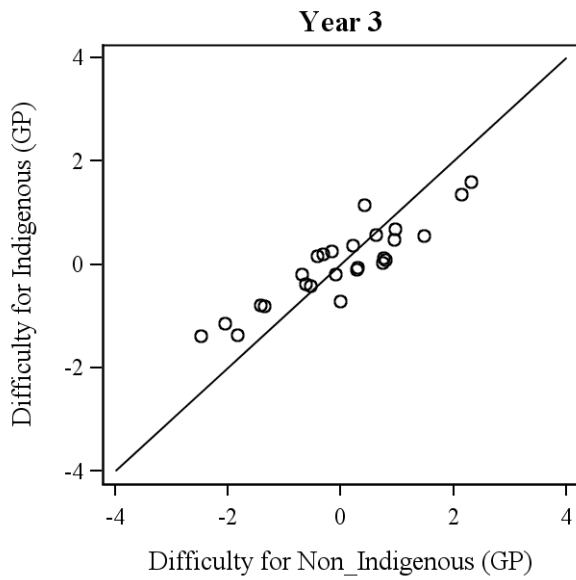
APPENDIX H. INDIGENOUS STATUS DIF ANALYSIS

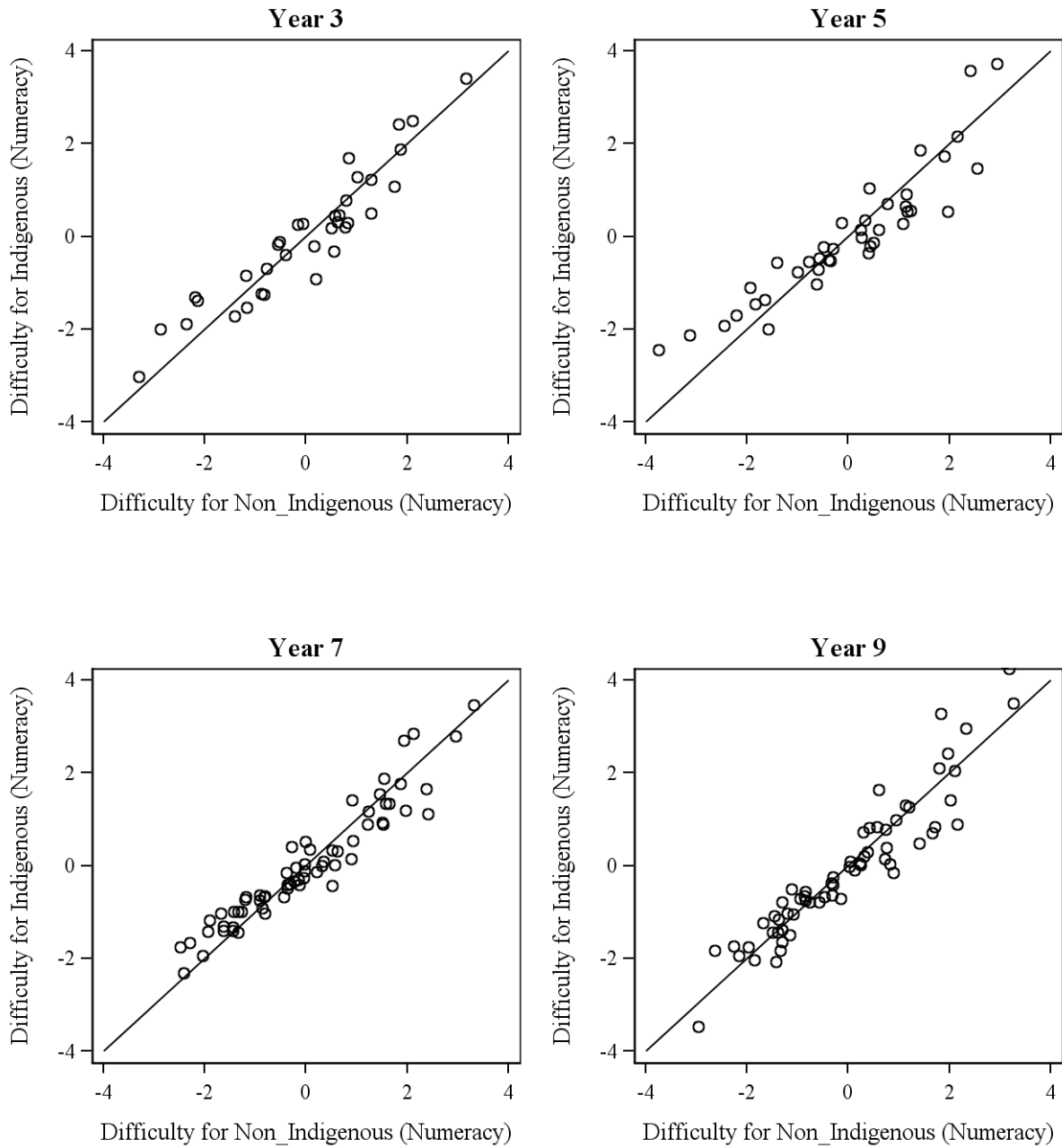
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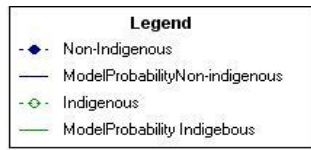
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H.3 Centred Item Locations of Indigenous and Non-Indigenous Students in Spelling (2015)

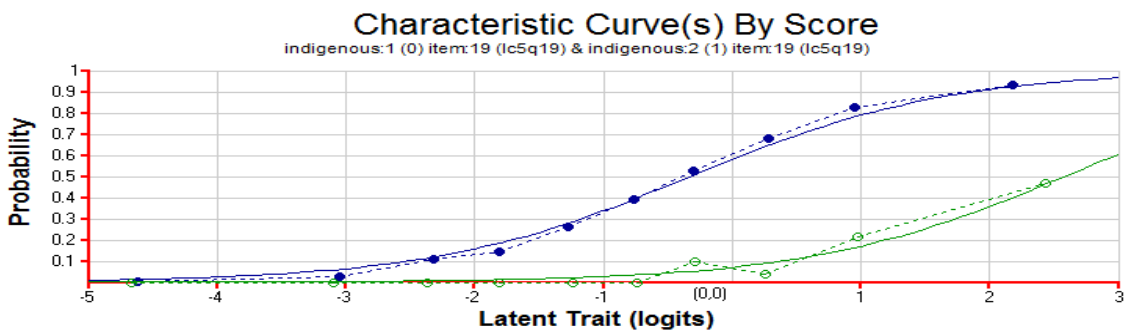
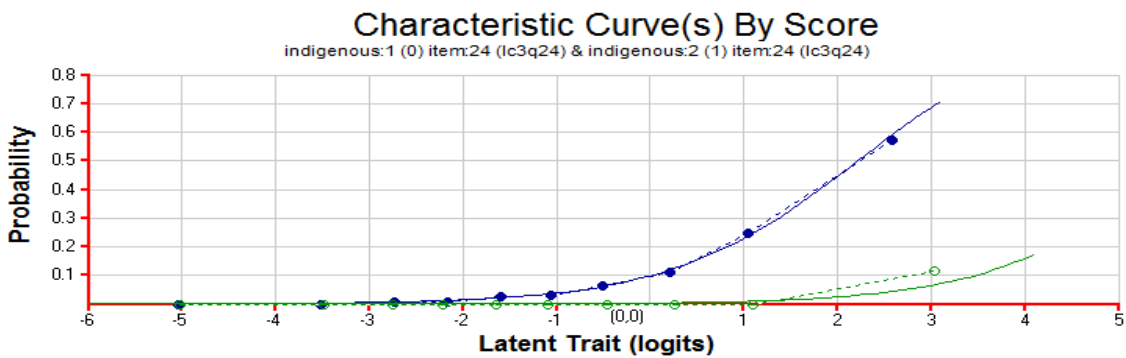
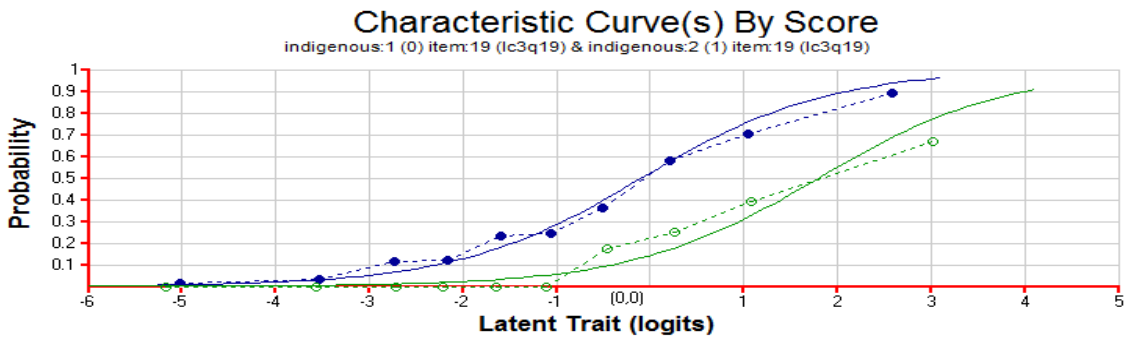
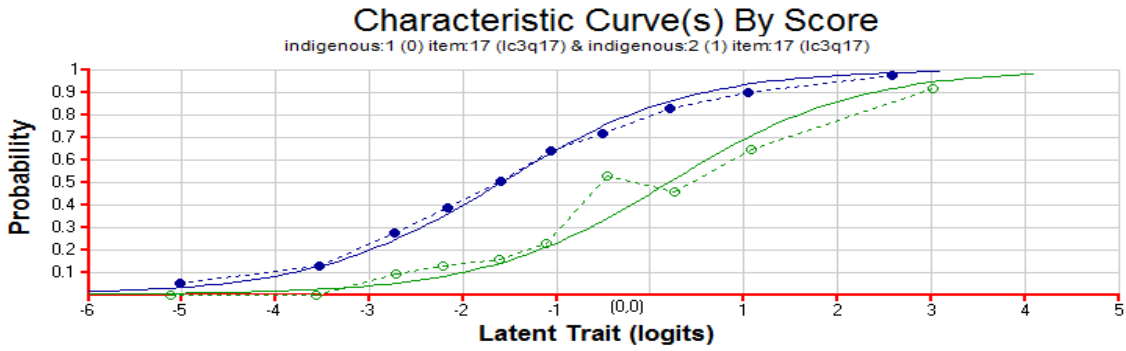
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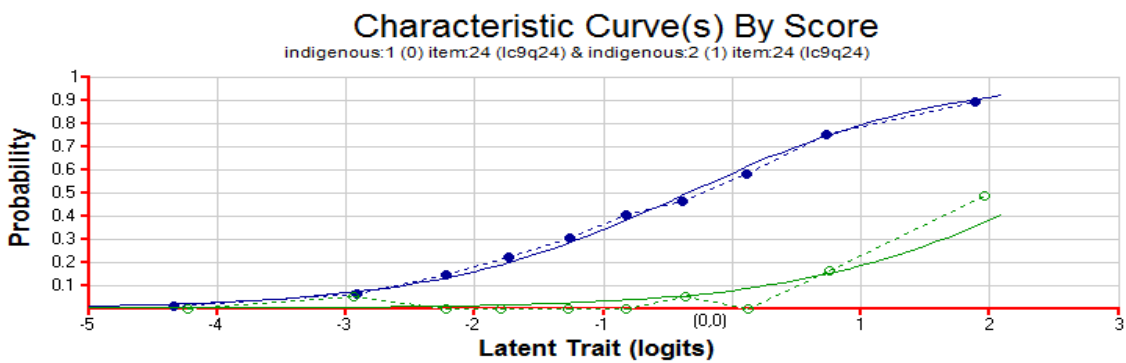
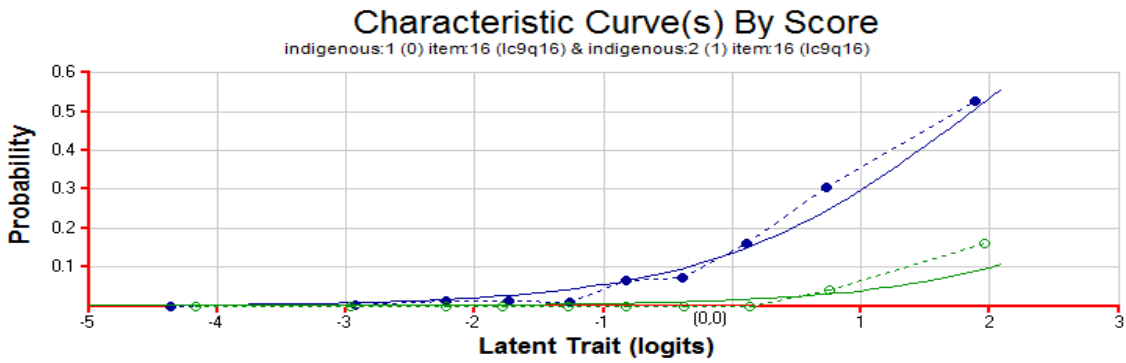
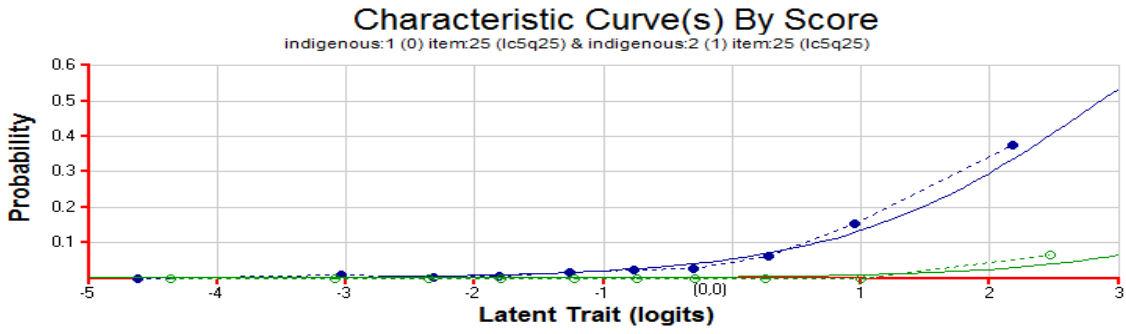
H.5 Centred Item Locations of Indigenous and Non-Indigenous Students in Numeracy (2015)

H.6 Item DIF Plots for Items Showing Indigenous Status DIF

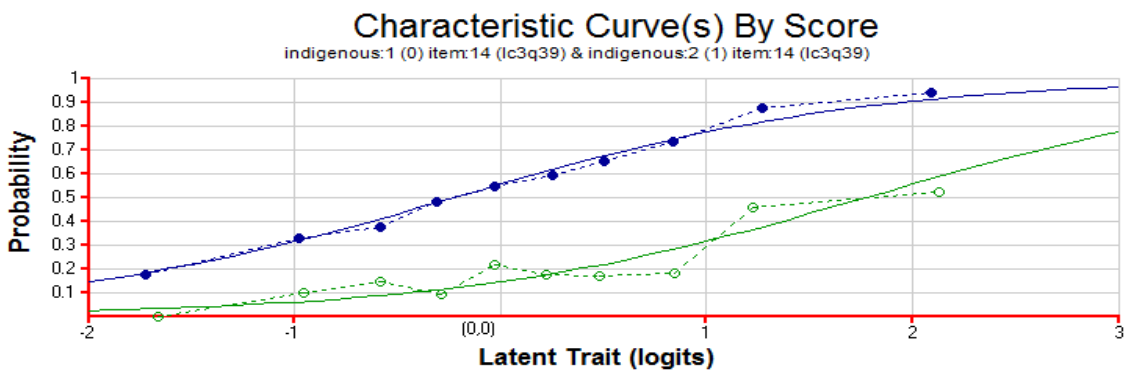
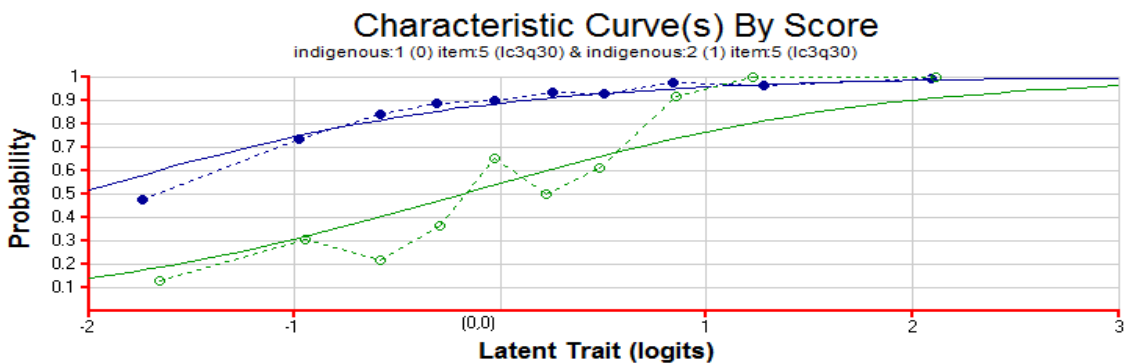
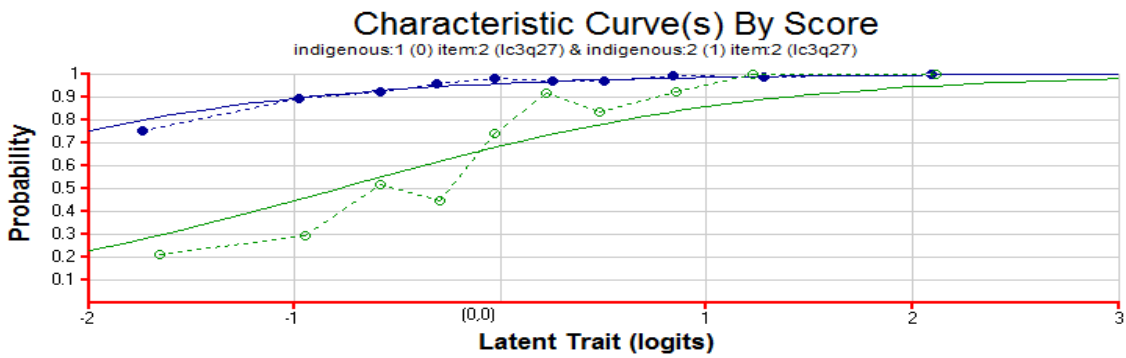
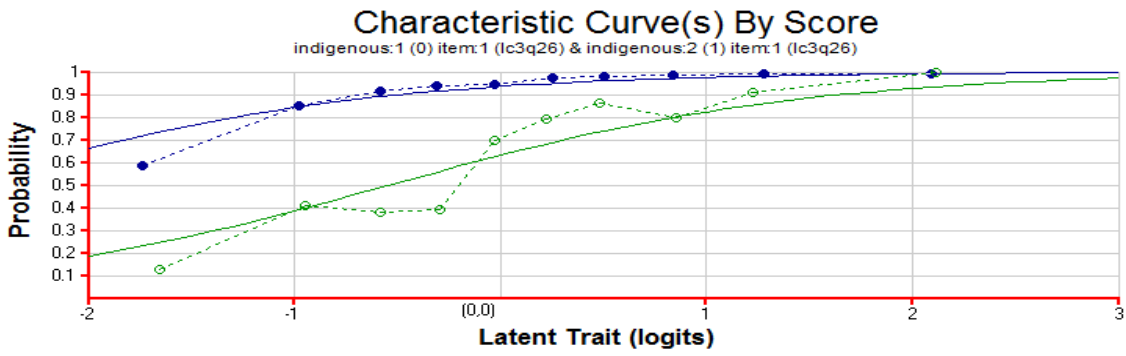


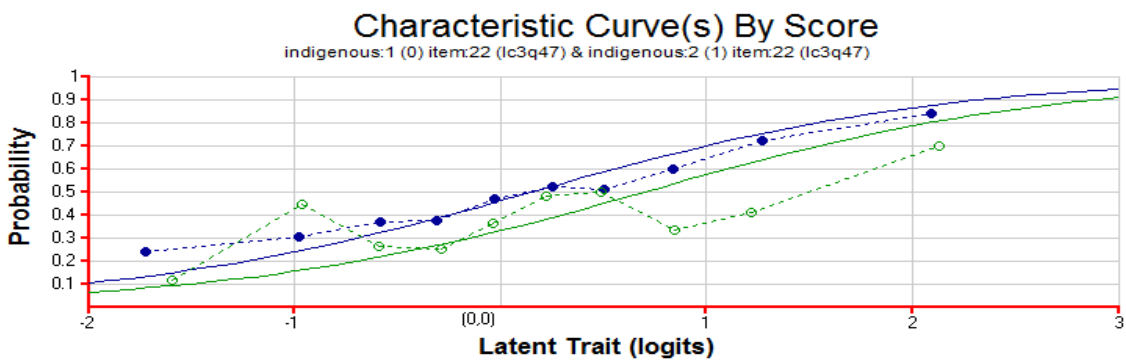
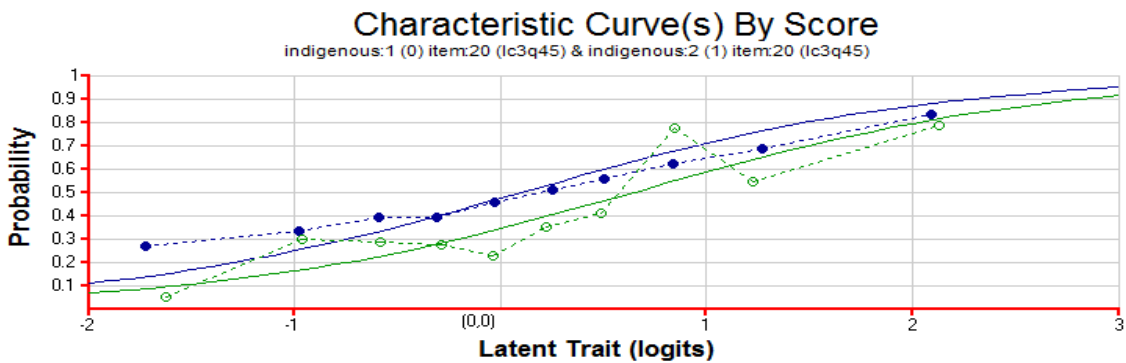
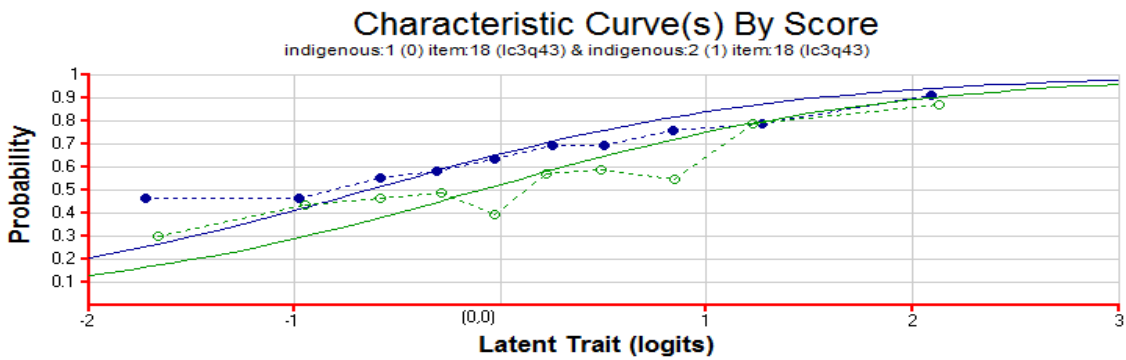
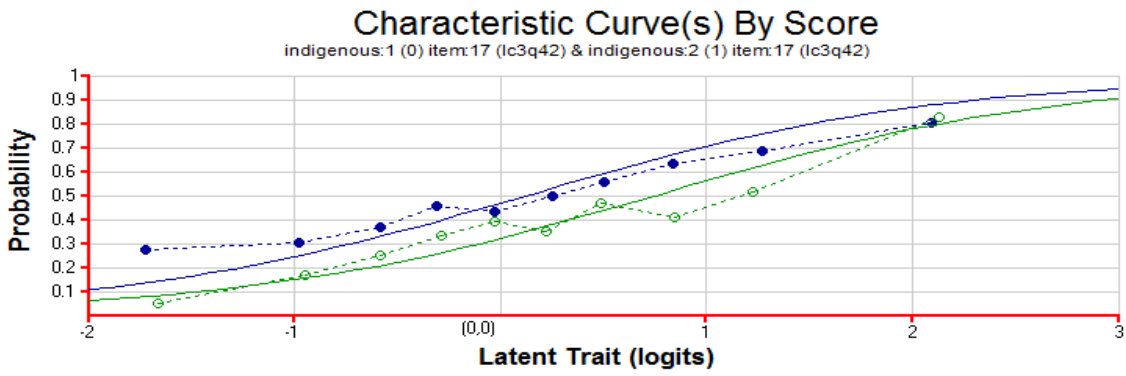
Spelling

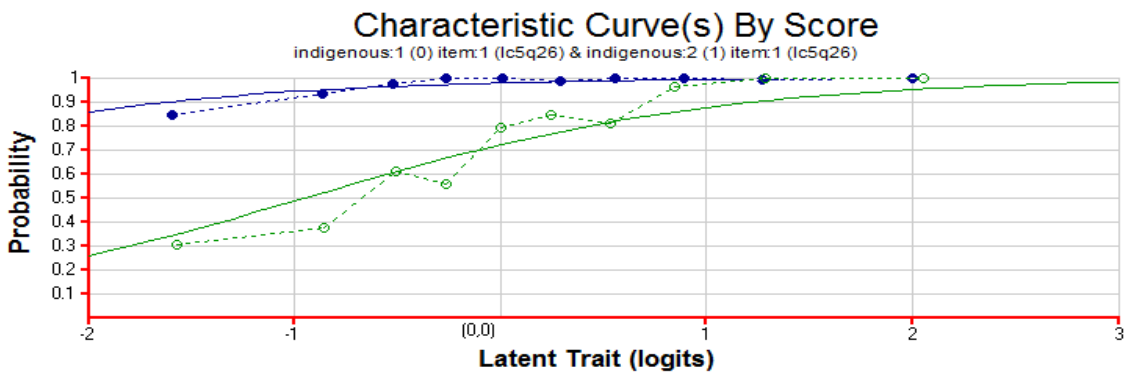
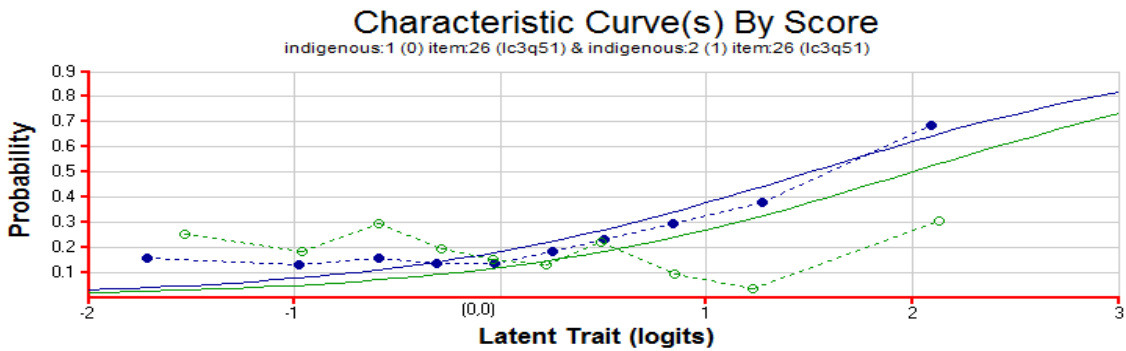
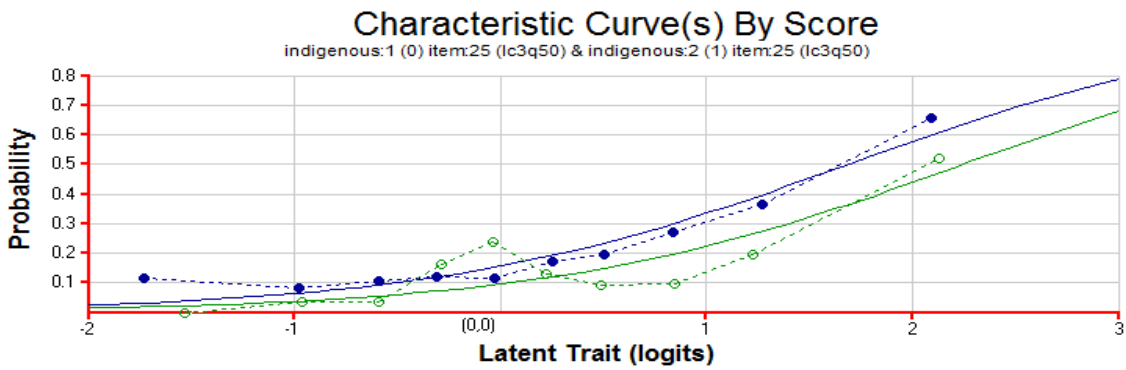
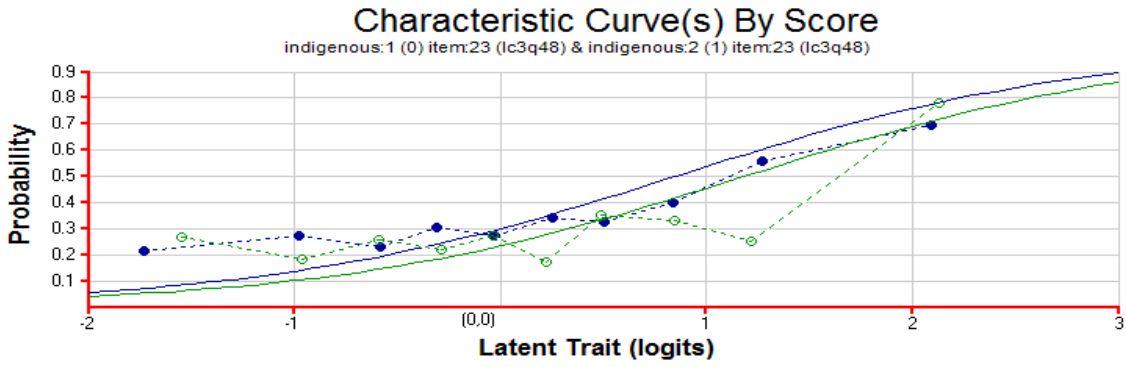


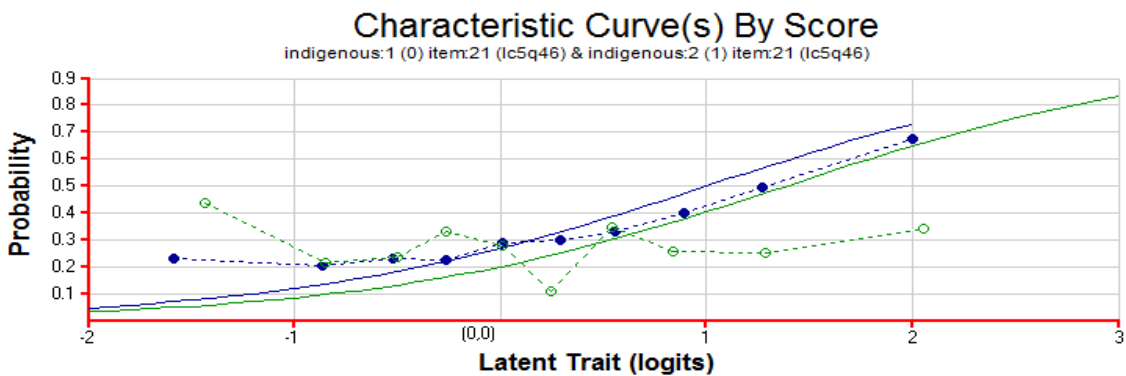
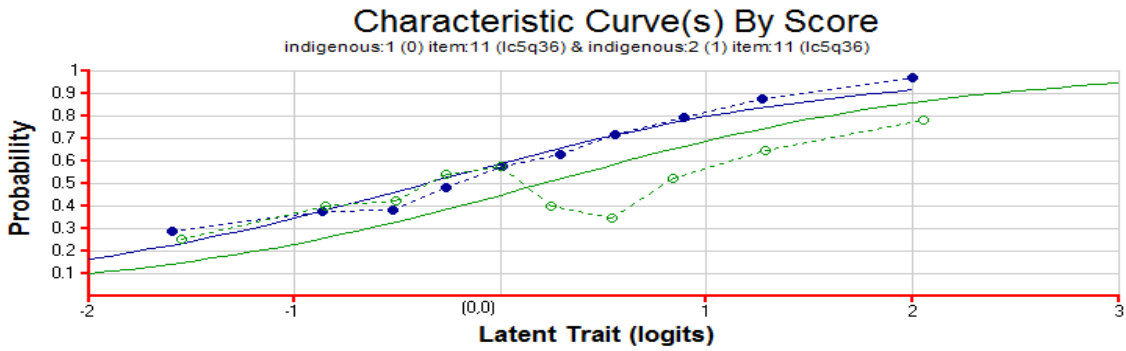
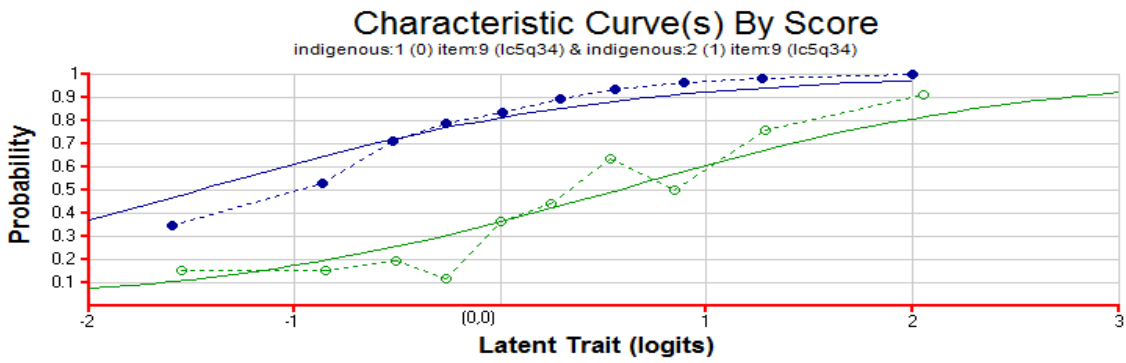
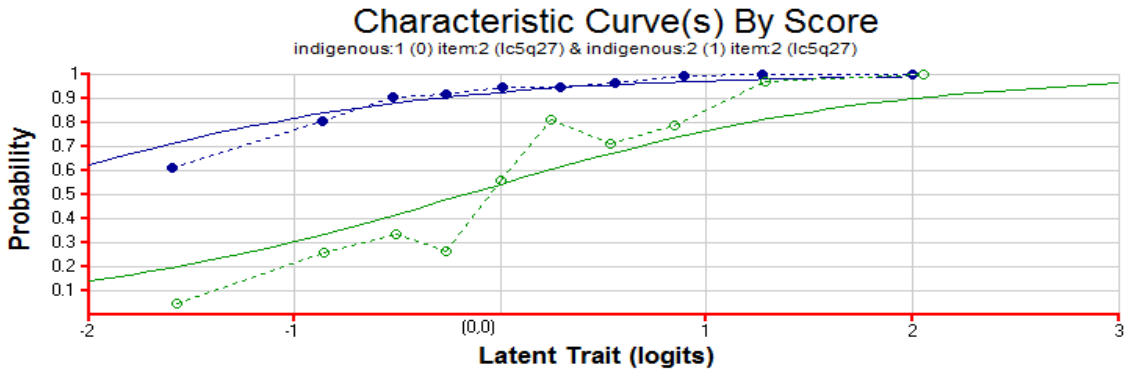


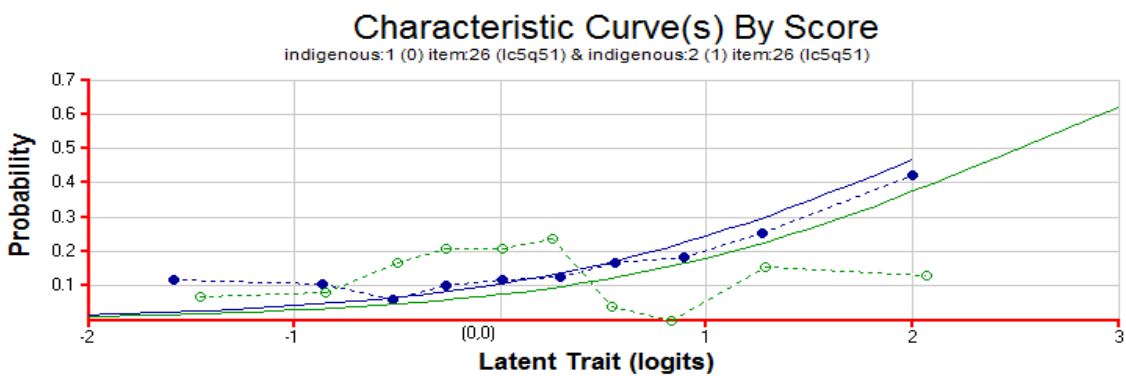
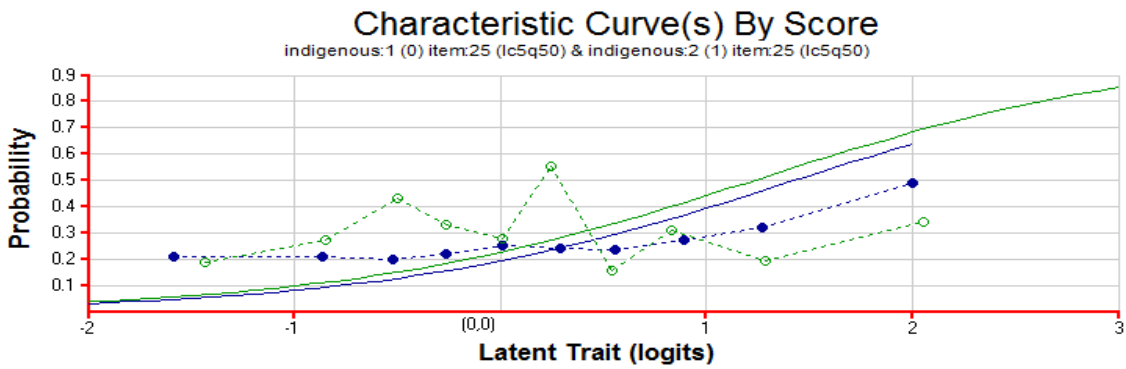
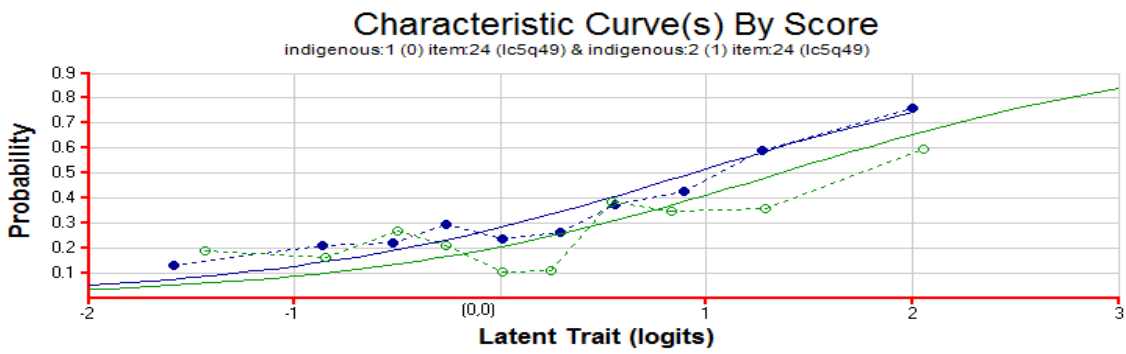
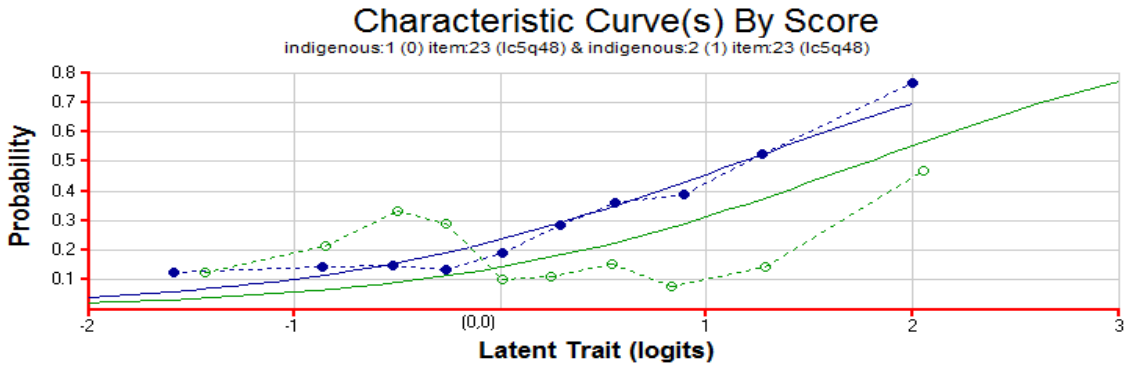
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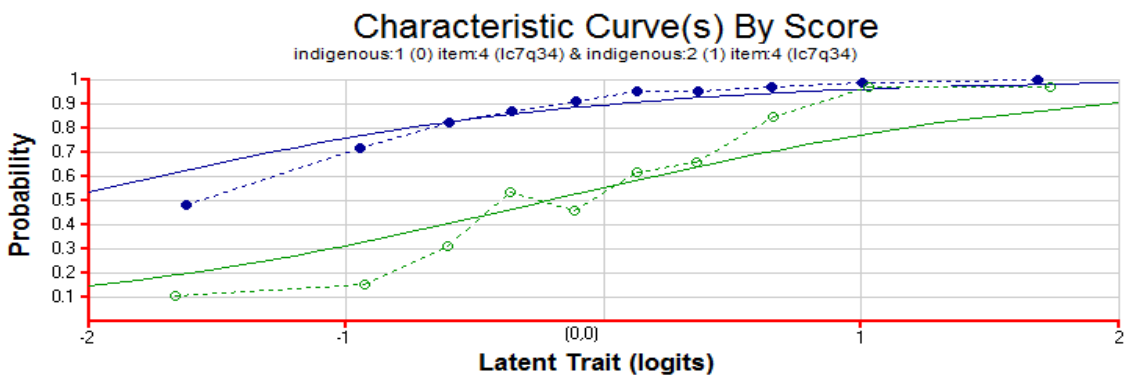
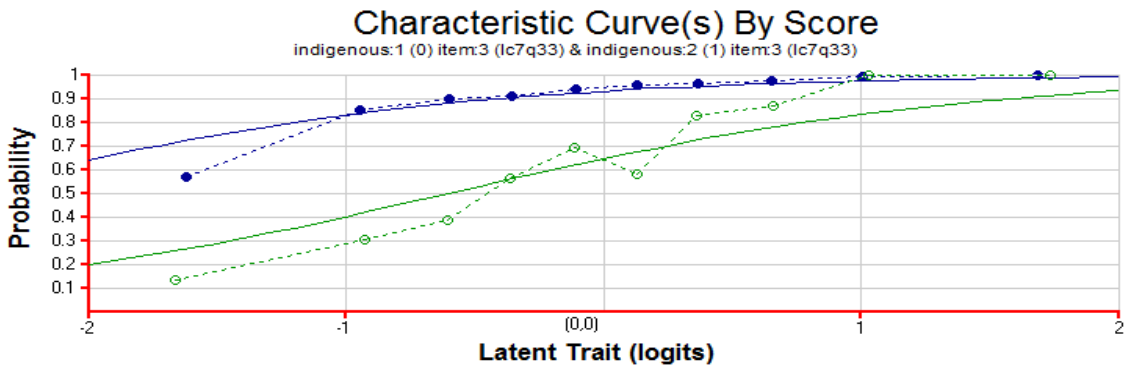
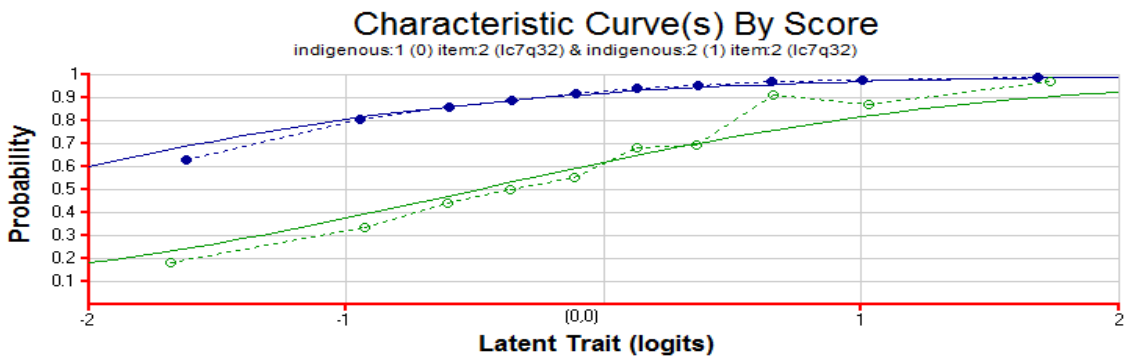
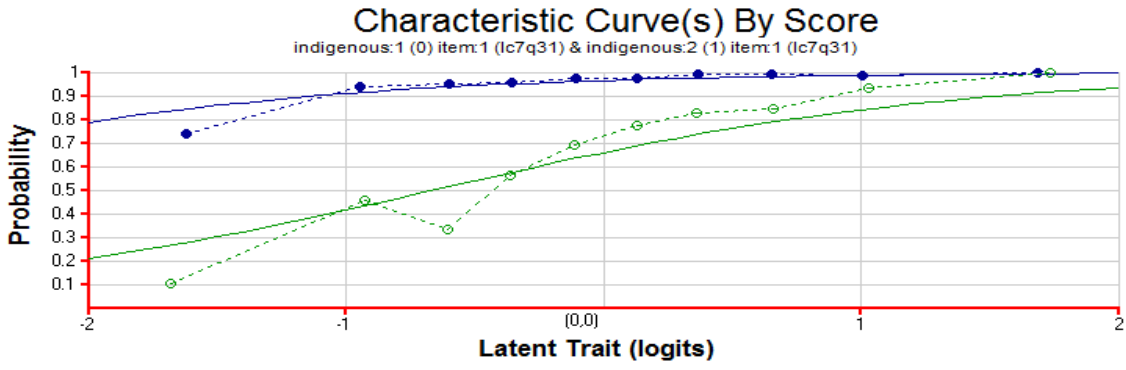


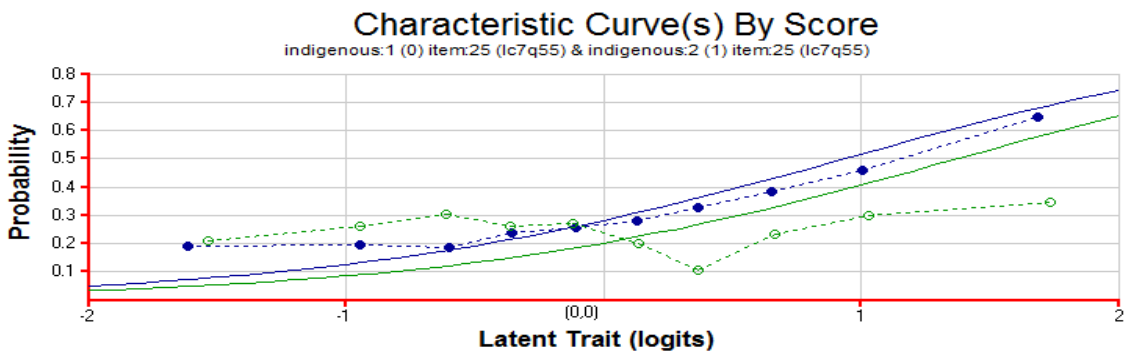
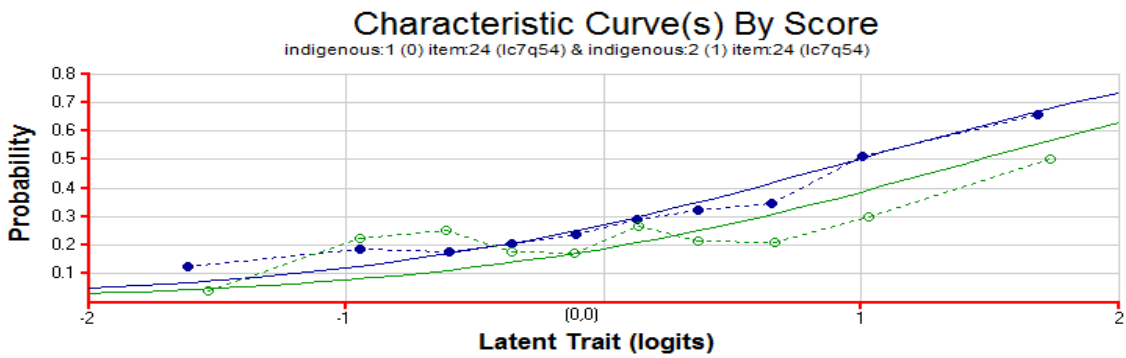
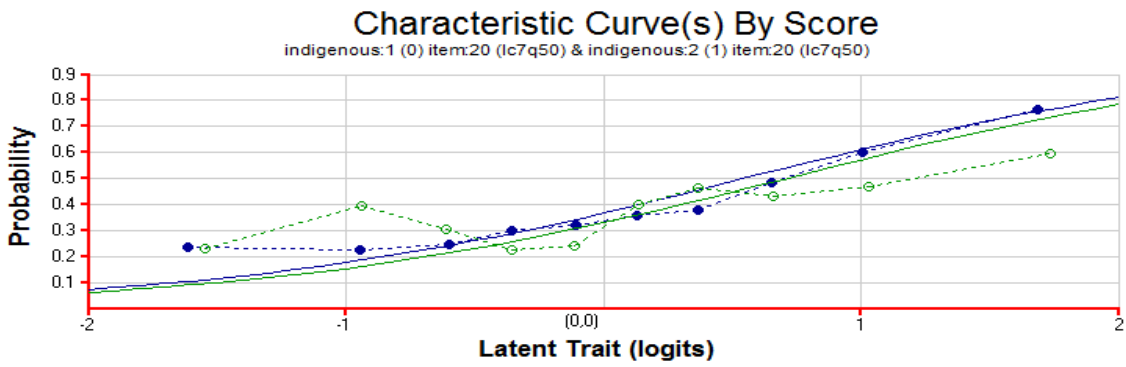
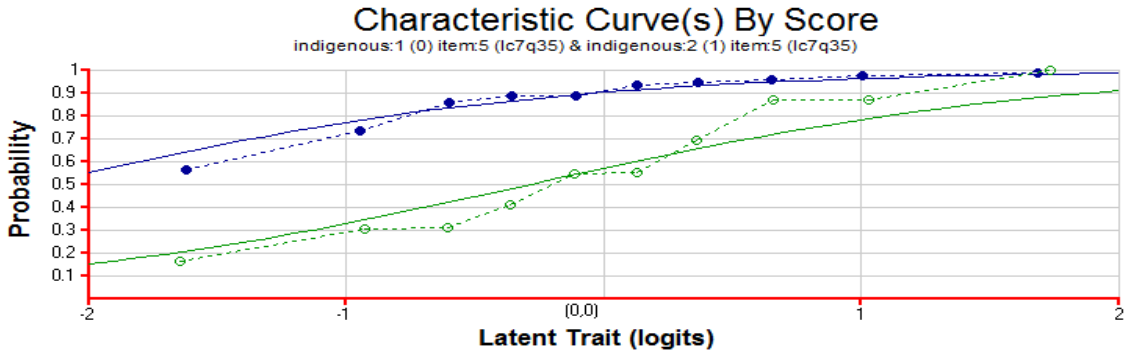


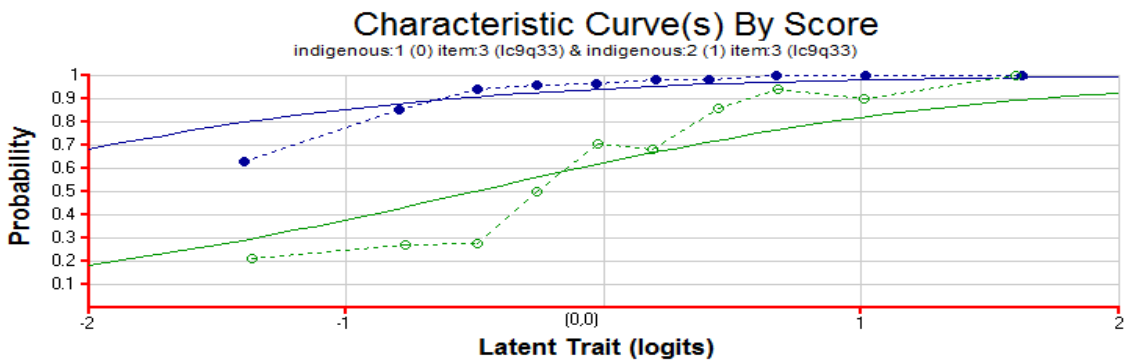
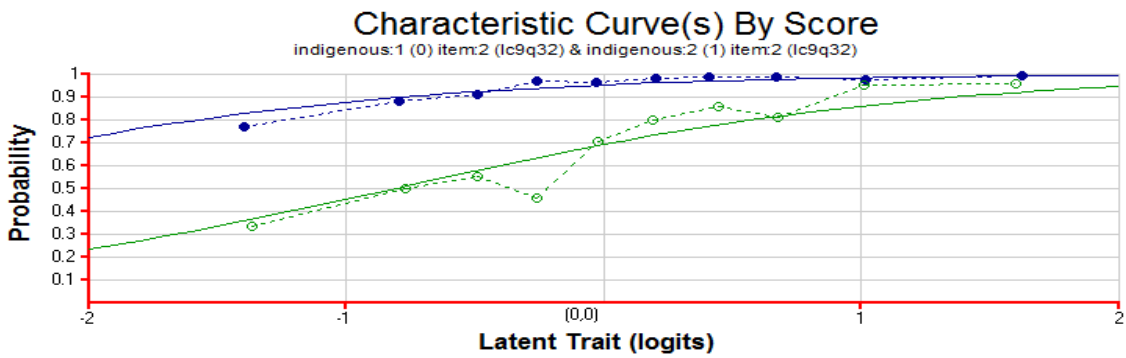
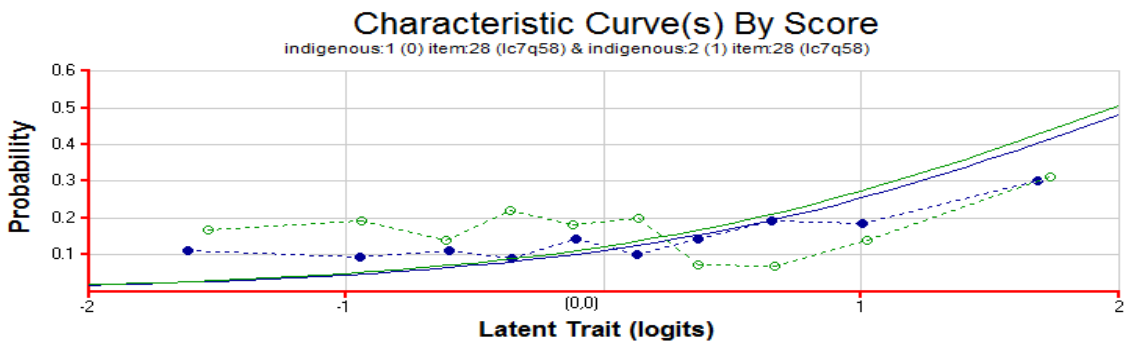
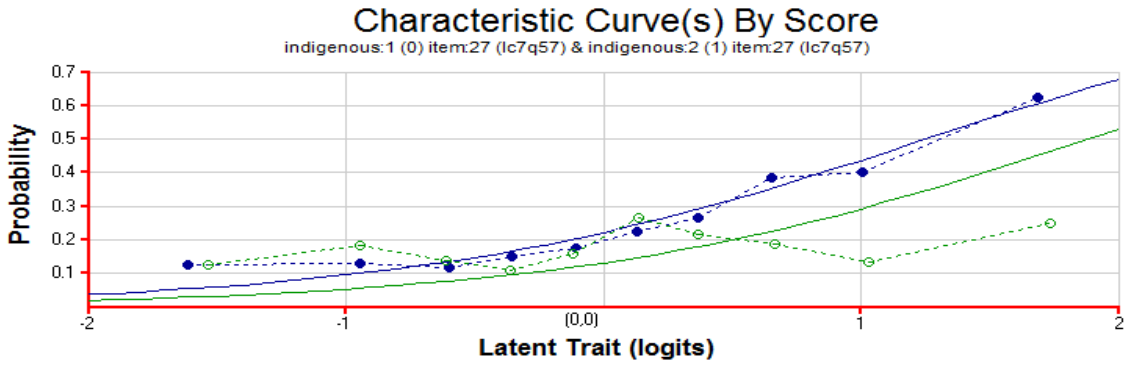


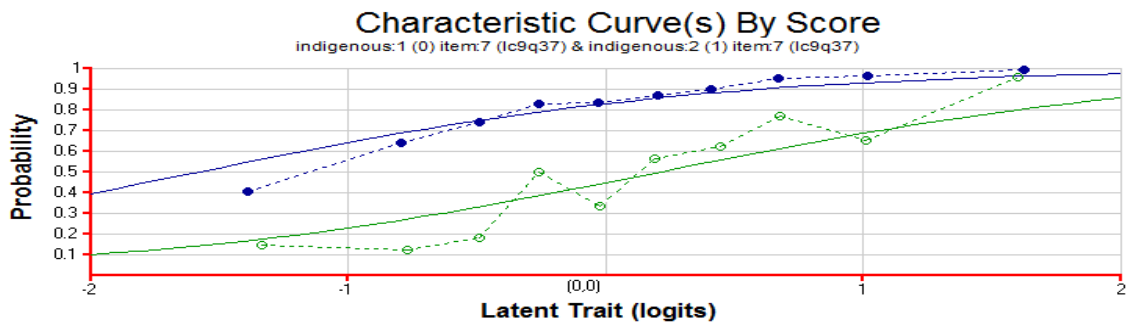
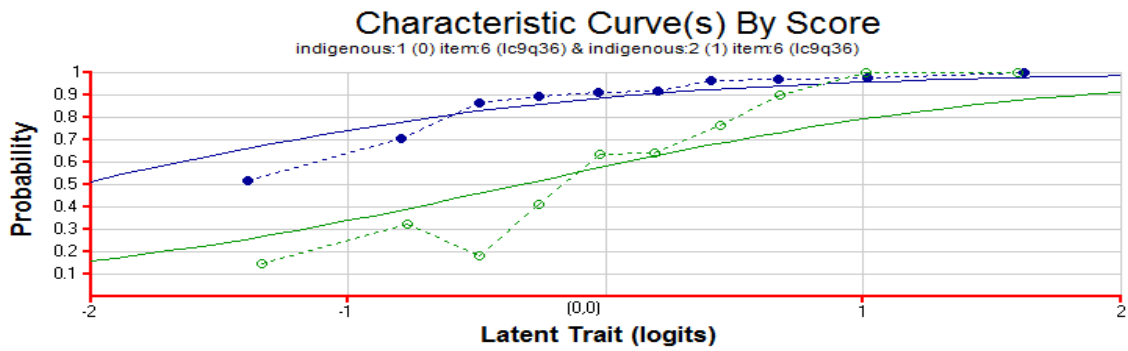
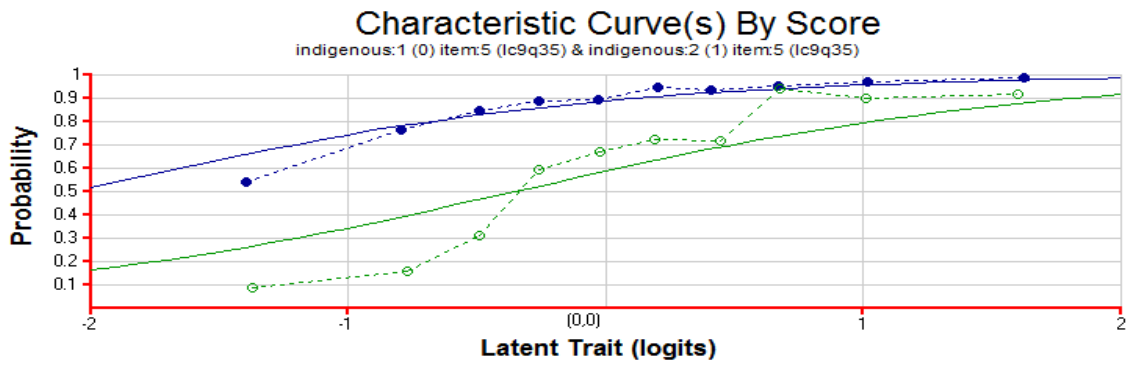
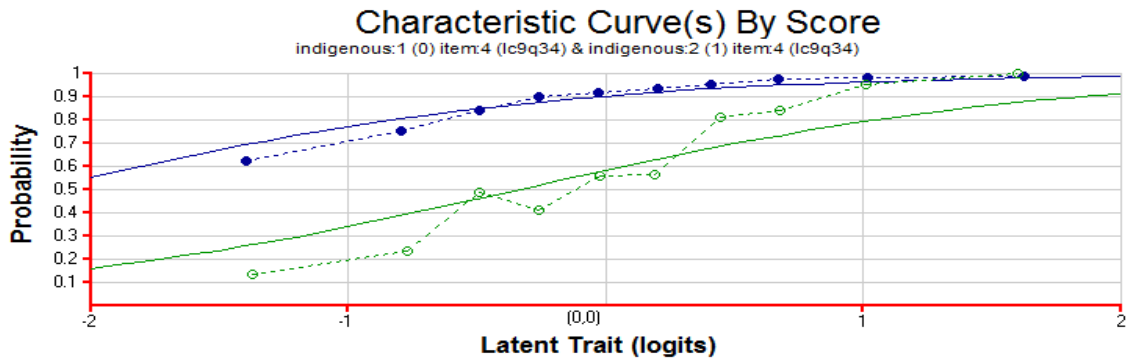


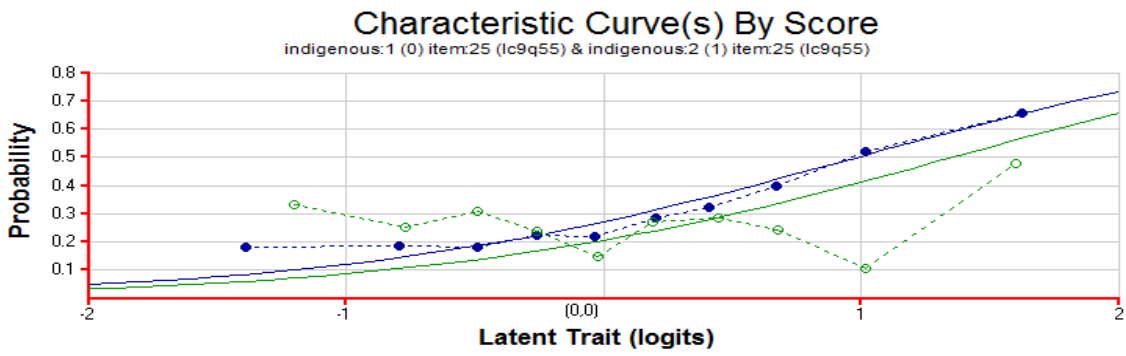
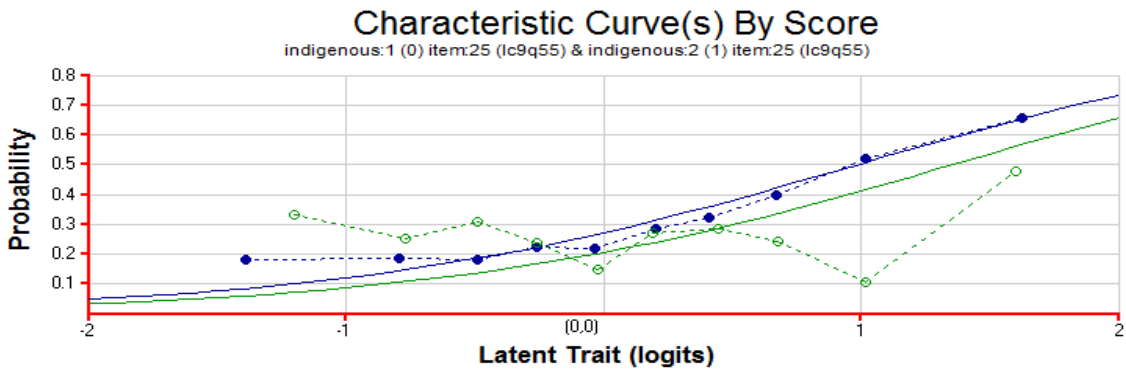




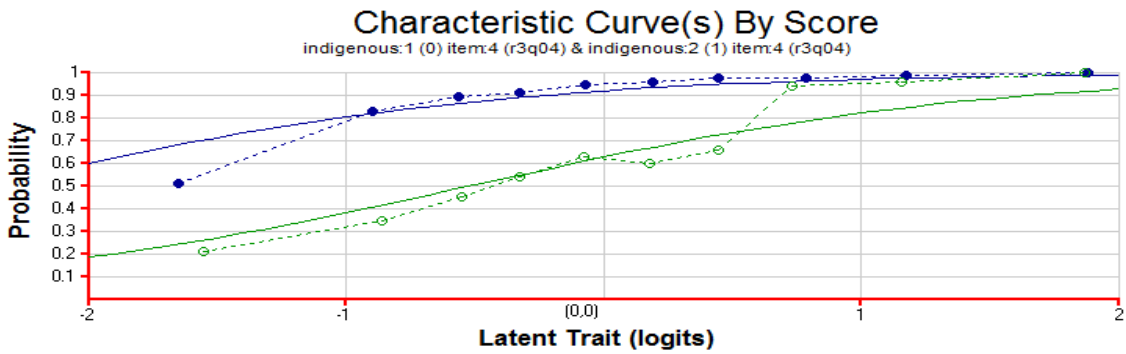
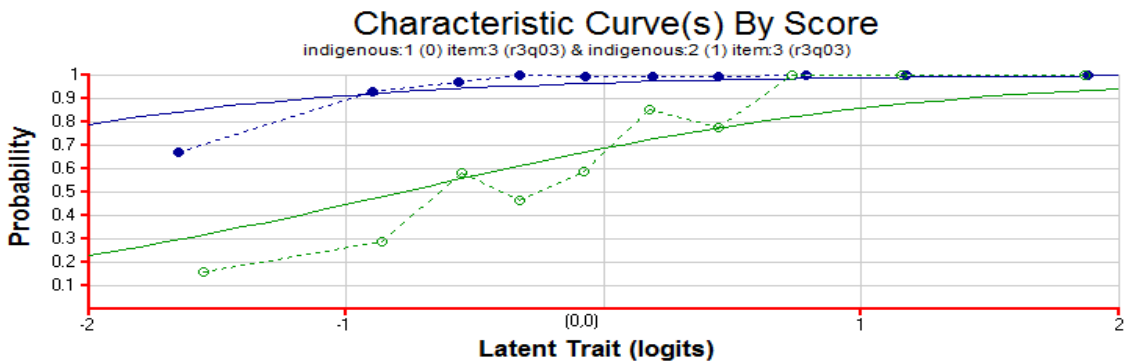
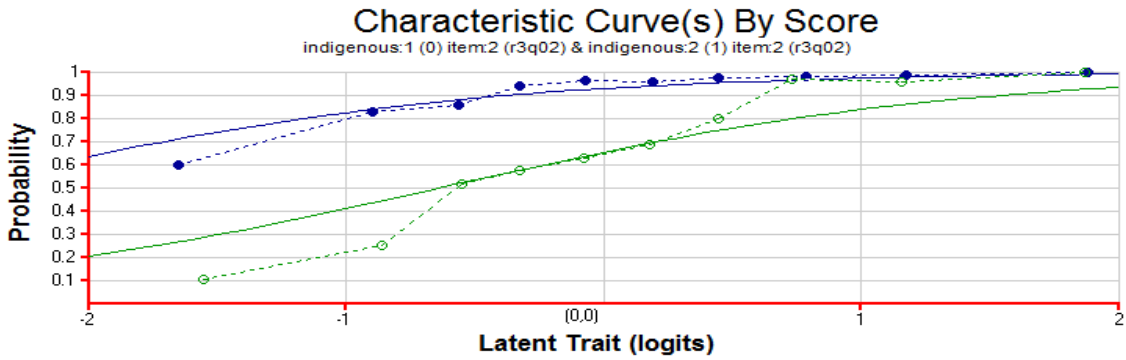
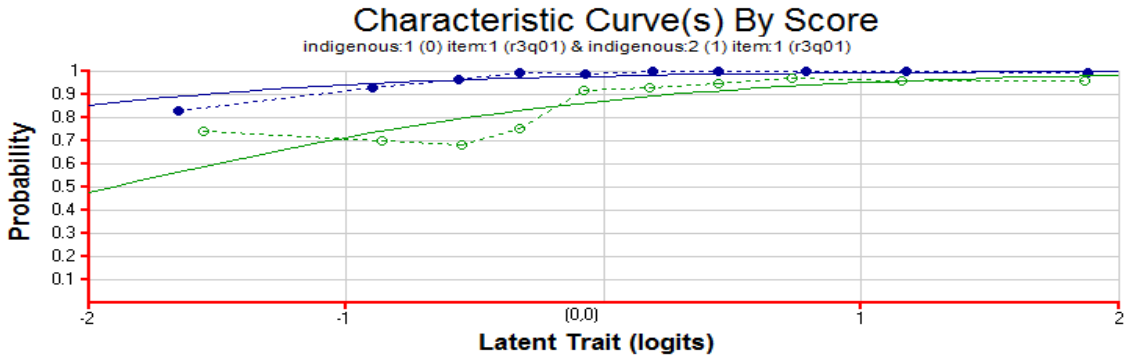


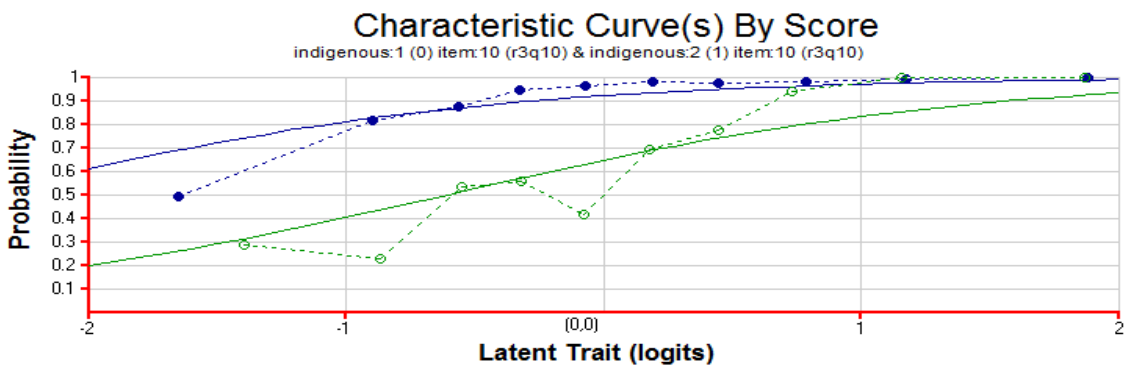
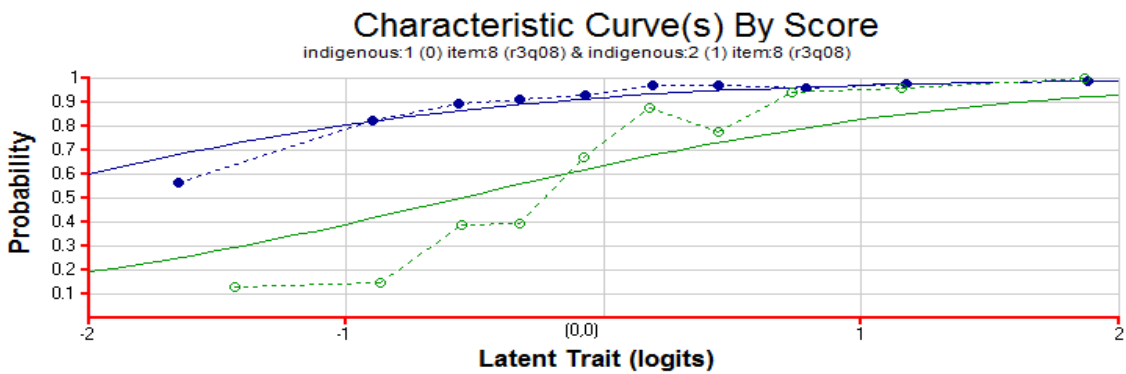
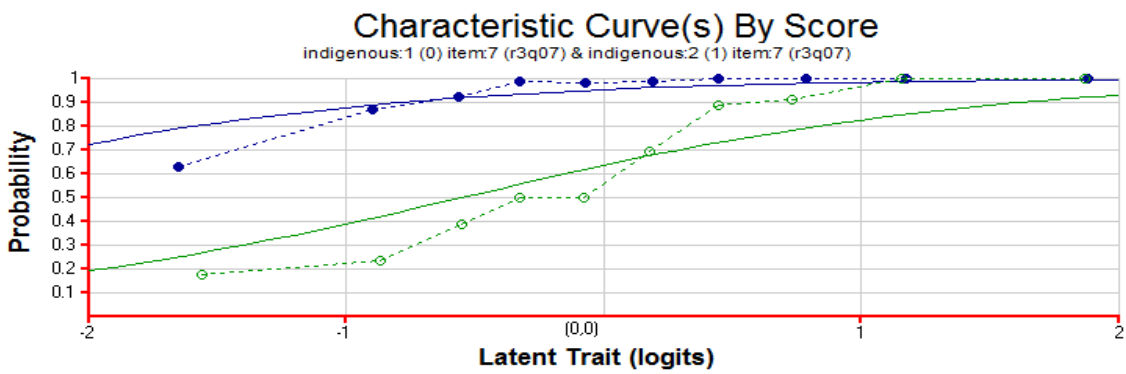
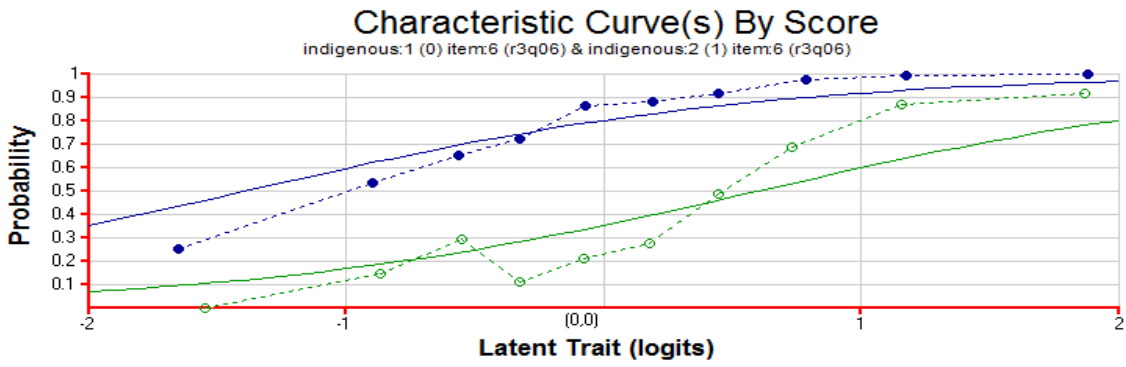


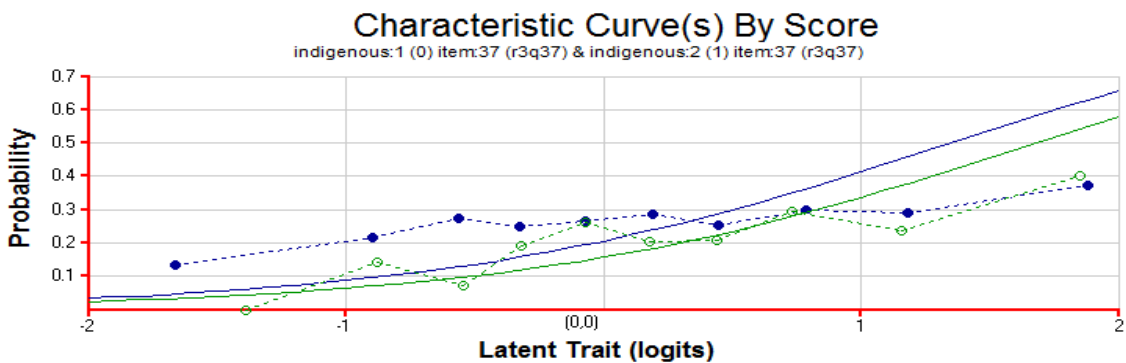
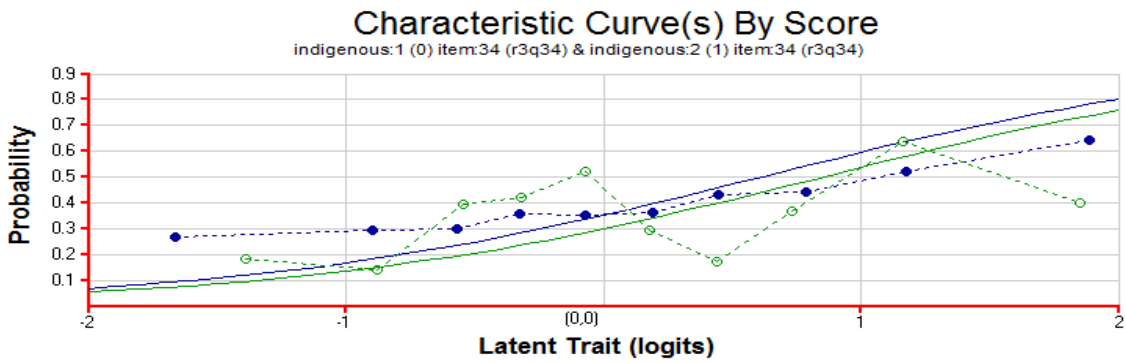
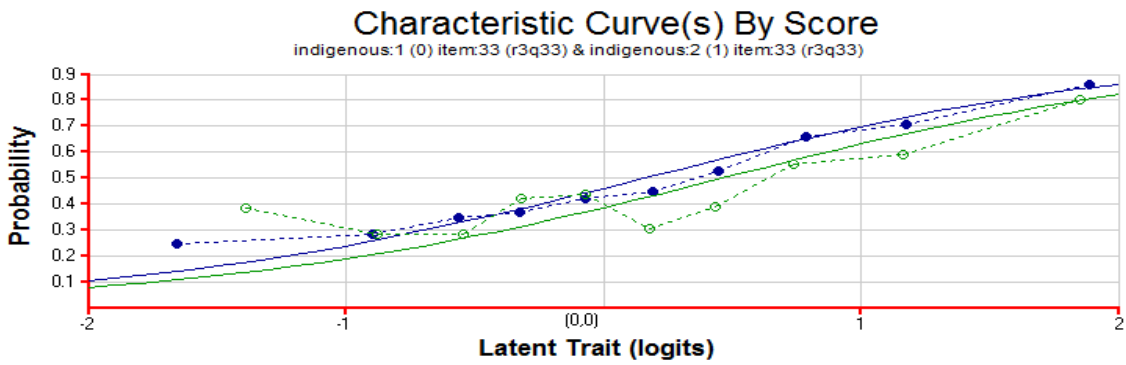
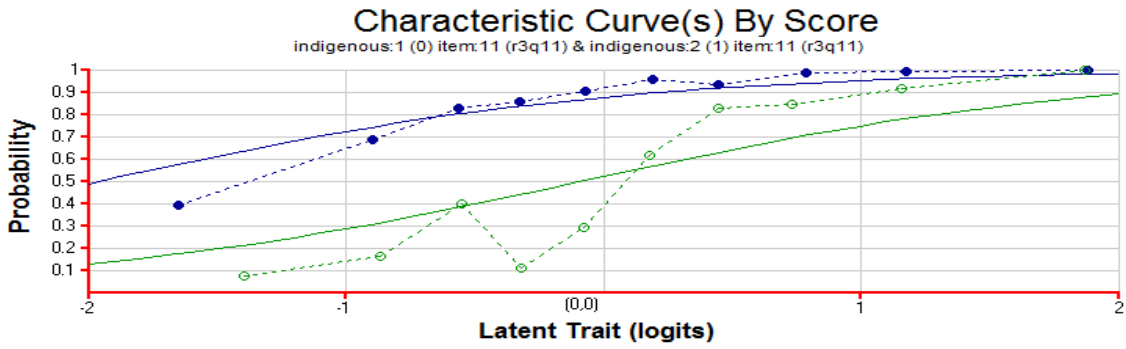


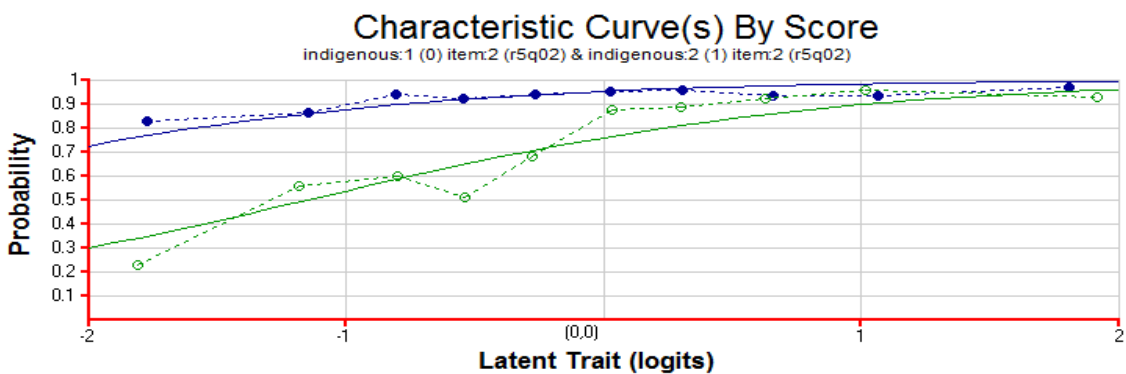
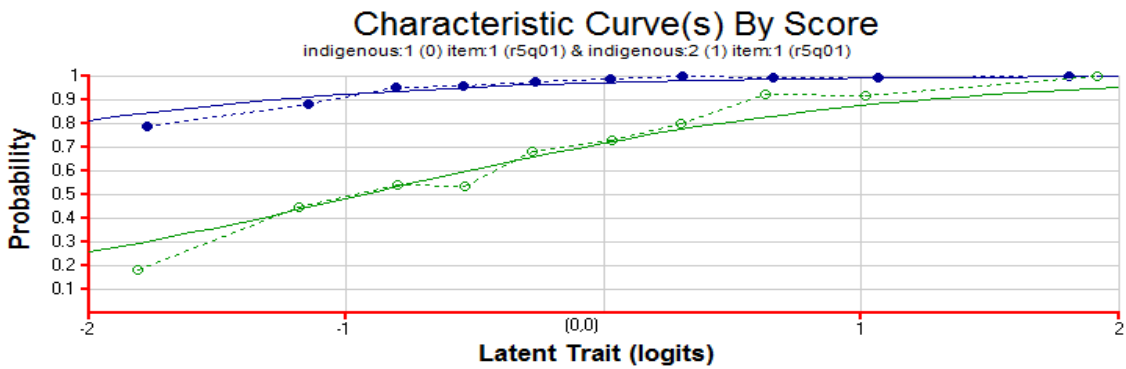
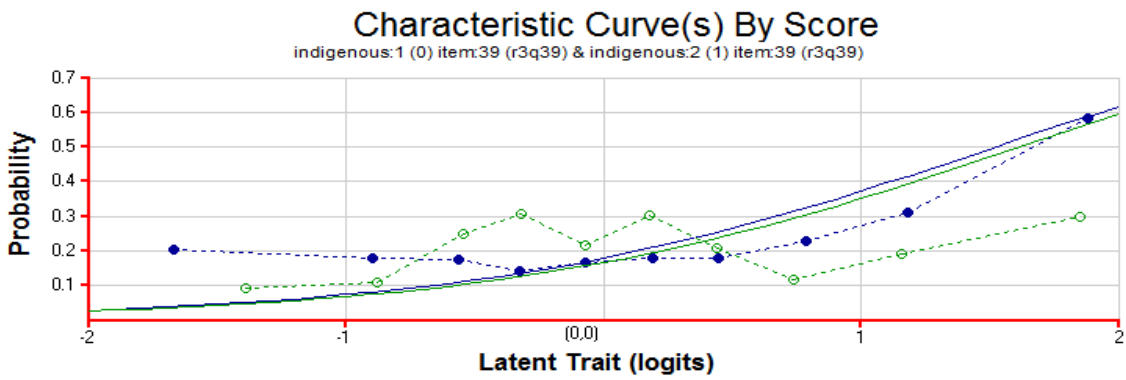
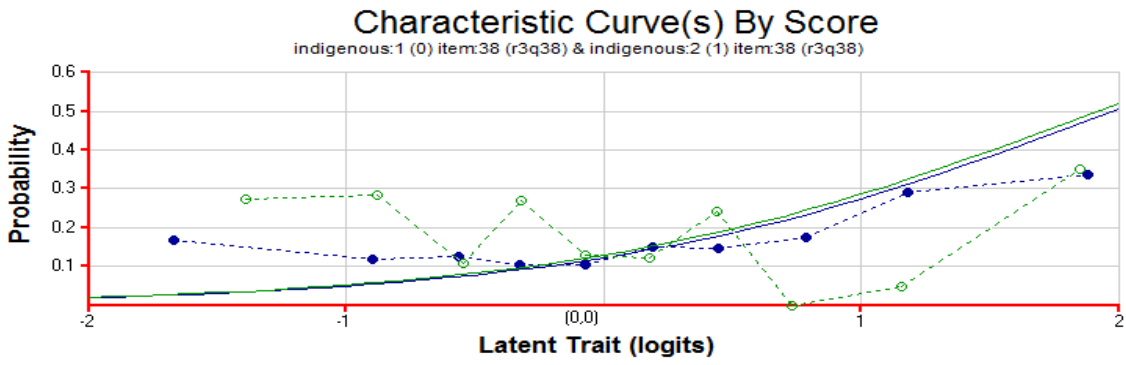


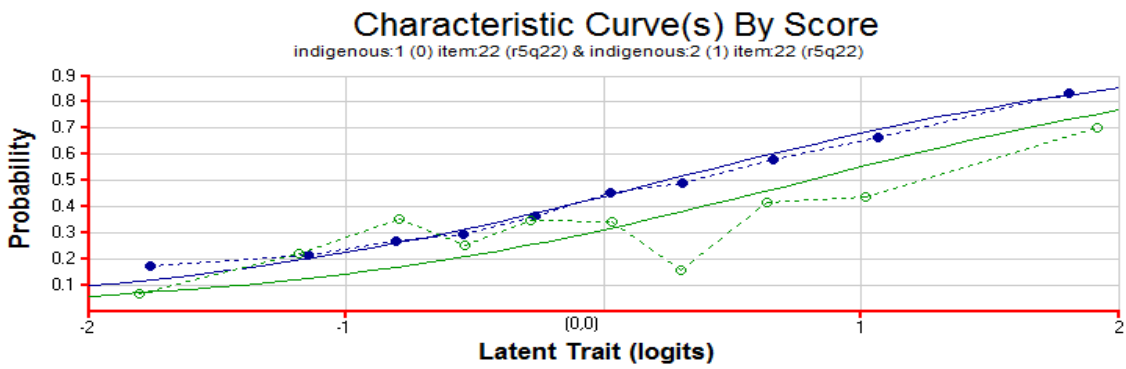
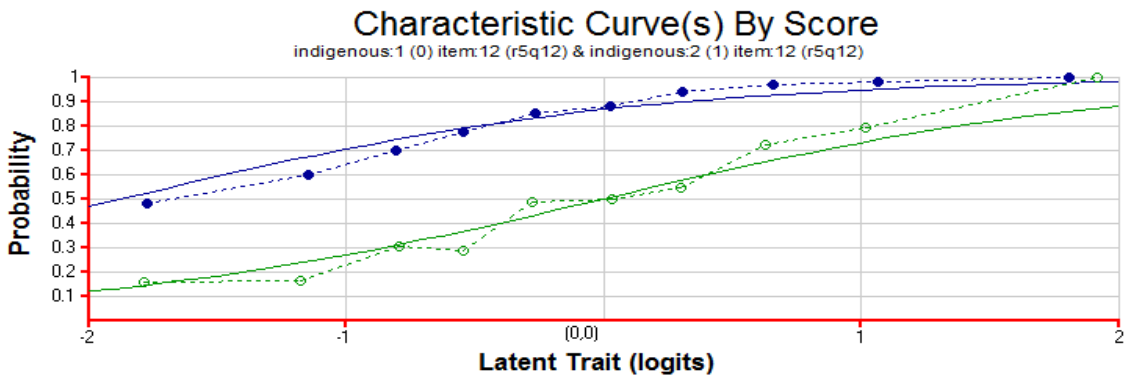
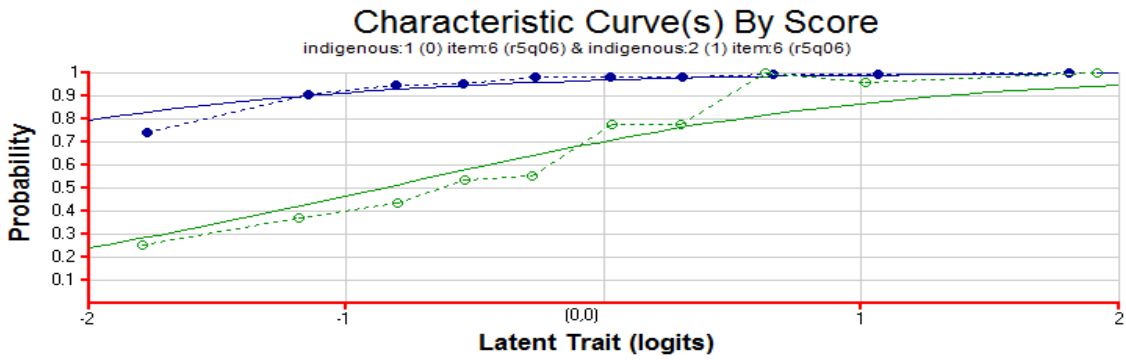
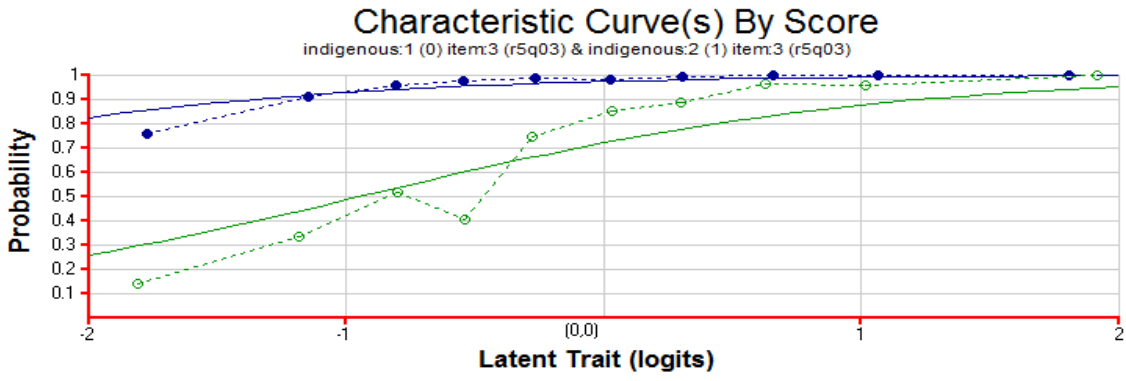
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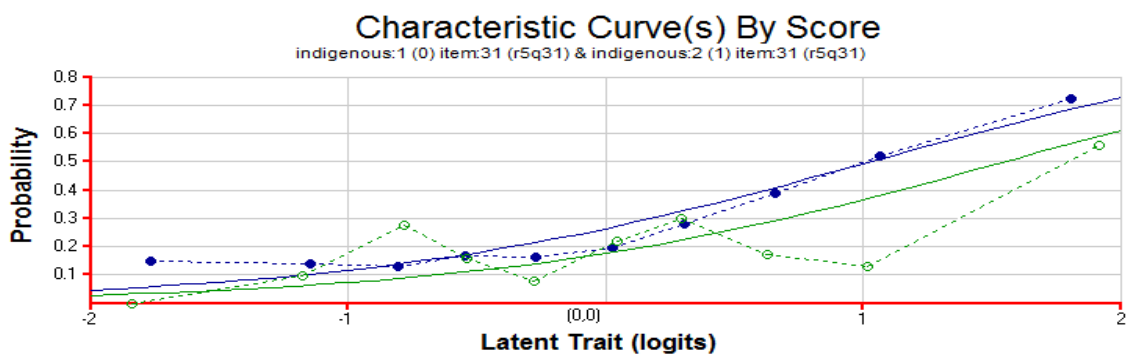
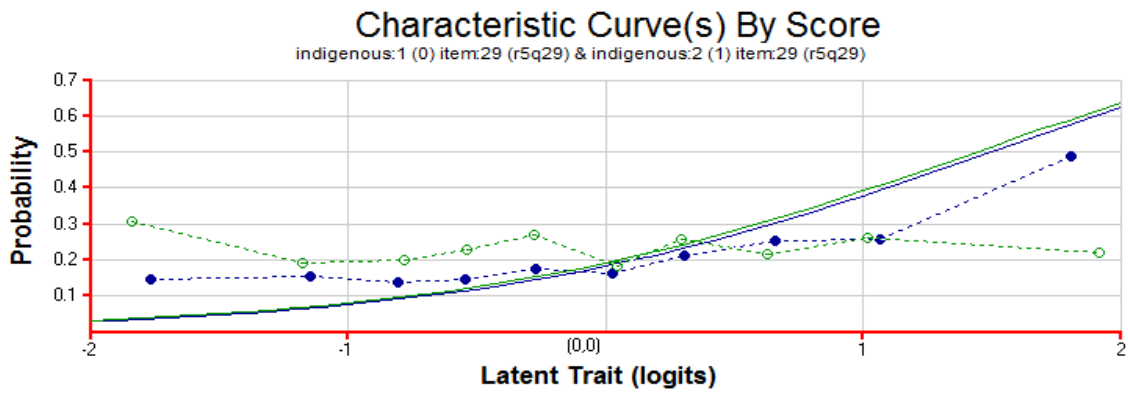
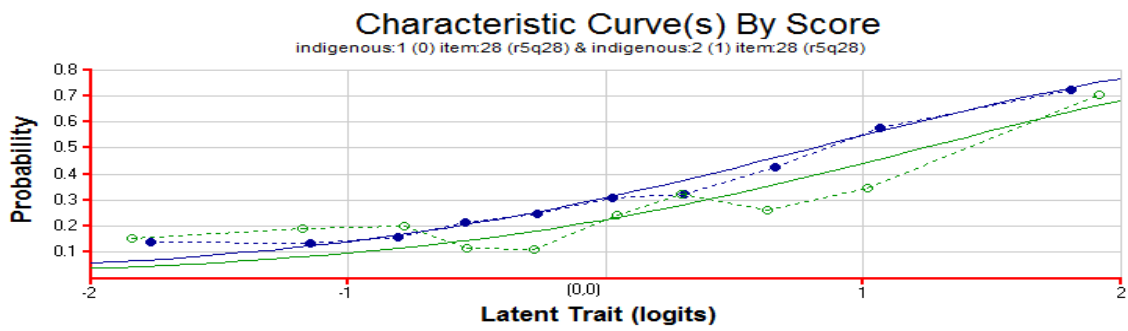
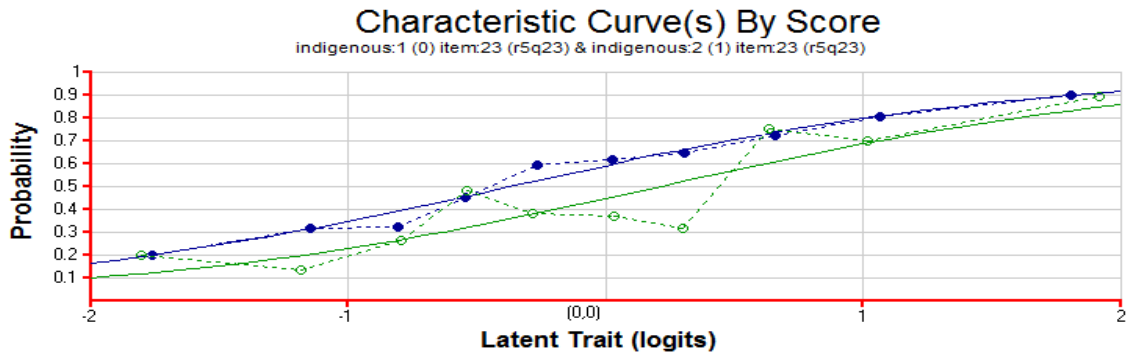


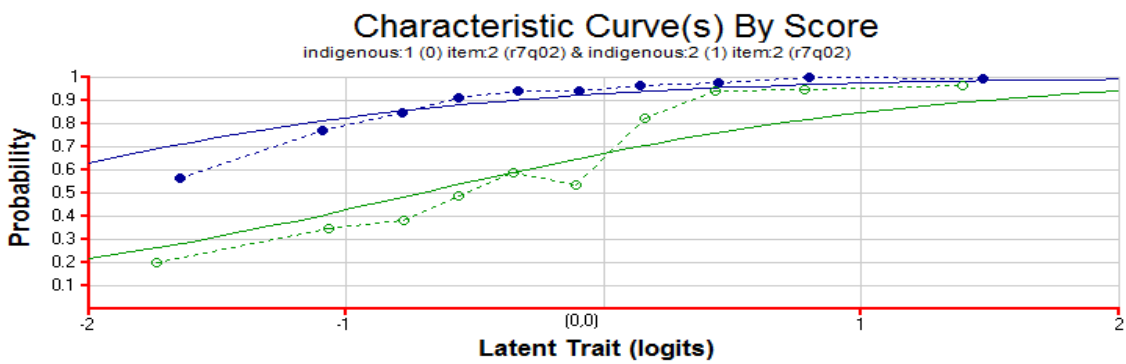
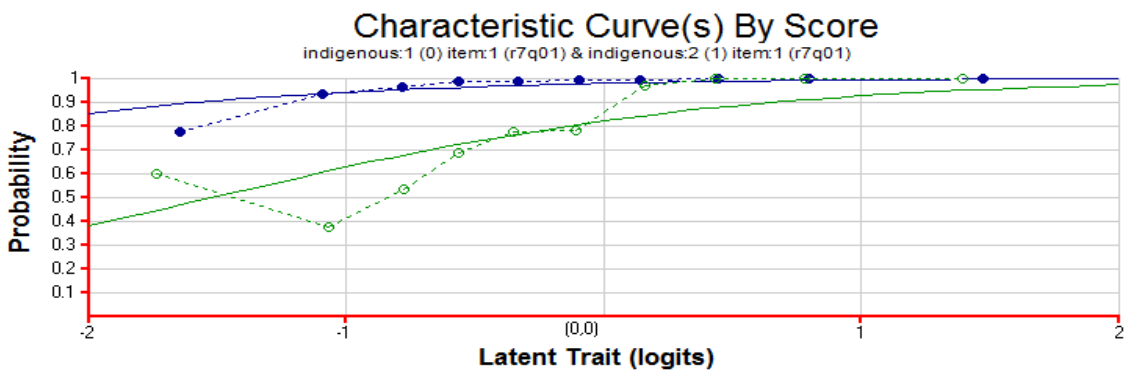
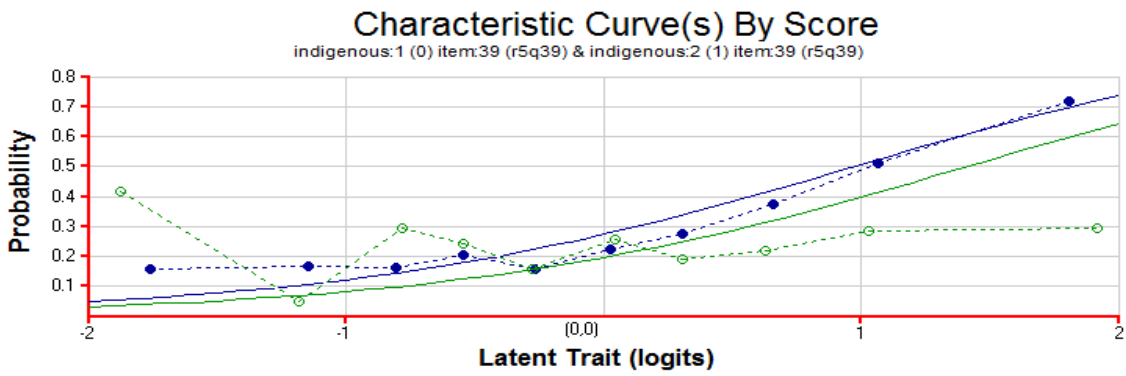
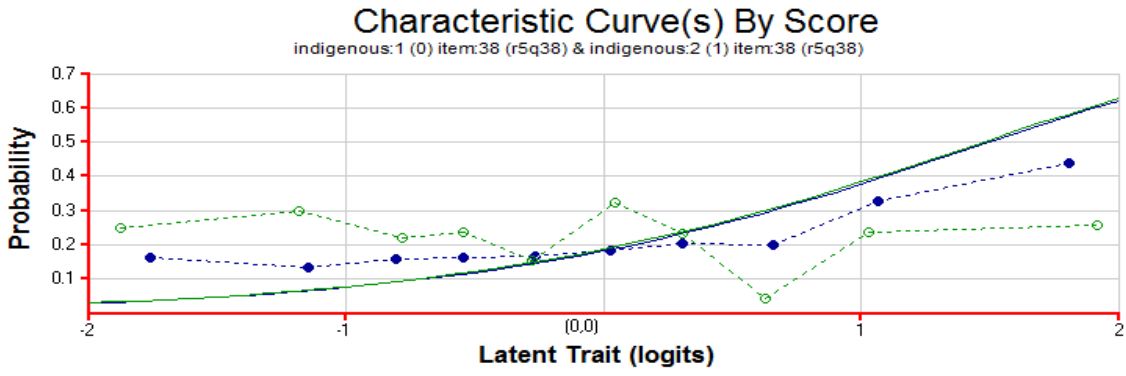


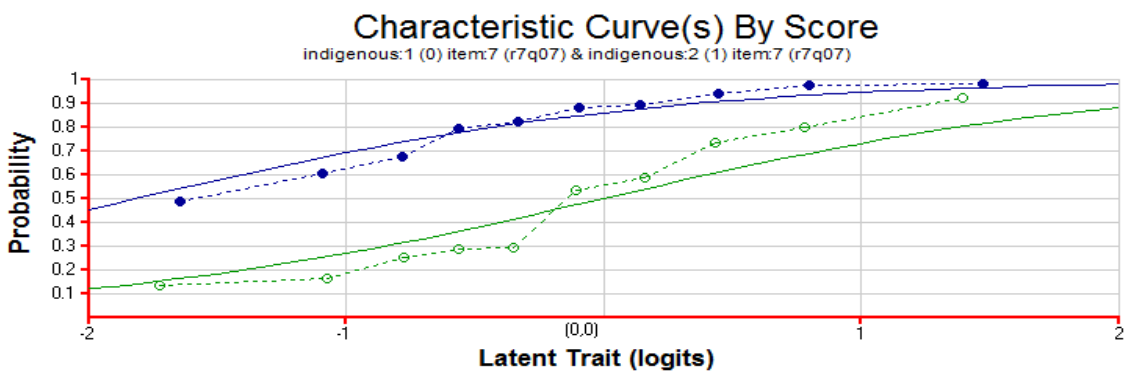
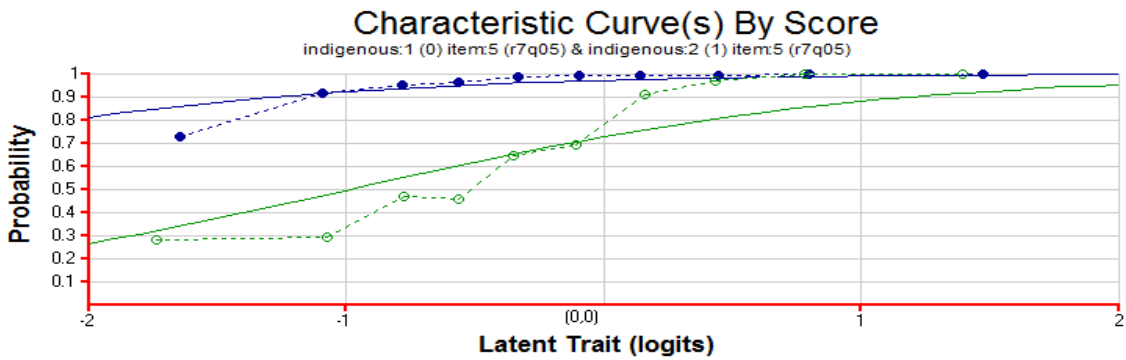
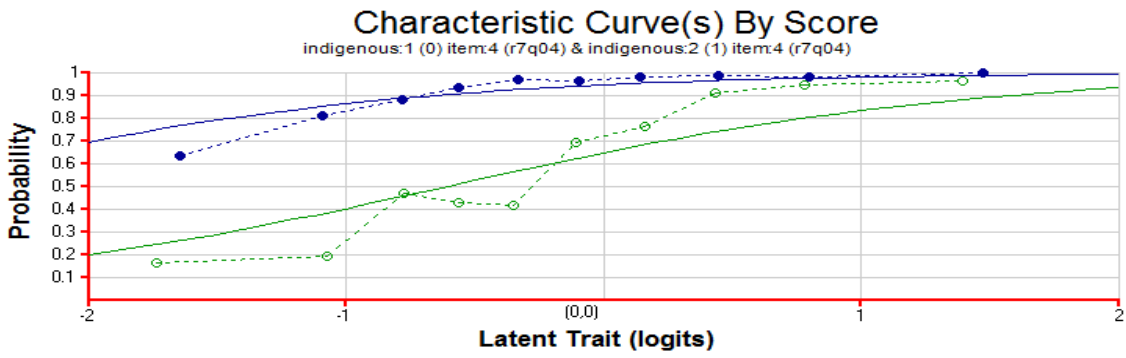
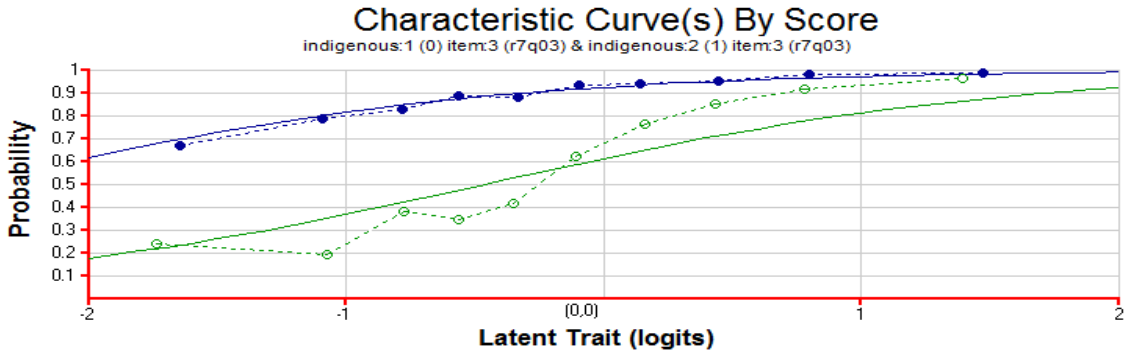


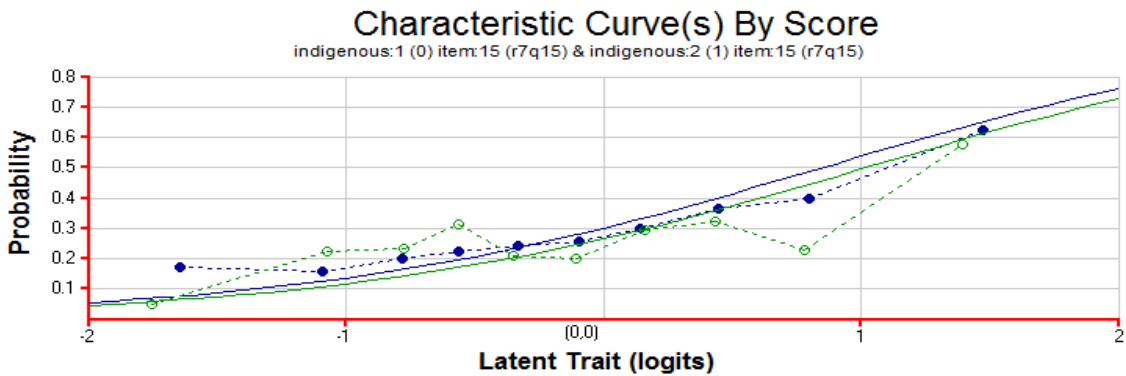
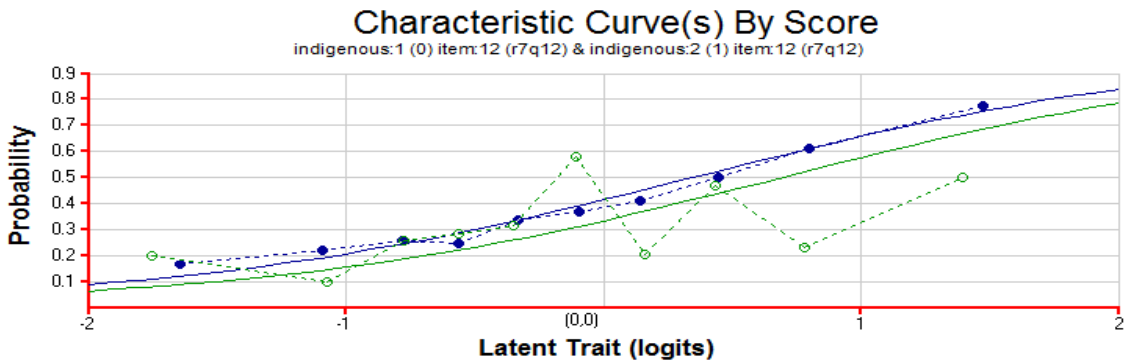
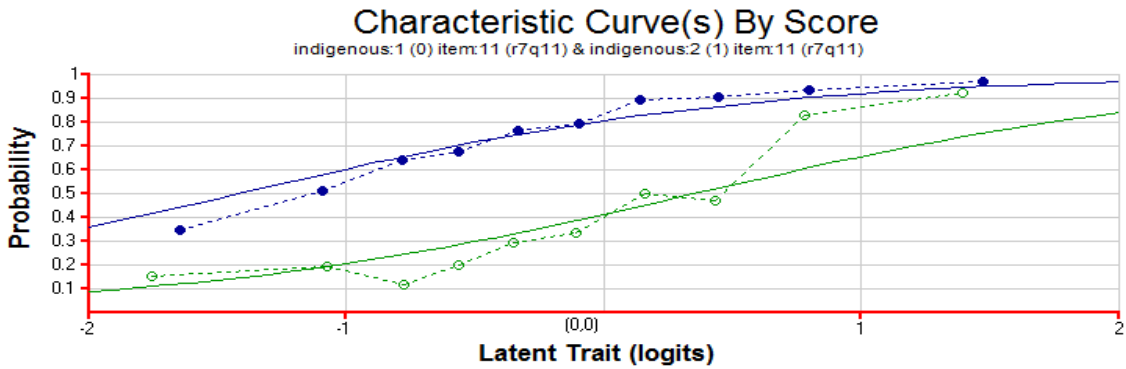
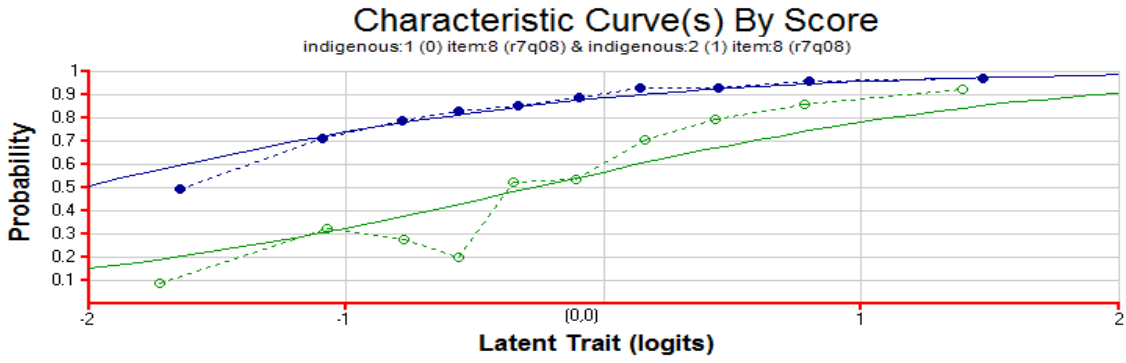


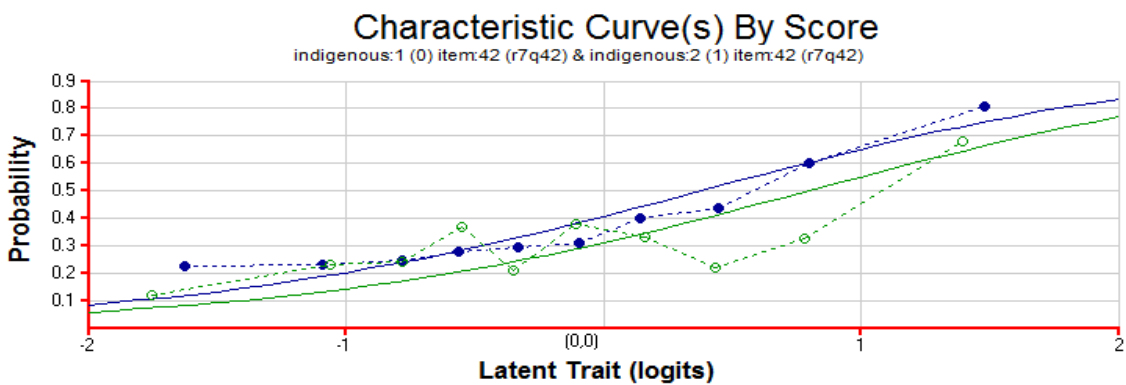
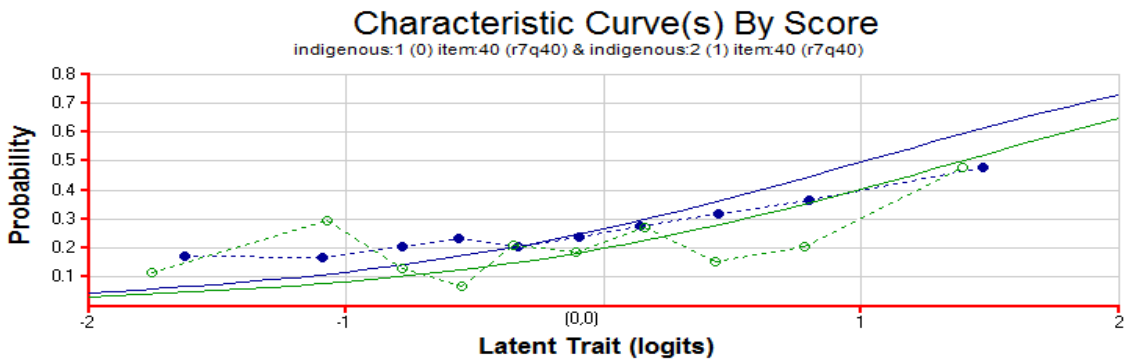
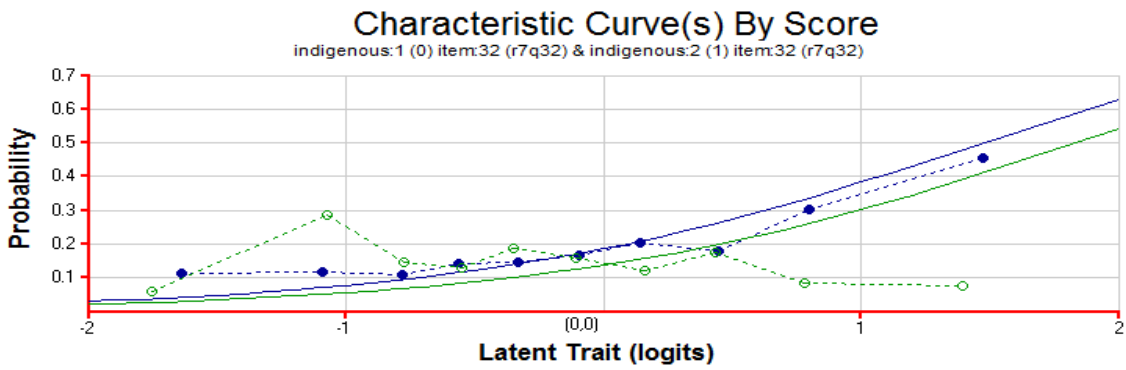
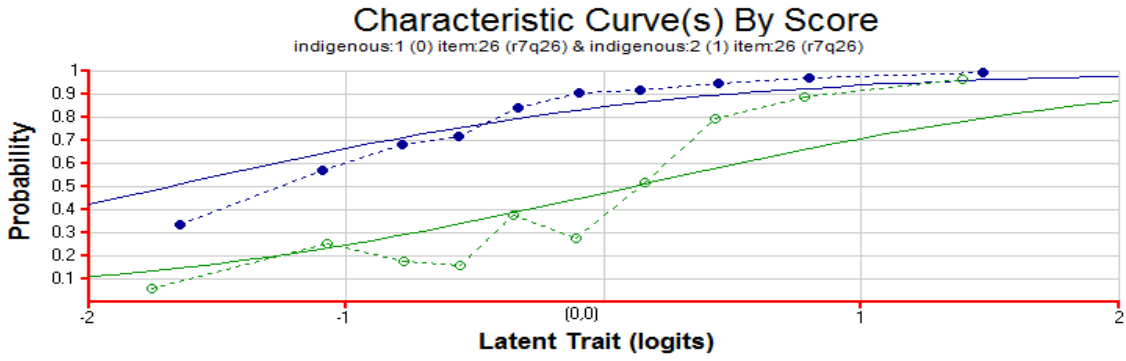


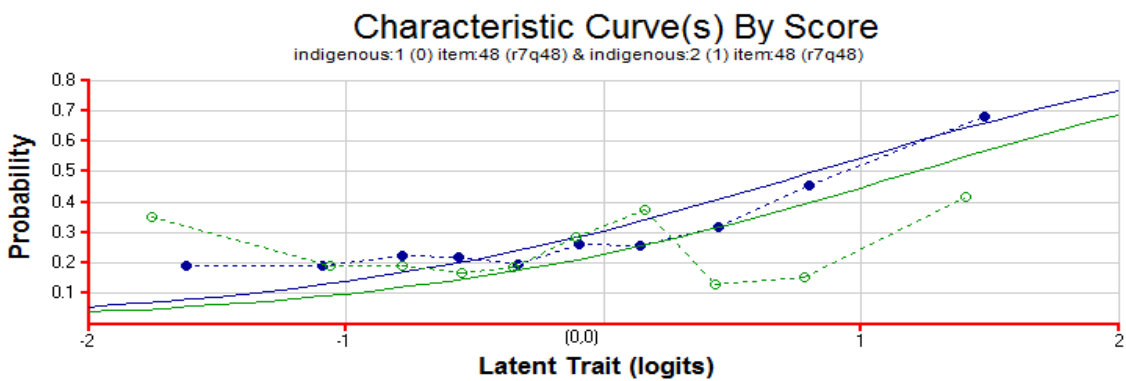
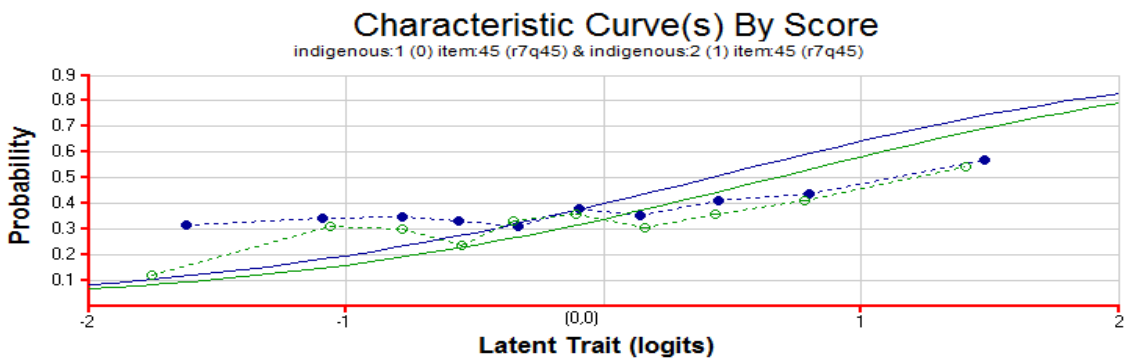
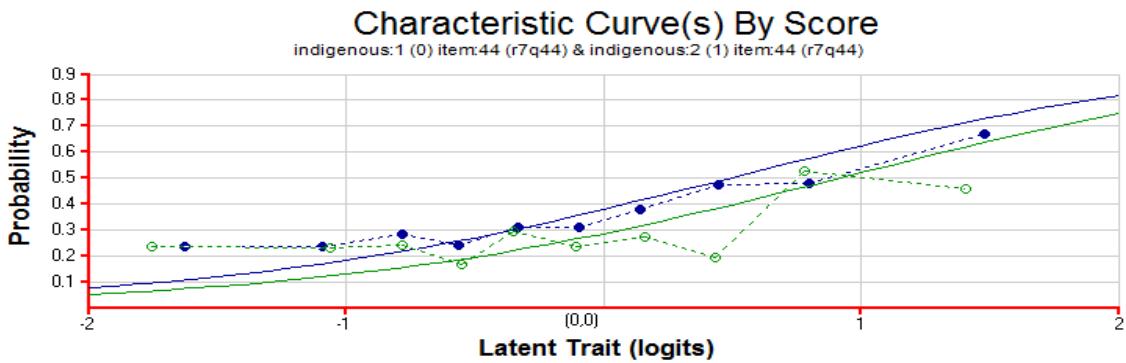
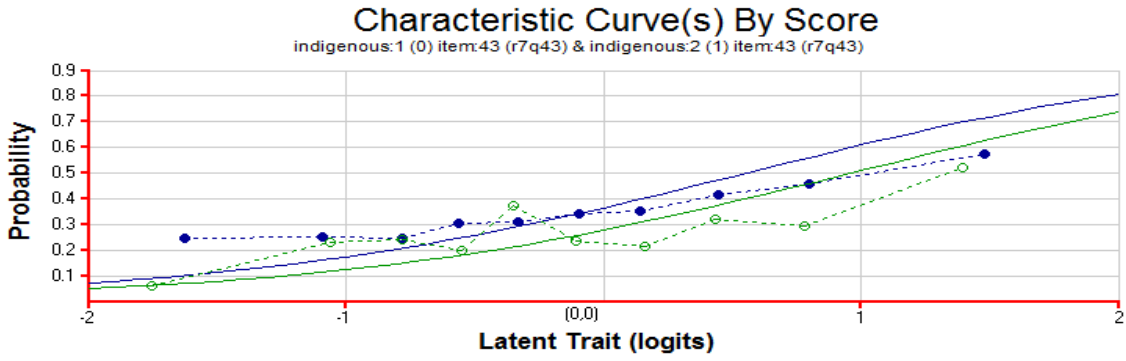


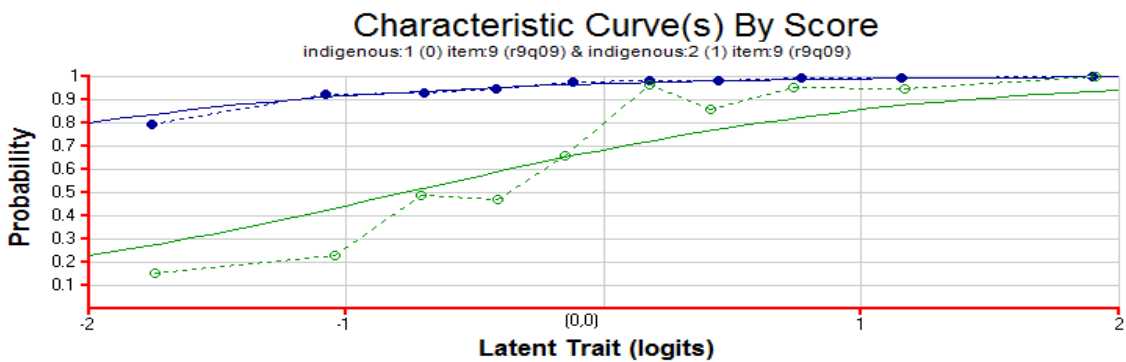
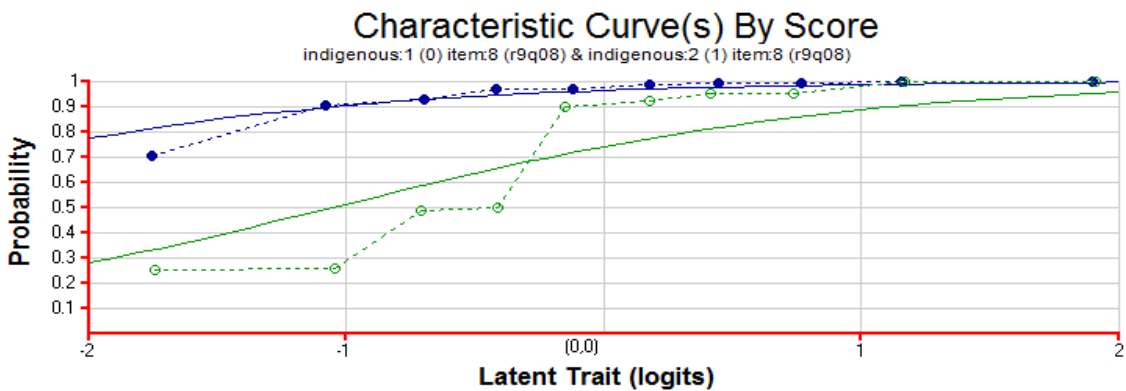
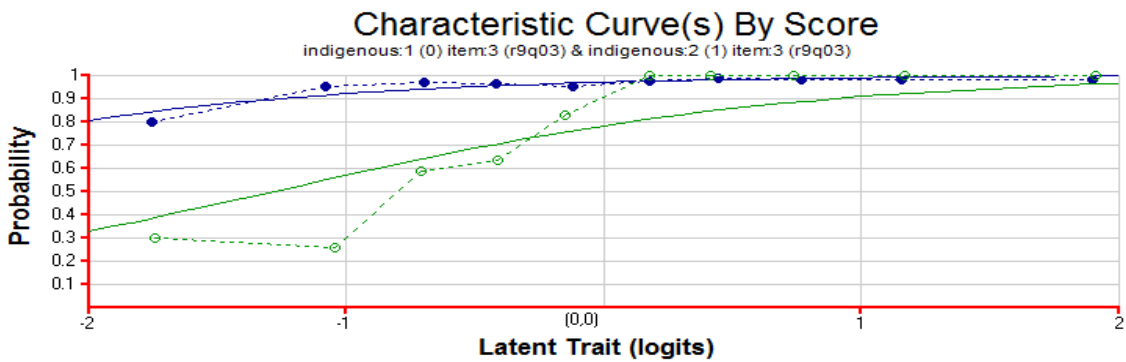
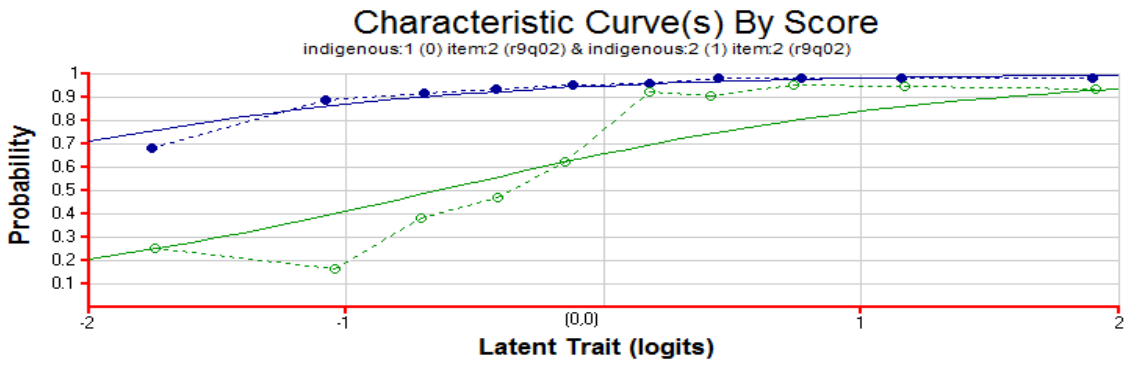


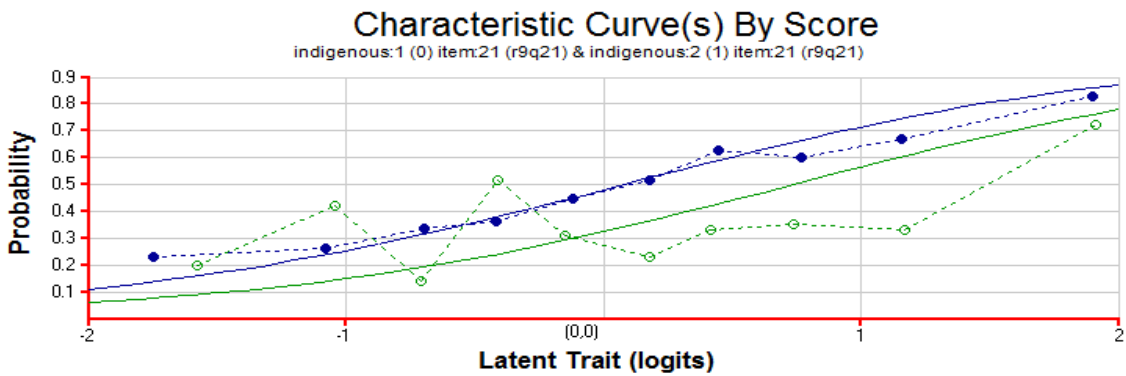
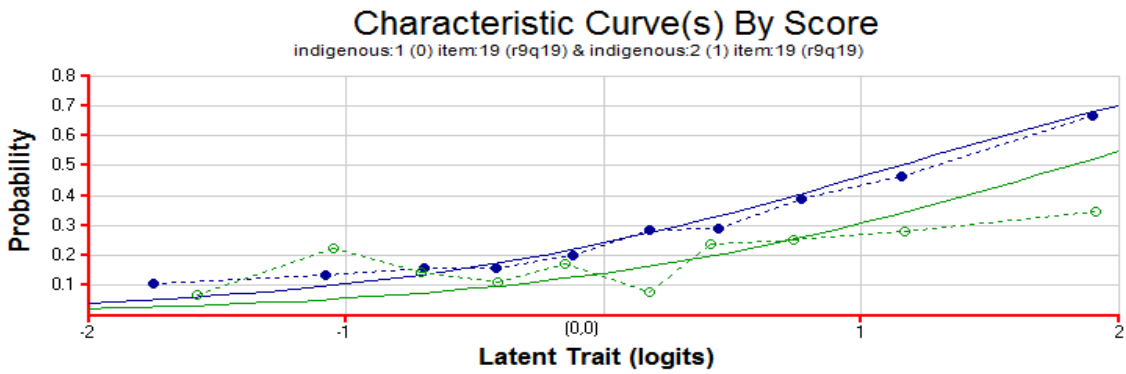
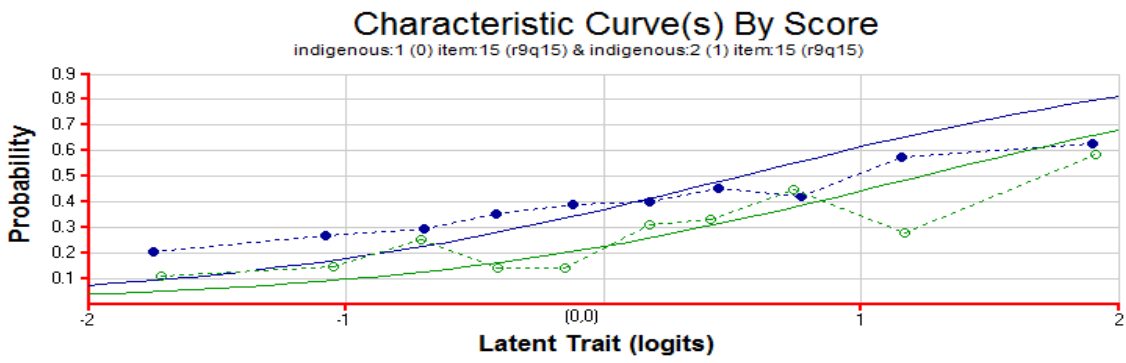
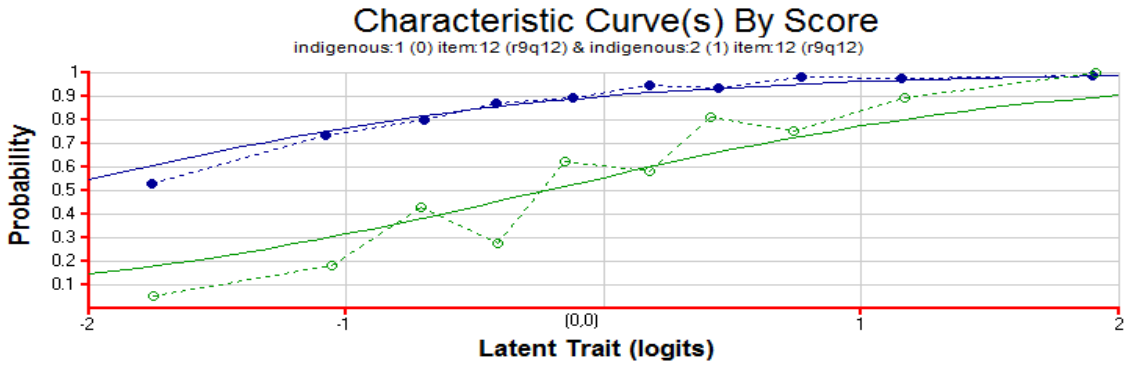


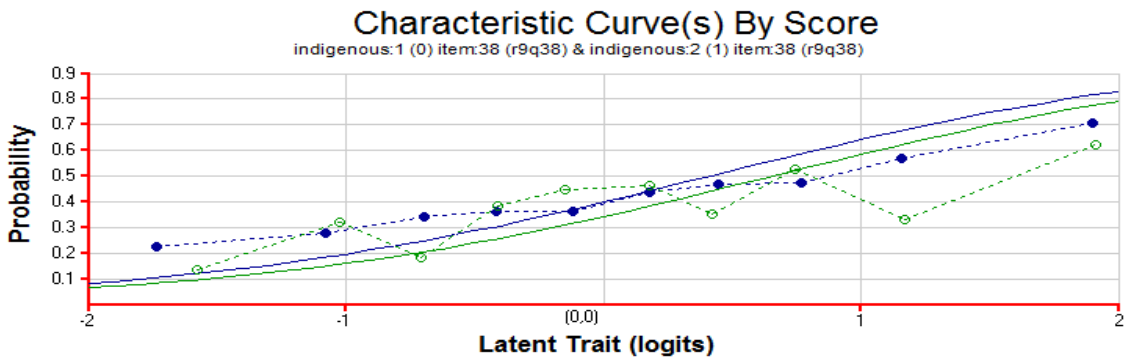
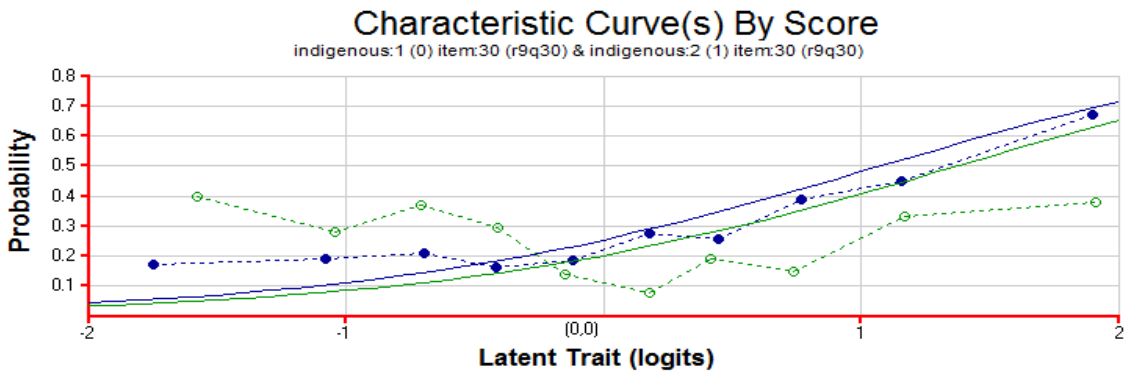




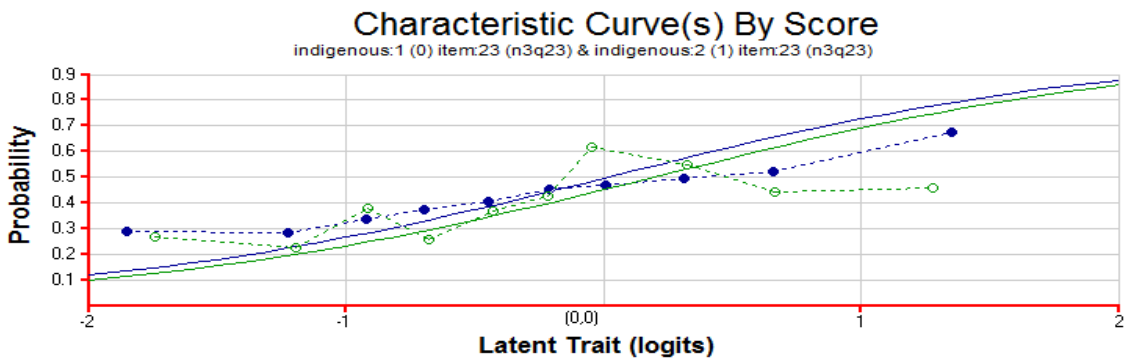
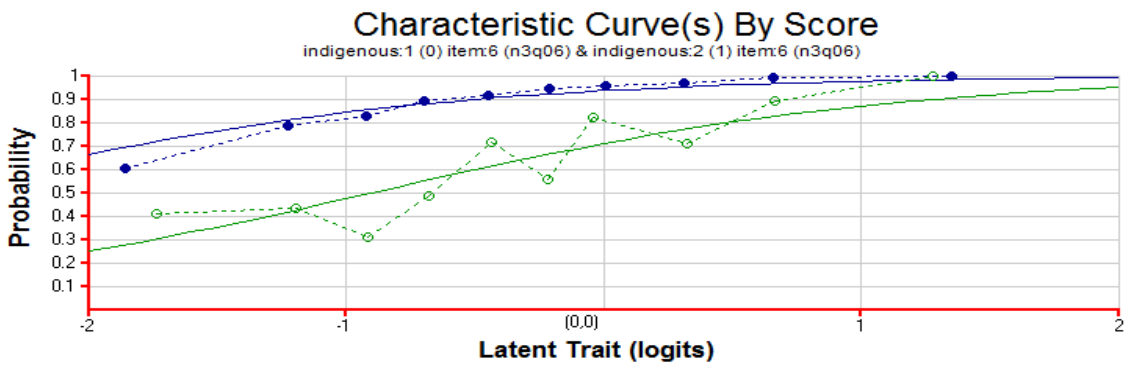
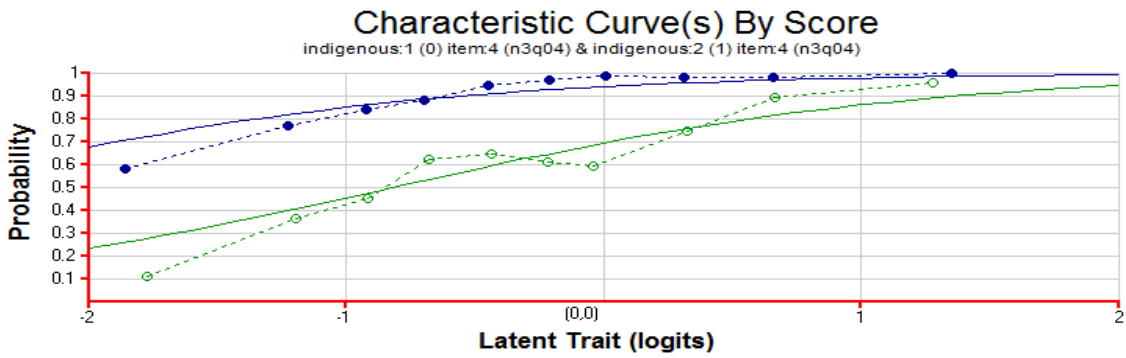
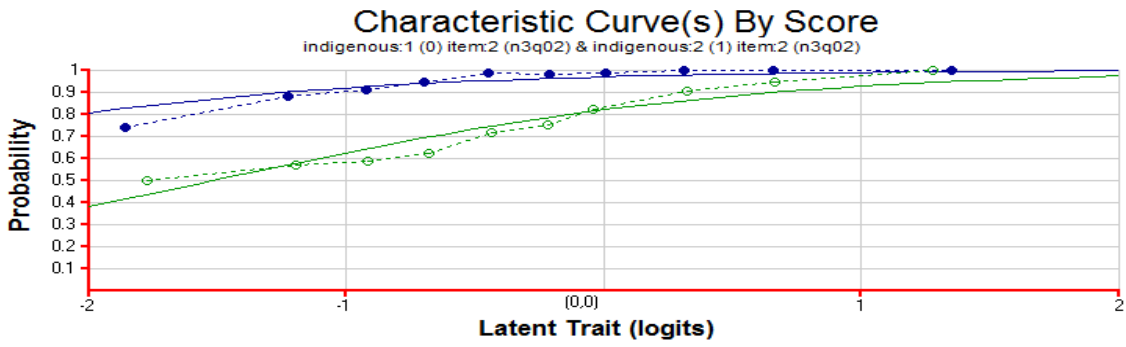


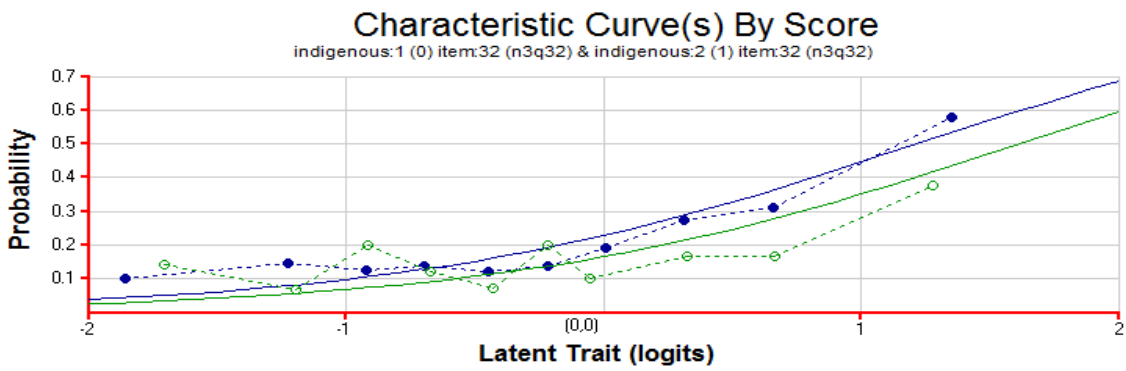
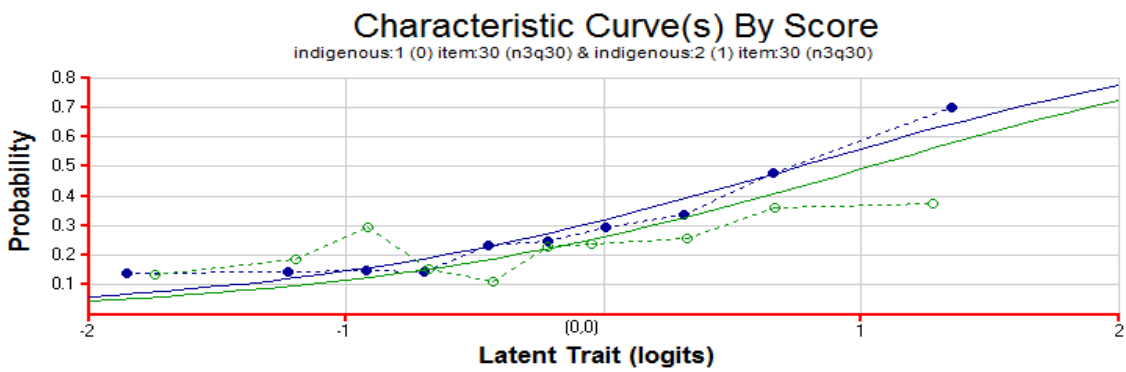
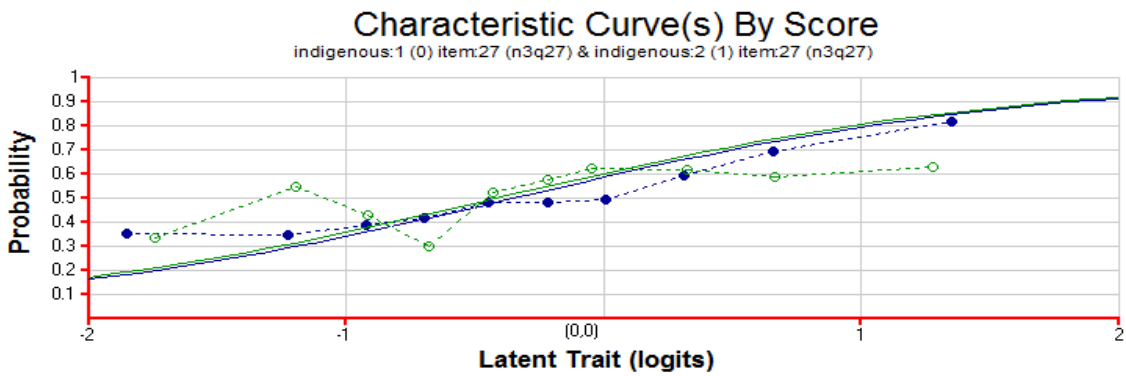
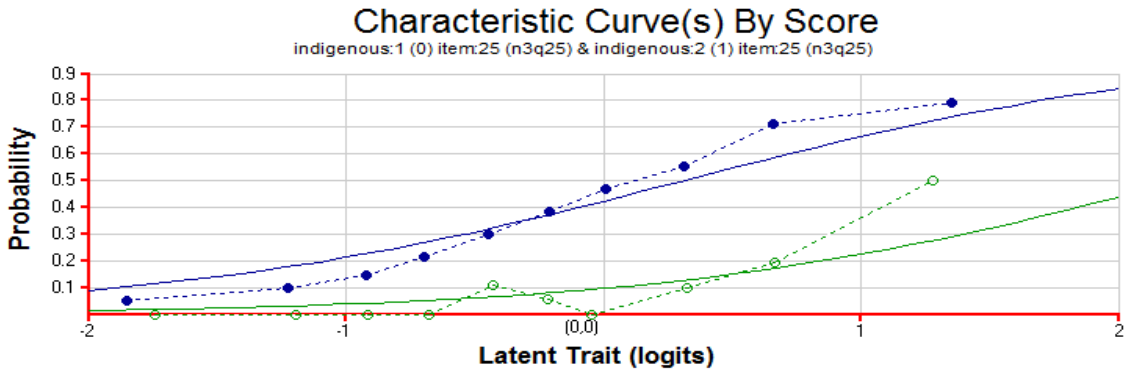


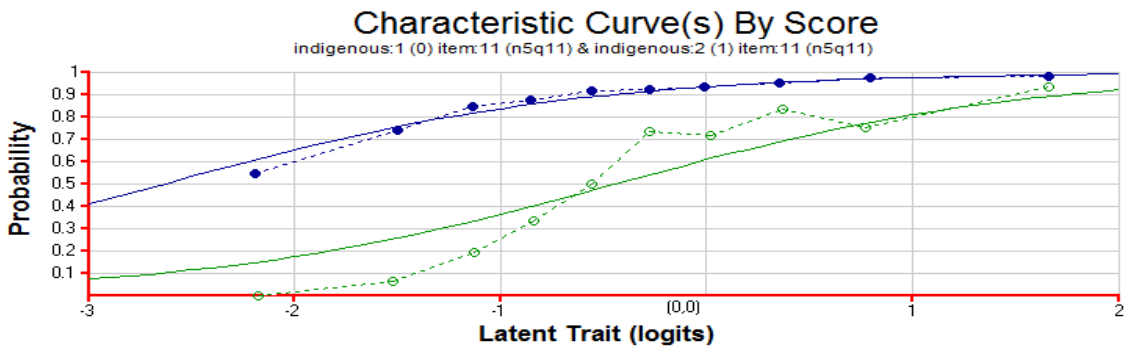
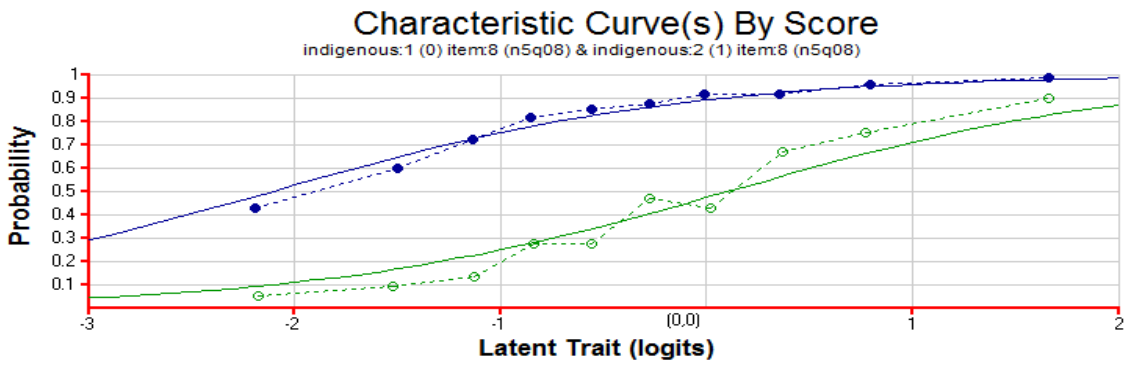
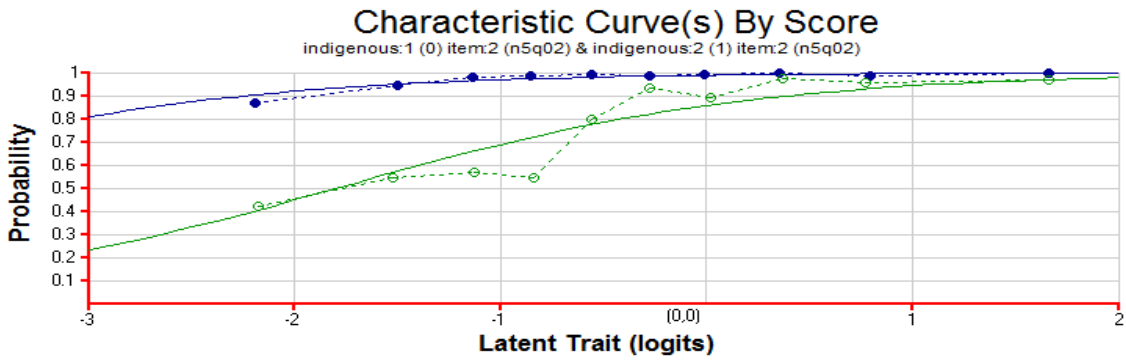
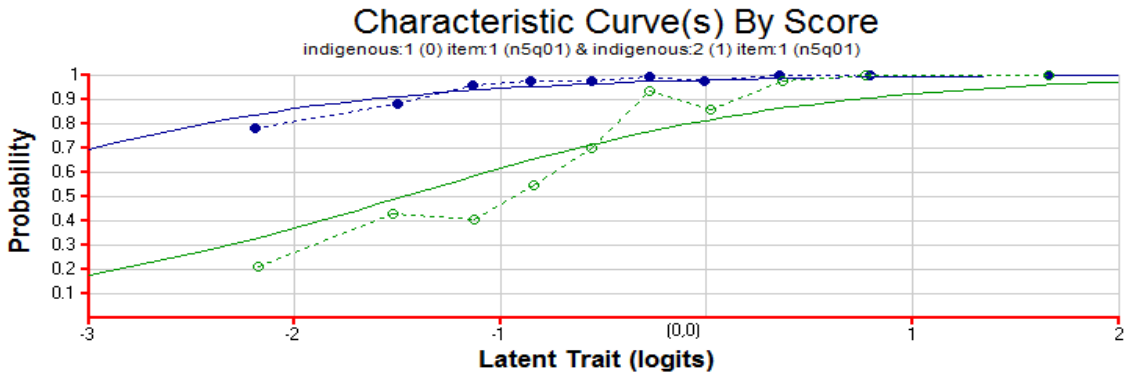


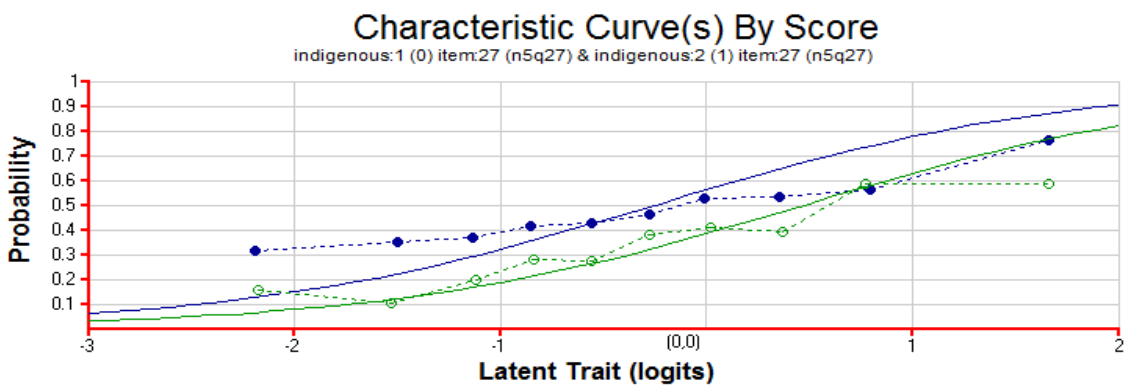
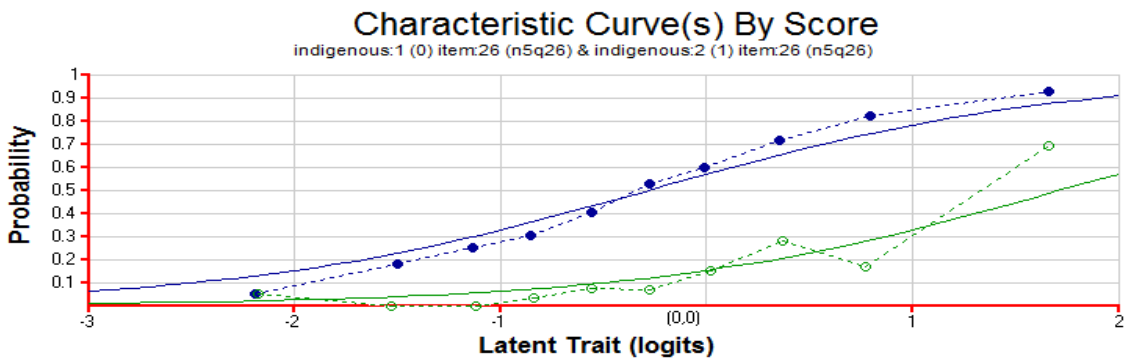
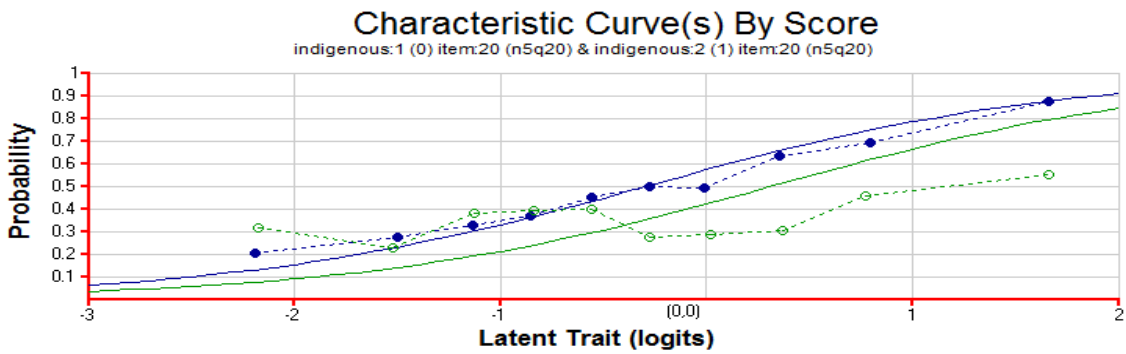
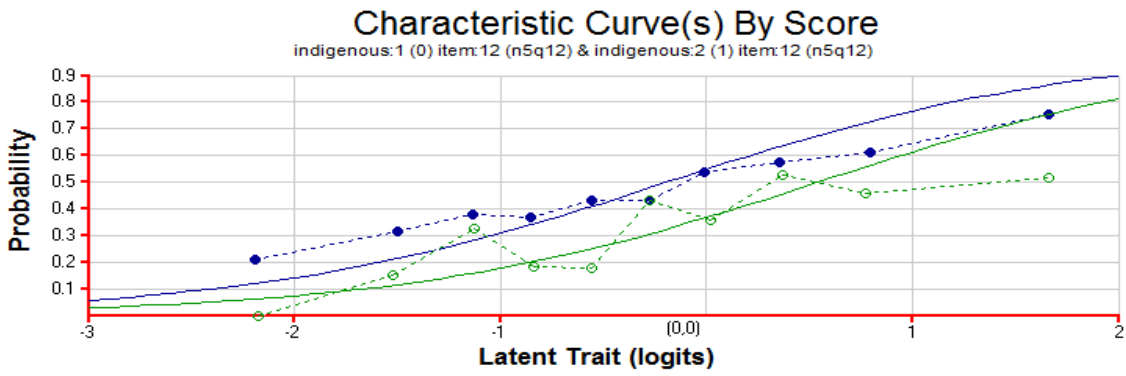


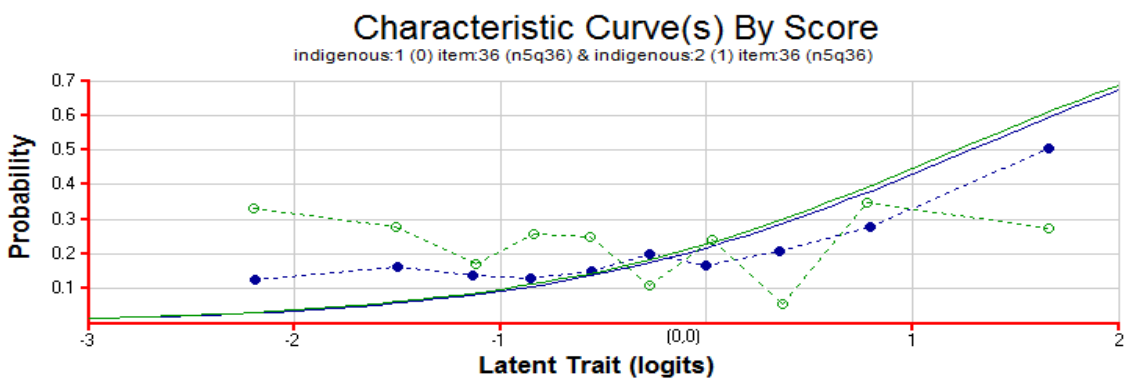
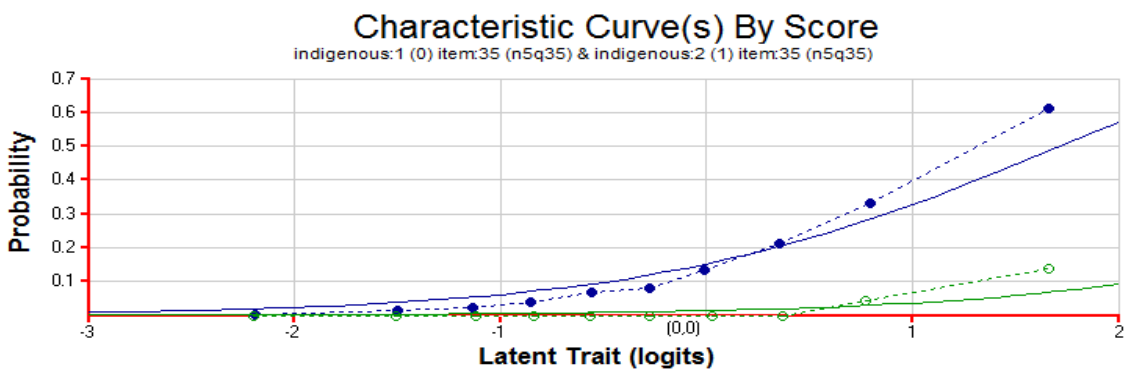
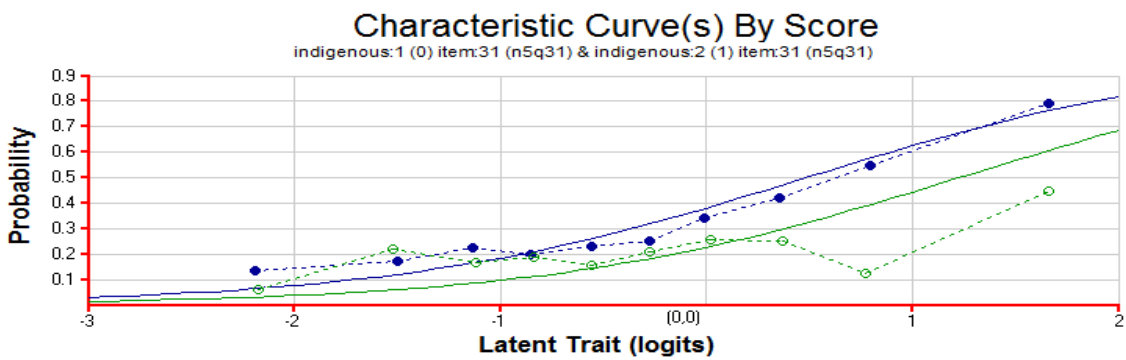
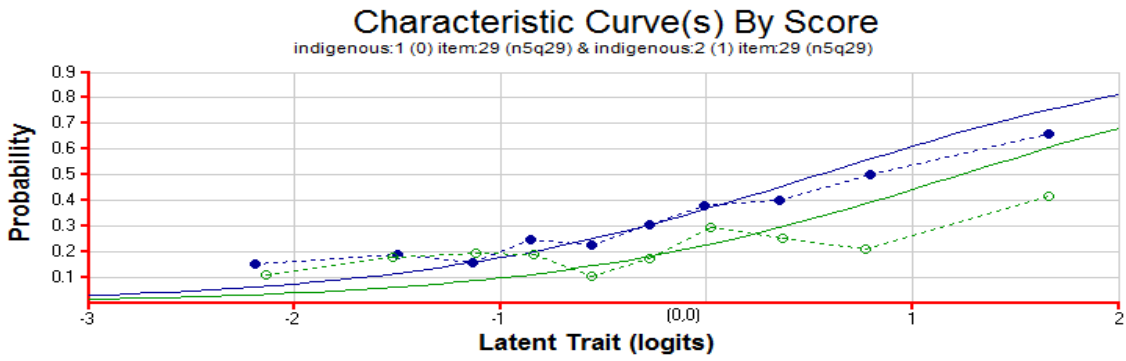
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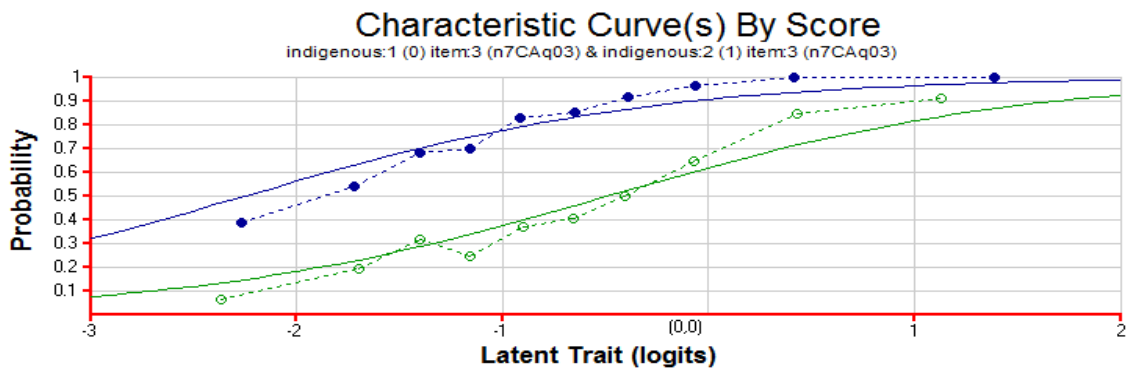
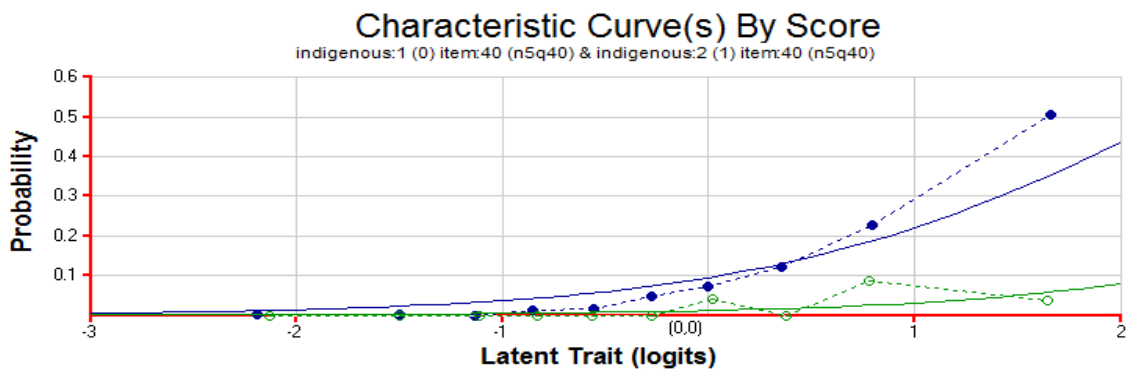
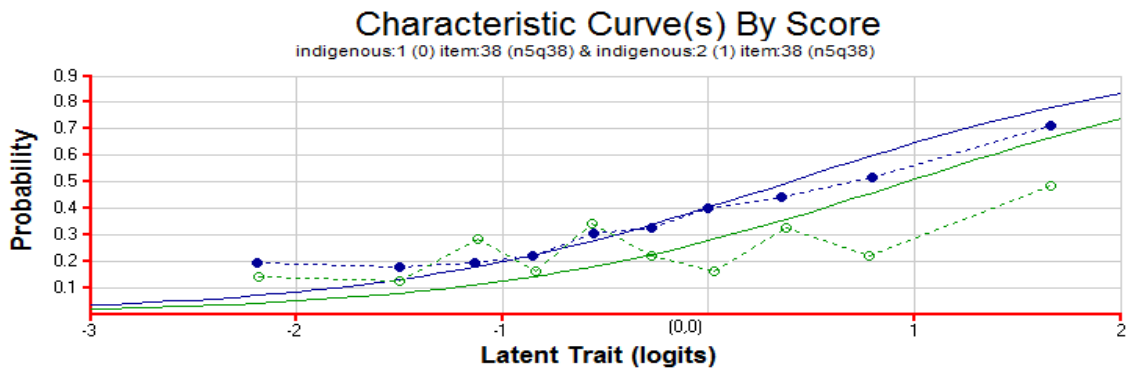
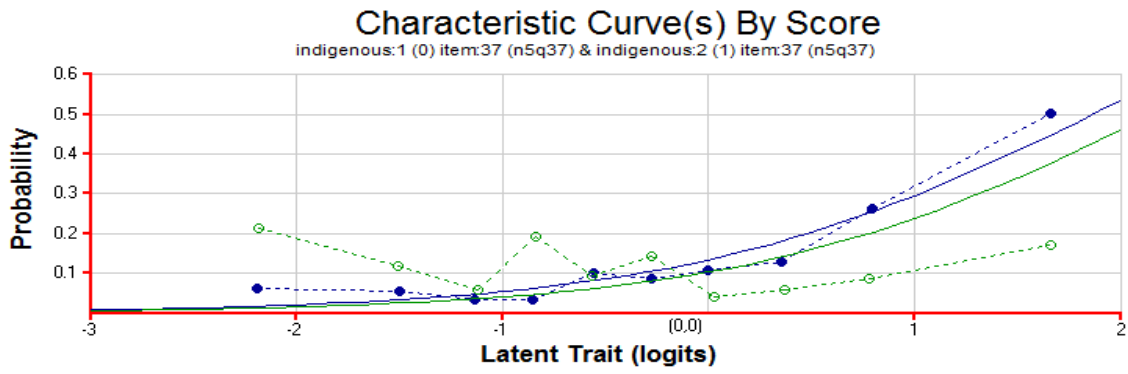


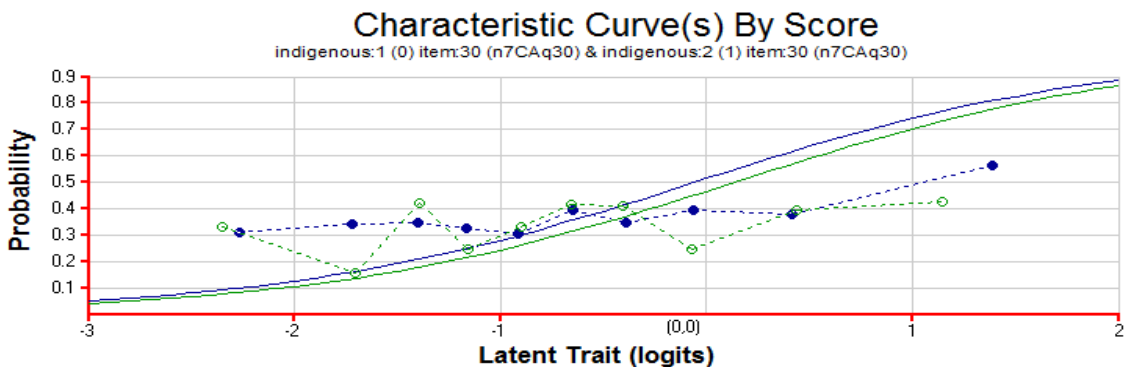
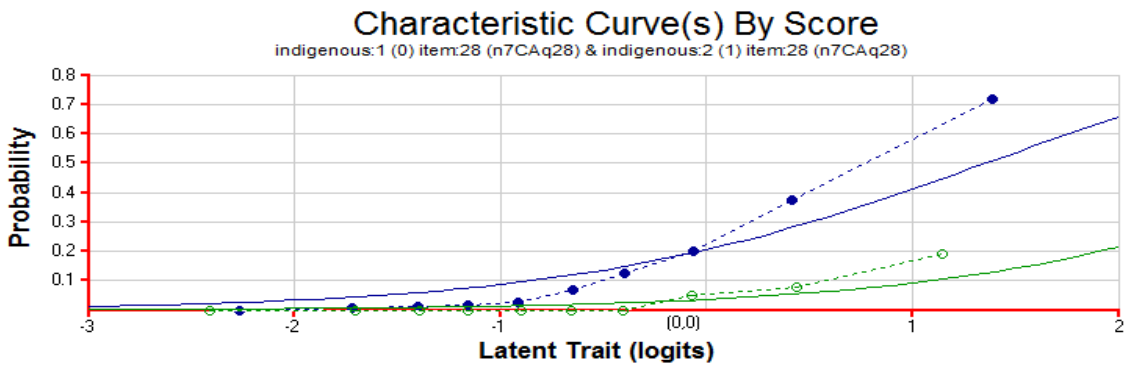
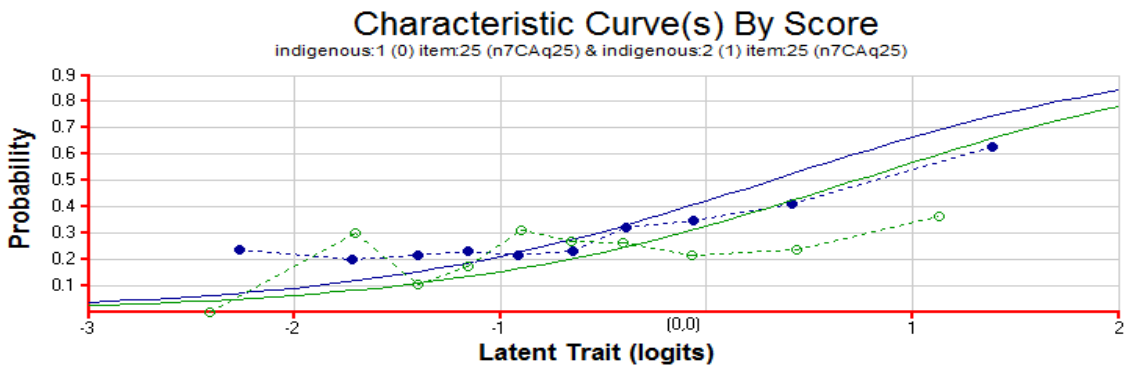
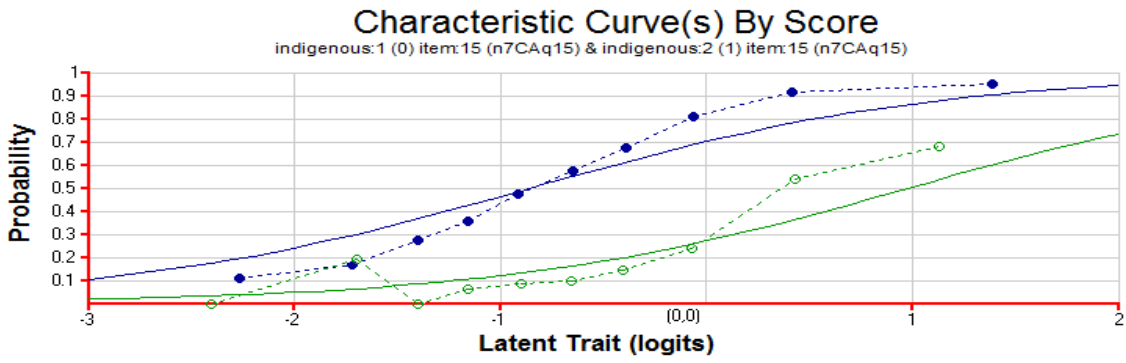


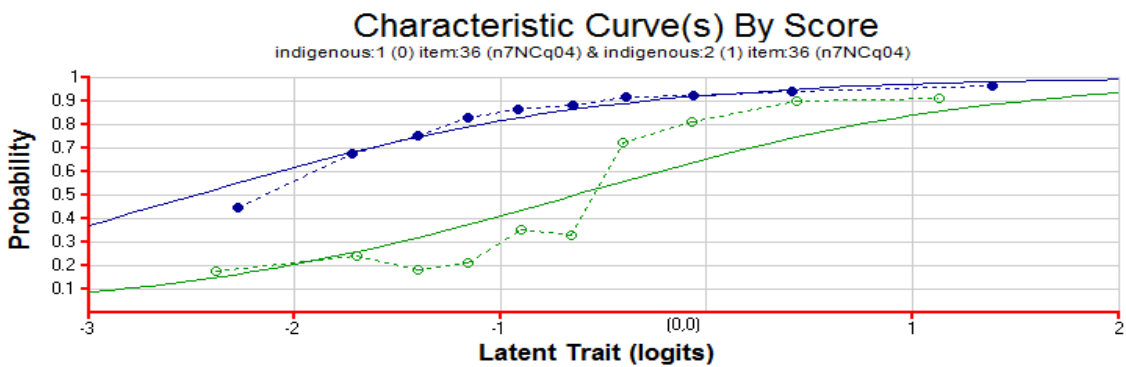
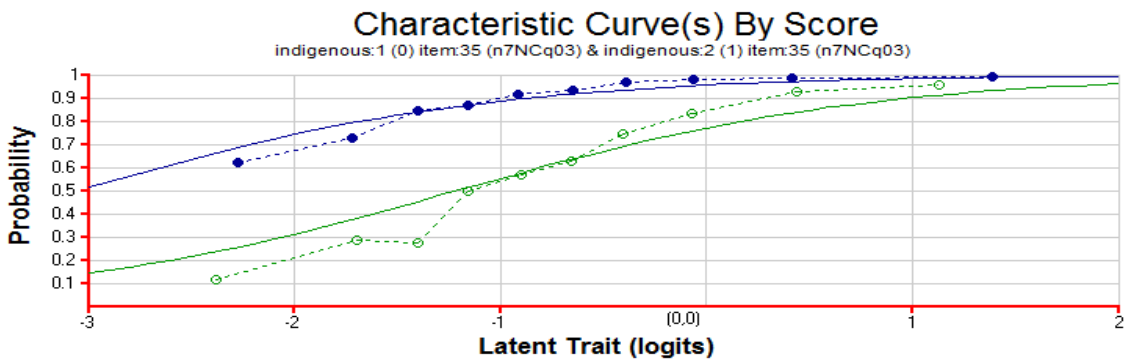
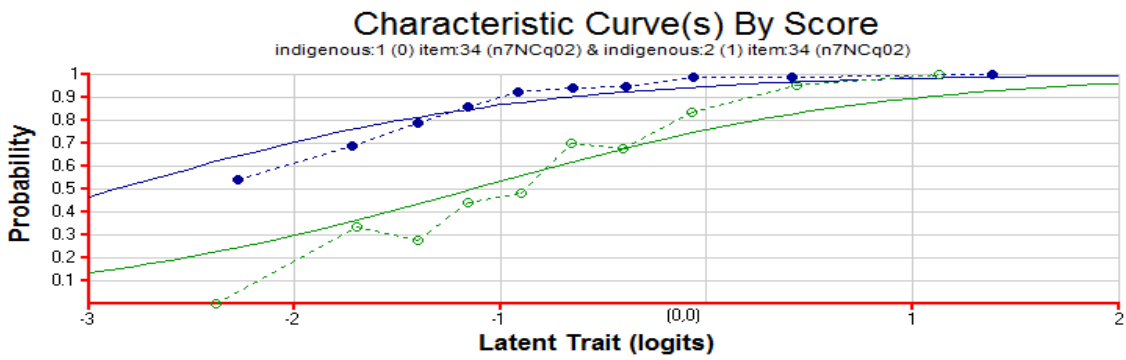
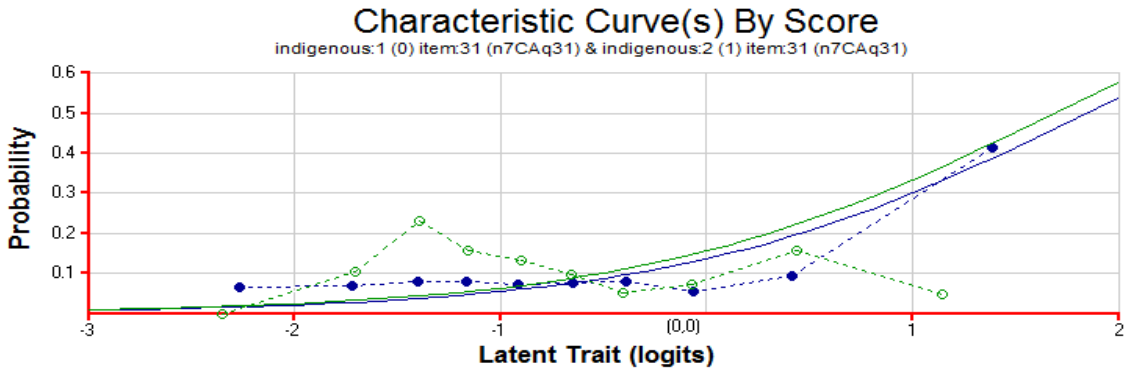


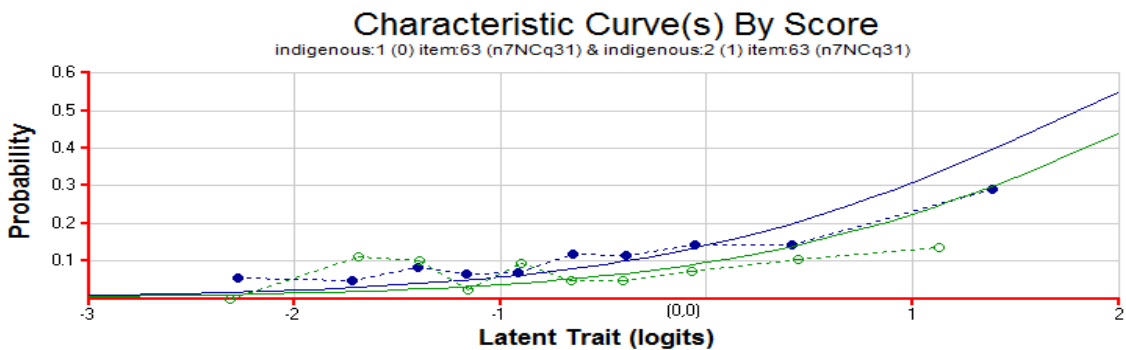
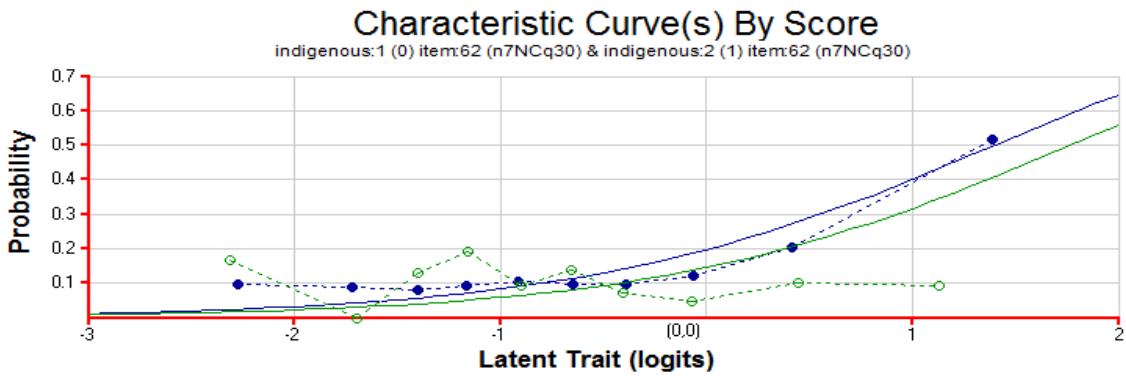
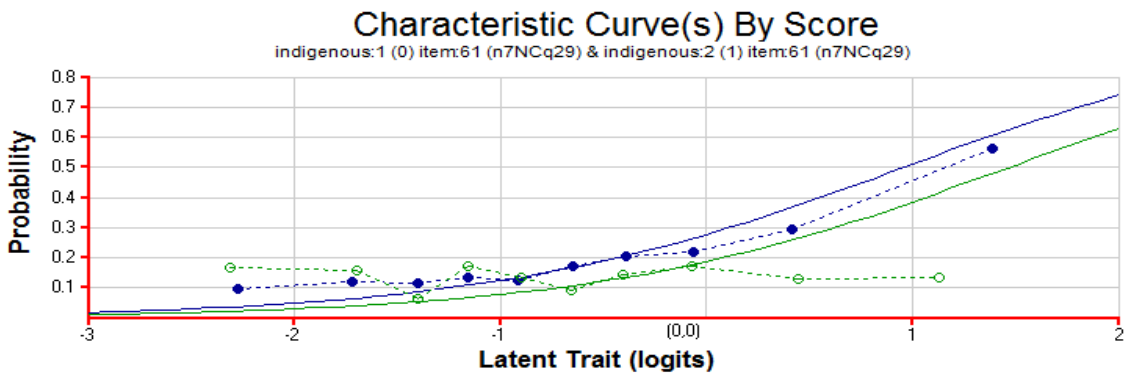
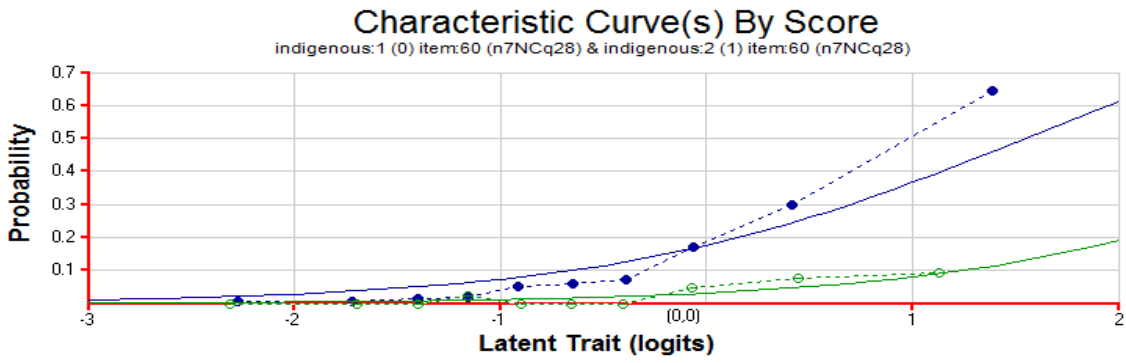


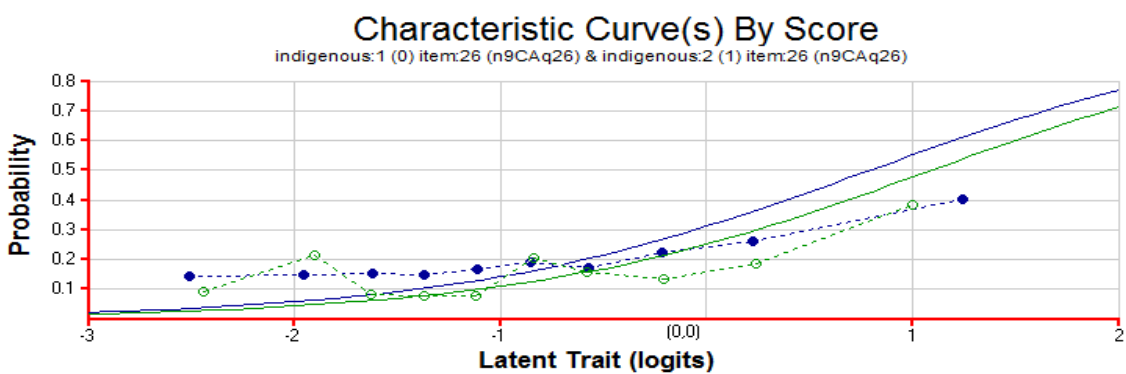
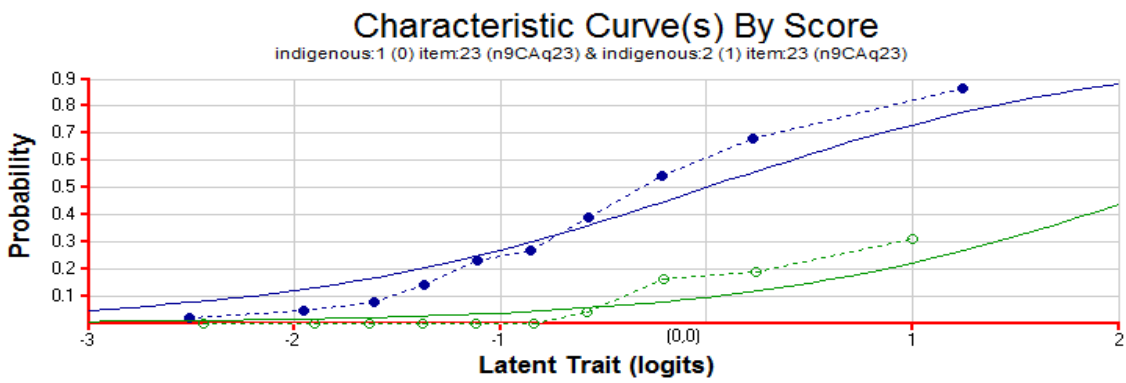
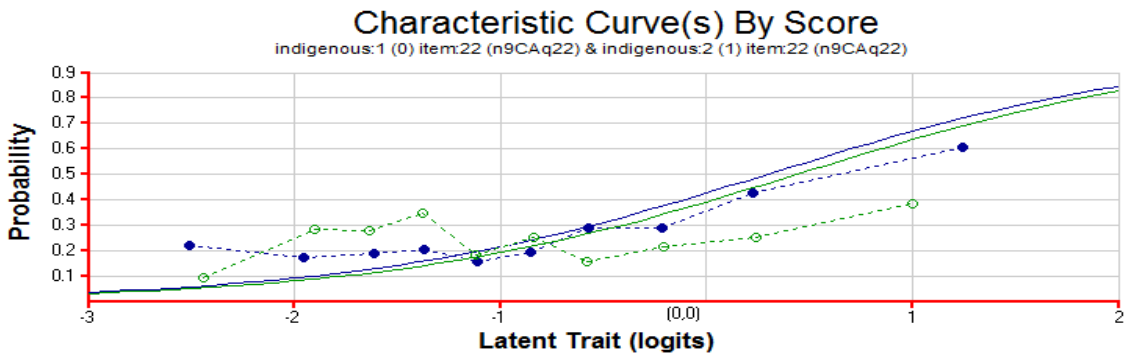
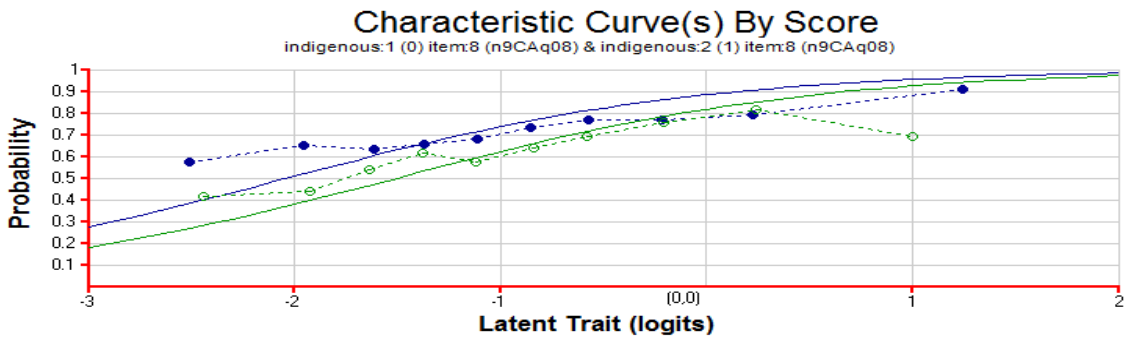


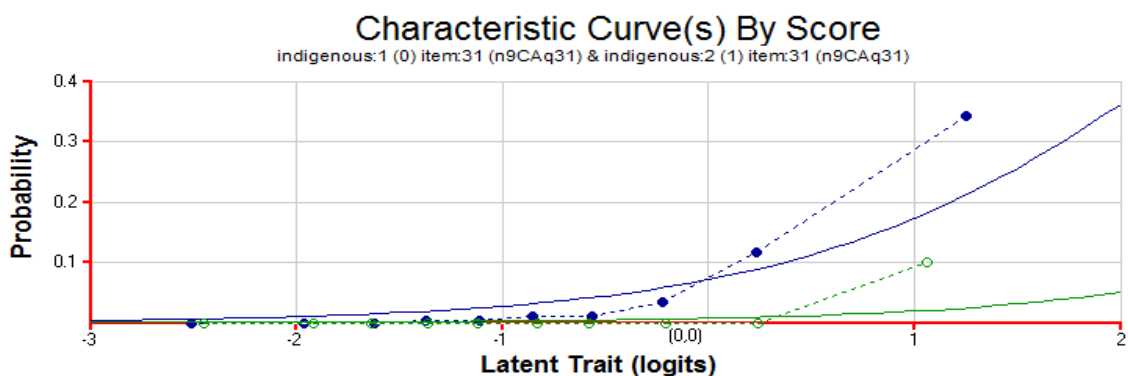
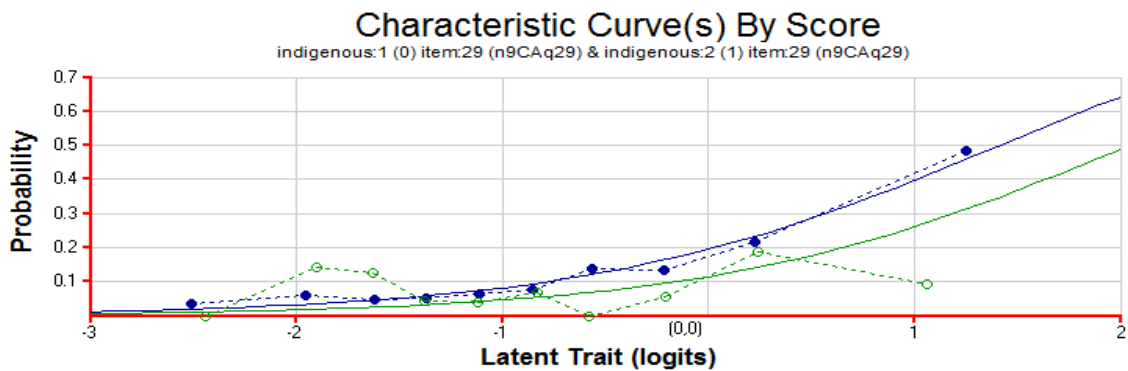
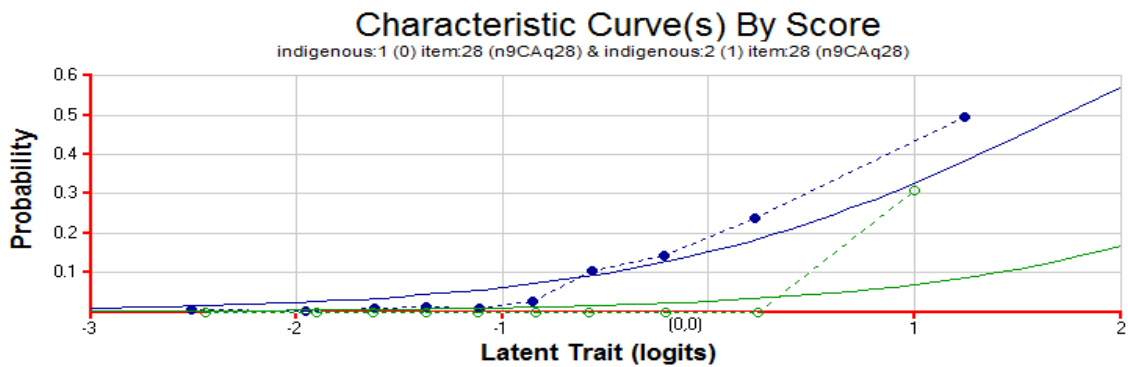
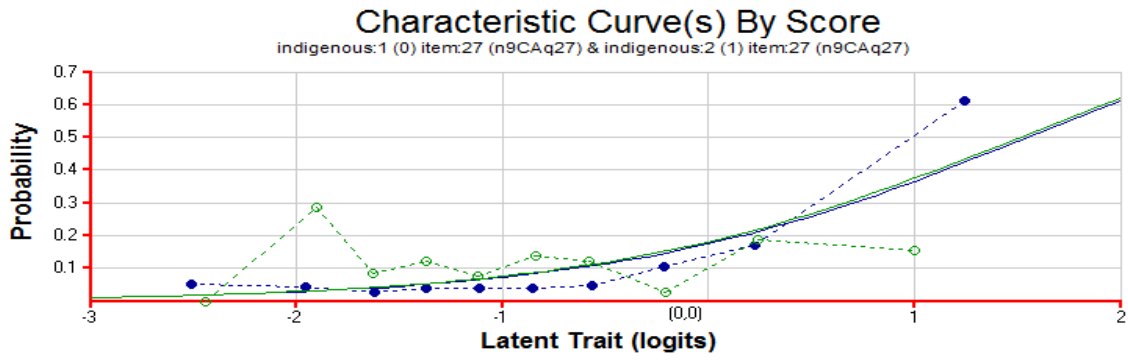


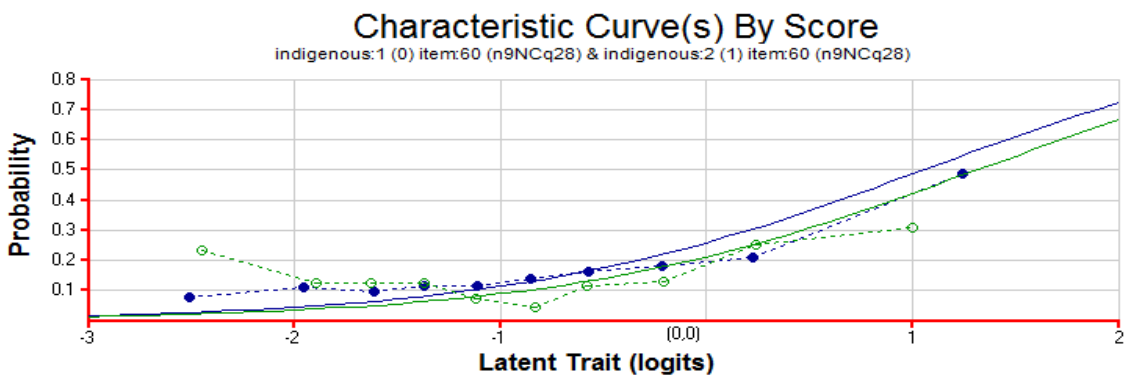
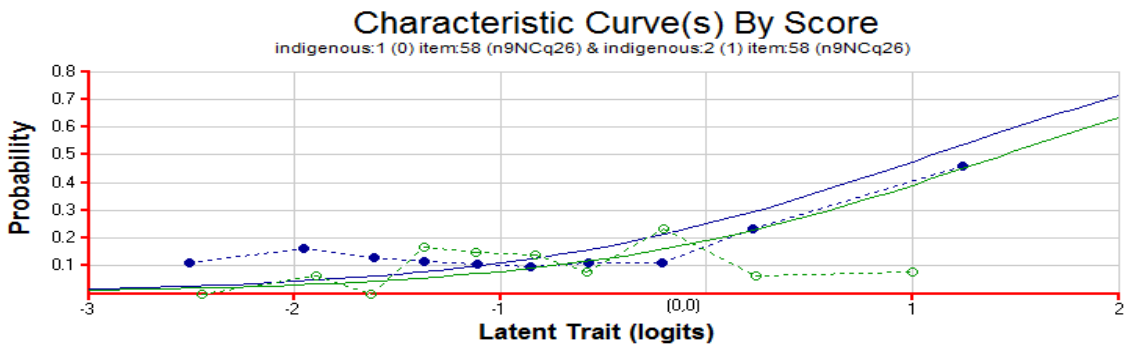
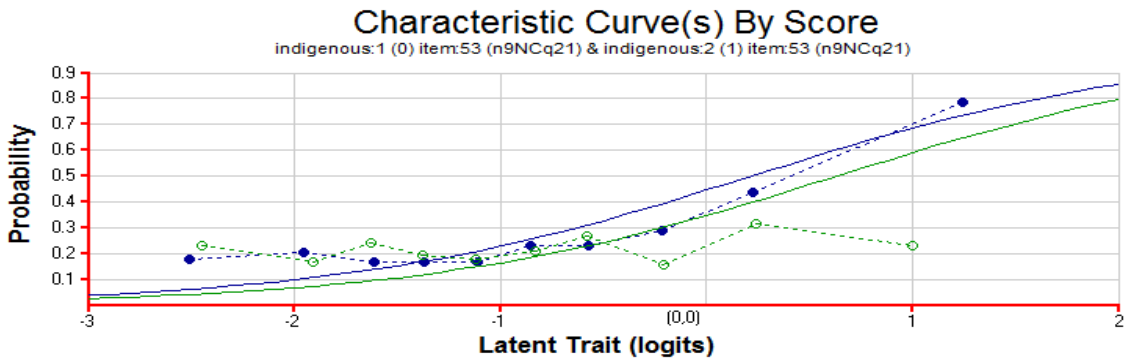
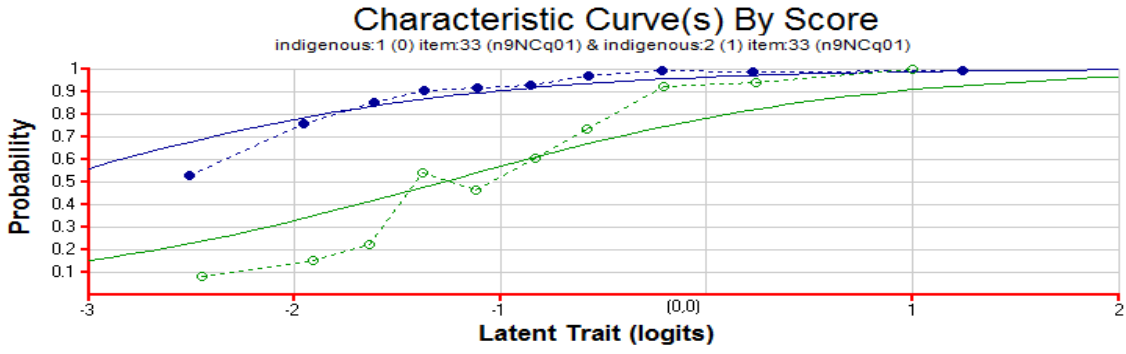


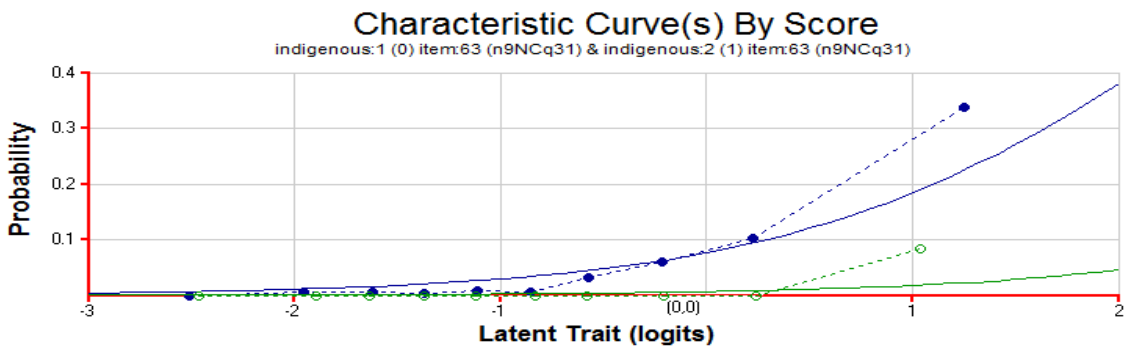
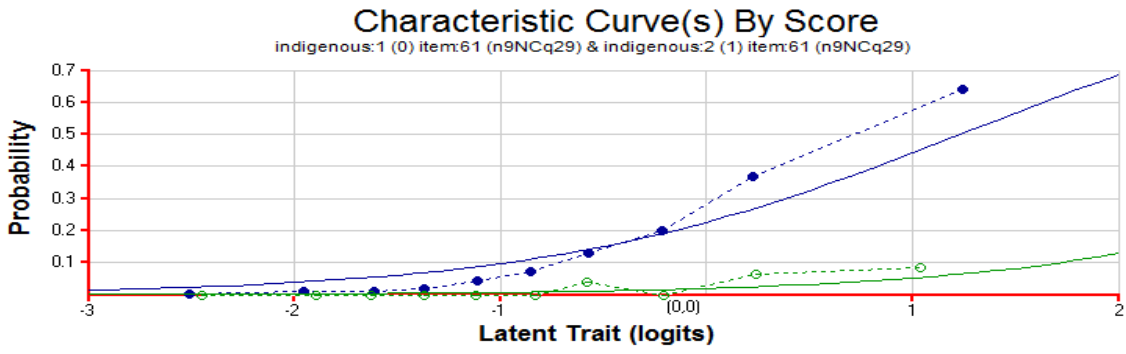












APPENDIX I. DIF BY DOMAIN BY YEAR LEVEL

Table I.1 Year 3 Reading Item DIF: Gender, LBOTE, and Indigenous

Item Label	Gender Difference	LBOTE Difference	Indigenous Difference
r3q01	0.275	0.221	0.698
r3q02	0.328	0.472	0.769
r3q03	0.219	0.651	1.393
r3q04	0.094	0.058	0.741
r3q05	-0.099	-0.333	0.042
r3q06	-0.008	0.109	0.826
r3q07	0.302	0.406	1.261
r3q08	0.31	0.235	0.702
r3q09	0.189	0.035	0.374
r3q10	0.039	0.119	0.692
r3q11	-0.001	0.249	0.711
r3q12	0.152	0.087	0.538
r3q13	0.04	0.035	0.094
r3q14	0.135	-0.05	-0.211
r3q15	0.05	-0.152	0.527
r3q16	-0.084	-0.148	-0.017
r3q17	0.031	-0.067	-0.294
r3q18	-0.083	-0.046	-0.027
r3q19	-0.011	-0.067	0.507
r3q20	0.051	0.028	-0.14
r3q21	0.096	-0.098	-0.27
r3q22	-0.061	-0.118	-0.543
r3q23	-0.169	-0.291	-0.261
r3q24	-0.019	-0.01	-0.564
r3q25	0.063	-0.032	0.109
r3q26	-0.222	-0.019	-0.046
r3q27	0.026	-0.119	-0.411
r3q28	-0.112	0	-0.211
r3q29	-0.083	-0.193	0.123
r3q30	-0.189	-0.147	-0.548
r3q31	-0.176	-0.072	-0.53
r3q32	-0.172	-0.135	-0.045
r3q33	-0.166	-0.016	-0.871
r3q34	-0.253	-0.268	-0.94
r3q35	-0.073	-0.038	-0.427
r3q36	0.109	0.166	-0.529
r3q37	-0.175	0.05	-0.862
r3q38	-0.256	-0.54	-1.257
r3q39	-0.094	0.039	-1.102

Table I.2 Year 3 Reading Item DIF:TAA

Item_Label	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
r3q01	0.153	-0.748	0.489	0.091	0.006	0.056	-0.316	-0.437
r3q02	-0.186	-0.041	0.326	-0.005	-0.117	0.144	-0.281	0.016
r3q03	-0.018	-0.469	0.83	-0.158	-0.455	0.304	-1.008	-0.398
r3q04	-0.085	-0.02	0.535	0.064	-0.45	0.127	-0.307	-0.136
r3q05	0.103	-0.088	-0.207	0.189	-0.035	0.092	0.099	-0.015
r3q06	-0.249	-0.091	0.5	-0.093	0.144	0.167	-0.299	-0.082
r3q07	-0.037	0.104	0.582	-0.411	-0.284	0.182	-0.513	-0.118
r3q08	-0.358	0.304	0.54	-0.397	-0.339	-0.066	-0.068	0.121
r3q09	0.176	0.028	0.069	-0.057	-0.162	0.134	0.013	-0.059
r3q10	-0.129	-0.268	0.249	-0.069	0.018	0.174	-0.243	0.166
r3q11	-0.148	-0.09	0.403	-0.072	-0.091	0.163	-0.295	0.068
r3q12	-0.389	-0.128	0.299	0.155	-0.186	0.089	0.178	-0.041
r3q13	0.218	0.013	-0.059	0.161	-0.046	-0.156	-0.023	0.051
r3q14	-0.152	0.091	-0.079	0.015	-0.076	0.123	0.135	0.083
r3q15	-0.08	0.037	0.182	0.372	-0.103	0.026	-0.187	-0.183
r3q16	-0.064	-0.032	0.073	-0.113	0.165	0.195	-0.075	0.048
r3q17	-0.031	0.061	-0.193	0.109	0.095	-0.103	0.069	0.122
r3q18	-0.027	0.047	0.05	0.272	-0.002	-0.054	-0.363	0.157
r3q19	0.05	-0.047	0.198	-0.083	0.125	0.122	-0.261	-0.009
r3q20	-0.09	-0.03	-0.117	0.066	0.123	-0.017	0.201	0.015
r3q21	0.066	0.154	-0.17	-0.035	0.026	0.08	0.097	-0.065
r3q22	-0.088	0.167	-0.179	0.103	0.057	-0.012	-0.016	0.089
r3q23	0.004	0.028	-0.318	0.164	0.101	0.022	0.188	-0.078
r3q24	0.222	-0.04	-0.113	-0.09	0.017	-0.196	0.295	0.054
r3q25	0.035	-0.083	0.014	0.079	0.143	0.085	-0.075	-0.029
r3q26	-0.078	0.078	0.124	0.04	-0.134	-0.201	0.221	0.128
r3q27	-0.078	0.119	-0.366	0.137	0.194	-0.073	0.188	-0.033
r3q28	0.117	-0.063	-0.245	-0.262	0.13	-0.027	0.612	-0.117
r3q29	-0.031	0	-0.226	-0.101	0.07	0.018	0.205	0.197
r3q30	0.052	-0.042	-0.226	-0.216	0.196	0.207	0.071	0.102
r3q31	0.128	-0.051	-0.335	-0.041	0.163	-0.002	0.192	0.044
r3q32	0.238	-0.057	-0.02	0.092	0.029	-0.147	-0.001	0.039
r3q33	0.129	0.185	-0.228	0.183	-0.085	-0.289	0.283	-0.059
r3q34	0.042	0.142	-0.462	0.051	0.292	-0.126	0.231	-0.111
r3q35	0.118	0.046	-0.141	0.071	0.045	-0.285	0.175	0.129
r3q36	0.046	0.306	-0.288	-0.166	0.064	-0.27	0.317	0.08
r3q37	0.289	0.131	-0.504	0.051	0.166	0.005	-0.122	0.027
r3q38	0.1	0.101	-0.579	-0.019	0.109	-0.203	0.323	0.149
r3q39	0.033	0.246	-0.409	-0.077	0.087	-0.289	0.361	0.085

Table I.3 Year 5 Reading Item DIF: Gender, LBOTE, and Indigenous

Item_Label	Gender_Difference	LBOTE_Difference	Indigenous Difference
r5q01	0.455	0.726	1.349
r5q02	-0.155	0.615	0.631
r5q03	0.186	0.539	1.404
r5q04	0.024	0.064	0.541
r5q05	0.245	-0.11	0.367
r5q06	0.263	0.789	1.293
r5q07	0.111	-0.048	0.27
r5q08	0.202	0.115	0.217
r5q09	0.049	-0.038	-0.022
r5q10	0.067	-0.225	0.135
r5q11	0.156	0.02	-0.065
r5q12	0.156	-0.176	0.667
r5q13	-0.075	0.387	0.273
r5q14	0	-0.176	-0.018
r5q15	-0.145	0.006	0.089
r5q16	0.219	-0.079	0.186
r5q17	0.104	-0.061	0.295
r5q18	-0.021	0.159	0.042
r5q19	-0.05	-0.141	0.034
r5q20	-0.031	0.338	0.574
r5q21	-0.145	0.094	0.103
r5q22	0.112	-0.279	-0.666
r5q23	0.011	-0.096	-0.627
r5q24	-0.026	-0.036	-0.068
r5q25	-0.346	-0.073	-0.514
r5q26	-0.064	-0.3	-0.341
r5q27	0.202	-0.38	-0.538
r5q28	-0.158	-0.011	-0.795
r5q29	-0.187	-0.352	-1.284
r5q30	-0.204	-0.045	-0.213
r5q31	-0.004	0.22	-0.703
r5q32	-0.223	-0.273	-0.246
r5q33	-0.097	-0.119	0.11
r5q34	0.089	-0.189	0.59
r5q35	-0.016	-0.017	-0.357
r5q36	-0.167	-0.114	-0.493
r5q37	-0.159	-0.226	-0.174
r5q38	-0.099	-0.412	-1.258
r5q39	-0.281	-0.096	-0.789

Table I.4 Year 5 Reading Item DIF: TAA

Item_Label	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
r5q01	-0.387	-0.266	0.869	-0.634	0.111	0.202	-0.785	-0.26
r5q02	0.032	-0.409	0.59	-0.403	0.091	-0.474	-0.038	0.199
r5q03	-0.583	-0.208	0.847	-0.464	-0.176	-0.123	-0.582	0.199
r5q04	0.164	0.004	0.458	-0.257	0.066	-0.035	-0.141	-0.209
r5q05	-0.063	-0.099	0.188	0.022	0.087	0.2	-0.224	-0.011
r5q06	-0.399	-0.115	0.895	-0.143	-0.471	-0.047	-0.523	-0.067
r5q07	-0.058	0.028	0.229	0.03	-0.051	-0.141	-0.018	0.099
r5q08	0.159	0.014	-0.037	-0.12	-0.02	0.139	0.125	-0.104
r5q09	-0.07	-0.009	-0.018	0.103	0.002	0.014	0	0.109
r5q10	-0.097	0.097	0.01	0.091	-0.013	0.169	-0.188	0.034
r5q11	0.092	0.071	-0.004	-0.02	0.084	-0.093	0.016	0
r5q12	-0.036	-0.01	0.077	-0.082	0.188	0.238	-0.077	-0.194
r5q13	0.197	0.214	0.259	-0.024	0.021	-0.349	-0.132	-0.099
r5q14	0.179	0.126	-0.092	-0.029	-0.078	0.122	0.027	-0.115
r5q15	-0.056	0.082	-0.045	0.081	-0.085	0.039	0.233	-0.111
r5q16	-0.201	0.183	0.036	0.01	-0.033	0.028	-0.116	0.179
r5q17	-0.053	-0.035	0.082	-0.002	0.036	0.244	-0.017	-0.093
r5q18	0.104	0.111	-0.006	-0.024	0.014	-0.013	-0.009	-0.029
r5q19	0.012	-0.148	0.008	0.229	-0.138	-0.015	-0.044	0.22
r5q20	-0.114	0.113	0.249	-0.042	-0.021	-0.314	0.143	0.186
r5q21	0.022	0.03	-0.012	-0.058	0.076	0.005	0.021	0.055
r5q22	0.119	-0.022	-0.293	-0.039	0.013	0.173	0.134	-0.013
r5q23	0.135	-0.12	-0.253	0.142	0.097	-0.216	0.222	0.085
r5q24	0.124	0.014	-0.181	0.048	-0.086	0.171	0.06	-0.036
r5q25	0.063	-0.01	-0.211	0.107	0.038	0.144	0.121	-0.163
r5q26	-0.122	-0.085	-0.032	0.24	0.215	0.016	-0.032	-0.05
r5q27	0.159	0.172	-0.245	0.148	0.02	-0.038	-0.066	-0.072
r5q28	0.267	-0.017	-0.348	0.16	-0.003	-0.22	0.292	-0.087
r5q29	0.192	-0.003	-0.574	-0.046	0.244	0.168	-0.055	0.084
r5q30	-0.033	-0.047	-0.18	0.226	-0.172	-0.293	0.423	0.15
r5q31	0.127	0.086	-0.385	0.116	-0.116	-0.235	0.269	0.172
r5q32	0.08	0.121	-0.214	0.346	-0.256	-0.002	0.058	-0.054
r5q33	-0.076	-0.016	-0.145	0.088	0.113	0.222	0.077	-0.147
r5q34	-0.032	0.009	-0.121	0.115	-0.21	0.271	0.139	-0.066
r5q35	-0.014	0.025	-0.116	0.072	0.133	-0.084	0.089	0.012
r5q36	-0.062	0.176	-0.162	0.092	-0.112	-0.154	0.131	0.177
r5q37	0.047	0.027	-0.426	0.103	-0.033	0.073	0.076	0.147
r5q38	-0.015	0.064	-0.542	-0.187	0.225	0.248	0.247	-0.035
r5q39	0.195	-0.149	-0.156	0.006	0.195	-0.042	0.143	-0.091

Table I.5 Year 7 Reading Item DIF: Gender, LBOTE, and Indigenous

Item_Label	Gender_Difference	LBOTE_Difference	Indigenous_Difference
r7q01	0.166	0.716	1.225
r7q02	-0.009	0.501	0.813
r7q03	0.162	0.364	0.997
r7q04	0.151	0.699	1.2
r7q05	0.184	0.802	1.46
r7q06	0.374	-0.043	0.446
r7q07	-0.054	0.262	0.784
r7q08	-0.15	0.619	0.737
r7q09	0.133	-0.126	0.25
r7q10	0.118	0.008	0.455
r7q11	0.042	0.3	0.742
r7q12	-0.301	-0.225	-0.691
r7q13	0.156	-0.268	0.049
r7q14	-0.063	-0.164	-0.145
r7q15	0.049	-0.297	-0.866
r7q16	-0.17	0.113	-0.304
r7q17	0.131	0.176	-0.304
r7q18	-0.324	-0.251	-0.024
r7q19	0.046	-0.201	0.044
r7q20	0.204	-0.278	-0.153
r7q21	-0.01	0.101	0.225
r7q22	0.007	-0.167	-0.261
r7q23	-0.168	0.215	0.011
r7q24	-0.067	0.103	-0.021
r7q25	-0.271	-0.088	-0.021
r7q26	0.333	0.128	0.771
r7q27	-0.034	0.054	-0.397
r7q28	-1.237	0.086	-0.399
r7q29	0.281	-0.036	-0.136
r7q30	0.232	-0.289	0.541
r7q31	0.095	-0.056	-0.211
r7q32	-0.084	-0.479	-0.689
r7q33	0.246	-0.155	-0.239
r7q34	0.123	-0.369	0.023
r7q35	0.316	-0.007	0.227
r7q36	0.084	-0.109	-0.24
r7q37	0.047	-0.197	-0.059
r7q38	-0.105	-0.134	-0.348
r7q39	-0.165	0.069	-0.008
r7q40	-0.086	-0.244	-0.673
r7q41	-0.326	-0.152	-0.443
r7q42	-0.245	-0.082	-0.627
r7q43	-0.031	-0.335	-0.643
r7q44	0.08	-0.08	-0.624
r7q45	-0.216	-0.055	-0.79
r7q46	0.341	-0.16	-0.12
r7q47	-0.126	-0.096	-0.448
r7q48	-0.011	-0.272	-0.658
r7q49	0.153	0.098	-0.454

Table I.6 Year 7 Reading Item DIF: TAA

Item_Label	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
r7q01	0.026	-0.258	0.788	-0.484	-0.26	0.296	-0.932	-0.199
r7q02	-0.091	0.027	0.523	-0.117	0.008	0.044	-0.243	-0.239
r7q03	0.124	-0.004	0.565	-0.257	-0.26	0.061	-0.116	-0.174
r7q04	-0.343	-0.028	0.89	-0.124	-0.22	-0.047	-0.45	-0.095
r7q05	-0.108	-0.224	0.866	-0.427	-0.094	-0.024	-0.395	-0.243
r7q06	-0.05	-0.093	0.26	-0.026	-0.144	0.019	0.075	0.029
r7q07	-0.231	-0.083	0.484	0.036	0.03	-0.107	-0.111	0.029
r7q08	-0.084	0.041	0.393	0.016	-0.333	-0.013	0.044	-0.011
r7q09	-0.074	0.018	0.074	-0.073	0.058	0.208	-0.09	-0.007
r7q10	-0.272	0.009	0.151	0.025	0.046	0.051	0.023	0.037
r7q11	-0.058	0.091	0.341	-0.079	0.084	-0.08	0.121	-0.314
r7q12	-0.008	0.127	-0.457	-0.068	0.032	0.149	0.08	0.104
r7q13	-0.004	-0.123	0.06	0.023	0.143	-0.069	-0.113	0.155
r7q14	-0.026	0.055	0.087	-0.014	0.065	-0.156	0.082	0.036
r7q15	-0.049	0.145	-0.466	0.158	0.052	-0.205	0.123	0.186
r7q16	0.006	-0.017	-0.221	-0.014	0.085	0.058	0.011	0.118
r7q17	-0.031	0.281	-0.36	-0.054	-0.005	-0.095	0.089	0.178
r7q18	0.131	-0.087	0.088	0.083	0.016	-0.053	0.011	-0.065
r7q19	-0.071	-0.071	0.076	0.083	0.175	-0.011	-0.145	0.05
r7q20	0.048	-0.174	-0.117	0.3	-0.19	0.14	0.16	-0.118
r7q21	-0.167	0.165	0.115	0.136	0.003	-0.034	-0.113	0.036
r7q22	0.075	-0.09	0.108	-0.118	0.146	0.026	0.097	-0.1
r7q23	0.049	-0.006	-0.158	0.03	0.031	0.079	0.13	-0.098
r7q24	-0.098	-0.058	-0.043	0.088	0.011	-0.027	0.223	-0.025
r7q25	-0.014	0.169	-0.072	0.324	-0.203	-0.146	-0.059	0.076
r7q26	-0.271	-0.202	0.433	0.118	0.07	-0.018	0.011	-0.098
r7q27	0.009	0.023	-0.185	-0.123	0.225	-0.118	0.155	0.051
r7q28	0.144	-0.061	-0.31	-0.056	0.233	-0.126	0.122	0.052
r7q29	0.05	0.057	-0.21	-0.15	0.203	0.146	-0.013	-0.046
r7q30	0.072	-0.261	0.415	-0.033	0.136	0.158	-0.082	-0.141
r7q31	0.163	0.009	-0.179	0.015	-0.03	0.025	-0.044	0.084
r7q32	-0.111	0.054	-0.412	0.113	0.054	0.162	0.091	0.041
r7q33	0.093	0.083	-0.214	-0.067	-0.022	0.127	0.069	-0.03
r7q34	0.253	-0.109	-0.133	-0.15	0.095	0.26	-0.117	-0.025
r7q35	0.002	0.064	-0.117	-0.092	0.012	0.041	0.102	0.044
r7q36	0.053	-0.003	-0.233	0.026	-0.034	0.124	0.167	-0.073
r7q37	-0.137	-0.094	-0.077	0.108	0.201	-0.035	0.089	0.039
r7q38	0.063	-0.198	-0.216	0.123	0.038	-0.128	0.177	0.154
r7q39	-0.114	-0.011	-0.087	0.21	-0.159	-0.087	0.17	0.13
r7q40	0.042	0.135	-0.155	-0.08	0.004	0.028	0.114	-0.056
r7q41	0.127	0.092	-0.169	-0.032	0.058	0.022	0	-0.047
r7q42	0.178	-0.044	-0.474	-0.07	0.026	-0.001	0.255	0.067
r7q43	0.036	0.039	-0.309	0.066	-0.087	0.118	-0.016	0.144
r7q44	0.063	0.131	-0.111	0.04	-0.128	-0.018	0.138	-0.064
r7q45	0.269	0.199	-0.413	0.078	-0.156	-0.179	0.079	0.071
r7q46	-0.003	-0.14	-0.117	0.36	0.035	-0.142	-0.075	0.128
r7q47	0.154	0.199	-0.245	0.023	-0.118	0.037	-0.106	0.066
r7q48	0.062	0.056	-0.307	0.005	0.144	-0.209	0.185	0.059
r7q49	0.122	0.17	-0.154	0.121	-0.078	-0.254	0.024	0.101

Table I.7 Year 9 Reading Item DIF: Gender, LBOTE, and Indigenous

Item_Label	Gender_Difference	LBOTE_Difference	Indigenous_Difference
r9q01	0.218	0.105	0.342
r9q02	0.172	0.524	0.939
r9q03	0.361	0.724	0.844
r9q04	0.163	0.087	0.457
r9q05	-0.206	0.287	0.143
r9q06	0.129	0.294	0.367
r9q07	0.127	0.275	0.38
r9q08	0.48	0.454	0.872
r9q09	0.044	0.991	1.306
r9q10	0.112	-0.253	0.09
r9q11	0.038	0.124	0.538
r9q12	-0.081	0.402	0.655
r9q13	0.113	-0.322	0.088
r9q14	-0.231	0.022	-0.037
r9q15	-0.278	-0.194	-0.604
r9q16	-0.377	0.017	-0.014
r9q17	-0.053	-0.056	-0.502
r9q18	-0.194	-0.23	-0.312
r9q19	-0.121	-0.321	-0.639
r9q20	0.088	-0.177	-0.503
r9q21	-0.117	-0.237	-0.648
r9q22	0.179	0.048	0.103
r9q23	-0.034	0.01	0.098
r9q24	-0.138	-0.11	-0.062
r9q25	0.089	0.159	0.55
r9q26	-0.047	-0.165	-0.419
r9q27	-0.26	-0.251	0.044
r9q28	0.231	-0.194	-0.196
r9q29	0.408	0.367	0.178
r9q30	-0.135	-0.502	-1.012
r9q31	-0.192	-0.199	-0.245
r9q32	-0.512	0.344	0.18
r9q33	0.142	0.041	-0.099
r9q34	-0.504	-0.273	-0.282
r9q35	0.039	0.019	-0.584
r9q36	-0.016	0.129	-0.141
r9q37	0.286	0.103	-0.237
r9q38	-0.022	-0.143	-1.069
r9q39	-0.253	-0.232	0.013
r9q40	0.113	-0.348	0.306
r9q41	-0.283	-0.044	-0.12
r9q42	-0.224	0.01	-0.337
r9q43	0.01	-0.247	-0.094
r9q44	0.091	-0.221	-0.014
r9q45	0.093	-0.182	0.187
r9q46	0.391	0.049	0.19
r9q47	0.255	0.122	-0.177
r9q48	0.105	-0.149	-0.08
r9q49	-0.016	-0.007	-0.188
r9q50	-0.183	-0.646	-0.253

Table I.8 Year 9 Reading Item DIF: TAA

Item_Label	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
r9q01	-0.093	0.077	0.35	-0.352	0.194	-0.04	-0.123	-0.048
r9q02	-0.151	-0.16	0.639	-0.121	-0.162	0.03	-0.496	0.078
r9q03	0.135	0.019	0.771	-0.221	-0.441	-0.375	-0.408	-0.032
r9q04	-0.132	-0.032	0.216	0.041	0.123	-0.059	-0.014	-0.155
r9q05	-0.089	0.191	-0.317	-0.048	-0.004	0.082	0.23	-0.03
r9q06	-0.184	0.189	0.087	0.158	-0.203	0.018	0.046	-0.09
r9q07	-0.294	-0.043	0.023	0.195	0.005	-0.032	-0.025	0.121
r9q08	-0.371	-0.606	0.534	0.015	-0.17	0.247	-0.161	-0.096
r9q09	-0.141	-0.415	0.832	-0.225	-0.139	-0.256	-0.222	-0.071
r9q10	-0.065	0.041	-0.012	-0.093	0.012	0.141	-0.002	0.045
r9q11	-0.028	-0.04	0.07	-0.059	-0.021	-0.014	0.194	-0.017
r9q12	-0.077	0.174	0.499	0.101	-0.061	-0.15	-0.24	-0.317
r9q13	0.044	-0.051	0.059	-0.048	0.161	-0.099	-0.004	0.001
r9q14	-0.041	-0.051	0.054	-0.1	-0.103	0.073	-0.004	0.267
r9q15	0.059	0.204	-0.015	-0.143	-0.121	-0.095	0.014	0.165
r9q16	0.137	0.049	-0.098	-0.136	0.173	-0.096	0.138	-0.111
r9q17	0.291	0.152	-0.314	-0.283	0.065	-0.041	0.229	-0.072
r9q18	-0.162	0.075	-0.062	0.172	-0.08	-0.074	0.079	0.113
r9q19	0.008	0.087	-0.181	-0.001	0.121	0.067	-0.076	0.02
r9q20	-0.015	0.05	-0.098	0.026	-0.029	0.097	0.042	-0.016
r9q21	0.235	-0.052	-0.302	-0.134	0.05	0.02	-0.044	0.219
r9q22	0.048	-0.152	0.219	0.046	0.055	-0.043	0.113	-0.219
r9q23	0.038	0.049	-0.03	-0.021	-0.079	0.122	0.065	-0.065
r9q24	0.192	-0.044	-0.19	0.153	0.087	-0.003	-0.057	-0.091
r9q25	-0.162	-0.041	0.419	0.012	-0.104	0.035	-0.128	0.032
r9q26	0.102	0.082	-0.287	0.109	0.171	-0.019	-0.286	0.14
r9q27	0.022	-0.131	-0.206	0.133	-0.039	0.297	-0.092	0.05
r9q28	0.247	0.09	-0.327	0.043	-0.017	-0.066	-0.096	0.116
r9q29	0.267	0.167	-0.409	-0.184	-0.353	0.398	0.165	-0.032
r9q30	-0.067	-0.099	-0.328	-0.078	0.132	0.213	0.085	0.156
r9q31	-0.052	-0.048	-0.041	0.03	0.165	0.072	0.007	-0.066
r9q32	-0.097	-0.085	0.13	0.193	0.103	-0.2	0.068	-0.018
r9q33	0.079	0.168	-0.227	0.055	-0.182	0.01	0.043	0.093
r9q34	0.14	-0.142	-0.166	0.028	0.03	0.05	-0.128	0.224
r9q35	0.319	0.242	-0.253	0.05	-0.049	-0.202	-0.125	0.047
r9q36	0.122	0.088	0.097	0.05	0.004	-0.3	0.132	-0.082
r9q37	0.012	0.166	0.02	0.035	0.026	-0.149	0.07	-0.08
r9q38	0.18	0.105	-0.209	-0.021	-0.073	-0.093	0.12	0.013
r9q39	-0.202	-0.098	-0.056	0.175	0.322	-0.053	0.156	-0.273
r9q40	0.027	-0.034	0.05	-0.113	0.079	0.147	0.171	-0.207
r9q41	0.014	0.057	-0.141	-0.111	0.103	0	0.18	-0.057
r9q42	0.114	0.077	-0.071	0	0.023	-0.195	0.04	0.08
r9q43	0.123	0.108	-0.168	-0.055	-0.014	0.036	-0.002	0.025
r9q44	0.092	-0.056	0.039	0.032	0.022	0.136	-0.018	-0.15
r9q45	-0.004	-0.174	-0.061	0.113	0.221	0.038	0.212	-0.155
r9q46	-0.145	0.041	-0.003	0.116	0.073	-0.043	0.11	-0.073
r9q47	-0.029	0.056	-0.232	0.146	0.045	-0.031	-0.125	0.189
r9q48	-0.281	0.041	-0.141	0.009	0.101	0.105	0.19	-0.019
r9q49	-0.117	-0.051	-0.017	0.243	-0.162	0.026	-0.072	0.225
r9q50	-0.051	-0.241	-0.152	0.065	-0.064	0.268	0.046	0.217

Table I.9 Year 3 Spelling Item DIF: Gender, LBOTE, and Indigenous

Item_Label	Gender_Difference	LBOTE_Difference	Indigenous_Difference
lc3q01	0.097	-0.114	0.405
lc3q02	0.213	0.184	0.265
lc3q03	-0.29	0.65	0.203
lc3q04	0.106	0.73	0.492
lc3q05	-0.059	0.228	-0.077
lc3q06	-0.075	-0.102	0.276
lc3q07	0.001	0.136	-0.04
lc3q08	-0.214	0.189	0.193
lc3q09	0.096	-0.166	-0.436
lc3q10	0.304	0	-0.466
lc3q11	-0.224	-0.086	-0.555
lc3q12	-0.43	-0.321	-0.255
lc3q13	0.32	-0.289	-0.385
lc3q14	-0.103	0.109	0.473
lc3q15	0.088	0.309	-0.398
lc3q16	-0.353	-0.095	-0.111
lc3q17	0.493	-0.326	-0.881
lc3q18	0.334	0.006	0.147
lc3q19	-0.176	0.182	-0.713
lc3q20	0.183	-0.057	0.084
lc3q21	-0.097	-0.344	0.369
lc3q22	-0.1	-0.012	0.153
lc3q23	-0.234	-0.234	0.112
lc3q24	0.184	-0.518	1.04
lc3q25	-0.063	-0.057	0.106

Table I.10 Year 3 Spelling Item DIF:TAA

Item_Label	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
lc3q01	0.02	-0.116	-0.134	-0.236	0.075	0.041	0.002	0.256
lc3q02	0.024	-0.247	0.146	-0.344	0.066	0.015	-0.197	0.337
lc3q03	0.143	-0.331	0.182	-0.158	-0.356	-0.277	0.432	-0.81
lc3q04	-0.174	0.134	0.308	-0.005	0.039	-0.469	-0.377	-0.291
lc3q05	0.157	0.068	-0.073	-0.157	-0.139	0.014	0.295	-0.132
lc3q06	0.024	0.026	0.063	-0.029	-0.046	0.132	-0.086	-0.011
lc3q07	0.24	-0.102	0.206	0.091	0.122	-0.354	-0.307	0.141
lc3q08	-0.142	0.184	-0.066	-0.336	0.408	0.102	0.062	-0.125
lc3q09	0.19	-0.19	0.098	0.305	-0.096	-0.136	-0.15	0.085
lc3q10	0.168	0.21	0.171	0.209	-0.32	-0.199	-0.036	-0.049
lc3q11	-0.11	0.266	-0.225	0.004	-0.044	0.195	0.195	-0.259
lc3q12	-0.212	-0.182	0.199	0.273	0.147	0.111	0.104	-0.19
lc3q13	-0.076	-0.019	-0.079	-0.019	-0.385	0.574	0.223	-0.051
lc3q14	-0.221	0.027	0.077	0.152	0.079	-0.001	-0.061	0.118
lc3q15	-0.004	0.118	-0.403	0.056	0.117	-0.097	0.007	0.187
lc3q16	-0.111	0.28	-0.225	-0.032	0.266	-0.246	0.115	-0.013
lc3q17	-0.17	-0.195	-0.184	0.344	-0.216	0.081	0.087	0.261
lc3q18	-0.089	-0.018	0.058	0.024	-0.14	0.033	-0.017	0.269
lc3q19	0.082	0.114	0.12	-0.137	0.174	-0.158	0.205	-0.232
lc3q20	0.277	-0.092	-0.283	-0.197	0.403	0.022	-0.035	-0.063
lc3q21	-0.135	0.034	0.019	0.183	-0.036	0.19	-0.273	0.181
lc3q22	-0.035	-0.068	0.383	-0.202	0.249	-0.107	0.243	-0.147
lc3q23	0.162	-0.203	-0.258	-0.111	-0.237	0.442	-0.096	0.451
lc3q24	0.069	-0.001	-0.168	-0.131	0.023	0.383	-0.193	0.141
lc3q25	-0.076	0.301	0.069	0.452	-0.154	-0.291	-0.143	-0.053

Table I.11 Year 5 Spelling Item DIF: Gender, LBOTE, and Indigenous

Item_Label	Gender_Difference	LBOTE_Difference	Indigenous_Difference
lc5q01	0.839	-0.017	-0.11
lc5q02	0.066	-0.092	0.051
lc5q03	0.099	-0.109	-0.171
lc5q04	0.336	0.095	-0.422
lc5q05	0.01	0.07	-0.108
lc5q06	0.31	0.449	0.122
lc5q07	-0.379	0.372	-0.259
lc5q08	-0.101	-0.162	0.297
lc5q09	0.156	-0.081	0.075
lc5q10	-0.388	0.249	0.25
lc5q11	0.446	0.225	-0.008
lc5q12	0.155	-0.371	0.275
lc5q13	-0.636	-0.173	-0.572
lc5q14	0.233	0.05	0.14
lc5q15	0.003	0.093	0.088
lc5q16	0.208	-0.222	-0.232
lc5q17	-0.09	-0.001	0.109
lc5q18	-0.074	-0.141	-0.098
lc5q19	-0.075	-0.231	0.62
lc5q20	-0.622	-0.206	-0.184
lc5q21	0.405	-0.34	-0.147
lc5q22	-0.121	0.32	-0.302
lc5q23	-0.06	0.146	-0.266
lc5q24	-0.031	-0.001	0.134
lc5q25	-0.688	0.079	0.716

Table I.12 Year 5 Spelling Item DIF: TAA

Item_Label	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
lc5q01	-0.207	-0.059	0.362	-0.246	0.314	-0.045	-0.734	-0.3
lc5q02	0.245	0.19	0.117	-0.184	-0.294	-0.352	-0.197	0.055
lc5q03	-0.136	-0.325	0.187	-0.17	0.086	0.152	-0.069	0.258
lc5q04	0.075	0.26	-0.04	0.429	-0.116	-0.166	-0.133	-0.275
lc5q05	-0.241	-0.009	0.081	0.058	0.166	0.08	-0.265	0.178
lc5q06	-0.045	0.107	-0.23	0.236	-0.003	-0.325	0.193	0.089
lc5q07	-0.128	-0.089	-0.47	0.131	-0.024	-0.152	0.49	0.167
lc5q08	0.023	-0.063	0.017	-0.151	0.043	0.189	-0.018	0.013
lc5q09	-0.015	0.071	0.112	0.097	-0.077	0.083	-0.077	-0.054
lc5q10	0.122	0.008	-0.017	-0.188	-0.156	0.06	0.099	0.124
lc5q11	-0.069	-0.037	0.186	0.176	-0.179	0.102	-0.08	0.067
lc5q12	-0.183	0.188	-0.07	0.133	0.061	0.148	-0.039	-0.149
lc5q13	-0.018	-0.09	-0.433	0.338	0.13	-0.195	0.311	-0.143
lc5q14	0.191	-0.152	-0.079	-0.093	-0.083	0.057	-0.028	0.15
lc5q15	0.179	0.074	0.14	-0.26	0.088	-0.027	-0.301	0.067
lc5q16	0.108	0.245	-0.087	-0.179	0.177	-0.048	-0.035	-0.104
lc5q17	-0.021	0.036	0.222	-0.151	0.13	-0.035	0.028	-0.041
lc5q18	-0.066	-0.027	0.29	0.014	0.213	0.055	-0.007	-0.251
lc5q19	-0.197	-0.287	0.202	0.195	-0.099	0.389	-0.014	0.008
lc5q20	-0.197	0.227	-0.239	0.163	0.135	-0.37	0.078	0.197
lc5q21	-0.228	-0.041	0.131	-0.017	-0.003	0.233	0.042	0.043
lc5q22	-0.032	0.11	-0.093	0.173	-0.438	0.056	0.093	0.173
lc5q23	0.343	-0.25	-0.014	-0.375	0.121	0.232	0.139	-0.068
lc5q24	0.182	-0.027	-0.086	-0.096	-0.052	-0.084	0.287	-0.111
lc5q25	0.313	-0.061	-0.188	-0.035	-0.141	-0.036	0.237	-0.092

Table I.13 Year 7 Spelling Item DIF: Gender, LBOTE, and Indigenous

Item_Label	Gender_Difference	LBOTE_Difference	Indigenous_Difference
lc7q01	-0.164	-0.094	-0.132
lc7q02	0.182	0.264	-0.23
lc7q03	0.172	-0.292	-0.273
lc7q04	0.48	-0.154	-0.035
lc7q05	-0.253	0.028	0.258
lc7q06	-0.388	0.662	-0.061
lc7q07	0.145	0.074	-0.124
lc7q08	-0.17	-0.138	0.33
lc7q09	0.223	-0.282	0.296
lc7q10	0.392	0.612	0.105
lc7q11	0.452	0.357	-0.075
lc7q12	-0.087	-0.067	0.298
lc7q13	-0.69	-0.202	-0.317
lc7q14	0.085	-0.017	-0.086
lc7q15	-0.116	-0.281	-0.031
lc7q16	-0.034	0.01	-0.168
lc7q17	0.297	0.125	0.445
lc7q18	-0.535	-0.219	-0.157
lc7q19	0.242	-0.093	-0.026
lc7q20	-0.067	0.289	-0.044
lc7q21	0.056	-0.316	-0.16
lc7q22	0.341	-0.014	-0.154
lc7q23	0.334	-0.179	0.09
lc7q24	0.05	-0.174	-0.021
lc7q25	-0.14	-0.028	0.14
lc7q26	0.225	0.019	0.143
lc7q27	-0.367	0.09	0.01
lc7q28	-0.032	-0.014	-0.36
lc7q29	-0.341	0.024	0.037
lc7q30	-0.298	0.01	0.301

Table I.14 Year 7 Spelling Item DIF: TAA

Item_Label	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
lc7q01	-0.146	0.15	0.139	-0.2	-0.35	-0.031	-0.06	0.155
lc7q02	-0.264	0.058	-0.304	0.013	0.34	-0.142	0.063	-0.051
lc7q03	-0.031	-0.141	-0.196	-0.397	0.07	0.371	0.076	-0.001
lc7q04	0.07	-0.144	-0.143	0.194	-0.01	-0.216	-0.045	0.148
lc7q05	0.041	0.146	-0.034	0.365	-0.348	0.09	-0.028	-0.349
lc7q06	-0.073	0.186	-0.06	0.085	-0.051	-0.174	0.325	-0.336
lc7q07	0.102	0.466	-0.181	0.13	-0.295	-0.133	-0.154	0.001
lc7q08	-0.326	0.156	-0.017	-0.12	-0.07	0.178	0.179	-0.058
lc7q09	-0.112	-0.133	0.274	0.262	0.115	-0.043	-0.167	-0.159
lc7q10	0.011	0.144	0.18	0.001	-0.304	-0.145	0.056	0.097
lc7q11	0.23	0.429	-0.313	0.432	-0.277	-0.275	-0.314	-0.021
lc7q12	0.098	-0.014	-0.011	-0.168	-0.046	0.025	0.024	0.06
lc7q13	0.135	0.155	0.054	-0.074	0.077	-0.201	0.011	-0.128
lc7q14	0.242	0.014	-0.345	-0.359	0.48	-0.094	0.052	-0.127
lc7q15	-0.267	-0.09	-0.185	0.315	0.258	-0.125	0.07	-0.08
lc7q16	0.187	-0.478	-0.375	-0.314	0.093	0.388	0.217	0.228
lc7q17	0.151	0.11	-0.086	-0.216	-0.037	0.112	-0.138	0.061
lc7q18	-0.06	-0.193	-0.025	0.21	-0.011	-0.045	-0.035	0.119
lc7q19	0.034	-0.22	0.075	-0.277	0.108	0.112	0.154	0.028
lc7q20	0.094	-0.11	-0.158	-0.023	0.07	-0.122	-0.118	0.283
lc7q21	0.098	0.167	-0.039	0.006	-0.183	0.205	-0.111	-0.162
lc7q22	0.045	0.105	0.063	-0.068	0.032	-0.196	-0.049	0.088
lc7q23	0.109	-0.056	0.136	0.097	0.05	0.018	-0.242	-0.02
lc7q24	0.209	-0.123	-0.041	-0.033	0.065	-0.046	0.033	-0.079
lc7q25	0.112	0.023	-0.097	-0.027	-0.032	-0.045	-0.089	0.107
lc7q26	-0.031	0.18	0.351	-0.282	-0.149	0.292	-0.028	-0.122
lc7q27	0.034	-0.266	0.363	-0.151	0.125	0.088	0.063	0.001
lc7q28	0.042	0.116	-0.003	-0.353	0.244	-0.004	0.081	-0.113
lc7q29	-0.13	-0.518	0.279	0.194	0.02	0.281	-0.107	0.47
lc7q30	-0.607	-0.121	0.702	0.755	0.016	-0.123	0.278	-0.037

Table I.15 Year 9 Spelling Item DIF: Gender, LBOTE, and Indigenous

Item_Label	Gender_Difference	LBOTE_Difference	Indigenous_Difference
lc9q01	0.273	-0.1	-0.494
lc9q02	0.364	0.084	-0.281
lc9q03	0.278	0.13	0.235
lc9q04	0.215	-0.054	0.256
lc9q05	-0.454	-0.101	-0.166
lc9q06	-0.246	-0.102	0.27
lc9q07	0.211	0.073	0.059
lc9q08	0.56	0.157	0.021
lc9q09	0.01	0.409	0.098
lc9q10	0.313	-0.205	-0.449
lc9q11	0.266	-0.205	-0.373
lc9q12	0.031	0.053	-0.228
lc9q13	-0.039	-0.243	0.106
lc9q14	-0.178	-0.099	0.51
lc9q15	-0.442	0.031	-0.441
lc9q16	-0.165	-0.119	0.644
lc9q17	0.061	0.08	0.108
lc9q18	0.474	-0.271	-0.067
lc9q19	-0.081	0.294	0.29
lc9q20	0.411	-0.295	0.103
lc9q21	-0.342	-0.112	-0.152
lc9q22	-0.108	-0.152	-0.316
lc9q23	0.307	-0.023	-0.318
lc9q24	-0.38	0.143	1.027
lc9q25	-0.445	0.124	-0.313
lc9q26	-0.019	-0.055	0.162
lc9q27	-0.345	0.288	-0.074
lc9q28	-0.745	-0.375	-0.259
lc9q29	-0.046	0.246	-0.061
lc9q30	0.26	0.398	0.104

Table I.16 Year 9 Spelling Item DIF: TAA

Item_Label	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
lc9q01	0.09	-0.364	-0.324	-0.541	-0.017	0.239	0.333	0.182
lc9q02	-0.005	0.264	-0.264	0.201	-0.072	-0.058	-0.154	0.006
lc9q03	0.051	0.081	-0.031	0.108	-0.351	0.09	-0.057	0.063
lc9q04	0.154	0.247	-0.317	0.124	-0.354	0.248	-0.163	-0.058
lc9q05	-0.254	0.044	-0.133	-0.019	0.12	0.173	0.13	-0.182
lc9q06	-0.024	-0.192	0.344	0.063	0.223	-0.13	-0.172	-0.073
lc9q07	-0.018	0.161	-0.226	0.4	-0.078	-0.283	-0.009	-0.013
lc9q08	-0.07	0.104	-0.132	0.016	0.194	-0.052	-0.135	0.034
lc9q09	-0.247	-0.182	0.024	-0.161	-0.051	0.22	0.321	0.066
lc9q10	0.133	-0.201	-0.067	-0.084	0.092	-0.031	0.045	0.071
lc9q11	0.201	0.156	-0.181	-0.13	0.017	-0.008	0.06	-0.174
lc9q12	0.038	0.146	-0.079	-0.117	0.128	-0.238	0.138	-0.045
lc9q13	0.171	-0.339	0.006	-0.239	-0.066	0.277	0.104	0.114
lc9q14	0.183	0.039	-0.134	0.104	-0.057	0.03	-0.065	-0.126
lc9q15	-0.057	0.163	0.286	0.107	-0.026	-0.058	0.013	-0.236
lc9q16	-0.161	-0.009	0.623	0.305	0.242	-0.016	-0.387	-0.087
lc9q17	-0.085	0.03	-0.146	-0.066	-0.022	0.274	-0.045	-0.077
lc9q18	0.158	-0.13	-0.228	-0.038	0.144	0.1	-0.096	-0.008
lc9q19	-0.022	-0.023	0.129	0.091	0.123	-0.092	0.007	-0.201
lc9q20	0.235	-0.081	-0.014	0.051	-0.008	-0.117	0.011	-0.091
lc9q21	0.104	0.026	-0.015	-0.224	0.061	0.001	0.057	-0.016
lc9q22	0.183	-0.048	0.125	-0.379	0.151	-0.041	0.154	-0.072
lc9q23	-0.152	-0.273	0.133	-0.081	-0.014	0.182	-0.136	0.372
lc9q24	-0.283	-0.002	0.095	0.322	-0.144	-0.181	-0.093	0.305
lc9q25	0.235	-0.06	-0.157	0.103	-0.059	-0.209	-0.105	0.158
lc9q26	-0.191	0.153	0.255	-0.206	0.027	-0.335	0.173	0.22
lc9q27	-0.258	-0.115	0.205	0.15	-0.081	0.058	0.099	0.081
lc9q28	0.064	-0.114	0.118	0.121	-0.319	0.162	-0.02	0.069
lc9q29	0.221	0.267	0.224	-0.003	-0.139	-0.168	0.023	-0.279
lc9q30	-0.392	0.255	-0.114	0.025	0.335	-0.036	-0.027	-0.003

Table I.17 Year 3 G&P DIF: Gender, LBOTE, and Indigenous

Item_Label	Gender_Difference	LBOTE_Difference	Indigenous_Difference
lc3q26	0.086	0.257	0.893
lc3q27	0.216	1.549	1.091
lc3q28	0.147	0.314	0.463
lc3q29	0.126	-0.156	0.545
lc3q30	-0.212	0.279	0.631
lc3q31	-0.046	0.21	0.505
lc3q32	0.171	-0.378	0.117
lc3q33	0.031	0.108	0.512
lc3q34	0.111	-0.311	0.564
lc3q35	0.037	0.102	0.402
lc3q36	-0.093	0.052	-0.353
lc3q37	0.291	0.318	0.247
lc3q38	-0.047	-0.414	-0.098
lc3q39	-0.02	0.252	0.727
lc3q40	0.075	0.075	0.158
lc3q41	-0.054	-0.446	-0.045
lc3q42	0.182	0.096	-0.64
lc3q43	0.063	-0.099	-0.707
lc3q44	-0.272	-0.333	-0.397
lc3q45	-0.292	0.095	-0.721
lc3q46	0.201	-0.441	-0.472
lc3q47	-0.079	-0.333	-0.716
lc3q48	-0.047	-0.048	-0.931
lc3q49	-0.057	-0.16	-0.274
lc3q50	-0.361	-0.037	-0.72
lc3q51	-0.158	-0.553	-0.781

Table I.18 Year 3 G&P Item DIF: TAA

Item_Label	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
lc3q26	-0.113	-0.38	0.556	0.02	-0.2	0.037	-0.19	-0.086
lc3q27	-0.02	-0.053	0.859	-0.075	-0.704	-0.348	-0.468	-0.115
lc3q28	-0.043	-0.184	0.518	-0.052	-0.191	0.084	-0.219	-0.176
lc3q29	-0.017	-0.13	0.133	-0.209	0.085	0.296	-0.149	-0.053
lc3q30	-0.251	-0.171	0.464	0.192	-0.238	-0.082	-0.251	0.212
lc3q31	-0.477	-0.08	0.371	0.048	0.075	0.013	-0.013	0.092
lc3q32	0.094	-0.264	0.229	-0.113	0.067	0.284	-0.021	-0.245
lc3q33	-0.071	-0.052	0.094	-0.075	0.067	0.11	0	0.046
lc3q34	-0.383	-0.015	0.266	0.098	0.092	-0.053	-0.073	0.158
lc3q35	0.142	-0.283	-0.109	-0.003	-0.043	0.231	0.133	0.022
lc3q36	0.297	0.038	-0.108	-0.031	0.002	-0.143	0.145	-0.07
lc3q37	-0.021	0.135	0.163	0.069	-0.155	-0.138	0.037	0.049
lc3q38	0.131	0.007	-0.065	-0.086	0.13	0.151	-0.113	-0.054
lc3q39	-0.213	0.078	-0.024	0	-0.075	0.143	0.016	0.196
lc3q40	0.025	0.131	0.015	0.034	-0.115	-0.112	0.228	-0.056
lc3q41	0.21	0.021	-0.032	0.062	0.086	0.28	-0.141	-0.37
lc3q42	0.004	0.162	-0.184	0.227	0.052	-0.141	0.074	-0.098
lc3q43	0.29	0.032	-0.415	-0.087	0.088	-0.015	0.129	0.065
lc3q44	-0.043	0.137	-0.489	-0.185	0.084	0.123	0.332	0.076
lc3q45	0.103	0.331	-0.269	-0.105	0.144	-0.354	0.167	0.063
lc3q46	0.18	0.044	-0.093	-0.263	0.229	-0.028	0.009	0.04
lc3q47	0.065	0.108	-0.486	0.156	0.123	-0.099	-0.047	0.196
lc3q48	0.083	0.193	-0.4	0.037	0.156	-0.255	0.116	0.083
lc3q49	0.044	0.105	-0.28	0.075	0.008	-0.112	0.103	0.111
lc3q50	0.016	-0.014	-0.313	0.283	0.096	-0.176	0.291	-0.151
lc3q51	-0.033	0.104	-0.399	-0.018	0.137	0.303	-0.098	0.066

Table I.19 Year 5 G&P Item DIF: Gender, LBOTE, and Indigenous

Item_Label	Gender_Difference	LBOTE_Difference	Indigenous_Difference
lc5q26	0.122	1.144	1.628
lc5q27	0.405	0.287	1.099
lc5q28	0.191	0.232	0.538
lc5q29	0.138	0.325	0.532
lc5q30	0.068	0.19	0.402
lc5q31	0.306	0.357	0.269
lc5q32	-0.081	-0.037	0.268
lc5q33	-0.007	0.288	0.345
lc5q34	0.316	0.023	0.791
lc5q35	-0.127	0.405	0.086
lc5q36	0.116	-0.487	-0.662
lc5q37	-0.032	-0.04	0.356
lc5q38	0.075	0.033	-0.05
lc5q39	0.137	-0.561	-0.268
lc5q40	-0.192	0.047	0.439
lc5q41	-0.225	-0.114	-0.066
lc5q42	0.149	-0.212	0.262
lc5q43	-0.089	-0.363	-0.399
lc5q44	0.026	-0.328	-0.169
lc5q45	-0.512	0.056	-0.484
lc5q46	-0.005	-0.11	-0.864
lc5q47	0.009	-0.059	-0.255
lc5q48	0.053	-0.257	-0.644
lc5q49	-0.15	-0.164	-0.825
lc5q50	-0.423	-0.339	-1.45
lc5q51	-0.268	-0.315	-0.883

Table I.20 Year 5 G&P Item DIF: TAA

Item_Label	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
lc5q26	-0.622	0.17	1.017	-0.262	-0.738	-0.422	-0.809	-0.068
lc5q27	-0.403	0.009	0.625	-0.213	-0.031	0.248	-0.468	-0.165
lc5q28	-0.047	0.045	0.278	-0.137	0.011	0.156	-0.251	-0.035
lc5q29	-0.274	-0.029	0.384	-0.338	0.068	-0.105	0.257	0.021
lc5q30	-0.106	-0.207	0.148	-0.341	0.264	0.319	-0.016	-0.081
lc5q31	-0.107	0.127	0.192	-0.028	-0.166	0.039	-0.083	0.095
lc5q32	0.103	-0.109	0.095	-0.07	-0.14	0.102	0.067	0.096
lc5q33	0.288	0.274	-0.055	-0.078	-0.4	-0.157	0.216	0.034
lc5q34	0.178	0.035	0.379	-0.265	0.057	0.179	-0.512	-0.029
lc5q35	-0.142	-0.018	0.175	0.054	0.01	-0.327	0.025	0.35
lc5q36	-0.023	-0.228	-0.348	0.226	0.23	0.063	0.02	0.136
lc5q37	-0.059	-0.013	0.029	0.037	0.081	-0.053	0.007	0.127
lc5q38	0.045	-0.024	0.158	0.271	0.147	-0.317	-0.041	-0.062
lc5q39	0.013	0.097	-0.241	-0.003	0.301	0.355	-0.213	-0.244
lc5q40	0.125	-0.052	0.031	-0.191	0.208	-0.034	-0.037	0.115
lc5q41	-0.279	0.064	-0.15	0.221	0.072	-0.033	-0.015	0.211
lc5q42	0.013	-0.065	0.278	0.049	-0.125	0.11	-0.084	0.009
lc5q43	-0.115	-0.229	-0.186	0.252	-0.038	0.076	0.036	0.298
lc5q44	0.055	0.004	-0.105	0.241	0.063	-0.076	0.04	-0.075
lc5q45	0.131	-0.057	-0.194	0.171	-0.069	-0.086	0.144	0.075
lc5q46	0.155	0.078	-0.337	0.075	0.102	-0.03	0.169	-0.138
lc5q47	0.053	-0.057	-0.172	0.041	0.032	0.027	0.326	-0.134
lc5q48	0.108	0.019	-0.175	0.062	-0.105	0.065	0.117	0.019
lc5q49	0.189	0.02	-0.27	0.085	0.23	-0.177	0.313	-0.277
lc5q50	0.376	0.108	-0.81	0.132	-0.148	-0.015	0.299	0.006
lc5q51	0.342	0.035	-0.75	0.008	0.082	0.094	0.494	-0.284

Table I.21 Year 7 G&P Item DIF: Gender, LBOTE, and Indigenous

Item_Label	Gender_Difference	LBOTE_Difference	Indigenous_Difference
lc7q31	0.556	0.588	1.411
lc7q32	0.137	0.738	0.688
lc7q33	-0.084	0.386	0.743
lc7q34	0.069	0.501	0.68
lc7q35	-0.277	0.469	0.685
lc7q36	-0.162	0.473	0.488
lc7q37	0.515	0.088	0.332
lc7q38	0.135	0.041	0.505
lc7q39	0.073	0.139	0.444
lc7q40	0.212	0.09	0.54
lc7q41	0.119	-0.164	0.107
lc7q42	-0.226	0.038	-0.027
lc7q43	0.116	-0.196	0.215
lc7q44	-0.186	-0.303	-0.013
lc7q45	-0.078	-0.132	-0.254
lc7q46	0.224	-0.206	-0.026
lc7q47	-0.173	0.087	-0.189
lc7q48	-0.045	0.083	-0.035
lc7q49	0.089	-0.065	-0.434
lc7q50	0.049	-0.147	-1.078
lc7q51	0.206	-0.376	-0.358
lc7q52	-0.045	-0.18	-0.358
lc7q53	-0.042	-0.181	-0.261
lc7q54	-0.082	-0.428	-0.773
lc7q55	-0.217	-0.304	-0.811
lc7q56	-0.286	-0.498	-0.249
lc7q57	-0.376	-0.486	-0.624
lc7q58	-0.218	-0.055	-1.351

Table I.22 Year 7 G&P Item DIF: TAA

Item_Label	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
lc7q31	-0.438	-0.113	0.898	-0.153	-0.541	0.036	-0.381	-0.177
lc7q32	-0.216	-0.007	0.441	0.124	0.012	-0.458	-0.079	0.1
lc7q33	-0.229	-0.285	0.527	0.01	-0.229	-0.121	0.098	0.05
lc7q34	-0.075	-0.04	0.408	-0.099	0.072	-0.155	-0.027	-0.062
lc7q35	-0.344	0.264	0.319	-0.036	-0.053	-0.032	-0.216	0.077
lc7q36	-0.115	-0.018	0.305	0.012	-0.063	-0.094	0.035	0.035
lc7q37	-0.101	0.205	0.204	-0.046	-0.122	0.218	-0.235	-0.049
lc7q38	0.024	-0.183	0.198	-0.05	0.152	0.079	-0.148	0.003
lc7q39	-0.082	0.03	0.402	-0.055	-0.103	0.112	-0.066	-0.159
lc7q40	-0.132	-0.017	0.104	0.095	0.119	0.184	-0.09	-0.188
lc7q41	0.275	0.058	-0.083	-0.244	0.007	0.08	0.057	-0.07
lc7q42	0.181	-0.283	0.009	-0.133	0.176	0.035	-0.056	0.145
lc7q43	0.176	-0.075	-0.039	0.222	0	0.184	-0.185	-0.212
lc7q44	0.011	0.095	-0.066	0.119	-0.02	0.048	-0.034	-0.048
lc7q45	0.145	0.088	-0.216	-0.015	0.143	0.09	-0.105	-0.075
lc7q46	0.154	0.011	-0.087	-0.078	-0.04	0.036	-0.062	0.147
lc7q47	-0.227	0.17	-0.242	0.07	0.137	-0.365	0.233	0.243
lc7q48	0.104	-0.126	0.041	0.034	-0.094	-0.012	0.154	0.007
lc7q49	0.054	0.09	-0.393	-0.135	-0.032	0.115	0.304	-0.029
lc7q50	0.011	0.017	-0.38	0.125	0.2	-0.198	0.175	0.03
lc7q51	0.163	0.022	-0.25	-0.067	0.086	0.284	-0.116	-0.081
lc7q52	0.25	-0.279	-0.118	-0.428	-0.13	0.167	0.468	0.191
lc7q53	-0.051	0.116	-0.05	0.024	0.236	-0.149	-0.017	-0.01
lc7q54	0.065	-0.018	-0.248	0.118	0.295	-0.175	-0.071	0.065
lc7q55	0.155	0.214	-0.755	0.244	-0.036	0.035	0.063	-0.08
lc7q56	-0.036	-0.187	0.019	0.122	-0.141	0.257	0.054	0.073
lc7q57	0.172	-0.352	-0.257	0.085	0.098	0.158	0.262	-0.087
lc7q58	0.104	0.601	-0.694	0.132	-0.13	-0.362	-0.017	0.162

Table I.23 Year 9 G&P Item DIF: Gender, LBOTE, and Indigenous

Item_Label	Gender_Difference	LBOTE_Difference	Indigenous_Difference
lc9q31	0.536	0.241	0.436
lc9q32	-0.156	0.741	1.044
lc9q33	0.03	0.9	1.157
lc9q34	-0.132	1.005	0.769
lc9q35	0.238	0.186	0.602
lc9q36	0.245	0.161	0.621
lc9q37	0.224	0.182	0.685
lc9q38	0.065	-0.134	-0.022
lc9q39	0.07	-0.075	-0.245
lc9q40	0.046	-0.244	-0.242
lc9q41	-0.371	0.144	-0.062
lc9q42	0.072	-0.114	0.113
lc9q43	0.063	-0.233	-0.084
lc9q44	-0.201	-0.085	0.136
lc9q45	0.109	-0.304	-0.118
lc9q46	-0.207	-0.422	0.065
lc9q47	0.121	-0.394	-0.261
lc9q48	0.201	0.233	0.229
lc9q49	0.25	-0.033	-0.367
lc9q50	-0.165	0.048	-0.124
lc9q51	0.037	-0.161	-0.342
lc9q52	-0.156	-0.348	-0.553
lc9q53	-0.037	0.01	-0.378
lc9q54	-0.131	-0.071	-0.47
lc9q55	-0.287	-0.462	-0.732
lc9q56	-0.193	-0.344	-0.363
lc9q57	0.029	-0.109	-0.478
lc9q58	-0.3	-0.322	-1.016

Table I.24 Year 9 G&P Item DIF: TAA

Item_Label	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
lc9q31	-0.181	0.104	0.263	-0.114	-0.048	-0.007	0.063	-0.171
lc9q32	-0.131	-0.103	0.496	0.346	-0.012	-0.244	-0.323	-0.377
lc9q33	-0.779	-0.066	0.714	0.003	-0.057	-0.028	-0.267	-0.091
lc9q34	-0.377	0.24	0.511	0.04	-0.116	-0.507	-0.051	0.142
lc9q35	-0.019	-0.236	0.341	-0.084	0.058	-0.019	-0.236	0.161
lc9q36	-0.148	-0.332	0.281	-0.084	0.009	0.283	-0.02	-0.093
lc9q37	-0.099	0.082	0.262	-0.008	-0.066	0.119	-0.165	-0.057
lc9q38	-0.082	-0.103	-0.042	0.031	0.08	0.128	0.068	-0.015
lc9q39	-0.15	0.139	-0.066	0.184	-0.08	-0.011	-0.002	0.06
lc9q40	0.032	0.087	0.077	-0.095	-0.054	0.04	0.066	-0.042
lc9q41	-0.229	0.154	-0.069	0.39	-0.023	-0.346	-0.161	0.326
lc9q42	0.16	-0.264	0.118	0.057	0.046	0.157	-0.255	0.058
lc9q43	0.034	0.175	-0.124	-0.174	-0.116	0.247	-0.031	0.048
lc9q44	0.126	-0.046	0.125	0.066	-0.051	-0.029	0.032	-0.102
lc9q45	0.255	-0.008	-0.317	-0.384	0.181	0.054	0.264	-0.065
lc9q46	0.211	0.002	-0.176	0.27	-0.089	-0.207	-0.135	0.169
lc9q47	0.14	0.168	-0.056	-0.124	0.104	-0.07	-0.009	-0.072
lc9q48	-0.093	0.079	0.04	0.25	-0.06	-0.239	-0.11	0.24
lc9q49	0.121	-0.04	-0.286	0.133	-0.003	-0.044	0.03	0.093
lc9q50	0.115	-0.072	0.091	-0.067	0.081	-0.107	0.027	0.053
lc9q51	0.21	0.099	-0.177	-0.034	0.092	0.089	-0.134	-0.095
lc9q52	0.307	-0.266	-0.213	-0.519	0.401	0.184	0.434	-0.182
lc9q53	-0.01	0.086	-0.115	-0.002	0.02	-0.016	0.138	-0.036
lc9q54	0.081	0.227	-0.234	0.098	-0.181	0.042	-0.01	-0.003
lc9q55	0.261	-0.258	-0.435	-0.09	-0.083	0.319	0.278	0.02
lc9q56	0.027	-0.19	-0.133	-0.085	0.085	0.121	0.157	0.084
lc9q57	0.028	0.16	-0.417	-0.06	0.036	0.163	0.296	-0.193
lc9q58	0.19	0.179	-0.461	0.055	-0.157	-0.076	0.055	0.136

Table I.25 Year 3 Numeracy Item DIF: Gender, LBOTE, and Indigenous

Item_Label	Gender_Difference	LBOTE_Difference	Indigenous_Difference
n3q01	0.05	0.167	0.276
n3q02	-0.069	0.384	0.882
n3q03	-0.362	0.728	0.474
n3q04	0.078	0.386	0.882
n3q05	0.012	-0.246	-0.317
n3q06	0.126	0.605	0.748
n3q07	0.432	0.003	-0.354
n3q08	-0.229	0.163	-0.431
n3q09	-0.057	0.214	0.352
n3q10	-0.076	0.042	0.065
n3q11	0.416	-0.251	-0.378
n3q12	0.341	0.023	0.375
n3q13	0.008	-0.282	0.006
n3q14	0.008	-0.373	0.403
n3q15	0.108	-0.072	0.406
n3q16	0.149	0.018	0.329
n3q17	0.294	-0.114	-0.379
n3q18	0.017	-0.377	-0.208
n3q19	0.355	-0.12	-0.318
n3q20	-0.31	0.205	-0.311
n3q21	-0.368	-0.235	-0.577
n3q22	0.004	0.154	-0.134
n3q23	0.135	-0.026	-0.879
n3q24	-0.059	-0.158	-0.548
n3q25	0.004	0.203	0.844
n3q26	-0.138	0.078	0.262
n3q27	-0.168	-0.005	-1.113
n3q28	-0.099	-0.335	-0.011
n3q29	0.129	-0.317	-0.072
n3q30	0.175	-0.29	-0.799
n3q31	-0.246	-0.223	0.586
n3q32	-0.016	-0.062	-0.685
n3q33	-0.094	-0.322	0.37
n3q34	0.004	0.277	0.003
n3q35	-0.558	0.156	0.248

Table I.26 Year 3 Numeracy Item DIF:TAA

Item_Label	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
n3q01	0.042	0.171	0.188	-0.222	0.114	0.134	-1.028	-0.042
n3q02	-0.486	-0.457	0.533	-0.187	-0.069	0.343	-0.338	-0.067
n3q03	0.161	-0.181	0.373	0.076	-0.19	-0.129	-0.281	-0.057
n3q04	-0.242	-0.214	0.474	-0.313	-0.126	0.276	-0.233	0.013
n3q05	0.302	-0.09	-0.358	-0.453	-0.035	0.321	0.447	-0.159
n3q06	0.032	0.257	0.334	0.189	-0.574	-0.281	-0.254	0.029
n3q07	0.071	0.157	-0.076	0.068	-0.054	-0.208	0.133	-0.038
n3q08	-0.021	0.204	-0.202	0.158	0.087	-0.179	0.09	-0.105
n3q09	0.057	0.258	0.108	-0.257	-0.249	-0.002	0.032	0.051
n3q10	-0.114	0.11	-0.027	0.203	-0.018	0.116	-0.053	-0.21
n3q11	-0.014	0.004	-0.121	0.052	0.182	-0.166	0.245	-0.136
n3q12	-0.272	-0.143	0.069	-0.146	0.211	0.192	0.091	0.006
n3q13	-0.167	0.225	0.065	0.081	0.155	-0.232	0.02	-0.111
n3q14	-0.013	-0.117	0.141	-0.515	0.036	0.291	0.4	-0.202
n3q15	0.169	-0.158	0.251	-0.011	-0.005	0.118	-0.174	-0.119
n3q16	0.008	0.013	0.138	-0.032	-0.075	-0.07	-0.049	0.134
n3q17	0.167	-0.077	-0.08	0.102	-0.082	-0.132	-0.001	0.143
n3q18	-0.03	-0.093	-0.035	0.016	0.073	0.009	0.057	0.067
n3q19	-0.074	-0.183	-0.194	-0.169	0.269	0.352	0.262	-0.207
n3q20	0.064	-0.078	0.184	0.194	-0.012	-0.309	-0.1	0.185
n3q21	0.037	0.144	-0.345	0.086	0.052	0.017	0.023	-0.018
n3q22	0.083	0.149	-0.216	-0.023	-0.08	-0.132	-0.061	0.311
n3q23	0.026	0.192	-0.615	0.316	0.055	-0.305	0.191	0.108
n3q24	-0.172	0.118	-0.214	0.019	-0.117	-0.019	0.158	0.254
n3q25	0.07	-0.019	0.17	-0.119	0.029	0.025	0.115	-0.15
n3q26	0.233	0.037	-0.115	0.052	0.121	-0.044	-0.028	-0.207
n3q27	0.173	0.007	-0.479	0.015	-0.008	-0.028	0.319	-0.005
n3q28	0.099	-0.008	0.01	-0.288	0.286	0.113	-0.089	-0.012
n3q29	0.131	-0.176	0.213	0.238	0.047	-0.066	-0.182	0.002
n3q30	0.154	-0.068	-0.521	0.14	0.039	0.045	0.061	0.114
n3q31	-0.26	0.057	0.11	0.254	-0.031	0.104	-0.099	0.082
n3q32	-0.034	-0.055	-0.265	0.145	0.015	-0.057	0.062	0.225
n3q33	0.096	-0.16	0.41	0.237	-0.213	0.112	-0.139	0.034
n3q34	-0.035	0.06	-0.45	0.078	-0.166	0.067	0.347	0.028
n3q35	-0.247	0.11	0.539	0.015	0.332	-0.282	0.052	0.052

Table I.27 Year 5 Numeracy Item DIF: Gender, LBOTE, and Indigenous

Item_Label	Gender_Difference	LBOTE_Difference	Indigenous_Difference
n5q01	0.264	0.896	0.992
n5q02	0.373	0.668	1.28
n5q03	-0.102	0.348	0.506
n5q04	0.067	0.36	0.512
n5q05	-0.381	0.176	0.367
n5q06	0.381	-0.261	-0.426
n5q07	-0.009	0.014	0.278
n5q08	0.003	0.139	0.842
n5q09	0.457	-0.013	-0.403
n5q10	0.055	0.387	0.22
n5q11	0.372	0.51	0.824
n5q12	0.18	-0.026	-0.638
n5q13	-0.199	-0.149	-0.129
n5q14	0.189	-0.315	0.095
n5q15	-0.327	0.077	-0.122
n5q16	-0.212	-0.036	0.23
n5q17	0.134	0.12	0.248
n5q18	-0.052	-0.127	-0.183
n5q19	-0.137	-0.102	0.033
n5q20	0.161	-0.17	-0.766
n5q21	0.192	-0.117	0.426
n5q22	-0.374	-0.03	-0.292
n5q23	0.307	-0.063	-0.107
n5q24	-0.064	-0.328	-0.457
n5q25	0.041	-0.232	0.017
n5q26	-0.079	-0.106	0.613
n5q27	0.484	-0.104	-0.65
n5q28	-0.139	0.022	-0.082
n5q29	0.009	-0.117	-0.693
n5q30	-0.136	0.01	-0.494
n5q31	-0.236	-0.31	-0.637
n5q32	-0.123	0.392	-0.235
n5q33	-0.14	0.013	0.436
n5q34	-0.091	-0.298	-0.004
n5q35	-0.472	-0.575	1.156
n5q36	-0.059	-0.18	-1.445
n5q37	0.034	-0.199	-1.092
n5q38	0.286	-0.31	-0.811
n5q39	-0.385	0.26	-0.181
n5q40	-0.274	-0.223	0.773

Table I.28 Year 5 Numeracy Item DIF: TAA

Item_Label	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
n5q01	-0.38	-0.085	0.552	-0.062	-0.148	-0.033	-0.266	-0.112
n5q02	-0.495	-0.148	0.556	-0.403	0.082	0.088	-0.146	-0.308
n5q03	0.018	0.284	0.18	-0.09	-0.143	-0.012	-0.112	-0.18
n5q04	0.022	0.001	0.416	-0.362	-0.467	-0.077	0.151	0.078
n5q05	0.073	0.162	0.306	-0.085	-0.078	-0.152	-0.252	-0.034
n5q06	-0.058	0.153	-0.264	-0.058	-0.038	0.299	-0.18	0.121
n5q07	0.232	-0.272	0.224	-0.207	0.193	-0.053	0.023	-0.146
n5q08	-0.062	-0.009	0.408	-0.203	-0.219	0.08	-0.149	0.113
n5q09	0.12	0.104	-0.257	0.051	-0.154	-0.008	0.011	0.168
n5q10	-0.005	-0.104	0.158	-0.094	-0.041	-0.039	0.242	-0.042
n5q11	-0.114	-0.083	0.591	-0.379	0.125	-0.019	-0.062	-0.238
n5q12	0.189	0.288	-0.559	-0.017	-0.019	0.088	0.018	-0.036
n5q13	-0.014	0.089	-0.055	0.044	0.122	0.239	-0.125	-0.255
n5q14	-0.041	-0.16	0.057	-0.166	0.243	0.159	-0.106	0.044
n5q15	-0.094	0.027	-0.076	0.15	0.016	-0.097	0.111	0.02
n5q16	-0.021	0.023	0.216	0.174	-0.088	-0.187	-0.009	-0.029
n5q17	0.008	0.186	0.061	-0.083	-0.076	-0.042	-0.058	0.07
n5q18	-0.135	0.077	-0.055	-0.182	0.189	0.095	0.035	0.022
n5q19	0.067	-0.053	0.267	0.214	-0.021	-0.289	-0.086	0.007
n5q20	-0.126	-0.124	-0.383	0.101	0.169	0.08	0.39	-0.116
n5q21	-0.002	-0.085	0.158	0.093	0.115	-0.012	-0.2	0.014
n5q22	0.106	-0.143	-0.023	0.024	-0.073	-0.065	0.2	0.037
n5q23	0.117	0.074	-0.048	0.105	-0.052	0.025	-0.197	0.029
n5q24	0.109	-0.089	-0.29	0.035	0.203	0.086	0.121	-0.176
n5q25	0.093	-0.211	-0.016	0.173	0.068	-0.028	-0.108	0.084
n5q26	0.019	-0.003	0.195	-0.291	-0.055	0.182	0.003	0.079
n5q27	-0.032	-0.235	-0.149	0.006	0.136	0.209	0.222	-0.122
n5q28	0.203	-0.067	-0.109	-0.246	0.168	0.076	0.178	-0.156
n5q29	0.153	0.352	-0.527	-0.412	0.127	0.08	0.155	0.031
n5q30	0.082	0.052	-0.358	0.208	-0.049	-0.145	0.148	0.022
n5q31	0.078	-0.073	-0.314	-0.033	-0.016	0.028	0.058	0.255
n5q32	-0.072	0.377	-0.244	0.177	-0.097	-0.261	0.081	0.059
n5q33	-0.191	0.003	0.259	0.059	0.158	-0.081	0.039	-0.035
n5q34	-0.076	-0.054	0.061	0.137	-0.117	-0.037	-0.029	0.259
n5q35	-0.218	-0.225	0.303	0.348	0.064	0.182	-0.145	0.079
n5q36	0.103	0.051	-0.716	0.222	-0.166	0.055	0.121	0.21
n5q37	0.275	0.055	-0.28	0.17	0.125	-0.029	-0.193	-0.088
n5q38	0.102	0.006	-0.422	0.178	0.039	0.017	0.122	-0.098
n5q39	-0.027	0.029	0.195	0.163	-0.104	-0.112	-0.054	0.098
n5q40	-0.007	-0.171	-0.018	0.542	-0.122	-0.288	0.044	0.273

Table I.29 Year 7 Numeracy Item DIF: Gender, LBOTE, and Indigenous

Item_Label	Gender_Difference	LBOTE_Difference	Indigenous_Difference
n7CAq01	0.05	0.396	0.505
n7CAq02	-0.194	0.163	0.087
n7CAq03	0.229	0.131	0.635
n7CAq04	0.317	0.266	0.339
n7CAq05	0.372	0.431	0.307
n7CAq06	0.191	0.34	0.028
n7CAq07	-0.057	-0.242	0.102
n7CAq08	0.102	0.21	0.143
n7CAq09	0.072	0.291	0.222
n7CAq10	-0.247	0.223	-0.232
n7CAq11	0.196	-0.246	0.227
n7CAq12	0.222	0.141	-0.249
n7CAq13	-0.247	-0.099	0.056
n7CAq14	0.132	-0.071	-0.104
n7CAq15	0.14	0.056	0.688
n7CAq16	-0.019	-0.582	-0.564
n7CAq17	-0.106	0.345	0.261
n7CAq18	-0.208	0.028	-0.085
n7CAq19	0.145	0.153	0.509
n7CAq20	-0.282	0.198	0.156
n7CAq21	0.074	-0.145	-0.25
n7CAq22	0.169	-0.205	-0.181
n7CAq23	0.172	-0.289	-0.394
n7CAq24	-0.253	-0.072	-0.276
n7CAq25	0.035	0.169	-0.741
n7CAq26	-0.024	-0.196	-0.598
n7CAq27	0.059	-0.202	0.086
n7CAq28	-0.677	0.029	0.765
n7CAq29	0.074	-0.004	-0.11
n7CAq30	-0.182	-0.04	-0.947
n7CAq31	0.096	-0.396	-1.312
n7CAq32	-0.428	-0.165	-0.177

(continued)

Table I.29 (continued)

Item_Label	Gender_Difference	LBOTE_Difference	Indigenous Difference
n7NCq01	0.597	-0.01	0.091
n7NCq02	0.238	0.728	0.614
n7NCq03	0.171	0.102	0.731
n7NCq04	-0.003	0.515	0.719
n7NCq05	-0.084	0.197	0.275
n7NCq06	0.082	-0.024	0.437
n7NCq07	0.2	-0.013	0.273
n7NCq08	-0.259	0.672	0.465
n7NCq09	0.011	0.013	0.144
n7NCq10	0.126	0.076	-0.1
n7NCq11	0.3	0.149	0.506
n7NCq12	-0.315	-0.068	-0.051
n7NCq13	0.175	0.098	0.148
n7NCq14	-0.314	-0.121	-0.12
n7NCq15	-0.026	-0.002	-0.177
n7NCq16	-0.273	-0.136	-0.057
n7NCq17	0.239	0.119	-0.222
n7NCq18	-0.099	-0.038	-0.283
n7NCq19	-0.256	-0.397	-0.333
n7NCq20	0.383	0	-0.12
n7NCq21	-0.264	-0.09	-0.317
n7NCq22	0.239	-0.185	-0.35
n7NCq23	0.258	0.1	0.494
n7NCq24	0.021	-0.42	-0.305
n7NCq25	-0.066	-0.145	-0.067
n7NCq26	-0.032	-0.486	-0.324
n7NCq27	-0.277	0.24	0.323
n7NCq28	-0.158	-0.649	0.728
n7NCq29	-0.158	-0.107	-0.644
n7NCq30	0.03	-0.746	-0.792
n7NCq31	0.054	0.354	-0.728
n7NCq32	-0.46	-0.345	0.143

Table I.30 Year 7 Numeracy Item DIF: TAA

Item_Label	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
n7CAq01	-0.158	-0.036	0.159	0.047	-0.075	-0.167	0.095	0.084
n7CAq02	-0.087	-0.287	-0.109	0.089	0.168	-0.154	0.052	0.196
n7CAq03	-0.058	0.026	0.223	-0.196	-0.049	0.152	-0.197	0.006
n7CAq04	0.034	0.068	0.043	0.057	-0.088	-0.131	0.061	-0.06
n7CAq05	-0.003	0.263	-0.005	-0.09	-0.051	-0.049	-0.186	0.098
n7CAq06	0.101	0.135	0.155	-0.031	-0.214	-0.22	0.069	0.007
n7CAq07	0.005	0	0.152	-0.078	0.016	0.063	-0.069	-0.141
n7CAq08	-0.012	0.06	0.038	0.087	-0.21	-0.015	-0.044	0.065
n7CAq09	-0.065	0.197	-0.014	-0.155	-0.11	-0.004	0.145	-0.022
n7CAq10	-0.015	0.261	-0.07	0.19	-0.143	-0.312	0.126	-0.047
n7CAq11	0.061	-0.025	-0.18	-0.102	0.007	0.329	-0.047	-0.15
n7CAq12	0.062	0.145	-0.138	-0.149	-0.068	0.104	0.086	-0.116
n7CAq13	-0.003	-0.041	-0.051	0.117	0.188	0.01	-0.145	-0.126
n7CAq14	0.057	0.113	0.053	0.039	-0.026	-0.266	0.071	-0.051
n7CAq15	-0.076	-0.06	0.363	-0.188	-0.089	0.208	-0.094	-0.015
n7CAq16	0.101	-0.175	-0.22	-0.095	-0.115	0.371	0.115	-0.079
n7CAq17	-0.116	-0.046	0.358	0.04	0.014	-0.12	-0.044	0.004
n7CAq18	0.218	0.159	-0.028	-0.082	-0.026	-0.228	-0.096	0.049
n7CAq19	-0.099	0.011	0.203	-0.104	-0.114	0.103	0.006	0.013
n7CAq20	-0.147	0.126	0.156	-0.069	-0.14	0.139	-0.166	0.078
n7CAq21	-0.111	-0.034	0.259	0.295	-0.159	-0.024	-0.241	0.191
n7CAq22	-0.065	-0.213	-0.339	-0.108	0.364	0.237	0.036	-0.025
n7CAq23	0.255	0.094	-0.296	0.111	-0.169	-0.14	0.094	-0.107
n7CAq24	0.109	0.078	0.123	-0.01	0.029	-0.156	-0.104	-0.058
n7CAq25	-0.034	0.453	-0.552	0.145	-0.189	-0.287	0.016	0.222
n7CAq26	0.088	-0.097	-0.229	0.165	-0.129	0.027	0.071	-0.011
n7CAq27	0.093	-0.005	-0.184	-0.004	0.147	-0.104	0.071	-0.116
n7CAq28	-0.099	-0.168	0.287	0.131	-0.044	0.052	-0.035	0.113
n7CAq29	-0.083	-0.064	-0.046	0.001	0.38	-0.083	-0.058	0.024
n7CAq30	0.06	0.43	-0.358	-0.216	-0.136	-0.202	0.174	0.088
n7CAq31	0.171	-0.056	-0.487	0.048	-0.072	-0.182	0.378	-0.008
n7CAq32	0.044	-0.018	-0.173	-0.079	0.152	0.146	0.11	-0.13

(continued)

Table I.30 (continued)

Item_Label	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
n7NCq01	-0.192	0.248	-0.004	0.133	-0.125	-0.037	-0.124	0.074
n7NCq02	-0.181	0.224	0.222	-0.22	-0.047	0.078	-0.102	-0.057
n7NCq03	-0.034	-0.05	0.416	-0.022	-0.013	-0.026	-0.26	-0.175
n7NCq04	-0.11	0.185	0.187	0.065	-0.102	-0.096	0.123	-0.274
n7NCq05	0.148	-0.103	0.112	0.054	-0.082	-0.293	0.015	0.121
n7NCq06	-0.083	-0.088	-0.003	-0.094	0.149	0.123	0.005	-0.106
n7NCq07	-0.255	-0.096	-0.21	-0.055	0.105	0.291	0.138	-0.065
n7NCq08	-0.153	0.003	0.417	-0.047	-0.221	-0.055	-0.019	0.084
n7NCq09	0.024	0.259	-0.274	0.001	-0.138	-0.004	0.143	-0.076
n7NCq10	-0.003	0.227	-0.185	-0.007	0.009	0.086	-0.095	-0.083
n7NCq11	-0.027	0.289	0.07	-0.098	-0.232	0.002	0.008	-0.017
n7NCq12	0.029	-0.07	0.022	0.005	0.108	-0.091	-0.121	0.067
n7NCq13	-0.103	-0.046	-0.074	0.066	0.075	-0.04	0.021	0.034
n7NCq14	-0.084	-0.155	-0.083	-0.026	0.251	0.097	-0.18	0.083
n7NCq15	0.048	-0.161	0	-0.12	0.189	0.192	-0.107	-0.1
n7NCq16	-0.017	-0.123	-0.121	-0.111	0.043	0.047	0.076	0.099
n7NCq17	0.229	0.154	-0.117	-0.127	-0.09	-0.253	0.045	0.087
n7NCq18	-0.001	0.055	0.013	0.011	-0.096	-0.111	0.057	0.037
n7NCq19	0.175	-0.299	-0.177	-0.039	-0.039	0.048	0.179	0.021
n7NCq20	0.081	0.035	-0.335	0.101	-0.106	-0.03	-0.01	0.132
n7NCq21	-0.086	0.1	-0.259	0.228	-0.173	-0.063	0.05	0.081
n7NCq22	0.185	0.054	-0.272	-0.087	-0.085	-0.031	-0.005	0.101
n7NCq23	-0.172	-0.13	0.373	0.184	0.001	-0.085	0.054	-0.059
n7NCq24	0.08	0.013	-0.234	0.07	-0.096	0.006	0.158	-0.127
n7NCq25	0.207	-0.306	0.055	-0.004	0.365	0.007	-0.179	-0.037
n7NCq26	0.2	-0.14	-0.033	0.266	-0.177	0.061	-0.224	0.057
n7NCq27	-0.157	-0.093	0.26	0.036	0.038	0.27	-0.041	-0.099
n7NCq28	-0.127	-0.687	0.511	0.191	0.73	0.711	-0.144	0.011
n7NCq29	0.116	-0.266	-0.133	-0.106	0.183	-0.1	0.157	0.112
n7NCq30	0.051	-0.224	0.004	0.013	0.393	0.167	0	-0.203
n7NCq31	-0.111	0.331	0.47	-0.034	-0.086	-0.211	0.121	-0.273
n7NCq32	0.098	-0.431	0.294	-0.03	0.223	0.247	0.01	0.575

Table I.31 Year 9 Numeracy Item DIF: Gender, LBOTE, and Indigenous

Item_Label	Gender_Difference	LBOTE_Difference	Indigenous_Difference
n9CAq01	-0.155	0.145	-0.525
n9CAq02	-0.367	0.228	-0.061
n9CAq03	-0.246	0.451	0.197
n9CAq04	0.419	-0.187	-0.087
n9CAq05	-0.259	0.277	0.367
n9CAq06	0.402	-0.068	0.598
n9CAq07	0.024	0.133	-0.337
n9CAq08	-0.051	0.146	-0.642
n9CAq09	0.024	0.24	-0.353
n9CAq10	0.531	-0.079	0.433
n9CAq11	0.094	0.084	0.029
n9CAq12	0.042	-0.268	0.082
n9CAq13	0.15	0.225	0.039
n9CAq14	-0.224	0.43	0.234
n9CAq15	0.326	0.239	0.275
n9CAq16	0.108	0.247	-0.035
n9CAq17	-0.131	0.19	-0.091
n9CAq18	0.394	-0.593	0.394
n9CAq19	0.508	-0.392	-0.175
n9CAq20	0.264	-0.408	-0.119
n9CAq21	0	0.044	0.425
n9CAq22	0.207	0.249	-1.068
n9CAq23	-0.533	0.215	1.02
n9CAq24	0.183	0.191	0.052
n9CAq25	-0.032	-0.251	0.305
n9CAq26	0.077	0.248	-0.927
n9CAq27	-0.467	-0.451	-1.271
n9CAq28	-0.153	0.083	0.636
n9CAq29	0.42	-0.241	-0.611
n9CAq30	-0.109	-0.067	-0.062
n9CAq31	-0.281	-0.659	1.071
n9CAq32	-0.196	-0.674	0.22

(continued)

Table I.31 (continued)

Item_Label	Gender_Difference	LBOTE_Difference	Indigenous Difference
n9NCq01	0.002	0.229	0.786
n9NCq02	0.284	0.152	0.523
n9NCq03	-0.076	0.165	-0.503
n9NCq04	-0.076	-0.019	0.212
n9NCq05	-0.103	0.252	0.042
n9NCq06	0.112	0.158	-0.193
n9NCq07	0.048	-0.452	0.22
n9NCq08	0.172	-0.002	0.203
n9NCq09	0.027	0.036	0.169
n9NCq10	-0.197	0.349	-0.225
n9NCq11	-0.222	0.262	-0.212
n9NCq12	0.383	0.028	-0.05
n9NCq13	-0.125	-0.401	-0.119
n9NCq14	-0.254	0.405	0.509
n9NCq15	-0.128	0.007	-0.34
n9NCq16	0.264	-0.244	-0.556
n9NCq17	-0.444	0.191	-0.058
n9NCq18	0.452	-0.276	0.044
n9NCq19	-0.111	0.116	0.269
n9NCq20	0.119	-0.157	-0.59
n9NCq21	0.056	-0.341	-0.801
n9NCq22	-0.105	-0.071	-0.238
n9NCq23	-0.05	0.402	0.028
n9NCq24	-0.418	-0.069	0.037
n9NCq25	-0.069	0.175	-0.247
n9NCq26	0.191	-0.26	-0.885
n9NCq27	0.037	0.256	0.144
n9NCq28	0.223	-0.32	-0.966
n9NCq29	-0.491	0.018	1.431
n9NCq30	0.004	-0.077	-0.378
n9NCq31	-0.274	0.05	1.291
n9NCq32	-0.206	-0.286	0.44

Table I.32 Year 9 Numeracy Item DIF: TAA

Item_Label	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
n9CAq01	0.168	-0.325	-0.229	0.169	-0.061	-0.004	0.116	-0.024
n9CAq02	-0.294	0.103	-0.294	-0.167	-0.004	0.134	0.115	0.209
n9CAq03	0.133	-0.063	0.139	-0.064	-0.384	0.092	0.079	-0.076
n9CAq04	0.246	-0.227	-0.211	-0.034	-0.081	0.057	0.049	0.007
n9CAq05	0.022	-0.084	0.057	0.055	-0.143	-0.188	0.06	0.119
n9CAq06	0.206	-0.81	-0.094	-0.092	0.253	0.185	-0.122	0.102
n9CAq07	0.109	0.306	-0.154	-0.171	-0.021	-0.182	0.105	-0.084
n9CAq08	0.11	0.12	-0.098	-0.045	0.072	-0.156	-0.086	-0.02
n9CAq09	0.042	0.131	-0.035	0.167	-0.22	-0.349	0.028	0.167
n9CAq10	0.164	0	-0.102	-0.13	-0.133	0.129	-0.058	-0.008
n9CAq11	0.066	0.255	-0.118	-0.103	-0.09	-0.014	-0.121	0.028
n9CAq12	0.053	-0.154	-0.149	-0.158	0.153	0.228	-0.088	-0.082
n9CAq13	-0.157	0.178	-0.135	-0.102	0.192	-0.215	0.096	0.006
n9CAq14	-0.072	0.284	0.123	-0.133	-0.1	-0.154	0.01	-0.006
n9CAq15	0.068	0.05	0.348	0.014	-0.107	-0.043	-0.125	-0.228
n9CAq16	-0.058	-0.147	-0.047	-0.08	-0.11	-0.017	0.306	-0.008
n9CAq17	-0.16	0.133	-0.039	-0.05	0.123	-0.01	-0.226	0.126
n9CAq18	-0.244	0.164	0.312	-0.158	0.145	0.312	-0.258	-0.15
n9CAq19	0.147	-0.198	-0.584	-0.024	-0.024	0.056	0.119	0.213
n9CAq20	-0.131	-0.025	0.106	0.022	0.257	0.027	-0.235	-0.046
n9CAq21	0.055	0.234	0.133	-0.041	-0.121	-0.062	-0.194	-0.043
n9CAq22	0.15	0.431	-0.286	-0.014	-0.303	-0.541	0.28	0.076
n9CAq23	-0.058	-0.172	0.47	0.123	-0.015	0.004	-0.173	-0.05
n9CAq24	0.096	0.229	-0.388	-0.075	-0.159	-0.111	0.017	0.11
n9CAq25	-0.063	-0.128	0.057	0.017	0.219	0.275	0.208	-0.333
n9CAq26	0.101	-0.2	-0.269	-0.393	-0.094	0.09	0.253	0.364
n9CAq27	-0.074	-0.45	-0.352	-0.11	0.396	0.276	0.199	0.323
n9CAq28	-0.268	-0.159	0.265	0.285	0.197	0.039	-0.01	-0.004
n9CAq29	-0.063	-0.023	-0.085	-0.031	0.086	0.326	-0.258	0.091
n9CAq30	-0.164	-0.213	-0.152	0.143	-0.02	0.179	0.123	0.145
n9CAq31	-0.314	-0.557	0.831	0.727	0.516	0.615	0.702	-0.195
n9CAq32	0.031	-0.75	0.662	0.609	1.224	0.036	0.474	0.186

(continued)

Table I.32 (continued)

Item_Label	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
n9NCq01	-0.203	0.006	0.309	-0.023	-0.057	0.131	-0.248	-0.187
n9NCq02	0.192	0.181	0.342	0.063	-0.047	-0.316	-0.13	-0.465
n9NCq03	-0.017	0.151	-0.02	-0.153	0.036	-0.173	0.04	0.043
n9NCq04	0.005	0.12	-0.17	0.06	0.026	0.045	-0.117	-0.111
n9NCq05	-0.072	-0.085	0.215	-0.144	0.002	0.069	-0.209	0.09
n9NCq06	0.021	0.232	-0.109	0.145	-0.188	-0.125	-0.131	0.082
n9NCq07	0.057	0.455	-0.185	-0.198	-0.156	0.237	-0.042	-0.314
n9NCq08	0.093	0.146	-0.027	-0.203	-0.123	0.185	-0.083	-0.102
n9NCq09	-0.085	-0.208	0.035	-0.02	0.133	0.02	-0.03	-0.017
n9NCq10	-0.039	0.268	0.179	0.057	-0.106	-0.364	-0.032	0.009
n9NCq11	0.122	0.051	-0.14	0.025	-0.131	-0.057	-0.077	0.073
n9NCq12	-0.083	-0.128	-0.126	0.003	-0.022	0.15	0.05	-0.003
n9NCq13	0.196	-0.082	-0.095	0.01	0.053	-0.097	0.112	-0.243
n9NCq14	-0.183	0.035	0.432	-0.028	0.062	-0.134	-0.173	-0.075
n9NCq15	0.126	0.173	-0.107	-0.071	-0.142	-0.164	-0.011	0.073
n9NCq16	0.173	0.273	-0.209	-0.145	-0.239	-0.07	-0.118	0.189
n9NCq17	-0.128	-0.037	0.159	-0.076	-0.027	0.147	-0.212	0.125
n9NCq18	0.139	0.077	-0.089	-0.022	-0.191	0.116	-0.045	-0.101
n9NCq19	-0.032	0.053	0.206	0.138	0.037	-0.129	-0.116	-0.15
n9NCq20	0.178	0.277	-0.095	-0.161	-0.041	-0.079	-0.255	0.048
n9NCq21	0.161	0.087	-0.149	-0.143	-0.232	-0.02	0.032	0.09
n9NCq22	-0.125	0.025	-0.005	0.076	-0.182	0.098	-0.138	0.151
n9NCq23	-0.031	0.386	0.143	-0.037	-0.284	-0.309	0.07	-0.004
n9NCq24	0.08	-0.21	0.065	0.054	0.044	0.025	-0.186	0.079
n9NCq25	-0.133	-0.16	-0.026	0.111	0.221	-0.057	0.263	-0.295
n9NCq26	0.157	0.022	-0.498	0.094	-0.189	-0.02	0.12	0.053
n9NCq27	-0.256	0.168	-0.162	-0.051	0.065	-0.152	0.147	0.086
n9NCq28	-0.046	-0.025	-0.382	0.154	-0.067	-0.003	0.124	0.05
n9NCq29	-0.114	-0.062	0.232	0.474	-0.019	-0.132	-0.023	-0.16
n9NCq30	0.276	-0.059	-0.208	-0.234	-0.164	-0.197	0.045	0.324
n9NCq31	-0.183	0.168	0.4	-0.136	0.26	0.403	0.031	-0.319
n9NCq32	-0.098	-0.233	0.403	0.22	0.018	-0.045	-0.042	0.062

Table I.33 Years 3, 5, 7, and 9 Writing Item DIF: Gender, LBOTE, and Indigenous

Item_Label	Gender_Difference	LBOTE_Difference	Indigenous_Difference
WQ01	0.043	-0.121	0.091
WQ02	0.112	-0.082	0.333
WQ03	-0.032	0.133	0.331
WQ04	0.125	0.026	0.142
WQ05	-0.24	0.062	0.139
WQ06	-0.117	0.057	0.069
WQ07	0.045	0.096	0.485
WQ08	-0.062	0.247	-1.534
WQ09	0.268	-0.15	-0.055
WQ10	-0.141	-0.267	-0.002

APPENDIX J. EXPECTED SCORE CURVES OF WRITING CRITERIA

FIGURE J.1 Criterion 1: Audience

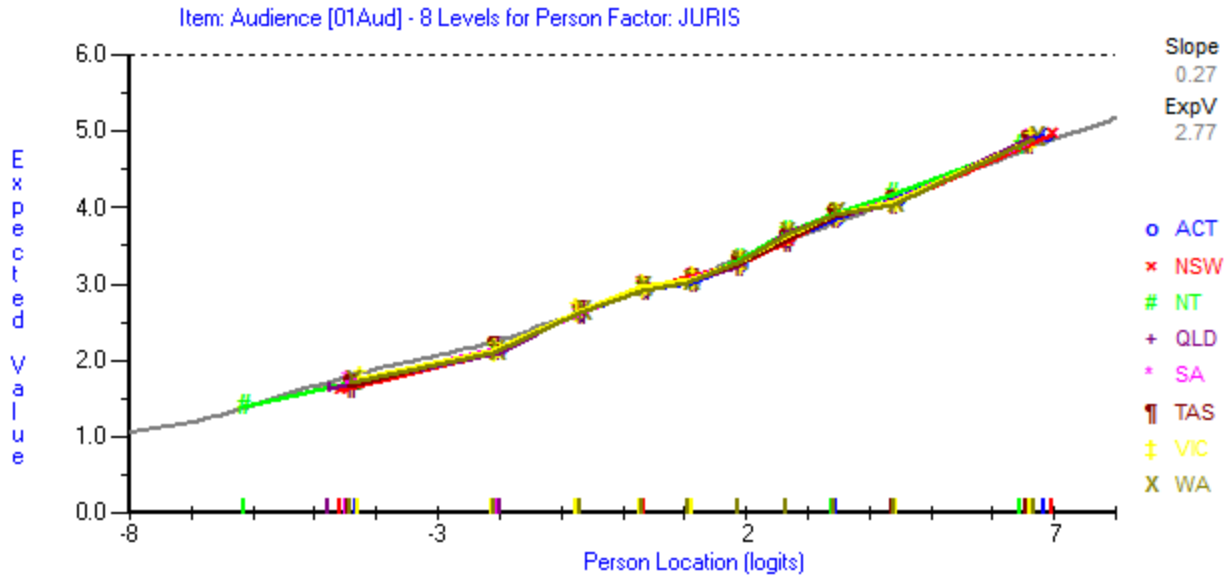


FIGURE J.2 Criterion 2: Text Structure

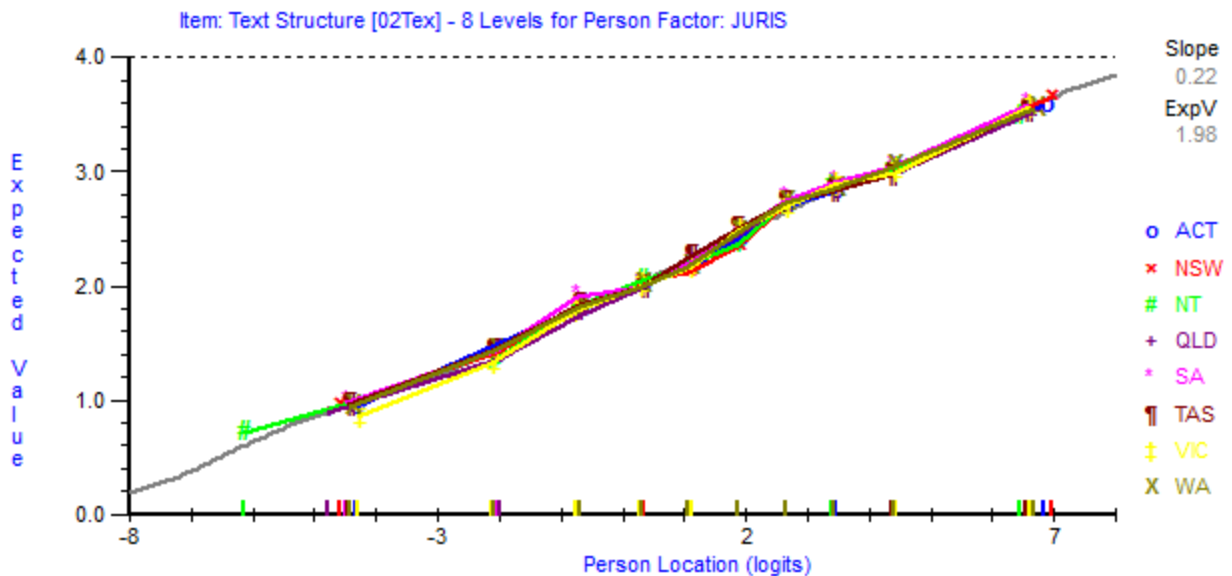


FIGURE J.3 Criterion 3: Ideas

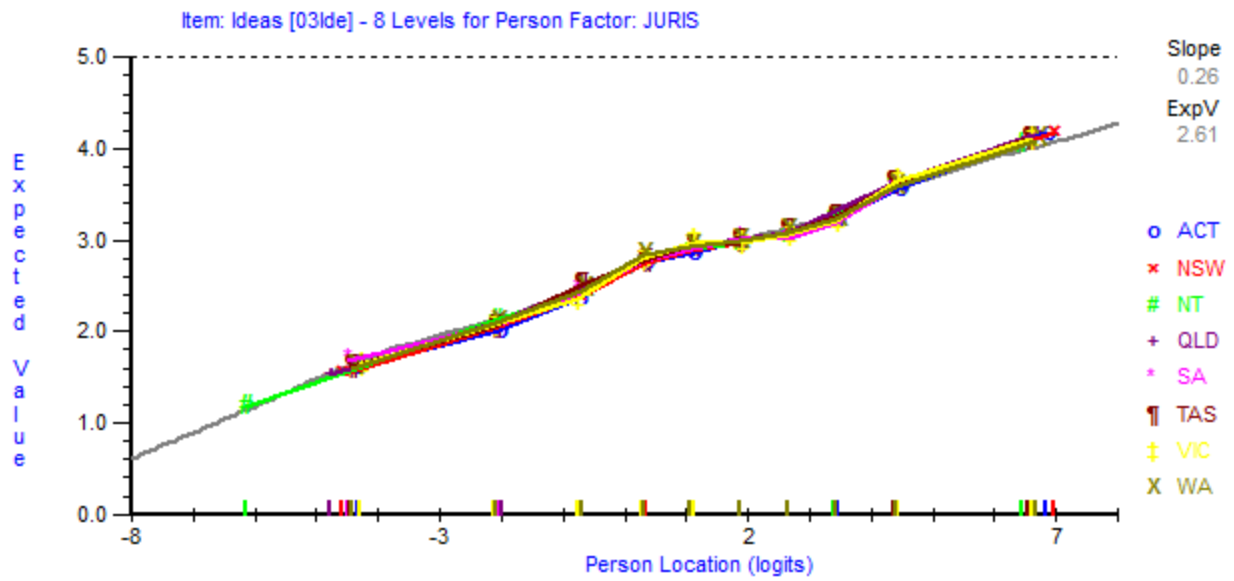


FIGURE J.4 Criterion 4: Persuasive Devices

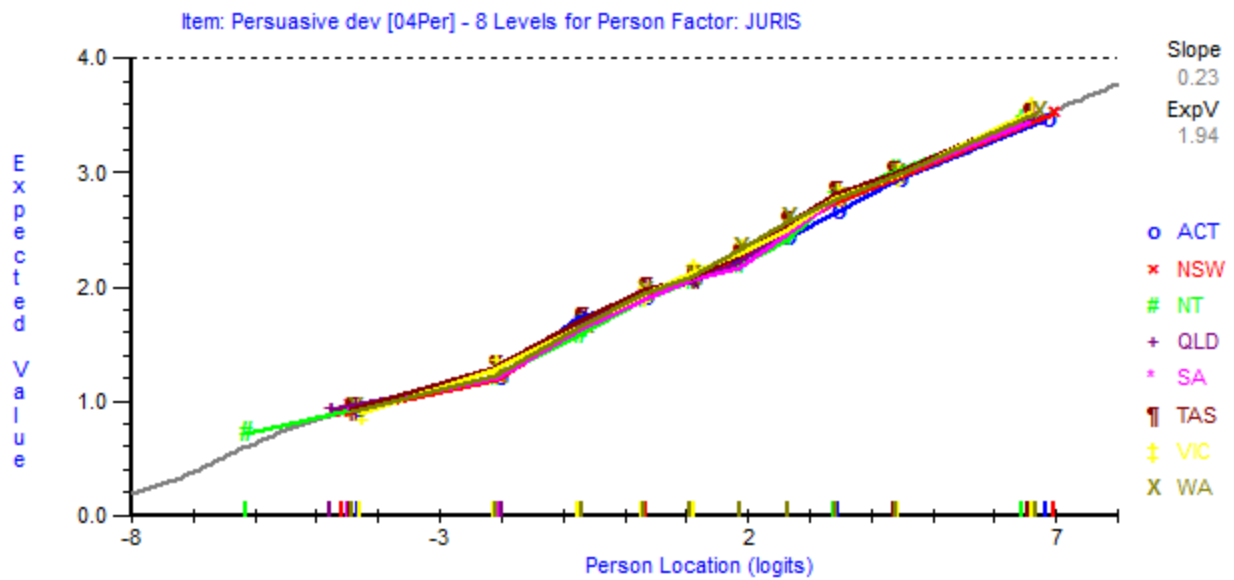


FIGURE J.5 Criterion 5: Vocabulary

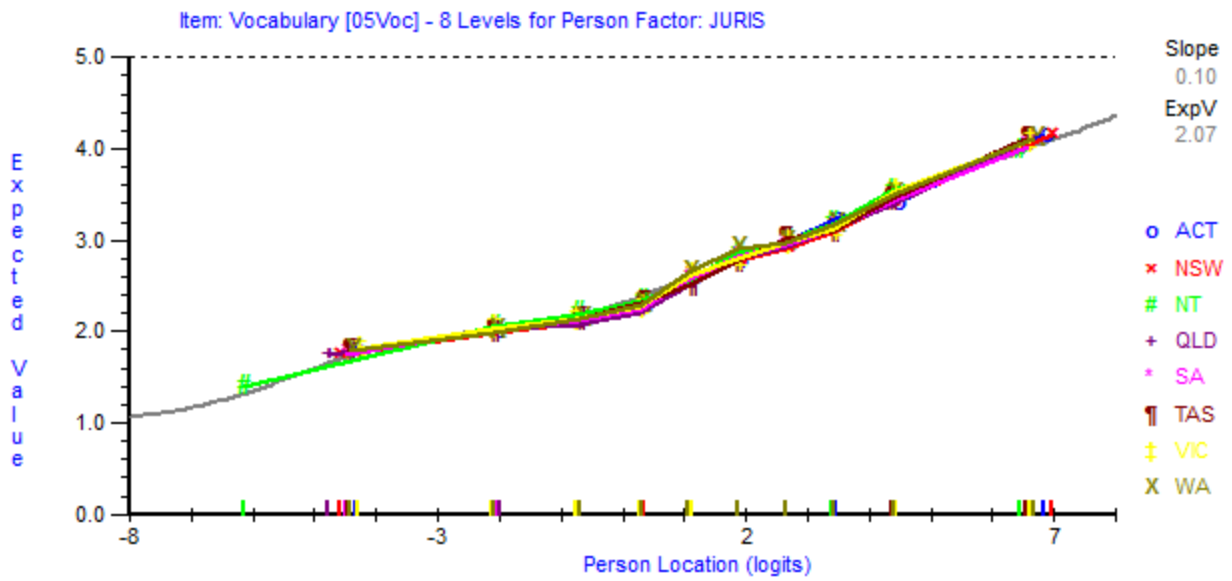


FIGURE J.6 Criterion 6: Cohesion

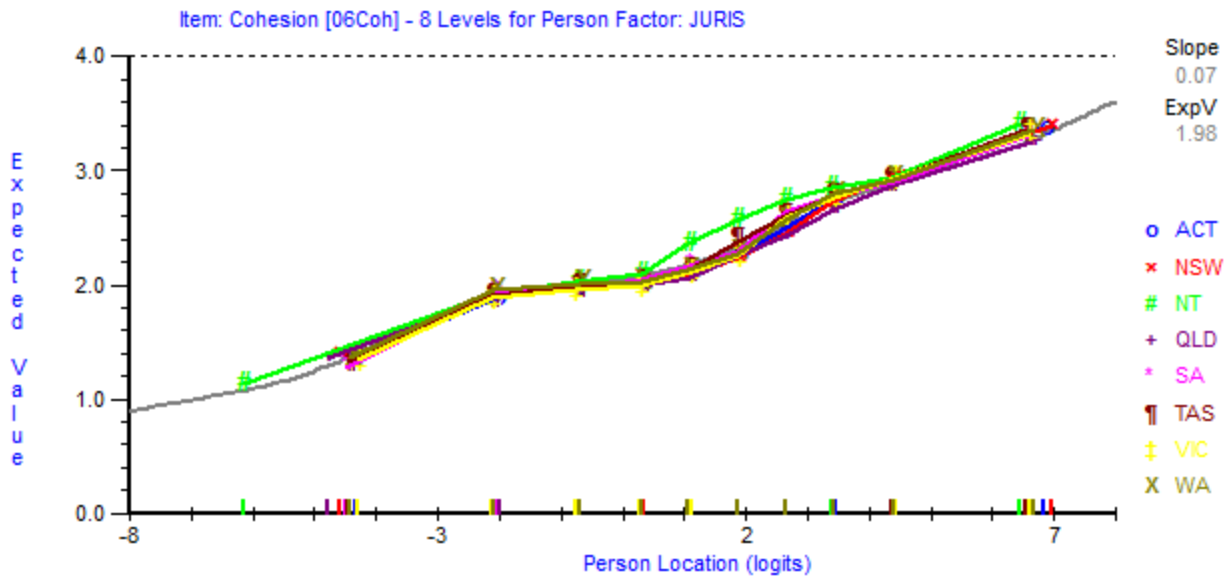


FIGURE J.7 Criterion 7: Paragraphing

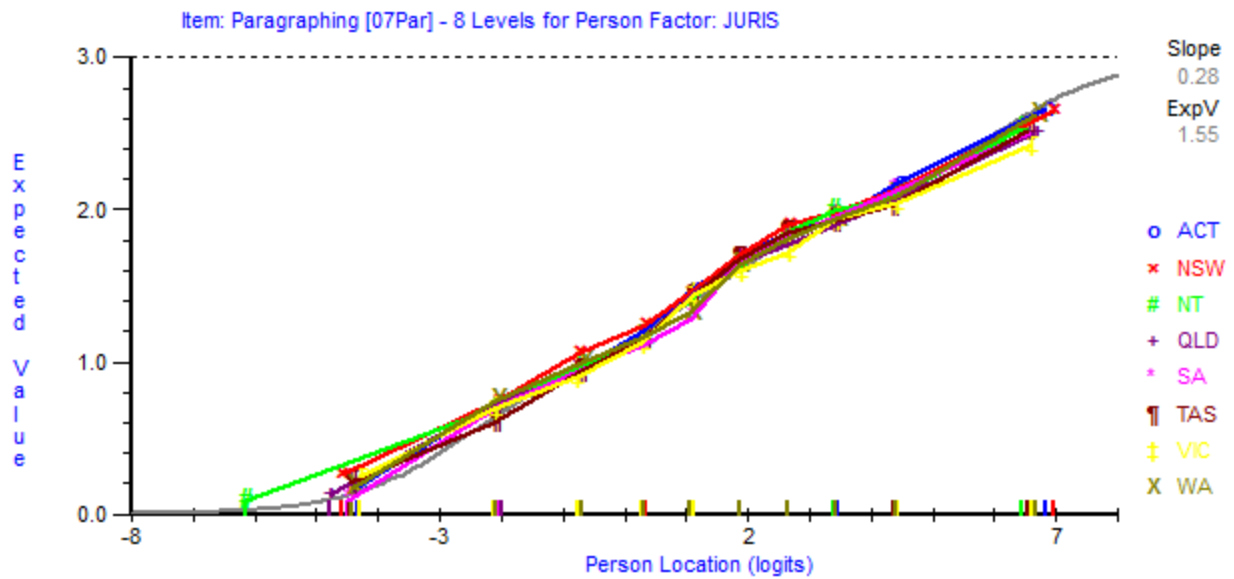


FIGURE J.8 Criterion 8: Sentence Structure

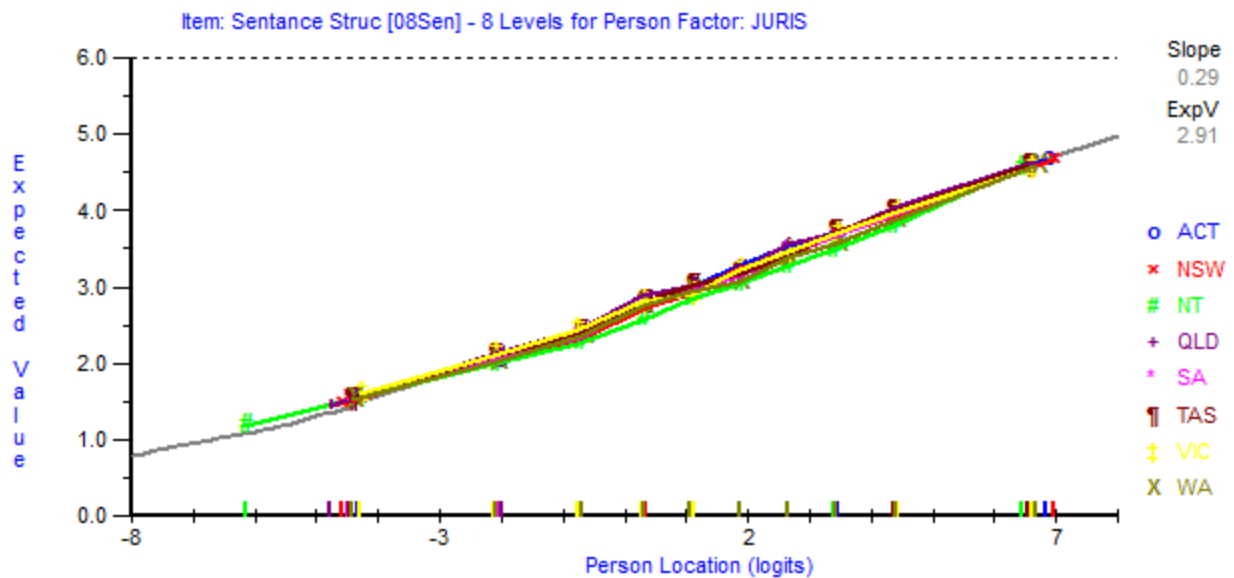


FIGURE J.9 Criterion 9: Punctuation

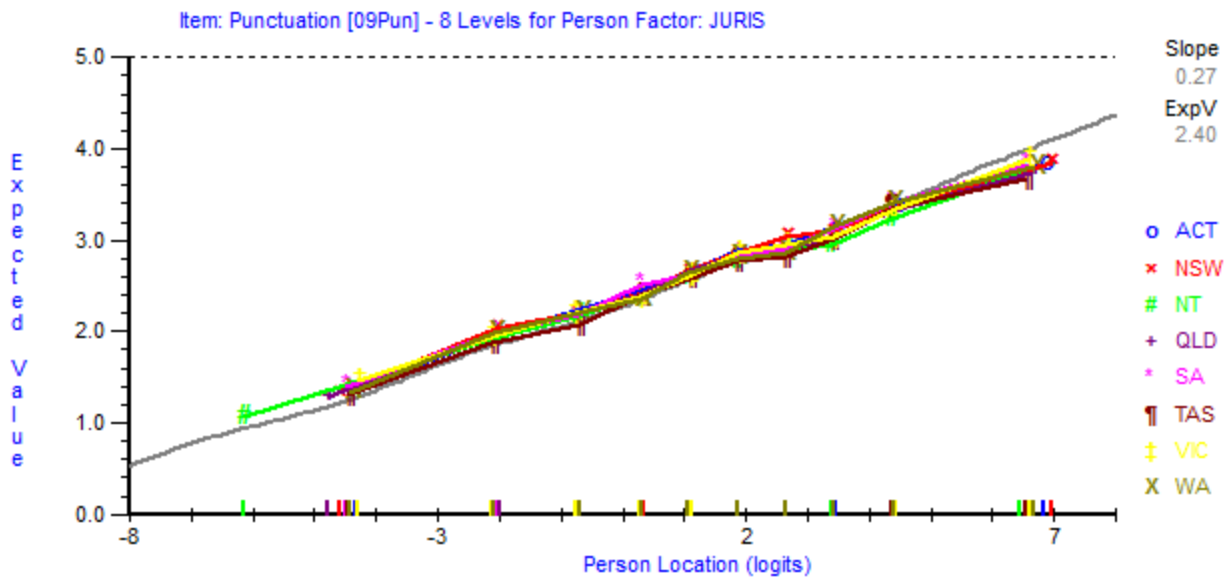
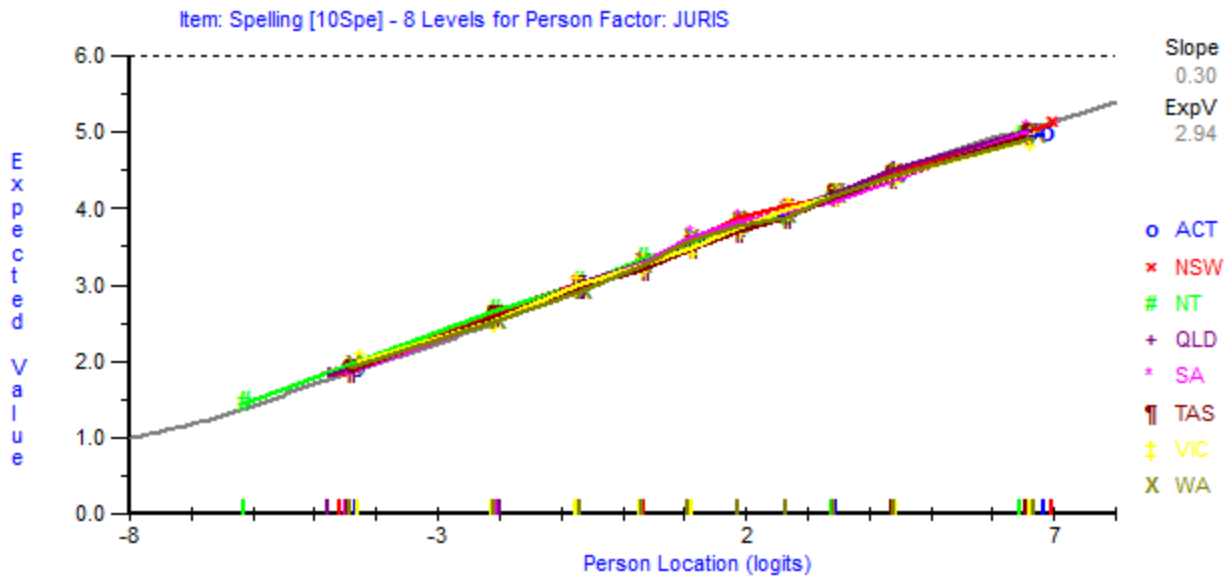


FIGURE J.10 Criterion 10: Spelling



APPENDIX K. SCORE EQUIVALENCE TABLES

TABLE K.1 Year 3 Numeracy Score Equivalence Table

Year	Domain	Raw Score	Delta-Centered Logit	Logit	Logit SE	Scale Score	Scale SE	Band
3	Numeracy	0	-6.05105	-7.67567	1.58045	-9.60065	94.91052	1
3	Numeracy	1	-4.76837	-6.26613	0.96799	75.04624	58.13055	1
3	Numeracy	2	-4.06675	-5.49512	0.79114	121.34759	47.51021	1
3	Numeracy	3	-3.53894	-4.91511	0.70001	156.17884	42.03759	1
3	Numeracy	4	-3.10130	-4.43419	0.64117	185.05945	38.50408	1
3	Numeracy	5	-2.72305	-4.01853	0.59813	210.02102	35.91941	1
3	Numeracy	6	-2.38867	-3.65108	0.56434	232.08744	33.89022	1
3	Numeracy	7	-2.08832	-3.32102	0.53690	251.90848	32.24237	1
3	Numeracy	8	-1.81488	-3.02054	0.51426	269.95316	30.88278	1
3	Numeracy	9	-1.56289	-2.74363	0.49543	286.58239	29.75198	2
3	Numeracy	10	-1.32809	-2.48561	0.47973	302.07723	28.80915	2
3	Numeracy	11	-1.10712	-2.24278	0.46667	316.65986	28.02486	2
3	Numeracy	12	-0.89731	-2.01222	0.45579	330.50564	27.37149	3
3	Numeracy	13	-0.69650	-1.79155	0.44679	343.75751	26.83101	3
3	Numeracy	14	-0.50293	-1.57884	0.43942	356.53135	26.38842	3
3	Numeracy	15	-0.31514	-1.37248	0.43349	368.92385	26.03231	3
3	Numeracy	16	-0.13186	-1.17107	0.42888	381.01910	25.75546	4
3	Numeracy	17	0.04797	-0.97346	0.42545	392.88614	25.54948	4
3	Numeracy	18	0.22538	-0.77850	0.42318	404.59404	25.41316	4
3	Numeracy	19	0.40125	-0.58524	0.42200	416.19986	25.34230	4
3	Numeracy	20	0.57649	-0.39267	0.42194	427.76423	25.33870	5
3	Numeracy	21	0.75203	-0.19976	0.42304	439.34903	25.40476	5
3	Numeracy	22	0.92883	-0.00548	0.42541	451.01609	25.54708	5
3	Numeracy	23	1.10799	0.19140	0.42917	462.83930	25.77288	5
3	Numeracy	24	1.29075	0.39224	0.43455	474.90031	26.09596	5
3	Numeracy	25	1.47862	0.59869	0.44182	487.29822	26.53255	6
3	Numeracy	26	1.67344	0.81277	0.45140	500.15434	27.10785	6
3	Numeracy	27	1.87760	1.03712	0.46389	513.62719	27.85791	6
3	Numeracy	28	2.09426	1.27521	0.48012	527.92517	28.83257	6
3	Numeracy	29	2.32788	1.53194	0.50126	543.34254	30.10209	6
3	Numeracy	30	2.58486	1.81433	0.52963	560.30086	31.80579	6
3	Numeracy	31	2.87540	2.13361	0.56892	579.47454	34.16527	6
3	Numeracy	32	3.21714	2.50915	0.62628	602.02678	37.60990	6
3	Numeracy	33	3.64523	2.97957	0.71878	630.27684	43.16479	6
3	Numeracy	34	4.24962	3.64374	0.89885	670.16214	53.97850	6
3	Numeracy	35	5.44449	4.95678	1.50520	749.01393	90.39154	6

TABLE K.2 Year 3 Reading Score Equivalence Table

Year	Domain	Raw Score	Delta-Centered Logit	Logit	Logit SE	Scale Score	Scale SE	Band
3	Reading	0	-5.48303	-6.57327	1.50852	-20.35851	101.46768	1
3	Reading	1	-4.28491	-5.29152	0.90241	65.85592	60.69886	1
3	Reading	2	-3.67618	-4.64030	0.72299	109.65898	48.63052	1
3	Reading	3	-3.24300	-4.17689	0.63084	140.82935	42.43223	1
3	Reading	4	-2.89568	-3.80532	0.57359	165.82229	38.58142	1
3	Reading	5	-2.59937	-3.48833	0.53430	187.14401	35.93866	1
3	Reading	6	-2.33687	-3.20751	0.50539	206.03282	33.99408	1
3	Reading	7	-2.09834	-2.95233	0.48326	223.19701	32.50555	1
3	Reading	8	-1.87769	-2.71628	0.46576	239.07446	31.32845	1
3	Reading	9	-1.67093	-2.49509	0.45153	253.95238	30.37129	1
3	Reading	10	-1.47523	-2.28573	0.43985	268.03457	29.58566	1
3	Reading	11	-1.28859	-2.08606	0.43003	281.46499	28.92514	2
3	Reading	12	-1.10946	-1.89443	0.42173	294.35461	28.36685	2
3	Reading	13	-0.93664	-1.70954	0.41470	306.79088	27.89399	2
3	Reading	14	-0.76911	-1.53032	0.40877	318.84577	27.49512	2
3	Reading	15	-0.60603	-1.35586	0.40384	330.58048	27.16352	3
3	Reading	16	-0.44659	-1.18529	0.39985	342.05354	26.89514	3
3	Reading	17	-0.29009	-1.01786	0.39674	353.31540	26.68595	3
3	Reading	18	-0.13580	-0.85280	0.39453	364.41784	26.53730	3
3	Reading	19	0.01697	-0.68937	0.39322	375.41064	26.44918	4
3	Reading	20	0.16895	-0.52678	0.39284	386.34694	26.42362	4
3	Reading	21	0.32087	-0.36426	0.39342	397.27854	26.46264	4
3	Reading	22	0.47352	-0.20095	0.39503	408.26327	26.57093	4
3	Reading	23	0.62776	-0.03595	0.39774	419.36167	26.75321	4
3	Reading	24	0.78452	0.13175	0.40166	430.64169	27.01688	5
3	Reading	25	0.94483	0.30325	0.40694	442.17731	27.37203	5
3	Reading	26	1.10994	0.47989	0.41367	454.05865	27.82471	5
3	Reading	27	1.28122	0.66312	0.42215	466.38326	28.39510	5
3	Reading	28	1.46038	0.85479	0.43262	479.27558	29.09935	6
3	Reading	29	1.64948	1.05709	0.44545	492.88290	29.96233	6
3	Reading	30	1.85113	1.27281	0.46113	507.39288	31.01702	6
3	Reading	31	2.06867	1.50554	0.48066	523.04702	32.33067	6
3	Reading	32	2.30673	1.76021	0.50507	540.17690	33.97256	6
3	Reading	33	2.57185	2.04384	0.53642	559.25473	36.08125	6
3	Reading	34	2.87413	2.36722	0.57830	581.00626	38.89823	6
3	Reading	35	3.23095	2.74895	0.63776	606.68259	42.89769	6
3	Reading	36	3.67693	3.22605	0.73176	638.77379	49.22042	6
3	Reading	37	4.30123	3.89393	0.91283	683.69745	61.39974	6
3	Reading	38	5.51696	5.19452	1.52228	771.17912	102.39322	6

TABLE K.3 Year 3 Spelling Score Equivalence Table

Year	Domain	Raw Score	Delta-Centered Logit	Logit	Logit SE	Scale Score	Scale SE	Band
3	Spelling	0	-6.08043	-7.35803	1.67845	183.75329	63.96288	1
3	Spelling	1	-4.66285	-5.89608	1.05184	239.46572	40.08384	1
3	Spelling	2	-3.81540	-5.02210	0.86934	272.77162	33.12907	2
3	Spelling	3	-3.16217	-4.34843	0.76869	298.44404	29.29347	2
3	Spelling	4	-2.62966	-3.79925	0.69988	319.37236	26.67124	2
3	Spelling	5	-2.17969	-3.33519	0.64869	337.05690	24.72048	3
3	Spelling	6	-1.78874	-2.93201	0.60919	352.42140	23.21520	3
3	Spelling	7	-1.44155	-2.57395	0.57844	366.06646	22.04337	3
3	Spelling	8	-1.12703	-2.24959	0.55469	378.42727	21.13830	4
3	Spelling	9	-0.83651	-1.94997	0.53679	389.84528	20.45616	4
3	Spelling	10	-0.56296	-1.66786	0.52401	400.59601	19.96913	4
3	Spelling	11	-0.30061	-1.39730	0.51573	410.90660	19.65360	4
3	Spelling	12	-0.04460	-1.13328	0.51147	420.96795	19.49125	4
3	Spelling	13	0.20926	-0.87147	0.51090	430.94509	19.46953	5
3	Spelling	14	0.46480	-0.60793	0.51379	440.98815	19.57967	5
3	Spelling	15	0.72563	-0.33894	0.52003	451.23890	19.81746	5
3	Spelling	16	0.99534	-0.06079	0.52960	461.83873	20.18216	5
3	Spelling	17	1.27759	0.23030	0.54261	472.93167	20.67795	5
3	Spelling	18	1.57629	0.53835	0.55936	484.67093	21.31626	6
3	Spelling	19	1.89595	0.86801	0.58051	497.23372	22.12225	6
3	Spelling	20	2.24218	1.22508	0.60760	510.84105	23.15461	6
3	Spelling	21	2.62319	1.61802	0.64382	525.81533	24.53489	6
3	Spelling	22	3.05350	2.06179	0.69632	542.72665	26.53557	6
3	Spelling	23	3.56465	2.58894	0.78194	562.81544	29.79841	6
3	Spelling	24	4.24266	3.28818	0.95491	589.46229	36.39000	6
3	Spelling	25	5.49879	4.58362	1.56124	638.82931	59.49621	6

TABLE K.4 Year 3 Grammar & Punctuation Score Equivalence Table

Year	Domain	Raw Score	Delta-Centered Logit	Logit	Logit SE	Scale Score	Scale SE	Band
3	GP	0	-4.79920	-5.85811	1.52983	-22.67622	112.44616	1
3	GP	1	-3.57603	-4.47189	0.92038	79.21426	67.65013	1
3	GP	2	-2.94367	-3.75523	0.74070	131.89048	54.44322	1
3	GP	3	-2.48804	-3.23887	0.64912	169.84417	47.71187	1
3	GP	4	-2.11929	-2.82096	0.59255	200.56156	43.55384	1
3	GP	5	-1.80231	-2.46173	0.55387	226.96582	40.71077	1
3	GP	6	-1.51949	-2.14121	0.52595	250.52481	38.65858	1
3	GP	7	-1.26078	-1.84801	0.50497	272.07571	37.11650	2
3	GP	8	-1.01977	-1.57488	0.48890	292.15141	35.93532	2
3	GP	9	-0.79202	-1.31677	0.47655	311.12312	35.02756	2
3	GP	10	-0.57425	-1.06997	0.46720	329.26351	34.34032	3
3	GP	11	-0.36385	-0.83152	0.46038	346.79015	33.83903	3
3	GP	12	-0.15867	-0.59899	0.45580	363.88166	33.50239	3
3	GP	13	0.04326	-0.37015	0.45334	380.70195	33.32157	4
3	GP	14	0.24375	-0.14293	0.45294	397.40316	33.29217	4
3	GP	15	0.44463	0.08473	0.45466	414.13671	33.41860	4
3	GP	16	0.64779	0.31497	0.45867	431.05990	33.71334	5
3	GP	17	0.85540	0.55025	0.46528	448.35355	34.19919	5
3	GP	18	1.06997	0.79342	0.47498	466.22712	34.91216	5
3	GP	19	1.29473	1.04814	0.48857	484.94965	35.91106	6
3	GP	20	1.53405	1.31937	0.50720	504.88570	37.28041	6
3	GP	21	1.79417	1.61416	0.53304	526.55347	39.17971	6
3	GP	22	2.08500	1.94376	0.56973	550.77986	41.87652	6
3	GP	23	2.42364	2.32754	0.62476	578.98861	45.92135	6
3	GP	24	2.84486	2.80491	0.71458	614.07644	52.52334	6
3	GP	25	3.43779	3.47687	0.89198	663.46711	65.56266	6
3	GP	26	4.61600	4.81214	1.49365	761.61264	109.78684	6

TABLE K.5 Year 5 Numeracy Score Equivalence Table

Year	Domain	Raw Score	Delta-Centered Logit	Logit	Logit SE	Scale Score	Scale SE	Band
5	Numeracy	0	-5.49876	-5.48427	1.49862	121.99916	89.99640	3
5	Numeracy	1	-4.31276	-4.23351	0.89469	197.11086	53.72868	3
5	Numeracy	2	-3.71424	-3.60232	0.71557	235.01561	42.97202	3
5	Numeracy	3	-3.29001	-3.15492	0.62355	261.88326	37.44595	3
5	Numeracy	4	-2.95109	-2.79750	0.56590	283.34735	33.98391	3
5	Numeracy	5	-2.66292	-2.49359	0.52628	301.59801	31.60461	3
5	Numeracy	6	-2.40855	-2.22533	0.49704	317.70778	29.84867	3
5	Numeracy	7	-2.17827	-1.98248	0.47462	332.29162	28.50228	3
5	Numeracy	8	-1.96597	-1.75859	0.45692	345.73685	27.43935	3
5	Numeracy	9	-1.76755	-1.54934	0.44266	358.30291	26.58299	3
5	Numeracy	10	-1.58009	-1.35164	0.43104	370.17535	25.88518	3
5	Numeracy	11	-1.40142	-1.16322	0.42144	381.49051	25.30867	4
5	Numeracy	12	-1.22986	-0.98229	0.41351	392.35587	24.83245	4
5	Numeracy	13	-1.06405	-0.80742	0.40698	402.85731	24.44031	4
5	Numeracy	14	-0.90292	-0.63750	0.40163	413.06149	24.11902	4
5	Numeracy	15	-0.74552	-0.47150	0.39732	423.03027	23.86020	4
5	Numeracy	16	-0.59106	-0.30861	0.39394	432.81227	23.65722	5
5	Numeracy	17	-0.43886	-0.14810	0.39138	442.45136	23.50348	5
5	Numeracy	18	-0.28828	0.01070	0.38959	451.98775	23.39599	5
5	Numeracy	19	-0.13875	0.16840	0.38852	461.45808	23.33173	5
5	Numeracy	20	0.01025	0.32553	0.38814	470.89419	23.30891	5
5	Numeracy	21	0.15923	0.48265	0.38843	480.32969	23.32633	6
5	Numeracy	22	0.30870	0.64028	0.38938	489.79582	23.38338	6
5	Numeracy	23	0.45916	0.79895	0.39102	499.32441	23.48186	6
5	Numeracy	24	0.61114	0.95923	0.39338	508.94968	23.62359	6
5	Numeracy	25	0.76520	1.12170	0.39651	518.70646	23.81155	6
5	Numeracy	26	0.92195	1.28701	0.40049	528.63380	24.05056	6
5	Numeracy	27	1.08213	1.45594	0.40542	538.77853	24.34663	7
5	Numeracy	28	1.24654	1.62932	0.41147	549.19049	24.70994	7
5	Numeracy	29	1.41619	1.80824	0.41884	559.93514	25.15253	7
5	Numeracy	30	1.59232	1.99398	0.42780	571.08936	25.69061	7
5	Numeracy	31	1.77649	2.18821	0.43874	582.75342	26.34759	8
5	Numeracy	32	1.97080	2.39313	0.45220	595.05945	27.15590	8
5	Numeracy	33	2.17800	2.61164	0.46918	608.18160	28.17559	8
5	Numeracy	34	2.40216	2.84804	0.49085	622.37809	29.47694	8
5	Numeracy	35	2.64928	3.10865	0.51939	638.02847	31.19085	8
5	Numeracy	36	2.92905	3.40370	0.55841	655.74706	33.53411	8
5	Numeracy	37	3.25845	3.75108	0.61538	676.60822	36.95532	8
5	Numeracy	38	3.67199	4.18720	0.70722	702.79846	42.47057	8
5	Numeracy	39	4.25892	4.80618	0.88600	739.96997	53.20682	8
5	Numeracy	40	5.43265	6.04400	1.48820	814.30459	89.37065	8

TABLE K.6 Year 5 Reading Score Equivalence Table

Year	Domain	Raw Score	Delta-Centered Logit	Logit	Logit SE	Scale Score	Scale SE	Band
5	Reading	0	-5.35986	-4.97880	1.50169	86.89043	101.00827	3
5	Reading	1	-4.17035	-3.77156	0.89740	168.09309	60.36188	3
5	Reading	2	-3.56822	-3.16046	0.71827	209.19755	48.31304	3
5	Reading	3	-3.14047	-2.72634	0.62616	238.39779	42.11744	3
5	Reading	4	-2.79827	-2.37904	0.56848	261.75826	38.23771	3
5	Reading	5	-2.50728	-2.08371	0.52845	281.62306	35.54517	3
5	Reading	6	-2.25055	-1.82316	0.49888	299.14845	33.55620	3
5	Reading	7	-2.01841	-1.58756	0.47612	314.99563	32.02529	3
5	Reading	8	-1.80472	-1.37068	0.45807	329.58364	30.81119	3
5	Reading	9	-1.60534	-1.16833	0.44350	343.19432	29.83117	3
5	Reading	10	-1.41728	-0.97747	0.43160	356.03215	29.03074	3
5	Reading	11	-1.23828	-0.79580	0.42179	368.25183	28.37089	3
5	Reading	12	-1.06660	-0.62157	0.41369	379.97108	27.82606	4
5	Reading	13	-0.90082	-0.45332	0.40705	391.28809	27.37943	4
5	Reading	14	-0.73977	-0.28987	0.40166	402.28224	27.01688	4
5	Reading	15	-0.58251	-0.13026	0.39735	413.01809	26.72698	4
5	Reading	16	-0.42815	0.02640	0.39406	423.55553	26.50568	4
5	Reading	17	-0.27598	0.18083	0.39164	433.94296	26.34291	5
5	Reading	18	-0.12533	0.33373	0.39006	444.22748	26.23663	5
5	Reading	19	0.02442	0.48571	0.38928	454.45012	26.18417	5
5	Reading	20	0.17387	0.63739	0.38928	464.65259	26.18417	5
5	Reading	21	0.32360	0.78935	0.39007	474.87388	26.23730	5
5	Reading	22	0.47421	0.94220	0.39167	485.15504	26.34493	6
5	Reading	23	0.62632	1.09658	0.39415	495.53911	26.51174	6
5	Reading	24	0.78063	1.25319	0.39756	506.07318	26.74110	6
5	Reading	25	0.93791	1.41281	0.40204	516.80971	27.04244	6
5	Reading	26	1.09907	1.57637	0.40773	527.81126	27.42517	6
5	Reading	27	1.26516	1.74494	0.41485	539.14979	27.90408	7
5	Reading	28	1.43753	1.91988	0.42368	550.91680	28.49802	7
5	Reading	29	1.61783	2.10286	0.43462	563.22459	29.23387	7
5	Reading	30	1.80825	2.29612	0.44822	576.22385	30.14865	7
5	Reading	31	2.01173	2.50263	0.46535	590.11435	31.30087	8
5	Reading	32	2.23238	2.72657	0.48734	605.17724	32.77998	8
5	Reading	33	2.47637	2.97419	0.51630	621.83292	34.72792	8
5	Reading	34	2.75346	3.25541	0.55596	640.74864	37.39557	8
5	Reading	35	3.08083	3.58766	0.61334	663.09679	41.25513	8
5	Reading	36	3.49296	4.00593	0.70570	691.23091	47.46755	8
5	Reading	37	4.07910	4.60080	0.88500	731.24369	59.52781	8
5	Reading	38	5.25261	5.79180	1.48760	811.35401	100.06054	8

TABLE K.7 Year 5 Spelling Score Equivalence Table

Year	Domain	Raw Score	Delta-Centered Logit	Logit	Logit SE	Scale Score	Scale SE	Band
5	Spelling	0	-5.75781	-4.73266	1.62211	283.80168	61.81586	3
5	Spelling	1	-4.41835	-3.44437	1.00092	332.89623	38.14336	3
5	Spelling	2	-3.66058	-2.71554	0.81953	360.67071	31.23090	3
5	Spelling	3	-3.09001	-2.16677	0.72409	381.58340	27.59384	4
5	Spelling	4	-2.62343	-1.71801	0.66280	398.68488	25.25818	4
5	Spelling	5	-2.22276	-1.33265	0.62017	413.37030	23.63363	4
5	Spelling	6	-1.86604	-0.98956	0.58939	426.44488	22.46065	5
5	Spelling	7	-1.53987	-0.67584	0.56669	438.40021	21.59559	5
5	Spelling	8	-1.23552	-0.38312	0.54989	449.55528	20.95538	5
5	Spelling	9	-0.94663	-0.10527	0.53783	460.14367	20.49579	5
5	Spelling	10	-0.66830	0.16243	0.52972	470.34526	20.18673	5
5	Spelling	11	-0.39644	0.42391	0.52504	480.30982	20.00838	6
5	Spelling	12	-0.12755	0.68252	0.52342	490.16501	19.94665	6
5	Spelling	13	0.14151	0.94131	0.52463	500.02706	19.99276	6
5	Spelling	14	0.41364	1.20304	0.52852	510.00114	20.14100	6
5	Spelling	15	0.69165	1.47043	0.53506	520.19092	20.39023	6
5	Spelling	16	0.97846	1.74628	0.54422	530.70310	20.73930	7
5	Spelling	17	1.27708	2.03350	0.55618	541.64857	21.19508	7
5	Spelling	18	1.59071	2.33515	0.57122	553.14394	21.76823	7
5	Spelling	19	1.92287	2.65462	0.59001	565.31839	22.48428	7
5	Spelling	20	2.27805	2.99623	0.61414	578.33657	23.40383	7
5	Spelling	21	2.66350	3.36696	0.64740	592.46446	24.67132	8
5	Spelling	22	3.09382	3.78084	0.69716	608.23673	26.56759	8
5	Spelling	23	3.60159	4.26921	0.78076	626.84768	29.75344	8
5	Spelling	24	4.27447	4.91639	0.95243	651.51061	36.29549	8
5	Spelling	25	5.52517	6.11931	1.55763	697.35185	59.35864	8

TABLE K.8 Year 5 Grammar & Punctuation Score Equivalence Table

Year	Domain	Raw Score	Delta-Centered Logit	Logit	Logit SE	Scale Score	Scale SE	Band
5	GP	0	-4.92369	-4.44065	1.52860	81.51047	112.35575	3
5	GP	1	-3.70392	-3.19965	0.92074	172.72694	67.67659	3
5	GP	2	-3.07204	-2.55678	0.74263	219.97942	54.58508	3
5	GP	3	-2.61448	-2.09126	0.65239	254.19625	47.95222	3
5	GP	4	-2.24193	-1.71223	0.59697	282.05586	43.87872	3
5	GP	5	-1.91980	-1.38449	0.55927	306.14553	41.10768	3
5	GP	6	-1.63089	-1.09055	0.53221	327.75083	39.11871	3
5	GP	7	-1.36539	-0.82043	0.51205	347.60529	37.63690	3
5	GP	8	-1.11709	-0.56781	0.49668	366.17347	36.50717	3
5	GP	9	-0.88159	-0.32822	0.48502	383.78390	35.65013	4
5	GP	10	-0.65560	-0.09829	0.47639	400.68431	35.01580	4
5	GP	11	-0.43648	0.12464	0.47035	417.07019	34.57185	4
5	GP	12	-0.22194	0.34291	0.46666	433.11356	34.30062	5
5	GP	13	-0.00989	0.55865	0.46523	448.97097	34.19552	5
5	GP	14	0.20170	0.77392	0.46606	464.79383	34.25652	5
5	GP	15	0.41494	0.99087	0.46927	480.74017	34.49247	6
5	GP	16	0.63214	1.21185	0.47510	496.98273	34.92098	6
5	GP	17	0.85594	1.43955	0.48390	513.71922	35.56781	6
5	GP	18	1.08956	1.67723	0.49631	531.18927	36.47997	7
5	GP	19	1.33714	1.92912	0.51314	549.70379	37.71702	7
5	GP	20	1.60430	2.20093	0.53557	569.68247	39.36567	7
5	GP	21	1.89889	2.50064	0.56593	591.71187	41.59721	8
5	GP	22	2.23292	2.84049	0.60780	616.69166	44.67475	8
5	GP	23	2.62601	3.24042	0.66832	646.08747	49.12312	8
5	GP	24	3.11484	3.73775	0.76365	682.64241	56.13010	8
5	GP	25	3.78823	4.42286	0.94687	732.99963	69.59721	8
5	GP	26	5.05529	5.71197	1.56290	827.75230	114.87688	8

TABLE K.9 Year 7 Numeracy Score Equivalence Table

Year	Domain	Raw Score	Delta-Centered Logit	Logit	Logit SE	Scale Score	Scale SE	Band
7	Numeracy	0	-5.68523	-3.96008	1.45805	213.53111	87.56005	4
7	Numeracy	1	-4.54311	-2.85017	0.85734	280.18436	51.48571	4
7	Numeracy	2	-3.98910	-2.31178	0.67603	312.51621	40.59753	4
7	Numeracy	3	-3.60973	-1.94311	0.58120	334.65590	34.90271	4
7	Numeracy	4	-3.31573	-1.65740	0.52114	351.81360	31.29594	4
7	Numeracy	5	-3.07253	-1.42106	0.47910	366.00649	28.77132	4
7	Numeracy	6	-2.86304	-1.21748	0.44777	378.23204	26.88986	4
7	Numeracy	7	-2.67753	-1.03720	0.42344	389.05837	25.42878	4
7	Numeracy	8	-2.50994	-0.87433	0.40390	398.83918	24.25534	4
7	Numeracy	9	-2.35623	-0.72496	0.38786	407.80927	23.29210	4
7	Numeracy	10	-2.21355	-0.58630	0.37448	416.13620	22.48859	4
7	Numeracy	11	-2.07981	-0.45633	0.36316	423.94127	21.80879	4
7	Numeracy	12	-1.95346	-0.33355	0.35349	431.31456	21.22808	5
7	Numeracy	13	-1.83329	-0.21677	0.34514	438.32753	20.72664	5
7	Numeracy	14	-1.71834	-0.10506	0.33788	445.03603	20.29066	5
7	Numeracy	15	-1.60783	0.00234	0.33159	451.48571	19.91292	5
7	Numeracy	16	-1.50113	0.10603	0.32608	457.71259	19.58203	5
7	Numeracy	17	-1.39773	0.20651	0.32123	463.74670	19.29078	5
7	Numeracy	18	-1.29716	0.30425	0.31697	469.61626	19.03495	5
7	Numeracy	19	-1.19905	0.39959	0.31324	475.34170	18.81095	5
7	Numeracy	20	-1.10308	0.49285	0.30997	480.94223	18.61458	6
7	Numeracy	21	-1.00895	0.58433	0.30712	486.43586	18.44343	6
7	Numeracy	22	-0.91640	0.67427	0.30464	491.83702	18.29450	6
7	Numeracy	23	-0.82522	0.76288	0.30250	497.15830	18.16599	6
7	Numeracy	24	-0.73518	0.85038	0.30070	502.41292	18.05789	6
7	Numeracy	25	-0.64612	0.93693	0.29919	507.61050	17.96721	6
7	Numeracy	26	-0.55785	1.02271	0.29796	512.76183	17.89335	6
7	Numeracy	27	-0.47021	1.10788	0.29699	517.87653	17.83509	6
7	Numeracy	28	-0.38306	1.19257	0.29627	522.96241	17.79186	6
7	Numeracy	29	-0.29624	1.27694	0.29579	528.02907	17.76303	6
7	Numeracy	30	-0.20962	1.36112	0.29555	533.08431	17.74862	7
7	Numeracy	31	-0.12306	1.44524	0.29554	538.13596	17.74802	7
7	Numeracy	32	-0.03643	1.52942	0.29575	543.19121	17.76063	7
7	Numeracy	33	0.05039	1.61380	0.29620	548.25847	17.78765	7
7	Numeracy	34	0.13755	1.69850	0.29687	553.34494	17.82789	7
7	Numeracy	35	0.22517	1.78365	0.29777	558.45844	17.88194	7
7	Numeracy	36	0.31341	1.86940	0.29890	563.60798	17.94980	7
7	Numeracy	37	0.40239	1.95587	0.30027	568.80074	18.03207	7
7	Numeracy	38	0.49226	2.04320	0.30190	574.04516	18.12995	7
7	Numeracy	39	0.58319	2.13157	0.30378	579.35203	18.24285	7
7	Numeracy	40	0.67533	2.22111	0.30594	584.72916	18.37257	8
7	Numeracy	41	0.76886	2.31200	0.30839	590.18736	18.51970	8
7	Numeracy	42	0.86399	2.40445	0.31116	595.73925	18.68604	8
7	Numeracy	43	0.96092	2.49865	0.31426	601.39623	18.87221	8
7	Numeracy	44	1.05989	2.59483	0.31773	607.17211	19.08059	8

Year	Domain	Raw Score	Delta-Centered Logit	Logit	Logit SE	Scale Score	Scale SE	Band
7	Numeracy	45	1.17772	2.77270	0.32338	617.85371	19.41989	8
7	Numeracy	46	1.28289	2.87753	0.32787	624.14905	19.68953	8
7	Numeracy	47	1.39112	2.98541	0.33283	630.62755	19.98739	8
7	Numeracy	48	1.50280	3.09674	0.33840	637.31324	20.32188	9
7	Numeracy	49	1.61837	3.21194	0.34456	644.23132	20.69181	9
7	Numeracy	50	1.73834	3.33152	0.35145	651.41244	21.10557	9
7	Numeracy	51	1.86332	3.45610	0.35919	658.89383	21.57038	9
7	Numeracy	52	1.99406	3.58642	0.36795	666.71991	22.09644	9
7	Numeracy	53	2.13150	3.72342	0.37796	674.94715	22.69757	9
7	Numeracy	54	2.27680	3.86826	0.38952	683.64521	23.39178	9
7	Numeracy	55	2.43150	4.02246	0.40303	692.90536	24.20310	9
7	Numeracy	56	2.59764	4.18807	0.41908	702.85071	25.16695	9
7	Numeracy	57	2.77804	4.36789	0.43852	713.64941	26.33437	9
7	Numeracy	58	2.97674	4.56596	0.46261	725.54408	27.78105	9
7	Numeracy	59	3.19976	4.78827	0.49375	738.89443	29.65109	9
7	Numeracy	60	3.45687	5.04455	0.53543	754.28477	32.15410	9
7	Numeracy	61	3.76518	5.35188	0.59506	772.74081	35.73505	9
7	Numeracy	62	4.15938	5.74481	0.68943	796.33738	41.40223	9
7	Numeracy	63	4.72886	6.31247	0.87048	830.42698	52.27480	9
7	Numeracy	64	5.88727	7.46718	1.47308	899.77060	88.46265	9

TABLE K.10 Year 7 Non-Calculator Score Equivalence Table

Year	Domain	Raw Score	Delta-Centered Logit	Logit	Logit SE	Scale Score	Scale SE	Band
7	NC	0	-4.82562	-3.12471	1.47956	263.69745	88.85179	4
7	NC	1	-3.66175	-1.99366	0.87891	331.62023	52.78105	4
7	NC	2	-3.08439	-1.43258	0.70012	365.31468	42.04420	4
7	NC	3	-2.67997	-1.03957	0.60823	388.91605	36.52594	4
7	NC	4	-2.35905	-0.72770	0.55164	407.64473	33.12755	4
7	NC	5	-2.08708	-0.46340	0.51303	423.51669	30.80891	4
7	NC	6	-1.84684	-0.22993	0.48538	437.53723	29.14845	5
7	NC	7	-1.62862	-0.01787	0.46462	450.27204	27.90175	5
7	NC	8	-1.42615	0.17889	0.44897	462.08804	26.96193	5
7	NC	9	-1.23538	0.36428	0.43689	473.22123	26.23649	5
7	NC	10	-1.05326	0.54127	0.42768	483.84999	25.68340	6
7	NC	11	-0.87763	0.71195	0.42067	494.09981	25.26243	6
7	NC	12	-0.70669	0.87806	0.41557	504.07519	24.95616	6
7	NC	13	-0.53904	1.04099	0.41209	513.85960	24.74718	6
7	NC	14	-0.37345	1.20191	0.41003	523.52330	24.62347	6
7	NC	15	-0.20886	1.36186	0.40927	533.12875	24.57783	7
7	NC	16	-0.04424	1.52183	0.40975	542.73541	24.60665	7
7	NC	17	0.12130	1.68271	0.41145	552.39671	24.70874	7
7	NC	18	0.28879	1.84547	0.41437	562.17091	24.88410	7
7	NC	19	0.45922	2.01110	0.41859	572.11746	25.13752	7
7	NC	20	0.63368	2.18064	0.42419	582.29882	25.47382	8
7	NC	21	0.81343	2.35532	0.43136	592.78885	25.90440	8
7	NC	22	0.99992	2.53655	0.44036	603.67223	26.44487	8
7	NC	23	1.19497	2.72610	0.45153	615.05525	27.11566	8
7	NC	24	1.40085	2.92617	0.46541	627.07002	27.94920	8
7	NC	25	1.62063	3.13975	0.48275	639.89611	28.99051	9
7	NC	26	1.85850	3.37092	0.50506	653.77853	30.33029	9
7	NC	27	2.12081	3.62583	0.53424	669.08660	32.08263	9
7	NC	28	2.41749	3.91414	0.57410	686.40043	34.47634	9
7	NC	29	2.76600	4.25282	0.63169	706.73913	37.93478	9
7	NC	30	3.20125	4.67580	0.72411	732.14028	43.48487	9
7	NC	31	3.81288	5.27018	0.90431	767.83449	54.30639	9
7	NC	32	5.01490	6.43831	1.51144	837.98403	90.76627	9

TABLE K.11 Year 7 Calculator Score Equivalence Table

Year	Domain	Raw Score	Delta-Centered Logit	Logit	Logit SE	Scale Score	Scale SE	Band
7	CA	0	-5.20298	-3.49143	1.51821	241.67487	91.17283	4
7	CA	1	-3.99350	-2.31606	0.91076	312.25919	54.69373	4
7	CA	2	-3.37318	-1.71323	0.73114	348.46085	43.90704	4
7	CA	3	-2.92934	-1.28191	0.63842	374.36284	38.33894	4
7	CA	4	-2.57274	-0.93536	0.58075	395.17415	34.87569	4
7	CA	5	-2.26872	-0.63992	0.54083	412.91617	32.47838	4
7	CA	6	-1.99973	-0.37851	0.51166	428.61458	30.72664	5
7	CA	7	-1.75558	-0.14125	0.48961	442.86272	29.40247	5
7	CA	8	-1.52974	0.07822	0.47251	456.04252	28.37557	5
7	CA	9	-1.31770	0.28429	0.45910	468.41761	27.57026	5
7	CA	10	-1.11615	0.48015	0.44861	480.17956	26.94031	6
7	CA	11	-0.92260	0.66824	0.44048	491.47490	26.45208	6
7	CA	12	-0.73508	0.85048	0.43433	502.41893	26.08275	6
7	CA	13	-0.55195	1.02844	0.42991	513.10593	25.81732	6
7	CA	14	-0.37182	1.20349	0.42702	523.61818	25.64377	6
7	CA	15	-0.19346	1.37682	0.42554	534.02714	25.55489	7
7	CA	16	-0.01569	1.54958	0.42542	544.40187	25.54768	7
7	CA	17	0.16256	1.72280	0.42663	554.80423	25.62035	7
7	CA	18	0.34245	1.89762	0.42917	565.30267	25.77288	7
7	CA	19	0.52512	2.07514	0.43311	575.96325	26.00949	7
7	CA	20	0.71181	2.25656	0.43853	586.85804	26.33497	8
7	CA	21	0.90391	2.44325	0.44559	598.06930	26.75895	8
7	CA	22	1.10299	2.63671	0.45450	609.68712	27.29402	8
7	CA	23	1.31093	2.83879	0.46558	621.82260	27.95940	8
7	CA	24	1.53004	3.05172	0.47931	634.60966	28.78393	9
7	CA	25	1.76333	3.27843	0.49636	648.22424	29.80783	9
7	CA	26	2.01483	3.52284	0.51813	662.90175	31.11518	9
7	CA	27	2.29051	3.79074	0.54648	678.98991	32.81768	9
7	CA	28	2.59979	4.09130	0.58510	697.03939	35.13692	9
7	CA	29	2.95931	4.44068	0.64103	718.02066	38.49568	9
7	CA	30	3.40288	4.87174	0.73149	743.90704	43.92806	9
7	CA	31	4.01901	5.47050	0.90905	779.86428	54.59104	9
7	CA	32	5.22035	6.63796	1.51327	849.97358	90.87617	9

TABLE K.12 Year 7 Reading Score Equivalence Table

Year	Domain	Raw Score	Delta-Centered Logit	Logit	Logit SE	Scale Score	Scale SE	Band
7	Reading	0	-5.59459	-4.31032	1.49184	131.85444	100.34573	4
7	Reading	1	-4.41422	-3.10174	0.88451	213.14724	59.49485	4
7	Reading	2	-3.82612	-2.49958	0.70286	253.65037	47.27652	4
7	Reading	3	-3.41602	-2.07968	0.60787	281.89413	40.88720	4
7	Reading	4	-3.09372	-1.74968	0.54796	304.09094	36.85747	4
7	Reading	5	-2.82403	-1.47354	0.50616	322.66496	34.04587	4
7	Reading	6	-2.58942	-1.23333	0.47509	338.82222	31.95601	4
7	Reading	7	-2.37984	-1.01874	0.45095	353.25621	30.33228	4
7	Reading	8	-2.18901	-0.82335	0.43164	366.39874	29.03343	4
7	Reading	9	-2.01271	-0.64283	0.41583	378.54106	27.97000	4
7	Reading	10	-1.84798	-0.47417	0.40267	389.88565	27.08482	4
7	Reading	11	-1.69266	-0.31513	0.39155	400.58317	26.33685	4
7	Reading	12	-1.54513	-0.16408	0.38206	410.74326	25.69853	4
7	Reading	13	-1.40412	-0.01970	0.37386	420.45470	25.14697	4
7	Reading	14	-1.26864	0.11902	0.36679	429.78543	24.67142	5
7	Reading	15	-1.13789	0.25289	0.36062	438.78994	24.25641	5
7	Reading	16	-1.01120	0.38261	0.35523	447.51530	23.89386	5
7	Reading	17	-0.88801	0.50875	0.35051	455.99987	23.57638	5
7	Reading	18	-0.76787	0.63176	0.34640	464.27390	23.29993	5
7	Reading	19	-0.65033	0.75211	0.34283	472.36901	23.05980	5
7	Reading	20	-0.53506	0.87013	0.33976	480.30739	22.85330	6
7	Reading	21	-0.42169	0.98621	0.33716	488.11529	22.67842	6
7	Reading	22	-0.30994	1.10063	0.33501	495.81153	22.53380	6
7	Reading	23	-0.19951	1.21370	0.33327	503.41696	22.41676	6
7	Reading	24	-0.09012	1.32571	0.33196	510.95110	22.32865	6
7	Reading	25	0.01849	1.43691	0.33106	518.43075	22.26811	6
7	Reading	26	0.12661	1.54762	0.33059	525.87745	22.23650	6
7	Reading	27	0.23451	1.65809	0.33055	533.30800	22.23381	7
7	Reading	28	0.34247	1.76863	0.33096	540.74326	22.26138	7
7	Reading	29	0.45079	1.87954	0.33185	548.20340	22.32125	7
7	Reading	30	0.55980	1.99116	0.33324	555.71131	22.41474	7
7	Reading	31	0.66984	2.10383	0.33518	563.28984	22.54523	7
7	Reading	32	0.78129	2.21794	0.33772	570.96522	22.71608	7
7	Reading	33	0.89456	2.33392	0.34091	578.76640	22.93065	7
7	Reading	34	1.01016	2.45228	0.34485	586.72765	23.19567	8
7	Reading	35	1.12862	2.57357	0.34962	594.88599	23.51651	8
7	Reading	36	1.25061	2.69848	0.35536	603.28782	23.90260	8
7	Reading	37	1.37690	2.82779	0.36222	611.98561	24.36403	8
7	Reading	38	1.50844	2.96247	0.37041	621.04460	24.91491	8
7	Reading	39	1.64641	3.10374	0.38019	630.54685	25.57275	8
7	Reading	40	1.79232	3.25314	0.39188	640.59595	26.35905	9
7	Reading	41	1.94807	3.41261	0.40624	651.32239	27.32495	9
7	Reading	42	2.11636	3.58492	0.42378	662.91249	28.50474	9
7	Reading	43	2.30086	3.77383	0.44568	675.61916	29.97780	9
7	Reading	44	2.50697	3.98487	0.47362	689.81435	31.85713	9

Year	Domain	Raw Score	Delta-Centered Logit	Logit	Logit SE	Scale Score	Scale SE	Band
7	Reading	45	2.74308	4.22662	0.51033	706.07520	34.32636	9
7	Reading	46	3.02316	4.51339	0.56086	725.36423	37.72516	9
7	Reading	47	3.37318	4.87178	0.63481	749.47064	42.69927	9
7	Reading	48	3.84863	5.35859	0.75395	782.21497	50.71299	9
7	Reading	49	4.59014	6.11782	0.98056	833.28311	65.95547	9
7	Reading	50	6.05765	7.62041	1.67651	934.35192	112.76720	9

TABLE K.13 Year 7 Spelling Score Equivalence Table

Year	Domain	Raw Score	Delta-Centered Logit	Logit	Logit SE	Scale Score	Scale SE	Band
7	Spelling	0	-5.53846	-3.76177	1.52147	320.80066	57.98064	4
7	Spelling	1	-4.32948	-2.47880	0.91843	369.69247	34.99981	4
7	Spelling	2	-3.70309	-1.81408	0.74347	395.02382	28.33238	4
7	Spelling	3	-3.24605	-1.32907	0.65637	413.50673	25.01315	4
7	Spelling	4	-2.86971	-0.92969	0.60382	428.72642	23.01056	5
7	Spelling	5	-2.53985	-0.57965	0.56913	442.06585	21.68858	5
7	Spelling	6	-2.23982	-0.26125	0.54488	454.19954	20.76445	5
7	Spelling	7	-1.96020	0.03548	0.52733	465.50741	20.09565	5
7	Spelling	8	-1.69504	0.31687	0.51443	476.23071	19.60405	5
7	Spelling	9	-1.44032	0.58717	0.50484	486.53138	19.23860	6
7	Spelling	10	-1.19310	0.84952	0.49780	496.52910	18.97031	6
7	Spelling	11	-0.95119	1.10624	0.49269	506.31226	18.77558	6
7	Spelling	12	-0.71293	1.35908	0.48914	515.94756	18.64030	6
7	Spelling	13	-0.47710	1.60934	0.48680	525.48455	18.55112	6
7	Spelling	14	-0.24276	1.85803	0.48546	534.96170	18.50006	7
7	Spelling	15	-0.00919	2.10589	0.48501	544.40723	18.48291	7
7	Spelling	16	0.22429	2.35366	0.48545	553.84932	18.49968	7
7	Spelling	17	0.45840	2.60210	0.48685	563.31695	18.55303	7
7	Spelling	18	0.69402	2.85214	0.48941	572.84555	18.65058	7
7	Spelling	19	0.93234	3.10504	0.49336	582.48314	18.80111	8
7	Spelling	20	1.17484	3.36238	0.49907	592.28993	19.01871	8
7	Spelling	21	1.42352	3.62628	0.50693	602.34671	19.31824	8
7	Spelling	22	1.68084	3.89935	0.51750	612.75294	19.72105	8
7	Spelling	23	1.95002	4.18500	0.53147	623.63858	20.25342	8
7	Spelling	24	2.23523	4.48767	0.55012	635.17282	20.96414	9
7	Spelling	25	2.54251	4.81375	0.57540	647.59918	21.92752	9
7	Spelling	26	2.88121	5.17318	0.61097	661.29644	23.28303	9
7	Spelling	27	3.26792	5.58356	0.66405	676.93533	25.30582	9
7	Spelling	28	3.73653	6.08085	0.75177	695.88621	28.64868	9
7	Spelling	29	4.37552	6.75894	0.92753	721.72707	35.34660	9
7	Spelling	30	5.59813	8.05638	1.53246	771.17031	58.39945	9

TABLE K.14 Year 7 Grammar & Punctuation Score Equivalence Table

Year	Domain	Raw Score	Delta-Centered		Logit SE	Scale Score	Scale SE	Band
			Logit	Logit				
7	GP	0	-5.04575	-3.89908	1.54527	121.31716	113.58104	4
7	GP	1	-3.80374	-2.67359	0.93299	211.39361	68.57699	4
7	GP	2	-3.15188	-2.03040	0.75257	258.66961	55.31569	4
7	GP	3	-2.67910	-1.56391	0.65903	292.95774	48.44028	4
7	GP	4	-2.29679	-1.18668	0.60020	320.68504	44.11613	4
7	GP	5	-1.97028	-0.86452	0.55895	344.36457	41.08416	4
7	GP	6	-1.68179	-0.57986	0.52839	365.28776	38.83793	4
7	GP	7	-1.42073	-0.32228	0.50495	384.22051	37.11503	4
7	GP	8	-1.18015	-0.08489	0.48663	401.66924	35.76847	4
7	GP	9	-0.95517	0.13709	0.47216	417.98530	34.70489	4
7	GP	10	-0.74215	0.34728	0.46080	433.43477	33.86990	5
7	GP	11	-0.53825	0.54847	0.45205	448.22271	33.22675	5
7	GP	12	-0.34118	0.74292	0.44557	462.51525	32.75046	5
7	GP	13	-0.14899	0.93255	0.44113	476.45351	32.42411	5
7	GP	14	0.04002	1.11905	0.43862	490.16171	32.23962	6
7	GP	15	0.22756	1.30409	0.43802	503.76259	32.19552	6
7	GP	16	0.41518	1.48922	0.43937	517.37008	32.29474	6
7	GP	17	0.60460	1.67612	0.44284	531.10768	32.54980	7
7	GP	18	0.79776	1.86671	0.44869	545.11650	32.97979	7
7	GP	19	0.99691	2.06321	0.45735	559.55972	33.61632	7
7	GP	20	1.20491	2.26844	0.46944	574.64462	34.50496	7
7	GP	21	1.42552	2.48612	0.48593	590.64462	35.71702	8
7	GP	22	1.66405	2.72148	0.50809	607.94414	37.34583	8
7	GP	23	1.92819	2.98210	0.53855	627.10033	39.58471	8
7	GP	24	2.23034	3.28024	0.58144	649.01433	42.73723	9
7	GP	25	2.59218	3.63726	0.64476	675.25616	47.39140	9
7	GP	26	3.05659	4.09550	0.74610	708.93789	54.84013	9
7	GP	27	3.72679	4.75678	0.94135	757.54355	69.19147	9
7	GP	28	5.03036	6.04302	1.58048	852.08526	116.16906	9

TABLE K.15 Year 9 Numeracy Score Equivalence Table

Year	Domain	Raw Score	Delta-Centered Logit	Logit	Logit SE	Scale Score	Scale SE	Band
9	Numeracy	0	-5.87732	-3.41126	1.47448	246.48931	88.54672	5
9	Numeracy	1	-4.71649	-2.31404	0.87108	312.38049	52.31083	5
9	Numeracy	2	-4.14529	-1.77414	0.68923	344.80303	41.39022	5
9	Numeracy	3	-3.75040	-1.40089	0.59383	367.21775	35.66118	5
9	Numeracy	4	-3.44255	-1.10991	0.53313	384.69193	32.01597	5
9	Numeracy	5	-3.18712	-0.86848	0.49034	399.19049	29.44631	5
9	Numeracy	6	-2.96690	-0.66033	0.45819	411.69049	27.51561	5
9	Numeracy	7	-2.77203	-0.47614	0.43305	422.75162	26.00589	5
9	Numeracy	8	-2.59630	-0.31004	0.41271	432.72640	24.78441	5
9	Numeracy	9	-2.43551	-0.15806	0.39591	441.85323	23.77552	5
9	Numeracy	10	-2.28666	-0.01737	0.38182	450.30207	22.92938	5
9	Numeracy	11	-2.14755	0.11412	0.36986	458.19841	22.21115	5
9	Numeracy	12	-2.01650	0.23799	0.35960	465.63716	21.59500	5
9	Numeracy	13	-1.89218	0.35550	0.35075	472.69397	21.06354	5
9	Numeracy	14	-1.77355	0.46762	0.34306	479.42710	20.60173	6
9	Numeracy	15	-1.65975	0.57519	0.33639	485.88698	20.20118	6
9	Numeracy	16	-1.55007	0.67886	0.33057	492.11266	19.85167	6
9	Numeracy	17	-1.44393	0.77918	0.32548	498.13716	19.54600	6
9	Numeracy	18	-1.34082	0.87664	0.32104	503.98991	19.27937	6
9	Numeracy	19	-1.24030	0.97165	0.31718	509.69553	19.04756	6
9	Numeracy	20	-1.14202	1.06455	0.31383	515.27444	18.84638	6
9	Numeracy	21	-1.04562	1.15566	0.31094	520.74586	18.67283	6
9	Numeracy	22	-0.95084	1.24525	0.30848	526.12599	18.52510	6
9	Numeracy	23	-0.85741	1.33356	0.30640	531.42926	18.40019	7
9	Numeracy	24	-0.76510	1.42081	0.30467	536.66887	18.29630	7
9	Numeracy	25	-0.67369	1.50721	0.30327	541.85743	18.21223	7
9	Numeracy	26	-0.58301	1.59292	0.30217	547.00456	18.14617	7
9	Numeracy	27	-0.49286	1.67813	0.30135	552.12167	18.09693	7
9	Numeracy	28	-0.40309	1.76298	0.30081	557.21715	18.06450	7
9	Numeracy	29	-0.31354	1.84763	0.30052	562.30062	18.04708	7
9	Numeracy	30	-0.22406	1.93220	0.30047	567.37929	18.04408	7
9	Numeracy	31	-0.13451	2.01685	0.30066	572.46277	18.05549	7
9	Numeracy	32	-0.04476	2.10168	0.30107	577.55705	18.08011	7
9	Numeracy	33	0.04533	2.18683	0.30172	582.67055	18.11914	8
9	Numeracy	34	0.13589	2.27243	0.30259	587.81107	18.17139	8
9	Numeracy	35	0.22706	2.35860	0.30368	592.98583	18.23685	8
9	Numeracy	36	0.31898	2.44548	0.30498	598.20322	18.31492	8
9	Numeracy	37	0.41176	2.53318	0.30654	603.46985	18.40860	8
9	Numeracy	38	0.50557	2.62185	0.30832	608.79474	18.51549	8
9	Numeracy	39	0.60055	2.71162	0.31036	614.18568	18.63800	8
9	Numeracy	40	0.69687	2.80267	0.31266	619.65350	18.77612	8
9	Numeracy	41	0.79469	2.89513	0.31523	625.20598	18.93046	8
9	Numeracy	42	0.89421	2.98919	0.31810	630.85455	19.10281	8
9	Numeracy	43	0.99564	3.08506	0.32130	636.61182	19.29498	9
9	Numeracy	44	1.09920	3.18295	0.32484	642.49039	19.50757	9

Year	Domain	Raw Score	Delta-Centered Logit	Logit	Logit SE	Scale Score	Scale SE	Band
9	Numeracy	45	1.20515	3.28309	0.32878	648.50408	19.74417	9
9	Numeracy	46	1.31379	3.38578	0.33314	654.67091	20.00601	9
9	Numeracy	47	1.42544	3.49131	0.33798	661.00829	20.29666	9
9	Numeracy	48	1.54050	3.60006	0.34343	667.53903	20.62395	9
9	Numeracy	49	1.65941	3.71246	0.34948	674.28897	20.98727	9
9	Numeracy	50	1.78270	3.82899	0.35628	681.28693	21.39563	9
9	Numeracy	51	1.91103	3.95029	0.36396	688.57134	21.85683	10
9	Numeracy	52	2.04515	4.07706	0.37268	696.18424	22.38049	10
9	Numeracy	53	2.18605	4.21024	0.38267	704.18208	22.98042	10
9	Numeracy	54	2.33493	4.35096	0.39423	712.63272	23.67463	10
9	Numeracy	55	2.49336	4.50071	0.40776	721.62563	24.48715	10
9	Numeracy	56	2.66342	4.66145	0.42385	731.27853	25.45340	10
9	Numeracy	57	2.84796	4.83588	0.44332	741.75354	26.62263	10
9	Numeracy	58	3.05103	5.02782	0.46743	753.28009	28.07050	10
9	Numeracy	59	3.27865	5.24296	0.49853	766.19986	29.93815	10
9	Numeracy	60	3.54054	5.49050	0.54010	781.06534	32.43454	10
9	Numeracy	61	3.85372	5.78652	0.59956	798.84218	36.00528	10
9	Numeracy	62	4.25271	6.16365	0.69369	821.48991	41.65806	10
9	Numeracy	63	4.82667	6.70615	0.87431	854.06858	52.50480	10
9	Numeracy	64	5.98889	7.80468	1.47686	920.03843	88.68965	10

TABLE K.16 Year 9 Non-Calculator Score Equivalence Table

Year	Domain	Raw Score	Delta-Centered Logit	Logit	Logit SE	Scale Score	Scale SE	Band
9	NC	0	-5.00653	-2.58819	1.51235	295.91701	90.82092	5
9	NC	1	-3.79903	-1.44686	0.90025	364.45712	54.06258	5
9	NC	2	-3.19077	-0.87193	0.71623	398.98331	43.01165	5
9	NC	3	-2.76471	-0.46922	0.62120	423.16719	37.30483	5
9	NC	4	-2.42886	-0.15177	0.56159	442.23096	33.72508	5
9	NC	5	-2.14649	0.11512	0.52075	458.25847	31.27252	5
9	NC	6	-1.89900	0.34905	0.49135	472.30663	29.50697	5
9	NC	7	-1.67571	0.56010	0.46925	484.98078	28.17980	6
9	NC	8	-1.46969	0.75483	0.45261	496.67487	27.18052	6
9	NC	9	-1.27636	0.93757	0.43982	507.64893	26.41244	6
9	NC	10	-1.09228	1.11156	0.43020	518.09753	25.83473	6
9	NC	11	-0.91499	1.27914	0.42304	528.16118	25.40476	6
9	NC	12	-0.74250	1.44217	0.41796	537.95160	25.09969	7
9	NC	13	-0.57318	1.60221	0.41466	547.56245	24.90151	7
9	NC	14	-0.40569	1.76053	0.41293	557.07002	24.79762	7
9	NC	15	-0.23882	1.91825	0.41263	566.54156	24.77961	7
9	NC	16	-0.07147	2.07643	0.41368	576.04072	24.84266	7
9	NC	17	0.09743	2.23608	0.41606	585.62815	24.98559	8
9	NC	18	0.26892	2.39817	0.41977	595.36212	25.20838	8
9	NC	19	0.44413	2.56378	0.42488	605.30747	25.51525	8
9	NC	20	0.62429	2.73406	0.43152	615.53327	25.91400	8
9	NC	21	0.81082	2.91037	0.43988	626.12119	26.41605	8
9	NC	22	1.00539	3.09428	0.45025	637.16551	27.03879	9
9	NC	23	1.21013	3.28780	0.46301	648.78693	27.80507	9
9	NC	24	1.42773	3.49347	0.47870	661.13800	28.74730	9
9	NC	25	1.66176	3.71468	0.49833	674.42229	29.92613	9
9	NC	26	1.91724	3.95616	0.52311	688.92385	31.41424	10
9	NC	27	2.20143	4.22478	0.55517	705.05525	33.33954	10
9	NC	28	2.52551	4.53110	0.59815	723.45064	35.92061	10
9	NC	29	2.90818	4.89280	0.65906	745.17175	39.57843	10
9	NC	30	3.38517	5.34365	0.75466	772.24658	45.31948	10
9	NC	31	4.04522	5.96753	0.93739	809.71235	56.29294	10
9	NC	32	5.29825	7.15189	1.55215	880.83654	93.21103	10

TABLE K.17 Year 9 Calculator Score Equivalence Table

Year	Domain	Raw Score	Delta-Centered Logit	Logit	Logit SE	Scale Score	Scale SE	Band
9	CA	0	-5.42305	-2.98188	1.54044	272.27480	92.50781	5
9	CA	1	-4.18653	-1.81312	0.92845	342.46217	55.75607	5
9	CA	2	-3.54075	-1.20273	0.74765	379.11782	44.89851	5
9	CA	3	-3.07447	-0.76200	0.65372	405.58491	39.25775	5
9	CA	4	-2.69891	-0.40703	0.59470	426.90187	35.71343	5
9	CA	5	-2.37914	-0.10478	0.55356	445.05285	33.24285	5
9	CA	6	-2.09702	0.16188	0.52333	461.06654	31.42746	5
9	CA	7	-1.84157	0.40333	0.50067	475.56630	30.06666	5
9	CA	8	-1.60565	0.62632	0.48317	488.95748	29.01573	6
9	CA	9	-1.38416	0.83568	0.46968	501.53015	28.20562	6
9	CA	10	-1.17334	1.03494	0.45937	513.49628	27.58648	6
9	CA	11	-0.97036	1.22680	0.45163	525.01802	27.12167	6
9	CA	12	-0.77300	1.41334	0.44601	536.22027	26.78417	7
9	CA	13	-0.57947	1.59627	0.44218	547.20574	26.55417	7
9	CA	14	-0.38830	1.77696	0.43990	558.05669	26.41725	7
9	CA	15	-0.19824	1.95661	0.43896	568.84518	26.36080	7
9	CA	16	-0.00822	2.13621	0.43925	579.63067	26.37821	7
9	CA	17	0.18274	2.31671	0.44068	590.47021	26.46409	8
9	CA	18	0.37554	2.49894	0.44321	601.41364	26.61602	8
9	CA	19	0.57111	2.68380	0.44686	612.51501	26.83521	8
9	CA	20	0.77039	2.87216	0.45174	623.82657	27.12827	8
9	CA	21	0.97449	3.06507	0.45796	635.41136	27.50180	9
9	CA	22	1.18469	3.26375	0.46578	647.34266	27.97141	9
9	CA	23	1.40261	3.46973	0.47554	659.71235	28.55753	9
9	CA	24	1.63030	3.68494	0.48778	672.63632	29.29258	9
9	CA	25	1.87055	3.91203	0.50328	686.27372	30.22340	10
9	CA	26	2.12731	4.15472	0.52334	700.84795	31.42806	10
9	CA	27	2.40647	4.41858	0.55011	716.69349	33.03567	10
9	CA	28	2.71757	4.71263	0.58734	734.35203	35.27144	10
9	CA	29	3.07758	5.05291	0.64218	754.78681	38.56474	10
9	CA	30	3.52082	5.47186	0.73188	779.94595	43.95148	10
9	CA	31	4.13631	6.05362	0.90941	814.88230	54.61266	10
9	CA	32	5.33763	7.18911	1.51328	883.07170	90.87677	10

TABLE K.18 Year 9 Reading Score Equivalence Table

Year	Domain	Raw Score	Delta-Centered Logit	Logit	Logit SE	Scale Score	Scale SE	Band
9	Reading	0	-5.48849	-3.36243	1.48468	195.61243	99.86413	5
9	Reading	1	-4.31627	-2.24156	0.87958	271.00558	59.16325	5
9	Reading	2	-3.73452	-1.68529	0.69855	308.42201	46.98661	5
9	Reading	3	-3.32953	-1.29804	0.60378	334.46963	40.61209	5
9	Reading	4	-3.01157	-0.99400	0.54393	354.92029	36.58640	5
9	Reading	5	-2.74577	-0.73984	0.50204	372.01587	33.76875	5
9	Reading	6	-2.51485	-0.51904	0.47082	386.86756	31.66880	5
9	Reading	7	-2.30895	-0.32216	0.44644	400.11031	30.02892	5
9	Reading	8	-2.12188	-0.14328	0.42683	412.14233	28.70989	5
9	Reading	9	-1.94949	0.02156	0.41069	423.22997	27.62427	5
9	Reading	10	-1.78886	0.17515	0.39718	433.56091	26.71554	5
9	Reading	11	-1.63786	0.31954	0.38571	443.27302	25.94404	5
9	Reading	12	-1.49487	0.45627	0.37581	452.46990	25.27813	5
9	Reading	13	-1.35858	0.58659	0.36738	461.23562	24.71111	5
9	Reading	14	-1.22800	0.71145	0.36004	469.63409	24.21739	5
9	Reading	15	-1.10229	0.83165	0.35365	477.71911	23.78758	5
9	Reading	16	-0.98074	0.94788	0.34810	485.53710	23.41427	6
9	Reading	17	-0.86275	1.06070	0.34329	493.12571	23.09074	6
9	Reading	18	-0.74780	1.17061	0.33914	500.51860	22.81160	6
9	Reading	19	-0.63544	1.27805	0.33561	507.74534	22.57416	6
9	Reading	20	-0.52525	1.38342	0.33264	514.83285	22.37439	6
9	Reading	21	-0.41684	1.48708	0.33021	521.80534	22.21094	6
9	Reading	22	-0.30989	1.58934	0.32828	528.68366	22.08112	6
9	Reading	23	-0.20404	1.69056	0.32683	535.49203	21.98359	7
9	Reading	24	-0.09900	1.79100	0.32586	542.24793	21.91834	7
9	Reading	25	0.00554	1.89096	0.32536	548.97155	21.88471	7
9	Reading	26	0.10990	1.99075	0.32533	555.68373	21.88269	7
9	Reading	27	0.21436	2.09063	0.32578	562.40196	21.91296	7
9	Reading	28	0.31925	2.19093	0.32671	569.14845	21.97552	7
9	Reading	29	0.42488	2.29193	0.32815	575.94202	22.07238	7
9	Reading	30	0.53159	2.39397	0.33013	582.80554	22.20556	8
9	Reading	31	0.63976	2.49740	0.33268	589.76256	22.37708	8
9	Reading	32	0.74978	2.60260	0.33585	596.83864	22.59030	8
9	Reading	33	0.86210	2.71000	0.33969	604.06269	22.84859	8
9	Reading	34	0.97721	2.82007	0.34428	611.46633	23.15733	8
9	Reading	35	1.09570	2.93337	0.34971	619.08724	23.52257	8
9	Reading	36	1.21823	3.05053	0.35609	626.96778	23.95171	8
9	Reading	37	1.34560	3.17232	0.36355	635.15975	24.45349	9
9	Reading	38	1.47875	3.29964	0.37228	643.72368	25.04069	9
9	Reading	39	1.61885	3.43361	0.38257	652.73492	25.73283	9
9	Reading	40	1.76738	3.57563	0.39471	662.28762	26.54940	9
9	Reading	41	1.92620	3.72749	0.40915	672.50219	27.52068	9
9	Reading	42	2.09780	3.89158	0.42652	683.53938	28.68904	9
9	Reading	43	2.28553	4.07109	0.44770	695.61378	30.11367	10
9	Reading	44	2.49410	4.27052	0.47401	709.02805	31.88337	10

Year	Domain	Raw Score	Delta-Centered Logit	Logit	Logit SE	Scale Score	Scale SE	Band
9	Reading	45	2.73047	4.49654	0.50755	724.23085	34.13937	10
9	Reading	46	3.00546	4.75948	0.55234	741.91700	37.15208	10
9	Reading	47	3.33763	5.07710	0.61540	763.28109	41.39369	10
9	Reading	48	3.76317	5.48400	0.71365	790.65043	48.00229	10
9	Reading	49	4.37287	6.06700	0.89910	829.86480	60.47622	10
9	Reading	50	5.58069	7.22192	1.51181	907.54826	101.68898	10

TABLE K.19 Year 9 Spelling Score Equivalence Table

Year	Domain	Raw Score	Delta-Centered Logit	Logit	Logit SE	Scale Score	Scale SE	Band
9	Spelling	0	-6.05218	-3.87516	1.60151	316.47955	61.03083	5
9	Spelling	1	-4.73527	-2.47410	0.97612	369.87158	37.19828	5
9	Spelling	2	-4.02113	-1.71432	0.79378	398.82550	30.24961	5
9	Spelling	3	-3.49318	-1.15264	0.70164	420.23017	26.73831	5
9	Spelling	4	-3.05753	-0.68915	0.64489	437.89299	24.57566	5
9	Spelling	5	-2.67721	-0.28453	0.60561	453.31237	23.07877	5
9	Spelling	6	-2.33463	0.07994	0.57630	467.20171	21.96182	5
9	Spelling	7	-2.02039	0.41426	0.55326	479.94208	21.08380	6
9	Spelling	8	-1.72856	0.72474	0.53477	491.77394	20.37918	6
9	Spelling	9	-1.45469	1.01611	0.51984	502.87756	19.81022	6
9	Spelling	10	-1.19500	1.29239	0.50802	513.40612	19.35978	6
9	Spelling	11	-0.94611	1.55719	0.49902	523.49720	19.01681	6
9	Spelling	12	-0.70502	1.81368	0.49260	533.27160	18.77215	7
9	Spelling	13	-0.46904	2.06474	0.48854	542.83907	18.61743	7
9	Spelling	14	-0.23579	2.31290	0.48666	552.29603	18.54579	7
9	Spelling	15	-0.00309	2.56047	0.48679	561.73050	18.55074	7
9	Spelling	16	0.23101	2.80953	0.48879	571.22175	18.62696	7
9	Spelling	17	0.46834	3.06202	0.49253	580.84372	18.76948	7
9	Spelling	18	0.71057	3.31973	0.49790	590.66461	18.97412	8
9	Spelling	19	0.95924	3.58429	0.50485	600.74654	19.23898	8
9	Spelling	20	1.21584	3.85729	0.51342	611.15011	19.56557	8
9	Spelling	21	1.48193	4.14038	0.52381	621.93819	19.96151	8
9	Spelling	22	1.75944	4.43562	0.53647	633.18928	20.44396	8
9	Spelling	23	2.05109	4.74591	0.55219	645.01391	21.04302	9
9	Spelling	24	2.36098	5.07560	0.57233	657.57784	21.81053	9
9	Spelling	25	2.69546	5.43146	0.59900	671.13906	22.82687	9
9	Spelling	26	3.06461	5.82419	0.63586	686.10533	24.23155	10
9	Spelling	27	3.48552	6.27200	0.68991	703.17061	26.29130	10
9	Spelling	28	3.99173	6.81056	0.77817	723.69422	29.65474	10
9	Spelling	29	4.67015	7.53233	0.95393	751.19965	36.35265	10
9	Spelling	30	5.93107	8.87382	1.56360	802.32156	59.58614	10

TABLE K.20 Year 9 Grammar & Punctuation Score Equivalence Table

Year	Domain	Raw Score	Delta-Centered Logit	Logit	Logit SE	Scale Score	Scale SE	Band
9	GP	0	-4.93209	-3.11005	1.53219	179.31275	112.61963	5
9	GP	1	-3.70575	-1.93129	0.92098	265.95443	67.69423	5
9	GP	2	-3.07085	-1.32102	0.74050	310.81073	54.42852	5
9	GP	3	-2.61456	-0.88244	0.64705	343.04741	47.55972	5
9	GP	4	-2.24733	-0.52946	0.58865	368.99228	43.26718	5
9	GP	5	-1.93426	-0.22853	0.54801	391.11136	40.28004	5
9	GP	6	-1.65766	0.03733	0.51802	410.65270	38.07571	5
9	GP	7	-1.40708	0.27819	0.49538	428.35649	36.41161	5
9	GP	8	-1.17588	0.50042	0.47768	444.69092	35.11062	5
9	GP	9	-0.95934	0.70856	0.46383	459.98971	34.09261	5
9	GP	10	-0.75397	0.90596	0.45307	474.49908	33.30173	5
9	GP	11	-0.55702	1.09527	0.44492	488.41382	32.70268	6
9	GP	12	-0.36626	1.27863	0.43905	501.89122	32.27122	6
9	GP	13	-0.17977	1.45788	0.43526	515.06652	31.99265	6
9	GP	14	0.00420	1.63471	0.43344	528.06395	31.85888	6
9	GP	15	0.18731	1.81072	0.43358	541.00110	31.86917	7
9	GP	16	0.37124	1.98751	0.43575	553.99559	32.02867	7
9	GP	17	0.55776	2.16680	0.44011	567.17383	32.34914	7
9	GP	18	0.74887	2.35049	0.44693	580.67549	32.85042	7
9	GP	19	0.94694	2.54088	0.45666	594.66961	33.56560	8
9	GP	20	1.15496	2.74082	0.46996	609.36567	34.54318	8
9	GP	21	1.37694	2.95419	0.48771	625.04888	35.84785	8
9	GP	22	1.61836	3.18624	0.51160	642.10511	37.60382	9
9	GP	23	1.88759	3.44503	0.54417	661.12679	39.99779	9
9	GP	24	2.19815	3.74354	0.58995	683.06799	43.36273	9
9	GP	25	2.57421	4.10501	0.65759	709.63690	48.33444	10
9	GP	26	3.06501	4.57676	0.76652	744.31165	56.34105	10
9	GP	27	3.78894	5.27261	0.97434	795.45829	71.61632	10
9	GP	28	5.18305	6.61262	1.63919	893.95222	120.48438	10

TABLE K.21 Years 3, 5, 7, and 9 Persuasive Writing Score Equivalence Table

Year	Domain	Raw Score	Delta-Centered Logit	Logit	Logit SE	Scale Score	Scale SE	Band
3579	Writing	0	-12.53942	-12.54000	1.76300	94.52478	52.30000	1
3579	Writing	1	-10.96010	-10.96000	1.07800	141.43828	32.00000	1
3579	Writing	2	-10.07480	-10.07000	0.86900	167.86425	25.80000	1
3579	Writing	3	-9.44963	-9.45000	0.77000	186.27335	22.90000	1
3579	Writing	4	-8.93305	-8.93300	0.71900	201.62416	21.30000	1
3579	Writing	5	-8.46266	-8.46300	0.69400	215.57944	20.60000	1
3579	Writing	6	-8.00794	-8.00800	0.68400	229.08934	20.30000	1
3579	Writing	7	-7.55131	-7.55100	0.68500	242.65863	20.30000	1
3579	Writing	8	-7.08260	-7.08300	0.69000	256.55453	20.50000	1
3579	Writing	9	-6.59984	-6.60000	0.69500	270.89581	20.60000	2
3579	Writing	10	-6.11019	-6.11000	0.69800	285.44494	20.70000	2
3579	Writing	11	-5.62191	-5.62200	0.69800	299.93468	20.70000	2
3579	Writing	12	-5.13566	-5.13600	0.69900	314.36503	20.80000	2
3579	Writing	13	-4.64673	-4.64700	0.70200	328.88447	20.80000	3
3579	Writing	14	-4.15104	-4.15100	0.70500	343.61175	20.90000	3
3579	Writing	15	-3.64855	-3.64900	0.70500	358.51718	20.90000	3
3579	Writing	16	-3.14571	-3.14600	0.70000	373.45230	20.80000	3
3579	Writing	17	-2.65476	-2.65500	0.69000	388.03112	20.50000	4
3579	Writing	18	-2.18469	-2.18500	0.67800	401.98640	20.10000	4
3579	Writing	19	-1.73507	-1.73500	0.66600	415.34784	19.80000	4
3579	Writing	20	-1.30026	-1.30000	0.65700	428.26390	19.50000	5
3579	Writing	21	-0.87509	-0.87500	0.65000	440.88304	19.30000	5
3579	Writing	22	-0.45735	-0.45700	0.64300	453.29434	19.10000	5
3579	Writing	23	-0.04732	-0.04700	0.63700	465.46810	18.90000	5
3579	Writing	24	0.35408	0.35400	0.63100	477.37463	18.70000	5
3579	Writing	25	0.74713	0.74700	0.62600	489.04362	18.60000	6
3579	Writing	26	1.13353	1.13400	0.62200	500.53446	18.50000	6
3579	Writing	27	1.51576	1.51600	0.62000	511.87684	18.40000	6
3579	Writing	28	1.89675	1.89700	0.62100	523.18952	18.40000	6
3579	Writing	29	2.28021	2.28000	0.62400	534.56160	18.50000	7
3579	Writing	30	2.67061	2.67100	0.62900	546.17120	18.70000	7
3579	Writing	31	3.07135	3.07100	0.63400	558.04804	18.80000	7
3579	Writing	32	3.48153	3.48200	0.63700	570.25149	18.90000	7
3579	Writing	33	3.89416	3.89400	0.63600	582.48463	18.90000	8
3579	Writing	34	4.30011	4.30000	0.63100	594.53962	18.70000	8
3579	Writing	35	4.69442	4.69400	0.62500	606.23831	18.60000	8
3579	Writing	36	5.07807	5.07800	0.62100	617.64007	18.40000	8
3579	Writing	37	5.45606	5.45600	0.62000	628.86368	18.40000	8
3579	Writing	38	5.83510	5.83500	0.62300	640.11699	18.50000	9
3579	Writing	39	6.22224	6.22200	0.63100	651.60783	18.70000	9
3579	Writing	40	6.62346	6.62300	0.64100	663.51436	19.00000	9
3579	Writing	41	7.04157	7.04200	0.65300	675.95534	19.40000	9
3579	Writing	42	7.47486	7.47500	0.66500	688.81202	19.70000	10
3579	Writing	43	7.92039	7.92000	0.68000	702.02500	20.20000	10
3579	Writing	44	8.38147	8.38100	0.70200	715.71306	20.90000	10

Year	Domain	Raw Score	Delta-Centered Logit	Logit	Logit SE	Scale Score	Scale SE	Band
3579	Writing	45	8.87411	8.87400	0.74300	730.35126	22.10000	10
3579	Writing	46	9.43550	9.43600	0.82000	747.03821	24.30000	10
3579	Writing	47	10.15886	10.15900	0.98800	768.50560	29.30000	10
3579	Writing	48	11.46052	11.46100	1.59900	807.16470	47.50000	10

APPENDIX L. VERTICAL LINK ITEM STATISTICS

Table L.1 Reading Year 3 to Year 5

Year 3						Year 5						Retained
Label	Locn	SE	Infit	Facil	Disc	Label	Locn	SE	Infit	Facil	Disc	
r3q14	0.433	0.038	1.12	53.82	0.73	r5q07	-0.554	0.029	-2.944	0.94	72.76	Y
r3q15	0.515	0.038	1.01	52.33	0.96	r5q08	-0.455	0.029	0.776	1.01	71.16	Y
r3q16	-0.162	0.039	0.95	64.92	1.12	r5q09	-1.74	0.032	-5.376	0.86	87.86	N
r3q17	-1.255	0.046	0.91	81.53	1.12	r5q10	-2.479	0.034	-1.512	0.93	93.31	Y
r3q18	-0.852	0.043	0.85	76.12	1.25	r5q11	-2.227	0.034	-6.412	0.83	91.75	Y
r3q19	0.23	0.038	1.04	57.8	0.92	r5q12	-0.686	0.029	-1.608	0.99	74.91	Y
r3q20	2.484	0.044	1.1	18.92	0.77	r5q13	1.547	0.028	1.576	0.99	33.52	Y
r3q21	1.989	0.041	1.25	25.92	0.48	r5q14	0.977	0.027	8.409	1.12	44.23	Y
r3q22	0.548	0.038	0.94	51.86	1.15	r5q15	-0.668	0.029	-4.497	0.91	74.65	Y
r3q23	0.229	0.038	0.97	57.94	1.08	r5q16	-1.214	0.03	-1.363	0.94	82.24	Y
r3q24	0.768	0.038	0.91	47.66	1.22	r5q17	-0.715	0.029	-7.537	0.85	75.37	Y
r3q25	0.436	0.038	0.94	54.07	1.16	r5q18	-1.019	0.03	-4.749	0.9	79.77	Y

Table L.2 Reading Year 5 to Year 7

Year 5						Year 7						Retained
Label	Locn	SE	Infit	Facil	Disc	Label	Locn	SE	Infit	Facil	Disc	
r5q20	0.192	0.028	1.24	59.65	0.32	r7q13	-0.33	0.038	9.597	1.19	64.39	N
r5q21	-0.027	0.028	1.07	63.79	0.87	r7q14	-0.759	0.039	-1.684	1.01	72.18	Y
r5q22	-0.884	0.03	1.03	77.96	0.97	r7q15	-1.753	0.05	-4.397	0.93	85.98	Y
r5q23	1.178	0.028	0.96	40.43	1.09	r7q16	-0.055	0.037	-6.603	0.89	59.07	Y
r5q24	2.595	0.031	0.96	17.67	1.03	r7q17	1.135	0.039	-5.128	0.91	35.18	N
r5q25	-0.474	0.029	0.99	71.68	1.05	r7q18	-1.507	0.047	-4.127	0.91	83.18	Y
r5q26	1.678	0.028	1.04	31.34	0.86	r7q19	0.583	0.037	-5.976	0.92	46.13	Y
r5q27	0.309	0.028	1.14	57.5	0.62	r7q20	-0.522	0.038	-0.676	1.01	68.06	Y
r5q28	0.03	0.028	0.95	62.8	1.15	r7q21	-1.217	0.042	-6.71	0.88	79.37	Y
r5q29	0.951	0.027	1.23	44.87	0.3	r7q22	0.322	0.037	13.636	1.2	51.48	N
r5q30	1.448	0.028	1.11	35.45	0.7	r7q23	0.523	0.037	1.005	1	47.38	Y
r5q31	1.985	0.029	1.05	26.28	0.83	r7q24	0.496	0.037	-4.396	0.93	47.92	N

Table L.3 Reading Year 7 to Year 9

Year 7						Year 9						Retained
Label	Locn	SE	Infit	Facil	Disc	Label	Locn	SE	Infit	Facil	Disc	
r7q25	-0.258	0.037	0.96	63.13	1.13	r9q24	-0.686	0.04	0.95	72.21	1.1	Y
r7q26	-1.164	0.044	0.89	78.63	1.18	r9q25	-1.588	0.049	0.87	84.89	1.16	Y
r7q27	-1.41	0.045	0.88	82	1.17	r9q26	-1.974	0.058	0.88	88.76	1.13	Y
r7q28	1.508	0.039	1.12	28.53	0.71	r9q27	1.205	0.037	1.08	35.64	0.75	Y
r7q29	1.397	0.04	0.96	30.47	1.05	r9q28	0.643	0.036	0.91	46.7	1.28	Y
r7q30	1.237	0.039	1.07	33.35	0.81	r9q29	0.792	0.036	1.02	43.75	0.94	Y
r7q31	0.91	0.038	0.97	39.61	1.04	r9q30	0.494	0.036	0.94	49.77	1.2	Y
r7q32	1.734	0.041	1.12	24.84	0.72	r9q31	1.522	0.038	1.12	29.9	0.71	Y
r7q33	0.538	0.037	1.04	47.14	0.88	r9q32	0.166	0.036	1.03	56.43	0.93	Y
r7q34	-0.237	0.037	1	62.83	1.02	r9q33	-0.474	0.038	0.99	68.68	1.04	Y
r7q35	0.704	0.037	1.16	43.82	0.48	r9q34	0.291	0.036	1.08	53.96	0.77	Y
r7q36	0.845	0.037	1.07	41	0.77	r9q35	0.095	0.036	0.95	57.88	1.17	Y
r7q37	0.487	0.037	1.03	48.26	0.91	r9q36	-0.153	0.037	0.94	62.76	1.17	Y
r7q38	4.715	0.145	1.02	2.16	1.02	r9q37	3.453	0.067	0.96	7.31	1.06	Y

Table L.4 Spelling Year 3 to Year 5

Year 3						Year 5						Retained
Label	Locn	SE	Infit	Facil	Disc	Label	Locn	SE	Infit	Facil	Disc	
lc3q06	-0.517	0.044	0.94	51.79	1.12	lc5q02	-2.41	0.054	0.93	81.04	1.04	Y
lc3q07	-0.381	0.043	0.96	49.9	1.08	lc5q03	-1.823	0.05	0.94	75	1.09	Y
lc3q10	1.31	0.047	1.07	26.94	0.87	lc5q07	-0.547	0.044	1.08	58.53	0.91	Y
lc3q11	1.276	0.047	0.95	27.45	1.07	lc5q08	-0.405	0.044	0.97	56.48	1.08	Y
lc3q13	2.909	0.063	0.96	11.8	1.02	lc5q11	1.034	0.044	0.99	35.16	1.06	Y
lc3q20	-0.267	0.044	0.98	50.24	1.07	lc5q15	-2.082	0.051	1.01	78.33	0.95	Y
lc3q22	0.527	0.045	0.95	39.25	1.13	lc5q17	-0.521	0.044	0.96	58.84	1.1	N
lc3q24	2.104	0.054	1.05	20	0.93	lc5q20	0.557	0.043	1.02	42.92	1	Y

Table L.5 Spelling Year 5 to Year 7

Year 5						Year 7						Retained
Label	Locn	SE	Infit	Facil	Disc	Label	Locn	SE	Infit	Facil	Disc	
lc5q05	-1.143	0.046	0.92	66.74	1.12	lc7q04	-2.462	0.055	0.87	81.85	1.11	Y
lc5q06	-0.568	0.044	1.02	58.8	1	lc7q05	-1.821	0.049	0.91	74.97	1.11	Y
lc5q18	-0.41	0.044	0.94	57.35	1.14	lc7q17	-1.605	0.047	0.95	72.97	1.05	Y
lc5q19	0.199	0.043	1.08	48.25	0.91	lc7q18	-0.908	0.044	1.06	63.44	0.92	Y
lc5q21	0.983	0.044	1	36.69	1.05	lc7q20	0.119	0.042	0.99	47.58	1.06	N
lc5q22	2.205	0.049	1.1	20.83	0.84	lc7q22	1.057	0.043	1.04	33.18	0.93	Y
lc5q23	2.397	0.051	0.89	18.94	1.16	lc7q24	1.401	0.045	0.91	28.34	1.17	Y
lc5q24	2.941	0.056	1.08	13.86	0.91	lc7q25	1.554	0.045	1.08	26.25	0.9	Y

Table L.6 Spelling Year 7 to Year 9

Year 7						Year 9						Retained
Label	Locn	SE	Infit	Facil	Disc	Label	Locn	SE	Infit	Facil	Disc	
lc7q06	-1.764	0.048	0.9	74.31	1.12	lc9q03	-2.481	31.233	0.87	86.63	1.07	Y
lc7q09	-0.938	0.043	0.87	63.3	1.22	lc9q05	-1.704	64.738	0.87	79.65	1.14	Y
lc7q10	-0.12	0.042	1.08	50.73	0.87	lc9q07	-0.47	21.659	1.08	63.86	0.89	Y
lc7q11	-0.347	0.042	0.92	54.32	1.19	lc9q08	-0.911	20.575	0.93	70.14	1.1	Y
lc7q13	0.945	0.043	1	34.11	1.02	lc9q10	0.41	20.485	1.03	50.13	0.97	Y
lc7q15	2.781	0.058	1.05	12.41	0.92	lc9q13	2.506	22.459	1.08	19.65	0.89	Y
lc7q16	-2.741	0.057	1.01	84.75	0.96	lc9q17	-2.963	16.574	0.97	90.34	0.97	Y
lc7q19	-0.751	0.043	0.93	61.24	1.13	lc9q19	-1.2	33.635	0.91	74.82	1.13	Y
lc7q23	0.392	0.042	1.1	43.63	0.84	lc9q23	0.081	52.218	1.19	56.83	0.67	Y
lc7q28	2.425	0.052	1.06	16.29	0.93	lc9q28	2.228	18.025	1.1	24.33	0.86	Y

Table L.7 Grammar and Punctuation Year 3 to Year 5

Year 3						Year 5						Retained
Label	Locn	SE	Infit	Facil	Disc	Label	Locn	SE	Infit	Facil	Disc	
lc3q29	-1.546	0.05	0.89	85.39	1.14	lc5q26	-2.769	0.08	0.95	95.11	1.04	Y
lc3q32	-0.849	0.041	1.02	76.3	0.94	lc5q28	-1.86	0.057	0.97	89.42	1.01	Y
lc3q33	-0.796	0.042	0.87	75.51	1.27	lc5q29	-2.048	0.064	0.88	90.94	1.13	Y
lc3q37	-0.23	0.038	1.04	65.93	0.92	lc5q30	-1.154	0.045	0.98	82	1.05	Y
lc3q38	0.062	0.037	0.95	60.36	1.16	lc5q32	-1.185	0.047	0.93	82.4	1.13	Y
lc3q41	0.864	0.037	1.04	44.2	0.87	lc5q34	-0.517	0.041	1.01	72.65	1	Y
lc3q44	1.104	0.038	1.02	39.49	0.91	lc5q40	0.047	0.038	0.97	62.56	1.12	Y
lc3q48	1.567	0.04	1.02	31.14	0.92	lc5q46	0.636	0.037	0.99	51.02	1.08	Y

Table L.8 Grammar and Punctuation Year 5 to Year 7

Year 5						Year 7						Retained
Label	Locn	SE	Infit	Facil	Disc	Label	Locn	SE	Infit	Facil	Disc	
lc5q27	-2.189	0.064	0.94	91.92	1.05	lc7q31	-2.948	0.088	0.93	96.15	1.08	Y
lc5q31	-1.662	0.053	0.96	87.67	1.05	lc7q33	-1.962	0.057	0.92	90.88	1.1	Y
lc5q37	0.174	0.038	0.97	60.1	1.14	lc7q38	-0.638	0.042	0.9	75.69	1.21	Y
lc5q39	0.208	0.038	0.94	59.42	1.23	lc7q41	-0.217	0.039	0.93	68.64	1.19	Y
lc5q41	0.222	0.037	0.94	59.19	1.18	lc7q42	-0.528	0.041	0.91	73.97	1.22	Y
lc5q42	0.662	0.037	0.94	50.38	1.23	lc7q43	-0.279	0.039	0.89	69.75	1.27	N
lc5q47	1.346	0.038	1.02	36.9	0.91	lc7q50	0.799	0.037	0.99	48.77	1.04	Y
lc5q48	1.77	0.04	1.12	29.22	0.68	lc7q51	0.838	0.037	1.01	47.98	0.96	N

Table L.9 Grammar and Punctuation Year 7 to Year 9

Year 7						Year 9						Retained
Label	Locn	SE	Infit	Facil	Disc	Label	Locn	SE	Infit	Facil	Disc	
lc7q37	-0.831	0.044	0.92	78.6	1.16	lc9q34	-1.527	0.05	0.91	85.48	1.12	Y
lc7q39	-0.631	0.042	0.98	75.58	1.06	lc9q36	-1.18	0.045	0.96	81.31	1.06	Y
lc7q40	-0.27	0.039	0.94	69.58	1.16	lc9q37	-1.169	0.045	0.9	81.17	1.15	Y
lc7q44	0.079	0.038	1.03	63.15	0.94	lc9q38	-0.492	0.039	0.99	70.78	1.03	Y
lc7q45	0.343	0.037	1.07	57.95	0.81	lc9q40	0.042	0.036	1	60.87	1.04	N
lc7q48	0.491	0.037	0.99	55.04	1.04	lc9q44	-0.146	0.037	0.95	64.57	1.17	Y
lc7q52	1.073	0.038	1.03	43.25	0.9	lc9q49	0.639	0.036	1.08	48.85	0.75	Y
lc7q53	1.054	0.037	1.16	43.67	0.48	lc9q50	0.751	0.036	1.1	46.55	0.68	N
lc7q57	1.713	0.04	0.95	31.11	1.08	lc9q55	0.893	0.036	0.89	43.72	1.36	Y

Table L.10 Numeracy Year 3 to Year 5

Year 3						Year 5						Retained
Label	Locn	SE	Infit	Facil	Disc	Label	Locn	SE	Infit	Facil	Disc	
n3q06	-1.754	0.047	0.94	82.11	1.06	n5q02	-2.794	0.067	0.93	92.72	1.04	Y
n3q09	-0.806	0.039	0.94	67.71	1.16	n5q04	-2.083	0.056	0.87	87.08	1.15	Y
n3q11	-1.081	0.041	1.05	72.4	0.9	n5q06	-2.003	0.049	1.05	86.29	0.92	Y
n3q13	-0.389	0.038	1.05	60.02	0.87	n5q07	-1.482	0.046	0.94	80.07	1.09	Y
n3q16	0.022	0.037	1.08	51.94	0.8	n5q09	-1.341	0.043	0.98	78.13	1.04	Y
n3q17	0.149	0.037	1.11	49.45	0.68	n5q11	-0.98	0.041	0.91	72.53	1.2	Y
n3q19	0.571	0.037	1.05	41.13	0.84	n5q12	-1.154	0.042	0.94	75.35	1.11	N
n3q20	0.32	0.037	1.08	46.06	0.78	n5q17	-0.378	0.038	1.12	61.7	0.64	N
n3q21	0.75	0.038	1.2	37.7	0.45	n5q19	-0.128	0.037	1.11	56.79	0.67	Y
n3q23	1.34	0.04	1.12	27.3	0.73	n5q22	0.278	0.037	1.07	48.66	0.77	Y
n3q26	1.291	0.04	1.06	28.15	0.83	n5q23	0.291	0.037	1.01	48.41	0.98	Y
n3q33	2.554	0.058	0.87	12.01	1.15	n5q29	0.765	0.038	0.93	39.04	1.2	N
n3q34	3.195	0.063	1.04	7.21	0.93	n5q35	2.082	0.046	1.02	17.79	0.93	Y

Table L.11 Numeracy Year 5 to Year 7

Year 5						Year 7						Retained
Label	Locn	SE	Infit	Facil	Disc	Label	Locn	SE	Infit	Facil	Disc	
n5q13	-0.656	0.039	1.01	66.9	1	n7NCq03	-1.642	0.043	1.03	77.33	0.96	Y
n5q14	-0.704	0.039	1.05	67.78	0.91	n7NCq04	-1.81	0.044	1	79.72	1.01	Y
n5q15	-0.391	0.038	0.92	61.96	1.26	n7NCq06	-1.471	0.042	0.94	74.78	1.11	Y
n5q20	0.417	0.037	1.12	45.86	0.6	n7NCq08	-0.866	0.039	1.01	64.53	0.98	Y
n5q21	-0.633	0.039	1	66.52	1.01	n7NCq09	-1.332	0.041	0.99	72.58	1.04	Y
n5q25	0.845	0.038	1.15	37.49	0.56	n7NCq19	-0.032	0.038	1.14	48.71	0.63	Y
n5q31	1.302	0.04	1.04	29.27	0.9	n7NCq21	0.499	0.039	1	38.71	0.99	Y
n5q33	1.599	0.041	1.07	24.48	0.83	n7NCq22	0.572	0.039	1.05	37.39	0.86	Y
n5q38	2.241	0.05	0.93	15.95	1.08	n7NCq25	0.835	0.04	0.96	32.79	1.07	N
n5q40	2.834	0.056	1.01	10.24	0.96	n7NCq31	1.659	0.045	1.04	20.48	0.9	Y

Table L.12 Numeracy Year 7 to Year 9

Label	Year 7					Label	Year 9					Retained
	Locn	SE	Infit	Facil	Disc		Locn	SE	Infit	Facil	Disc	
n7CAq01	-2.723	0.059	0.88	89.57	1.13	n9CAq01	-3.185	0.08	0.85	93.64	1.14	Y
n7CAq02	-2.06	0.048	0.87	82.82	1.16	n9CAq03	-2.489	0.056	0.89	88.68	1.1	Y
n7CAq06	-1.299	0.04	1.18	71.93	0.64	n9CAq05	-1.267	0.04	1.13	73.37	0.74	N
n7CAq11	-0.654	0.038	1.1	60.49	0.77	n9CAq12	-0.975	0.039	1.02	68.49	0.98	Y
n7CAq14	0	0.038	1	47.94	0.98	n9CAq13	-0.625	0.037	1.03	62.15	0.94	Y
n7CAq15	-0.035	0.038	1.06	48.61	0.84	n9CAq14	-0.594	0.038	0.93	61.58	1.2	Y
n7CAq19	0.528	0.039	1.03	38.03	0.89	n9CAq16	-0.043	0.037	0.99	50.96	1.02	Y
n7CAq20	0.469	0.039	1.07	39.1	0.86	n9CAq17	-0.02	0.037	0.92	50.5	1.22	Y
n7CAq30	2.649	0.058	1	10.45	0.98	n9CAq27	1.9	0.047	0.92	18.59	1.09	Y
n7CAq32	2.792	0.064	0.93	9.42	1.03	n9CAq30	2.319	0.054	0.88	14	1.09	Y
n7NCq01	-1.868	0.045	1.04	80.47	0.96	n9nCq02	-2.012	0.048	0.99	83.81	1.03	Y
n7NCq13	-0.622	0.038	1.26	60.02	0.28	n9nCq06	-0.896	0.038	1.16	67.1	0.62	Y
n7NCq14	-0.817	0.039	1.12	63.67	0.72	n9nCq10	-1.126	0.039	1.05	71.11	0.9	Y
n7NCq15	-0.426	0.038	1.05	56.33	0.88	n9nCq11	-0.959	0.038	0.99	68.25	1.01	Y
n7NCq18	-0.285	0.038	1.09	53.61	0.73	n9nCq12	-0.744	0.038	1.07	64.41	0.81	Y
n7NCq24	0.489	0.039	0.95	38.9	1.1	n9nCq19	0.47	0.038	0.93	41.1	1.14	N
n7NCq28	1.596	0.045	0.97	21.31	1	n9nCq27	1.026	0.04	0.97	31.22	1.01	Y
n7NCq32	2.65	0.067	0.82	10.5	1.17	n9nCq29	1.917	0.048	0.83	18.63	1.21	N

APPENDIX M. REGRESSION INDICATORS TO OBTAIN PLAUSIBLE VALUES

Table M.1 Non-Writing Regression Indicators to Obtain Plausible Values: Grade 3

Grade	TAA	Regression Indicator
3	1	geo1, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	2	geo1, geo3, geo4, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	3	geo3, geo4, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	4	geo1, geo3, geo4, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
TAA	5	geo1, geo3, geo4, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
Grade	6	geo1, geo3, geo4, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
Grade	7	geo1, geo3, sectorc, sectori, gender2, atsi123, atsim, lbotey, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
Grade	8	geo1, geo3, geo4, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle

Note 1. geo=School Geolocation; sector= School Sector; ats=Indigenous Status; lbotem= Indicator for Language Background Other Than English; parented=Parental Education; parentocc= Parental Occupations

Note 2. ReadingWLE= Reading Logit Score as continuous variable

Table M.2 Non-Writing Regression Indicators to Obtain Plausible Values: Grade 5

Grade	TAA	Regression Indicator
5	1	geo1, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	2	geo1, geo3, geo4, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	3	geo3, geo4, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	4	geo1, geo3, geo4, sectorc, sectori, gender2, atsi123, atsim, lbotey, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
TAA	5	geo1, geo3, geo4, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
Grade	6	geo1, geo3, geo4, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
Grade	7	geo1, geo3, sectorc, sectori, gender2, atsi123, atsim, lbotey, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
Grade	8	geo1, geo3, geo4, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle

Note 1. geo=School Geolocation; sector= School Sector; ats=Indigenous Status; lbot= Indicator for Language Background Other Than English; partented=Parental Education; parentocc= Parental Occupations

Note 2. ReadingWLE= Reading Logit Score as continuous variable

Table M.3 Non-Writing Regression Indicators to Obtain Plausible Values: Grade 7

Grade	TAA	Regression Indicator
7	1	sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	2	geo1, geo3, geo4, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	3	geo3, geo4, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	4	geo1, geo3, geo4, sectorc, sectori, gender2, atsi123, atsim, lbotey, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
TAA	5	geo1, geo3, geo4, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
Grade	6	geo1, geo3, geo4, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
Grade	7	geo1, geo3, sectorc, sectori, gender2, atsi123, lbotey, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
Grade	8	geo1, geo3, geo4, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle

Note 1. geo=School Geolocation; sector= School Sector; ats=Indigenous Status; lbotey= Indicator for Language Background Other Than English; parented=Parental Education; parentocc= Parental Occupations

Note 2. ReadingWLE= Reading Logit Score as continuous variable

Table M.4 Non-Writing Regression Indicators to Obtain Plausible Values: Grade 9

Grade	TAA	Regression Indicator
9	1	Sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	2	geo1, geo3, geo4, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	3	geo3, geo4, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	4	geo1, geo3, geo4, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
TAA	5	geo1, geo3, geo4, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
Grade	6	geo1, geo3, geo4, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
Grade	7	geo1, geo3, sectorc, sectori, gender2, atsi123, atsim, lbotey, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
Grade	8	geo1, geo3, geo4, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle

Note 1. geo=School Geolocation; sector= School Sector; ats=Indigenous Status; lbotey= Indicator for Language Background Other Than English; partented=Parental Education; parentocc= Parental Occupations

Note 2. ReadingWLE= Reading Logit Score as continuous variable

Table M.5 Writing Regression Indicators to Obtain Plausible Values: All Grades

TAA	Regression Indicator
1	geo1, sectorc, sectori, sectorh, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, grade3, grade7, grade9, Writingwle
2	geo1, geo3, geo4, sectorc, sectori, sectorh, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, grade3, grade7, grade9, Writingwle
3	geo3, geo4, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, grade3, grade7, grade9, Writingwle
4	geo1, geo3, geo4, sectorc, sectori, sectorh, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, grade3, grade7, grade9, Writingwle
5	geo1, geo3, geo4, sectorc, sectori, sectorh, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, grade3, grade7, grade9, Writingwle
6	geo1, geo3, geo4, sectorc, sectori, sectorh, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, grade3, grade7, grade9, Writingwle
7	geo1, geo3, sectorc, sectori, sectorh, gender2, atsi123, atsim, lbotey, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, grade3, grade7, grade9, Writingwle
8	geo1, geo3, geo4, sectorc, sectori, sectorh, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, grade3, grade7, grade9, Writingwle

Note 1. geo=School Geolocation; sector= School Sector; ats=Indigenous Status; lbote= Indicator for Language Background Other Than English; partented=Partental Education; parentocc= Parental Occupations

Note 2. WritingWLE= Writing Logit Score as continuous variable