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Contact details

Australian Curriculum, Assessment and Reporting Authority
Level 13, Centennial Plaza
280 Elizabeth Street
Sydney NSW 2000
T. 1300 895 563
F. 1800 982 118
www.acara.edu.au

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National Assessment Program – Literacy and Numeracy (NAPLAN) 2016 Central Analysis of Data project staff

The NAPLAN 2016 Central Analysis of Data project was jointly directed by Associate Professor Stephen M. Humphry of the University of Western Australia (UWA) and Dr Michael J. Young of Pearson in conjunction with Dr Goran Lazendic, Dr Rassoul Sadeghi, Dr Lihong Yang, Mrs. Jasmine Cohen, and Mr. Ben Businovski of ACARA.

The technical report text and data analysis tasks were undertaken by Associate Professor Stephen M. Humphry and Dr Ida Marais from UWA; Dr Michael J. Young, Dr Daeryong Seo of Pearson, and Dr Mark G. Robeck of Pearson.

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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) 2016.

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 2016 administration. The tests were administered nationally to all students in Years 3, 5, 7 and 9 in May 2016. 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, 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 2016 tests. The vertical reporting scales in the five domains were equated onto the historic NAPLAN reporting scales to ensure that results were comparable from 2008 to 2016. The equating was achieved using data collected by administering the secure equating tests and the 2016 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 2016 summary information, the NAPLAN 2016 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 2016 NAPLAN . 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 2016 assessment scales and the methodology used to report on the performance of the 2016 student cohort. It includes descriptions of test calibration, equating and scale construction processes, and outlines the steps in the analysis. The 2016 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 NAPLAN student performance in 2016. 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. These results are included in the 2016 NAPLAN National Report and 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 2016

Domain	Strand	Number of MC Items	Number of CR Items	Total for Strand	Total in Test
Numeracy	Statistics and Probability	4	1	5	35
	Measurement and Geometry	10	1	11	
	Number	14	2	16	
	Algebra, Function and Pattern	2	1	3	
Reading	Literacy	31	1	32	38
	Literature	2	0	2	
	Language	3	0	3	
Spelling	Correctly Spells	0	14	0	25
	Identifies an Error and Correctly Spells	0	11	0	
Grammar & Punctuation	Grammar	17	0	17	26
	Punctuation	9	0	9	

Table 2.2. Structure of Year 5 Test Domains, NAPLAN 2016

Domain	Strand	Number of MC Items	Number of CR Items	Total for Strand	Total in Test
Numeracy	Statistics and Probability	5	1	6	40
	Measurement and Geometry	13	0	13	
	Number	13	4	17	
	Algebra, Function and Pattern	3	1	4	
Reading	Literacy	27	1	28	38
	Literature	6	0	6	
	Language	4	0	4	
Spelling	Correctly Spells	0	13	13	25
	Identifies an Error and Correctly Spells	0	12	12	
Grammar & Punctuation	Grammar	19	0	19	26
	Punctuation	7	0	7	

Table 2.3. Structure of Year 7 Test Domains, NAPLAN 2016

Domain	Strand	Number of MC Items	Number of CR Items	Total for Strand	Total in Test
Numeracy (Non-calculator)	Statistics and Probability	4	2	6	64
	Measurement and Geometry	9	1	10	
	Number	6	6	12	
	Algebra, Function and Pattern	3	1	4	
Numeracy (Calculator)	Statistics and Probability	3	1	4	
	Measurement and Geometry	7	3	10	
	Number	11	4	15	
	Algebra, Function and Pattern	2	1	3	
Reading	Literacy	32	0	32	50
	Literature	7	0	7	
	Language	11	0	11	
Spelling	Correctly Spells	0	14	14	30
	Identifies an Error and Correctly Spells	0	16	16	
Grammar & Punctuation	Grammar	19	0	19	28
	Punctuation	9	0	9	

Table 2.4. Structure of Year 9 Test Domains, NAPLAN 2016

Domain	Strand	Number of MC Items	Number of CR Items	Total for Strand	Total in Test
Numeracy (Non-calculator)	Statistics and Probability	5	1	6	64
	Measurement and Geometry	7	2	9	
	Number	8	3	11	
	Algebra, Function and Pattern	4	2	6	
Numeracy (Calculator)	Statistics and Probability	3	1	4	
	Measurement and Geometry	4	6	10	
	Number	9	4	13	
	Algebra, Function and Pattern	3	2	5	
Reading	Literacy	22	1	23	50
	Literature	10	0	10	
	Language	17	0	17	
Spelling	Correctly Spells	0	15	15	30
	Identifies an Error and Correctly Spells	0	15	15	
Grammar & Punctuation	Grammar	19	0	19	28
	Punctuation	9	0	9	

For writing, all students were required to write a narrative 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 2016

Item	Criterion	Score Categories
1	Audience	0-6
2	Text Structure	0-4
3	Ideas	0-5
4	Character and Setting	0-4
5	Vocabulary	0-5
6	Cohesion	0-4
7	Paragraphing	0-2
8	Sentence Structure	0-6
9	Punctuation	0-5
10	Spelling	0-6
	Score Range	0-47

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 2016:

- 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 2016 NAPLAN results on the existing NAPLAN scale. It should be noted that plausible values (PVs) for the 2016 NAPLAN administration were obtained using a new procedure that combined MDLR 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 2016 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 2016 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 2016 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 2016 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 2016 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 2016 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 2016 NAPLAN tests.

Table 3.1. Numbers of Schools and Students included in the National Calibration Sample by State/Territory and Year Level (2016)

Year Level	Source	NSW	VIC	QLD	WA	SA	TAS	ACT	NT	Total
Year 3	Schools	46	44	47	43	44	30	20	23	297
	Students (N)	2166	1764	2344	1873	1545	1022	1035	713	12462
	Students (Wtd N)	100627	78353	72807	35987	21595	6858	5676	3896	325800
Year 5	Schools	48	46	47	43	43	29	20	24	300
	Students (N)	1901	1726	2244	1731	1513	891	954	671	11631
	Students (Wtd N)	92040	73007	70081	32591	19875	6194	5141	3602	302531
Year 7	Schools	47	44	48	45	42	29	17	16	288
	Students (N)	5353	5463	5910	5254	1598	2268	2508	850	29204
	Students (Wtd N)	90111	70930	64757	31046	19792	6563	5172	4005	292377
Year 9	Schools	47	44	47	44	44	29	16	16	287
	Students (N)	5242	5030	4168	5202	4351	2274	2273	829	29369
	Students (Wtd N)	93977	75297	48524	31516	21970	7079	5527	3978	287868
Total	Schools	94	94	95	88	87	58	70	43	629
	Students (N)	14662	13983	14666	14060	9007	6455	6770	3063	82666
	Students (Wtd N)	376755	297588	256169	131140	83231	26694	21516	15481	1208576

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

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

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

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

$$RRsr = Psr/(Psr + NP) \quad (3.2)$$

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

Table 3.2. Percentage of Sampled Schools included in the National Calibration Sample (2016)

Year Level	School Type	NSW	VIC	QLD	WA	SA	TAS	ACT	NT
Year 3	Sampled Schools	100	100	100	100	100	100	100	100
	Sampled and Replaced Schools	100	100	100	100	100	100	100	100
Year 5	Sampled Schools	100	100	100	100	100	100	100	100
	Sampled and Replaced Schools	100	100	100	100	100	100	100	100
Year 7	Sampled Schools	100	100	100	100	100	100	100	94
	Sampled and Replaced Schools	100	100	100	100	100	100	100	100
Year 9	Sampled Schools	98	100	100	100	96	100	100	79
	Sampled and Replaced Schools	98	100	100	100	98	100	100	100

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 (2016)

Domain	Participation Code	NSW	VIC	QLD	WA	SA	TAS	ACT	NT	AUS
Reading	Absent	2.0	3.0	2.5	3.5	2.4	2.4	2.4	7.7	2.9
	Exempt	1.8	2.1	0.8	0.5	1.4	1.6	1.5	0.6	1.3
	Withdrawn	0.9	1.4	6.0	1.8	3.4	1.6	3.8	0.6	2.6
	Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Present	95.3	93.5	90.7	94.2	92.8	94.4	92.3	91.2	93.2
Writing	Absent	1.8	3.3	2.2	3.9	2.6	2.8	2.4	7.3	2.9
	Exempt	1.8	2.2	1.0	0.5	1.5	1.6	1.7	0.6	1.4
	Withdrawn	1.0	1.4	5.8	1.8	3.3	1.6	3.8	0.6	2.6
	Other	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
	Present	95.5	93.1	91.0	93.8	92.6	94.0	92.1	91.6	93.1
Spelling	Absent	1.8	3.1	2.1	3.2	2.4	2.3	2.6	7.0	2.7
	Exempt	1.8	2.2	0.7	0.5	1.4	1.6	1.7	0.6	1.3
	Withdrawn	0.9	1.4	5.8	1.8	3.4	1.6	3.6	0.6	2.6
	Other	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Present	95.5	93.3	91.3	94.6	92.8	94.5	92.1	91.9	93.3
Grammar & Punctuation	Absent	1.8	3.1	2.1	3.2	2.4	2.3	2.6	7.0	2.7
	Exempt	1.8	2.2	0.7	0.5	1.4	1.6	1.7	0.6	1.3
	Withdrawn	0.9	1.4	5.8	1.8	3.4	1.6	3.6	0.6	2.6
	Other	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Present	95.5	93.3	91.3	94.6	92.8	94.5	92.1	91.9	93.3
Numeracy	Absent	2.3	2.7	3.1	4.1	2.8	2.8	2.9	8.3	3.3
	Exempt	1.7	2.1	0.7	0.5	1.2	1.6	1.5	0.6	1.2
	Withdrawn	0.8	1.4	5.5	1.7	3.1	1.5	3.2	0.4	2.4
	Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Present	95.2	93.8	90.7	93.8	92.9	94.1	92.4	90.7	93.1

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 (2016)

Domain	Participation Code	NSW	VIC	QLD	WA	SA	TAS	ACT	NT	AUS
Reading	Absent	1.9	2.1	2.3	3.1	3.0	2.5	2.5	6.9	2.7
	Exempt	1.1	2.4	1.1	0.6	0.7	1.1	1.5	1.5	1.2
	Withdrawn	0.4	2.1	5.8	1.3	2.6	0.9	3.4	0.3	2.4
	Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Present	96.5	93.3	90.8	95.1	93.7	95.5	92.7	91.4	93.7
Writing	Absent	1.8	2.2	2.5	3.0	2.5	2.4	2.8	6.9	2.7
	Exempt	1.1	2.4	1.1	0.6	0.6	1.1	1.5	1.5	1.2
	Withdrawn	0.4	2.3	5.9	1.2	2.6	0.9	3.5	0.3	2.4
	Other	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Present	96.6	93.0	90.5	95.3	94.3	95.6	92.2	91.4	93.7
Spelling	Absent	1.7	2.1	2.4	2.8	2.4	2.2	2.3	6.4	2.5
	Exempt	1.1	2.4	1.0	0.6	0.6	1.1	1.5	1.5	1.2
	Withdrawn	0.4	2.2	5.9	1.1	2.6	0.9	3.4	0.3	2.4
	Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Present	96.7	93.3	90.7	95.5	94.3	95.7	92.9	91.8	93.9
Grammar & Punctuation	Absent	1.7	2.1	2.4	2.8	2.4	2.2	2.3	6.4	2.5
	Exempt	1.1	2.4	1.0	0.6	0.6	1.1	1.5	1.5	1.2
	Withdrawn	0.4	2.2	5.9	1.1	2.6	0.9	3.4	0.3	2.4
	Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Present	96.7	93.3	90.7	95.5	94.3	95.7	92.9	91.8	93.9
Numeracy	Absent	2.5	2.5	2.5	3.4	3.4	3.9	3.0	8.0	3.2
	Exempt	1.1	2.4	1.1	0.6	0.6	1.1	1.4	1.3	1.2
	Withdrawn	0.4	2.1	5.7	1.2	2.6	0.9	3.1	0.3	2.3
	Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Present	96.1	92.9	90.7	94.9	93.3	94.1	92.5	90.3	93.3

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 (2016)

Domain	Participation Code	NSW	VIC	QLD	WA	SA	TAS	ACT	NT	AUS
Reading	Absent	3.0	3.7	3.7	3.2	2.8	4.2	2.8	11.6	3.6
	Exempt	1.1	0.8	1.0	0.4	1.0	1.2	0.8	0.2	0.8
	Withdrawn	0.3	1.3	5.0	0.5	2.6	0.4	2.0	0.8	1.8
	Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Present	95.6	94.2	90.3	95.9	93.6	94.3	94.4	87.3	93.8
Writing	Absent	3.1	3.5	5.6	2.9	2.9	4.0	2.4	14.4	4.0
	Exempt	1.1	0.8	1.0	0.5	1.0	1.2	0.9	0.2	0.9
	Withdrawn	0.3	1.4	5.0	0.4	2.3	0.3	2.0	0.8	1.7
	Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
	Present	95.5	94.4	88.4	96.2	93.7	94.5	94.7	84.5	93.4
Spelling	Absent	3.0	3.5	5.2	2.6	2.4	3.7	2.4	14.5	3.8
	Exempt	1.1	0.8	0.9	0.4	1.0	1.2	0.9	0.2	0.8
	Withdrawn	0.3	1.4	5.0	0.4	2.5	0.4	2.0	0.8	1.8
	Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Present	95.6	94.4	88.9	96.5	94.1	94.8	94.7	84.5	93.6
Grammar & Punctuation	Absent	3.0	3.5	5.2	2.6	2.4	3.7	2.4	14.5	3.8
	Exempt	1.1	0.8	0.9	0.4	1.0	1.2	0.9	0.2	0.8
	Withdrawn	0.3	1.4	5.0	0.4	2.5	0.4	2.0	0.8	1.8
	Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Present	95.6	94.4	88.9	96.5	94.1	94.8	94.7	84.5	93.6
Numeracy (Calculator)	Absent	3.6	4.1	4.9	3.5	2.9	4.8	3.2	14.8	4.3
	Exempt	1.1	0.7	0.9	0.5	1.1	1.2	0.8	0.2	0.8
	Withdrawn	0.3	1.5	4.9	0.4	2.4	0.4	2.0	0.8	1.7
	Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Present	95.0	93.7	89.2	95.6	93.6	93.7	94.0	84.1	93.1
Numeracy (Non-calculator)	Absent	3.7	4.2	5.1	3.6	3.0	4.9	3.1	14.7	4.4
	Exempt	1.1	0.7	1.0	0.5	1.1	1.2	0.8	0.2	0.8
	Withdrawn	0.3	1.5	5.0	0.4	2.4	0.4	2.0	0.8	1.8
	Other	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
	Present	95.0	93.6	89.0	95.5	93.6	93.6	94.0	84.2	93.0

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

Table 3.6. Year 9 sample: Overall Participation Category Rates (%) by State/Territory by Domain (2016)

Domain	Participation Code	NSW	VIC	QLD	WA	SA	TAS	ACT	NT	AUS
Reading	Absent	6.2	6.7	5.6	4.7	6.9	9.4	4.1	22.1	6.6
	Exempt	1.0	0.7	1.3	0.3	1.7	0.8	0.9	0.4	0.9
	Withdrawn	0.7	2.9	6.2	0.4	4.1	0.4	3.3	1.7	2.5
	Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Present	92.1	89.7	86.9	94.6	87.2	89.4	91.7	75.9	90.0
Writing	Absent	5.7	6.6	6.9	4.5	6.3	7.7	4.0	20.4	6.3
	Exempt	1.0	0.7	1.2	0.3	1.7	0.8	0.9	0.4	0.9
	Withdrawn	0.7	3.0	6.2	0.3	4.0	0.4	3.3	1.6	2.5
	Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Present	92.6	89.7	85.7	94.9	88.0	91.1	91.8	77.7	90.3
Spelling	Absent	5.7	6.8	6.6	4.2	6.2	7.7	4.0	20.3	6.3
	Exempt	1.0	0.7	1.2	0.3	1.7	0.8	0.9	0.4	0.9
	Withdrawn	0.7	2.9	6.1	0.3	3.9	0.4	3.2	1.6	2.4
	Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Present	92.6	89.7	86.0	95.2	88.2	91.1	91.9	77.8	90.4
Grammar & Punctuation	Absent	5.7	6.8	6.6	4.2	6.2	7.7	4.0	20.3	6.3
	Exempt	1.0	0.7	1.2	0.3	1.7	0.8	0.9	0.4	0.9
	Withdrawn	0.7	2.9	6.1	0.3	3.9	0.4	3.2	1.6	2.4
	Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Present	92.6	89.7	86.0	95.2	88.2	91.1	91.9	77.8	90.4
Numeracy (Calculator)	Absent	7.0	7.6	7.6	5.4	7.5	10.3	4.9	21.1	7.5
	Exempt	1.0	0.7	1.0	0.3	1.7	0.8	0.9	0.4	0.9
	Withdrawn	0.7	3.2	6.4	0.3	4.2	0.4	3.3	1.8	2.6
	Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Present	91.2	88.5	85.0	94.0	86.5	88.5	90.9	76.7	89.0
Numeracy (Non-calculator)	Absent	7.0	7.8	7.8	5.5	7.7	9.9	4.8	21.7	7.5
	Exempt	1.0	0.7	1.0	0.3	1.7	0.8	0.9	0.4	0.9
	Withdrawn	0.7	3.2	6.4	0.3	4.3	0.4	3.3	1.8	2.6
	Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Present	91.3	88.3	84.8	93.9	86.3	88.9	91.0	76.1	88.9

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 for Tables 3.7 to 3.9 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).

Prior to 2016, the *geolocation* of a school was described using the MCEECDYA Schools Geographic Location Classification System. In 2016, geolocation was changed to follow the Australian Bureau of Statistics' *Australian Statistical Geography Standard (*ASGS*) Remoteness Structure* which uses the categories Major Cities of Australia, Inner Regional Australia, Outer Regional Australia, Remote Australia, and Very Remote Australia (Table 3.10).

Table 3.7. Calibration Sample: Distribution (%) by Gender by Year Level (2016)

Year Level	Gender	NSW	VIC	QLD	WA	SA	TAS	ACT	NT	AUS
Year 3	Male	49.0	50.7	53.8	50.9	51.3	51.4	52.0	51.2	51.3
	Female	51.0	49.3	46.2	49.1	48.7	48.6	48.0	48.8	48.7
Year 5	Male	49.2	51.4	53.8	50.6	50.1	49.3	53.9	52.2	51.3
	Female	50.8	48.6	46.2	49.4	49.9	50.7	46.1	47.8	48.7
Year 7	Male	56.8	49.8	49.1	51.7	46.4	52.2	46.5	50.4	51.0
	Female	43.2	50.2	50.9	48.3	53.6	47.8	53.5	49.6	49.0
Year 9	Male	55.5	54.4	51.0	49.1	52.0	49.8	47.4	51.3	51.8
	Female	44.5	45.6	49.0	50.9	48.0	50.2	52.6	48.7	48.2

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 (2016)

Year Level	Language Background	NSW	VIC	QLD	WA	SA	TAS	ACT	NT	AUS
Year 3	Non-LBOTE	73.3	68.1	85.8	49.5	86.0	92.8	73.4	53.3	73.4
	LBOTE	26.5	31.9	14.0	21.7	13.6	4.0	26.4	27.1	20.8
	Not Stated	0.2	0.0	0.2	28.8	0.4	3.2	0.2	19.6	5.8
Year 5	Non-LBOTE	74.5	67.7	87.7	54.2	86.5	92.7	74.2	50.1	74.6
	LBOTE	25.4	32.3	12.2	20.8	13.0	4.8	25.8	28.5	20.2
	Not Stated	0.1	0.0	0.1	25.0	0.5	2.5	0.0	21.5	5.2
Year 7	Non-LBOTE	68.5	81.4	86.2	68.9	87.1	91.0	77.7	54.8	77.7
	LBOTE	27.6	18.6	13.7	16.0	12.1	3.8	21.5	28.2	17.8
	Not Stated	3.9	0.0	0.1	15.1	0.8	5.2	0.8	16.9	4.4
Year 9	Non-LBOTE	68.9	80.4	86.2	68.1	83.1	91.9	77.9	49.7	77.2
	LBOTE	26.8	19.6	13.8	16.7	10.4	3.8	21.1	30.0	17.4
	Not Stated	4.3	0.0	0.0	15.3	6.5	4.3	1.0	20.3	5.4

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 (2016)

Year Level	Indigenous Status	NSW	VIC	QLD	WA	SA	TAS	ACT	NT	AUS
Year 3	Aboriginal and/or Torre Strait Isl.	5.9	3.0	9.4	6.2	4.5	8.4	2.2	23.1	6.9
	Non-Aboriginal and/or Torre Strait Isl.	92.7	96.2	87.4	92.7	95.3	87.9	95.8	76.2	91.4
	Not Stated	1.5	0.8	3.2	1.1	0.1	3.7	1.9	0.7	1.7
Year 5	Aboriginal and/or Torre Strait Isl.	6.6	3.2	9.0	5.9	4.4	10.1	2.8	27.4	7.3
	Non-Aboriginal and/or Torre Strait Isl.	92.2	96.5	88.8	92.3	95.5	87.8	96.0	72.1	91.4
	Not Stated	1.2	0.3	2.2	1.8	0.1	2.1	1.2	0.4	1.3
Year 7	Aboriginal and/or Torre Strait Isl.	5.6	1.3	7.3	4.1	3.8	7.6	2.5	36.7	5.5
	Non-Aboriginal and/or Torre Strait Isl.	88.4	98.6	90.2	94.4	95.4	87.4	95.3	62.1	91.9
	Not Stated	6.0	0.2	2.5	1.6	0.8	5.0	2.2	1.2	2.6
Year 9	Aboriginal and/or Torre Strait Isl.	5.8	1.2	6.4	4.4	3.7	8.8	2.7	42.3	5.6
	Non-Aboriginal and/or Torre Strait Isl.	88.3	98.4	90.7	93.7	94.9	86.6	94.8	56.3	91.8
	Not Stated	5.8	0.4	2.8	1.8	1.4	4.6	2.6	1.3	2.6

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 (2016)

		NSW	VIC	QLD	WA	SA	TAS	ACT	NT	AUS
Year 3	Major Cities of Australia	75.6	74.1	72.5	82.6	69.5	0.0	99.0	0.0	66.5
	Inner Regional Australia	15.0	16.4	6.6	4.8	6.4	65.9	1.0	0.0	13.2
	Outer Regional Australia	9.5	9.5	16.8	5.2	23.5	33.1	0.0	60.7	16.0
	Remote Australia	0.0	0.0	1.3	7.2	0.0	1.0	0.0	20.6	2.6
	Very Remote Australia	0.0	0.0	2.9	0.3	0.6	0.0	0.0	18.7	1.7
Year 5	Major Cities of Australia	74.0	74.6	71.3	82.3	70.0	0.0	99.2	0.0	66.4
	Inner Regional Australia	15.4	16.3	7.2	5.4	6.3	63.7	0.8	0.0	12.9
	Outer Regional Australia	10.6	9.1	17.8	5.7	23.5	35.8	0.0	56.2	16.4
	Remote Australia	0.0	0.0	1.2	6.4	0.0	0.4	0.0	21.8	2.5
	Very Remote Australia	0.0	0.0	2.5	0.2	0.3	0.0	0.0	22.1	1.8
Year 7	Major Cities of Australia	73.3	78.2	68.7	77.6	74.7	0.0	100.0	0.0	68.6
	Inner Regional Australia	21.2	16.7	11.1	10.7	2.4	78.1	0.0	0.0	17.4
	Outer Regional Australia	5.2	4.8	18.9	9.4	22.7	21.5	0.0	58.1	12.0
	Remote Australia	0.2	0.3	0.3	2.3	0.0	0.0	0.0	28.6	1.4
	Very Remote Australia	0.0	0.0	1.0	0.0	0.3	0.4	0.0	13.3	0.6
Year 9	Major Cities of Australia	73.0	77.7	69.1	75.9	66.4	0.0	100.0	0.0	67.2
	Inner Regional Australia	21.6	17.4	9.8	11.9	19.4	77.5	0.0	0.0	19.2
	Outer Regional Australia	5.2	4.8	20.0	10.0	8.2	22.1	0.0	48.6	10.7
	Remote Australia	0.2	0.1	0.5	2.1	5.9	0.0	0.0	32.4	2.3
	Very Remote Australia	0.0	0.0	0.6	0.0	0.2	0.4	0.0	18.9	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 (2016)

Domain	Year		NSW	VIC	QLD	WA	SA	TAS	ACT	NT	AUS
Reading	Year 3	School	9	6	6	4	2	2	2	2	33
		Student	222	127	144	84	56	42	43	51	769
	Year 5	School	9	6	6	4	1	2	3	2	33
		Student	222	139	135	97	26	40	44	53	756
	Year 7	School	13	6	8	4	2	2	1	1	37
		Student	304	131	174	105	48	35	11	23	831
	Year 9	School	13	5	8	3	3	2	1	0	35
		Student	280	97	178	80	125	38	19	0	817
	All	School	44	23	28	15	8	8	7	5	138
		Student	1028	494	631	366	255	155	117	127	3173
Language Conventions (Spelling, Grammar and Punctuation)	Year 3	School	11	7	5	4	2	2	2	2	35
		Student	321	157	109	91	40	47	52	42	859
	Year 5	School	11	8	5	4	2	2	2	2	36
		Student	290	186	112	89	53	49	28	37	844
	Year 7	School	13	7	7	5	2	2	2	0	38
		Student	304	149	154	109	49	46	37	0	848
	Year 9	School	13	6	7	4	4	2	2	0	38
		Student	261	123	162	90	150	35	32	0	853
	All	School	48	28	24	17	10	8	8	4	147
		Student	1176	615	537	379	292	177	149	79	3404
Numeracy	Year 3	School	9	8	6	3	3	2	2	2	35
		Student	249	197	128	64	63	52	41	41	835
	Year 5	School	9	8	6	3	3	2	2	2	35
		Student	234	175	135	84	68	55	50	43	844
	Year 7	School	13	8	9	5	1	2	2	1	41
		Student	279	187	206	120	22	53	37	19	923
	Year 9	School	13	6	9	5	2	1	2	1	39
		Student	272	122	194	116	64	21	33	20	842
	All	School	44	30	30	16	9	7	8	6	150
		Student	1034	681	663	384	217	181	161	123	3444
All	Total	School	136	81	82	48	27	23	23	15	435
		Student	3238	1790	1831	1129	764	513	427	329	10021

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 2016 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 2016 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 July 2016. These data were used for the generation of the NAPLAN 2016 national summary information. The complete set of full cohort data used in the production of the national report was delivered in December 2016. 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

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

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

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

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, SAS and R 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 2016 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 2016 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 2016 tests of adjacent year levels (Year 3 and Year 5, Year 5 and Year 7, Year 7 and Year 9), based on the 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 2016, students in Years 3 and 5 responded to one narrative prompt for the writing assessment, while 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. A new combined writing scale was developed by equating the 2016 narrative writing to the 2011 persuasive writing scale using common item traits across the narrative and persuasive writing rubrics. The details of this method and 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 2016 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 2016 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:

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

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:

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

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:

$$V = U + (1+\frac{1}{M})B_M \tag{4.5}$$

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 2016. 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 2016, 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 2016 performance in the reports.

Two additional sets of standard errors were calculated, one set for the comparisons of means between 2016 and the baseline years, and one set for the comparisons of means between 2016 and 2015. These took into consideration, in addition to sampling and measurement errors, the errors due to the equating of measurement scales across administrations. 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:

$$g = \frac{m_2 - m_1}{s_p} \tag{4.6}$$

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

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

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:

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

4.6 Stratified Random Sampling and Multidimensional Linear Regression

As mentioned earlier, plausible values for the 2016 NAPLAN administration were obtained using a procedure that combined MDLR analyses of stratified random samples from the census data together with analyses of the complete census data. This procedure was first implemented during the 2015 administration and is described below. Figure 4.1 presents a flowchart showing the 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 the 2011 base writing scale, 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.

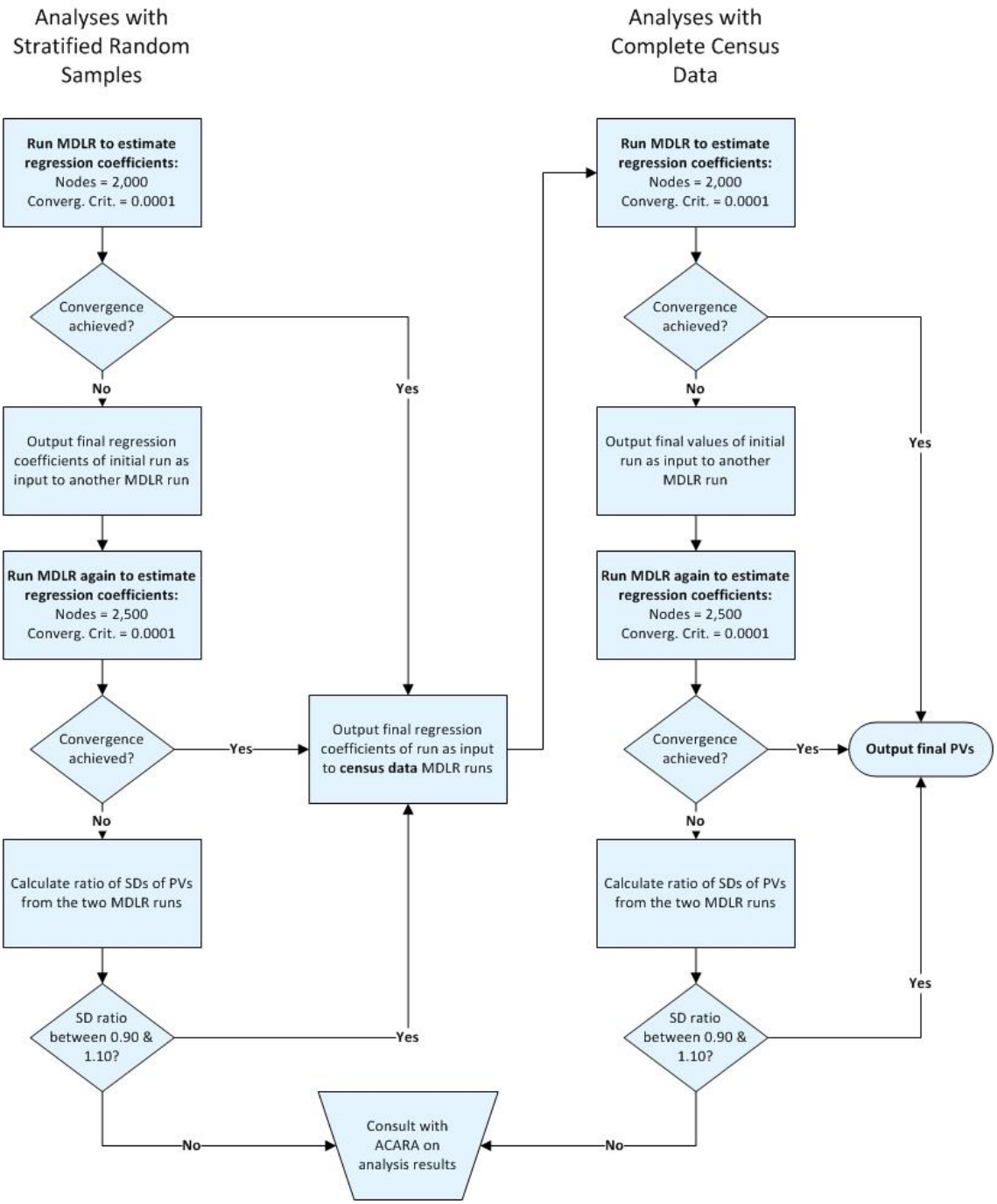


Figure 4.1. Non-writing MDLR process with TAAs (using stratified random sample).

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 2016, 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 0.90 for the reading tests, between 0.90 and 0.92 for the spelling tests, between 0.76 and 0.79 for the grammar and punctuation tests and between 0.84 and 0.93 for the numeracy tests. The reliability for the writing test is 0.95. 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 2016 Tests

Year Level	Reading	Spelling	Grammar and Punctuation	Numeracy	Writing
3	0.90	0.90	0.79	0.84	0.95*
5	0.85	0.91	0.76	0.90	
7	0.87	0.92	0.78	0.93	
9	0.88	0.90	0.79	0.93	

*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 0.37 to 0.48, with the Year 7 test having the lowest average item discrimination. The spelling tests have the highest average item discriminations, ranging from 0.54 to 0.57. The averages for the grammar and punctuation tests are between 0.39 and 0.43, and those for the numeracy tests are between 0.40 and 0.45. 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., 0.83) 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 2016 Tests

Year Level	Reading	Spelling	Grammar and Punctuation	Numeracy (ALL)	Numeracy (NC)	Numeracy (C)	Writing
3	0.48	0.55	0.43	0.40			
5	0.40	0.57	0.39	0.45			
7	0.37	0.54	0.39	0.44	0.42	0.46	0.83*
9	0.40	0.54	0.39	0.44	0.46	0.42	

*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 8 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.

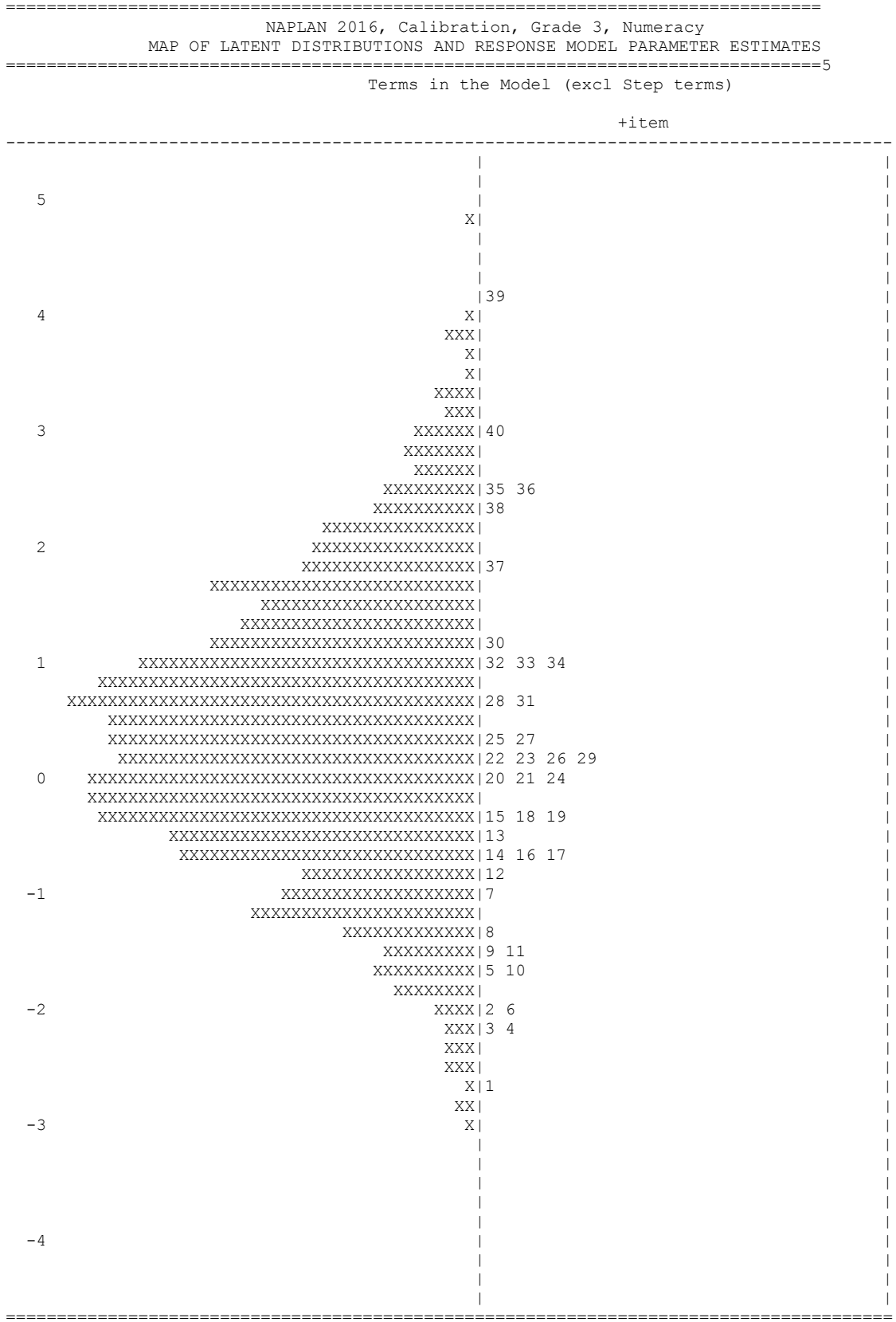


Figure 5.1. Example of a Wright map for Year 3 Numeracy.

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 13 items having Infit greater than 1.20. Regarding classical test statistics, there was a total of 26 items across the 16 tests with discrimination less than 0.25. There was a total of 26 items with facility higher than 0.90 and 16 items with facility less than 0.10. Figure 5.2 shows the ICC of one reading item (i.e., Item r3q06) with an Infit statistic close to 1.07. In contrast, Figure 5.3 shows the ICC of one numeracy item (i.e., Item n9NCq12) with an Infit statistic (i.e., 1.27) 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 paragraphing and puncutation (i.e., 1.61 and 1.27, 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 2016 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**	38	0	37	1	2	0
	5	38	4	37	1	5	1
	7	50	5	50	0	2	0
	9	50	2	50	0	3	0
Spelling	**3**	25	0	24	1	1	3
	5	25	0	25	0	0	0
	7	30	0	30	0	1	3
	9	30	0	30	0	1	2
Grammar and Punctuation	**3**	26	1	25	1	2	0
	5	26	2	26	0	2	0
	7	28	1	28	0	0	0
	9	28	3	28	0	1	0
Numeracy	**3**	35	1	35	0	2	2
	5	40	0	40	0	1	1
	7	64	4	59	5	0	2
	9	64	3	60	4	3	2

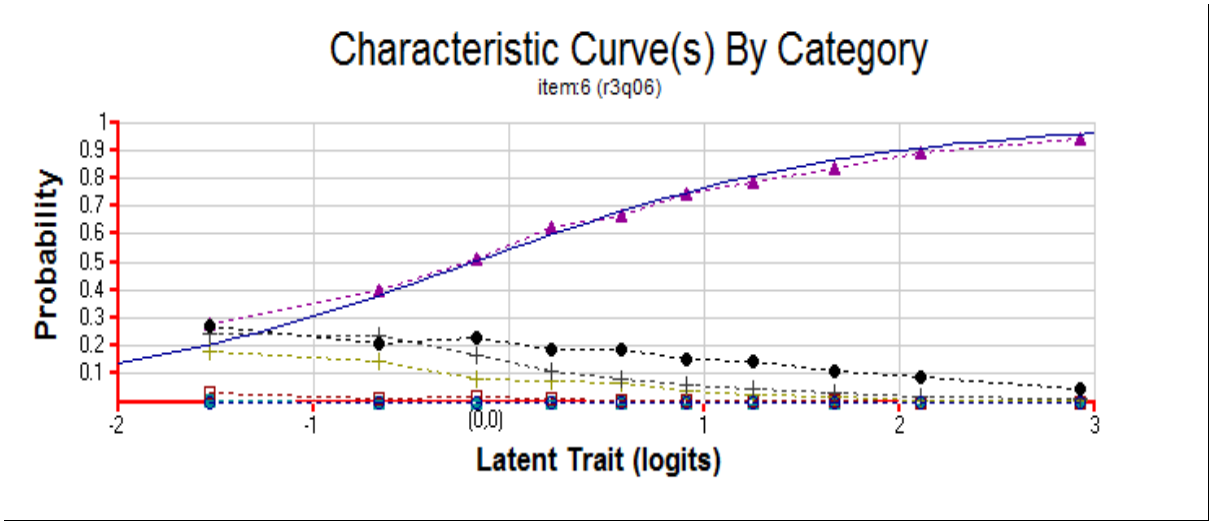


Figure 5.2. Item characteristic curves for an item with Infit =1.07

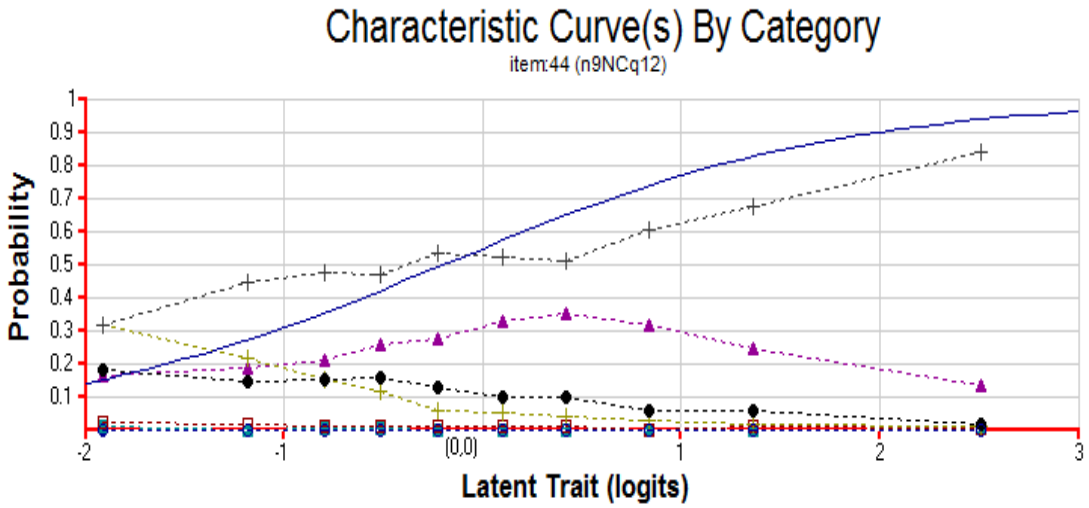


Figure 5.3. Item characteristic curves for an item with Infit > 1.27

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 lc9q20) 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., 0.52) 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 grammer and punctuation item (Item lc5q37) with an absolute adjusted difference of 0.50 or greater. This item was relatively easier (i.e., 0.86) 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 n3q06) with an absolute adjusted difference of 0.60 or greater. This item was relatively easier (i.e., 0.70) 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 4 items in reading, 5 items in spelling, 5 items in grammar and punctuation and 10 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.

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	38	0	25	2	26	0	35	1
5	38	1	25	1	26	0	40	2
7	50	1	30	2	28	0	64	2
9	50	1	30	3	28	2	64	7

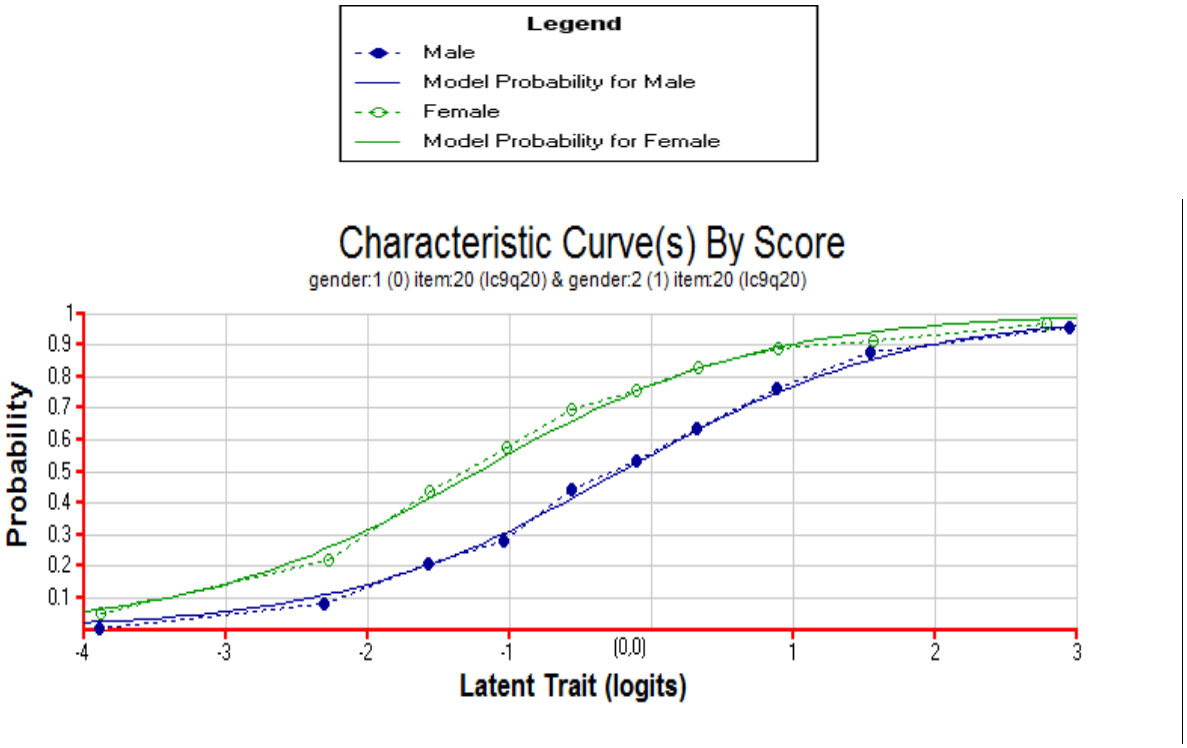


Figure 5.3. Example of item characteristic curves displaying gender DIF.

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	38	1	25	0	26	1	35	1
5	38	1	25	2	26	3	40	2
7	50	0	30	4	28	2	64	1
9	50	3	30	2	28	2	64	5

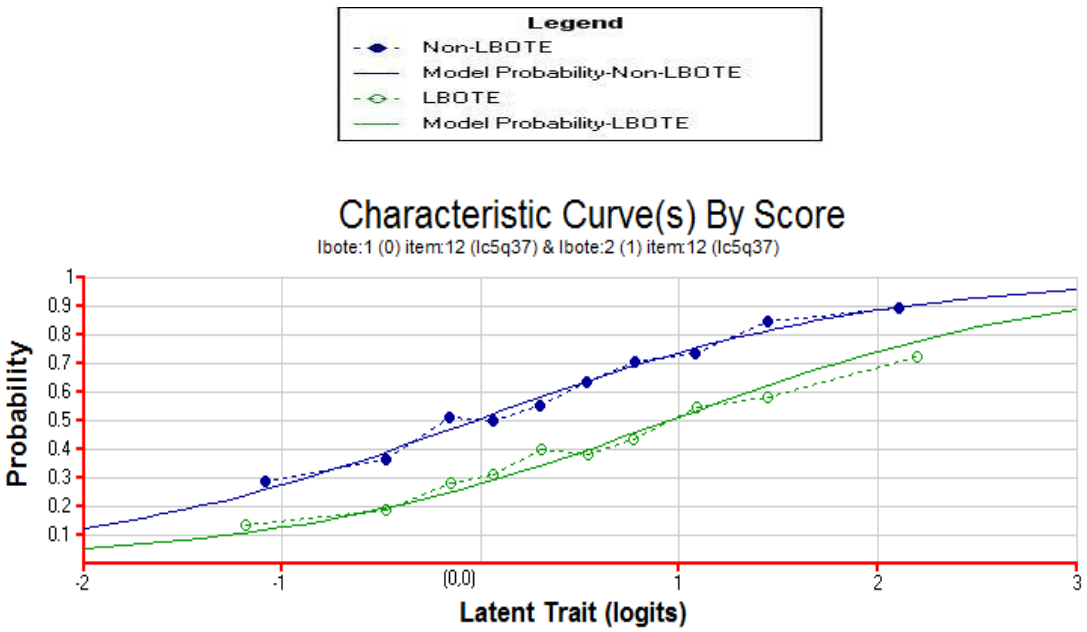


Figure 5.4. Example of item characteristic curves displaying LBOTE DIF

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	38	8	25	0	26	5	35	10
5	38	8	25	0	26	7	40	3
7	50	6	30	1	28	1	64	21
9	50	7	30	2	28	10	64	10

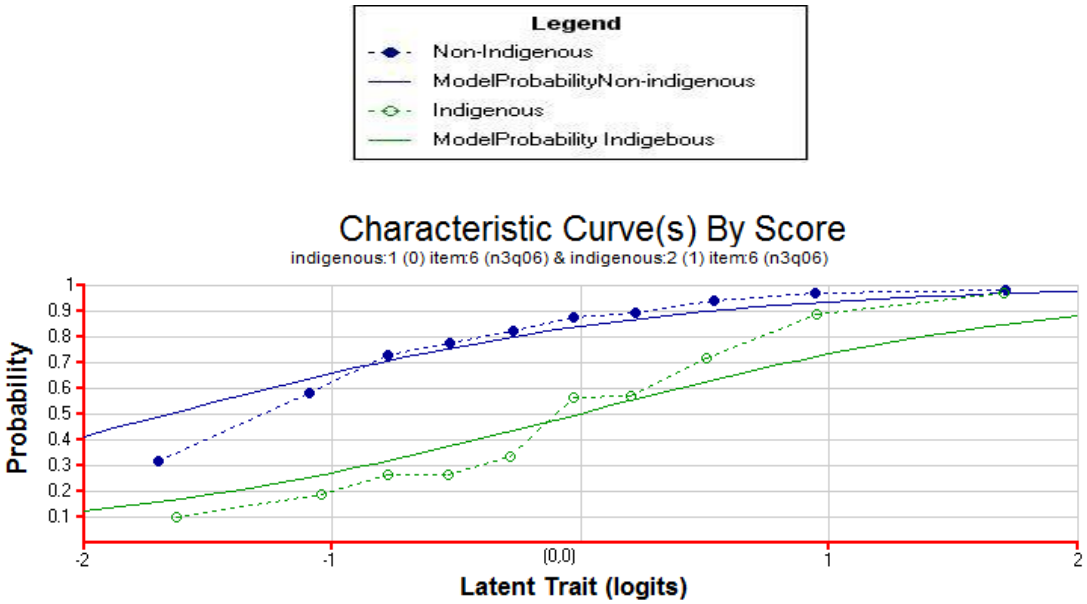


Figure 5.5. Example of item characteristic curves displaying Indigenous DIF

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	E	H
Reading	3	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
	5	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9	1	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0
Spelling	3	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
	5	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
	7	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
	9	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
GP	3	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
	5	1	0	1	0	0	1	0	0	1	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
Numeracy	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
	9	0	0	1	0	1	2	0	1	2	1	0	0	2	1	1	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., scales are aligned so 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; namely, Years 3 and 5, Years 5 and 7 and Years 7 and 9. The responses to the common items are represented as the shaded columns in Figure 6.1 that overlap between adjacent year levels. For the purpose of monitoring student achievement over time, the 2016 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 2015 were used for common-person equating again in 2016, 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 2016 main NAPLAN test forms. The equating data were used to equate the 2016 tests onto the existing NAPLAN reporting scales.

The horizontal equating provides one basis for placing the 2016 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 2016 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 2016 a narrative writing task was administered in NAPLAN and the resulting scale was equated to the existing persuasive writing scale. In 2016 as in the previous year, 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 2016 tests for reading, spelling, grammar and punctuation and numeracy. Each student in the equating sample completed an equating form in addition to the NAPLAN 2016 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 secure equating form for each domain at each year level had already been scaled onto the historic NAPLAN scale in 2009. The first step is to place the NAPLAN 2016 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 is 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.

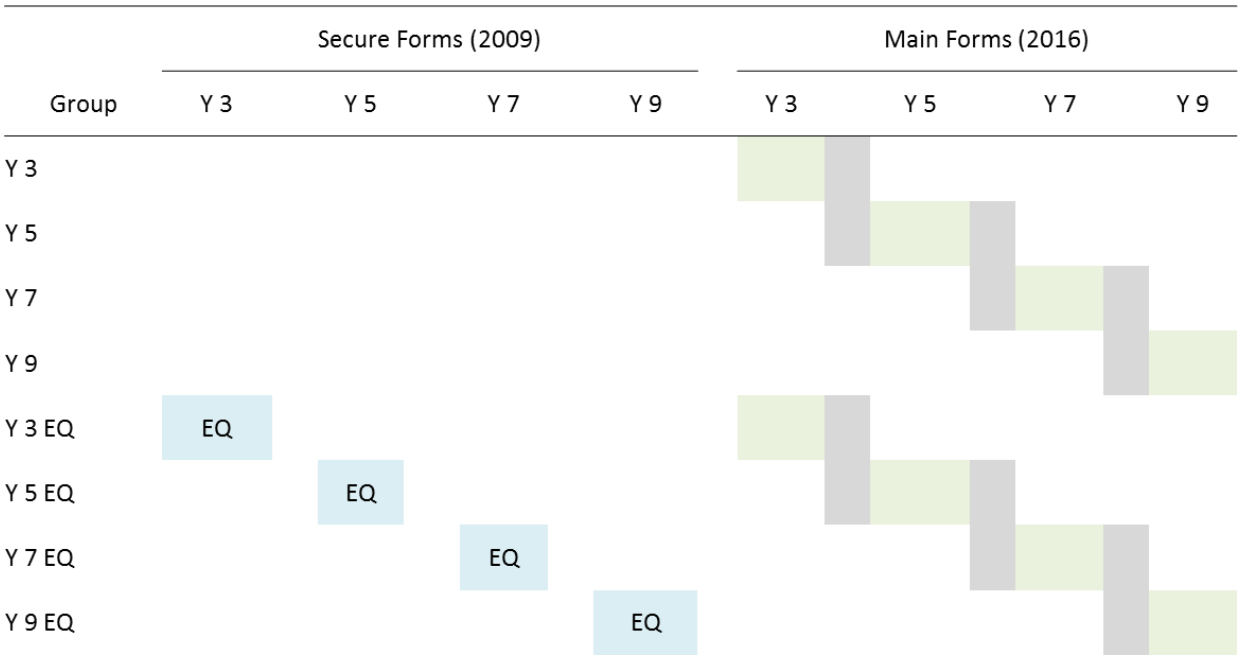


Figure 6.1. Equating design for each assessment domain.

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 2016 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 2016 scale for each of the equating forms. The set of 2016 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 2016 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. Certain items, particularly in the Reading tests in 2011, have been added to replace other items and the locations were placed on the NAPLAN scale in the first year they were used. These items were used as links in subsequent years.

Before Review **After Review**

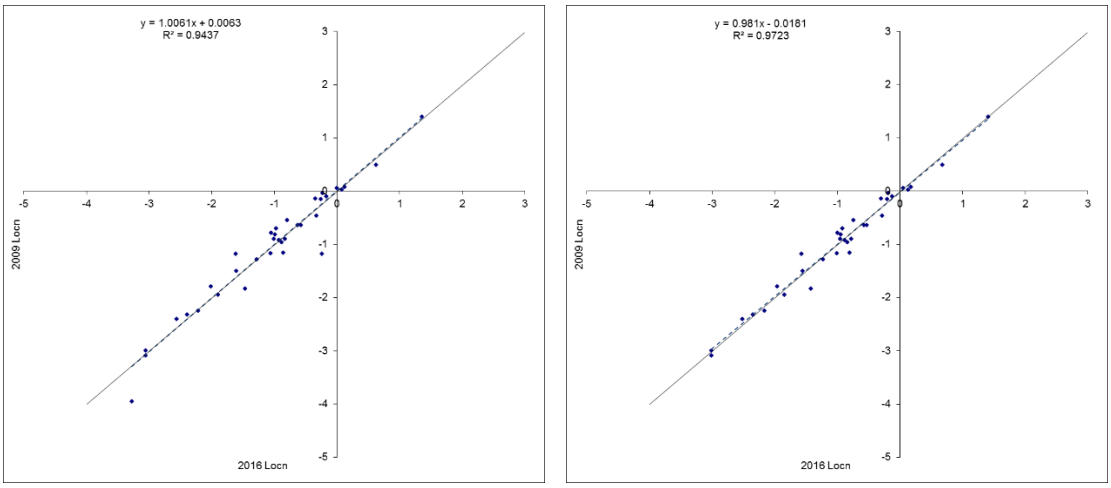


Figure 6.2. Links review for Reading equating form Year 3 (2016 vs. 2009).

Before Review **After Review**

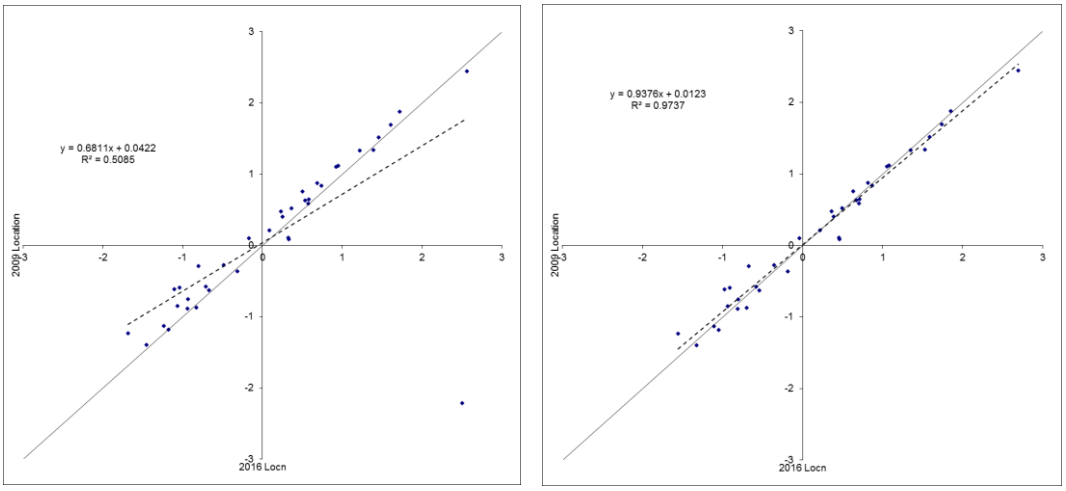


Figure 6.3. Links Review for Reading equating form Year 5 (2016 vs. 2009).

Before Review **After Review**

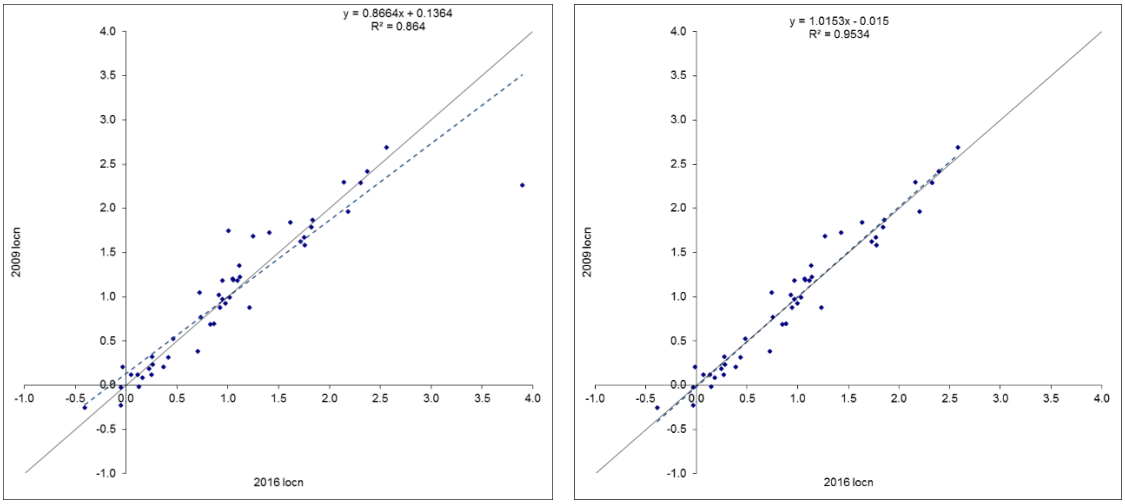


Figure 6.4. Links Review for Reading equating form Year 7 (2016 vs. 2009).

Before Review **After Review**

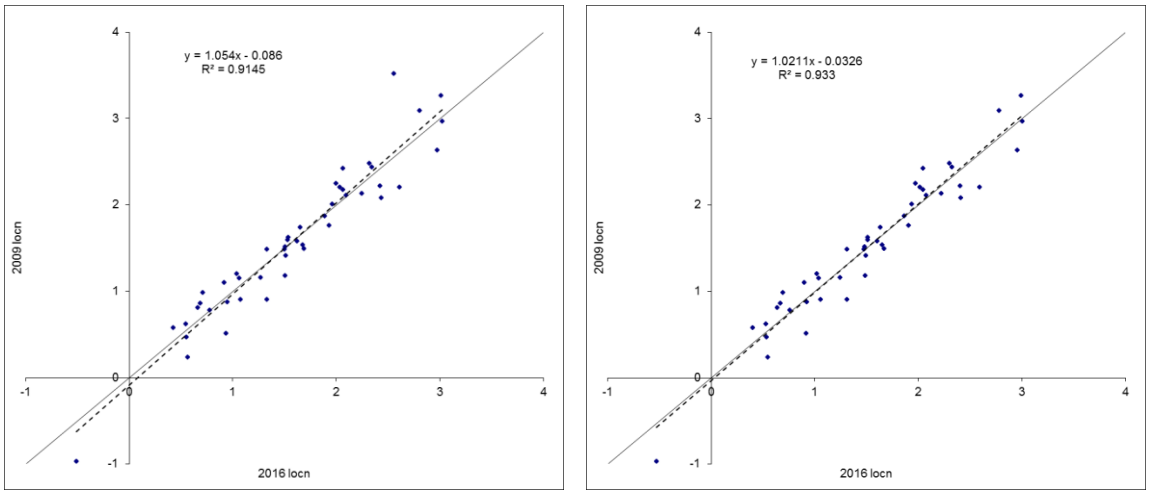


Figure 6.5. Links review for Reading equating form Year 9 (2016 vs. 2009).

Before Review **After Review**

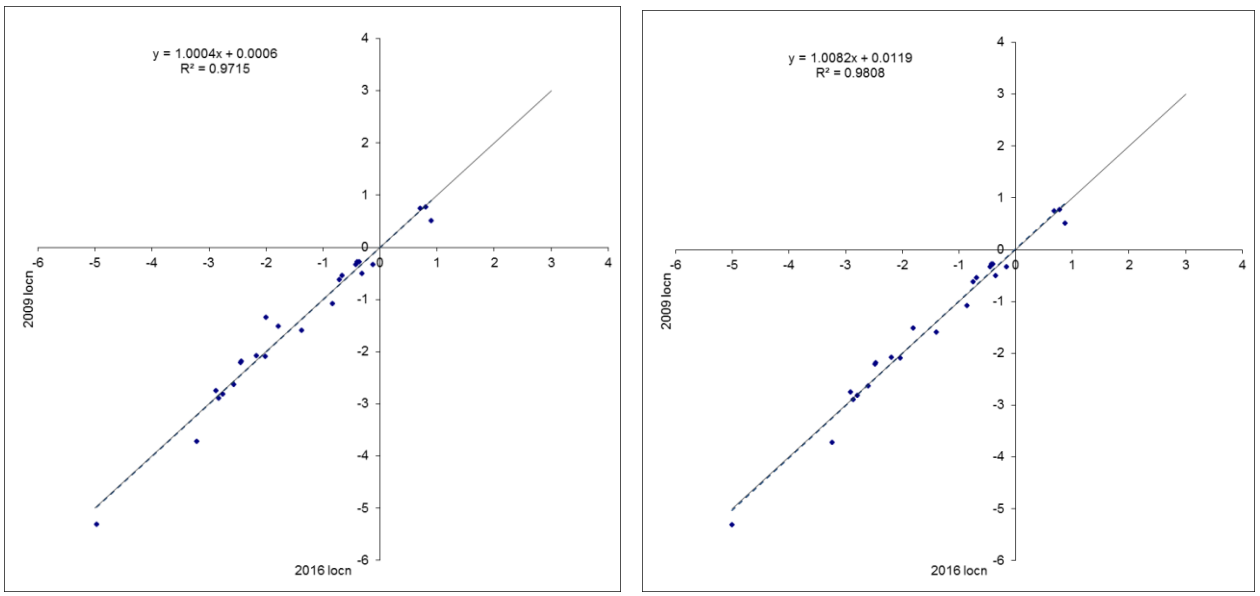


Figure 6.6. Links review for Spelling equating form Year 3 (2016 vs. 2009).

Before Review **After Review (no omissions)**

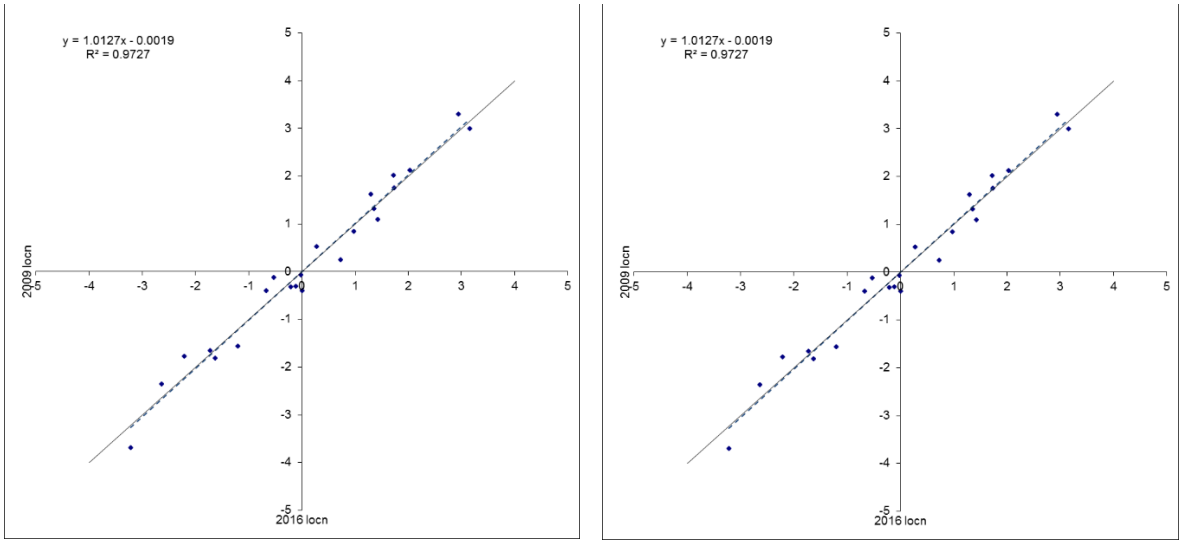


Figure 6.7. Links review for Spelling equating form Year 5 (2016 vs. 2009).

Before Review **After Review (no omissions)**

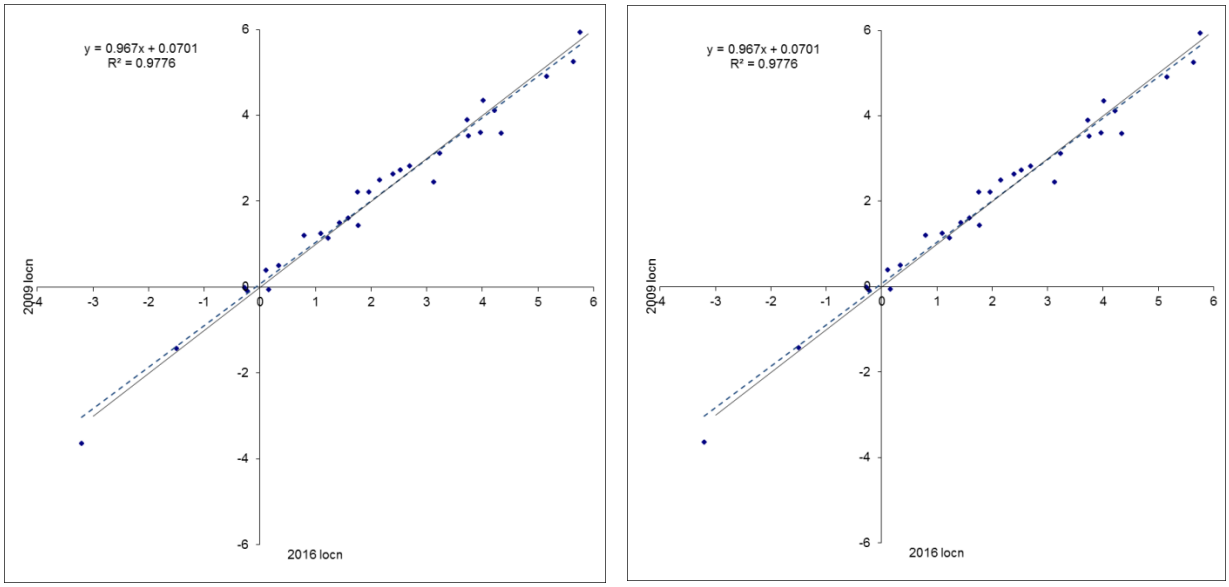


Figure 6.8. Links Review for Spelling equating form Year 7 (2016 vs. 2009).

Before Review **After Review**

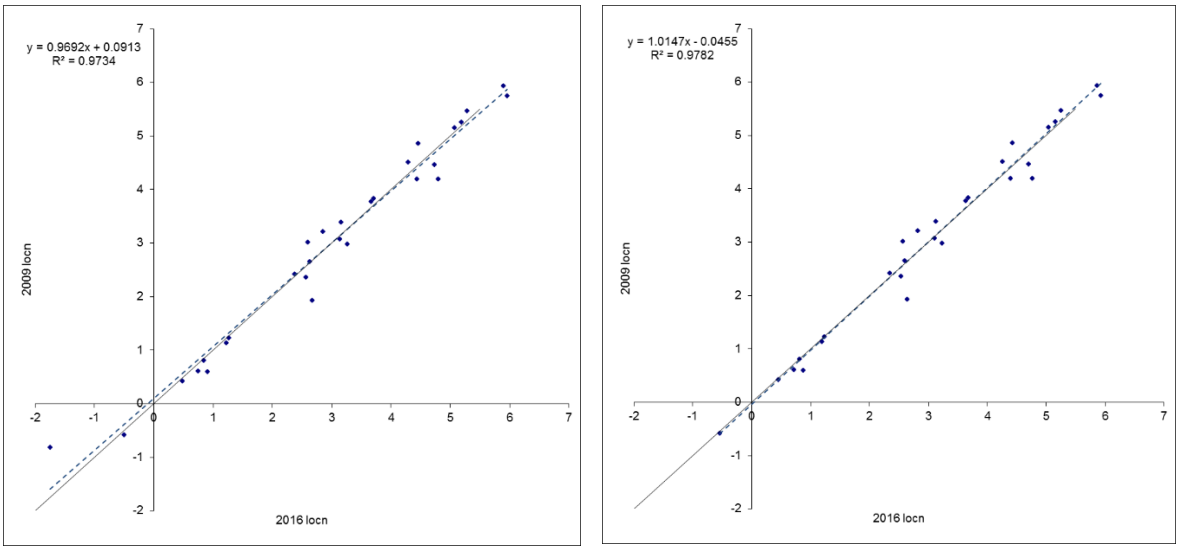


Figure 6.9. Links Review for Spelling equating form Year 9 (2016 vs. 2009).

Before Review **After Review (no omissions)**

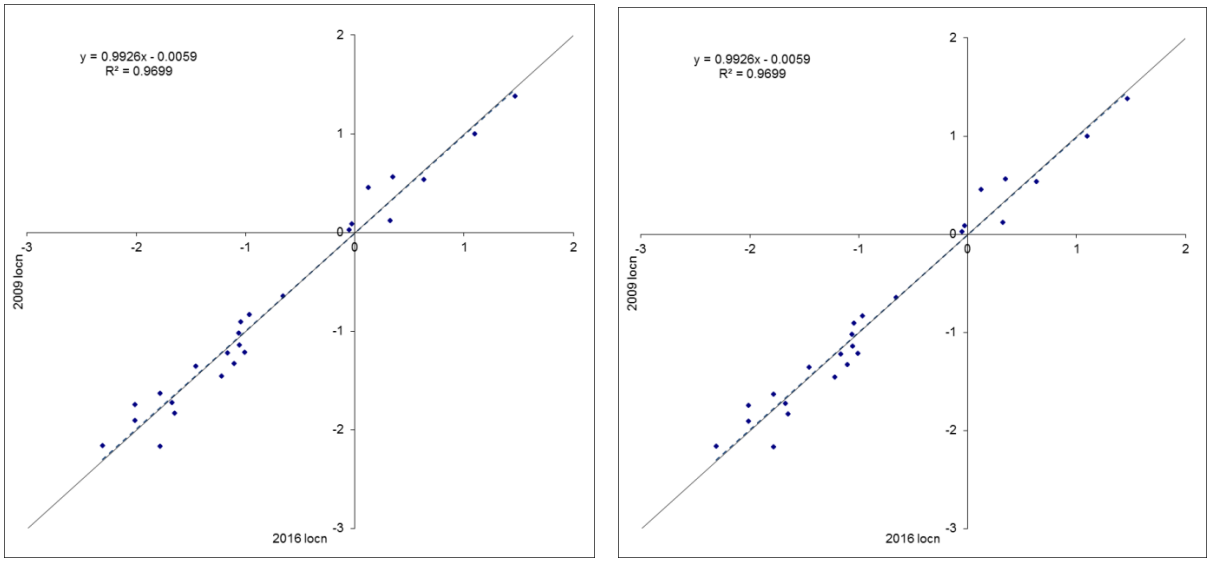


Figure 6.10. Links review for Grammar and Punctuation equating form Year 3 (2016 vs. 2009).

Before Review **After Review (no omissions)**

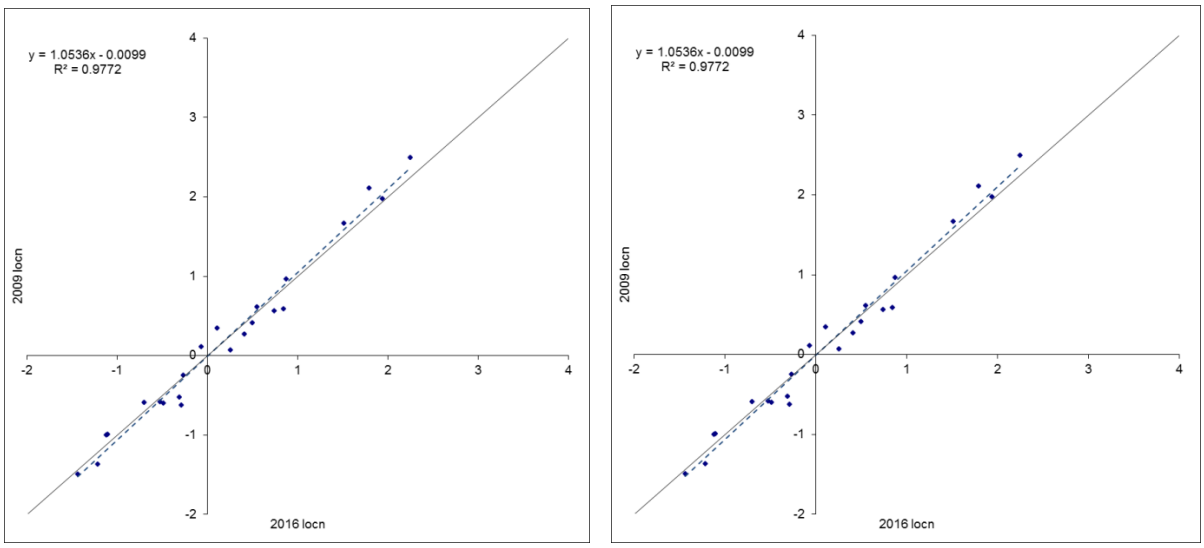


Figure 6.11. Links Review for Grammar and Punctuation equating form Year 5 (2016 vs. 2009).

Before Review **After Review (no omissions)**

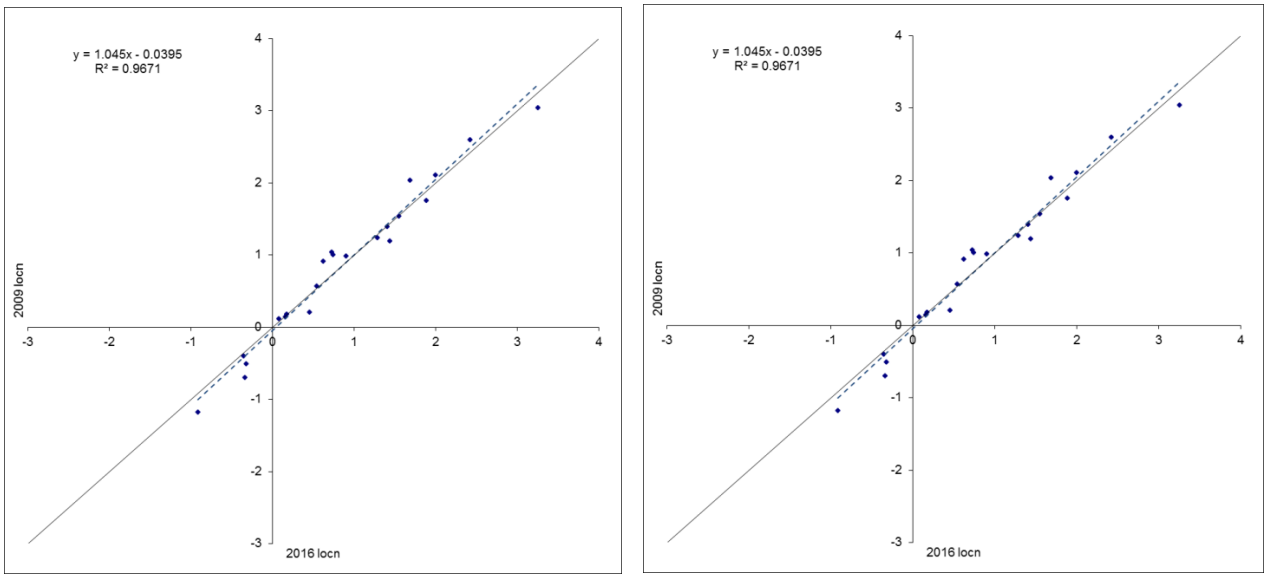


Figure 6.12. Links Review for Grammar and Punctuation equating form Year 7 (2016 vs. 2009).

Before Review **After Review**

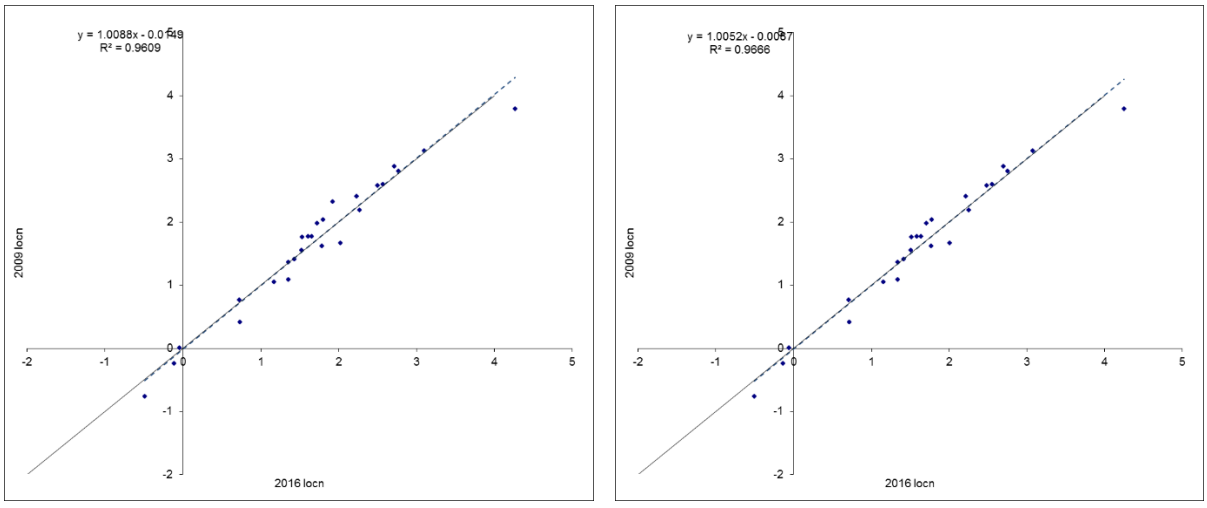


Figure 6.13. Links review for Grammar and Punctuation equating form Year 9 (2016 vs. 2009).

Before Review **After Review**

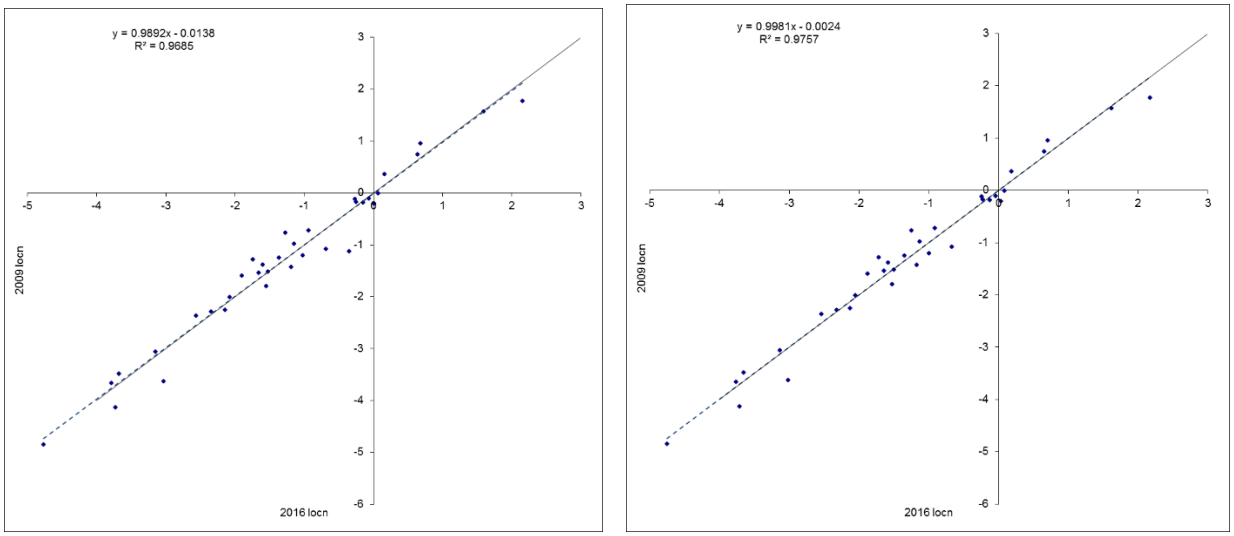


Figure 6.14. Links review for Numeracy equating form Year 3 (2016 vs. 2009).

Before Review **After Review**

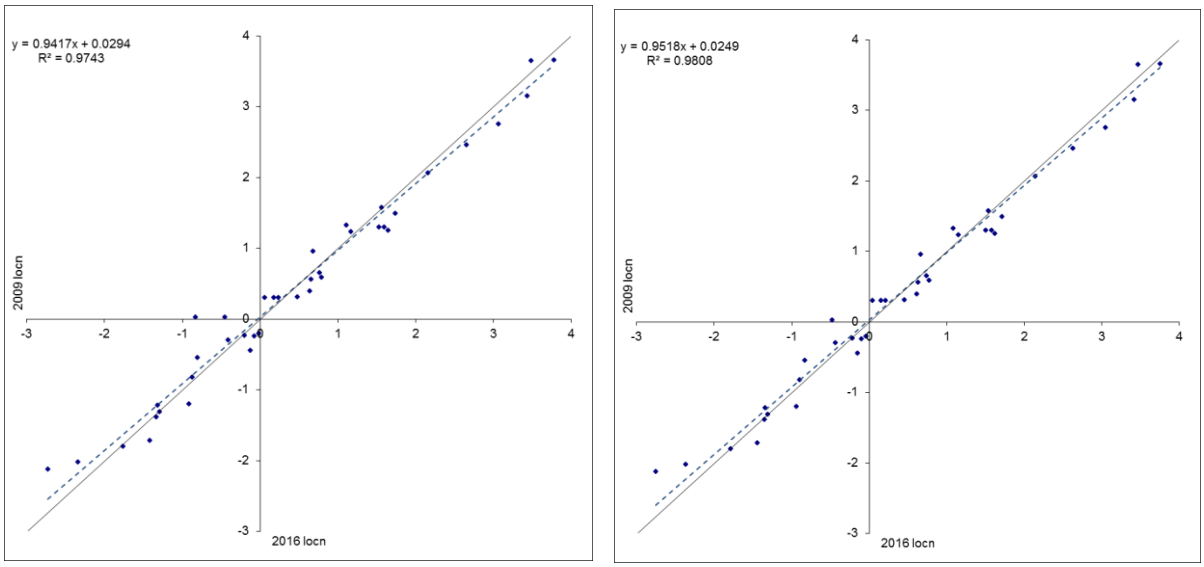


Figure 6.15. Links review for Numeracy equating form Year 5 (2016 vs. 2009).

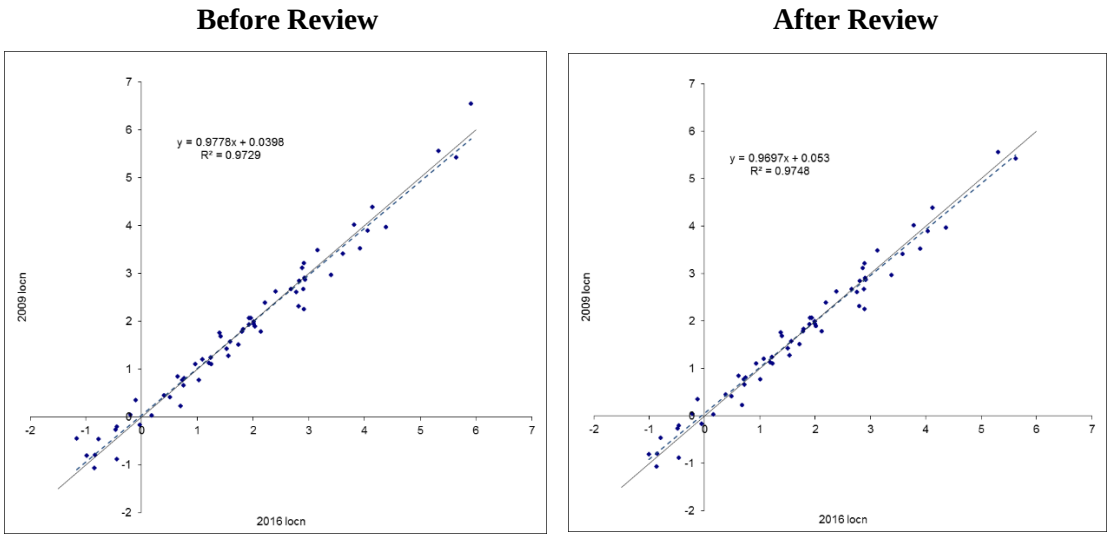


Figure 6.16. Links review for Numeracy equating form Year 7 (2016 vs. 2009).

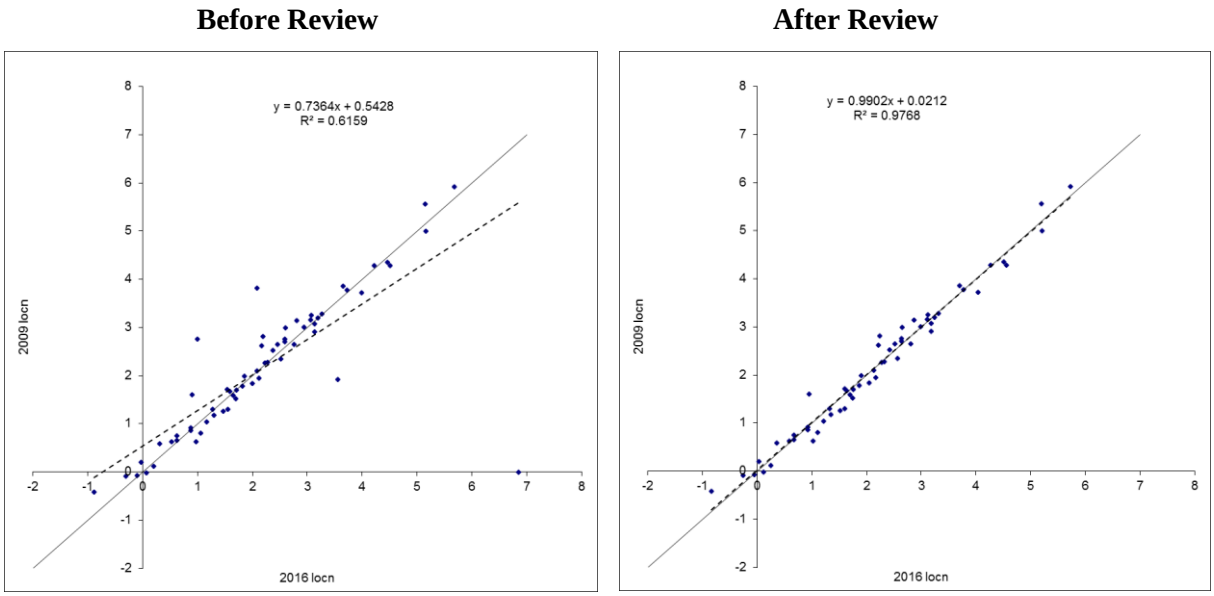


Figure 6.17. Links review for Numeracy equating form Year 9 (2016 vs. 2009).

As part of the equating process, the secure equating forms were calibrated jointly with the NAPLAN 2016 forms based on response data from an equating group of students. The locations of the equating items from the 2016 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 2016 equating forms onto the historic NAPLAN reporting scale, thus aligning the 2016 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 2016 calibration, with the 2009 item locations of the same set of link items.

Table 6.1. Horizontal Shifts for Equating the 2016 Item Locations with 2009 Item Locations

Year Level	Reading	Spelling	Grammar & Punctuation	Numeracy
Year 3	-0.710	-0.896	-0.015	-1.124
Year 5	0.421	0.824	0.752	0.172
Year 7	1.534	2.421	1.423	1.482
Year 9	1.886	3.426	1.963	2.266

The horizontal equating of each of the 2016 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 2016 tests and both sets of results were taken into consideration in determining the final shifts. The vertical equating of the 2016 tests is described in the next section.

6.3 Common-Item Vertical Equating of NAPLAN 2016 Tests

As in previous years of testing, the 2016 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 item characteristic curve (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 necessarily 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, and based on visual inspection of the level of discrimination evident in the ICC for the item. 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 standard 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 2016 Reading Tests

Reading – Year 3/Year 5

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

Before Review **After Review**

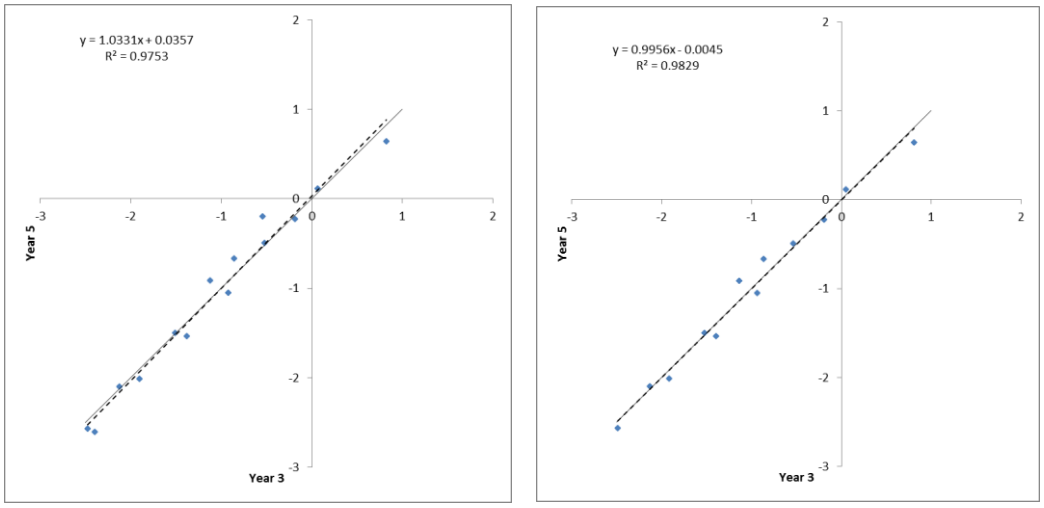


Figure 6.18. Links review for Reading Year 3 and Year 5.

Reading – Year 5/Year 7

Figure 6.19 shows the Year5/Year 7 reading links before and after review. Four items were omitted. Of these, two had high discrimination that affected the contribution to the shift constant in the predicted direction. The other two had low and very low levels of discrimination that affected the shift constant in the prediction direction.

Before Review **After Review**

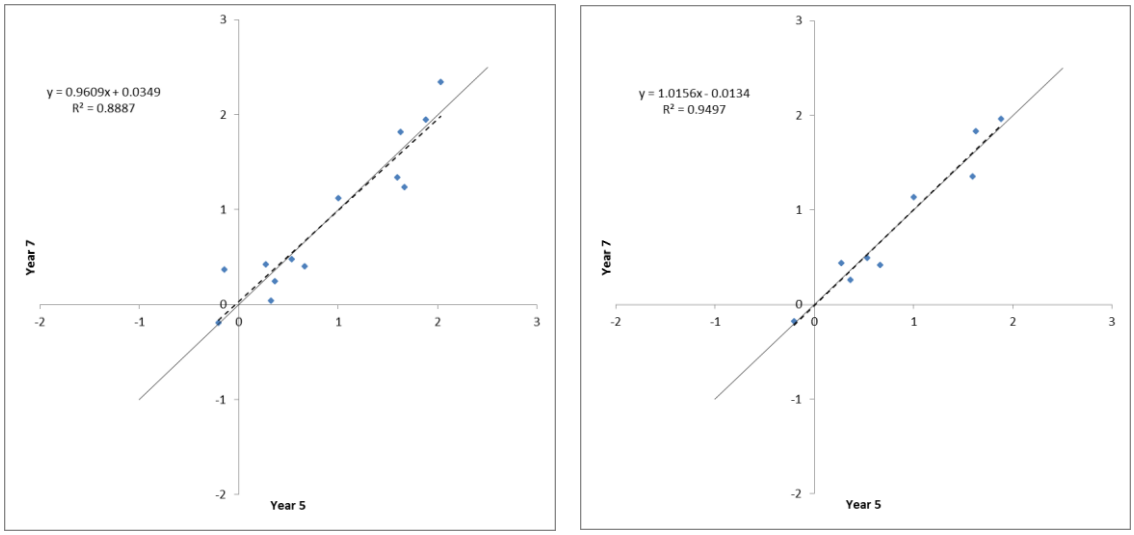


Figure 6.19. Links review for Reading Year 5 and Year 7

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.

Before Review **After Review**

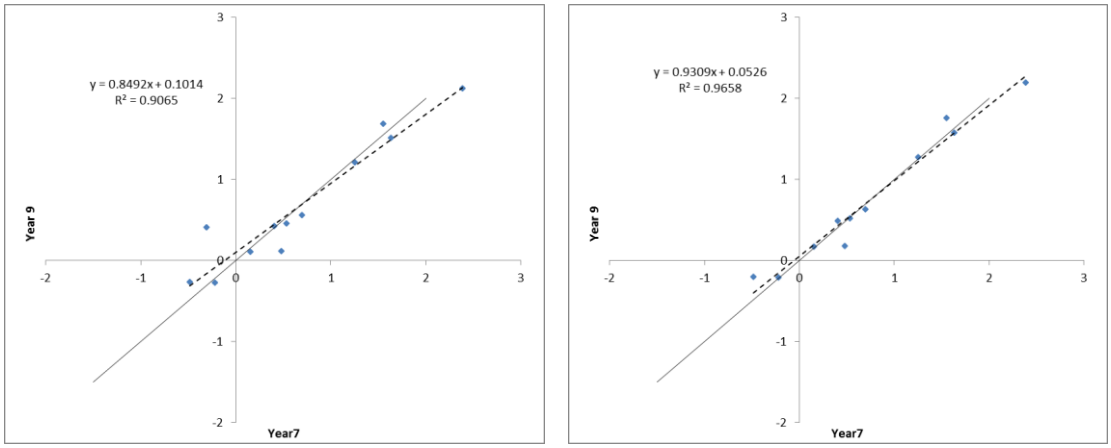


Figure 6.20. Links review for Reading Year 7 and Year 9.

Vertical Equating of Spelling Tests

Spelling – Year 3/Year 5

The Year 3/Year 5 vertical equating is summarised in Figure 6.21. No omissions were necessary.

Before Review **After Review (no omissions)**

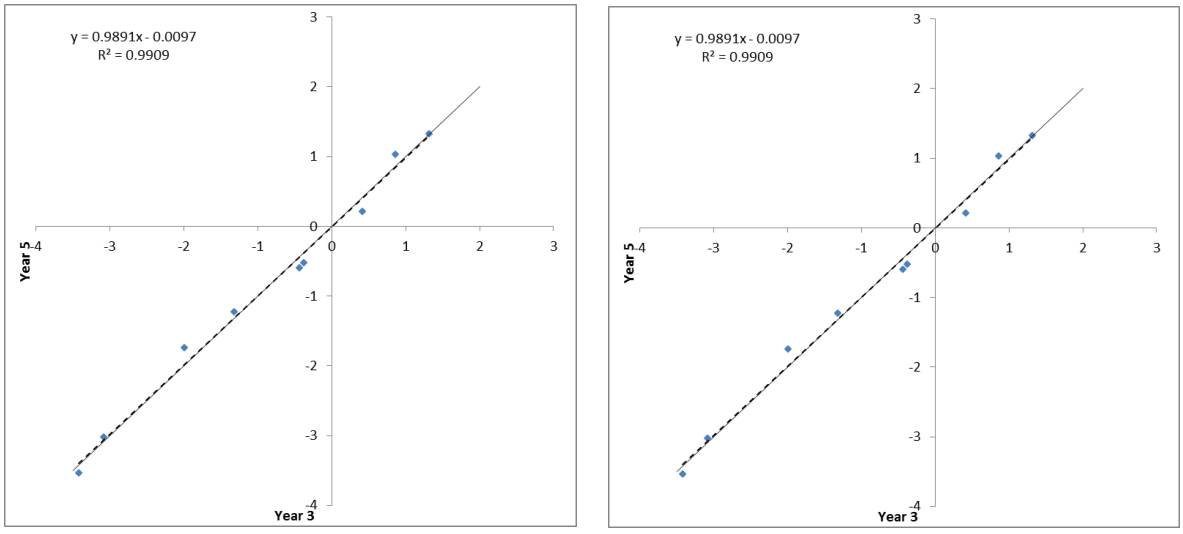


Figure 6.21. Links review for Spelling Year 3 and Year 5.

Spelling – Year 5/Year 7

The Year 5/ Year 7 links are shown in Figure 6.22. One item was omitted due to cross-year level DIF.

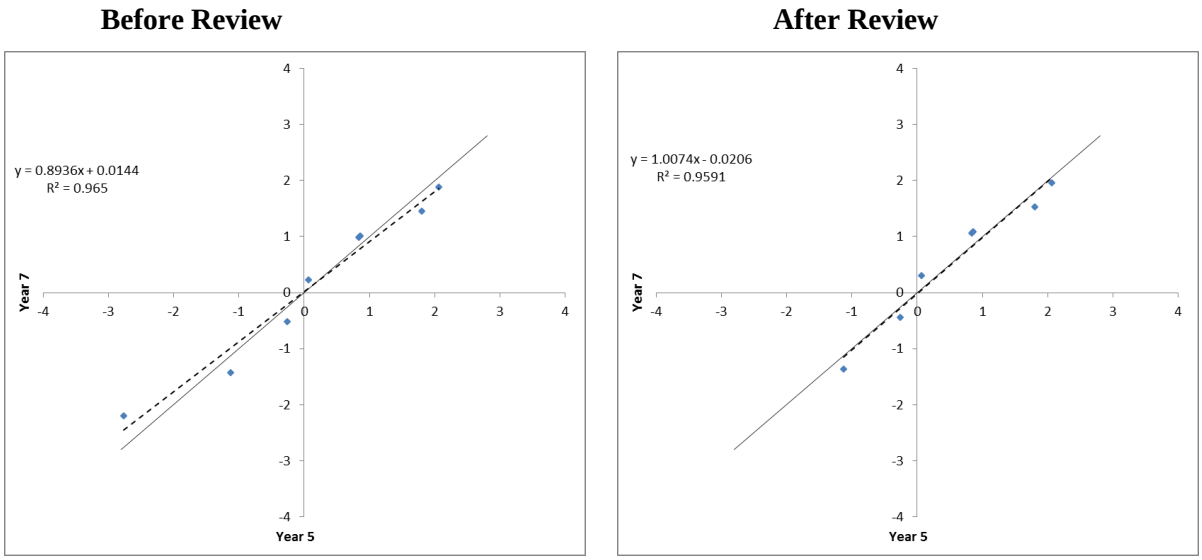


Figure 6.22. Links review for Spelling Year 5 and Year 7.

Spelling – Year 7/Year 9

The Year 7/ Year 9 links are summarised in Figure 6.23. One very easy item was omitted due to cross-year level DIF.

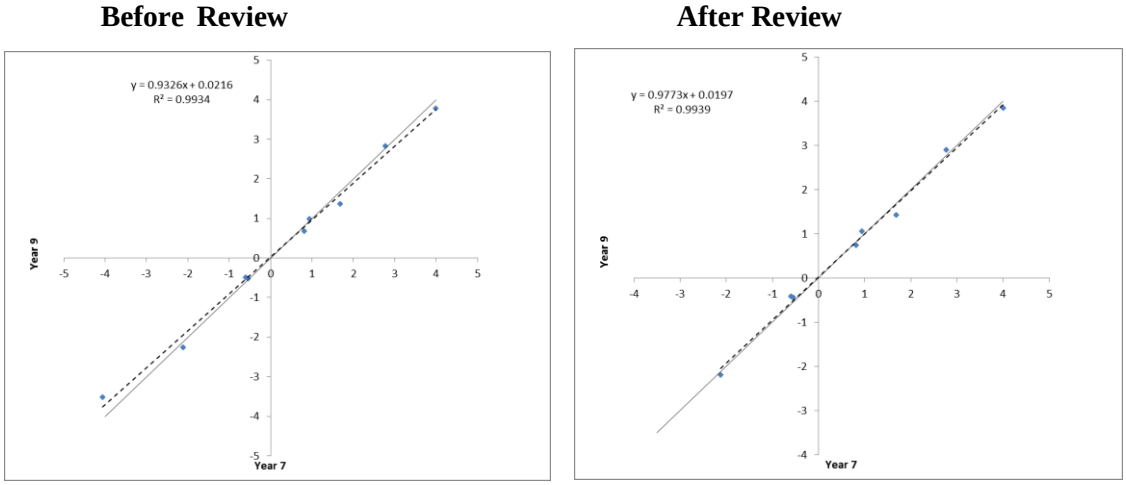


Figure 6.23. Links review for Spelling Year 7 and Year 9.

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: one due to high discrimination and which also exceeded the DIF criterion, the other due to cross-year level DIF.

Before Review **After Review**

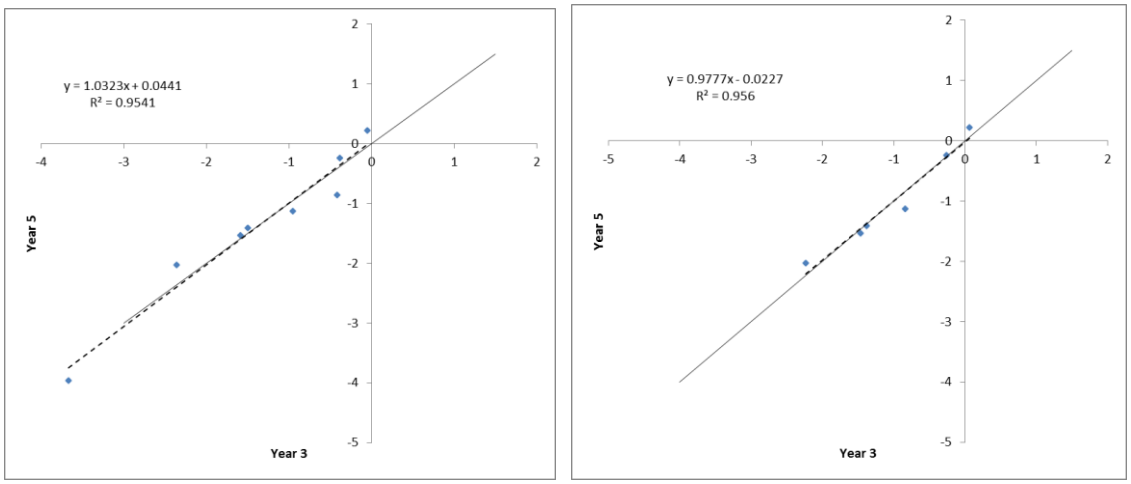


Figure 6.24. Links review for grammar and punctuation Year 3 and Year 5.

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. Three items were omitted. All exceeded the DIF criterion and there was noticeable misfit for one of the items.

Before Review **After Review**

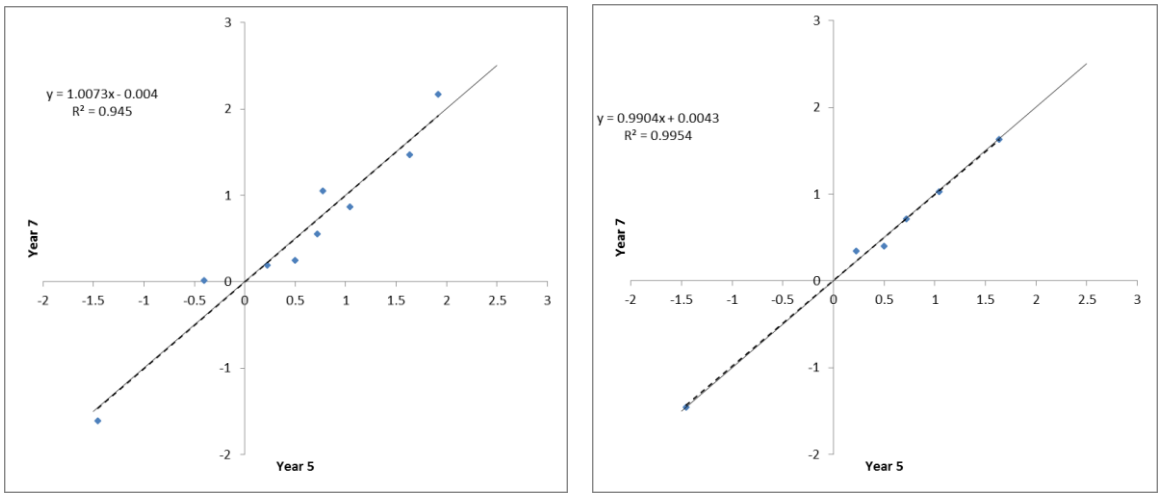


Figure 6.25. Links review for grammar and punctuation Year 5 and Year 7.
Grammar and Punctuation – Year 7/Year 9

Figure 6.26 shows the scatterplots for Year 7/ Year 9 vertical links before and after review. No omissions were necessary.

Before Review **After Review (no omissions)**

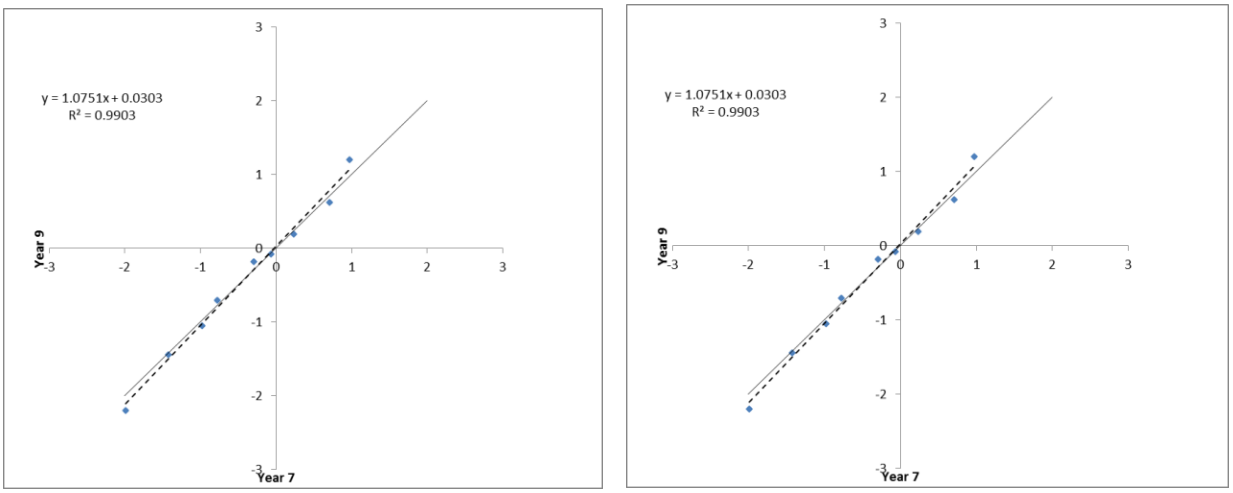


Figure 6.26. Links review for Grammar and Punctuation Year 7 and Year 9.

Vertical Equating of 2016 Numeracy Tests

The quality of the 2016 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. Both of these had high discrimination that affected the shift in the predicted direction and both had cross-year level DIF that exceeded the criterion level.

Before Review **After Review**

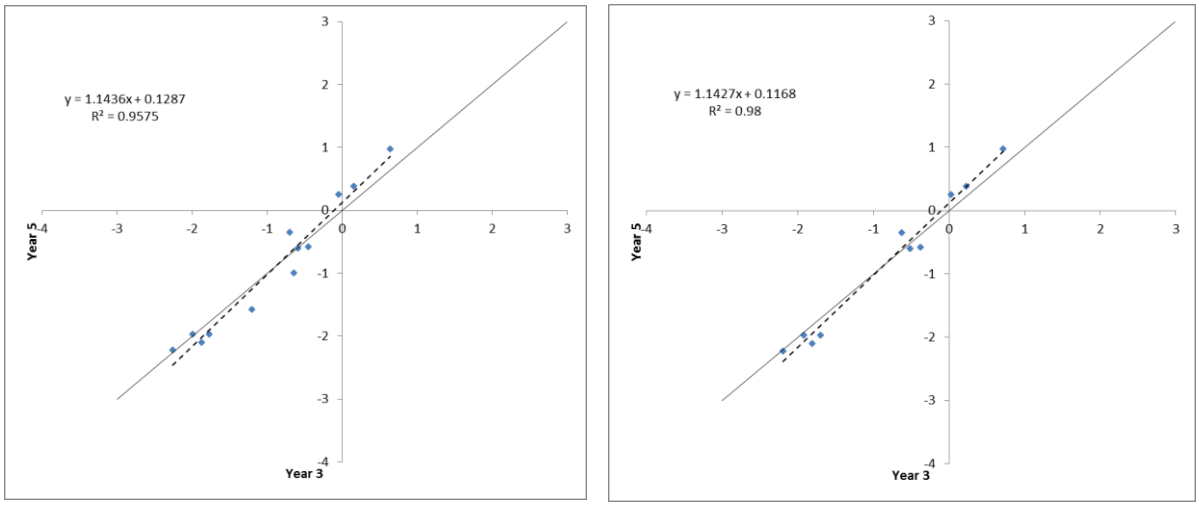


Figure 6.27. Links review for Numeracy Year 3 and Year 5

Numeracy – Year 5/Year 7

Figure 6.28 shows the scatterplot before and after review for numeracy Years 5 and 7. Three items were omitted. One r item had high discrimination that affected the shift in the predicted direction; the other two had cross-year level DIF that exceeded the criterion level.

Before Review **After Review**

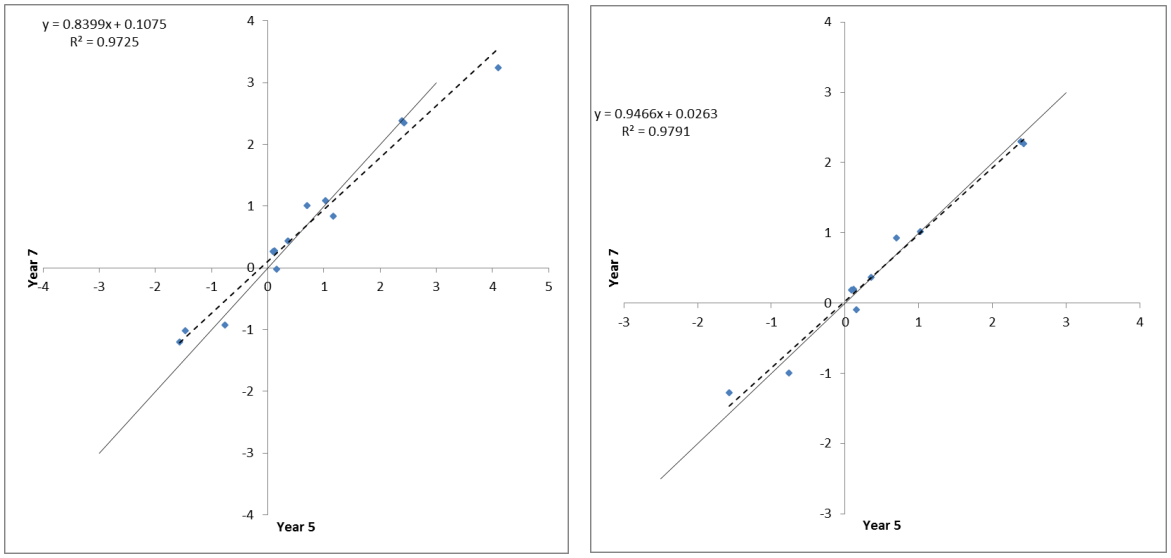


Figure 6.28. Links review for Numeracy Year 5 and Year 7.

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. Nine items were omitted sequentially because the cross-year level DIF exceeded the criterion level.

Before Review **After Review**

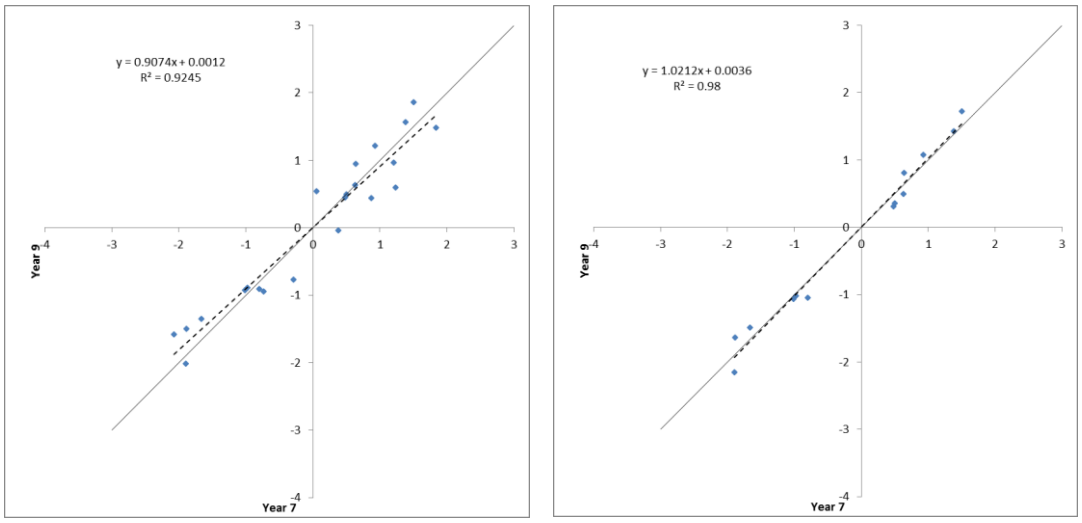


Figure 6.29. Links review for Numeracy Year 7 and Year 9.

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 2016 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

	Years 3 and 5		Years 5 and 7		Years 7 and 9	
Domain	**No. Links Retained**	**Total No. of Links**	**No. Links Retained**	**Total No. of Links**	**No. Links Retained**	**Total No. of Links**
Reading	12	14	9	13	11	12
Spelling	9	9	8	9	8	9
Grammar & Punctuation	6	8	6	9	9	9
Numeracy	10	12	10	13	13	22

Summary of Vertical Equating of NAPLAN 2016 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

Equating Shift	Reading	Spelling	Grammar & Punctuation	Numeracy
Year 3 to 5	-1.140	-1.689	-0.837	-1.145
Year 5 to 5	0.000	0.000	0.000	0.000
Year 7 to 5	1.140	1.810	0.731	1.118
Year 9 to 5	1.592	2.694	1.105	1.716

The final locations of the 2016 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 2016 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 2016 test can be equated with the Year 5 NAPLAN 2016 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 2016 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.

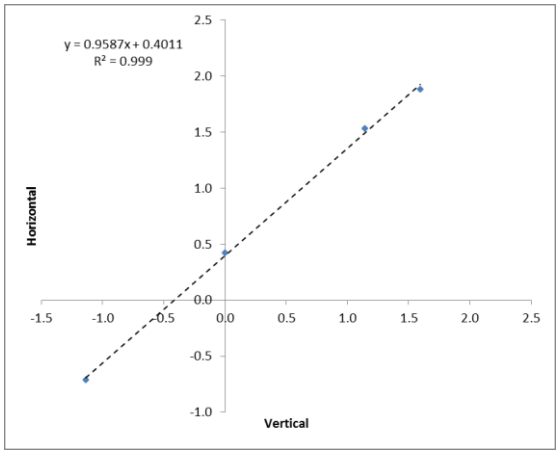
Figure 6.30 shows plots of the horizontal shifts for the 2016 tests (vertical axes) against the vertical shifts (horizontal axes). The latter are based on the common-item vertical equating and delta-centred at Year 5. Because each test is calibrated so that the mean item location is 0 (delta-centred),

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.

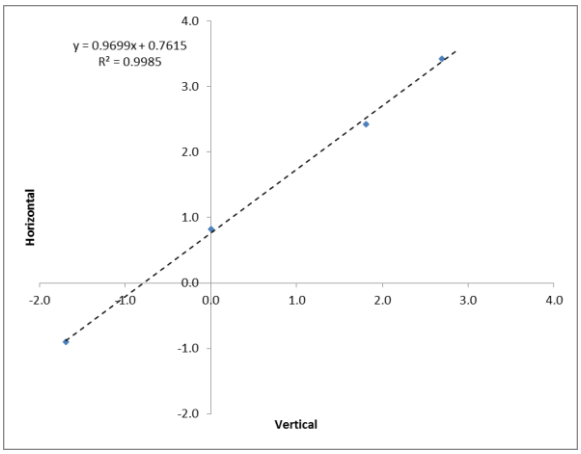
Ideally, each regression line would have a slope of 1.0 and pass through all four points, showing perfect correspondence of the two methods. It can be seen from the plots that this is not always the case. There is to some extent a re-setting of the vertical scale when the regression slopes deviate from 1.0.

Since inception of the programme, 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.

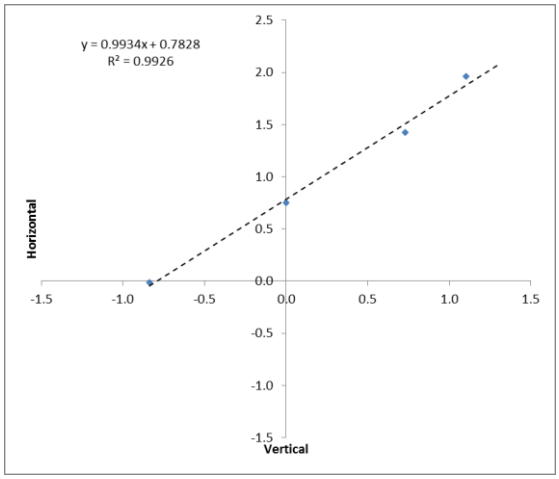
2016 Reading Tests



2016 Spelling Tests



2016 Grammar & Punctuation Tests



2016 Numeracy Tests

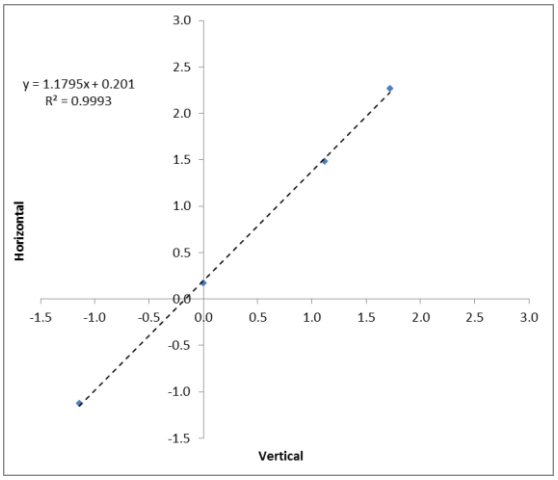


Figure 6.30. Regression-based combination of vertical and horizontal equating shifts.

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

Table 6.4. Regression Intercepts and Slopes

Regression Coefficient	Reading	Spelling	Grammar & Punctuation	Numeracy
Intercept	0.401	0.761	0.783	0.201
Slope	0.959	0.970	0.993	1.179

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

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

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 Equating Shifts Applied for Placing NAPLAN 2016 onto the NAPLAN 2008 Scale

Year Level	Reading	Spelling	Grammar & Punctuation	Numeracy
Year 3	-0.691	-0.877	-0.049	-1.150
Year 5	0.401	0.761	0.783	0.201
Year 7	1.494	2.517	1.508	1.520
Year 9	1.927	3.374	1.880	2.225

6.5 Calibration and Scaling of Writing

Background

As noted earlier, in 2016 two 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 2016 writing for all participating year groups was based on most of the same ten criteria and marking guide used for the writing tests in 2011 through 2015.

Raw score summary

Table 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 2016.

Equating Methodology

As some background to the methodology, the following variations of tasks have been used:

- From 2008 to 2010, narrative writing tasks, single prompt
- From 2011 to 2014 persuasive tasks, single prompt
- In 2015, separate persuasive tasks for years 3 and 5 versus years 7and 9
- In 2016, separate narrative tasks for years 3 and 5 versus years 7 and 9

Thus, in 2016 Narrative prompts were used rather than a Persuasive and there were differentiated prompts for lower year levels and higher year levels. The equating methodology comprised a two key components:

- Pairwise comparisons of 2015 and 2016 scripts to obtain, if possible, a common scale based on the comparisons
- A common person equating design in which a group of year 5 and 7 students attempted the main, differentiated task and a single secure task

The Narrative and Persuasive marking guides contain overlapping criteria but also have differences which are summarised below:

- The first three criteria differ in being genre-specific (Audience, Text Structure, Ideas)
- The fourth Narrative criterion is Character and Setting whereas the fourth Persuasive criterion is Persuasive Devices (they have an equal number of categories)
- Paragraphing has a different number of categories
- Other criteria are the same–these include Cohesion and all conventions apart from Paragraphing

In previous years, identity equating had been employed. In 2016, there was again a very high correlation between threshold locations for 2015 and 2016 calibrations and the decision taken was to anchor a set of common items.

The pairwise study design for writing in the NAPLAN 2016 assessment was essentially the same as that used in 2015. A group of 40 judges compared (i) 2015 scripts with other 2015 scripts, (ii) 2016 scripts with other 2016 scripts, and (iii) 2015 scripts with 2016 scripts. The 2015 and 2016 scripts represented performances on two differentiated tasks designed for year 3/5 and year 7/9 students. The purpose of the pairwise study was to cross-check other sources of information in the equating

Table 6.6. NAPLAN 2011 – 2016 Writing Raw Score Distribution by Year Level

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

of Writing. The design allows evaluation of whether, for a given scale location based on pairwise comparisons, a similar rubric score was predicted for 2015 and 2016 scripts.

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 2016. Specifically, approximately 800 students in total from Years 5 and 7 produced writing based on both: (i) the main 2016 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 43 Year 5 and 56 Year 7 students that attempted both the secure and main tasks.

Pairwise Study

The purpose of the pairwise study is to obtain a common frame of reference by which to compare marking in 2015 with marking in 2016. One focus is whether there is a different relationship between the correspondence in 2016 and 2015 using differentiated prompts relative to previous years, where there was only one prompt. Another focus is whether there is any indication of a change in marker behaviour, including but not limited to harshness.

For the Pairwise study total, approximately 250 scripts from 2015 were compared with other scripts and 250 scripts from 2016 were compared with other scripts. 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 6.31 shows the plot of pairwise scale locations (*x*-axis) against locations based on the rubrics (*y*-axis) for 2015 and 2016 separately. The correlation overall is approximately $r = 0.926$ for 2015 scripts and $r = 0.940$ for 2016 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 2015 and writing 2016 are highlighted separately. The rubric locations for 2015 are based on the 2011 calibration, which continued to be used till 2015. The rubric locations (logits) for 2016 are based on calibration of the 2016 writing data. Regression lines are shown separately for each of these years. It can be seen that there is a similar correspondence between the pairwise and NAPLAN scale locations for 2015 and 2016 scripts. The correlation and nature of the relationship are relatively similar for both of these calendar years to the relationship in previous calendar years.

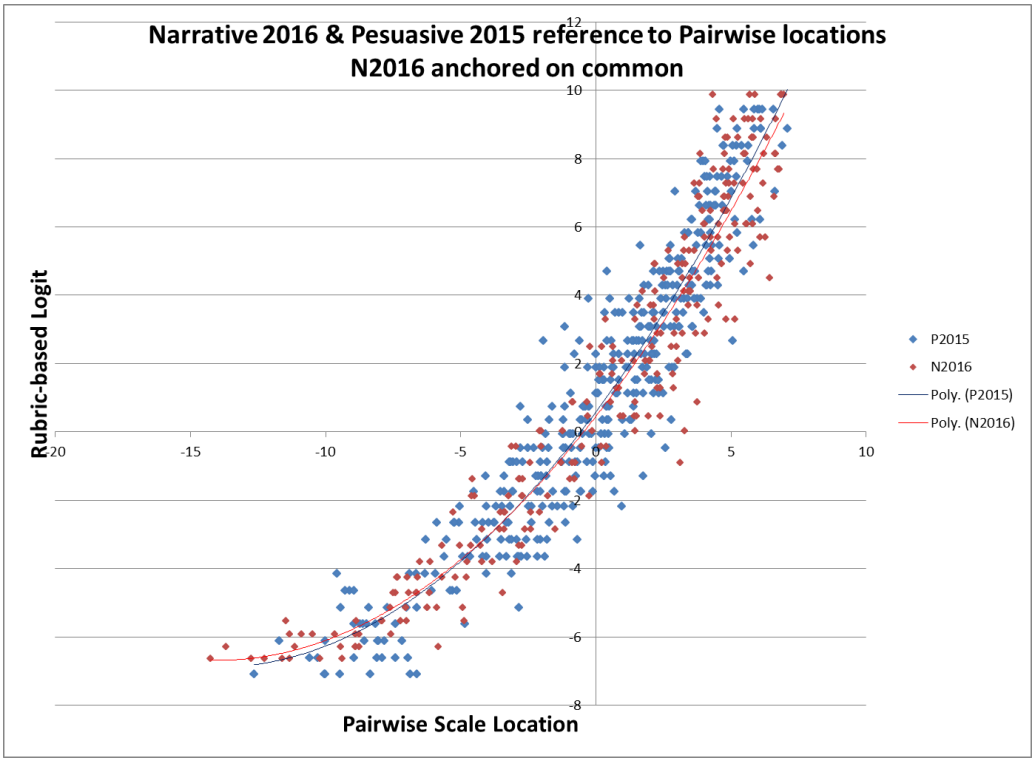


Figure 6.31. Scatterplot of the NAPLAN and pairwise scale locations.

6.7 Equating

Inspection of the data indicated subtle increases in local dependencies from 2015, but further investigation is required. Threshold locations were used in combination with information from the pairwise study to evaluate the viability of using common criterion equating. The threshold/delta locations for common criteria on the 2015 and 2016 are highly correlated and similar as shown in Figure 6.32. The correlation of the threshold locations is 0.999. However, the spread of the threshold locations for common items is somewhat smaller in 2016 than 2015 with the ratio being approximately 0.94.

Because the item parameter locations for common items were highly correlated, the decision was taken to anchor the 2016 scale on these common item locations. This decision was informed by the similarity between the 2015 and 2016 marking indicated by the pairwise comparison study. The common criteria are vocabulary, cohesion, sentence structure, punctuation, and spelling.

Common Person Study

The common person equating information was designed to ascertain whether there was a task-year level interaction to a degree that might indicate concerns for longitudinal equating for different year levels on a common scale. Participating students attempted a secure narrative prompt and secure persuasive prompt, each of which was common for year 5 and 7 students. The main narrative prompt differed for the two year levels. Table 6.34 presents the differences between the average abilities of students on the pairwise scale based on:

- Narrative main prompt compared with Persuasive secure prompt
- Narrative main prompt compared with Narrative secure prompt
- Persuasive secure prompt compared with Narrative secure prompt

The means should be the same within statistical margins of error if there is no interaction. It can be seen that the values of the differences are generally small. The analysis did not indicate statistically significant task by year-level interactions.

Table 6.7. Results of common person study of task-by-year level interaction effects

Year Level	Differences between the Mean Student Ability on Pairwise Scale								
	Narrative Main vs Persuasive Secure			Narrative Main vs Narrative Secure			Persuasive Secure vs Narrative Secure		
	N	Mean	SD	N	Mean	SD	N	Mean	SD
5	43	-0.073	2.356	43	-0.034	1.987	43	0.039	1.615
7	56	-0.174	1.626	56	0.050	2.338	56	0.225	1.592
Overall	99	-0.130	1.966	99	0.014	2.182	99	0.144	1.596

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.

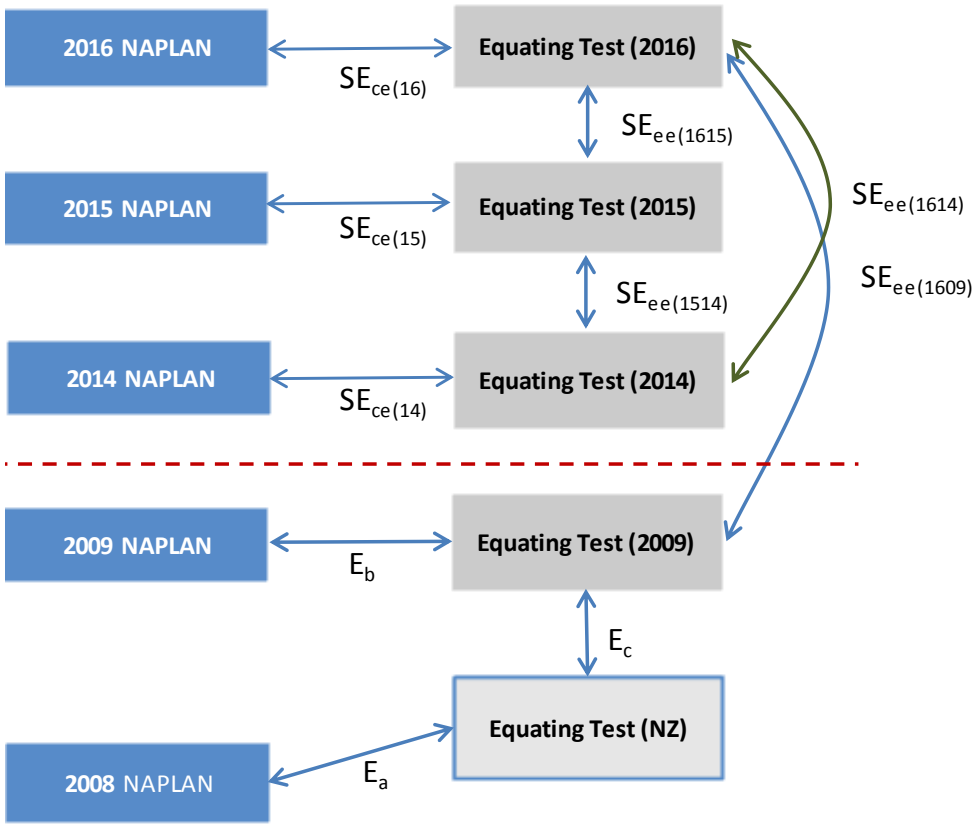


Figure 6.32. A schematic of the equating errors accumulated across NAPLAN administrations.

For each domain and year level:

- *SEa* is the standard error associated with equating the offshore equating form and the 2008 NAPLAN test;
- *SEb* is the standard error associated with equating the onshore equating form and the 2009 NAPLAN test;
- *SEc* is the standard error associated with equating the offshore and onshore equating forms;
- $SE_{ce(15)}$ is the standard error associated with equating the NAPLAN 2015 calibration with the equating test (calibration to equating);
- $SE_{ce(16)}$ is the error associated with equating the NAPLAN 2016 calibration with the equating test; and
- $SE_{ee(1516)}$ is the standard error associated with equating the 2015 and 2016 administrations of the equating test (equating to equating); and so forth

The equating errors for equating of the 2016 scale to the 2008 scales are estimated by combining the relevant standard errors as follows:

$$SE_{2016to2015} = \sqrt{SE^2_{ce(15)} + SE^2_{ce(16)} + SE^2_{ce(1615)}} \qquad (6.7)$$

$$SE_{2016to2008} = \sqrt{SE_a^2 + SE_c^2 + SE_{ce(1609)}^2 + SE_{ce(16)}^2} \quad (6.8)$$

In 2011 it was decided 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 2016. 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 Level	2016 to Base	2016 to 2015	2016 to 2014
Reading	3	0.060	0.053	0.049
	5	0.060	0.047	0.047
	7	0.050	0.039	0.034
	9	0.052	0.034	0.032
Writing	3	0.188	0.133	N/A
	5	0.188	0.133	N/A
	7	0.188	0.133	N/A
	9	0.188	0.133	N/A
Spelling	3	0.095	0.073	0.065
	5	0.103	0.056	0.064
	7	0.104	0.051	0.056
	9	0.101	0.069	0.061
Grammar and Punctuation	3	0.086	0.064	0.061
	5	0.098	0.045	0.050
	7	0.092	0.043	0.045
	9	0.082	0.046	0.061
Numeracy	3	0.076	0.053	0.052
	5	0.073	0.044	0.038
	7	0.052	0.030	0.032
	9	0.054	0.034	0.034

*The base year for Grammar and Punctuation, Numeracy, Reading and Spelling was 2008; the base year used for the 2016 writing scale was persuasive writing for 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 2016. 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 2016. 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 2016

NAPLAN 2016 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 2015. This was made possible by applying the equating shifts and scale transformations necessary to bring the 2016 logit scores for each test in each domain onto the NAPLAN reporting scale. The NAPLAN 2016 achievement scores in writing were produced by forming a single scale that placed the genre used in 2016, narrative writing, on the same scale as persuasive writing based on common writing traits. The details of both of these processes 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 2016. The scale equating enabled achievement scores to be compared across NAPLAN administration years for reading, numeracy, spelling and grammar and punctuation, and across the 2011 through 2016 administrations for writing.

7.1 Proficiency Estimates

As for the previous years, population statistics for the reporting of NAPLAN 2016 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 responses and their background variable values.

As Wu (2004) notes:

> As plausible values are random draws from a student's posterior distribution, plausible values are not appropriate to be used as individual student scores for reporting back to the students. Suppose two students have the same raw score on a test, their plausible values are likely to be different as these are random draws from the posterior distribution. Imagine the outcry if we ever give two students different ability scores when they have the same raw score. However, plausible values are used to estimate population characteristics, and they do a better job than a set of point estimates of abilities. (p. 976)

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 variables used in 2015 were also used in 2016. 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.

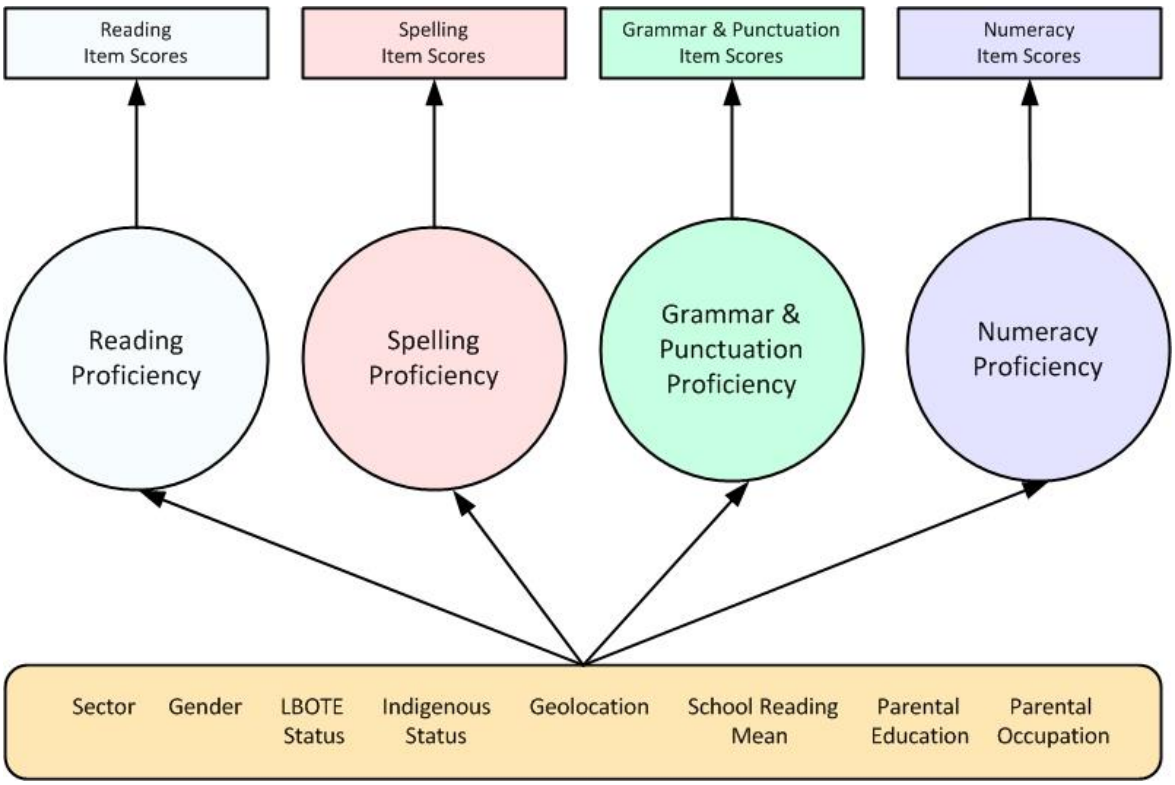


Figure 7.1. Conditioning variables for the multidimensional item response model with latent regression.

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 2016 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 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., test_writing = P) available from 2016 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 2016 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 2016 and 2015 as well as 2016 and 2008 for reading, numeracy, spelling, and grammar and punctuation and between 2016 and 2015 as well as 2016 and 2011 for writing.

7.2 Reporting NAPLAN 2016 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 2016 latent distributions of student achievement were estimated using the plausible values drawn for the 2016 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 2016 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 writing, it was 2011.The ratio of the base year standard deviation to the 2016 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 2016 test did for that domain at the particular year level. Conversely, a ratio that was less than 1.0 indicated that the 2016 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:

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

where

LocalMean = the mean of the latent distribution estimated using the 2016 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 2016 standard deviation.

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

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

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

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

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

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:

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

Table 7.1. Parameters for transforming the 2016 logit scores to the NAPLAN Scales

Year	Domain	Local Mean	Scaling Factor	Equating Shift
Year 3	Reading	0.7329	0.9943	-0.6915
	Writing	—*	1	0
	Spelling	-0.3473	1.1307	-0.8767
	Grammar and Punctuation	0.4312	1.1443	-0.0486
	Numeracy	0.3251	1.2033	-1.1496
Year 5	Reading	0.7687	1.2119	0.4011
	Writing	—*	1	0
	Spelling	-0.0506	0.9713	0.7615
	Grammar and Punctuation	0.5256	1.1722	0.7828
	Numeracy	0.4707	0.9331	0.2010
Year 7	Reading	0.3292	1.135	1.4943
	Writing	—*	1	0
	Spelling	-0.4189	0.966	2.5171
	Grammar and Punctuation	0.3383	1.1256	1.5085
	Numeracy	0.1793	0.9593	1.5201
Year 9	Reading	0.4944	1.0137	1.9272
	Writing	—*	1	0
	Spelling	-0.2709	1.026	3.374
	Grammar and Punctuation	0.3657	1.0163	1.8803
	Numeracy	0.1157	0.8415	2.2245

*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 2016 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 2016 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

		Logits				
Band Cut Score	**Scale Score**	**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.

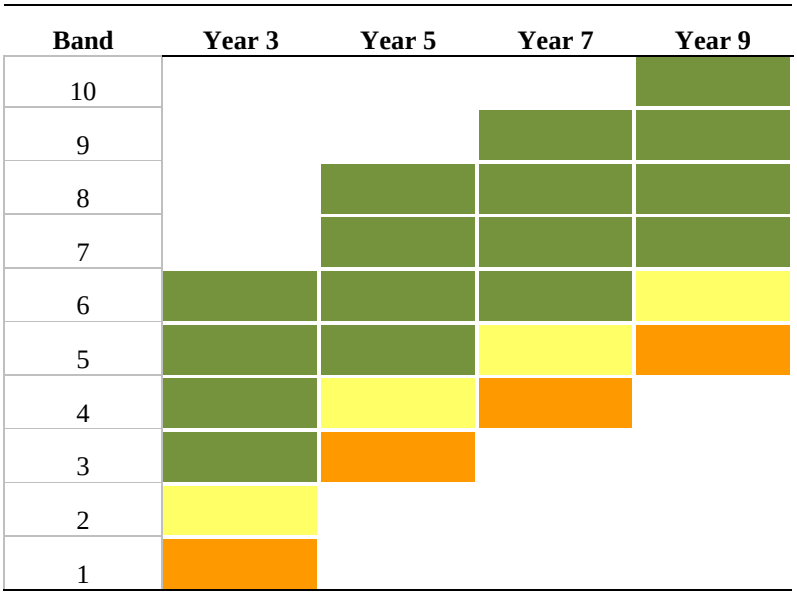


Figure 7.2. Reporting against the NAPLAN proficiency bands.

7.5 National Reports

The NAPLAN 2016 Summary Information was released on 3 August 2016. 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 9 December 2016.

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APPENDIX A. NAPLAN EQUATING AND CALIBRATION SAMPLES 2016

PREPARED FOR:

AUSTRALIAN CURRICULUM, ASSESSMENT AND REPORTING AUTHORITY

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Mark Dulhunty
Leanne Calvitto

Purpose

The purpose of this report is to provide information regarding the 2016 NAPLAN Calibration and Equating Samples that complements existing NAPLAN technical documentation. It should be read in conjunction with the NAPLAN 2016 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 has been treated as a secondary year level for QLD and WA since 2015. SA was the only state where Year 7 was included as a primary year level.

<table>
<tr><th>State/Territory</th><th>Year 3</th><th>Year 5</th><th>Year 7</th><th>Year 9</th></tr>
<tr><td>ACT</td><td colspan="2" rowspan="8">Primary</td><td colspan="2" rowspan="8">Secondary</td></tr>
<tr><td>NSW</td></tr>
<tr><td>NT</td></tr>
<tr><td>TAS</td></tr>
<tr><td>VIC</td></tr>
<tr><td>QLD</td></tr>
<tr><td>WA</td></tr>
<tr><td>SA</td><td colspan="3">Primary</td><td>Secondary</td></tr>
</table>

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 the number of students enrolled at each school in Years 3, 5, 7 and 9 in 2015. Additional demographic information such as state, sector, geographic location and aggregate NAPLAN performance data was also provided.

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 2015 enrolment numbers contained in the source data were used to estimate 2016 enrolment sizes. For example, Year 3 enrolment sizes in the 2015 source data were used as the estimate for 2016 Year 3 enrolment sizes.

A change to school starting age in QLD meant that the enrolment numbers for Year 9 students in 2016 are lower than usual (41,000 instead of a typical cohort size of approximately 59,000 students). To accommodate this, the QLD Grade 8 enrolments from the sample frame (which is

based on 2015 enrolments) were used to estimate the 2016 Year 9 enrolments for QLD.Calibration sample frames

Calibration sample frames

The calibration sample frame consisted of 7476 schools with Primary year levels and 2643 schools with Secondary year levels. Very remote schools in WA and NSW (89 schools in total) were excluded from the sample frame prior to sample selection.

Equating sample frames

The equating sample frame comprised 3786 primary schools and 1757 secondary schools. Schools that were in the equating sample in 2014 or 2015 were excluded from selection, as were all remote and very remote schools in each state/territory. Schools were also excluded if the enrolment was less than the desired target cluster size of 25 students for Primary year levels and 20 students for Secondary year levels. 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 general 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

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

For the equating sample, sample frames were split into 18 explicit strata where ACT, NT and TAS were 3 strata while the remaining states (n=5) were split by sector (n=3) into the remaining 15 explicit strata.

Implicit stratification

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

[1] The equating sample does not include the Writing domain.

Table 1: Implicit stratification variables

Implicit Stratification Variable	Description
Sector	School sector (Catholic, Government, Independent)
SchtypeID	An indicator denoting the inclusion (or absence of) year 7 students in the sample.
Geolocation	Geographic location as provided by ACARA
NAPLAN performance	For each school, a numeric value was provided by ACARA representing performance on NAPLAN across all year levels and domains at the school.
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.

Sector

Sector was included as an implicit stratification variable in the instances is wasn't used as an explicit stratification variable.

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 = Major Cities of Australia, 2=Inner Regional Australia, 3=Outer Regional Australia, 4=Remote Australia

NAPLAN performance

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

For example, level 5 represents schools with NAPLAN performance values that ranked them above the 80th percentile of other schools in the same state/territory (e.g. in ACT this was schools with values higher than 0.343, in SA this was schools with values higher than 0.107). Level 4 denotes schools with a rank in their state/territory above the 60th percentile but less than or equal to the 80th percentile (e.g. in Victoria level 4 indicated that the school had a NAPLAN performance value above 0.128 but equal to or less than 0.359).

Table 2: NAPLAN performance value cut-points for percentile groups

	Percentiles (within state)			
State/Territory	20	40	60	80
ACT	-0.259	0.022	0.164	0.343
NSW	-0.451	-0.171	0.074	0.349
NT	-2.537	-2.113	-1.033	-0.444
QLD	-0.538	-0.268	-0.072	0.15
SA	-0.543	-0.295	-0.104	0.107
TAS	-0.552	-0.341	-0.14	0.096
VIC	-0.293	-0.071	0.128	0.359
WA	-0.598	-0.293	-0.044	0.239

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 **Error! Not a valid bookmark self-reference.**, 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 138 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	40
NT	25	17	6	2
QLD	48	48	17	26
SA	45	46	8	12
TAS	30	30	6	6
VIC	48	48	24	31
WA	45	46	11	15
Total	309	300	109	138

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 **Error! Not a valid bookmark self-reference.**). 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].

Table 4: Number of selected and replacement schools

Sample type	selected	replacement1	replacement2	Total
Calibration Primary	309	309	309	927
Calibration Secondary	300	297	272	869
Equating Primary	109	109	108	326
Equating Secondary	138	136	136	410

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 2016 are shown in **Error! Not a valid bookmark self-reference.**. For example, approximately 12000 students are expected to be included in the calibration sample for Year 3 while 30000 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 28500 students for Year 7 is comprised of students drawn from both the primary and secondary calibration samples.

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

Table 5: Expected calibration sample sizes by year level

Year	Sum ENR
Year 3	12004
Year 5	11109
Year 7[3]	28473
Year 9	30042

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 **Error! Not a valid bookmark self-reference.**, approximately 2700 students are sampled at each year level across the 3 domains. Year 7 is comprised of 8 SA 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).

Table 6: Expected equating sample sizes by year level

Year	Number of schools	Expected total sample size (R and LC and N)	Expected sample size per domain
Year 3	109	2725	908
Year 5	109	2725	908
Year 7[4]	134	2720	907
Year 9	138	2760	920

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	45
Year 9	46	46	46

3 Comprising 1379 Year 7 students from the primary calibration sample and 27094 students from the secondary calibration sample.
4 Comprising 8 primary schools with Year 7 students (target cluster size of 25) and 126 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 42 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 2015 information. The number of schools per state/territory is shown in **Error! Not a valid bookmark self-reference.** compared to ABS 2015 totals.

Table 8 Number of schools per state/territory

State/territory	ABS All (2015[6])	ACARA Sample Frame[7]	% Comparison
ACT	126	118	107%
NSW	2917	2862	102%
NT	183	176	104%
QLD	1654	1656	100%
SA	697	699	100%
TAS	250	251	100%
VIC	2122	2235	95%
WA	1007	896	112%
Aus	8956	8893	101%

[6] Data sourced from the Australian Bureau of Statistics 2015, "*Table 35a Summary of School Characteristics, 2015*", cat. no. 4221.0, ABS, Canberra. Released 18/03/2016. ABS totals are based on Primary + Secondary + Combined only and do not include special schools.

[7] The totals in this table are based on the original file from ACARA after approximately 1158 schools were removed. 962 schools were deemed 'Not Eligible' as they had participated in a previous equating study, were a special school or a distance school, or the school had requested to be removed. Additionally, 67 schools had incomplete NAPLAN data (either student count or NAPLAN aggregate missing) and 6 schools had missing geolocation codes causing them to be removed from the sample frame. Lastly, 89 very remote WA and NSW schools and 34 schools with zero enrolments in all of the target year levels (i.e. no enrolments in any of Years 3, 5, 7 or 9) were removed.

Table 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 **2015** 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	5217	5013	5061	5126	4984	4698	4771	4829	4739	4955	4539	2599	2284
NSW	96867	95818	96934	95396	91918	88562	87785	80113	79983	80739	81186	69051	60386
NT	3596	3543	3481	3429	3386	3179	3140	3281	3088	2854	1501	1054	820
QLD	66287	65244	65401	64542	63204	60974	59748	56522	40733	57667	58670	54772	49550
SA	20079	20434	20462	20061	19666	18557	18974	18585	18929	18970	19601	19138	17025
TAS	6461	6655	6568	6490	6328	5924	5950	6196	6135	6430	6568	1388	1181
VIC	78450	77070	77853	76435	73616	71015	70609	73592	72625	74652	70546	64801	56780
WA	32075	31730	32523	32248	30843	29590	29008	26574	26532	26864	26635	23178	19802

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

ABS **2015** measure [8]													
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		5367	5314	5236	5091	4799	4878	4905	4825	5069	5002	5295	4689
NSW		97318	98315	96097	92575	89220	88434	86524	86062	87334	88677	79678	69087
NT		3623	3557	3504	3473	3252	3230	3346	3169	2932	2695	2351	1787
QLD		66247	66387	65595	64113	62630	61349	58828	42440	59866	62499	59729	53701
SA		20732	20720	20204	19821	18719	19179	18677	19116	19215	20368	22099	19830
TAS		6683	6598	6512	6346	5942	5956	6223	6161	6450	6604	5887	4955
VIC		74974	75620	74169	71291	68634	68345	67519	66363	68047	68948	65858	58026
WA		33922	34547	34070	32472	31219	30525	29995	30051	29985	30203	29023	24247

[8] Data sourced from the Australian Bureau of Statistics 2016, "*Table 42b Number of Full-time and Part-time Students, 2006-2015*", cat. no. 4221.0, ABS, Canberra. Released 04/02/2016.

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
Sector	C=Catholic; G=Gov; I=Indep, A=All sectors.
cases	Number of schools in sample frame
units	Number of schools sampled (desired)
interval	sampling interval which is equal to cases / units
RN	random number between 0 and 1
inclprob	school inclusion probability (each school within an explicit stratum has the same inclusion probability) = units/cases
designweight	inverse of inclprob
Nsel	Number of schools sampled
Nr1	Number of 1st replacement schools
Nr2	Number of 2nd replacement schools

Table 12: Sampling parameters

Sample	strataID	State	Sector	Cases	units	interval	RN	inclprob	designweight	Nsel	Nr1	Nr2
CP	1	ACT	C	24	5	4.8	0.0149	0.2083	4.8008	5	5	5
CP	2	ACT	G	56	11	5.0909	0.9047	0.1964	5.0916	11	11	11
CP	3	ACT	I	14	4	3.5	0.4641	0.2857	3.5002	4	4	4
CP	4	NSW	C	425	9	47.2222	0.2472	0.0212	47.1698	9	9	9
CP	5	NSW	G	1624	33	49.2121	0.1587	0.0203	49.2611	33	33	33
CP	6	NSW	I	318	6	53	0.8754	0.0189	52.9101	6	6	6
CP	7	NT	C	13	3	4.3333	0.2571	0.2308	4.3328	3	3	3
CP	8	NT	G	124	19	6.5263	0.7502	0.1532	6.5274	19	19	19
CP	9	NT	I	16	3	5.3333	0.2023	0.1875	5.3333	3	3	3
CP	10	QLD	C	228	9	25.3333	0.9351	0.0395	25.3165	9	9	9
CP	11	QLD	G	1004	33	30.4242	0.1044	0.0329	30.3951	33	33	33
CP	12	QLD	I	166	6	27.6667	0.7543	0.0361	27.7008	6	6	6
CP	13	SA	C	88	9	9.7778	0.2021	0.1023	9.7752	9	9	9
CP	14	SA	G	433	27	16.037	0.78	0.0624	16.0256	27	27	27
CP	15	SA	I	103	9	11.4444	0.6751	0.0874	11.4416	9	9	9
CP	16	TAS	C	33	6	5.5	0.1258	0.1818	5.5006	6	6	6
CP	17	TAS	G	148	21	7.0476	0.7654	0.1419	7.0472	21	21	21
CP	18	TAS	I	34	3	11.3333	0.3027	0.0882	11.3379	3	3	3
CP	19	VIC	C	398	11	36.1818	0.4106	0.0276	36.2319	11	11	11
CP	20	VIC	G	1226	31	39.5484	0.9319	0.0253	39.5257	31	31	31
CP	21	VIC	I	223	6	37.1667	0.7943	0.0269	37.1747	6	6	6
CP	22	WA	C	117	7	16.7143	0.4625	0.0598	16.7224	7	7	7
CP	23	WA	G	539	32	16.8438	0.8157	0.0594	16.835	32	32	32
CP	24	WA	I	122	6	20.3333	0.3142	0.0492	20.3252	6	6	6

Sample	strataID	State	Sector	Cases	units	interval	RN	inclprob	designweight	Nsel	Nr1	Nr2
CS	1	ACT	C	5	3	1.6667	0.7258	0.6	1.6667	3	2	0
CS	2	ACT	G	21	8	2.625	0.2554	0.381	2.6247	8	8	4
CS	3	ACT	I	14	6	2.3333	0.5182	0.4286	2.3332	6	6	2
CS	4	NSW	C	118	9	13.1111	0.2633	0.0763	13.1062	9	9	9
CS	5	NSW	G	400	28	14.2857	0.7427	0.07	14.2857	28	28	28
CS	6	NSW	I	264	11	24	0.447	0.0417	23.9808	11	11	11
CS	7	NT	C	10	3	3.3333	0.0528	0.3	3.3333	3	3	2
CS	8	NT	G	69	10	6.9	0.8044	0.1449	6.9013	10	10	10
CS	9	NT	I	19	4	4.75	0.1559	0.2105	4.7506	4	4	4
CS	10	QLD	C	92	10	9.2	0.8275	0.1087	9.1996	10	10	10
CS	11	QLD	G	259	29	8.931	0.3136	0.112	8.9286	29	29	29
CS	12	QLD	I	147	9	16.3333	0.4953	0.0612	16.3399	9	9	9
CS	13	SA	C	26	10	2.6	0.8945	0.3846	2.6001	10	10	6
CS	14	SA	G	132	27	4.8889	0.6861	0.2045	4.89	27	27	27
CS	15	SA	I	63	9	7	0.1406	0.1429	6.9979	9	9	9
CS	16	TAS	C	12	7	1.7143	0.3318	0.5833	1.7144	7	5	0
CS	17	TAS	G	52	19	2.7368	0.6796	0.3654	2.7367	19	19	14
CS	18	TAS	I	27	4	6.75	0.9897	0.1481	6.7522	4	4	4
CS	19	VIC	C	116	13	8.9231	0.7081	0.1121	8.9206	13	13	13
CS	20	VIC	G	352	26	13.5385	0.9519	0.0739	13.5318	26	26	26
CS	21	VIC	I	186	9	20.6667	0.286	0.0484	20.6612	9	9	9
CS	22	WA	C	33	10	3.3	0.5327	0.303	3.3003	10	10	10
CS	23	WA	G	136	25	5.44	0.8132	0.1838	5.4407	25	25	25
CS	24	WA	I	90	11	8.1818	0.0616	0.1222	8.1833	11	11	11

Sample	strataID	State	Sector	Cases	units	interval	RN	inclprob	designweight	Nsel	Nr1	Nr2
EP	1	ACT	A	64	6	10.6667	0.6497	0.0938	10.661	6	6	6
EP	2	NSW	C	257	6	42.8333	0.8153	0.0233	42.9185	6	6	6
EP	3	NSW	G	866	21	41.2381	0.3201	0.0242	41.3223	21	21	21
EP	4	NSW	I	139	4	34.75	0.2456	0.0288	34.7222	4	4	4
EP	5	NT	A	20	6	3.3333	0.2821	0.3	3.3333	6	6	5
EP	6	QLD	C	137	3	45.6667	0.3647	0.0219	45.6621	3	3	3
EP	7	QLD	G	476	12	39.6667	0.7312	0.0252	39.6825	12	12	12
EP	8	QLD	I	82	2	41	0.0899	0.0244	40.9836	2	2	2
EP	9	SA	C	34	2	17	0.7913	0.0588	17.0068	2	2	2
EP	10	SA	G	154	4	38.5	0.5644	0.026	38.4615	4	4	4
EP	11	SA	I	35	2	17.5	0.1729	0.0571	17.5131	2	2	2
EP	12	TAS	A	86	6	14.3333	0.5019	0.0698	14.3266	6	6	6
EP	13	VIC	C	240	5	48	0.1245	0.0208	48.0769	5	5	5
EP	14	VIC	G	657	16	41.0625	0.4874	0.0244	40.9836	16	16	16
EP	15	VIC	I	98	3	32.6667	0.2394	0.0306	32.6797	3	3	3
EP	16	WA	C	72	2	36	0.9081	0.0278	35.9712	2	2	2
EP	17	WA	G	316	8	39.5	0.3509	0.0253	39.5257	8	8	8
EP	18	WA	I	53	1	53	0.5684	0.0189	52.9101	1	1	1

Sample	strataID	State	Sector	Cases	units	interval	RN	inclprob	designweight	Nsel	Nr1	Nr2
ES	1	ACT	A	22	6	3.6667	0.5703	0.2727	3.667	6	6	6
ES	2	NSW	C	99	7	14.1429	0.8892	0.0707	14.1443	7	7	7
ES	3	NSW	G	323	24	13.4583	0.5315	0.0743	13.459	24	24	24
ES	4	NSW	I	183	9	20.3333	0.1638	0.0492	20.3252	9	9	9
ES	5	NT	A	2	2	1	0.399	1	1	2	0	0
ES	6	QLD	C	78	6	13	0.2163	0.0769	13.0039	6	6	6
ES	7	QLD	G	159	15	10.6	0.9447	0.0943	10.6045	15	15	15
ES	8	QLD	I	90	5	18	0.0254	0.0556	17.9856	5	5	5
ES	9	SA	C	21	2	10.5	0.9792	0.0952	10.5042	2	2	2
ES	10	SA	G	63	7	9	0.5347	0.1111	9.0009	7	7	7
ES	11	SA	I	47	3	15.6667	0.9587	0.0638	15.674	3	3	3
ES	12	TAS	A	46	6	7.6667	0.0862	0.1304	7.6687	6	6	6
ES	13	VIC	C	76	8	9.5	0.5431	0.1053	9.4967	8	8	8
ES	14	VIC	G	274	17	16.1176	0.7451	0.062	16.129	17	17	17
ES	15	VIC	I	117	6	19.5	0.6654	0.0513	19.4932	6	6	6
ES	16	WA	C	24	3	8	0.8347	0.125	8	3	3	3
ES	17	WA	G	76	8	9.5	0.6425	0.1053	9.4967	8	8	8
ES	18	WA	I	57	4	14.25	0.8353	0.0702	14.245	4	4	4

APPENDIX B. ITEM ANALYSIS

Appendix B.1 Year 3 Reading

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================================================================================
NAPLAN 2016, Calibration, Grade 3, reading
GENERALISED ITEM ANALYSIS
================================================================================
Item 1
------
item:1 (r3q01)
Cases for this item   5287   Discrimination  0.44
Item Threshold(s):    -2.10   Weighted MNSQ   0.88
Item Delta(s):     -2.10
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   8       0.00         8       0.15   -0.06    -4.72(.000) -1.38     0.69
   9       0.00        28       0.53   -0.11    -8.03(.000) -0.98     1.31
   A       1.00      4775      90.32    0.44    36.05(.000)  0.90     1.20
   B       0.00       309       5.84   -0.29   -22.27(.000) -0.66     1.20
   C       0.00        47       0.89   -0.16   -11.43(.000) -1.22     0.76
   D       0.00       120       2.27   -0.25   -18.97(.000) -1.17     0.83
================================================================================

Item 2
------
item:2 (r3q02)
Cases for this item   5287   Discrimination  0.46
Item Threshold(s):    -1.97   Weighted MNSQ   0.89
Item Delta(s):     -1.97
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   8       0.00         1       0.02   -0.03    -2.14(.032) -2.91     0.00
   9       0.00        28       0.53   -0.08    -5.56(.000) -0.48     1.55
   A       0.00       333       6.30   -0.31   -23.87(.000) -0.69     1.05
   B       0.00       110       2.08   -0.27   -20.68(.000) -1.49     0.59
   C       0.00        94       1.78   -0.16   -11.44(.000) -0.66     1.01
   D       1.00      4721      89.29    0.46    37.36(.000)  0.91     1.20
================================================================================

Item 3
------
item:3 (r3q03)
Cases for this item   5287   Discrimination  0.50
Item Threshold(s):    -2.29   Weighted MNSQ   0.80
Item Delta(s):     -2.29
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   8       0.00         1       0.02   -0.02    -1.34(.180) -0.01     0.00
   9       0.00        39       0.74   -0.10    -7.08(.000) -0.69     1.16
   A       0.00       154       2.91   -0.30   -22.99(.000) -1.32     0.85
   B       0.00        79       1.49   -0.23   -17.57(.000) -1.53     0.64
   C       0.00       169       3.20   -0.29   -21.68(.000) -1.10     0.88
   D       1.00      4845      91.64    0.50    41.82(.000)  0.90     1.18
================================================================================

Item 4
------
item:4 (r3q04)
Cases for this item   5286   Discrimination  0.50
Item Threshold(s):    -1.86   Weighted MNSQ   0.84
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   -0.00    -0.14(.887)  0.38     1.62
   9       0.00        23       0.44   -0.09    -6.56(.000) -0.83     1.27
   A       0.00       172       3.25   -0.25   -19.13(.000) -0.91     0.96
   B       1.00      4672      88.38    0.50    41.52(.000)  0.94     1.17
   C       0.00       248       4.69   -0.37   -28.86(.000) -1.22     0.85
   D       0.00       169       3.20   -0.17   -12.47(.000) -0.42     1.18
```

```
================================================================================
Item 5
------
item:5 (r3q05)
Cases for this item   5286   Discrimination  0.52
Item Threshold(s):    -0.98   Weighted MNSQ   0.91
Item Delta(s):     -0.98
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   8       0.00       10       0.19   -0.04    -2.76(.006) -0.27     1.12
   9       0.00       42       0.79   -0.10    -7.28(.000) -0.60     1.18
   A       1.00     4164      78.77    0.52    44.60(.000)  1.05     1.14
   B       0.00      589      11.14   -0.34   -25.89(.000) -0.39     1.17
   C       0.00      164       3.10   -0.20   -15.16(.000) -0.58     1.05
   D       0.00      317       6.00   -0.26   -19.79(.000) -0.54     1.13
================================================================================

Item 6
------
item:6 (r3q06)
Cases for this item   5285   Discrimination  0.46
Item Threshold(s):    -0.18   Weighted MNSQ   1.07
Item Delta(s):     -0.18
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   8       0.00        1       0.02   -0.03    -2.14(.032) -2.91     0.00
   9       0.00       43       0.81   -0.09    -6.26(.000) -0.47     1.20
   A       1.00     3519      66.58    0.46    37.48(.000)  1.12     1.18
   B       0.00      339       6.41   -0.25   -18.62(.000) -0.43     1.03
   C       0.00      526       9.95   -0.28   -21.04(.000) -0.26     1.10
   D       0.00      857      16.22   -0.17   -12.82(.000)  0.25     1.19
================================================================================

Item 7
------
item:7 (r3q07)
Cases for this item   5281   Discrimination  0.49
Item Threshold(s):    -0.90   Weighted MNSQ   0.97
Item Delta(s):     -0.90
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   8       0.00        1       0.02   -0.01    -0.71(.476) -0.36     0.00
   9       0.00       36       0.68   -0.08    -5.64(.000) -0.47     1.12
   A       0.00      557      10.55   -0.30   -22.72(.000) -0.29     1.10
   B       0.00      330       6.25   -0.24   -17.74(.000) -0.36     1.11
   C       0.00      253       4.79   -0.23   -17.50(.000) -0.49     1.09
   D       1.00     4104      77.71    0.49    41.27(.000)  1.04     1.18
================================================================================

Item 8
------
item:8 (r3q08)
Cases for this item   5278   Discrimination  0.55
Item Threshold(s):    -1.52   Weighted MNSQ   0.83
Item Delta(s):     -1.53
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   8       0.00        2       0.04   -0.03    -2.12(.034) -1.14     0.53
   9       0.00       27       0.51   -0.09    -6.91(.000) -0.84     1.08
   A       0.00      258       4.89   -0.28   -21.53(.000) -0.69     0.92
   B       1.00     4501      85.28    0.55    47.57(.000)  1.00     1.16
   C       0.00      318       6.03   -0.32   -24.36(.000) -0.75     0.96
   D       0.00      172       3.26   -0.28   -21.25(.000) -1.07     0.87
================================================================================
```

Item 9
------
item:9 (r3q09)
Cases for this item 5277 Discrimination 0.54
Item Threshold(s): -1.69 Weighted MNSQ 0.83
Item Delta(s): -1.69

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	23	0.44	-0.09	-6.89(.000)	-1.13	1.24
A	0.00	268	5.08	-0.34	-25.96(.000)	-0.98	0.89
B	0.00	149	2.82	-0.27	-20.61(.000)	-1.14	0.79
C	0.00	252	4.78	-0.26	-19.86(.000)	-0.66	1.04
D	1.00	4585	86.89	0.54	46.35(.000)	0.98	1.16

Item 10
----
item:10 (r3q10)
Cases for this item 5271 Discrimination 0.49
Item Threshold(s): -0.23 Weighted MNSQ 1.02
Item Delta(s): -0.23

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.00	-0.33(.738)	0.73	0.00
9	0.00	289	5.48	-0.03	-2.29(.022)	0.48	1.10
A	0.00	305	5.79	-0.17	-12.79(.000)	-0.08	1.16
B	0.00	398	7.55	-0.31	-23.40(.000)	-0.54	1.02
C	1.00	3564	67.62	0.49	41.28(.000)	1.15	1.16
D	0.00	714	13.55	-0.30	-22.79(.000)	-0.18	1.05

Item 11
----
item:11 (r3q11)
Cases for this item 5269 Discrimination 0.42
Item Threshold(s): 0.07 Weighted MNSQ 1.12
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	-0.02	-1.40(.161)	-1.06	2.61
9	0.00	49	0.93	-0.08	-5.71(.000)	-0.44	1.13
A	0.00	641	12.17	-0.18	-13.53(.000)	0.13	1.11
B	1.00	3289	62.42	0.42	33.67(.000)	1.14	1.21
C	0.00	504	9.57	-0.24	-18.18(.000)	-0.16	1.16
D	0.00	784	14.88	-0.18	-13.38(.000)	0.20	1.15

Item 12
----
item:12 (r3q12)
Cases for this item 5268 Discrimination 0.57
Item Threshold(s): -1.27 Weighted MNSQ 0.84
Item Delta(s): -1.27

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.06	-0.04	-3.06(.002)	-1.67	0.34
9	0.00	37	0.70	-0.05	-3.52(.000)	-0.03	1.04
A	0.00	490	9.30	-0.39	-30.39(.000)	-0.71	0.93
B	0.00	293	5.56	-0.32	-24.09(.000)	-0.76	0.91
C	0.00	95	1.80	-0.21	-15.43(.000)	-1.02	0.77
D	1.00	4350	82.57	0.57	50.65(.000)	1.05	1.14

Item 13
---
item:13 (r3q13)
Cases for this item 5265 Discrimination 0.45
Item Threshold(s): 0.00 Weighted MNSQ 1.08
Item Delta(s): 0.00

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.04	-0.04	-2.82(.005)	-1.34	0.30
9	0.00	29	0.55	-0.07	-5.33(.000)	-0.55	1.08
A	1.00	3350	63.63	0.45	37.01(.000)	1.15	1.19
B	0.00	563	10.69	-0.29	-22.17(.000)	-0.28	1.09
C	0.00	1059	20.11	-0.17	-12.73(.000)	0.31	1.13
D	0.00	262	4.98	-0.24	-18.16(.000)	-0.51	0.92

Item 14
---
item:14 (r3q14)
Cases for this item 5260 Discrimination 0.51
Item Threshold(s): -0.99 Weighted MNSQ 0.94
Item Delta(s): -1.00

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.08	-0.03	-1.87(.062)	-0.61	1.60
9	0.00	43	0.82	-0.09	-6.57(.000)	-0.50	1.23
A	0.00	240	4.56	-0.29	-21.90(.000)	-0.82	0.91
B	1.00	4164	79.16	0.51	43.15(.000)	1.05	1.16
C	0.00	527	10.02	-0.29	-22.16(.000)	-0.32	1.02
D	0.00	282	5.36	-0.23	-16.78(.000)	-0.37	1.09

Item 15
---
item:15 (r3q15)
Cases for this item 5258 Discrimination 0.43
Item Threshold(s): 0.95 Weighted MNSQ 1.09
Item Delta(s): 0.94

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	33	0.63	0.00	0.19(.851)	0.69	1.13
9	0.00	61	1.16	-0.06	-4.01(.000)	0.04	1.37
A	1.00	2435	46.31	0.43	34.57(.000)	1.33	1.23
B	0.00	1128	21.45	-0.09	-6.59(.000)	0.48	1.07
C	0.00	663	12.61	-0.16	-11.86(.000)	0.20	1.17
D	0.00	938	17.84	-0.31	-23.52(.000)	-0.06	1.04

Item 16
---
item:16 (r3q16)
Cases for this item 5258 Discrimination 0.55
Item Threshold(s): 0.20 Weighted MNSQ 0.95
Item Delta(s): 0.20

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	86	1.64	-0.06	-4.23(.000)	-0.01	1.11
A	0.00	864	16.43	-0.30	-23.19(.000)	-0.09	1.00
B	0.00	638	12.13	-0.24	-18.10(.000)	-0.06	1.03
C	1.00	3160	60.10	0.55	47.58(.000)	1.29	1.14
D	0.00	510	9.70	-0.23	-17.46(.000)	-0.12	1.14

Item 17
---
item:17 (r3q17)
Cases for this item 5253 Discrimination 0.55
Item Threshold(s): -1.35 Weighted MNSQ 0.86
Item Delta(s): -1.35

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.08	-0.01	-0.76(.448)	-0.04	0.72
9	0.00	37	0.70	-0.08	-6.12(.000)	-0.48	1.02
A	1.00	4389	83.55	0.55	47.47(.000)	1.02	1.16
B	0.00	232	4.42	-0.31	-23.26(.000)	-0.91	0.92
C	0.00	195	3.71	-0.25	-18.83(.000)	-0.71	0.89
D	0.00	396	7.54	-0.32	-24.79(.000)	-0.57	0.92

Item 18
---
item:18 (r3q18)
Cases for this item 5246 Discrimination 0.43
Item Threshold(s): 0.60 Weighted MNSQ 1.10
Item Delta(s): 0.60

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	0.00	0.17(.865)	0.71	0.00
9	0.00	63	1.20	-0.08	-5.98(.000)	-0.34	0.94
A	0.00	948	18.07	-0.19	-14.26(.000)	0.23	1.10
B	1.00	2769	52.78	0.43	34.39(.000)	1.25	1.24
C	0.00	801	15.27	-0.21	-15.66(.000)	0.13	1.10
D	0.00	664	12.66	-0.17	-12.12(.000)	0.18	1.04

Item 19
---
item:19 (r3q19)
Cases for this item 5243 Discrimination 0.40
Item Threshold(s): 0.91 Weighted MNSQ 1.14
Item Delta(s): 0.91

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.04	0.00	0.24(.810)	0.75	0.06
9	0.00	95	1.81	-0.06	-3.99(.000)	0.08	1.18
A	0.00	1270	24.22	-0.21	-15.56(.000)	0.30	1.16
B	0.00	760	14.50	-0.21	-15.26(.000)	0.12	1.12
C	1.00	2467	47.05	0.40	31.55(.000)	1.27	1.20
D	0.00	649	12.38	-0.09	-6.51(.000)	0.45	1.29

Item 20
---
item:20 (r3q20)
Cases for this item 5229 Discrimination 0.55
Item Threshold(s): -0.16 Weighted MNSQ 0.95
Item Delta(s): -0.16

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	81	1.55	-0.07	-4.73(.000)	-0.04	1.03
A	1.00	3485	66.65	0.55	47.24(.000)	1.21	1.15
B	0.00	578	11.05	-0.33	-25.05(.000)	-0.34	0.92
C	0.00	392	7.50	-0.23	-17.30(.000)	-0.23	1.05
D	0.00	693	13.25	-0.25	-18.93(.000)	-0.03	1.08

Item 21
---
item:21 (r3q21)
Cases for this item 5225 Discrimination 0.61
Item Threshold(s): 0.41 Weighted MNSQ 0.88
Item Delta(s): 0.40

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.04	-0.01	-0.97(.330)	-0.25	0.57
9	0.00	64	1.22	-0.07	-4.73(.000)	-0.15	0.97
A	0.00	1150	22.01	-0.35	-27.22(.000)	-0.05	1.00
B	1.00	2956	56.57	0.61	55.06(.000)	1.39	1.11
C	0.00	334	6.39	-0.25	-18.55(.000)	-0.38	0.94
D	0.00	719	13.76	-0.25	-18.66(.000)	-0.01	0.99

Item 22
---
item:22 (r3q22)
Cases for this item 5212 Discrimination 0.62
Item Threshold(s): -0.41 Weighted MNSQ 0.85
Item Delta(s): -0.42

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.01	-0.85(.393)	0.24	0.00
9	0.00	46	0.88	-0.07	-5.06(.000)	-0.21	1.37
A	0.00	406	7.79	-0.34	-26.25(.000)	-0.62	0.89
B	0.00	551	10.57	-0.33	-25.10(.000)	-0.38	0.88
C	1.00	3696	70.91	0.62	57.28(.000)	1.22	1.10
D	0.00	512	9.82	-0.28	-20.96(.000)	-0.28	0.94

Item 23
---
item:23 (r3q23)
Cases for this item 5207 Discrimination 0.43
Item Threshold(s): 1.49 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	3	0.06	-0.04	-2.62(.009)	-1.26	0.95
9	0.00	107	2.05	-0.06	-4.05(.000)	0.15	1.14
A	0.00	979	18.80	-0.13	-9.53(.000)	0.40	1.05
B	0.00	587	11.27	-0.36	-28.10(.000)	-0.44	1.01
C	0.00	1629	31.28	-0.06	-4.67(.000)	0.58	1.03
D	1.00	1902	36.53	0.43	33.88(.000)	1.49	1.26

Item 24
---
item:24 (r3q24)
Cases for this item 5199 Discrimination 0.46
Item Threshold(s): -0.13 Weighted MNSQ 1.07
Item Delta(s): -0.12

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	59	1.13	-0.09	-6.51(.000)	-0.36	1.17
A	0.00	939	18.06	-0.18	-13.27(.000)	0.25	1.12
B	1.00	3436	66.09	0.46	36.98(.000)	1.15	1.18
C	0.00	301	5.79	-0.27	-20.30(.000)	-0.52	0.94
D	0.00	464	8.92	-0.26	-19.25(.000)	-0.20	1.10

Item 25
---
item:25 (r3q25)
Cases for this item 5195 Discrimination 0.39
Item Threshold(s): 1.89 Weighted MNSQ 1.06
Item Delta(s): 1.89

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.04	-0.01	-0.88(.378)	-0.20	0.79
9	0.00	124	2.39	-0.05	-3.86(.000)	0.23	1.17
A	0.00	1814	34.92	-0.19	-13.79(.000)	0.40	1.07
B	0.00	1057	20.35	-0.11	-8.27(.000)	0.50	1.23
C	0.00	652	12.55	-0.11	-7.86(.000)	0.43	1.31
D	1.00	1546	29.76	0.39	30.83(.000)	1.52	1.23

Item 26
---
item:26 (r3q26)
Cases for this item 5170 Discrimination 0.49
Item Threshold(s): 1.20 Weighted MNSQ 1.01
Item Delta(s): 1.19

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	85	1.64	-0.06	-4.54(.000)	-0.04	1.01
A	0.00	596	11.53	-0.24	-17.89(.000)	-0.01	1.20
B	0.00	948	18.34	-0.13	-9.41(.000)	0.42	1.30
C	1.00	2172	42.01	0.49	40.30(.000)	1.47	1.14
D	0.00	1369	26.48	-0.24	-17.79(.000)	0.25	0.96

Item 27
---
item:27 (r3q27)
Cases for this item 5136 Discrimination 0.50
Item Threshold(s): 0.58 Weighted MNSQ 1.02
Item Delta(s): 0.58

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.02	-1.49(.135)	-0.94	0.00
9	0.00	78	1.52	-0.08	-5.54(.000)	-0.09	1.01
A	0.00	633	12.32	-0.27	-20.20(.000)	-0.09	1.06
B	0.00	953	18.56	-0.12	-8.98(.000)	0.43	1.09
C	1.00	2749	53.52	0.50	40.85(.000)	1.33	1.19
D	0.00	722	14.06	-0.29	-21.47(.000)	-0.11	0.93

Item 28
---
item:28 (r3q28)
Cases for this item 5124 Discrimination 0.35
Item Threshold(s): -0.38 Weighted MNSQ 1.19
Item Delta(s): -0.38

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.03	-2.26(.024)	-1.59	0.00
9	0.00	61	1.19	-0.08	-5.84(.000)	-0.28	1.02
A	1.00	3616	70.57	0.35	26.75(.000)	1.04	1.24
B	0.00	387	7.55	-0.16	-11.44(.000)	0.08	1.29
C	0.00	621	12.12	-0.19	-13.59(.000)	0.17	1.05
D	0.00	438	8.55	-0.17	-12.41(.000)	0.08	1.19

Item 29
---
item:29 (r3q29)
Cases for this item 5113 Discrimination 0.56
Item Threshold(s): -0.78 Weighted MNSQ 0.89
Item Delta(s): -0.78

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.04	-0.02	-1.76(.079)	-0.53	0.73
9	0.00	53	1.04	-0.07	-5.06(.000)	-0.11	1.04
A	0.00	472	9.23	-0.34	-25.77(.000)	-0.48	1.16
B	1.00	3916	76.59	0.56	47.89(.000)	1.13	1.13
C	0.00	351	6.86	-0.23	-16.55(.000)	-0.22	1.00
D	0.00	319	6.24	-0.30	-22.59(.000)	-0.58	0.87

Item 30
---
item:30 (r3q30)
Cases for this item 5105 Discrimination 0.49
Item Threshold(s): 0.27 Weighted MNSQ 1.04
Item Delta(s): 0.27

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.01	-0.73(.464)	-0.36	0.00
9	0.00	75	1.47	-0.06	-4.32(.000)	0.09	1.03
A	0.00	615	12.05	-0.22	-16.07(.000)	0.06	1.13
B	0.00	799	15.65	-0.23	-16.74(.000)	0.10	1.07
C	0.00	583	11.42	-0.24	-18.03(.000)	-0.05	1.09
D	1.00	3032	59.39	0.49	39.93(.000)	1.26	1.17

Item 31
---
item:31 (r3q31)
Cases for this item 5093 Discrimination 0.35
Item Threshold(s): 1.95 Weighted MNSQ 1.10
Item Delta(s): 1.95

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.02	-1.24(.214)	-0.62	0.00
9	0.00	105	2.06	-0.07	-4.83(.000)	0.12	1.00
A	0.00	1815	35.64	0.06	4.29(.000)	0.82	1.09
B	0.00	924	18.14	-0.33	-24.64(.000)	-0.06	1.03
C	0.00	768	15.08	-0.14	-10.44(.000)	0.35	1.23
D	1.00	1480	29.06	0.35	26.62(.000)	1.49	1.28

Item 32
---
item:32 (r3q32)
Cases for this item 5078 Discrimination 0.51
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
9	0.00	63	1.24	-0.06	-4.57(.000)	-0.01	1.00
A	0.00	307	6.05	-0.25	-18.24(.000)	-0.39	0.99
B	0.00	766	15.08	-0.30	-22.13(.000)	-0.10	0.97
C	1.00	3486	68.65	0.51	42.57(.000)	1.19	1.16
D	0.00	456	8.98	-0.23	-16.79(.000)	-0.09	1.18

Item 33
---
item:33 (r3q33)
Cases for this item 5073 Discrimination 0.26
Item Threshold(s): 2.47 Weighted MNSQ 1.14
Item Delta(s): 2.47

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	147	2.90	-0.02	-1.60(.109)	0.50	1.01
A	0.00	1634	32.21	-0.09	-6.26(.000)	0.60	1.16
B	0.00	1288	25.39	-0.06	-4.30(.000)	0.64	1.22
C	0.00	917	18.08	-0.10	-6.93(.000)	0.52	1.30
D	1.00	1087	21.43	0.26	19.46(.000)	1.45	1.34

Item 34
---
item:34 (r3q34)
Cases for this item 5000 Discrimination 0.54
Item Threshold(s): 0.09 Weighted MNSQ 0.97
Item Delta(s): 0.09

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.08	0.02	1.46(.145)	1.55	1.45
9	0.00	51	1.02	-0.05	-3.25(.001)	0.16	1.08
A	1.00	3138	62.76	0.54	44.95(.000)	1.27	1.16
B	0.00	895	17.90	-0.32	-23.72(.000)	-0.05	1.04
C	0.00	280	5.60	-0.27	-19.88(.000)	-0.49	1.00
D	0.00	632	12.64	-0.21	-15.51(.000)	0.09	1.05

Item 35
---
item:35 (r3q35)
Cases for this item 4985 Discrimination 0.58
Item Threshold(s): 1.00 Weighted MNSQ 0.90
Item Delta(s): 1.00

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	54	1.08	-0.04	-2.61(.009)	0.31	1.10
A	0.00	958	19.22	-0.18	-13.00(.000)	0.29	1.02
B	0.00	934	18.74	-0.30	-22.39(.000)	0.00	0.98
C	0.00	750	15.05	-0.27	-19.73(.000)	0.03	1.16
D	1.00	2289	45.92	0.58	50.36(.000)	1.56	1.10

Item 36
---
item:36 (r3q36)
Cases for this item 4964 Discrimination 0.57
Item Threshold(s): 0.51 Weighted MNSQ 0.93
Item Delta(s): 0.51

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	55	1.11	-0.02	-1.25(.211)	0.55	1.05
A	0.00	544	10.96	-0.22	-16.25(.000)	-0.01	1.04
B	0.00	762	15.35	-0.23	-16.43(.000)	0.12	1.05
C	1.00	2743	55.26	0.57	48.99(.000)	1.41	1.13
D	0.00	860	17.32	-0.34	-25.75(.000)	-0.11	1.01

Item 37
---
item:37 (r3q37)
Cases for this item 4939 Discrimination 0.33
Item Threshold(s): 3.09 Weighted MNSQ 1.02
Item Delta(s): 3.09

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3840	77.75	-0.07	-4.87(.000)	0.72	1.18
1	1.00	700	14.17	0.33	24.84(.000)	1.87	1.18
9	0.00	399	8.08	-0.32	-23.83(.000)	-0.49	1.09

Item 38
---
item:38 (r3q38)
Cases for this item 4844 Discrimination 0.28
Item Threshold(s): 1.81 Weighted MNSQ 1.22
Item Delta(s): 1.81

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	8	0.17	-0.03	-2.26(.024)	-0.07	0.63
9	0.00	104	2.15	-0.03	-1.87(.062)	0.56	1.04
A	0.00	1054	21.76	-0.16	-11.05(.000)	0.42	1.20
B	0.00	1128	23.29	0.01	0.64(.525)	0.81	1.28
C	1.00	1540	31.79	0.28	20.29(.000)	1.34	1.27
D	0.00	1010	20.85	-0.16	-11.16(.000)	0.40	1.14

The following traditional statistics are only meaningful for complete designs and when the amount of missing data is minimal.
In this analysis 1.93% of the data are missing.

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

N	5287
Mean	23.59
Standard Deviation	7.89
Variance	62.32
Skewness	-0.41
Kurtosis	-0.68
Standard error of mean	0.11
Standard error of measurement	2.54
Coefficient Alpha	0.90

Appendix B.2 Year 5 Reading

```
================================================================================
NAPLAN 2016, Calibration, Grade 5, reading
GENERALISED ITEM ANALYSIS
================================================================================
Item 1
------
item:1 (r5q01)
Cases for this item   5005   Discrimination  0.45
Item Threshold(s):    -0.96   Weighted MNSQ   0.93
Item Delta(s):     -0.96
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   9       0.00       13       0.26   -0.09    -6.22(.000) -0.92     0.90
   A       0.00       57       1.14   -0.17   -12.03(.000) -0.64     1.02
   B       0.00      224       4.48   -0.28   -20.23(.000) -0.39     0.89
   C       0.00      666      13.31   -0.29   -21.65(.000)  0.09     0.94
   D       1.00     4045      80.82    0.45    35.99(.000)  0.94     0.88
================================================================================

Item 2
------
item:2 (r5q02)
Cases for this item   5005   Discrimination  0.39
Item Threshold(s):    -2.23   Weighted MNSQ   0.91
Item Delta(s):     -2.23
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   9       0.00       14       0.28   -0.10    -7.36(.000) -1.17     1.08
   A       0.00      200       4.00   -0.21   -15.11(.000) -0.14     0.86
   B       1.00     4649      92.89    0.39    30.14(.000)  0.84     0.92
   C       0.00       63       1.26   -0.21   -15.05(.000) -0.86     0.66
   D       0.00       79       1.58   -0.25   -18.27(.000) -1.10     0.84
================================================================================

Item 3
------
item:3 (r5q03)
Cases for this item   5005   Discrimination  0.44
Item Threshold(s):    -1.02   Weighted MNSQ   0.94
Item Delta(s):     -1.02
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   9       0.00       14       0.28   -0.10    -7.26(.000) -1.12     1.15
   A       1.00     4087      81.66    0.44    34.43(.000)  0.93     0.89
   B       0.00      470       9.39   -0.27   -19.96(.000) -0.01     0.93
   C       0.00      380       7.59   -0.24   -17.46(.000)  0.01     0.94
   D       0.00       54       1.08   -0.21   -14.89(.000) -0.99     0.78
================================================================================

Item 4
------
item:4 (r5q04)
Cases for this item   5005   Discrimination  0.43
Item Threshold(s):    -0.94   Weighted MNSQ   0.96
Item Delta(s):     -0.94
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   9       0.00       19       0.38   -0.08    -5.82(.000) -0.62     1.34
   A       1.00     4032      80.56    0.43    34.08(.000)  0.94     0.90
   B       0.00      258       5.15   -0.24   -17.48(.000) -0.17     0.90
   C       0.00       67       1.34   -0.25   -17.90(.000) -1.13     0.64
   D       0.00      629      12.57   -0.26   -18.88(.000)  0.14     0.89
================================================================================
```

Item 5
------
item:5 (r5q05)
Cases for this item 5005 Discrimination 0.43
Item Threshold(s): -2.60 Weighted MNSQ 0.87
Item Delta(s): -2.60

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.05	-3.54(.000)	-2.83	0.00
9	0.00	11	0.22	-0.08	-5.91(.000)	-0.90	0.82
A	0.00	136	2.72	-0.31	-23.26(.000)	-0.93	0.79
B	0.00	89	1.78	-0.24	-17.27(.000)	-0.79	0.77
C	0.00	19	0.38	-0.13	-9.01(.000)	-1.13	0.80
D	1.00	4749	94.89	0.43	33.60(.000)	0.84	0.92

Item 6
------
item:6 (r5q06)
Cases for this item 5004 Discrimination 0.42
Item Threshold(s): -0.91 Weighted MNSQ 0.97
Item Delta(s): -0.91

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	17	0.34	-0.10	-7.01(.000)	-0.82	1.22
A	1.00	4012	80.18	0.42	32.85(.000)	0.93	0.90
B	0.00	274	5.48	-0.27	-19.85(.000)	-0.25	0.91
C	0.00	599	11.97	-0.20	-14.52(.000)	0.26	0.91
D	0.00	102	2.04	-0.25	-18.33(.000)	-0.76	0.79

Item 7
------
item:7 (r5q07)
Cases for this item 5003 Discrimination 0.43
Item Threshold(s): -2.10 Weighted MNSQ 0.89
Item Delta(s): -2.10

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	0.00	0.25(.800)	0.24	0.00
9	0.00	18	0.36	-0.09	-6.34(.000)	-0.64	0.83
A	0.00	73	1.46	-0.22	-16.25(.000)	-0.83	0.71
B	1.00	4607	92.08	0.43	33.49(.000)	0.86	0.91
C	0.00	223	4.46	-0.30	-22.09(.000)	-0.49	0.87
D	0.00	81	1.62	-0.17	-12.45(.000)	-0.44	0.89

Item 8
------
item:8 (r5q08)
Cases for this item 5003 Discrimination 0.51
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
8	0.00	30	0.60	0.00	0.16(.876)	0.81	0.90
9	0.00	21	0.42	-0.09	-6.30(.000)	-0.56	1.02
A	1.00	3470	69.36	0.51	42.27(.000)	1.05	0.87
B	0.00	654	13.07	-0.22	-16.21(.000)	0.23	0.78
C	0.00	336	6.72	-0.23	-16.55(.000)	-0.02	0.84
D	0.00	492	9.83	-0.33	-24.82(.000)	-0.12	0.95

Item 9
------
item:9 (r5q09)
Cases for this item 5003 Discrimination 0.51
Item Threshold(s): -1.05 Weighted MNSQ 0.88
Item Delta(s): -1.05

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.01	-0.74(.457)	0.23	0.00
9	0.00	30	0.60	-0.09	-6.42(.000)	-0.51	1.04
A	0.00	396	7.92	-0.33	-24.75(.000)	-0.21	0.83
B	0.00	270	5.40	-0.27	-20.18(.000)	-0.29	0.87
C	1.00	4102	81.99	0.51	42.38(.000)	0.96	0.88
D	0.00	204	4.08	-0.20	-14.31(.000)	-0.08	0.83

Item 10
----
item:10 (r5q10)
Cases for this item 4996 Discrimination 0.41
Item Threshold(s): -2.57 Weighted MNSQ 0.89
Item Delta(s): -2.57

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.03	-2.01(.045)	-0.81	0.00
9	0.00	13	0.26	-0.05	-3.32(.001)	-0.11	1.35
A	1.00	4733	94.74	0.41	31.36(.000)	0.83	0.92
B	0.00	79	1.58	-0.24	-17.40(.000)	-0.91	0.81
C	0.00	59	1.18	-0.21	-15.10(.000)	-0.85	0.63
D	0.00	111	2.22	-0.24	-17.47(.000)	-0.63	0.84

Item 11
----
item:11 (r5q11)
Cases for this item 4996 Discrimination 0.51
Item Threshold(s): -0.49 Weighted MNSQ 0.92
Item Delta(s): -0.49

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	14	0.28	-0.09	-6.69(.000)	-0.94	1.24
A	0.00	401	8.03	-0.23	-16.96(.000)	0.05	0.90
B	1.00	3692	73.90	0.51	41.73(.000)	1.02	0.87
C	0.00	417	8.35	-0.27	-19.77(.000)	-0.04	0.84
D	0.00	472	9.45	-0.27	-20.21(.000)	0.00	0.86

Item 12
----
item:12 (r5q12)
Cases for this item 4996 Discrimination 0.49
Item Threshold(s): 0.12 Weighted MNSQ 0.95
Item Delta(s): 0.12

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.06	-0.03	-1.93(.054)	-0.58	0.81
9	0.00	64	1.28	-0.05	-3.68(.000)	0.31	1.14
A	0.00	279	5.58	-0.19	-13.37(.000)	0.11	1.00
B	0.00	560	11.21	-0.08	-5.99(.000)	0.51	1.00
C	1.00	3144	62.93	0.49	39.76(.000)	1.09	0.85
D	0.00	946	18.94	-0.41	-31.85(.000)	-0.01	0.78

Item 13
---
item:13 (r5q13)
Cases for this item 4993 Discrimination 0.49
Item Threshold(s): -0.20 Weighted MNSQ 0.95
Item Delta(s): -0.19

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.01	-0.91(.365)	-0.76	0.00
9	0.00	15	0.30	-0.07	-5.24(.000)	-0.69	1.33
A	0.00	279	5.59	-0.27	-19.57(.000)	-0.18	0.90
B	0.00	882	17.66	-0.20	-14.74(.000)	0.34	0.87
C	1.00	3435	68.80	0.49	39.31(.000)	1.05	0.86
D	0.00	381	7.63	-0.31	-22.90(.000)	-0.22	0.80

Item 14
---
item:14 (r5q14)
Cases for this item 4993 Discrimination 0.31
Item Threshold(s): -1.50 Weighted MNSQ 1.02
Item Delta(s): -1.50

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.04	-0.01	-0.72(.470)	0.09	0.80
9	0.00	15	0.30	-0.09	-6.69(.000)	-0.76	1.14
A	1.00	4353	87.18	0.31	22.73(.000)	0.85	0.94
B	0.00	208	4.17	-0.12	-8.85(.000)	0.26	1.12
C	0.00	269	5.39	-0.19	-13.66(.000)	0.07	0.89
D	0.00	146	2.92	-0.17	-12.48(.000)	-0.19	0.97

Item 15
---
item:15 (r5q15)
Cases for this item 4992 Discrimination 0.41
Item Threshold(s): -2.02 Weighted MNSQ 0.90
Item Delta(s): -2.01

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.04	-0.04	-2.62(.009)	-0.74	0.01
9	0.00	13	0.26	-0.10	-6.76(.000)	-0.96	1.15
A	0.00	165	3.31	-0.20	-14.34(.000)	-0.25	1.06
B	1.00	4569	91.53	0.41	31.57(.000)	0.86	0.90
C	0.00	168	3.37	-0.24	-17.83(.000)	-0.42	0.91
D	0.00	75	1.50	-0.23	-16.93(.000)	-0.89	0.77

Item 16
---
item:16 (r5q16)
Cases for this item 4991 Discrimination 0.41
Item Threshold(s): -0.66 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	1	0.02	0.01	0.83(.407)	1.28	0.00
9	0.00	17	0.34	-0.04	-3.12(.002)	0.15	1.46
A	0.00	353	7.07	-0.19	-13.89(.000)	0.14	0.90
B	0.00	511	10.24	-0.20	-14.59(.000)	0.23	0.98
C	0.00	280	5.61	-0.26	-19.33(.000)	-0.19	0.92
D	1.00	3829	76.72	0.41	31.89(.000)	0.95	0.90

Item 17
---
item:17 (r5q17)
Cases for this item 4991 Discrimination 0.53
Item Threshold(s): 0.65 Weighted MNSQ 0.91
Item Delta(s): 0.65

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	31	0.62	-0.09	-6.06(.000)	-0.31	1.20
A	0.00	1363	27.31	-0.25	-17.87(.000)	0.40	0.80
B	0.00	480	9.62	-0.32	-23.81(.000)	-0.09	0.87
C	0.00	507	10.16	-0.18	-12.99(.000)	0.25	0.88
D	1.00	2610	52.29	0.53	44.16(.000)	1.21	0.86

Item 18
---
item:18 (r5q18)
Cases for this item 4984 Discrimination 0.44
Item Threshold(s): -1.53 Weighted MNSQ 0.91
Item Delta(s): -1.53

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.04	0.00	0.14(.886)	0.72	0.76
9	0.00	24	0.48	-0.07	-5.16(.000)	-0.18	1.18
A	0.00	105	2.11	-0.21	-15.48(.000)	-0.54	0.73
B	0.00	264	5.30	-0.30	-22.29(.000)	-0.35	0.71
C	1.00	4364	87.56	0.44	35.03(.000)	0.90	0.91
D	0.00	225	4.51	-0.21	-15.12(.000)	-0.13	0.89

Item 19
---
item:19 (r5q19)
Cases for this item 4984 Discrimination 0.30
Item Threshold(s): -0.61 Weighted MNSQ 1.09
Item Delta(s): -0.61

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.04	-2.97(.003)	-1.76	0.00
9	0.00	20	0.40	-0.11	-7.49(.000)	-0.67	1.07
A	0.00	372	7.46	-0.14	-10.19(.000)	0.32	1.01
B	1.00	3781	75.86	0.30	22.51(.000)	0.91	0.91
C	0.00	118	2.37	-0.26	-18.89(.000)	-0.70	0.84
D	0.00	692	13.88	-0.13	-9.45(.000)	0.46	0.94

Item 20
---
item:20 (r5q20)
Cases for this item 4983 Discrimination 0.45
Item Threshold(s): -0.20 Weighted MNSQ 0.98
Item Delta(s): -0.20

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.04	0.01	0.72(.469)	1.32	0.93
9	0.00	67	1.34	-0.07	-4.80(.000)	0.29	1.13
A	0.00	187	3.75	-0.27	-19.64(.000)	-0.41	0.83
B	0.00	524	10.52	-0.24	-17.44(.000)	0.14	0.85
C	0.00	763	15.31	-0.22	-15.69(.000)	0.29	0.88
D	1.00	3440	69.03	0.45	36.05(.000)	1.03	0.89

Item 21
---
item:21 (r5q21)
Cases for this item 4982 Discrimination 0.41
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
9	0.00	24	0.48	-0.12	-8.77(.000)	-0.79	1.08
A	0.00	1006	20.19	-0.07	-4.85(.000)	0.62	0.91
B	1.00	1654	33.20	0.41	31.46(.000)	1.29	0.95
C	0.00	398	7.99	-0.19	-13.64(.000)	0.19	0.93
D	0.00	1900	38.14	-0.21	-15.51(.000)	0.50	0.82

Item 22
---
item:22 (r5q22)
Cases for this item 4982 Discrimination 0.20
Item Threshold(s): 2.03 Weighted MNSQ 1.14
Item Delta(s): 2.03

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.03	-1.86(.063)	-0.71	0.00
9	0.00	41	0.82	-0.09	-6.35(.000)	-0.11	1.10
A	1.00	1270	25.49	0.20	14.19(.000)	1.07	0.99
B	0.00	2871	57.63	0.08	5.53(.000)	0.81	0.90
C	0.00	452	9.07	-0.26	-19.11(.000)	0.04	0.94
D	0.00	347	6.97	-0.16	-11.50(.000)	0.23	0.86

Item 23
---
item:23 (r5q23)
Cases for this item 4982 Discrimination 0.50
Item Threshold(s): 0.37 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	1	0.02	-0.00	-0.15(.880)	0.19	0.00
9	0.00	26	0.52	-0.11	-8.15(.000)	-0.65	1.16
A	0.00	324	6.50	-0.22	-16.12(.000)	0.01	0.93
B	0.00	1249	25.07	-0.26	-19.33(.000)	0.33	0.81
C	1.00	2896	58.13	0.50	41.02(.000)	1.14	0.87
D	0.00	486	9.76	-0.24	-17.18(.000)	0.14	0.87

Item 24
---
item:24 (r5q24)
Cases for this item 4982 Discrimination 0.26
Item Threshold(s): -0.15 Weighted MNSQ 1.14
Item Delta(s): -0.15

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.04	-0.01	-0.62(.538)	0.41	0.36
9	0.00	29	0.58	-0.10	-7.24(.000)	-0.50	1.27
A	0.00	156	3.13	-0.26	-18.94(.000)	-0.50	0.74
B	0.00	685	13.75	-0.18	-12.89(.000)	0.35	0.96
C	0.00	720	14.45	-0.02	-1.72(.085)	0.71	1.04
D	1.00	3390	68.04	0.26	19.39(.000)	0.92	0.90

Item 25
---
item:25 (r5q25)
Cases for this item 4981 Discrimination 0.49
Item Threshold(s): 0.66 Weighted MNSQ 0.95
Item Delta(s): 0.66

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	23	0.46	-0.09	-6.61(.000)	-0.51	0.97
A	0.00	823	16.52	-0.29	-21.62(.000)	0.18	0.85
B	0.00	895	17.97	-0.27	-19.46(.000)	0.25	0.85
C	1.00	2592	52.04	0.49	40.16(.000)	1.18	0.87
D	0.00	648	13.01	-0.09	-6.30(.000)	0.54	0.87

Item 26
---
item:26 (r5q26)
Cases for this item 4979 Discrimination 0.45
Item Threshold(s): 0.27 Weighted MNSQ 0.99
Item Delta(s): 0.27

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.01	-0.59(.552)	0.25	0.00
9	0.00	63	1.27	-0.07	-5.30(.000)	0.12	0.90
A	0.00	443	8.90	-0.26	-18.97(.000)	0.04	0.84
B	0.00	562	11.29	-0.18	-13.19(.000)	0.29	1.05
C	1.00	2992	60.09	0.45	35.48(.000)	1.08	0.88
D	0.00	918	18.44	-0.20	-14.77(.000)	0.37	0.80

Item 27
---
item:27 (r5q27)
Cases for this item 4962 Discrimination 0.25
Item Threshold(s): 1.88 Weighted MNSQ 1.10
Item Delta(s): 1.88

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.06	-0.02	-1.22(.224)	0.23	1.68
9	0.00	62	1.25	-0.06	-4.08(.000)	0.40	1.01
A	0.00	900	18.14	-0.18	-12.77(.000)	0.42	0.86
B	1.00	1392	28.05	0.25	18.29(.000)	1.15	1.01
C	0.00	626	12.62	-0.26	-18.58(.000)	0.17	0.91
D	0.00	1979	39.88	0.10	6.85(.000)	0.84	0.87

Item 28
---
item:28 (r5q28)
Cases for this item 4960 Discrimination 0.44
Item Threshold(s): 0.53 Weighted MNSQ 1.00
Item Delta(s): 0.53

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.08	-0.03	-1.99(.046)	-0.06	1.18
9	0.00	46	0.93	-0.06	-3.97(.000)	0.25	1.03
A	1.00	2720	54.84	0.44	34.30(.000)	1.13	0.92
B	0.00	556	11.21	-0.26	-18.87(.000)	0.11	0.83
C	0.00	1212	24.44	-0.18	-12.56(.000)	0.46	0.80
D	0.00	422	8.51	-0.20	-14.06(.000)	0.19	0.92

Item 29
---
item:29 (r5q29)
Cases for this item 4956 Discrimination 0.23
Item Threshold(s): 1.63 Weighted MNSQ 1.14
Item Delta(s): 1.63

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.04	-2.97(.003)	-1.71	0.00
9	0.00	43	0.87	-0.08	-5.46(.000)	-0.00	1.09
A	1.00	1615	32.59	0.23	16.42(.000)	1.08	1.00
B	0.00	771	15.56	-0.18	-12.71(.000)	0.37	0.86
C	0.00	1153	23.26	-0.04	-3.07(.002)	0.68	0.90
D	0.00	1373	27.70	-0.04	-2.50(.012)	0.70	0.94

Item 30
---
item:30 (r5q30)
Cases for this item 4950 Discrimination 0.42
Item Threshold(s): 1.67 Weighted MNSQ 0.96
Item Delta(s): 1.67

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.04	-0.02	-1.63(.103)	-0.53	1.67
9	0.00	55	1.11	-0.06	-4.49(.000)	0.25	0.99
A	0.00	376	7.60	-0.16	-11.21(.000)	0.26	0.84
B	0.00	932	18.83	-0.26	-18.87(.000)	0.28	0.91
C	1.00	1578	31.88	0.42	32.51(.000)	1.33	0.93
D	0.00	2007	40.55	-0.09	-6.52(.000)	0.65	0.83

Item 31
---
item:31 (r5q31)
Cases for this item 4945 Discrimination 0.37
Item Threshold(s): 1.00 Weighted MNSQ 1.06
Item Delta(s): 1.00

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)	-1.01	0.99
9	0.00	69	1.40	-0.07	-4.79(.000)	0.23	0.88
A	0.00	812	16.42	-0.23	-16.97(.000)	0.30	0.85
B	1.00	2232	45.14	0.37	27.81(.000)	1.13	0.93
C	0.00	1298	26.25	-0.07	-5.23(.000)	0.63	0.90
D	0.00	532	10.76	-0.18	-12.60(.000)	0.31	0.93

Item 32
---
item:32 (r5q32)
Cases for this item 4941 Discrimination 0.53
Item Threshold(s): 0.33 Weighted MNSQ 0.92
Item Delta(s): 0.33

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.04	-0.06	-3.88(.000)	-1.51	0.28
9	0.00	47	0.95	-0.09	-6.02(.000)	-0.05	0.93
A	0.00	521	10.54	-0.24	-17.55(.000)	0.12	0.80
B	0.00	578	11.70	-0.22	-15.55(.000)	0.24	0.83
C	0.00	875	17.71	-0.28	-20.30(.000)	0.23	0.82
D	1.00	2918	59.06	0.53	43.58(.000)	1.16	0.87

Item 33
---
item:33 (r5q33)
Cases for this item 4937 Discrimination 0.21
Item Threshold(s): 0.83 Weighted MNSQ 1.22
Item Delta(s): 0.83

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.04	-0.06	-3.88(.000)	-1.51	0.28
9	0.00	67	1.36	-0.05	-3.48(.000)	0.22	0.88
A	1.00	2404	48.69	0.21	14.95(.000)	0.95	0.93
B	0.00	680	13.77	-0.16	-11.44(.000)	0.39	0.91
C	0.00	940	19.04	-0.12	-8.63(.000)	0.56	0.97
D	0.00	844	17.10	0.02	1.14(.254)	0.81	1.01

Item 34
---
item:34 (r5q34)
Cases for this item 4903 Discrimination 0.41
Item Threshold(s): 0.94 Weighted MNSQ 1.01
Item Delta(s): 0.94

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)	-1.71	0.00
9	0.00	35	0.71	-0.08	-5.27(.000)	-0.03	0.86
A	0.00	985	20.09	-0.14	-10.24(.000)	0.50	0.87
B	1.00	2280	46.50	0.41	31.30(.000)	1.17	0.95
C	0.00	1085	22.13	-0.23	-16.34(.000)	0.37	0.83
D	0.00	517	10.54	-0.14	-10.21(.000)	0.39	0.86

Item 35
---
item:35 (r5q35)
Cases for this item 4891 Discrimination 0.35
Item Threshold(s): 0.57 Weighted MNSQ 1.08
Item Delta(s): 0.57

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.06	-0.04	-2.88(.004)	-0.57	1.03
9	0.00	29	0.59	-0.01	-0.93(.351)	0.69	0.74
A	0.00	986	20.16	-0.23	-16.45(.000)	0.36	0.86
B	1.00	2649	54.16	0.35	26.43(.000)	1.06	0.92
C	0.00	589	12.04	-0.18	-12.86(.000)	0.32	0.94
D	0.00	635	12.98	-0.07	-4.88(.000)	0.60	0.96

Item 36
---
item:36 (r5q36)
Cases for this item 4883 Discrimination 0.35
Item Threshold(s): 1.18 Weighted MNSQ 1.05
Item Delta(s): 1.18

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.04	-2.99(.003)	-1.71	0.00
9	0.00	46	0.94	-0.03	-2.28(.022)	0.49	0.79
A	0.00	703	14.40	-0.09	-6.04(.000)	0.55	0.83
B	1.00	2027	41.51	0.35	26.29(.000)	1.16	0.98
C	0.00	1152	23.59	-0.22	-15.62(.000)	0.40	0.81
D	0.00	954	19.54	-0.12	-8.32(.000)	0.56	0.96

Item 37
----
item:37 (r5q37)
Cases for this item 4870 Discrimination 0.15
Item Threshold(s): 3.99 Weighted MNSQ 1.03
Item Delta(s): 3.99

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3981	81.75	0.12	8.69(.000)	0.82	0.93
1	1.00	269	5.52	0.15	10.93(.000)	1.39	1.07
9	0.00	620	12.73	-0.25	-17.96(.000)	0.19	0.96

Item 38
----
item:38 (r5q38)
Cases for this item 4855 Discrimination 0.28
Item Threshold(s): 1.73 Weighted MNSQ 1.09
Item Delta(s): 1.72

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.08	-0.01	-0.98(.326)	0.34	1.45
9	0.00	12	0.25	0.01	0.64(.525)	0.82	1.05
A	0.00	305	6.28	-0.27	-19.92(.000)	-0.13	0.81
B	0.00	370	7.62	-0.29	-21.48(.000)	-0.14	0.83
C	0.00	2656	54.71	0.03	2.05(.041)	0.78	0.86
D	1.00	1508	31.06	0.28	20.43(.000)	1.17	0.96

The following traditional statistics are only meaningful for complete
designs and when the amount of missing data is minimal.
In this analysis 0.69% of the data are missing.

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

N	5005
Mean	23.72
Standard Deviation	6.36
Variance	40.50
Skewness	-0.50
Kurtosis	-0.18
Standard error of mean	0.09
Standard error of measurement	2.50
Coefficient Alpha	0.85

Appendix B.3 Year 7 Reading

```
================================================================================
NAPLAN 2016, Calibration, Grade 7, reading
GENERALISED ITEM ANALYSIS
================================================================================
Item 1
------
item:1 (r7q01)
Cases for this item   6304   Discrimination  0.23
Item Threshold(s):    -2.91   Weighted MNSQ   0.97
Item Delta(s):     -2.91
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   9       0.00         8       0.13   -0.06    -4.49(.000) -1.22     0.89
   A       0.00       107       1.70   -0.11    -9.04(.000) -0.44     1.02
   B       1.00      5964      94.61    0.23    18.72(.000)  0.33     0.86
   C       0.00        49       0.78   -0.14   -10.94(.000) -1.04     0.88
   D       0.00       176       2.79   -0.14   -11.30(.000) -0.42     0.76
================================================================================

Item 2
------
item:2 (r7q02)
Cases for this item   6304   Discrimination  0.37
Item Threshold(s):    -2.06   Weighted MNSQ   0.92
Item Delta(s):     -2.06
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   9       0.00        28       0.44   -0.08    -6.21(.000) -0.85     1.12
   A       0.00       253       4.01   -0.25   -20.36(.000) -0.71     0.74
   B       0.00       214       3.39   -0.17   -14.02(.000) -0.48     0.79
   C       0.00       218       3.46   -0.18   -14.55(.000) -0.54     0.86
   D       1.00      5591      88.69    0.37    31.99(.000)  0.40     0.83
================================================================================

Item 3
------
item:3 (r7q03)
Cases for this item   6303   Discrimination  0.39
Item Threshold(s):    -1.04   Weighted MNSQ   0.97
Item Delta(s):     -1.04
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   9       0.00        22       0.35   -0.08    -6.49(.000) -1.03     1.07
   A       1.00      4775      75.76    0.39    34.12(.000)  0.47     0.84
   B       0.00       628       9.96   -0.20   -16.02(.000) -0.20     0.76
   C       0.00       802      12.72   -0.26   -21.23(.000) -0.27     0.69
   D       0.00        76       1.21   -0.18   -14.11(.000) -1.07     0.61
================================================================================

Item 4
------
item:4 (r7q04)
Cases for this item   6303   Discrimination  0.38
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         2       0.03   -0.00    -0.05(.961)  0.01     1.33
   9       0.00        21       0.33   -0.10    -7.89(.000) -1.17     0.87
   A       1.00      5273      83.66    0.38    32.83(.000)  0.42     0.82
   B       0.00       311       4.93   -0.24   -19.69(.000) -0.58     0.73
   C       0.00       134       2.13   -0.18   -14.83(.000) -0.73     0.64
   D       0.00       562       8.92   -0.20   -16.19(.000) -0.26     0.84
================================================================================
```

Item 5
------
item:5 (r7q05)
Cases for this item 6303 Discrimination 0.32
Item Threshold(s): -2.45 Weighted MNSQ 0.95
Item Delta(s): -2.45

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.03	-2.12(.034)	-1.01	0.00
9	0.00	15	0.24	-0.08	-6.28(.000)	-1.21	1.17
A	0.00	136	2.16	-0.22	-17.66(.000)	-0.91	0.62
B	0.00	54	0.86	-0.16	-12.85(.000)	-1.13	0.62
C	0.00	308	4.89	-0.17	-13.83(.000)	-0.30	0.73
D	1.00	5789	91.85	0.32	26.77(.000)	0.36	0.85

Item 6
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item:6 (r7q06)
Cases for this item 6300 Discrimination 0.36
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
8	0.00	1	0.02	-0.01	-1.08(.281)	-0.54	0.00
9	0.00	24	0.38	-0.09	-7.51(.000)	-1.25	1.09
A	0.00	139	2.21	-0.20	-15.81(.000)	-0.78	0.69
B	0.00	384	6.10	-0.22	-17.65(.000)	-0.41	0.74
C	0.00	712	11.30	-0.18	-14.32(.000)	-0.12	0.84
D	1.00	5040	80.00	0.36	30.34(.000)	0.43	0.83

Item 7
------
item:7 (r7q07)
Cases for this item 6297 Discrimination 0.49
Item Threshold(s): 0.21 Weighted MNSQ 0.93
Item Delta(s): 0.21

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.01	-0.50(.617)	-0.33	0.00
9	0.00	24	0.38	-0.07	-5.93(.000)	-0.73	0.87
A	0.00	1004	15.94	-0.11	-8.97(.000)	0.06	0.78
B	1.00	3233	51.34	0.49	44.16(.000)	0.67	0.80
C	0.00	355	5.64	-0.19	-15.13(.000)	-0.35	0.77
D	0.00	1680	26.68	-0.35	-29.49(.000)	-0.17	0.74

Item 8
------
item:8 (r7q08)
Cases for this item 6297 Discrimination 0.28
Item Threshold(s): 1.22 Weighted MNSQ 1.07
Item Delta(s): 1.22

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	23	0.37	-0.08	-6.18(.000)	-0.91	1.23
A	1.00	1938	30.78	0.28	23.07(.000)	0.62	0.93
B	0.00	3814	60.57	-0.10	-8.00(.000)	0.22	0.78
C	0.00	259	4.11	-0.21	-16.67(.000)	-0.49	0.77
D	0.00	263	4.18	-0.17	-13.81(.000)	-0.33	0.73

Item 9
------
item:9 (r7q09)
Cases for this item 6296 Discrimination 0.45
Item Threshold(s): -0.88 Weighted MNSQ 0.94
Item Delta(s): -0.88

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	16	0.25	-0.08	-6.71(.000)	-1.29	1.01
A	0.00	206	3.27	-0.15	-12.23(.000)	-0.44	0.92
B	0.00	1163	18.47	-0.32	-26.46(.000)	-0.25	0.71
C	1.00	4600	73.06	0.45	39.44(.000)	0.51	0.82
D	0.00	311	4.94	-0.20	-16.20(.000)	-0.42	0.70

Item 10
----
item:10 (r7q10)
Cases for this item 6295 Discrimination 0.15
Item Threshold(s): -0.75 Weighted MNSQ 1.16
Item Delta(s): -0.75

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.01	-0.50(.616)	-0.11	0.00
9	0.00	36	0.57	-0.13	-10.67(.000)	-1.24	0.72
A	0.00	86	1.37	-0.17	-13.59(.000)	-0.95	0.68
B	0.00	454	7.21	-0.18	-14.33(.000)	-0.25	0.76
C	0.00	1259	20.00	0.02	1.79(.074)	0.32	0.91
D	1.00	4459	70.83	0.15	11.77(.000)	0.37	0.84

Item 11
----
item:11 (r7q11)
Cases for this item 6295 Discrimination 0.46
Item Threshold(s): -0.72 Weighted MNSQ 0.93
Item Delta(s): -0.72

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.03	-0.02	-1.69(.090)	-0.72	0.59
9	0.00	36	0.57	-0.13	-10.31(.000)	-1.19	0.88
A	0.00	559	8.88	-0.25	-20.49(.000)	-0.39	0.73
B	0.00	751	11.93	-0.27	-22.57(.000)	-0.31	0.73
C	1.00	4420	70.21	0.46	40.83(.000)	0.53	0.81
D	0.00	527	8.37	-0.14	-11.38(.000)	-0.11	0.78

Item 12
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item:12 (r7q12)
Cases for this item 6291 Discrimination 0.41
Item Threshold(s): -2.15 Weighted MNSQ 0.89
Item Delta(s): -2.15

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.00	-0.39(.699)	-0.34	0.00
9	0.00	33	0.52	-0.07	-5.45(.000)	-0.51	0.94
A	1.00	5632	89.52	0.41	35.46(.000)	0.40	0.82
B	0.00	121	1.92	-0.19	-15.76(.000)	-0.82	0.68
C	0.00	180	2.86	-0.19	-15.32(.000)	-0.63	0.85
D	0.00	324	5.15	-0.28	-23.02(.000)	-0.67	0.61

Item 13
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item:13 (r7q13)
Cases for this item 6289 Discrimination 0.40
Item Threshold(s): 0.66 Weighted MNSQ 1.00
Item Delta(s): 0.66

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.05	-0.01	-0.87(.383)	-0.22	0.75
9	0.00	42	0.67	-0.08	-6.18(.000)	-0.54	1.04
A	0.00	783	12.45	-0.10	-7.86(.000)	0.07	0.87
B	1.00	2632	41.85	0.40	34.13(.000)	0.67	0.86
C	0.00	2452	38.99	-0.24	-19.37(.000)	0.04	0.75
D	0.00	377	5.99	-0.17	-13.59(.000)	-0.25	0.70

Item 14
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item:14 (r7q14)
Cases for this item 6286 Discrimination 0.46
Item Threshold(s): -0.75 Weighted MNSQ 0.92
Item Delta(s): -0.75

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.00	-0.04(.969)	-0.04	0.00
9	0.00	56	0.89	-0.06	-4.66(.000)	-0.31	1.05
A	0.00	545	8.67	-0.23	-18.81(.000)	-0.28	0.66
B	0.00	821	13.06	-0.31	-25.73(.000)	-0.35	0.74
C	0.00	407	6.47	-0.14	-11.04(.000)	-0.13	0.88
D	1.00	4456	70.89	0.46	40.94(.000)	0.52	0.81

Item 15
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item:15 (r7q15)
Cases for this item 6283 Discrimination 0.48
Item Threshold(s): 0.53 Weighted MNSQ 0.93
Item Delta(s): 0.53

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	0.00	0.08(.938)	0.46	0.00
9	0.00	80	1.27	-0.11	-9.07(.000)	-0.53	0.91
A	0.00	1143	18.19	-0.28	-22.90(.000)	-0.19	0.70
B	0.00	962	15.31	-0.26	-21.38(.000)	-0.19	0.69
C	0.00	1294	20.60	-0.06	-5.00(.000)	0.18	0.80
D	1.00	2803	44.61	0.48	43.48(.000)	0.73	0.80

Item 16
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item:16 (r7q16)
Cases for this item 6282 Discrimination 0.36
Item Threshold(s): -0.25 Weighted MNSQ 1.03
Item Delta(s): -0.25

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.01	-0.97(.331)	-0.52	0.00
9	0.00	25	0.40	-0.09	-7.37(.000)	-0.93	0.86
A	1.00	3846	61.22	0.36	30.47(.000)	0.52	0.85
B	0.00	242	3.85	-0.22	-17.50(.000)	-0.60	0.71
C	0.00	1694	26.97	-0.20	-16.30(.000)	0.02	0.75
D	0.00	474	7.55	-0.14	-11.52(.000)	-0.10	0.81

Item 17
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item:17 (r7q17)
Cases for this item 6281 Discrimination 0.42
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	2	0.03	-0.01	-0.96(.336)	0.26	0.59
9	0.00	23	0.37	-0.07	-5.45(.000)	-0.64	1.25
A	0.00	1535	24.44	-0.19	-15.19(.000)	0.02	0.77
B	0.00	310	4.94	-0.29	-24.22(.000)	-0.76	0.53
C	0.00	455	7.24	-0.21	-16.74(.000)	-0.30	0.78
D	1.00	3956	62.98	0.42	36.53(.000)	0.55	0.81

Item 18
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item:18 (r7q18)
Cases for this item 6280 Discrimination 0.40
Item Threshold(s): -0.70 Weighted MNSQ 0.97
Item Delta(s): -0.70

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.03	-2.14(.032)	-1.01	0.00
9	0.00	84	1.34	-0.07	-5.85(.000)	-0.23	0.78
A	0.00	304	4.84	-0.23	-19.01(.000)	-0.54	0.71
B	0.00	572	9.11	-0.14	-11.43(.000)	-0.07	0.88
C	1.00	4395	69.98	0.40	34.85(.000)	0.51	0.81
D	0.00	924	14.71	-0.24	-19.48(.000)	-0.18	0.75

Item 19
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item:19 (r7q19)
Cases for this item 6278 Discrimination 0.32
Item Threshold(s): 0.82 Weighted MNSQ 1.06
Item Delta(s): 0.82

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.06	0.01	0.48(.630)	0.50	0.51
9	0.00	106	1.69	-0.11	-8.40(.000)	-0.36	0.80
A	0.00	789	12.57	-0.16	-12.55(.000)	-0.05	0.80
B	1.00	2425	38.63	0.32	26.70(.000)	0.62	0.86
C	0.00	520	8.28	-0.22	-18.09(.000)	-0.30	0.76
D	0.00	2434	38.77	-0.06	-4.70(.000)	0.22	0.79

Item 20
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item:20 (r7q20)
Cases for this item 6276 Discrimination 0.46
Item Threshold(s): -0.65 Weighted MNSQ 0.93
Item Delta(s): -0.65

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	93	1.48	-0.11	-8.50(.000)	-0.39	0.89
A	1.00	4328	68.96	0.46	40.76(.000)	0.54	0.82
B	0.00	368	5.86	-0.26	-21.03(.000)	-0.54	0.63
C	0.00	1155	18.40	-0.24	-19.38(.000)	-0.11	0.71
D	0.00	332	5.29	-0.21	-16.79(.000)	-0.40	0.76

Item 21
---
item:21 (r7q21)
Cases for this item 6273 Discrimination 0.31
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
8	0.00	2	0.03	-0.02	-1.54(.122)	-0.57	0.66
9	0.00	39	0.62	-0.09	-7.47(.000)	-0.59	0.89
A	1.00	2592	41.32	0.31	25.97(.000)	0.60	0.88
B	0.00	647	10.31	-0.23	-18.66(.000)	-0.25	0.73
C	0.00	1587	25.30	-0.14	-11.18(.000)	0.10	0.76
D	0.00	1406	22.41	-0.04	-2.88(.004)	0.22	0.82

Item 22
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item:22 (r7q22)
Cases for this item 6273 Discrimination 0.55
Item Threshold(s): 0.11 Weighted MNSQ 0.88
Item Delta(s): 0.11

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.01	-1.09(.275)	-0.54	0.00
9	0.00	47	0.75	-0.07	-5.63(.000)	-0.37	0.85
A	0.00	326	5.20	-0.19	-15.27(.000)	-0.37	0.65
B	0.00	760	12.12	-0.27	-22.22(.000)	-0.28	0.75
C	1.00	3367	53.67	0.55	51.56(.000)	0.70	0.79
D	0.00	1772	28.25	-0.30	-25.01(.000)	-0.10	0.68

Item 23
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item:23 (r7q23)
Cases for this item 6272 Discrimination 0.39
Item Threshold(s): 0.00 Weighted MNSQ 1.01
Item Delta(s): -0.00

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.03	-0.02	-1.21(.225)	-0.29	1.05
9	0.00	70	1.12	-0.07	-5.23(.000)	-0.23	0.87
A	0.00	615	9.81	-0.25	-20.71(.000)	-0.32	0.68
B	1.00	3515	56.04	0.39	33.47(.000)	0.57	0.83
C	0.00	1597	25.46	-0.15	-12.20(.000)	0.08	0.80
D	0.00	473	7.54	-0.17	-13.52(.000)	-0.18	0.76

Item 24
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item:24 (r7q24)
Cases for this item 6271 Discrimination 0.54
Item Threshold(s): -1.08 Weighted MNSQ 0.85
Item Delta(s): -1.08

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	49	0.78	-0.12	-9.56(.000)	-0.73	0.91
A	0.00	327	5.21	-0.26	-20.97(.000)	-0.56	0.57
B	0.00	413	6.59	-0.24	-20.01(.000)	-0.46	0.64
C	0.00	681	10.86	-0.32	-26.88(.000)	-0.44	0.62
D	1.00	4801	76.56	0.54	50.64(.000)	0.53	0.80

Item 25
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item:25 (r7q25)
Cases for this item 6271 Discrimination 0.33
Item Threshold(s): -0.30 Weighted MNSQ 1.05
Item Delta(s): -0.31

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	35	0.56	-0.04	-3.17(.002)	-0.32	1.02
A	0.00	963	15.36	-0.27	-22.38(.000)	-0.22	0.72
B	1.00	3911	62.37	0.33	28.01(.000)	0.50	0.84
C	0.00	862	13.75	-0.11	-8.56(.000)	0.08	0.84
D	0.00	500	7.97	-0.09	-6.91(.000)	0.08	0.84

Item 26
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item:26 (r7q26)
Cases for this item 6264 Discrimination 0.40
Item Threshold(s): -0.22 Weighted MNSQ 1.00
Item Delta(s): -0.22

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	54	0.86	-0.11	-8.70(.000)	-0.75	0.86
A	0.00	548	8.75	-0.19	-15.13(.000)	-0.18	0.76
B	0.00	720	11.49	-0.25	-20.02(.000)	-0.25	0.73
C	1.00	3797	60.62	0.40	34.20(.000)	0.55	0.82
D	0.00	1145	18.28	-0.14	-10.84(.000)	0.05	0.80

Item 27
----
item:27 (r7q27)
Cases for this item 6261 Discrimination 0.41
Item Threshold(s): -0.48 Weighted MNSQ 0.98
Item Delta(s): -0.49

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.01	-0.98(.328)	-0.79	0.00
9	0.00	58	0.93	-0.13	-10.46(.000)	-0.77	0.83
A	1.00	4131	65.98	0.41	35.65(.000)	0.54	0.84
B	0.00	998	15.94	-0.19	-15.15(.000)	-0.07	0.72
C	0.00	477	7.62	-0.17	-13.42(.000)	-0.17	0.76
D	0.00	596	9.52	-0.23	-19.06(.000)	-0.28	0.66

Item 28
----
item:28 (r7q28)
Cases for this item 6259 Discrimination 0.45
Item Threshold(s): 1.25 Weighted MNSQ 0.93
Item Delta(s): 1.25

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	41	0.66	-0.12	-9.85(.000)	-1.02	0.77
A	0.00	2239	35.77	-0.26	-21.42(.000)	0.01	0.70
B	1.00	1902	30.39	0.45	39.39(.000)	0.85	0.86
C	0.00	287	4.59	-0.25	-20.06(.000)	-0.59	0.56
D	0.00	1790	28.60	-0.04	-3.21(.001)	0.23	0.76

Item 29
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item:29 (r7q29)
Cases for this item 6259 Discrimination 0.42
Item Threshold(s): 0.53 Weighted MNSQ 0.99
Item Delta(s): 0.53

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.02	-1.56(.118)	-1.29	0.00
9	0.00	52	0.83	-0.07	-5.39(.000)	-0.33	0.92
A	0.00	1057	16.89	-0.15	-12.11(.000)	0.01	0.81
B	0.00	861	13.76	-0.23	-18.87(.000)	-0.19	0.75
C	1.00	2802	44.77	0.42	36.56(.000)	0.67	0.83
D	0.00	1486	23.74	-0.15	-12.34(.000)	0.08	0.74

Item 30
---
item:30 (r7q30)
Cases for this item 6255 Discrimination 0.41
Item Threshold(s): 0.15 Weighted MNSQ 1.00
Item Delta(s): 0.15

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.03	-0.01	-0.53(.595)	-0.39	1.47
9	0.00	47	0.75	-0.12	-9.42(.000)	-0.80	0.86
A	0.00	1998	31.94	-0.16	-12.75(.000)	0.11	0.76
B	1.00	3304	52.82	0.41	35.31(.000)	0.60	0.83
C	0.00	467	7.47	-0.22	-17.57(.000)	-0.32	0.71
D	0.00	437	6.99	-0.24	-19.81(.000)	-0.42	0.62

Item 31
---
item:31 (r7q31)
Cases for this item 6252 Discrimination 0.37
Item Threshold(s): 0.68 Weighted MNSQ 1.02
Item Delta(s): 0.68

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	51	0.82	-0.05	-3.88(.000)	-0.09	0.92
A	0.00	1438	23.00	-0.10	-7.56(.000)	0.14	0.79
B	0.00	1186	18.97	-0.21	-17.14(.000)	-0.06	0.79
C	1.00	2606	41.68	0.37	31.34(.000)	0.65	0.85
D	0.00	971	15.53	-0.15	-11.96(.000)	0.03	0.80

Item 32
---
item:32 (r7q32)
Cases for this item 6251 Discrimination 0.40
Item Threshold(s): -0.71 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	2	0.03	-0.02	-1.30(.193)	-0.29	0.19
9	0.00	44	0.70	-0.12	-9.53(.000)	-0.85	0.81
A	1.00	4396	70.32	0.40	34.40(.000)	0.50	0.81
B	0.00	789	12.62	-0.13	-10.11(.000)	0.02	0.85
C	0.00	492	7.87	-0.18	-14.62(.000)	-0.22	0.77
D	0.00	528	8.45	-0.29	-24.03(.000)	-0.45	0.67

Item 33
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item:33 (r7q33)
Cases for this item 6247 Discrimination 0.38
Item Threshold(s): 0.46 Weighted MNSQ 1.02
Item Delta(s): 0.46

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.01	-0.63(.529)	0.09	0.00
9	0.00	34	0.54	-0.07	-5.50(.000)	-0.57	0.89
A	0.00	2292	36.69	-0.13	-10.20(.000)	0.16	0.78
B	0.00	502	8.04	-0.23	-18.43(.000)	-0.32	0.76
C	0.00	528	8.45	-0.23	-18.37(.000)	-0.32	0.70
D	1.00	2890	46.26	0.38	32.89(.000)	0.64	0.82

Item 34
----
item:34 (r7q34)
Cases for this item 6243 Discrimination 0.43
Item Threshold(s): 0.03 Weighted MNSQ 0.98
Item Delta(s): 0.03

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.01	-0.75(.455)	-0.43	0.00
9	0.00	83	1.33	-0.09	-6.98(.000)	-0.37	0.91
A	0.00	1489	23.85	-0.16	-13.00(.000)	0.06	0.76
B	0.00	686	10.99	-0.24	-19.25(.000)	-0.22	0.73
C	0.00	519	8.31	-0.22	-17.46(.000)	-0.28	0.75
D	1.00	3465	55.50	0.43	37.48(.000)	0.60	0.82

Item 35
----
item:35 (r7q35)
Cases for this item 6242 Discrimination 0.27
Item Threshold(s): 0.68 Weighted MNSQ 1.11
Item Delta(s): 0.68

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.03	-0.02	-1.88(.060)	-0.63	0.53
9	0.00	36	0.58	-0.10	-8.11(.000)	-0.81	1.06
A	0.00	2302	36.88	-0.03	-2.01(.045)	0.26	0.82
B	0.00	1004	16.08	-0.21	-16.71(.000)	-0.09	0.73
C	1.00	2599	41.64	0.27	21.92(.000)	0.56	0.87
D	0.00	299	4.79	-0.17	-13.28(.000)	-0.29	0.76

Item 36
----
item:36 (r7q36)
Cases for this item 6242 Discrimination 0.30
Item Threshold(s): 0.75 Weighted MNSQ 1.08
Item Delta(s): 0.75

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	0.02	1.94(.052)	2.03	0.00
9	0.00	49	0.79	-0.10	-8.16(.000)	-0.63	1.01
A	1.00	2512	40.24	0.30	25.02(.000)	0.59	0.85
B	0.00	1035	16.58	-0.19	-15.29(.000)	-0.04	0.71
C	0.00	1198	19.19	-0.15	-12.31(.000)	0.04	0.79
D	0.00	1447	23.18	-0.02	-1.49(.137)	0.27	0.89

Item 37
---
item:37 (r7q37)
Cases for this item 6241 Discrimination 0.41
Item Threshold(s): 0.51 Weighted MNSQ 0.99
Item Delta(s): 0.51

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.05	-0.02	-1.41(.159)	-0.19	0.79
9	0.00	27	0.43	-0.08	-6.51(.000)	-0.81	0.99
A	1.00	2828	45.31	0.41	35.76(.000)	0.67	0.85
B	0.00	711	11.39	-0.24	-19.52(.000)	-0.25	0.72
C	0.00	2343	37.54	-0.17	-13.92(.000)	0.11	0.74
D	0.00	329	5.27	-0.18	-14.10(.000)	-0.31	0.74

Item 38
---
item:38 (r7q38)
Cases for this item 6236 Discrimination 0.31
Item Threshold(s): 0.89 Weighted MNSQ 1.06
Item Delta(s): 0.89

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	36	0.58	-0.07	-5.81(.000)	-0.46	0.89
A	0.00	1674	26.84	-0.06	-5.06(.000)	0.20	0.75
B	1.00	2327	37.32	0.31	26.19(.000)	0.64	0.90
C	0.00	1521	24.39	-0.09	-7.20(.000)	0.16	0.81
D	0.00	678	10.87	-0.25	-20.82(.000)	-0.27	0.68

Item 39
---
item:39 (r7q39)
Cases for this item 6234 Discrimination 0.34
Item Threshold(s): 0.70 Weighted MNSQ 1.05
Item Delta(s): 0.70

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.02	-1.92(.055)	-1.06	0.00
9	0.00	56	0.90	-0.06	-4.53(.000)	-0.25	0.88
A	0.00	1598	25.63	-0.05	-4.16(.000)	0.22	0.82
B	0.00	1019	16.35	-0.25	-20.42(.000)	-0.16	0.71
C	0.00	984	15.78	-0.12	-9.71(.000)	0.07	0.74
D	1.00	2576	41.32	0.34	28.23(.000)	0.63	0.88

Item 40
---
item:40 (r7q40)
Cases for this item 6225 Discrimination 0.43
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	1	0.02	0.02	1.59(.112)	1.45	0.00
9	0.00	43	0.69	-0.06	-4.99(.000)	-0.37	0.86
A	1.00	2861	45.96	0.43	37.27(.000)	0.68	0.84
B	0.00	1267	20.35	-0.06	-5.13(.000)	0.18	0.83
C	0.00	931	14.96	-0.28	-23.28(.000)	-0.24	0.62
D	0.00	1122	18.02	-0.21	-16.97(.000)	-0.07	0.69

Item 41
---
item:41 (r7q41)
Cases for this item 6219 Discrimination 0.29
Item Threshold(s): 1.63 Weighted MNSQ 1.03
Item Delta(s): 1.63

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.05	-0.01	-0.69(.489)	0.19	0.58
9	0.00	75	1.21	-0.06	-5.02(.000)	-0.15	0.90
A	0.00	2659	42.76	0.05	3.82(.000)	0.34	0.81
B	0.00	745	11.98	-0.20	-15.88(.000)	-0.14	0.75
C	0.00	1253	20.15	-0.19	-15.16(.000)	0.00	0.72
D	1.00	1484	23.86	0.29	23.76(.000)	0.73	0.93

Item 42
---
item:42 (r7q42)
Cases for this item 6206 Discrimination 0.14
Item Threshold(s): 2.38 Weighted MNSQ 1.08
Item Delta(s): 2.39

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.03	0.02	1.92(.055)	1.65	0.25
9	0.00	87	1.40	-0.09	-7.43(.000)	-0.34	1.02
A	1.00	855	13.78	0.14	11.37(.000)	0.60	1.00
B	0.00	915	14.74	-0.13	-10.07(.000)	0.06	0.77
C	0.00	2540	40.93	-0.16	-12.71(.000)	0.14	0.77
D	0.00	1807	29.12	0.19	14.94(.000)	0.54	0.86

Item 43
---
item:43 (r7q43)
Cases for this item 6200 Discrimination 0.45
Item Threshold(s): 0.41 Weighted MNSQ 0.96
Item Delta(s): 0.41

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	97	1.56	-0.06	-4.46(.000)	-0.03	0.94
A	0.00	1074	17.32	-0.21	-16.66(.000)	-0.06	0.72
B	0.00	860	13.87	-0.24	-19.81(.000)	-0.20	0.70
C	1.00	2945	47.50	0.45	40.16(.000)	0.69	0.83
D	0.00	1224	19.74	-0.14	-11.43(.000)	0.07	0.76

Item 44
---
item:44 (r7q44)
Cases for this item 6196 Discrimination 0.12
Item Threshold(s): 1.55 Weighted MNSQ 1.17
Item Delta(s): 1.55

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.02	-1.65(.099)	-1.26	0.00
9	0.00	79	1.28	-0.10	-7.94(.000)	-0.44	0.98
A	0.00	2144	34.60	0.08	6.04(.000)	0.38	0.82
B	1.00	1559	25.16	0.12	9.14(.000)	0.47	0.97
C	0.00	1380	22.27	-0.06	-5.08(.000)	0.20	0.82
D	0.00	1033	16.67	-0.13	-10.25(.000)	0.06	0.76

Item 45
---
item:45 (r7q45)
Cases for this item 6193 Discrimination 0.21
Item Threshold(s): 1.15 Weighted MNSQ 1.12
Item Delta(s): 1.15

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	75	1.21	-0.10	-7.52(.000)	-0.45	0.97
A	1.00	1999	32.28	0.21	17.19(.000)	0.56	0.95
B	0.00	636	10.27	-0.29	-23.63(.000)	-0.37	0.65
C	0.00	2947	47.59	0.06	4.82(.000)	0.35	0.75
D	0.00	536	8.65	-0.12	-9.18(.000)	-0.01	0.80

Item 46
---
item:46 (r7q46)
Cases for this item 6162 Discrimination 0.52
Item Threshold(s): -0.22 Weighted MNSQ 0.90
Item Delta(s): -0.22

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.01	-0.87(.385)	-0.06	0.00
9	0.00	59	0.96	-0.11	-8.58(.000)	-0.59	0.99
A	0.00	1011	16.41	-0.30	-24.93(.000)	-0.25	0.61
B	1.00	3742	60.73	0.52	48.06(.000)	0.64	0.82
C	0.00	511	8.29	-0.24	-19.59(.000)	-0.35	0.64
D	0.00	838	13.60	-0.19	-15.27(.000)	-0.09	0.66

Item 47
---
item:47 (r7q47)
Cases for this item 6149 Discrimination 0.25
Item Threshold(s): 0.54 Weighted MNSQ 1.13
Item Delta(s): 0.54

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.03	0.01	0.76(.450)	1.00	1.56
9	0.00	47	0.76	-0.08	-6.42(.000)	-0.46	0.86
A	0.00	795	12.93	-0.18	-14.05(.000)	-0.07	0.76
B	1.00	2752	44.76	0.25	19.92(.000)	0.53	0.87
C	0.00	1557	25.32	-0.04	-3.38(.001)	0.23	0.85
D	0.00	996	16.20	-0.10	-8.05(.000)	0.12	0.80

Item 48
---
item:48 (r7q48)
Cases for this item 6145 Discrimination 0.53
Item Threshold(s): 0.92 Weighted MNSQ 0.88
Item Delta(s): 0.92

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.05	-0.02	-1.84(.066)	-0.75	0.49
9	0.00	43	0.70	-0.07	-5.21(.000)	-0.38	0.88
A	0.00	1596	25.97	-0.28	-23.25(.000)	-0.08	0.66
B	0.00	818	13.31	-0.15	-12.03(.000)	-0.01	0.73
C	1.00	2258	36.75	0.53	48.56(.000)	0.86	0.84
D	0.00	1427	23.22	-0.17	-13.49(.000)	0.05	0.71

Item 49
----
item:49 (r7q49)
Cases for this item 6138 Discrimination 0.40
Item Threshold(s): 0.50 Weighted MNSQ 1.00
Item Delta(s): 0.50

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.05	-0.00	-0.36(.720)	-0.06	0.76
9	0.00	89	1.45	-0.04	-3.09(.002)	0.00	0.80
A	0.00	1301	21.20	-0.26	-21.37(.000)	-0.11	0.68
B	0.00	1102	17.95	-0.18	-14.18(.000)	-0.00	0.76
C	1.00	2790	45.45	0.40	34.27(.000)	0.66	0.88
D	0.00	853	13.90	-0.05	-4.27(.000)	0.20	0.76

Item 50
----
item:50 (r7q50)
Cases for this item 6062 Discrimination 0.39
Item Threshold(s): 1.16 Weighted MNSQ 0.98
Item Delta(s): 1.16

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.05	-0.02	-1.38(.169)	-0.07	0.19
9	0.00	22	0.36	-0.01	-1.01(.314)	0.06	0.73
A	0.00	1228	20.26	-0.14	-11.18(.000)	0.08	0.72
B	0.00	1796	29.63	-0.04	-3.18(.001)	0.25	0.79
C	0.00	1058	17.45	-0.28	-22.56(.000)	-0.20	0.66
D	1.00	1955	32.25	0.39	33.03(.000)	0.78	0.89

The following traditional statistics are only meaningful for complete designs and when the amount of missing data is minimal.
In this analysis 0.83% of the data are missing.

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

N	6304
Mean	27.29
Standard Deviation	8.62
Variance	74.39
Skewness	0.02
Kurtosis	-0.59
Standard error of mean	0.11
Standard error of measurement	3.10
Coefficient Alpha	0.87

Appendix B.4 Year 9 Reading

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================================================================================
NAPLAN 2016, Calibration, Grade 9, reading
GENERALISED ITEM ANALYSIS
================================================================================
Item 1
------
item:1 (r9q01)
Cases for this item   5805   Discrimination  0.30
Item Threshold(s):    -2.86   Weighted MNSQ   0.94
Item Delta(s):     -2.86
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   8       0.00         4       0.07   -0.09    -6.60(.000) -3.05     0.03
   9       0.00         9       0.16   -0.09    -7.02(.000) -1.86     1.00
   A       0.00        30       0.52   -0.12    -9.40(.000) -1.11     0.69
   B       1.00      5509      94.90    0.30    23.72(.000)  0.53     0.93
   C       0.00        51       0.88   -0.16   -12.33(.000) -1.05     0.62
   D       0.00       202       3.48   -0.20   -15.19(.000) -0.47     0.85
================================================================================

Item 2
------
item:2 (r9q02)
Cases for this item   5805   Discrimination  0.29
Item Threshold(s):    -2.69   Weighted MNSQ   0.95
Item Delta(s):     -2.69
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   8       0.00         8       0.14   -0.09    -6.62(.000) -1.91     1.31
   9       0.00         8       0.14   -0.08    -5.92(.000) -1.70     1.30
   A       0.00       279       4.81   -0.23   -18.12(.000) -0.47     0.87
   B       0.00        28       0.48   -0.11    -8.21(.000) -1.08     0.97
   C       1.00      5462      94.09    0.29    23.13(.000)  0.54     0.93
   D       0.00        20       0.34   -0.09    -7.17(.000) -1.06     0.81
================================================================================

Item 3
------
item:3 (r9q03)
Cases for this item   5804   Discrimination  0.38
Item Threshold(s):    -2.78   Weighted MNSQ   0.88
Item Delta(s):     -2.78
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   8       0.00         5       0.09   -0.08    -6.14(.000) -2.32     1.63
   9       0.00        22       0.38   -0.10    -7.91(.000) -1.31     1.21
   A       1.00      5487      94.54    0.38    31.70(.000)  0.56     0.91
   B       0.00        65       1.12   -0.17   -13.12(.000) -1.08     0.84
   C       0.00       125       2.15   -0.24   -18.95(.000) -1.03     0.67
   D       0.00       100       1.72   -0.20   -15.33(.000) -0.89     0.56
================================================================================

Item 4
------
item:4 (r9q04)
Cases for this item   5802   Discrimination  0.44
Item Threshold(s):    -1.42   Weighted MNSQ   0.90
Item Delta(s):     -1.42
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   8       0.00         4       0.07   -0.09    -6.60(.000) -3.05     0.03
   9       0.00        11       0.19   -0.09    -6.94(.000) -1.62     0.98
   A       0.00        64       1.10   -0.16   -12.51(.000) -1.05     0.70
   B       1.00      4841      83.44    0.44    37.68(.000)  0.65     0.88
   C       0.00        25       0.43   -0.12    -9.47(.000) -1.48     0.79
   D       0.00       857      14.77   -0.38   -30.97(.000) -0.34     0.83
================================================================================
```

Item 5
------
item:5 (r9q05)
Cases for this item 5802 Discrimination 0.47
Item Threshold(s): -1.46 Weighted MNSQ 0.88
Item Delta(s): -1.46

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.07	-0.09	-6.60(.000)	-3.05	0.03
9	0.00	24	0.41	-0.11	-8.76(.000)	-1.39	1.02
A	0.00	339	5.84	-0.25	-19.93(.000)	-0.45	0.75
B	0.00	467	8.05	-0.30	-24.37(.000)	-0.48	0.81
C	1.00	4864	83.83	0.47	40.92(.000)	0.66	0.88
D	0.00	104	1.79	-0.17	-13.02(.000)	-0.65	0.72

Item 6
------
item:6 (r9q06)
Cases for this item 5801 Discrimination 0.40
Item Threshold(s): 0.13 Weighted MNSQ 1.03
Item Delta(s): 0.14

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	7	0.12	-0.06	-4.25(.000)	-1.19	2.42
9	0.00	19	0.33	-0.08	-5.91(.000)	-1.05	1.44
A	0.00	276	4.76	-0.19	-14.92(.000)	-0.30	0.74
B	0.00	1395	24.05	-0.05	-3.83(.000)	0.40	0.83
C	0.00	794	13.69	-0.37	-30.80(.000)	-0.38	0.82
D	1.00	3310	57.06	0.40	33.17(.000)	0.78	0.89

Item 7
------
item:7 (r9q07)
Cases for this item 5801 Discrimination 0.47
Item Threshold(s): -1.76 Weighted MNSQ 0.87
Item Delta(s): -1.75

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.07	-0.09	-6.60(.000)	-3.05	0.03
9	0.00	27	0.47	-0.12	-9.29(.000)	-1.17	1.20
A	1.00	5053	87.11	0.47	40.42(.000)	0.64	0.88
B	0.00	102	1.76	-0.20	-15.20(.000)	-0.88	0.78
C	0.00	387	6.67	-0.30	-24.12(.000)	-0.55	0.70
D	0.00	228	3.93	-0.23	-18.35(.000)	-0.58	0.83

Item 8
------
item:8 (r9q08)
Cases for this item 5799 Discrimination 0.46
Item Threshold(s): -1.80 Weighted MNSQ 0.86
Item Delta(s): -1.80

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.07	-0.09	-6.60(.000)	-3.05	0.03
9	0.00	18	0.31	-0.11	-8.77(.000)	-1.47	1.07
A	0.00	236	4.07	-0.25	-19.48(.000)	-0.63	0.70
B	0.00	142	2.45	-0.23	-18.34(.000)	-0.86	0.70
C	0.00	322	5.55	-0.25	-19.68(.000)	-0.48	0.83
D	1.00	5077	87.55	0.46	39.19(.000)	0.63	0.88

Item 9
---
item:9 (r9q09)
Cases for this item 5799 Discrimination 0.32
Item Threshold(s): 1.26 Weighted MNSQ 1.08
Item Delta(s): 1.26

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.10	-0.06	-4.85(.000)	-1.70	2.17
9	0.00	32	0.55	-0.09	-6.95(.000)	-0.98	1.45
A	0.00	630	10.86	-0.17	-13.28(.000)	0.01	1.01
B	0.00	1868	32.21	-0.27	-21.76(.000)	0.11	0.81
C	1.00	1983	34.20	0.32	26.01(.000)	0.89	0.90
D	0.00	1280	22.07	0.09	6.87(.000)	0.62	0.90

Item 10
---
item:10 (r9q10)
Cases for this item 5794 Discrimination 0.45
Item Threshold(s): -2.02 Weighted MNSQ 0.85
Item Delta(s): -2.02

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	7	0.12	-0.09	-6.71(.000)	-2.08	1.30
9	0.00	19	0.33	-0.11	-8.14(.000)	-1.41	1.17
A	0.00	83	1.43	-0.17	-13.51(.000)	-0.84	0.70
B	0.00	116	2.00	-0.22	-17.08(.000)	-0.99	0.74
C	0.00	376	6.49	-0.32	-25.38(.000)	-0.60	0.75
D	1.00	5193	89.63	0.45	38.80(.000)	0.62	0.88

Item 11
---
item:11 (r9q11)
Cases for this item 5794 Discrimination 0.38
Item Threshold(s): 0.31 Weighted MNSQ 1.05
Item Delta(s): 0.31

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	8	0.14	-0.07	-5.16(.000)	-1.48	1.72
9	0.00	40	0.69	-0.09	-6.80(.000)	-0.62	1.36
A	1.00	3101	53.52	0.38	31.02(.000)	0.79	0.92
B	0.00	557	9.61	-0.31	-24.91(.000)	-0.39	0.81
C	0.00	90	1.55	-0.18	-13.88(.000)	-0.82	0.77
D	0.00	1998	34.48	-0.14	-10.42(.000)	0.31	0.79

Item 12
---
item:12 (r9q12)
Cases for this item 5794 Discrimination 0.42
Item Threshold(s): -1.56 Weighted MNSQ 0.91
Item Delta(s): -1.56

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.09	-0.09	-6.62(.000)	-2.61	0.99
9	0.00	18	0.31	-0.10	-8.01(.000)	-1.55	1.34
A	0.00	58	1.00	-0.17	-12.90(.000)	-1.06	0.59
B	0.00	332	5.73	-0.20	-15.46(.000)	-0.26	0.95
C	1.00	4928	85.05	0.42	34.76(.000)	0.63	0.88
D	0.00	453	7.82	-0.29	-22.73(.000)	-0.42	0.80

Item 13
---
item:13 (r9q13)
Cases for this item 5792 Discrimination 0.44
Item Threshold(s): -0.38 Weighted MNSQ 0.97
Item Delta(s): -0.37

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.09	-0.08	-6.11(.000)	-2.42	1.41
9	0.00	21	0.36	-0.08	-6.29(.000)	-1.02	1.30
A	0.00	1164	20.10	-0.25	-19.55(.000)	0.04	0.84
B	1.00	3889	67.14	0.44	37.62(.000)	0.75	0.88
C	0.00	155	2.68	-0.19	-14.98(.000)	-0.55	0.94
D	0.00	558	9.63	-0.24	-18.56(.000)	-0.18	0.82

Item 14
---
item:14 (r9q14)
Cases for this item 5789 Discrimination 0.47
Item Threshold(s): -1.14 Weighted MNSQ 0.91
Item Delta(s): -1.14

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.10	-0.06	-4.91(.000)	-1.73	2.06
9	0.00	11	0.19	-0.07	-5.15(.000)	-1.31	1.35
A	1.00	4619	79.79	0.47	40.71(.000)	0.69	0.88
B	0.00	174	3.01	-0.23	-17.89(.000)	-0.73	0.77
C	0.00	189	3.26	-0.23	-18.00(.000)	-0.64	0.69
D	0.00	790	13.65	-0.30	-24.30(.000)	-0.20	0.74

Item 15
---
item:15 (r9q15)
Cases for this item 5788 Discrimination 0.38
Item Threshold(s): -0.61 Weighted MNSQ 1.02
Item Delta(s): -0.61

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	7	0.12	-0.08	-6.16(.000)	-2.00	1.34
9	0.00	24	0.41	-0.10	-7.65(.000)	-1.01	1.13
A	1.00	4133	71.41	0.38	30.82(.000)	0.69	0.90
B	0.00	243	4.20	-0.25	-19.43(.000)	-0.57	0.81
C	0.00	462	7.98	-0.25	-19.84(.000)	-0.29	0.87
D	0.00	919	15.88	-0.12	-8.89(.000)	0.24	0.84

Item 16
---
item:16 (r9q16)
Cases for this item 5784 Discrimination 0.48
Item Threshold(s): -1.29 Weighted MNSQ 0.88
Item Delta(s): -1.29

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.10	-0.08	-6.43(.000)	-2.26	1.28
9	0.00	13	0.22	-0.08	-6.20(.000)	-1.19	1.17
A	0.00	94	1.63	-0.20	-15.89(.000)	-1.04	0.74
B	0.00	102	1.76	-0.19	-14.57(.000)	-0.76	0.62
C	0.00	834	14.42	-0.37	-30.05(.000)	-0.31	0.73
D	1.00	4735	81.86	0.48	42.00(.000)	0.68	0.87

Item 17
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item:17 (r9q17)
Cases for this item 5782 Discrimination 0.35
Item Threshold(s): -1.27 Weighted MNSQ 0.99
Item Delta(s): -1.28

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.09	-0.08	-5.82(.000)	-2.30	1.67
9	0.00	20	0.35	-0.10	-7.80(.000)	-1.25	1.22
A	0.00	297	5.14	-0.23	-17.65(.000)	-0.40	0.79
B	0.00	629	10.88	-0.17	-12.75(.000)	0.07	0.96
C	1.00	4723	81.68	0.35	28.20(.000)	0.63	0.90
D	0.00	108	1.87	-0.18	-14.20(.000)	-0.73	0.66

Item 18
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item:18 (r9q18)
Cases for this item 5780 Discrimination 0.30
Item Threshold(s): -0.22 Weighted MNSQ 1.11
Item Delta(s): -0.22

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.07	-0.09	-6.65(.000)	-3.05	0.03
9	0.00	24	0.42	-0.09	-6.57(.000)	-0.78	1.18
A	0.00	1340	23.18	-0.22	-17.06(.000)	0.13	0.87
B	1.00	3715	64.27	0.30	23.92(.000)	0.68	0.92
C	0.00	504	8.72	-0.07	-5.07(.000)	0.28	0.99
D	0.00	193	3.34	-0.14	-10.61(.000)	-0.20	0.86

Item 19
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item:19 (r9q19)
Cases for this item 5780 Discrimination 0.41
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	5	0.09	-0.09	-6.61(.000)	-2.57	1.06
9	0.00	68	1.18	-0.10	-7.54(.000)	-0.39	0.94
A	0.00	341	5.90	-0.13	-9.85(.000)	-0.01	0.93
B	0.00	1306	22.60	-0.21	-16.19(.000)	0.14	0.94
C	1.00	3414	59.07	0.41	34.61(.000)	0.79	0.87
D	0.00	646	11.18	-0.23	-18.15(.000)	-0.10	0.77

Item 20
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item:20 (r9q20)
Cases for this item 5778 Discrimination 0.41
Item Threshold(s): -0.03 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	8	0.14	-0.06	-4.67(.000)	-1.36	1.88
9	0.00	50	0.87	-0.09	-6.91(.000)	-0.42	1.00
A	0.00	1242	21.50	-0.25	-19.60(.000)	0.06	0.84
B	0.00	817	14.14	-0.15	-11.60(.000)	0.16	0.86
C	0.00	156	2.70	-0.22	-16.87(.000)	-0.73	0.71
D	1.00	3505	60.66	0.41	34.30(.000)	0.77	0.89

Item 21
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item:21 (r9q21)
Cases for this item 5777 Discrimination 0.40
Item Threshold(s): 0.20 Weighted MNSQ 1.03
Item Delta(s): 0.20

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.09	-0.07	-5.52(.000)	-2.27	1.75
9	0.00	36	0.62	-0.07	-5.44(.000)	-0.40	1.15
A	0.00	827	14.32	-0.17	-12.80(.000)	0.12	0.83
B	1.00	3224	55.81	0.40	33.31(.000)	0.81	0.90
C	0.00	1164	20.15	-0.14	-10.82(.000)	0.22	0.86
D	0.00	521	9.02	-0.27	-21.18(.000)	-0.30	0.76

Item 22
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item:22 (r9q22)
Cases for this item 5774 Discrimination 0.27
Item Threshold(s): 0.31 Weighted MNSQ 1.15
Item Delta(s): 0.31

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.09	-0.08	-6.46(.000)	-2.57	1.06
9	0.00	52	0.90	-0.10	-7.61(.000)	-0.42	1.05
A	1.00	3095	53.60	0.27	21.19(.000)	0.71	0.90
B	0.00	949	16.44	-0.11	-8.69(.000)	0.24	0.96
C	0.00	579	10.03	-0.24	-18.96(.000)	-0.18	0.83
D	0.00	1094	18.95	-0.02	-1.40(.162)	0.46	0.92

Item 23
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item:23 (r9q23)
Cases for this item 5774 Discrimination 0.24
Item Threshold(s): 1.74 Weighted MNSQ 1.11
Item Delta(s): 1.74

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.09	-0.08	-5.89(.000)	-2.30	1.67
9	0.00	43	0.74	-0.06	-4.89(.000)	-0.23	1.06
A	0.00	510	8.83	-0.19	-14.75(.000)	-0.08	0.87
B	0.00	200	3.46	-0.24	-18.92(.000)	-0.67	0.67
C	0.00	3526	61.07	-0.00	-0.14(.891)	0.48	0.86
D	1.00	1490	25.81	0.24	19.15(.000)	0.86	0.98

Item 24
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item:24 (r9q24)
Cases for this item 5773 Discrimination 0.48
Item Threshold(s): 1.71 Weighted MNSQ 0.92
Item Delta(s): 1.71

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	4202	72.79	-0.45	-38.23(.000)	0.24	0.87
1	1.00	1519	26.31	0.48	41.05(.000)	1.20	0.80
9	0.00	52	0.90	-0.10	-7.47(.000)	-0.49	0.89

Item 25
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item:25 (r9q25)
Cases for this item 5769 Discrimination 0.36
Item Threshold(s): 0.02 Weighted MNSQ 1.06
Item Delta(s): 0.02

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	9	0.16	-0.07	-5.49(.000)	-1.37	1.74
9	0.00	38	0.66	-0.10	-7.93(.000)	-0.67	0.98
A	0.00	935	16.21	-0.26	-20.11(.000)	-0.04	0.84
B	1.00	3436	59.56	0.36	29.29(.000)	0.75	0.90
C	0.00	797	13.82	-0.14	-11.06(.000)	0.15	0.94
D	0.00	554	9.60	-0.07	-5.49(.000)	0.29	0.83

Item 26
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item:26 (r9q26)
Cases for this item 5758 Discrimination 0.43
Item Threshold(s): -0.66 Weighted MNSQ 0.97
Item Delta(s): -0.66

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.10	-0.09	-6.74(.000)	-2.33	1.16
9	0.00	31	0.54	-0.07	-5.42(.000)	-0.34	0.95
A	0.00	312	5.42	-0.23	-17.84(.000)	-0.36	0.72
B	0.00	408	7.09	-0.24	-18.69(.000)	-0.29	0.78
C	1.00	4174	72.49	0.43	35.68(.000)	0.72	0.88
D	0.00	827	14.36	-0.20	-15.18(.000)	0.05	0.87

Item 27
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item:27 (r9q27)
Cases for this item 5756 Discrimination 0.44
Item Threshold(s): -0.66 Weighted MNSQ 0.96
Item Delta(s): -0.66

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.09	-0.09	-7.08(.000)	-2.72	0.73
9	0.00	25	0.43	-0.08	-5.87(.000)	-0.50	0.88
A	1.00	4169	72.43	0.44	36.86(.000)	0.72	0.89
B	0.00	888	15.43	-0.25	-19.65(.000)	-0.03	0.75
C	0.00	387	6.72	-0.18	-13.51(.000)	-0.08	0.90
D	0.00	282	4.90	-0.25	-19.22(.000)	-0.49	0.73

Item 28
---
item:28 (r9q28)
Cases for this item 5755 Discrimination 0.53
Item Threshold(s): 0.82 Weighted MNSQ 0.90
Item Delta(s): 0.82

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.10	-0.09	-6.79(.000)	-2.41	1.01
9	0.00	26	0.45	-0.09	-6.59(.000)	-0.58	0.78
A	0.00	1574	27.35	-0.33	-26.86(.000)	0.00	0.76
B	1.00	2480	43.09	0.53	47.57(.000)	1.03	0.86
C	0.00	176	3.06	-0.22	-17.19(.000)	-0.61	0.67
D	0.00	1493	25.94	-0.15	-11.84(.000)	0.26	0.79

Item 29
---
item:29 (r9q29)
Cases for this item 5754 Discrimination 0.44
Item Threshold(s): 0.07 Weighted MNSQ 0.98
Item Delta(s): 0.07

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.10	-0.09	-7.13(.000)	-2.48	0.88
9	0.00	32	0.56	-0.09	-6.96(.000)	-0.55	0.74
A	0.00	735	12.77	-0.14	-11.02(.000)	0.17	0.94
B	0.00	645	11.21	-0.23	-17.53(.000)	-0.07	0.87
C	1.00	3378	58.71	0.44	37.53(.000)	0.81	0.86
D	0.00	958	16.65	-0.24	-18.78(.000)	0.01	0.81

Item 30
---
item:30 (r9q30)
Cases for this item 5752 Discrimination 0.44
Item Threshold(s): -0.28 Weighted MNSQ 0.97
Item Delta(s): -0.28

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.10	-0.09	-6.89(.000)	-2.27	1.29
9	0.00	34	0.59	-0.06	-4.92(.000)	-0.21	1.06
A	0.00	1338	23.26	-0.22	-17.26(.000)	0.13	0.86
B	1.00	3774	65.61	0.44	37.15(.000)	0.77	0.87
C	0.00	323	5.62	-0.22	-16.95(.000)	-0.29	0.74
D	0.00	277	4.82	-0.27	-21.00(.000)	-0.56	0.70

Item 31
---
item:31 (r9q31)
Cases for this item 5752 Discrimination 0.27
Item Threshold(s): 2.02 Weighted MNSQ 1.07
Item Delta(s): 2.02

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	7	0.12	-0.08	-5.80(.000)	-1.78	1.61
9	0.00	25	0.43	-0.06	-4.80(.000)	-0.37	0.97
A	0.00	1378	23.96	0.00	0.29(.773)	0.49	0.85
B	0.00	1051	18.27	-0.09	-6.55(.000)	0.33	0.94
C	0.00	2053	35.69	-0.15	-11.36(.000)	0.30	0.88
D	1.00	1238	21.52	0.27	20.95(.000)	0.96	0.98

Item 32
---
item:32 (r9q32)
Cases for this item 5750 Discrimination 0.44
Item Threshold(s): 0.18 Weighted MNSQ 0.99
Item Delta(s): 0.18

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.10	-0.07	-5.23(.000)	-1.80	1.94
9	0.00	30	0.52	-0.06	-4.42(.000)	-0.29	0.93
A	0.00	1280	22.26	-0.17	-12.80(.000)	0.21	0.83
B	0.00	597	10.38	-0.28	-21.69(.000)	-0.20	0.75
C	0.00	586	10.19	-0.19	-14.99(.000)	-0.01	0.80
D	1.00	3251	56.54	0.44	37.17(.000)	0.83	0.89

Item 33
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item:33 (r9q33)
Cases for this item 5744 Discrimination 0.51
Item Threshold(s): -0.27 Weighted MNSQ 0.91
Item Delta(s): -0.27

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.10	-0.06	-4.71(.000)	-1.27	1.96
9	0.00	58	1.01	-0.09	-6.54(.000)	-0.20	0.83
A	1.00	3762	65.49	0.51	44.99(.000)	0.82	0.87
B	0.00	812	14.14	-0.18	-13.82(.000)	0.10	0.81
C	0.00	554	9.64	-0.33	-26.54(.000)	-0.40	0.64
D	0.00	552	9.61	-0.24	-19.10(.000)	-0.17	0.69

Item 34
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item:34 (r9q34)
Cases for this item 5744 Discrimination 0.44
Item Threshold(s): 1.13 Weighted MNSQ 0.96
Item Delta(s): 1.12

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.09	-0.05	-3.96(.000)	-1.46	1.68
9	0.00	68	1.18	-0.08	-5.94(.000)	-0.18	0.89
A	0.00	2345	40.83	-0.10	-7.87(.000)	0.36	0.78
B	0.00	491	8.55	-0.23	-17.77(.000)	-0.17	0.81
C	0.00	703	12.24	-0.27	-21.41(.000)	-0.14	0.71
D	1.00	2132	37.12	0.44	37.37(.000)	1.01	0.93

Item 35
---
item:35 (r9q35)
Cases for this item 5743 Discrimination 0.35
Item Threshold(s): 1.74 Weighted MNSQ 1.01
Item Delta(s): 1.74

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	10	0.17	-0.06	-4.66(.000)	-1.09	1.47
9	0.00	35	0.61	-0.06	-4.37(.000)	-0.23	0.98
A	1.00	1488	25.91	0.35	28.06(.000)	1.02	0.98
B	0.00	657	11.44	-0.21	-16.07(.000)	-0.00	0.77
C	0.00	1832	31.90	-0.23	-18.09(.000)	0.19	0.82
D	0.00	1721	29.97	0.06	4.83(.000)	0.56	0.86

Item 36
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item:36 (r9q36)
Cases for this item 5741 Discrimination 0.48
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
8	0.00	5	0.09	-0.07	-5.47(.000)	-2.30	1.03
9	0.00	24	0.42	-0.07	-5.51(.000)	-0.59	0.89
A	0.00	804	14.00	-0.23	-17.52(.000)	0.02	0.85
B	0.00	532	9.27	-0.22	-16.96(.000)	-0.10	0.86
C	1.00	3409	59.38	0.48	41.16(.000)	0.83	0.86
D	0.00	967	16.84	-0.23	-17.91(.000)	0.04	0.83

Item 37
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item:37 (r9q37)
Cases for this item 5739 Discrimination 0.32
Item Threshold(s): 1.30 Weighted MNSQ 1.06
Item Delta(s): 1.30

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	7	0.12	-0.07	-5.50(.000)	-1.78	1.39
9	0.00	31	0.54	-0.05	-3.43(.001)	-0.15	1.20
A	0.00	1915	33.37	-0.05	-3.55(.000)	0.42	0.81
B	1.00	1931	33.65	0.32	25.57(.000)	0.90	0.98
C	0.00	1159	20.20	-0.18	-13.63(.000)	0.18	0.89
D	0.00	696	12.13	-0.16	-12.26(.000)	0.10	0.84

Item 38
---
item:38 (r9q38)
Cases for this item 5736 Discrimination 0.34
Item Threshold(s): 0.68 Weighted MNSQ 1.07
Item Delta(s): 0.68

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.09	-0.08	-6.32(.000)	-2.30	1.09
9	0.00	56	0.98	-0.07	-5.25(.000)	-0.22	1.02
A	0.00	507	8.84	-0.24	-18.98(.000)	-0.19	0.78
B	1.00	2647	46.15	0.34	27.57(.000)	0.83	0.95
C	0.00	1264	22.04	-0.15	-11.70(.000)	0.22	0.84
D	0.00	1257	21.91	-0.07	-5.32(.000)	0.38	0.79

Item 39
---
item:39 (r9q39)
Cases for this item 5727 Discrimination 0.44
Item Threshold(s): 0.43 Weighted MNSQ 0.99
Item Delta(s): 0.43

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.07	-0.08	-6.26(.000)	-2.70	0.71
9	0.00	43	0.75	-0.03	-2.56(.010)	0.09	1.06
A	1.00	2945	51.42	0.44	37.04(.000)	0.87	0.90
B	0.00	1338	23.36	-0.20	-15.62(.000)	0.16	0.81
C	0.00	1027	17.93	-0.21	-15.89(.000)	0.11	0.80
D	0.00	370	6.46	-0.20	-15.80(.000)	-0.21	0.81

Item 40
---
item:40 (r9q40)
Cases for this item 5724 Discrimination 0.35
Item Threshold(s): 1.02 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	0.09	-0.06	-4.55(.000)	-1.71	1.85
9	0.00	26	0.45	-0.05	-3.42(.001)	-0.15	1.03
A	1.00	2237	39.08	0.35	28.60(.000)	0.89	0.94
B	0.00	554	9.68	-0.14	-10.40(.000)	0.12	0.93
C	0.00	1728	30.19	-0.20	-15.08(.000)	0.22	0.77
D	0.00	1174	20.51	-0.09	-7.10(.000)	0.32	0.92

Item 41
---
item:41 (r9q41)
Cases for this item 5724 Discrimination 0.42
Item Threshold(s): 0.62 Weighted MNSQ 1.01
Item Delta(s): 0.62

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	9	0.16	-0.06	-4.81(.000)	-1.03	1.94
9	0.00	54	0.94	-0.04	-3.35(.001)	0.04	0.99
A	0.00	1466	25.61	-0.06	-4.30(.000)	0.40	0.79
B	0.00	488	8.53	-0.28	-21.70(.000)	-0.29	0.76
C	0.00	991	17.31	-0.26	-20.46(.000)	-0.02	0.79
D	1.00	2716	47.45	0.42	34.53(.000)	0.88	0.91

Item 42
---
item:42 (r9q42)
Cases for this item 5716 Discrimination 0.45
Item Threshold(s): 0.71 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	12	0.21	-0.06	-4.84(.000)	-0.92	1.71
9	0.00	32	0.56	-0.05	-4.11(.000)	-0.10	0.73
A	0.00	1904	33.31	-0.13	-9.76(.000)	0.33	0.79
B	0.00	398	6.96	-0.26	-20.72(.000)	-0.34	0.75
C	0.00	763	13.35	-0.26	-20.13(.000)	-0.07	0.79
D	1.00	2607	45.61	0.45	37.66(.000)	0.92	0.90

Item 43
---
item:43 (r9q43)
Cases for this item 5716 Discrimination 0.43
Item Threshold(s): 0.98 Weighted MNSQ 0.99
Item Delta(s): 0.98

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	10	0.17	-0.06	-4.72(.000)	-1.05	1.80
9	0.00	24	0.42	-0.04	-3.31(.001)	-0.15	0.80
A	1.00	2294	40.13	0.43	35.84(.000)	0.97	0.90
B	0.00	1314	22.99	-0.26	-20.68(.000)	0.06	0.77
C	0.00	719	12.58	-0.19	-14.26(.000)	0.07	0.86
D	0.00	1355	23.71	-0.08	-5.71(.000)	0.36	0.85

Item 44
---
item:44 (r9q44)
Cases for this item 5714 Discrimination 0.30
Item Threshold(s): 1.25 Weighted MNSQ 1.08
Item Delta(s): 1.25

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	8	0.14	-0.07	-5.49(.000)	-1.54	1.77
9	0.00	84	1.47	-0.08	-6.13(.000)	-0.14	0.90
A	0.00	1139	19.93	-0.07	-5.27(.000)	0.38	0.91
B	1.00	1989	34.81	0.30	24.00(.000)	0.86	0.99
C	0.00	1940	33.95	-0.11	-8.33(.000)	0.35	0.81
D	0.00	554	9.70	-0.18	-13.49(.000)	0.03	0.80

Item 45
---
item:45 (r9q45)
Cases for this item 5703 Discrimination 0.27
Item Threshold(s): 1.24 Weighted MNSQ 1.12
Item Delta(s): 1.24

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.11	-0.08	-6.32(.000)	-2.20	1.50
9	0.00	41	0.72	-0.04	-3.34(.001)	-0.02	0.89
A	0.00	698	12.24	-0.15	-11.83(.000)	0.14	0.89
B	0.00	1609	28.21	-0.03	-2.04(.041)	0.46	0.92
C	1.00	1995	34.98	0.27	20.97(.000)	0.82	0.99
D	0.00	1354	23.74	-0.14	-10.43(.000)	0.27	0.76

Item 46
---
item:46 (r9q46)
Cases for this item 5702 Discrimination 0.47
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	7	0.12	-0.08	-5.80(.000)	-1.79	1.75
9	0.00	27	0.47	-0.04	-3.37(.001)	-0.24	0.90
A	0.00	1475	25.87	-0.28	-22.32(.000)	0.07	0.77
B	0.00	730	12.80	-0.26	-20.19(.000)	-0.08	0.76
C	1.00	3088	54.16	0.47	40.46(.000)	0.88	0.88
D	0.00	375	6.58	-0.08	-5.85(.000)	0.23	0.96

Item 47
---
item:47 (r9q47)
Cases for this item 5700 Discrimination 0.27
Item Threshold(s): 1.59 Weighted MNSQ 1.10
Item Delta(s): 1.59

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	7	0.12	-0.07	-5.09(.000)	-1.56	1.88
9	0.00	36	0.63	-0.04	-3.16(.002)	-0.08	0.81
A	0.00	1367	23.98	-0.09	-7.08(.000)	0.36	0.87
B	0.00	1221	21.42	-0.08	-6.33(.000)	0.34	0.90
C	0.00	1445	25.35	-0.10	-7.26(.000)	0.35	0.90
D	1.00	1624	28.49	0.27	21.09(.000)	0.88	0.96

Item 48
---
item:48 (r9q48)
Cases for this item 5698 Discrimination 0.53
Item Threshold(s): 0.80 Weighted MNSQ 0.89
Item Delta(s): 0.79

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	8	0.14	-0.06	-4.88(.000)	-1.54	1.72
9	0.00	20	0.35	-0.04	-3.20(.001)	-0.22	1.01
A	0.00	1612	28.29	-0.19	-14.57(.000)	0.23	0.76
B	0.00	996	17.48	-0.29	-22.75(.000)	-0.04	0.75
C	1.00	2500	43.88	0.53	47.23(.000)	1.02	0.88
D	0.00	562	9.86	-0.21	-16.41(.000)	-0.05	0.79

Item 49
----
item:49 (r9q49)
Cases for this item 5695 Discrimination 0.40
Item Threshold(s): 0.88 Weighted MNSQ 1.01
Item Delta(s): 0.88

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	8	0.14	-0.07	-5.63(.000)	-1.41	1.98
9	0.00	118	2.07	-0.02	-1.80(.071)	0.30	0.88
A	0.00	1041	18.28	-0.09	-6.73(.000)	0.33	0.79
B	1.00	2404	42.21	0.40	32.57(.000)	0.91	0.98
C	0.00	1606	28.20	-0.22	-16.79(.000)	0.20	0.76
D	0.00	518	9.10	-0.20	-15.39(.000)	-0.07	0.78

Item 50
----
item:50 (r9q50)
Cases for this item 5585 Discrimination 0.22
Item Threshold(s): 1.65 Weighted MNSQ 1.12
Item Delta(s): 1.64

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	12	0.21	-0.07	-5.27(.000)	-1.08	1.61
9	0.00	5	0.09	-0.01	-0.51(.607)	0.21	0.64
A	0.00	2247	40.23	-0.02	-1.71(.088)	0.47	0.83
B	1.00	1546	27.68	0.22	16.90(.000)	0.84	1.06
C	0.00	1428	25.57	-0.09	-6.77(.000)	0.35	0.86
D	0.00	347	6.21	-0.18	-14.05(.000)	-0.13	0.82

The following traditional statistics are only meaningful for complete
designs and when the amount of missing data is minimal.
In this analysis 0.82% of the data are missing.

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

N	5805
Mean	28.75
Standard Deviation	8.75
Variance	76.60
Skewness	-0.11
Kurtosis	-0.56
Standard error of mean	0.11
Standard error of measurement	3.02
Coefficient Alpha	0.88

Appendix B.5 Year 3 Spelling

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================================================================================
NAPLAN 2016, Calibration, Grade 3, spelling
GENERALISED ITEM ANALYSIS
================================================================================
Item 1
------
item:1 (lc3q01)
Cases for this item   5298   Discrimination  0.42
Item Threshold(s):    -4.11   Weighted MNSQ   0.97
Item Delta(s):     -4.11
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   0       0.00       439       8.29   -0.40   -32.21(.000) -3.30     1.81
   1       1.00      4835      91.26    0.42    33.37(.000) -0.20     1.82
   9       0.00        24       0.45   -0.09    -6.68(.000) -3.36     1.33
================================================================================

Item 2
------
item:2 (lc3q02)
Cases for this item   5298   Discrimination  0.46
Item Threshold(s):    -3.19   Weighted MNSQ   1.04
Item Delta(s):     -3.19
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   0       0.00       781      14.74   -0.45   -37.14(.000) -2.73     1.88
   1       1.00      4495      84.84    0.46    38.19(.000) -0.06     1.75
   9       0.00        22       0.42   -0.09    -6.22(.000) -3.14     1.50
================================================================================

Item 3
------
item:3 (lc3q03)
Cases for this item   5297   Discrimination  0.40
Item Threshold(s):    -3.14   Weighted MNSQ   1.23
Item Delta(s):     -3.14
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   0       0.00       789      14.90   -0.38   -30.02(.000) -2.35     2.02
   1       1.00      4472      84.43    0.40    31.44(.000) -0.12     1.80
   9       0.00        36       0.68   -0.10    -7.16(.000) -3.00     1.96
================================================================================

Item 4
------
item:4 (lc3q04)
Cases for this item   5297   Discrimination  0.63
Item Threshold(s):    -2.27   Weighted MNSQ   0.82
Item Delta(s):     -2.26
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   0       0.00      1241      23.43   -0.62   -57.08(.000) -2.66     1.54
   1       1.00      4000      75.51    0.63    59.72(.000)  0.24     1.59
   9       0.00        56       1.06   -0.11    -8.15(.000) -2.62     1.68
================================================================================

Item 5
------
item:5 (lc3q05)
Cases for this item   5293   Discrimination  0.62
Item Threshold(s):    -1.42   Weighted MNSQ   0.98
Item Delta(s):     -1.42
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   0       0.00      1810      34.20   -0.60   -55.03(.000) -2.07     1.64
   1       1.00      3423      64.67    0.62    58.10(.000)  0.42     1.59
   9       0.00        60       1.13   -0.11    -8.39(.000) -2.74     1.86
================================================================================
```

Item 6
---
item:6 (lc3q06)
Cases for this item 5289 Discrimination 0.63
Item Threshold(s): -1.73 Weighted MNSQ 0.91
Item Delta(s): -1.74

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1554	29.38	-0.60	-54.23(.000)	-2.25	1.62
1	1.00	3648	68.97	0.63	59.30(.000)	0.36	1.57
9	0.00	87	1.64	-0.16	-11.59(.000)	-3.13	1.59

Item 7
---
item:7 (lc3q07)
Cases for this item 5286 Discrimination 0.60
Item Threshold(s): -1.88 Weighted MNSQ 0.96
Item Delta(s): -1.88

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1427	27.00	-0.58	-51.40(.000)	-2.31	1.65
1	1.00	3744	70.83	0.60	54.84(.000)	0.29	1.61
9	0.00	115	2.18	-0.12	-8.76(.000)	-2.16	1.86

Item 8
---
item:8 (lc3q08)
Cases for this item 5283 Discrimination 0.64
Item Threshold(s): -1.40 Weighted MNSQ 0.93
Item Delta(s): -1.40

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1759	33.30	-0.59	-53.21(.000)	-2.04	1.64
1	1.00	3403	64.41	0.64	60.34(.000)	0.45	1.56
9	0.00	121	2.29	-0.18	-13.56(.000)	-2.99	1.55

Item 9
---
item:9 (lc3q09)
Cases for this item 5274 Discrimination 0.57
Item Threshold(s): -1.15 Weighted MNSQ 1.11
Item Delta(s): -1.15

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1939	36.77	-0.53	-45.25(.000)	-1.77	1.75
1	1.00	3212	60.90	0.57	50.72(.000)	0.42	1.62
9	0.00	123	2.33	-0.16	-11.92(.000)	-2.67	1.74

Item 10
---
item:10 (lc3q10)
Cases for this item 5269 Discrimination 0.67
Item Threshold(s): 0.62 Weighted MNSQ 0.87
Item Delta(s): 0.62

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3254	61.76	-0.59	-52.47(.000)	-1.30	1.62
1	1.00	1809	34.33	0.67	66.29(.000)	1.28	1.41
9	0.00	206	3.91	-0.18	-13.51(.000)	-2.34	1.55

Item 11
---
item:11 (lc3q11)
Cases for this item 5264 Discrimination 0.64
Item Threshold(s): 0.12 Weighted MNSQ 0.98
Item Delta(s): 0.12

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3007	57.12	-0.61	-56.24(.000)	-1.43	1.65
1	1.00	2196	41.72	0.64	60.56(.000)	0.96	1.52
9	0.00	61	1.16	-0.12	-8.71(.000)	-2.93	1.72

Item 12
---
item:12 (lc3q12)
Cases for this item 5246 Discrimination 0.62
Item Threshold(s): 0.37 Weighted MNSQ 1.00
Item Delta(s): 0.37

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2864	54.59	-0.50	-41.54(.000)	-1.25	1.72
1	1.00	1997	38.07	0.62	57.91(.000)	1.04	1.49
9	0.00	385	7.34	-0.21	-15.78(.000)	-2.03	1.41

Item 13
---
item:13 (lc3q13)
Cases for this item 5216 Discrimination 0.51
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	4092	78.45	-0.42	-33.47(.000)	-0.83	1.80
1	1.00	872	16.72	0.51	42.81(.000)	1.70	1.51
9	0.00	252	4.83	-0.08	-5.87(.000)	-1.22	1.66

Item 14
---
item:14 (lc3q14)
Cases for this item 5210 Discrimination 0.39
Item Threshold(s): 3.01 Weighted MNSQ 1.07
Item Delta(s): 3.00

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	4549	87.31	-0.27	-20.59(.000)	-0.61	1.85
1	1.00	501	9.62	0.39	30.90(.000)	1.86	1.64
9	0.00	160	3.07	-0.14	-10.45(.000)	-2.13	1.67

Item 15
---
item:15 (lc3q15)
Cases for this item 5193 Discrimination 0.54
Item Threshold(s): -0.86 Weighted MNSQ 1.18
Item Delta(s): -0.86

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2044	39.36	-0.48	-39.72(.000)	-1.52	1.77
1	1.00	2973	57.25	0.54	46.53(.000)	0.47	1.63
9	0.00	176	3.39	-0.18	-13.16(.000)	-2.49	1.79

Item 16
---
item:16 (lc3q16)
Cases for this item 5144 Discrimination 0.59
Item Threshold(s): -0.30 Weighted MNSQ 1.08
Item Delta(s): -0.31

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2383	46.33	-0.55	-46.86(.000)	-1.44	1.69
1	1.00	2524	49.07	0.59	52.85(.000)	0.72	1.57
9	0.00	237	4.61	-0.11	-8.19(.000)	-1.56	1.68

Item 17
---
item:17 (lc3q17)
Cases for this item 5111 Discrimination 0.60
Item Threshold(s): 0.83 Weighted MNSQ 1.01
Item Delta(s): 0.83

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3199	62.59	-0.53	-44.70(.000)	-1.11	1.67
1	1.00	1644	32.17	0.60	53.65(.000)	1.22	1.50
9	0.00	268	5.24	-0.11	-7.68(.000)	-1.31	1.70

Item 18
---
item:18 (lc3q18)
Cases for this item 5077 Discrimination 0.63
Item Threshold(s): 0.92 Weighted MNSQ 0.93
Item Delta(s): 0.92

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3236	63.74	-0.55	-47.45(.000)	-1.10	1.63
1	1.00	1579	31.10	0.63	58.04(.000)	1.36	1.46
9	0.00	262	5.16	-0.12	-8.39(.000)	-1.46	1.66

Item 19
---
item:19 (lc3q19)
Cases for this item 5041 Discrimination 0.64
Item Threshold(s): 1.30 Weighted MNSQ 0.86
Item Delta(s): 1.30

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3409	67.63	-0.56	-47.60(.000)	-1.03	1.62
1	1.00	1319	26.17	0.64	59.15(.000)	1.61	1.37
9	0.00	313	6.21	-0.09	-6.14(.000)	-1.12	1.72

Item 20
---
item:20 (lc3q20)
Cases for this item 5016 Discrimination 0.58
Item Threshold(s): -0.14 Weighted MNSQ 1.11
Item Delta(s): -0.14

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2367	47.19	-0.51	-42.25(.000)	-1.31	1.66
1	1.00	2364	47.13	0.58	50.05(.000)	0.77	1.62
9	0.00	285	5.68	-0.14	-9.99(.000)	-1.53	1.72

Item 21
---
item:21 (lc3q21)
Cases for this item 4978 Discrimination 0.62
Item Threshold(s): 1.66 Weighted MNSQ 0.86
Item Delta(s): 1.66

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3542	71.15	-0.52	-43.35(.000)	-0.92	1.65
1	1.00	1098	22.06	0.62	55.27(.000)	1.78	1.39
9	0.00	338	6.79	-0.07	-5.21(.000)	-0.95	1.68

Item 22
---
item:22 (lc3q22)
Cases for this item 4875 Discrimination 0.57
Item Threshold(s): 1.24 Weighted MNSQ 1.02
Item Delta(s): 1.24

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3245	66.56	-0.50	-40.30(.000)	-0.94	1.70
1	1.00	1339	27.47	0.57	48.55(.000)	1.38	1.51
9	0.00	291	5.97	-0.08	-5.61(.000)	-0.93	1.71

Item 23
---
item:23 (lc3q23)
Cases for this item 4776 Discrimination 0.45
Item Threshold(s): 2.55 Weighted MNSQ 1.02
Item Delta(s): 2.55

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3855	80.72	-0.35	-25.56(.000)	-0.59	1.77
1	1.00	656	13.74	0.45	34.78(.000)	1.83	1.61
9	0.00	265	5.55	-0.08	-5.41(.000)	-0.87	1.73

Item 24
---
item:24 (lc3q24)
Cases for this item 4689 Discrimination 0.43
Item Threshold(s): 3.41 Weighted MNSQ 0.95
Item Delta(s): 3.42

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	4079	86.99	-0.33	-24.15(.000)	-0.50	1.80
1	1.00	370	7.89	0.43	32.65(.000)	2.53	1.29
9	0.00	240	5.12	-0.02	-1.28(.201)	-0.47	1.84

Item 25
---
item:25 (lc3q25)
Cases for this item 4560 Discrimination 0.40
Item Threshold(s): 3.46 Weighted MNSQ 0.97
Item Delta(s): 3.46

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3925	86.07	-0.26	-17.87(.000)	-0.44	1.82
1	1.00	354	7.76	0.40	29.71(.000)	2.39	1.54
9	0.00	281	6.16	-0.08	-5.40(.000)	-0.81	1.66

The following traditional statistics are only meaningful for complete designs and when the amount of missing data is minimal.
In this analysis 3.15% of the data are missing.

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

N	5298
Mean	11.32
Standard Deviation	5.93
Variance	35.16
Skewness	0.10
Kurtosis	-0.74
Standard error of mean	0.08
Standard error of measurement	1.88
Coefficient Alpha	0.90

==========

Appendix B.6 Year 5 Spelling

```
Item 1
------
item:1 (lc5q01)
Cases for this item   5029   Discrimination  0.46
Item Threshold(s):    -3.54   Weighted MNSQ   0.92
Item Delta(s):     -3.54
-------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
-------------------------------------------------------------------------------
   0       0.00      515      10.24   -0.44   -35.20(.000) -3.01     1.83
   1       1.00     4497      89.42    0.46    36.44(.000)  0.12     1.76
   9       0.00       17       0.34   -0.10    -7.10(.000) -3.81     1.07
===============================================================================

Item 2
------
item:2 (lc5q02)
Cases for this item   5029   Discrimination  0.48
Item Threshold(s):    -3.02   Weighted MNSQ   0.98
Item Delta(s):     -3.02
-------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
-------------------------------------------------------------------------------
   0       0.00      689      13.70   -0.46   -37.12(.000) -2.68     1.84
   1       1.00     4310      85.70    0.48    38.87(.000)  0.20     1.72
   9       0.00       30       0.60   -0.11    -8.13(.000) -3.69     1.32
===============================================================================

Item 3
------
item:3 (lc5q03)
Cases for this item   5024   Discrimination  0.47
Item Threshold(s):    -3.08   Weighted MNSQ   1.00
Item Delta(s):     -3.08
-------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
-------------------------------------------------------------------------------
   0       0.00      658      13.10   -0.46   -36.38(.000) -2.65     1.83
   1       1.00     4331      86.21    0.47    38.17(.000)  0.18     1.74
   9       0.00       35       0.70   -0.11    -8.09(.000) -3.21     1.58
===============================================================================

Item 4
------
item:4 (lc5q04)
Cases for this item   5021   Discrimination  0.48
Item Threshold(s):    -2.77   Weighted MNSQ   1.06
Item Delta(s):     -2.76
-------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
-------------------------------------------------------------------------------
   0       0.00      785      15.63   -0.45   -35.82(.000) -2.36     1.89
   1       1.00     4196      83.57    0.48    38.49(.000)  0.23     1.72
   9       0.00       40       0.80   -0.15   -10.50(.000) -3.93     1.42
===============================================================================

Item 5
------
item:5 (lc5q05)
Cases for this item   5019   Discrimination  0.66
Item Threshold(s):    -1.13   Weighted MNSQ   0.90
Item Delta(s):     -1.12
-------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
-------------------------------------------------------------------------------
   0       0.00     1693      33.73   -0.64   -58.27(.000) -1.89     1.60
   1       1.00     3229      64.34    0.66    62.07(.000)  0.73     1.53
   9       0.00       97       1.93   -0.11    -7.92(.000) -2.04     1.91
===============================================================================

Item 6
------
item:6 (lc5q06)
Cases for this item   5017   Discrimination  0.58
```

Item Threshold(s): -1.23 Weighted MNSQ 1.05
Item Delta(s): -1.23

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1562	31.13	-0.53	-43.71(.000)	-1.69	1.78
1	1.00	3301	65.80	0.58	50.95(.000)	0.61	1.58
9	0.00	154	3.07	-0.20	-14.17(.000)	-2.67	1.73

Item 7

item:7 (lc5q07)
Cases for this item 5015 Discrimination 0.58
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
0	0.00	2031	40.50	-0.53	-44.63(.000)	-1.42	1.73
1	1.00	2893	57.69	0.58	50.15(.000)	0.74	1.60
9	0.00	91	1.81	-0.18	-12.82(.000)	-3.25	1.58

Item 8

item:8 (lc5q08)
Cases for this item 5015 Discrimination 0.65
Item Threshold(s): 0.06 Weighted MNSQ 0.97
Item Delta(s): 0.06

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2615	52.14	-0.62	-56.58(.000)	-1.32	1.65
1	1.00	2329	46.44	0.65	61.10(.000)	1.11	1.48
9	0.00	71	1.42	-0.12	-8.43(.000)	-2.50	2.00

Item 9

item:9 (lc5q09)
Cases for this item 5013 Discrimination 0.67
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
0	0.00	2611	52.08	-0.63	-57.08(.000)	-1.30	1.62
1	1.00	2275	45.38	0.67	63.84(.000)	1.16	1.47
9	0.00	127	2.53	-0.13	-9.02(.000)	-2.10	2.13

Item 10

item:10 (lc5q10)
Cases for this item 5008 Discrimination 0.65
Item Threshold(s): 0.21 Weighted MNSQ 0.97
Item Delta(s): 0.21

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2613	52.18	-0.59	-51.80(.000)	-1.22	1.67
1	1.00	2212	44.17	0.65	60.28(.000)	1.13	1.51
9	0.00	183	3.65	-0.14	-10.27(.000)	-1.79	1.91

Item 11
---
item:11 (lc5q11)
Cases for this item 5005 Discrimination 0.54
Item Threshold(s): 0.84 Weighted MNSQ 1.13
Item Delta(s): 0.84

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3148	62.90	-0.49	-39.75(.000)	-0.88	1.73
1	1.00	1744	34.85	0.54	45.94(.000)	1.19	1.64
9	0.00	113	2.26	-0.15	-11.02(.000)	-2.56	2.05

Item 12
---
item:12 (lc5q12)
Cases for this item 4990 Discrimination 0.57
Item Threshold(s): 1.32 Weighted MNSQ 1.03
Item Delta(s): 1.32

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3513	70.40	-0.53	-44.49(.000)	-0.82	1.73
1	1.00	1410	28.26	0.57	49.35(.000)	1.50	1.55
9	0.00	67	1.34	-0.13	-9.04(.000)	-2.76	1.70

Item 13
---
item:13 (lc5q13)
Cases for this item 4986 Discrimination 0.58
Item Threshold(s): 1.80 Weighted MNSQ 0.95
Item Delta(s): 1.81

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3764	75.49	-0.50	-40.99(.000)	-0.70	1.71
1	1.00	1114	22.34	0.58	49.81(.000)	1.80	1.49
9	0.00	108	2.17	-0.17	-11.89(.000)	-2.68	1.66

Item 14
---
item:14 (lc5q14)
Cases for this item 4981 Discrimination 0.55
Item Threshold(s): -1.73 Weighted MNSQ 1.05
Item Delta(s): -1.74

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1240	24.89	-0.53	-43.54(.000)	-1.94	1.73
1	1.00	3632	72.92	0.55	46.79(.000)	0.48	1.64
9	0.00	109	2.19	-0.13	-9.01(.000)	-2.15	1.99

Item 15
---
item:15 (lc5q15)
Cases for this item 4960 Discrimination 0.61
Item Threshold(s): -0.27 Weighted MNSQ 1.06
Item Delta(s): -0.26

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2190	44.15	-0.54	-45.09(.000)	-1.28	1.69
1	1.00	2576	51.94	0.61	53.89(.000)	0.92	1.54
9	0.00	194	3.91	-0.19	-13.27(.000)	-2.11	1.81

Item 16
---
item:16 (lc5q16)
Cases for this item 4946 Discrimination 0.67
Item Threshold(s): -0.52 Weighted MNSQ 0.91
Item Delta(s): -0.52

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2051	41.47	-0.64	-58.34(.000)	-1.54	1.60
1	1.00	2775	56.11	0.67	63.29(.000)	0.93	1.49
9	0.00	120	2.43	-0.11	-8.01(.000)	-1.75	1.87

Item 17
---
item:17 (lc5q17)
Cases for this item 4929 Discrimination 0.65
Item Threshold(s): 0.06 Weighted MNSQ 0.96
Item Delta(s): 0.06

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2435	49.40	-0.59	-51.55(.000)	-1.23	1.63
1	1.00	2323	47.13	0.65	60.43(.000)	1.11	1.48
9	0.00	171	3.47	-0.16	-11.56(.000)	-1.96	1.88

Item 18
---
item:18 (lc5q18)
Cases for this item 4907 Discrimination 0.59
Item Threshold(s): -0.59 Weighted MNSQ 1.07
Item Delta(s): -0.59

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1909	38.90	-0.55	-46.41(.000)	-1.41	1.70
1	1.00	2820	57.47	0.59	51.34(.000)	0.80	1.57
9	0.00	178	3.63	-0.12	-8.67(.000)	-1.52	1.95

Item 19
---
item:19 (lc5q19)
Cases for this item 4885 Discrimination 0.60
Item Threshold(s): 1.04 Weighted MNSQ 0.99
Item Delta(s): 1.04

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3062	62.68	-0.53	-43.33(.000)	-0.85	1.67
1	1.00	1597	32.69	0.60	52.57(.000)	1.44	1.50
9	0.00	226	4.63	-0.13	-9.10(.000)	-1.46	1.94

Item 20
---
item:20 (lc5q20)
Cases for this item 4854 Discrimination 0.66
Item Threshold(s): 0.86 Weighted MNSQ 0.90
Item Delta(s): 0.86

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2924	60.24	-0.56	-47.65(.000)	-0.93	1.59
1	1.00	1718	35.39	0.66	60.75(.000)	1.48	1.44
9	0.00	212	4.37	-0.19	-13.17(.000)	-1.87	1.83

Item 21
---
item:21 (lc5q21)
Cases for this item 4821 Discrimination 0.59
Item Threshold(s): 1.95 Weighted MNSQ 0.88
Item Delta(s): 1.95

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3556	73.76	-0.48	-38.46(.000)	-0.62	1.66
1	1.00	1027	21.30	0.59	50.99(.000)	1.97	1.45
9	0.00	238	4.94	-0.13	-9.44(.000)	-1.31	1.78

Item 22
---
item:22 (lc5q22)
Cases for this item 4765 Discrimination 0.51
Item Threshold(s): 2.05 Weighted MNSQ 1.04
Item Delta(s): 2.06

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3534	74.17	-0.41	-30.99(.000)	-0.52	1.73
1	1.00	968	20.31	0.51	41.25(.000)	1.77	1.53
9	0.00	263	5.52	-0.12	-8.25(.000)	-1.06	1.89

Item 23
---
item:23 (lc5q23)
Cases for this item 4719 Discrimination 0.43
Item Threshold(s): 2.38 Weighted MNSQ 1.12
Item Delta(s): 2.38

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3652	77.39	-0.38	-28.35(.000)	-0.45	1.77
1	1.00	808	17.12	0.43	33.08(.000)	1.71	1.72
9	0.00	259	5.49	-0.02	-1.17(.244)	-0.31	1.74

Item 24
---
item:24 (lc5q24)
Cases for this item 4677 Discrimination 0.49
Item Threshold(s): 2.84 Weighted MNSQ 0.94
Item Delta(s): 2.84

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3902	83.43	-0.40	-30.16(.000)	-0.39	1.74
1	1.00	612	13.09	0.49	38.54(.000)	2.26	1.44
9	0.00	163	3.49	-0.08	-5.81(.000)	-0.99	1.96

Item 25
---
item:25 (lc5q25)
Cases for this item 4599 Discrimination 0.49
Item Threshold(s): 2.98 Weighted MNSQ 0.90
Item Delta(s): 2.98

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3870	84.15	-0.42	-31.72(.000)	-0.38	1.73
1	1.00	559	12.15	0.49	38.38(.000)	2.43	1.44
9	0.00	170	3.70	-0.03	-2.23(.026)	-0.35	1.70

The following traditional statistics are only meaningful for complete designs and when the amount of missing data is minimal.
In this analysis 2.00% of the data are missing.

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

N	5029
Mean	11.89
Standard Deviation	6.26
Variance	39.24
Skewness	0.07
Kurtosis	-0.80
Standard error of mean	0.09
Standard error of measurement	1.88
Coefficient Alpha	0.91

==========

Appendix B.7 Year 7 Spelling

```
================================================================================
NAPLAN 2016, Calibration, Grade 7, spelling
GENERALISED ITEM ANALYSIS
================================================================================
Item 1
------
item:1 (lc7q01)
Cases for this item   6283   Discrimination  0.39
Item Threshold(s):    -3.94   Weighted MNSQ   1.02
Item Delta(s):     -3.93
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   0       0.00       611       9.72   -0.37   -31.93(.000) -2.97     1.88
   1       1.00      5650      89.93    0.39    33.12(.000) -0.31     1.76
   9       0.00        22       0.35   -0.09    -7.22(.000) -4.04     1.60
================================================================================

Item 2
------
item:2 (lc7q02)
Cases for this item   6283   Discrimination  0.36
Item Threshold(s):    -4.05   Weighted MNSQ   1.09
Item Delta(s):     -4.06
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   0       0.00       545       8.67   -0.34   -28.65(.000) -2.86     1.84
   1       1.00      5698      90.69    0.36    30.59(.000) -0.35     1.80
   9       0.00        40       0.64   -0.11    -8.96(.000) -3.59     1.49
================================================================================

Item 3
------
item:3 (lc7q03)
Cases for this item   6280   Discrimination  0.53
Item Threshold(s):    -3.17   Weighted MNSQ   0.87
Item Delta(s):     -3.17
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   0       0.00       935      14.89   -0.51   -47.05(.000) -3.02     1.53
   1       1.00      5281      84.09    0.53    49.44(.000) -0.12     1.66
   9       0.00        64       1.02   -0.12    -9.42(.000) -2.87     1.40
================================================================================

Item 4
------
item:4 (lc7q04)
Cases for this item   6280   Discrimination  0.59
Item Threshold(s):    -1.77   Weighted MNSQ   1.01
Item Delta(s):     -1.78
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   0       0.00      1929      30.72   -0.57   -54.36(.000) -2.19     1.58
   1       1.00      4276      68.09    0.59    57.33(.000)  0.18     1.60
   9       0.00        75       1.19   -0.11    -9.00(.000) -2.80     1.90
================================================================================

Item 5
------
item:5 (lc7q05)
Cases for this item   6277   Discrimination  0.60
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
--------------------------------------------------------------------------------
   0       0.00      2576      41.04   -0.57   -54.27(.000) -1.82     1.62
   1       1.00      3588      57.16    0.60    59.25(.000)  0.38     1.59
   9       0.00       113       1.80   -0.14   -11.06(.000) -2.71     1.63
================================================================================
```

Item 6
---
item:6 (lc7q06)
Cases for this item 6274 Discrimination 0.57
Item Threshold(s): -0.75 Weighted MNSQ 1.12
Item Delta(s): -0.75

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2847	45.38	-0.53	-50.06(.000)	-1.64	1.61
1	1.00	3319	52.90	0.57	55.22(.000)	0.41	1.64
9	0.00	108	1.72	-0.15	-12.01(.000)	-3.07	1.55

Item 7
---
item:7 (lc7q07)
Cases for this item 6269 Discrimination 0.66
Item Threshold(s): -0.60 Weighted MNSQ 0.94
Item Delta(s): -0.60

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2957	47.17	-0.61	-60.69(.000)	-1.73	1.53
1	1.00	3171	50.58	0.66	69.32(.000)	0.61	1.50
9	0.00	141	2.25	-0.17	-13.90(.000)	-3.07	1.54

Item 8
---
item:8 (lc7q08)
Cases for this item 6265 Discrimination 0.55
Item Threshold(s): -1.02 Weighted MNSQ 1.16
Item Delta(s): -1.02

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2501	39.92	-0.52	-47.58(.000)	-1.74	1.65
1	1.00	3576	57.08	0.55	52.07(.000)	0.32	1.64
9	0.00	188	3.00	-0.12	-9.21(.000)	-2.06	1.68

Item 9
---
item:9 (lc7q09)
Cases for this item 6260 Discrimination 0.61
Item Threshold(s): -0.29 Weighted MNSQ 1.04
Item Delta(s): -0.29

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3304	52.78	-0.57	-55.48(.000)	-1.55	1.61
1	1.00	2862	45.72	0.61	61.03(.000)	0.65	1.53
9	0.00	94	1.50	-0.15	-11.60(.000)	-3.12	1.58

Item 10
---
item:10 (lc7q10)
Cases for this item 6258 Discrimination 0.64
Item Threshold(s): 0.55 Weighted MNSQ 0.93
Item Delta(s): 0.55

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3968	63.41	-0.57	-54.71(.000)	-1.34	1.59
1	1.00	2076	33.17	0.64	66.25(.000)	1.07	1.46
9	0.00	214	3.42	-0.16	-12.47(.000)	-2.23	1.58

Item 11
----
item:11 (lc7q11)
Cases for this item 6257 Discrimination 0.57
Item Threshold(s): 0.82 Weighted MNSQ 1.05
Item Delta(s): 0.82

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	4134	66.07	-0.47	-41.95(.000)	-1.17	1.66
1	1.00	1847	29.52	0.57	54.99(.000)	1.04	1.52
9	0.00	276	4.41	-0.19	-15.11(.000)	-2.41	1.63

Item 12
----
item:12 (lc7q12)
Cases for this item 6250 Discrimination 0.66
Item Threshold(s): 1.10 Weighted MNSQ 0.82
Item Delta(s): 1.10

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	4384	70.14	-0.56	-52.80(.000)	-1.20	1.57
1	1.00	1620	25.92	0.66	69.71(.000)	1.43	1.35
9	0.00	246	3.94	-0.18	-14.74(.000)	-2.48	1.59

Item 13
----
item:13 (lc7q13)
Cases for this item 6247 Discrimination 0.47
Item Threshold(s): 2.70 Weighted MNSQ 0.95
Item Delta(s): 2.70

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	5403	86.49	-0.34	-28.23(.000)	-0.80	1.74
1	1.00	657	10.52	0.47	42.12(.000)	1.98	1.41
9	0.00	187	2.99	-0.17	-13.78(.000)	-2.66	1.62

Item 14
----
item:14 (lc7q14)
Cases for this item 6243 Discrimination 0.53
Item Threshold(s): -2.25 Weighted MNSQ 1.03
Item Delta(s): -2.25

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1443	23.11	-0.48	-43.70(.000)	-2.23	1.69
1	1.00	4659	74.63	0.53	49.21(.000)	0.03	1.63
9	0.00	141	2.26	-0.18	-14.05(.000)	-3.02	1.56

Item 15
----
item:15 (lc7q15)
Cases for this item 6221 Discrimination 0.60
Item Threshold(s): -2.12 Weighted MNSQ 0.91
Item Delta(s): -2.12

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1517	24.39	-0.54	-51.23(.000)	-2.33	1.53
1	1.00	4548	73.11	0.60	58.56(.000)	0.13	1.57
9	0.00	156	2.51	-0.19	-15.64(.000)	-3.07	1.50

Item 16
---
item:16 (lc7q16)
Cases for this item 6209 Discrimination 0.61
Item Threshold(s): -1.13 Weighted MNSQ 1.00
Item Delta(s): -1.12

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2296	36.98	-0.55	-52.10(.000)	-1.83	1.56
1	1.00	3669	59.09	0.61	61.18(.000)	0.38	1.57
9	0.00	244	3.93	-0.18	-14.55(.000)	-2.36	1.49

Item 17
---
item:17 (lc7q17)
Cases for this item 6201 Discrimination 0.60
Item Threshold(s): -1.51 Weighted MNSQ 1.00
Item Delta(s): -1.51

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2014	32.48	-0.55	-52.06(.000)	-2.01	1.56
1	1.00	4025	64.91	0.60	58.58(.000)	0.27	1.57
9	0.00	162	2.61	-0.17	-13.31(.000)	-2.53	1.54

Item 18
---
item:18 (lc7q18)
Cases for this item 6193 Discrimination 0.60
Item Threshold(s): -0.97 Weighted MNSQ 1.04
Item Delta(s): -0.97

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2457	39.67	-0.54	-50.55(.000)	-1.74	1.58
1	1.00	3524	56.90	0.60	58.67(.000)	0.41	1.58
9	0.00	212	3.42	-0.17	-13.88(.000)	-2.35	1.54

Item 19
---
item:19 (lc7q19)
Cases for this item 6176 Discrimination 0.66
Item Threshold(s): -0.73 Weighted MNSQ 0.92
Item Delta(s): -0.72

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2582	41.81	-0.57	-54.88(.000)	-1.72	1.50
1	1.00	3282	53.14	0.66	69.18(.000)	0.58	1.49
9	0.00	312	5.05	-0.22	-17.38(.000)	-2.37	1.56

Item 20
---
item:20 (lc7q20)
Cases for this item 6154 Discrimination 0.64
Item Threshold(s): -0.55 Weighted MNSQ 0.97
Item Delta(s): -0.55

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2627	42.69	-0.53	-49.10(.000)	-1.61	1.55
1	1.00	3107	50.49	0.64	64.75(.000)	0.61	1.52
9	0.00	420	6.82	-0.22	-17.81(.000)	-2.05	1.50

Item 21
---
item:21 (lc7q21)
Cases for this item 6142 Discrimination 0.57
Item Threshold(s): 0.15 Weighted MNSQ 1.10
Item Delta(s): 0.15

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3411	55.54	-0.51	-45.89(.000)	-1.33	1.63
1	1.00	2440	39.73	0.57	53.98(.000)	0.75	1.56
9	0.00	291	4.74	-0.12	-9.84(.000)	-1.63	1.67

Item 22
---
item:22 (lc7q22)
Cases for this item 6114 Discrimination 0.61
Item Threshold(s): 1.28 Weighted MNSQ 0.91
Item Delta(s): 1.28

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	4245	69.43	-0.51	-46.61(.000)	-1.10	1.60
1	1.00	1477	24.16	0.61	59.66(.000)	1.40	1.46
9	0.00	392	6.41	-0.10	-7.61(.000)	-1.25	1.62

Item 23
---
item:23 (lc7q23)
Cases for this item 6089 Discrimination 0.58
Item Threshold(s): 0.94 Weighted MNSQ 1.01
Item Delta(s): 0.94

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	4074	66.91	-0.51	-46.21(.000)	-1.13	1.62
1	1.00	1743	28.63	0.58	56.03(.000)	1.14	1.49
9	0.00	272	4.47	-0.12	-9.08(.000)	-1.51	1.72

Item 24
---
item:24 (lc7q24)
Cases for this item 6055 Discrimination 0.57
Item Threshold(s): 1.69 Weighted MNSQ 0.94
Item Delta(s): 1.68

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	4392	72.54	-0.44	-38.51(.000)	-0.97	1.64
1	1.00	1195	19.74	0.57	53.45(.000)	1.55	1.43
9	0.00	468	7.73	-0.10	-8.01(.000)	-1.15	1.65

Item 25
---
item:25 (lc7q25)
Cases for this item 6011 Discrimination 0.59
Item Threshold(s): 1.50 Weighted MNSQ 0.92
Item Delta(s): 1.50

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	4210	70.04	-0.45	-38.83(.000)	-0.99	1.62
1	1.00	1318	21.93	0.59	56.95(.000)	1.52	1.41
9	0.00	483	8.04	-0.15	-11.47(.000)	-1.36	1.48

Item 26
---
item:26 (lc7q26)
Cases for this item 5971 Discrimination 0.47
Item Threshold(s): 1.86 Weighted MNSQ 1.10
Item Delta(s): 1.86

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	4453	74.58	-0.36	-29.76(.000)	-0.83	1.72
1	1.00	1080	18.09	0.47	41.26(.000)	1.32	1.62
9	0.00	438	7.34	-0.10	-7.38(.000)	-1.09	1.58

Item 27
---
item:27 (lc7q27)
Cases for this item 5943 Discrimination 0.35
Item Threshold(s): 2.95 Weighted MNSQ 1.10
Item Delta(s): 2.95

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	5146	86.59	-0.22	-17.32(.000)	-0.61	1.76
1	1.00	555	9.34	0.35	28.93(.000)	1.54	1.82
9	0.00	242	4.07	-0.14	-10.84(.000)	-1.70	1.57

Item 28
---
item:28 (lc7q28)
Cases for this item 5899 Discrimination 0.47
Item Threshold(s): 2.77 Weighted MNSQ 0.93
Item Delta(s): 2.77

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	5009	84.91	-0.35	-28.39(.000)	-0.70	1.70
1	1.00	624	10.58	0.47	40.87(.000)	2.02	1.49
9	0.00	266	4.51	-0.10	-7.59(.000)	-1.25	1.65

Item 29
---
item:29 (lc7q29)
Cases for this item 5808 Discrimination 0.37
Item Threshold(s): 3.57 Weighted MNSQ 0.99
Item Delta(s): 3.57

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	4826	83.09	-0.20	-15.39(.000)	-0.58	1.78
1	1.00	358	6.16	0.37	30.63(.000)	2.25	1.55
9	0.00	624	10.74	-0.05	-3.82(.000)	-0.70	1.60

Item 30
---
item:30 (lc7q30)
Cases for this item 5621 Discrimination 0.32
Item Threshold(s): 4.00 Weighted MNSQ 1.04
Item Delta(s): 4.00

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	5225	92.95	-0.22	-17.06(.000)	-0.51	1.80
1	1.00	258	4.59	0.32	25.40(.000)	2.33	1.53
9	0.00	138	2.46	-0.07	-5.04(.000)	-1.14	1.53

The following traditional statistics are only meaningful for complete designs and when the amount of missing data is minimal.
In this analysis 2.10% of the data are missing.

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

N	6283
Mean	13.09
Standard Deviation	7.02
Variance	49.22
Skewness	0.18
Kurtosis	-0.73
Standard error of mean	0.09
Standard error of measurement	2.02
Coefficient Alpha	0.92

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Appendix B.8 Year 9 Spelling

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================================================================================
NAPLAN 2016, Calibration, Grade 9, spelling
GENERALISED ITEM ANALYSIS
================================================================================
Item 1
------
item:1 (lc9q01)
Cases for this item   5833   Discrimination  0.35
Item Threshold(s):    -4.33   Weighted MNSQ   1.06
Item Delta(s):     -4.33
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   0       0.00       364       6.24   -0.33   -27.13(.000) -3.04     1.90
   1       1.00      5435      93.18    0.35    28.26(.000) -0.21     1.76
   9       0.00        34       0.58   -0.09    -6.59(.000) -2.66     1.93
================================================================================

Item 2
------
item:2 (lc9q02)
Cases for this item   5833   Discrimination  0.41
Item Threshold(s):    -3.03   Weighted MNSQ   1.15
Item Delta(s):     -3.03
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   0       0.00       807      13.84   -0.37   -30.13(.000) -2.21     1.97
   1       1.00      4942      84.72    0.41    34.59(.000) -0.06     1.67
   9       0.00        84       1.44   -0.18   -14.16(.000) -3.61     1.47
================================================================================

Item 3
------
item:3 (lc9q03)
Cases for this item   5821   Discrimination  0.48
Item Threshold(s):    -3.37   Weighted MNSQ   0.91
Item Delta(s):     -3.37
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   0       0.00       647      11.11   -0.44   -37.35(.000) -2.86     1.76
   1       1.00      5094      87.51    0.48    41.42(.000) -0.04     1.63
   9       0.00        80       1.37   -0.17   -12.99(.000) -3.47     1.34
================================================================================

Item 4
------
item:4 (lc9q04)
Cases for this item   5814   Discrimination  0.52
Item Threshold(s):    -2.48   Weighted MNSQ   1.00
Item Delta(s):     -2.48
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   0       0.00      1082      18.61   -0.48   -42.20(.000) -2.31     1.74
   1       1.00      4626      79.57    0.52    46.80(.000)  0.11     1.58
   9       0.00       106       1.82   -0.17   -12.99(.000) -3.04     1.34
================================================================================

Item 5
------
item:5 (lc9q05)
Cases for this item   5811   Discrimination  0.65
Item Threshold(s):    -1.30   Weighted MNSQ   0.90
Item Delta(s):     -1.30
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   0       0.00      1918      33.01   -0.60   -57.16(.000) -1.92     1.52
   1       1.00      3758      64.67    0.65    65.18(.000)  0.48     1.46
   9       0.00       135       2.32   -0.19   -14.69(.000) -2.97     1.42
================================================================================
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Item 6
---
item:6 (lc9q06)
Cases for this item 5806 Discrimination 0.61
Item Threshold(s): -1.41 Weighted MNSQ 0.96
Item Delta(s): -1.42

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1643	28.30	-0.53	-47.66(.000)	-1.90	1.62
1	1.00	3853	66.36	0.61	59.19(.000)	0.40	1.50
9	0.00	310	5.34	-0.23	-17.74(.000)	-2.25	1.45

Item 7
---
item:7 (lc9q07)
Cases for this item 5797 Discrimination 0.53
Item Threshold(s): -0.72 Weighted MNSQ 1.17
Item Delta(s): -0.72

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2481	42.80	-0.49	-43.30(.000)	-1.40	1.71
1	1.00	3240	55.89	0.53	47.91(.000)	0.47	1.54
9	0.00	76	1.31	-0.17	-13.51(.000)	-3.66	1.35

Item 8
---
item:8 (lc9q08)
Cases for this item 5793 Discrimination 0.59
Item Threshold(s): -0.23 Weighted MNSQ 1.05
Item Delta(s): -0.22

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2613	45.11	-0.45	-38.57(.000)	-1.23	1.62
1	1.00	2785	48.08	0.59	55.82(.000)	0.70	1.50
9	0.00	395	6.82	-0.28	-22.18(.000)	-2.43	1.43

Item 9
---
item:9 (lc9q09)
Cases for this item 5786 Discrimination 0.58
Item Threshold(s): -0.13 Weighted MNSQ 1.07
Item Delta(s): -0.13

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2798	48.36	-0.48	-41.73(.000)	-1.24	1.64
1	1.00	2703	46.72	0.58	54.38(.000)	0.73	1.47
9	0.00	285	4.93	-0.23	-17.98(.000)	-2.46	1.59

Item 10
---
item:10 (lc9q10)
Cases for this item 5782 Discrimination 0.53
Item Threshold(s): 0.05 Weighted MNSQ 1.16
Item Delta(s): 0.04

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2859	49.45	-0.41	-33.70(.000)	-1.09	1.65
1	1.00	2538	43.89	0.53	48.09(.000)	0.70	1.56
9	0.00	385	6.66	-0.25	-19.74(.000)	-2.23	1.57

Item 11
---
item:11 (lc9q11)
Cases for this item 5777 Discrimination 0.55
Item Threshold(s): 0.20 Weighted MNSQ 1.13
Item Delta(s): 0.21

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2933	50.77	-0.40	-33.38(.000)	-1.07	1.68
1	1.00	2390	41.37	0.55	50.00(.000)	0.79	1.49
9	0.00	454	7.86	-0.26	-20.36(.000)	-2.07	1.48

Item 12
---
item:12 (lc9q12)
Cases for this item 5767 Discrimination 0.62
Item Threshold(s): -0.09 Weighted MNSQ 0.98
Item Delta(s): -0.09

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2515	43.61	-0.45	-38.23(.000)	-1.25	1.62
1	1.00	2657	46.07	0.62	60.26(.000)	0.82	1.44
9	0.00	595	10.32	-0.29	-22.63(.000)	-1.98	1.42

Item 13
---
item:13 (lc9q13)
Cases for this item 5760 Discrimination 0.57
Item Threshold(s): 1.09 Weighted MNSQ 0.98
Item Delta(s): 1.09

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3146	54.62	-0.31	-24.66(.000)	-0.84	1.63
1	1.00	1640	28.47	0.57	53.20(.000)	1.22	1.48
9	0.00	974	16.91	-0.28	-22.20(.000)	-1.51	1.55

Item 14
---
item:14 (lc9q14)
Cases for this item 5755 Discrimination 0.61
Item Threshold(s): 1.17 Weighted MNSQ 0.91
Item Delta(s): 1.17

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3525	61.25	-0.41	-34.58(.000)	-0.93	1.61
1	1.00	1573	27.33	0.61	57.99(.000)	1.37	1.39
9	0.00	657	11.42	-0.22	-16.76(.000)	-1.51	1.50

Item 15
---
item:15 (lc9q15)
Cases for this item 5753 Discrimination 0.55
Item Threshold(s): 1.38 Weighted MNSQ 1.00
Item Delta(s): 1.37

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3825	66.49	-0.38	-31.63(.000)	-0.82	1.65
1	1.00	1424	24.75	0.55	49.89(.000)	1.32	1.44
9	0.00	504	8.76	-0.20	-15.18(.000)	-1.63	1.60

Item 16
---
item:16 (lc9q16)
Cases for this item 5741 Discrimination 0.53
Item Threshold(s): -3.07 Weighted MNSQ 0.84
Item Delta(s): -3.07

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	675	11.76	-0.47	-40.02(.000)	-2.79	1.58
1	1.00	4921	85.72	0.53	47.67(.000)	0.06	1.57
9	0.00	145	2.53	-0.23	-17.80(.000)	-3.22	1.45

Item 17
---
item:17 (lc9q17)
Cases for this item 5715 Discrimination 0.56
Item Threshold(s): -1.69 Weighted MNSQ 1.02
Item Delta(s): -1.69

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1515	26.51	-0.49	-42.52(.000)	-1.79	1.65
1	1.00	4050	70.87	0.56	51.14(.000)	0.31	1.51
9	0.00	150	2.62	-0.24	-18.62(.000)	-3.25	1.31

Item 18
---
item:18 (lc9q18)
Cases for this item 5694 Discrimination 0.63
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
0	0.00	1580	27.75	-0.52	-45.44(.000)	-1.77	1.55
1	1.00	3759	66.02	0.63	61.30(.000)	0.47	1.45
9	0.00	355	6.23	-0.28	-21.98(.000)	-2.44	1.34

Item 19
---
item:19 (lc9q19)
Cases for this item 5669 Discrimination 0.62
Item Threshold(s): -1.09 Weighted MNSQ 0.97
Item Delta(s): -1.08

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1739	30.68	-0.50	-43.69(.000)	-1.61	1.54
1	1.00	3546	62.55	0.62	59.37(.000)	0.51	1.48
9	0.00	384	6.77	-0.27	-21.24(.000)	-2.18	1.48

Item 20
---
item:20 (lc9q20)
Cases for this item 5659 Discrimination 0.62
Item Threshold(s): -0.70 Weighted MNSQ 0.97
Item Delta(s): -0.70

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1933	34.16	-0.48	-40.80(.000)	-1.44	1.60
1	1.00	3212	56.76	0.62	59.19(.000)	0.63	1.43
9	0.00	514	9.08	-0.28	-21.87(.000)	-1.99	1.47

Item 21
---
item:21 (lc9q21)
Cases for this item 5637 Discrimination 0.58
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
0	0.00	2952	52.37	-0.51	-45.05(.000)	-1.14	1.63
1	1.00	2411	42.77	0.58	54.06(.000)	0.85	1.43
9	0.00	274	4.86	-0.15	-11.34(.000)	-1.54	1.62

Item 22
---
item:22 (lc9q22)
Cases for this item 5610 Discrimination 0.63
Item Threshold(s): 0.55 Weighted MNSQ 0.93
Item Delta(s): 0.55

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2902	51.73	-0.47	-40.13(.000)	-1.06	1.55
1	1.00	2077	37.02	0.63	60.63(.000)	1.10	1.40
9	0.00	631	11.25	-0.21	-16.46(.000)	-1.40	1.54

Item 23
---
item:23 (lc9q23)
Cases for this item 5555 Discrimination 0.63
Item Threshold(s): 0.64 Weighted MNSQ 0.93
Item Delta(s): 0.64

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3038	54.69	-0.52	-45.01(.000)	-1.07	1.56
1	1.00	1996	35.93	0.63	60.45(.000)	1.16	1.35
9	0.00	521	9.38	-0.15	-11.62(.000)	-1.14	1.55

Item 24
---
item:24 (lc9q24)
Cases for this item 5519 Discrimination 0.55
Item Threshold(s): 2.02 Weighted MNSQ 0.88
Item Delta(s): 2.02

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	4125	74.74	-0.38	-30.52(.000)	-0.62	1.57
1	1.00	997	18.06	0.55	49.22(.000)	1.76	1.37
9	0.00	397	7.19	-0.18	-13.85(.000)	-1.53	1.60

Item 25
---
item:25 (lc9q25)
Cases for this item 5472 Discrimination 0.48
Item Threshold(s): 2.09 Weighted MNSQ 1.01
Item Delta(s): 2.08

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	4099	74.91	-0.30	-23.41(.000)	-0.54	1.62
1	1.00	960	17.54	0.48	40.97(.000)	1.56	1.48
9	0.00	413	7.55	-0.20	-15.29(.000)	-1.48	1.58

Item 26
---
item:26 (lc9q26)
Cases for this item 5426 Discrimination 0.49
Item Threshold(s): 2.65 Weighted MNSQ 0.90
Item Delta(s): 2.65

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	4170	76.85	-0.23	-17.43(.000)	-0.45	1.62
1	1.00	679	12.51	0.49	41.24(.000)	2.03	1.37
9	0.00	577	10.63	-0.21	-15.76(.000)	-1.25	1.46

Item 27
---
item:27 (lc9q27)
Cases for this item 5352 Discrimination 0.40
Item Threshold(s): 2.83 Weighted MNSQ 1.05
Item Delta(s): 2.83

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	4027	75.24	-0.17	-12.26(.000)	-0.38	1.72
1	1.00	600	11.21	0.40	32.30(.000)	1.78	1.53
9	0.00	725	13.55	-0.16	-12.16(.000)	-0.87	1.39

Item 28
---
item:28 (lc9q28)
Cases for this item 5289 Discrimination 0.43
Item Threshold(s): 2.96 Weighted MNSQ 0.97
Item Delta(s): 2.96

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	4347	82.19	-0.22	-16.75(.000)	-0.37	1.66
1	1.00	547	10.34	0.43	34.15(.000)	1.98	1.44
9	0.00	395	7.47	-0.17	-12.21(.000)	-1.20	1.61

Item 29
---
item:29 (lc9q29)
Cases for this item 5230 Discrimination 0.40
Item Threshold(s): 3.70 Weighted MNSQ 0.90
Item Delta(s): 3.70

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3905	74.67	-0.12	-8.93(.000)	-0.31	1.74
1	1.00	324	6.20	0.40	31.67(.000)	2.58	1.31
9	0.00	1001	19.14	-0.11	-8.03(.000)	-0.54	1.43

Item 30
---
item:30 (lc9q30)
Cases for this item 5060 Discrimination 0.35
Item Threshold(s): 3.47 Weighted MNSQ 1.03
Item Delta(s): 3.47

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	4567	90.26	-0.25	-18.55(.000)	-0.29	1.70
1	1.00	380	7.51	0.35	26.98(.000)	2.04	1.55
9	0.00	113	2.23	-0.13	-9.06(.000)	-1.61	1.60

The following traditional statistics are only meaningful for complete designs and when the amount of missing data is minimal.
In this analysis 3.13% of the data are missing.

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

N	5833
Mean	13.78
Standard Deviation	6.84
Variance	46.83
Skewness	0.05
Kurtosis	-0.66
Standard error of mean	0.09
Standard error of measurement	2.13
Coefficient Alpha	0.90

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Appendix B.9 Year 3 G&P

```
================================================================================
NAPLAN 2016, Calibration, Grade 3, GP
GENERALISED ITEM ANALYSIS
================================================================================
Item 1
------
item:1 (lc3q26)
Cases for this item   5285   Discrimination  0.35
Item Threshold(s):    -2.71   Weighted MNSQ   0.91
Item Delta(s):     -2.71
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   8       0.00         1       0.02   -0.04    -2.70(.007) -2.44     0.00
   9       0.00        36       0.68   -0.13    -9.26(.000) -1.17     0.97
   A       0.00       139       2.63   -0.21   -15.92(.000) -0.76     0.89
   B       1.00      4950      93.66    0.35    27.31(.000)  0.47     0.98
   C       0.00        98       1.85   -0.19   -13.89(.000) -0.84     0.86
   D       0.00        61       1.15   -0.14   -10.47(.000) -0.82     0.93
================================================================================

Item 2
------
item:2 (lc3q27)
Cases for this item   5285   Discrimination  0.35
Item Threshold(s):    -2.66   Weighted MNSQ   0.92
Item Delta(s):     -2.67
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   9       0.00        30       0.57   -0.07    -5.06(.000) -0.63     1.17
   A       0.00        44       0.83   -0.16   -12.05(.000) -1.10     0.63
   B       0.00       213       4.03   -0.26   -19.55(.000) -0.80     0.94
   C       1.00      4937      93.42    0.35    27.09(.000)  0.48     0.98
   D       0.00        61       1.15   -0.14   -10.61(.000) -0.82     0.82
================================================================================

Item 3
------
item:3 (lc3q28)
Cases for this item   5285   Discrimination  0.42
Item Threshold(s):    -1.40   Weighted MNSQ   0.96
Item Delta(s):     -1.40
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   8       0.00         1       0.02   -0.04    -2.70(.007) -2.44     0.00
   9       0.00        29       0.55   -0.09    -6.51(.000) -0.72     1.00
   A       0.00       192       3.63   -0.25   -18.89(.000) -0.80     0.88
   B       1.00      4325      81.84    0.42    33.32(.000)  0.57     0.97
   C       0.00       649      12.28   -0.27   -20.04(.000) -0.25     0.85
   D       0.00        89       1.68   -0.15   -11.00(.000) -0.65     0.82
================================================================================

Item 4
------
item:4 (lc3q29)
Cases for this item   5274   Discrimination  0.43
Item Threshold(s):    -1.35   Weighted MNSQ   0.94
Item Delta(s):     -1.35
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   8       0.00         2       0.04   -0.04    -2.86(.004) -1.73     1.00
   9       0.00        45       0.85   -0.13    -9.27(.000) -0.92     0.98
   A       0.00       656      12.44   -0.26   -19.23(.000) -0.22     0.90
   B       0.00       204       3.87   -0.27   -20.68(.000) -0.86     0.79
   C       1.00      4286      81.27    0.43    34.95(.000)  0.58     0.95
   D       0.00        81       1.54   -0.16   -11.66(.000) -0.72     0.84
================================================================================
```

Item 5
------
item:5 (lc3q30)
Cases for this item 5274 Discrimination 0.53
Item Threshold(s): -0.63 Weighted MNSQ 0.91
Item Delta(s): -0.63

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.06	-0.02	-1.74(.082)	-0.34	1.88
9	0.00	44	0.83	-0.11	-8.11(.000)	-0.85	0.87
A	0.00	940	17.82	-0.31	-23.31(.000)	-0.20	0.83
B	0.00	264	5.01	-0.23	-17.50(.000)	-0.53	0.86
C	1.00	3692	70.00	0.53	44.90(.000)	0.70	0.94
D	0.00	331	6.28	-0.26	-19.29(.000)	-0.49	0.72

Item 6
------
item:6 (lc3q31)
Cases for this item 5274 Discrimination 0.48
Item Threshold(s): -0.36 Weighted MNSQ 0.96
Item Delta(s): -0.36

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.06	-0.04	-2.99(.003)	-0.90	1.39
9	0.00	94	1.78	-0.11	-7.82(.000)	-0.43	1.00
A	1.00	3428	65.00	0.48	39.50(.000)	0.72	0.96
B	0.00	663	12.57	-0.21	-15.96(.000)	-0.18	0.86
C	0.00	473	8.97	-0.22	-16.05(.000)	-0.24	0.90
D	0.00	613	11.62	-0.25	-18.71(.000)	-0.22	0.74

Item 7
------
item:7 (lc3q32)
Cases for this item 5266 Discrimination 0.47
Item Threshold(s): -0.63 Weighted MNSQ 0.97
Item Delta(s): -0.63

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.06	-0.03	-2.54(.011)	-1.06	1.25
9	0.00	95	1.80	-0.16	-11.53(.000)	-0.85	0.84
A	0.00	938	17.81	-0.25	-18.35(.000)	-0.09	0.81
B	1.00	3684	69.96	0.47	38.60(.000)	0.68	0.96
C	0.00	270	5.13	-0.18	-13.54(.000)	-0.31	0.87
D	0.00	276	5.24	-0.27	-20.03(.000)	-0.65	0.80

Item 8
------
item:8 (lc3q33)
Cases for this item 5258 Discrimination 0.51
Item Threshold(s): -0.54 Weighted MNSQ 0.93
Item Delta(s): -0.54

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.06	-0.03	-2.43(.015)	-0.87	1.53
9	0.00	58	1.10	-0.11	-7.87(.000)	-0.63	1.19
A	0.00	1132	21.53	-0.32	-24.19(.000)	-0.17	0.84
B	0.00	265	5.04	-0.24	-17.70(.000)	-0.53	0.90
C	1.00	3599	68.45	0.51	42.59(.000)	0.72	0.93
D	0.00	201	3.82	-0.22	-16.02(.000)	-0.60	0.74

Item 9
------
item:9 (lc3q34)
Cases for this item 5255 Discrimination 0.48
Item Threshold(s): -0.79 Weighted MNSQ 0.94
Item Delta(s): -0.79

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.10	-0.01	-0.78(.434)	0.05	1.68
9	0.00	69	1.31	-0.10	-7.45(.000)	-0.62	1.18
A	1.00	3826	72.81	0.48	39.50(.000)	0.66	0.95
B	0.00	476	9.06	-0.24	-18.14(.000)	-0.28	0.81
C	0.00	295	5.61	-0.23	-17.37(.000)	-0.45	0.82
D	0.00	584	11.11	-0.25	-18.47(.000)	-0.24	0.85

Item 10
----
item:10 (lc3q35)
Cases for this item 5243 Discrimination 0.35
Item Threshold(s): -0.07 Weighted MNSQ 1.11
Item Delta(s): -0.07

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.06	-0.03	-2.20(.028)	-0.89	1.35
9	0.00	101	1.93	-0.11	-8.34(.000)	-0.54	1.13
A	0.00	235	4.48	-0.17	-12.59(.000)	-0.25	0.98
B	1.00	3118	59.47	0.35	26.76(.000)	0.66	1.00
C	0.00	218	4.16	-0.19	-13.72(.000)	-0.37	0.93
D	0.00	1568	29.91	-0.18	-13.04(.000)	0.14	0.86

Item 11
----
item:11 (lc3q36)
Cases for this item 5226 Discrimination 0.53
Item Threshold(s): 0.00 Weighted MNSQ 0.93
Item Delta(s): 0.00

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.04	-0.04	-3.16(.002)	-1.66	1.10
9	0.00	124	2.37	-0.11	-8.17(.000)	-0.48	0.95
A	0.00	873	16.70	-0.29	-21.76(.000)	-0.16	0.88
B	0.00	620	11.86	-0.23	-16.80(.000)	-0.16	0.80
C	0.00	569	10.89	-0.20	-14.95(.000)	-0.13	0.79
D	1.00	3038	58.13	0.53	45.25(.000)	0.82	0.93

Item 12
----
item:12 (lc3q37)
Cases for this item 5187 Discrimination 0.52
Item Threshold(s): 0.22 Weighted MNSQ 0.94
Item Delta(s): 0.22

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.06	-0.04	-2.94(.003)	-1.26	1.17
9	0.00	109	2.10	-0.11	-7.90(.000)	-0.32	0.95
A	0.00	829	15.98	-0.21	-15.13(.000)	-0.01	0.86
B	0.00	889	17.14	-0.27	-19.99(.000)	-0.11	0.82
C	1.00	2798	53.94	0.52	43.67(.000)	0.84	0.95
D	0.00	559	10.78	-0.21	-15.60(.000)	-0.16	0.79

Item 13
---
item:13 (lc3q38)
Cases for this item 5172 Discrimination 0.49
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	1	0.02	-0.04	-2.74(.006)	-2.44	0.00
9	0.00	128	2.47	-0.11	-7.74(.000)	-0.25	0.94
A	0.00	913	17.65	-0.25	-18.93(.000)	-0.09	0.80
B	0.00	1055	20.40	-0.18	-13.51(.000)	0.07	0.85
C	1.00	2553	49.36	0.49	40.31(.000)	0.87	0.98
D	0.00	522	10.09	-0.19	-13.56(.000)	-0.11	0.76

Item 14
---
item:14 (lc3q39)
Cases for this item 5156 Discrimination 0.53
Item Threshold(s): 0.08 Weighted MNSQ 0.94
Item Delta(s): 0.08

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.04	-2.73(.006)	-2.44	0.00
9	0.00	96	1.86	-0.09	-6.79(.000)	-0.34	1.01
A	0.00	1006	19.51	-0.29	-21.63(.000)	-0.14	0.79
B	0.00	629	12.20	-0.17	-12.49(.000)	0.01	0.83
C	0.00	497	9.64	-0.26	-19.41(.000)	-0.32	0.75
D	1.00	2927	56.77	0.53	44.43(.000)	0.84	0.95

Item 15
---
item:15 (lc3q40)
Cases for this item 5139 Discrimination 0.50
Item Threshold(s): -0.02 Weighted MNSQ 0.95
Item Delta(s): -0.02

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.04	-0.04	-3.15(.002)	-1.96	0.68
9	0.00	94	1.83	-0.10	-7.31(.000)	-0.42	0.93
A	0.00	961	18.70	-0.26	-19.62(.000)	-0.08	0.84
B	0.00	535	10.41	-0.26	-19.50(.000)	-0.27	0.76
C	0.00	527	10.25	-0.17	-12.17(.000)	-0.03	0.94
D	1.00	3020	58.77	0.50	41.88(.000)	0.80	0.94

Item 16
---
item:16 (lc3q41)
Cases for this item 5114 Discrimination 0.51
Item Threshold(s): 0.09 Weighted MNSQ 0.95
Item Delta(s): 0.09

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.04	-0.03	-2.47(.014)	-1.36	1.53
9	0.00	95	1.86	-0.08	-5.68(.000)	-0.16	1.03
A	0.00	1257	24.58	-0.28	-20.95(.000)	-0.03	0.85
B	1.00	2905	56.80	0.51	42.32(.000)	0.81	0.95
C	0.00	329	6.43	-0.23	-17.00(.000)	-0.33	0.80
D	0.00	526	10.29	-0.21	-15.20(.000)	-0.10	0.79

Item 17
---
item:17 (lc3q42)
Cases for this item 5096 Discrimination 0.53
Item Threshold(s): 0.55 Weighted MNSQ 0.93
Item Delta(s): 0.54

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.04	-0.02	-1.35(.177)	-0.38	2.91
9	0.00	120	2.35	-0.09	-6.10(.000)	-0.15	0.88
A	0.00	1220	23.94	-0.28	-21.22(.000)	-0.04	0.85
B	0.00	461	9.05	-0.21	-14.98(.000)	-0.18	0.91
C	0.00	876	17.19	-0.19	-13.82(.000)	0.05	0.83
D	1.00	2417	47.43	0.53	44.81(.000)	0.93	0.93

Item 18
---
item:18 (lc3q43)
Cases for this item 5076 Discrimination 0.43
Item Threshold(s): 1.14 Weighted MNSQ 1.00
Item Delta(s): 1.14

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.04	-2.74(.006)	-2.44	0.00
9	0.00	101	1.99	-0.08	-5.58(.000)	-0.13	0.99
A	0.00	1368	26.95	-0.15	-11.00(.000)	0.20	0.92
B	1.00	1803	35.52	0.43	34.03(.000)	0.97	1.02
C	0.00	1100	21.67	-0.15	-10.47(.000)	0.15	0.80
D	0.00	703	13.85	-0.19	-14.13(.000)	-0.03	0.86

Item 19
---
item:19 (lc3q44)
Cases for this item 5060 Discrimination 0.20
Item Threshold(s): 1.04 Weighted MNSQ 1.22
Item Delta(s): 1.04

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.04	0.00	0.19(.853)	0.84	1.18
9	0.00	112	2.21	-0.03	-1.88(.060)	0.03	1.07
A	1.00	1898	37.51	0.20	14.22(.000)	0.69	1.10
B	0.00	1185	23.42	-0.14	-10.16(.000)	0.18	0.87
C	0.00	866	17.11	-0.11	-8.13(.000)	0.19	0.93
D	0.00	997	19.70	0.03	2.07(.038)	0.46	0.93

Item 20
---
item:20 (lc3q45)
Cases for this item 5020 Discrimination 0.27
Item Threshold(s): 0.58 Weighted MNSQ 1.18
Item Delta(s): 0.57

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.08	-0.01	-0.56(.575)	0.12	1.30
9	0.00	101	2.01	-0.04	-2.86(.004)	0.01	0.93
A	0.00	818	16.29	-0.24	-17.80(.000)	-0.10	0.86
B	1.00	2356	46.93	0.27	20.02(.000)	0.70	1.04
C	0.00	1030	20.52	-0.10	-7.17(.000)	0.26	0.91
D	0.00	711	14.16	0.00	0.17(.863)	0.42	0.89

Item 21
---
item:21 (lc3q46)
Cases for this item 4990 Discrimination 0.39
Item Threshold(s): 0.91 Weighted MNSQ 1.05
Item Delta(s): 0.90

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	85	1.70	-0.05	-3.36(.001)	-0.04	0.78
A	0.00	1704	34.15	-0.27	-19.42(.000)	0.09	0.86
B	0.00	756	15.15	-0.01	-0.98(.327)	0.40	1.03
C	1.00	2011	40.30	0.39	30.31(.000)	0.88	0.98
D	0.00	434	8.70	-0.20	-14.47(.000)	-0.15	0.80

Item 22
---
item:22 (lc3q47)
Cases for this item 4951 Discrimination 0.42
Item Threshold(s): 1.07 Weighted MNSQ 1.02
Item Delta(s): 1.07

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.02	-1.75(.080)	-0.93	0.00
9	0.00	139	2.81	-0.05	-3.64(.000)	0.14	0.89
A	1.00	1836	37.08	0.42	32.67(.000)	0.96	1.02
B	0.00	945	19.09	-0.26	-18.84(.000)	-0.05	0.82
C	0.00	1024	20.68	-0.12	-8.17(.000)	0.21	0.87
D	0.00	1006	20.32	-0.11	-8.13(.000)	0.21	0.89

Item 23
---
item:23 (lc3q48)
Cases for this item 4909 Discrimination 0.41
Item Threshold(s): 1.44 Weighted MNSQ 1.01
Item Delta(s): 1.44

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.04	0.00	0.18(.858)	0.96	1.03
9	0.00	84	1.71	-0.04	-3.09(.002)	0.05	1.10
A	0.00	1760	35.85	-0.13	-9.18(.000)	0.28	0.88
B	0.00	716	14.59	-0.14	-9.86(.000)	0.11	0.94
C	0.00	854	17.40	-0.19	-13.34(.000)	0.07	0.87
D	1.00	1493	30.41	0.41	31.39(.000)	1.01	1.02

Item 24
---
item:24 (lc3q49)
Cases for this item 4874 Discrimination 0.39
Item Threshold(s): 0.91 Weighted MNSQ 1.06
Item Delta(s): 0.91

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.06	-0.03	-2.35(.019)	-0.88	0.40
9	0.00	109	2.24	-0.05	-3.17(.002)	0.09	0.89
A	0.00	1436	29.46	-0.20	-14.17(.000)	0.15	0.88
B	1.00	1969	40.40	0.39	29.34(.000)	0.88	1.03
C	0.00	713	14.63	-0.12	-8.49(.000)	0.17	0.91
D	0.00	644	13.21	-0.15	-10.26(.000)	0.09	0.85

Item 25
----
item:25 (lc3q50)
Cases for this item 4827 Discrimination 0.31
Item Threshold(s): 1.25 Weighted MNSQ 1.11
Item Delta(s): 1.25

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	0.01	0.42(.674)	0.73	0.00
9	0.00	59	1.22	-0.03	-1.97(.049)	0.13	0.95
A	0.00	1055	21.86	-0.12	-8.55(.000)	0.23	0.94
B	0.00	1227	25.42	-0.09	-6.54(.000)	0.27	0.91
C	0.00	849	17.59	-0.14	-9.58(.000)	0.16	0.92
D	1.00	1636	33.89	0.31	22.59(.000)	0.86	1.05

Item 26
----
item:26 (lc3q51)
Cases for this item 4792 Discrimination 0.31
Item Threshold(s): 1.46 Weighted MNSQ 1.10
Item Delta(s): 1.46

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	56	1.17	-0.04	-2.62(.009)	0.12	1.02
A	0.00	1684	35.14	-0.13	-8.81(.000)	0.27	0.85
B	0.00	652	13.61	-0.17	-12.17(.000)	0.08	1.01
C	0.00	960	20.03	-0.04	-2.98(.003)	0.35	0.98
D	1.00	1440	30.05	0.31	22.35(.000)	0.88	1.07

The following traditional statistics are only meaningful for complete designs and when the amount of missing data is minimal.
In this analysis 3.00% of the data are missing.

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

N	5285
Mean	14.77
Standard Deviation	5.10
Variance	25.98
Skewness	-0.02
Kurtosis	-0.62
Standard error of mean	0.07
Standard error of measurement	2.32
Coefficient Alpha	0.79

Appendix B.10 Year 5 G&P

```
================================================================================
NAPLAN 2016, Calibration, Grade 5, GP
GENERALISED ITEM ANALYSIS
================================================================================
Item 1
------
item:1 (lc5q26)
Cases for this item   5021   Discrimination  0.21
Item Threshold(s):    -3.96   Weighted MNSQ   0.96
Item Delta(s):     -3.96
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   9       0.00         9       0.18   -0.09    -6.21(.000) -1.16     1.06
   A       0.00        37       0.74   -0.13    -9.25(.000) -0.54     1.12
   B       1.00      4937      98.33    0.21    15.21(.000)  0.51     0.90
   C       0.00        27       0.54   -0.11    -8.07(.000) -0.64     0.77
   D       0.00        11       0.22   -0.08    -5.88(.000) -0.97     0.66
================================================================================

Item 2
------
item:2 (lc5q27)
Cases for this item   5021   Discrimination  0.34
Item Threshold(s):    -2.02   Weighted MNSQ   0.95
Item Delta(s):     -2.02
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   8       0.00         1       0.02   -0.02    -1.54(.125)  0.15     0.00
   9       0.00        12       0.24   -0.08    -5.84(.000) -0.88     0.88
   A       0.00        53       1.06   -0.14   -10.38(.000) -0.50     0.88
   B       1.00      4528      90.18    0.34    25.89(.000)  0.58     0.87
   C       0.00       393       7.83   -0.27   -19.48(.000) -0.22     0.81
   D       0.00        34       0.68   -0.14   -10.30(.000) -0.94     0.54
================================================================================

Item 3
------
item:3 (lc5q28)
Cases for this item   5020   Discrimination  0.43
Item Threshold(s):    -1.53   Weighted MNSQ   0.92
Item Delta(s):     -1.54
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   9       0.00        29       0.58   -0.10    -7.30(.000) -0.74     0.75
   A       0.00       460       9.16   -0.29   -21.35(.000) -0.19     0.71
   B       0.00       135       2.69   -0.20   -14.30(.000) -0.46     0.71
   C       1.00      4289      85.44    0.43    33.38(.000)  0.63     0.86
   D       0.00       107       2.13   -0.19   -13.63(.000) -0.66     0.79
================================================================================

Item 4
------
item:4 (lc5q29)
Cases for this item   5010   Discrimination  0.42
Item Threshold(s):    -1.41   Weighted MNSQ   0.94
Item Delta(s):     -1.41
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   8       0.00         1       0.02   -0.02    -1.54(.123)  0.15     0.00
   9       0.00        18       0.36   -0.09    -6.64(.000) -0.73     1.18
   A       0.00       630      12.57   -0.33   -24.41(.000) -0.18     0.76
   B       0.00        92       1.84   -0.17   -12.47(.000) -0.53     0.77
   C       1.00      4210      84.03    0.42    32.39(.000)  0.64     0.86
   D       0.00        59       1.18   -0.14   -10.01(.000) -0.47     0.83
================================================================================
```

Item 5
------
item:5 (lc5q30)
Cases for this item 5008 Discrimination 0.38
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
8	0.00	2	0.04	-0.01	-0.63(.532)	-0.08	0.13
9	0.00	31	0.62	-0.12	-8.25(.000)	-0.80	1.03
A	0.00	275	5.49	-0.28	-20.87(.000)	-0.44	0.73
B	1.00	4234	84.54	0.38	29.17(.000)	0.63	0.86
C	0.00	265	5.29	-0.14	-9.77(.000)	0.08	0.89
D	0.00	201	4.01	-0.17	-12.23(.000)	-0.20	0.78

Item 6
------
item:6 (lc5q31)
Cases for this item 5005 Discrimination 0.45
Item Threshold(s): -1.13 Weighted MNSQ 0.92
Item Delta(s): -1.13

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.04	-0.03	-1.88(.060)	-0.06	0.30
9	0.00	32	0.64	-0.09	-6.73(.000)	-0.56	0.88
A	0.00	424	8.47	-0.28	-20.64(.000)	-0.23	0.77
B	0.00	219	4.38	-0.21	-14.94(.000)	-0.27	0.78
C	0.00	309	6.17	-0.22	-15.77(.000)	-0.13	0.71
D	1.00	4019	80.30	0.45	36.08(.000)	0.67	0.85

Item 7
------
item:7 (lc5q32)
Cases for this item 5003 Discrimination 0.50
Item Threshold(s): -0.86 Weighted MNSQ 0.90
Item Delta(s): -0.86

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	37	0.74	-0.09	-6.43(.000)	-0.57	0.95
A	0.00	577	11.53	-0.33	-25.02(.000)	-0.24	0.73
B	0.00	217	4.34	-0.19	-13.56(.000)	-0.18	0.69
C	0.00	355	7.10	-0.23	-16.74(.000)	-0.14	0.77
D	1.00	3817	76.29	0.50	40.62(.000)	0.72	0.84

Item 8
------
item:8 (lc5q33)
Cases for this item 5002 Discrimination 0.38
Item Threshold(s): -0.41 Weighted MNSQ 1.03
Item Delta(s): -0.40

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	8	0.16	-0.02	-1.28(.201)	0.00	0.41
9	0.00	35	0.70	-0.11	-7.69(.000)	-0.70	1.06
A	0.00	319	6.38	-0.17	-12.33(.000)	-0.02	0.81
B	1.00	3420	68.37	0.38	29.03(.000)	0.71	0.88
C	0.00	1074	21.47	-0.25	-17.87(.000)	0.12	0.76
D	0.00	146	2.92	-0.14	-10.30(.000)	-0.15	0.83

Item 9
------
item:9 (lc5q34)
Cases for this item 5000 Discrimination 0.44
Item Threshold(s): -0.55 Weighted MNSQ 0.97
Item Delta(s): -0.55

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.01	-0.89(.376)	0.01	0.00
9	0.00	27	0.54	-0.08	-5.82(.000)	-0.52	1.06
A	0.00	1179	23.58	-0.36	-27.44(.000)	-0.02	0.77
B	0.00	67	1.34	-0.12	-8.78(.000)	-0.39	1.03
C	1.00	3558	71.16	0.44	34.25(.000)	0.73	0.85
D	0.00	168	3.36	-0.13	-9.32(.000)	-0.14	0.76

Item 10
----
item:10 (lc5q35)
Cases for this item 4999 Discrimination 0.43
Item Threshold(s): -0.34 Weighted MNSQ 0.99
Item Delta(s): -0.34

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.06	-0.02	-1.41(.159)	0.38	0.71
9	0.00	58	1.16	-0.11	-7.79(.000)	-0.46	0.92
A	0.00	451	9.02	-0.22	-15.57(.000)	-0.03	0.76
B	1.00	3357	67.15	0.43	33.21(.000)	0.73	0.87
C	0.00	231	4.62	-0.25	-18.08(.000)	-0.36	0.73
D	0.00	899	17.98	-0.19	-13.85(.000)	0.17	0.73

Item 11
----
item:11 (lc5q36)
Cases for this item 4993 Discrimination 0.37
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	12	0.24	0.01	0.80(.421)	0.63	0.92
9	0.00	44	0.88	-0.08	-5.56(.000)	-0.16	0.88
A	0.00	263	5.27	-0.23	-16.42(.000)	-0.27	0.72
B	1.00	3257	65.23	0.37	28.53(.000)	0.73	0.88
C	0.00	786	15.74	-0.19	-13.80(.000)	0.13	0.81
D	0.00	631	12.64	-0.15	-11.02(.000)	0.17	0.76

Item 12
----
item:12 (lc5q37)
Cases for this item 4993 Discrimination 0.42
Item Threshold(s): 0.22 Weighted MNSQ 1.01
Item Delta(s): 0.22

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.04	-0.00	-0.00(.998)	0.38	0.95
9	0.00	26	0.52	-0.09	-6.29(.000)	-0.82	1.15
A	0.00	1141	22.85	-0.31	-23.15(.000)	0.06	0.79
B	0.00	822	16.46	-0.09	-6.35(.000)	0.33	0.76
C	1.00	2789	55.86	0.42	32.98(.000)	0.80	0.87
D	0.00	213	4.27	-0.20	-14.16(.000)	-0.25	0.73

Item 13
----
item:13 (lc5q38)
Cases for this item 4981 Discrimination 0.40
Item Threshold(s): 0.22 Weighted MNSQ 1.03
Item Delta(s): 0.22

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.04	-0.02	-1.26(.206)	-0.23	0.20
9	0.00	24	0.48	-0.08	-5.65(.000)	-0.52	0.80
A	1.00	2788	55.97	0.40	30.49(.000)	0.79	0.85
B	0.00	843	16.92	-0.17	-11.83(.000)	0.22	0.82
C	0.00	1152	23.13	-0.22	-15.95(.000)	0.17	0.83
D	0.00	172	3.45	-0.20	-14.23(.000)	-0.30	0.73

Item 14
----
item:14 (lc5q39)
Cases for this item 4973 Discrimination 0.46
Item Threshold(s): 0.72 Weighted MNSQ 0.98
Item Delta(s): 0.72

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.00	-0.23(.819)	0.80	0.00
9	0.00	79	1.59	-0.08	-5.45(.000)	-0.16	1.00
A	1.00	2259	45.43	0.46	36.35(.000)	0.92	0.88
B	0.00	761	15.30	-0.19	-13.80(.000)	0.11	0.75
C	0.00	653	13.13	-0.19	-14.00(.000)	0.12	0.76
D	0.00	1220	24.53	-0.19	-13.96(.000)	0.24	0.75

Item 15
----
item:15 (lc5q40)
Cases for this item 4964 Discrimination 0.42
Item Threshold(s): 0.32 Weighted MNSQ 1.01
Item Delta(s): 0.32

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	47	0.95	-0.06	-4.02(.000)	-0.05	1.13
A	0.00	718	14.46	-0.22	-15.92(.000)	0.09	0.79
B	0.00	664	13.38	-0.23	-16.84(.000)	0.04	0.73
C	0.00	858	17.28	-0.13	-9.11(.000)	0.28	0.82
D	1.00	2677	53.93	0.42	32.86(.000)	0.82	0.86

Item 16
----
item:16 (lc5q41)
Cases for this item 4959 Discrimination 0.44
Item Threshold(s): 0.86 Weighted MNSQ 0.99
Item Delta(s): 0.86

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	7	0.14	-0.02	-1.14(.253)	0.41	0.91
9	0.00	51	1.03	-0.07	-4.63(.000)	-0.18	0.95
A	0.00	392	7.90	-0.15	-10.78(.000)	0.10	0.84
B	1.00	2107	42.49	0.44	34.46(.000)	0.92	0.87
C	0.00	1292	26.05	-0.28	-20.39(.000)	0.13	0.71
D	0.00	1110	22.38	-0.11	-8.02(.000)	0.36	0.82

Item 17
---
item:17 (lc5q42)
Cases for this item 4947 Discrimination 0.36
Item Threshold(s): 0.77 Weighted MNSQ 1.06
Item Delta(s): 0.78

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.06	-0.03	-1.81(.070)	0.03	0.47
9	0.00	61	1.23	-0.06	-4.47(.000)	-0.02	0.94
A	0.00	1355	27.39	-0.15	-10.45(.000)	0.31	0.83
B	0.00	684	13.83	-0.22	-15.99(.000)	0.08	0.78
C	1.00	2194	44.35	0.36	26.83(.000)	0.83	0.89
D	0.00	650	13.14	-0.08	-5.72(.000)	0.35	0.81

Item 18
---
item:18 (lc5q43)
Cases for this item 4937 Discrimination 0.45
Item Threshold(s): 0.58 Weighted MNSQ 0.98
Item Delta(s): 0.58

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.10	-0.03	-2.31(.021)	0.08	0.50
9	0.00	37	0.75	-0.07	-4.71(.000)	-0.32	0.93
A	0.00	1488	30.14	-0.19	-13.95(.000)	0.28	0.78
B	0.00	215	4.35	-0.23	-16.72(.000)	-0.30	0.74
C	1.00	2394	48.49	0.45	35.82(.000)	0.89	0.86
D	0.00	798	16.16	-0.23	-16.38(.000)	0.08	0.74

Item 19
---
item:19 (lc5q44)
Cases for this item 4924 Discrimination 0.42
Item Threshold(s): 0.91 Weighted MNSQ 1.00
Item Delta(s): 0.91

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	55	1.12	-0.06	-3.98(.000)	0.02	1.00
A	0.00	1278	25.95	-0.23	-16.45(.000)	0.19	0.80
B	1.00	2044	41.51	0.42	32.67(.000)	0.91	0.88
C	0.00	1293	26.26	-0.20	-14.21(.000)	0.26	0.76
D	0.00	254	5.16	-0.07	-4.65(.000)	0.33	0.94

Item 20
---
item:20 (lc5q45)
Cases for this item 4916 Discrimination 0.37
Item Threshold(s): 1.04 Weighted MNSQ 1.04
Item Delta(s): 1.04

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.06	-0.00	-0.27(.784)	0.31	0.93
9	0.00	66	1.34	-0.03	-2.27(.023)	0.20	0.84
A	0.00	1225	24.92	-0.22	-15.50(.000)	0.20	0.78
B	1.00	1918	39.02	0.37	27.66(.000)	0.90	0.92
C	0.00	871	17.72	-0.18	-12.50(.000)	0.22	0.78
D	0.00	833	16.94	-0.04	-2.78(.006)	0.44	0.78

Item 21
---
item:21 (lc5q46)
Cases for this item 4907 Discrimination 0.39
Item Threshold(s): 0.50 Weighted MNSQ 1.03
Item Delta(s): 0.50

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	64	1.30	-0.07	-4.61(.000)	-0.12	0.87
A	1.00	2469	50.32	0.39	30.11(.000)	0.83	0.90
B	0.00	451	9.19	-0.20	-14.24(.000)	0.00	0.75
C	0.00	604	12.31	-0.26	-18.81(.000)	-0.03	0.72
D	0.00	1319	26.88	-0.11	-7.50(.000)	0.38	0.75

Item 22
---
item:22 (lc5q47)
Cases for this item 4867 Discrimination 0.43
Item Threshold(s): 1.05 Weighted MNSQ 0.99
Item Delta(s): 1.04

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	100	2.05	-0.05	-3.18(.001)	0.21	0.91
A	0.00	1015	20.85	-0.20	-13.93(.000)	0.23	0.76
B	0.00	881	18.10	-0.20	-14.51(.000)	0.18	0.77
C	1.00	1898	39.00	0.43	32.96(.000)	0.96	0.91
D	0.00	973	19.99	-0.11	-7.70(.000)	0.31	0.75

Item 23
---
item:23 (lc5q48)
Cases for this item 4851 Discrimination 0.38
Item Threshold(s): 1.63 Weighted MNSQ 1.01
Item Delta(s): 1.64

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.00	-0.24(.812)	0.49	0.00
9	0.00	86	1.77	-0.02	-1.10(.272)	0.36	0.95
A	0.00	1256	25.89	-0.13	-9.27(.000)	0.33	0.79
B	0.00	699	14.41	-0.04	-2.93(.003)	0.44	0.86
C	0.00	1460	30.10	-0.20	-14.57(.000)	0.28	0.77
D	1.00	1349	27.81	0.38	28.28(.000)	1.02	0.92

Item 24
---
item:24 (lc5q49)
Cases for this item 4835 Discrimination 0.39
Item Threshold(s): 1.67 Weighted MNSQ 0.99
Item Delta(s): 1.67

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.08	-0.02	-1.70(.089)	-0.05	0.71
9	0.00	34	0.70	-0.05	-3.62(.000)	-0.24	0.80
A	0.00	1599	33.07	-0.16	-10.94(.000)	0.35	0.78
B	1.00	1315	27.20	0.39	29.45(.000)	1.04	0.93
C	0.00	923	19.09	-0.23	-16.37(.000)	0.15	0.78
D	0.00	960	19.86	-0.01	-0.92(.357)	0.51	0.82

Item 25
----
item:25 (lc5q50)
Cases for this item 4820 Discrimination 0.19
Item Threshold(s): 1.91 Weighted MNSQ 1.13
Item Delta(s): 1.91

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	67	1.39	-0.05	-3.30(.001)	0.17	0.96
A	0.00	954	19.79	-0.08	-5.90(.000)	0.39	0.84
B	0.00	1171	24.29	-0.05	-3.42(.001)	0.45	0.85
C	0.00	1506	31.24	-0.04	-2.94(.003)	0.49	0.86
D	1.00	1122	23.28	0.19	13.39(.000)	0.79	0.97

Item 26
----
item:26 (lc5q51)
Cases for this item 4791 Discrimination 0.33
Item Threshold(s): 1.48 Weighted MNSQ 1.06
Item Delta(s): 1.48

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.06	-0.03	-2.21(.027)	-0.43	1.42
9	0.00	65	1.36	-0.02	-1.34(.180)	0.42	0.82
A	0.00	873	18.22	-0.11	-7.65(.000)	0.33	0.87
B	0.00	870	18.16	-0.13	-9.00(.000)	0.33	0.82
C	0.00	1516	31.64	-0.13	-8.80(.000)	0.37	0.81
D	1.00	1464	30.56	0.33	24.53(.000)	0.93	0.91

The following traditional statistics are only meaningful for complete
designs and when the amount of missing data is minimal.
In this analysis 1.38% of the data are missing.

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

N	5021
Mean	14.99
Standard Deviation	4.55
Variance	20.69
Skewness	0.01
Kurtosis	-0.41
Standard error of mean	0.06
Standard error of measurement	2.21
Coefficient Alpha	0.76

Appendix B.11 Year 7 G&P

```
================================================================================
NAPLAN 2016, Calibration, Grade 7, GP
GENERALISED ITEM ANALYSIS
================================================================================
Item 1
------
item:1 (lc7q31)
Cases for this item   6284   Discrimination  0.37
Item Threshold(s):    -1.98   Weighted MNSQ   0.94
Item Delta(s):     -1.99
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   8       0.00         3       0.05   -0.03    -2.02(.044) -1.00     1.64
   9       0.00        15       0.24   -0.07    -5.66(.000) -0.74     1.19
   A       0.00        99       1.58   -0.19   -15.06(.000) -0.93     0.58
   B       1.00      5536      88.10    0.37    31.34(.000)  0.38     0.84
   C       0.00       548       8.72   -0.26   -21.04(.000) -0.37     0.77
   D       0.00        83       1.32   -0.17   -13.68(.000) -0.86     0.59
================================================================================

Item 2
------
item:2 (lc7q32)
Cases for this item   6284   Discrimination  0.33
Item Threshold(s):    -1.52   Weighted MNSQ   1.00
Item Delta(s):     -1.52
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   8       0.00         2       0.03   -0.02    -1.85(.064) -1.78     1.58
   9       0.00        12       0.19   -0.04    -3.31(.001) -0.49     1.24
   A       0.00       441       7.02   -0.15   -11.72(.000) -0.14     0.75
   B       0.00       129       2.05   -0.17   -13.52(.000) -0.55     0.71
   C       1.00      5208      82.88    0.33    27.93(.000)  0.39     0.85
   D       0.00       492       7.83   -0.23   -18.73(.000) -0.33     0.78
================================================================================

Item 3
------
item:3 (lc7q33)
Cases for this item   6283   Discrimination  0.27
Item Threshold(s):    -2.19   Weighted MNSQ   0.98
Item Delta(s):     -2.18
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   8       0.00         4       0.06   -0.03    -2.48(.013) -1.42     1.20
   9       0.00        39       0.62   -0.09    -7.24(.000) -0.64     0.82
   A       0.00       167       2.66   -0.20   -16.50(.000) -0.75     0.72
   B       1.00      5648      89.89    0.27    22.28(.000)  0.35     0.84
   C       0.00       236       3.76   -0.10    -7.89(.000) -0.13     0.95
   D       0.00       189       3.01   -0.13   -10.29(.000) -0.30     0.91
================================================================================

Item 4
------
item:4 (lc7q34)
Cases for this item   6283   Discrimination  0.41
Item Threshold(s):    -1.43   Weighted MNSQ   0.95
Item Delta(s):     -1.43
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   8       0.00         3       0.05   -0.03    -2.48(.013) -1.12     1.53
   9       0.00        19       0.30   -0.05    -3.75(.000) -0.45     0.92
   A       0.00       616       9.80   -0.24   -19.89(.000) -0.32     0.77
   B       0.00       171       2.72   -0.20   -15.82(.000) -0.61     0.61
   C       1.00      5127      81.60    0.41    35.95(.000)  0.43     0.83
   D       0.00       347       5.52   -0.23   -18.72(.000) -0.47     0.71
================================================================================
```

Item 5
------
item:5 (lc7q35)
Cases for this item 6281 Discrimination 0.50
Item Threshold(s): -0.98 Weighted MNSQ 0.90
Item Delta(s): -0.98

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.03	-0.03	-2.56(.011)	-1.46	2.03
9	0.00	40	0.64	-0.08	-6.22(.000)	-0.62	0.78
A	0.00	837	13.33	-0.30	-24.62(.000)	-0.29	0.73
B	0.00	304	4.84	-0.23	-18.98(.000)	-0.53	0.69
C	1.00	4700	74.83	0.50	45.89(.000)	0.50	0.81
D	0.00	398	6.34	-0.25	-20.09(.000)	-0.46	0.67

Item 6
------
item:6 (lc7q36)
Cases for this item 6270 Discrimination 0.47
Item Threshold(s): -0.55 Weighted MNSQ 0.95
Item Delta(s): -0.55

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	27	0.43	-0.05	-3.66(.000)	-0.27	0.74
9	0.00	35	0.56	-0.07	-5.44(.000)	-0.43	0.87
A	0.00	563	8.98	-0.20	-16.25(.000)	-0.21	0.72
B	1.00	4212	67.18	0.47	41.66(.000)	0.54	0.83
C	0.00	1210	19.30	-0.32	-26.52(.000)	-0.24	0.71
D	0.00	223	3.56	-0.15	-11.97(.000)	-0.32	0.69

Item 7
------
item:7 (lc7q37)
Cases for this item 6269 Discrimination 0.43
Item Threshold(s): -0.78 Weighted MNSQ 0.97
Item Delta(s): -0.78

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.03	-0.03	-2.42(.015)	-2.08	1.15
9	0.00	18	0.29	-0.07	-5.35(.000)	-0.74	1.02
A	0.00	611	9.75	-0.21	-16.96(.000)	-0.23	0.82
B	1.00	4477	71.41	0.43	37.45(.000)	0.49	0.82
C	0.00	134	2.14	-0.17	-13.39(.000)	-0.57	0.70
D	0.00	1027	16.38	-0.28	-22.89(.000)	-0.20	0.75

Item 8
------
item:8 (lc7q38)
Cases for this item 6269 Discrimination 0.47
Item Threshold(s): -0.66 Weighted MNSQ 0.94
Item Delta(s): -0.65

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.08	-0.03	-2.71(.007)	-0.95	1.20
9	0.00	32	0.51	-0.06	-4.82(.000)	-0.60	0.80
A	0.00	864	13.78	-0.31	-25.70(.000)	-0.31	0.73
B	0.00	525	8.37	-0.19	-15.31(.000)	-0.19	0.77
C	1.00	4331	69.09	0.47	41.79(.000)	0.52	0.82
D	0.00	512	8.17	-0.19	-15.13(.000)	-0.19	0.76

Item 9
------
item:9 (lc7q39)
Cases for this item 6264 Discrimination 0.52
Item Threshold(s): -0.07 Weighted MNSQ 0.92
Item Delta(s): -0.07

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.05	-0.03	-2.71(.007)	-1.17	1.52
9	0.00	34	0.54	-0.06	-5.14(.000)	-0.51	0.85
A	0.00	1447	23.10	-0.28	-23.18(.000)	-0.11	0.73
B	0.00	540	8.62	-0.23	-18.51(.000)	-0.28	0.69
C	0.00	645	10.30	-0.24	-19.21(.000)	-0.24	0.75
D	1.00	3595	57.39	0.52	48.80(.000)	0.62	0.81

Item 10
----
item:10 (lc7q40)
Cases for this item 6263 Discrimination 0.35
Item Threshold(s): -0.38 Weighted MNSQ 1.04
Item Delta(s): -0.38

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	14	0.22	-0.08	-6.39(.000)	-1.07	1.12
A	1.00	3998	63.84	0.35	29.09(.000)	0.48	0.84
B	0.00	869	13.88	-0.18	-14.65(.000)	-0.09	0.82
C	0.00	1266	20.21	-0.19	-15.49(.000)	-0.01	0.80
D	0.00	116	1.85	-0.16	-13.02(.000)	-0.61	0.65

Item 11
----
item:11 (lc7q41)
Cases for this item 6261 Discrimination 0.50
Item Threshold(s): -0.02 Weighted MNSQ 0.93
Item Delta(s): -0.02

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.03	-0.02	-1.66(.097)	-1.02	0.35
9	0.00	60	0.96	-0.08	-6.33(.000)	-0.41	0.89
A	1.00	3526	56.32	0.50	46.13(.000)	0.63	0.83
B	0.00	717	11.45	-0.22	-17.46(.000)	-0.20	0.75
C	0.00	776	12.39	-0.23	-18.88(.000)	-0.19	0.69
D	0.00	1180	18.85	-0.25	-20.16(.000)	-0.11	0.69

Item 12
----
item:12 (lc7q42)
Cases for this item 6257 Discrimination 0.43
Item Threshold(s): -0.35 Weighted MNSQ 0.98
Item Delta(s): -0.35

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.08	-0.04	-3.03(.002)	-0.72	0.40
9	0.00	39	0.62	-0.07	-5.72(.000)	-0.38	0.88
A	0.00	446	7.13	-0.20	-16.51(.000)	-0.30	0.75
B	1.00	3955	63.21	0.43	38.17(.000)	0.54	0.84
C	0.00	748	11.95	-0.26	-21.73(.000)	-0.29	0.71
D	0.00	1064	17.00	-0.17	-13.74(.000)	0.00	0.74

Item 13
---
item:13 (lc7q43)
Cases for this item 6254 Discrimination 0.33
Item Threshold(s): -0.30 Weighted MNSQ 1.06
Item Delta(s): -0.29

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.03	-0.00	-0.39(.694)	-0.50	0.47
9	0.00	67	1.07	-0.09	-6.90(.000)	-0.35	0.86
A	0.00	1186	18.96	-0.18	-14.17(.000)	-0.03	0.79
B	0.00	601	9.61	-0.16	-12.46(.000)	-0.08	0.84
C	0.00	516	8.25	-0.14	-11.14(.000)	-0.06	0.84
D	1.00	3882	62.07	0.33	28.09(.000)	0.49	0.84

Item 14
---
item:14 (lc7q44)
Cases for this item 6251 Discrimination 0.37
Item Threshold(s): 0.48 Weighted MNSQ 1.04
Item Delta(s): 0.48

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	52	0.83	-0.07	-5.78(.000)	-0.38	0.84
A	0.00	1664	26.62	-0.14	-11.10(.000)	0.10	0.79
B	0.00	645	10.32	-0.22	-17.66(.000)	-0.25	0.82
C	1.00	2858	45.72	0.37	31.86(.000)	0.61	0.86
D	0.00	1032	16.51	-0.14	-11.15(.000)	0.04	0.73

Item 15
---
item:15 (lc7q45)
Cases for this item 6246 Discrimination 0.43
Item Threshold(s): -0.33 Weighted MNSQ 0.98
Item Delta(s): -0.33

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.05	-0.03	-2.44(.015)	-0.95	0.66
9	0.00	46	0.74	-0.10	-7.69(.000)	-0.80	0.85
A	1.00	3921	62.78	0.43	37.51(.000)	0.54	0.84
B	0.00	446	7.14	-0.22	-17.59(.000)	-0.30	0.71
C	0.00	499	7.99	-0.24	-19.47(.000)	-0.35	0.70
D	0.00	1331	21.31	-0.19	-15.23(.000)	-0.00	0.75

Item 16
---
item:16 (lc7q46)
Cases for this item 6234 Discrimination 0.44
Item Threshold(s): 0.23 Weighted MNSQ 0.98
Item Delta(s): 0.24

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	54	0.87	-0.09	-7.18(.000)	-0.57	0.77
A	0.00	759	12.18	-0.15	-11.83(.000)	-0.03	0.80
B	0.00	1972	31.63	-0.26	-21.22(.000)	-0.00	0.76
C	0.00	272	4.36	-0.22	-17.53(.000)	-0.47	0.66
D	1.00	3177	50.96	0.44	39.10(.000)	0.62	0.83

Item 17
---
item:17 (lc7q47)
Cases for this item 6230 Discrimination 0.51
Item Threshold(s): 0.30 Weighted MNSQ 0.93
Item Delta(s): 0.30

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.08	-0.03	-2.15(.032)	-0.50	0.44
9	0.00	129	2.07	-0.06	-4.99(.000)	-0.09	0.80
A	0.00	985	15.81	-0.23	-18.58(.000)	-0.12	0.73
B	0.00	981	15.75	-0.24	-19.54(.000)	-0.13	0.76
C	1.00	3094	49.66	0.51	46.24(.000)	0.67	0.83
D	0.00	1036	16.63	-0.19	-15.52(.000)	-0.04	0.70

Item 18
---
item:18 (lc7q48)
Cases for this item 6226 Discrimination 0.35
Item Threshold(s): 0.70 Weighted MNSQ 1.05
Item Delta(s): 0.70

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	0.00	0.05(.958)	0.01	0.00
9	0.00	53	0.85	-0.07	-5.70(.000)	-0.35	0.89
A	1.00	2554	41.02	0.35	29.78(.000)	0.62	0.90
B	0.00	390	6.26	-0.25	-20.16(.000)	-0.46	0.75
C	0.00	2419	38.85	-0.11	-8.39(.000)	0.18	0.75
D	0.00	809	12.99	-0.17	-13.22(.000)	-0.03	0.75

Item 19
---
item:19 (lc7q49)
Cases for this item 6218 Discrimination 0.40
Item Threshold(s): 0.50 Weighted MNSQ 1.02
Item Delta(s): 0.50

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.03	0.01	1.01(.312)	0.96	0.59
9	0.00	40	0.64	-0.07	-5.51(.000)	-0.46	0.83
A	0.00	1094	17.59	-0.14	-11.30(.000)	0.06	0.80
B	0.00	1692	27.21	-0.19	-15.29(.000)	0.03	0.78
C	1.00	2823	45.40	0.40	34.02(.000)	0.63	0.85
D	0.00	567	9.12	-0.18	-14.82(.000)	-0.14	0.77

Item 20
---
item:20 (lc7q50)
Cases for this item 6211 Discrimination 0.40
Item Threshold(s): 0.53 Weighted MNSQ 1.02
Item Delta(s): 0.53

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.01	-0.62(.536)	-0.01	0.00
9	0.00	48	0.77	-0.06	-5.10(.000)	-0.39	1.05
A	0.00	1173	18.89	-0.14	-11.54(.000)	0.04	0.79
B	0.00	1355	21.82	-0.22	-17.57(.000)	-0.03	0.78
C	0.00	854	13.75	-0.13	-10.40(.000)	0.05	0.79
D	1.00	2780	44.76	0.40	34.08(.000)	0.63	0.85

Item 21
---
item:21 (lc7q51)
Cases for this item 6197 Discrimination 0.25
Item Threshold(s): 0.73 Weighted MNSQ 1.13
Item Delta(s): 0.72

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	0.00	0.31(.754)	0.65	0.00
9	0.00	85	1.37	-0.05	-3.65(.000)	0.00	0.91
A	0.00	2380	38.41	-0.13	-9.94(.000)	0.17	0.84
B	1.00	2522	40.70	0.25	20.25(.000)	0.52	0.86
C	0.00	782	12.62	-0.09	-7.49(.000)	0.09	0.87
D	0.00	427	6.89	-0.10	-7.68(.000)	0.06	0.85

Item 22
---
item:22 (lc7q52)
Cases for this item 6188 Discrimination 0.32
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	5	0.08	-0.01	-0.91(.364)	-0.04	0.89
9	0.00	93	1.50	-0.06	-4.57(.000)	-0.03	0.83
A	0.00	1232	19.91	-0.22	-17.43(.000)	-0.05	0.74
B	0.00	1060	17.13	-0.07	-5.81(.000)	0.15	0.84
C	1.00	2441	39.45	0.32	27.01(.000)	0.60	0.88
D	0.00	1357	21.93	-0.09	-7.11(.000)	0.18	0.82

Item 23
---
item:23 (lc7q53)
Cases for this item 6179 Discrimination 0.34
Item Threshold(s): 0.68 Weighted MNSQ 1.06
Item Delta(s): 0.68

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.02	-1.68(.092)	-1.27	0.00
9	0.00	127	2.06	-0.05	-4.17(.000)	0.00	0.87
A	1.00	2576	41.69	0.34	28.25(.000)	0.60	0.89
B	0.00	1659	26.85	-0.10	-7.56(.000)	0.18	0.75
C	0.00	817	13.22	-0.16	-12.51(.000)	-0.03	0.82
D	0.00	999	16.17	-0.17	-13.72(.000)	-0.01	0.78

Item 24
---
item:24 (lc7q54)
Cases for this item 6170 Discrimination 0.38
Item Threshold(s): 0.98 Weighted MNSQ 1.01
Item Delta(s): 0.97

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	64	1.04	-0.04	-3.27(.001)	0.03	1.04
A	0.00	617	10.00	-0.17	-13.80(.000)	-0.09	0.77
B	0.00	2064	33.45	-0.20	-16.39(.000)	0.06	0.76
C	1.00	2199	35.64	0.38	32.68(.000)	0.70	0.88
D	0.00	1226	19.87	-0.08	-6.22(.000)	0.16	0.79

Item 25
---
item:25 (lc7q55)
Cases for this item 6161 Discrimination 0.46
Item Threshold(s): 0.90 Weighted MNSQ 0.96
Item Delta(s): 0.90

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.06	-0.03	-2.27(.023)	-0.84	0.96
9	0.00	86	1.40	-0.05	-4.32(.000)	-0.12	0.90
A	0.00	1378	22.37	-0.22	-17.91(.000)	-0.02	0.74
B	0.00	870	14.12	-0.06	-4.44(.000)	0.18	0.85
C	0.00	1531	24.85	-0.23	-18.87(.000)	-0.03	0.73
D	1.00	2292	37.20	0.46	40.26(.000)	0.76	0.83

Item 26
---
item:26 (lc7q56)
Cases for this item 6125 Discrimination 0.35
Item Threshold(s): 1.60 Weighted MNSQ 1.01
Item Delta(s): 1.60

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.05	-0.03	-2.70(.007)	-1.17	0.49
9	0.00	84	1.37	-0.04	-2.75(.006)	0.12	0.89
A	0.00	1207	19.71	-0.11	-8.33(.000)	0.13	0.79
B	0.00	1286	21.00	-0.13	-10.10(.000)	0.11	0.77
C	0.00	2052	33.50	-0.11	-8.58(.000)	0.17	0.82
D	1.00	1493	24.38	0.35	29.30(.000)	0.78	0.90

Item 27
---
item:27 (lc7q57)
Cases for this item 6109 Discrimination 0.19
Item Threshold(s): 1.68 Weighted MNSQ 1.12
Item Delta(s): 1.68

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.01	-1.09(.276)	-0.70	0.00
9	0.00	54	0.88	-0.04	-3.10(.002)	0.03	0.91
A	0.00	1555	25.45	-0.04	-3.50(.000)	0.24	0.83
B	0.00	1634	26.75	-0.05	-3.69(.000)	0.22	0.83
C	1.00	1410	23.08	0.19	14.82(.000)	0.58	0.94
D	0.00	1455	23.82	-0.08	-6.30(.000)	0.18	0.83

Item 28
---
item:28 (lc7q58)
Cases for this item 6100 Discrimination 0.32
Item Threshold(s): 1.47 Weighted MNSQ 1.04
Item Delta(s): 1.46

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	174	2.85	0.01	0.51(.607)	0.28	0.78
9	0.00	54	0.89	-0.00	-0.38(.703)	0.24	0.69
A	1.00	1625	26.64	0.32	26.30(.000)	0.71	0.89
B	0.00	2241	36.74	0.02	1.81(.070)	0.33	0.81
C	0.00	724	11.87	-0.14	-11.21(.000)	-0.01	0.76
D	0.00	1282	21.02	-0.26	-21.25(.000)	-0.10	0.79

The following traditional statistics are only meaningful for complete designs and when the amount of missing data is minimal.
In this analysis 0.90% of the data are missing.

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

N	6284
Mean	15.38
Standard Deviation	5.03
Variance	25.28
Skewness	0.06
Kurtosis	-0.56
Standard error of mean	0.06
Standard error of measurement	2.35
Coefficient Alpha	0.78

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Appendix B.12 Year 9 G&P

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================================================================================
NAPLAN 2016, Calibration, Grade 9, GP
GENERALISED ITEM ANALYSIS
================================================================================
Item 1
------
item:1 (lc9q31)
Cases for this item   5839   Discrimination  0.36
Item Threshold(s):    -2.58   Weighted MNSQ   0.91
Item Delta(s):     -2.58
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   8       0.00         4       0.07   -0.08    -6.47(.000) -2.58     0.85
   9       0.00         7       0.12   -0.07    -5.53(.000) -1.56     0.80
   A       0.00        70       1.20   -0.20   -15.30(.000) -1.13     0.65
   B       1.00      5430      93.00    0.36    29.33(.000)  0.42     0.87
   C       0.00       291       4.98   -0.25   -20.07(.000) -0.56     0.79
   D       0.00        37       0.63   -0.13    -9.81(.000) -0.88     0.60
================================================================================

Item 2
------
item:2 (lc9q32)
Cases for this item   5839   Discrimination  0.42
Item Threshold(s):    -1.82   Weighted MNSQ   0.92
Item Delta(s):     -1.82
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   8       0.00         8       0.14   -0.08    -6.36(.000) -1.70     1.34
   9       0.00        13       0.22   -0.08    -5.91(.000) -1.15     0.89
   A       0.00       367       6.29   -0.23   -18.04(.000) -0.39     0.75
   B       0.00       101       1.73   -0.19   -14.56(.000) -0.81     0.65
   C       1.00      5069      86.81    0.42    35.22(.000)  0.47     0.86
   D       0.00       281       4.81   -0.26   -20.22(.000) -0.56     0.71
================================================================================

Item 3
------
item:3 (lc9q33)
Cases for this item   5839   Discrimination  0.28
Item Threshold(s):    -2.15   Weighted MNSQ   1.00
Item Delta(s):     -2.15
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   8       0.00         4       0.07   -0.08    -6.47(.000) -2.58     0.85
   9       0.00        11       0.19   -0.07    -5.05(.000) -1.25     0.96
   A       1.00      5250      89.91    0.28    22.32(.000)  0.41     0.89
   B       0.00        40       0.69   -0.14   -10.54(.000) -0.91     0.66
   C       0.00       375       6.42   -0.20   -15.55(.000) -0.26     0.78
   D       0.00       159       2.72   -0.12    -9.08(.000) -0.23     0.76
================================================================================

Item 4
------
item:4 (lc9q34)
Cases for this item   5837   Discrimination  0.47
Item Threshold(s):    -1.42   Weighted MNSQ   0.90
Item Delta(s):     -1.42
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   8       0.00         6       0.10   -0.09    -6.57(.000) -2.03     1.09
   9       0.00        22       0.38   -0.09    -6.84(.000) -1.07     0.94
   A       0.00       588      10.07   -0.30   -23.89(.000) -0.38     0.71
   B       0.00       174       2.98   -0.22   -16.86(.000) -0.64     0.69
   C       1.00      4793      82.11    0.47    40.93(.000)  0.52     0.85
   D       0.00       254       4.35   -0.23   -17.81(.000) -0.53     0.67
================================================================================
```

Item 5
------
item:5 (lc9q35)
Cases for this item 5835 Discrimination 0.51
Item Threshold(s): -1.11 Weighted MNSQ 0.89
Item Delta(s): -1.11

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	177	3.03	-0.12	-9.05(.000)	-0.17	0.74
9	0.00	87	1.49	-0.13	-9.97(.000)	-0.60	0.76
A	0.00	329	5.64	-0.25	-19.70(.000)	-0.48	0.71
B	1.00	4534	77.70	0.51	45.42(.000)	0.56	0.84
C	0.00	320	5.48	-0.23	-18.24(.000)	-0.45	0.72
D	0.00	388	6.65	-0.27	-21.13(.000)	-0.46	0.67

Item 6
------
item:6 (lc9q36)
Cases for this item 5826 Discrimination 0.34
Item Threshold(s): -1.75 Weighted MNSQ 0.97
Item Delta(s): -1.75

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	8	0.14	-0.07	-5.27(.000)	-1.36	1.70
9	0.00	25	0.43	-0.08	-6.26(.000)	-0.76	0.92
A	0.00	183	3.14	-0.20	-15.35(.000)	-0.61	0.81
B	0.00	532	9.13	-0.22	-16.89(.000)	-0.19	0.81
C	1.00	5017	86.11	0.34	27.39(.000)	0.45	0.87
D	0.00	61	1.05	-0.12	-9.30(.000)	-0.57	0.73

Item 7
------
item:7 (lc9q37)
Cases for this item 5825 Discrimination 0.52
Item Threshold(s): -0.92 Weighted MNSQ 0.90
Item Delta(s): -0.92

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	40	0.69	-0.07	-5.07(.000)	-0.36	1.03
9	0.00	58	1.00	-0.11	-8.24(.000)	-0.55	0.84
A	0.00	437	7.50	-0.28	-22.53(.000)	-0.46	0.64
B	1.00	4357	74.80	0.52	45.88(.000)	0.58	0.83
C	0.00	477	8.19	-0.26	-20.24(.000)	-0.33	0.77
D	0.00	456	7.83	-0.23	-18.32(.000)	-0.30	0.73

Item 8
------
item:8 (lc9q38)
Cases for this item 5825 Discrimination 0.44
Item Threshold(s): -1.08 Weighted MNSQ 0.95
Item Delta(s): -1.08

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	8	0.14	-0.08	-6.23(.000)	-1.46	1.59
9	0.00	21	0.36	-0.08	-6.26(.000)	-0.90	0.88
A	0.00	386	6.63	-0.18	-13.84(.000)	-0.20	0.80
B	1.00	4503	77.30	0.44	37.12(.000)	0.54	0.85
C	0.00	98	1.68	-0.15	-11.60(.000)	-0.53	0.70
D	0.00	809	13.89	-0.32	-26.02(.000)	-0.34	0.75

Item 9
------
item:9 (lc9q39)
Cases for this item 5823 Discrimination 0.56
Item Threshold(s): -0.45 Weighted MNSQ 0.88
Item Delta(s): -0.45

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	8	0.14	-0.09	-6.90(.000)	-1.98	0.90
9	0.00	34	0.58	-0.10	-7.61(.000)	-0.75	0.86
A	0.00	1157	19.87	-0.35	-28.48(.000)	-0.23	0.70
B	0.00	334	5.74	-0.25	-19.43(.000)	-0.45	0.65
C	0.00	430	7.38	-0.22	-16.96(.000)	-0.27	0.75
D	1.00	3860	66.29	0.56	51.52(.000)	0.66	0.82

Item 10
----
item:10 (lc9q40)
Cases for this item 5820 Discrimination 0.21
Item Threshold(s): -0.72 Weighted MNSQ 1.15
Item Delta(s): -0.72

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	7	0.12	-0.07	-5.51(.000)	-1.54	1.67
9	0.00	19	0.33	-0.09	-7.20(.000)	-1.07	1.10
A	0.00	1351	23.21	-0.05	-3.82(.000)	0.27	0.79
B	0.00	102	1.75	-0.21	-16.63(.000)	-0.95	0.63
C	0.00	193	3.32	-0.21	-16.60(.000)	-0.61	0.77
D	1.00	4148	71.27	0.21	16.38(.000)	0.45	0.89

Item 11
----
item:11 (lc9q41)
Cases for this item 5820 Discrimination 0.44
Item Threshold(s): -0.20 Weighted MNSQ 0.99
Item Delta(s): -0.21

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	47	0.81	-0.11	-8.16(.000)	-0.54	0.91
9	0.00	55	0.95	-0.09	-6.66(.000)	-0.48	0.91
A	1.00	3579	61.49	0.44	37.50(.000)	0.62	0.87
B	0.00	865	14.86	-0.17	-13.39(.000)	0.01	0.78
C	0.00	337	5.79	-0.27	-20.97(.000)	-0.47	0.71
D	0.00	937	16.10	-0.20	-15.54(.000)	-0.01	0.75

Item 12
----
item:12 (lc9q42)
Cases for this item 5815 Discrimination 0.38
Item Threshold(s): -0.55 Weighted MNSQ 1.02
Item Delta(s): -0.55

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	9	0.15	-0.07	-5.30(.000)	-1.37	1.48
9	0.00	64	1.10	-0.12	-8.84(.000)	-0.62	0.83
A	0.00	879	15.12	-0.24	-18.68(.000)	-0.11	0.82
B	0.00	460	7.91	-0.16	-12.14(.000)	-0.06	0.86
C	0.00	431	7.41	-0.12	-9.57(.000)	-0.02	0.87
D	1.00	3972	68.31	0.38	30.95(.000)	0.55	0.86

Item 13
---
item:13 (lc9q43)
Cases for this item 5811 Discrimination 0.44
Item Threshold(s): -0.18 Weighted MNSQ 0.99
Item Delta(s): -0.18

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	11	0.19	-0.07	-5.44(.000)	-1.11	1.46
9	0.00	42	0.72	-0.11	-8.61(.000)	-0.78	0.91
A	0.00	597	10.27	-0.21	-16.59(.000)	-0.16	0.76
B	0.00	1456	25.06	-0.24	-18.94(.000)	0.01	0.81
C	0.00	164	2.82	-0.20	-15.26(.000)	-0.55	0.70
D	1.00	3541	60.94	0.44	37.24(.000)	0.63	0.85

Item 14
---
item:14 (lc9q44)
Cases for this item 5811 Discrimination 0.41
Item Threshold(s): 0.37 Weighted MNSQ 1.02
Item Delta(s): 0.37

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.10	-0.09	-6.86(.000)	-2.21	0.88
9	0.00	76	1.31	-0.09	-7.06(.000)	-0.33	1.01
A	0.00	839	14.44	-0.20	-15.84(.000)	-0.04	0.79
B	0.00	1099	18.91	-0.14	-11.01(.000)	0.13	0.83
C	1.00	2876	49.49	0.41	34.55(.000)	0.67	0.88
D	0.00	915	15.75	-0.18	-13.94(.000)	-0.00	0.77

Item 15
---
item:15 (lc9q45)
Cases for this item 5803 Discrimination 0.55
Item Threshold(s): 0.49 Weighted MNSQ 0.90
Item Delta(s): 0.49

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	14	0.24	-0.09	-6.62(.000)	-1.17	1.36
9	0.00	31	0.53	-0.09	-6.77(.000)	-0.64	1.07
A	0.00	665	11.46	-0.23	-17.97(.000)	-0.16	0.71
B	0.00	823	14.18	-0.15	-11.57(.000)	0.07	0.76
C	0.00	1545	26.62	-0.32	-25.46(.000)	-0.08	0.74
D	1.00	2725	46.96	0.55	50.65(.000)	0.82	0.82

Item 16
---
item:16 (lc9q46)
Cases for this item 5801 Discrimination 0.41
Item Threshold(s): -0.11 Weighted MNSQ 1.02
Item Delta(s): -0.11

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	8	0.14	-0.08	-6.34(.000)	-1.51	1.46
9	0.00	61	1.05	-0.07	-5.29(.000)	-0.24	0.96
A	0.00	821	14.15	-0.23	-18.29(.000)	-0.10	0.76
B	0.00	374	6.45	-0.18	-13.98(.000)	-0.19	0.79
C	0.00	1075	18.53	-0.16	-12.48(.000)	0.07	0.84
D	1.00	3462	59.68	0.41	33.75(.000)	0.61	0.86

Item 17
---
item:17 (lc9q47)
Cases for this item 5799 Discrimination 0.45
Item Threshold(s): 0.77 Weighted MNSQ 0.98
Item Delta(s): 0.77

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.10	-0.08	-6.11(.000)	-1.84	1.57
9	0.00	36	0.62	-0.07	-5.44(.000)	-0.38	1.01
A	1.00	2388	41.18	0.45	38.46(.000)	0.79	0.87
B	0.00	860	14.83	-0.25	-19.97(.000)	-0.13	0.76
C	0.00	1123	19.37	-0.18	-13.79(.000)	0.03	0.76
D	0.00	1386	23.90	-0.12	-9.56(.000)	0.16	0.80

Item 18
---
item:18 (lc9q48)
Cases for this item 5798 Discrimination 0.45
Item Threshold(s): 0.25 Weighted MNSQ 0.99
Item Delta(s): 0.25

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.10	-0.08	-6.19(.000)	-1.96	1.32
9	0.00	30	0.52	-0.07	-5.50(.000)	-0.48	1.05
A	1.00	3025	52.17	0.45	38.43(.000)	0.70	0.89
B	0.00	219	3.78	-0.18	-13.63(.000)	-0.38	0.80
C	0.00	1908	32.91	-0.25	-19.79(.000)	0.06	0.73
D	0.00	610	10.52	-0.21	-16.63(.000)	-0.15	0.74

Item 19
---
item:19 (lc9q49)
Cases for this item 5795 Discrimination 0.47
Item Threshold(s): 0.83 Weighted MNSQ 0.96
Item Delta(s): 0.83

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	9	0.16	-0.08	-6.23(.000)	-1.55	1.28
9	0.00	53	0.91	-0.08	-5.95(.000)	-0.24	1.00
A	0.00	528	9.11	-0.16	-12.33(.000)	-0.08	0.72
B	0.00	1626	28.06	-0.24	-18.52(.000)	0.05	0.76
C	1.00	2316	39.97	0.47	40.33(.000)	0.81	0.90
D	0.00	1263	21.79	-0.16	-12.41(.000)	0.12	0.76

Item 20
---
item:20 (lc9q50)
Cases for this item 5790 Discrimination 0.42
Item Threshold(s): 0.80 Weighted MNSQ 1.01
Item Delta(s): 0.80

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	8	0.14	-0.07	-5.01(.000)	-1.43	1.40
9	0.00	136	2.35	-0.08	-6.49(.000)	-0.11	0.87
A	1.00	2346	40.52	0.42	35.46(.000)	0.77	0.88
B	0.00	1111	19.19	-0.20	-15.22(.000)	0.03	0.77
C	0.00	1180	20.38	-0.14	-11.06(.000)	0.11	0.82
D	0.00	1009	17.43	-0.15	-11.55(.000)	0.09	0.79

Item 21
---
item:21 (lc9q51)
Cases for this item 5788 Discrimination 0.33
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	9	0.16	-0.08	-6.45(.000)	-1.54	1.24
9	0.00	63	1.09	-0.08	-5.84(.000)	-0.26	1.03
A	0.00	2124	36.70	-0.21	-15.97(.000)	0.14	0.80
B	0.00	1128	19.49	-0.06	-4.36(.000)	0.26	0.86
C	0.00	498	8.60	-0.08	-5.95(.000)	0.13	0.96
D	1.00	1966	33.97	0.33	26.31(.000)	0.71	0.88

Item 22
---
item:22 (lc9q52)
Cases for this item 5787 Discrimination 0.40
Item Threshold(s): 0.80 Weighted MNSQ 1.02
Item Delta(s): 0.80

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	7	0.12	-0.08	-6.26(.000)	-1.63	1.57
9	0.00	75	1.30	-0.09	-6.86(.000)	-0.23	0.93
A	0.00	780	13.48	-0.15	-11.70(.000)	0.05	0.79
B	0.00	1931	33.37	-0.17	-12.81(.000)	0.17	0.78
C	0.00	650	11.23	-0.17	-13.07(.000)	-0.03	0.86
D	1.00	2344	40.50	0.40	33.26(.000)	0.73	0.90

Item 23
---
item:23 (lc9q53)
Cases for this item 5785 Discrimination 0.26
Item Threshold(s): 1.07 Weighted MNSQ 1.12
Item Delta(s): 1.07

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	9	0.16	-0.08	-6.31(.000)	-1.60	1.22
9	0.00	145	2.51	-0.04	-2.99(.003)	0.06	0.80
A	0.00	696	12.03	-0.09	-7.06(.000)	0.16	0.87
B	1.00	2032	35.13	0.26	20.78(.000)	0.65	0.97
C	0.00	2068	35.75	-0.08	-6.32(.000)	0.26	0.81
D	0.00	835	14.43	-0.13	-10.18(.000)	0.09	0.78

Item 24
---
item:24 (lc9q54)
Cases for this item 5775 Discrimination 0.39
Item Threshold(s): 1.04 Weighted MNSQ 1.02
Item Delta(s): 1.04

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.10	-0.08	-5.86(.000)	-2.02	1.19
9	0.00	24	0.42	-0.05	-4.15(.000)	-0.40	1.17
A	0.00	791	13.70	-0.10	-7.61(.000)	0.14	0.84
B	1.00	2064	35.74	0.39	32.07(.000)	0.78	0.89
C	0.00	955	16.54	-0.23	-18.01(.000)	-0.06	0.80
D	0.00	1935	33.51	-0.13	-9.80(.000)	0.20	0.79

Item 25
---
item:25 (lc9q55)
Cases for this item 5772 Discrimination 0.29
Item Threshold(s): 1.16 Weighted MNSQ 1.09
Item Delta(s): 1.17

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	7	0.12	-0.07	-5.71(.000)	-1.57	1.42
9	0.00	57	0.99	-0.04	-3.33(.001)	-0.07	1.04
A	0.00	1765	30.58	-0.14	-10.47(.000)	0.19	0.76
B	0.00	898	15.56	-0.17	-12.79(.000)	0.04	0.88
C	1.00	1926	33.37	0.29	23.21(.000)	0.69	0.93
D	0.00	1119	19.39	-0.02	-1.49(.136)	0.31	0.88

Item 26
---
item:26 (lc9q56)
Cases for this item 5770 Discrimination 0.34
Item Threshold(s): 1.86 Weighted MNSQ 1.00
Item Delta(s): 1.86

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.10	-0.08	-6.29(.000)	-1.90	1.46
9	0.00	38	0.66	-0.04	-2.77(.006)	-0.08	1.11
A	0.00	1785	30.94	-0.11	-8.34(.000)	0.22	0.77
B	0.00	674	11.68	-0.24	-18.94(.000)	-0.15	0.76
C	1.00	1242	21.53	0.34	27.30(.000)	0.88	1.02
D	0.00	2025	35.10	-0.01	-0.83(.408)	0.33	0.81

Item 27
---
item:27 (lc9q57)
Cases for this item 5764 Discrimination 0.24
Item Threshold(s): 2.29 Weighted MNSQ 1.04
Item Delta(s): 2.29

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	8	0.14	-0.08	-6.28(.000)	-1.55	1.30
9	0.00	26	0.45	-0.06	-4.85(.000)	-0.41	1.07
A	1.00	916	15.89	0.24	18.83(.000)	0.81	1.07
B	0.00	643	11.16	-0.15	-11.32(.000)	0.02	0.93
C	0.00	3675	63.76	-0.01	-1.05(.294)	0.34	0.81
D	0.00	496	8.61	-0.10	-7.51(.000)	0.07	0.79

Item 28
---
item:28 (lc9q58)
Cases for this item 5761 Discrimination 0.14
Item Threshold(s): 2.16 Weighted MNSQ 1.14
Item Delta(s): 2.16

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	8	0.14	-0.09	-6.88(.000)	-1.67	1.16
9	0.00	10	0.17	-0.04	-3.39(.001)	-0.31	0.82
A	0.00	371	6.44	-0.19	-14.32(.000)	-0.22	0.84
B	0.00	4238	73.56	0.05	3.53(.000)	0.37	0.86
C	1.00	1005	17.44	0.14	10.64(.000)	0.61	0.94
D	0.00	129	2.24	-0.15	-11.65(.000)	-0.43	0.86

The following traditional statistics are only meaningful for complete designs and when the amount of missing data is minimal.
In this analysis 0.57% of the data are missing.

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

N	5839
Mean	15.59
Standard Deviation	4.84
Variance	23.43
Skewness	0.04
Kurtosis	-0.43
Standard error of mean	0.06
Standard error of measurement	2.24
Coefficient Alpha	0.79

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Appendix B.13 Year 3 Numeracy

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================================================================================
NAPLAN 2016, Calibration, Grade 3, numeracy
GENERALISED ITEM ANALYSIS
================================================================================
Item 1
------
item:1 (n3q01)
Cases for this item   5291   Discrimination  0.16
Item Threshold(s):    -4.45   Weighted MNSQ   0.97
Item Delta(s):     -4.44
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   9       0.00         7       0.13   -0.05    -3.74(.000) -0.92     1.31
   A       0.00        12       0.23   -0.09    -6.48(.000) -1.50     0.72
   B       0.00        17       0.32   -0.11    -7.81(.000) -1.30     0.60
   C       1.00      5219      98.64    0.16    12.00(.000)  0.30     0.99
   D       0.00        36       0.68   -0.08    -5.97(.000) -0.58     0.78
================================================================================

Item 2
------
item:2 (n3q02)
Cases for this item   5291   Discrimination  0.34
Item Threshold(s):    -2.14   Weighted MNSQ   0.95
Item Delta(s):     -2.14
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   8       0.00         1       0.02    0.00     0.13(.900)  0.66     0.00
   9       0.00        16       0.30   -0.07    -5.25(.000) -0.74     0.86
   A       1.00      4706      88.94    0.34    26.25(.000)  0.39     0.96
   B       0.00       221       4.18   -0.27   -20.09(.000) -0.90     0.75
   C       0.00       347       6.56   -0.20   -14.77(.000) -0.38     0.91
================================================================================

Item 3
------
item:3 (n3q03)
Cases for this item   5290   Discrimination  0.46
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         1       0.02   -0.03    -1.82(.068) -1.57     0.00
   9       0.00        15       0.28   -0.05    -3.99(.000) -0.69     1.06
   A       0.00       146       2.76   -0.15   -10.95(.000) -0.47     0.80
   B       0.00       524       9.91   -0.39   -30.56(.000) -0.77     0.71
   C       1.00      4497      85.01    0.46    37.72(.000)  0.46     0.93
   D       0.00       107       2.02   -0.15   -10.96(.000) -0.72     0.80
================================================================================

Item 4
------
item:4 (n3q04)
Cases for this item   5290   Discrimination  0.27
Item Threshold(s):    -2.69   Weighted MNSQ   0.96
Item Delta(s):     -2.69
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   8       0.00         4       0.08   -0.03    -2.19(.029) -0.39     1.04
   9       0.00        15       0.28   -0.06    -4.72(.000) -1.03     1.07
   A       0.00       182       3.44   -0.17   -12.35(.000) -0.51     0.99
   B       0.00       112       2.12   -0.14   -10.34(.000) -0.59     0.92
   C       0.00        56       1.06   -0.14   -10.06(.000) -0.94     0.86
   D       1.00      4921      93.02    0.27    20.48(.000)  0.35     0.97
================================================================================
```

Item 5
------
item:5 (n3q05)
Cases for this item 5290 Discrimination 0.45
Item Threshold(s): -1.24 Weighted MNSQ 0.93
Item Delta(s): -1.24

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	19	0.36	-0.08	-6.12(.000)	-0.97	0.69
9	0.00	20	0.38	-0.06	-4.08(.000)	-0.63	0.86
A	0.00	197	3.72	-0.22	-16.10(.000)	-0.71	0.75
B	1.00	4145	78.36	0.45	36.60(.000)	0.50	0.94
C	0.00	689	13.02	-0.27	-20.12(.000)	-0.33	0.81
D	0.00	220	4.16	-0.23	-17.21(.000)	-0.74	0.80

Item 6
------
item:6 (n3q06)
Cases for this item 5290 Discrimination 0.51
Item Threshold(s): -1.10 Weighted MNSQ 0.89
Item Delta(s): -1.10

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.02	-1.34(.181)	-0.22	0.00
9	0.00	20	0.38	-0.08	-5.58(.000)	-0.92	0.98
A	0.00	495	9.36	-0.39	-30.88(.000)	-0.81	0.69
B	0.00	421	7.96	-0.21	-15.26(.000)	-0.35	0.80
C	0.00	325	6.14	-0.18	-13.17(.000)	-0.34	0.78
D	1.00	4028	76.14	0.51	43.05(.000)	0.54	0.91

Item 7
------
item:7 (n3q07)
Cases for this item 5290 Discrimination 0.41
Item Threshold(s): -0.80 Weighted MNSQ 1.00
Item Delta(s): -0.81

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.02	-1.17(.240)	-0.89	0.00
9	0.00	19	0.36	-0.04	-3.10(.002)	-0.37	1.22
A	1.00	3774	71.34	0.41	32.47(.000)	0.52	0.96
B	0.00	726	13.72	-0.21	-15.53(.000)	-0.18	0.85
C	0.00	471	8.90	-0.20	-15.21(.000)	-0.30	0.81
D	0.00	299	5.65	-0.22	-16.59(.000)	-0.56	0.80

Item 8
------
item:8 (n3q08)
Cases for this item 5289 Discrimination 0.45
Item Threshold(s): -1.26 Weighted MNSQ 0.92
Item Delta(s): -1.25

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1110	20.99	-0.44	-35.21(.000)	-0.48	0.87
1	1.00	4153	78.52	0.45	36.49(.000)	0.50	0.92
9	0.00	26	0.49	-0.10	-7.00(.000)	-1.04	0.98

Item 9
------
item:9 (n3q09)
Cases for this item 5289 Discrimination 0.51
Item Threshold(s): -0.77 Weighted MNSQ 0.90
Item Delta(s): -0.78

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1518	28.70	-0.50	-41.93(.000)	-0.43	0.83
1	1.00	3744	70.79	0.51	42.98(.000)	0.58	0.90
9	0.00	27	0.51	-0.08	-5.54(.000)	-0.82	1.04

Item 10
----
item:10 (n3q10)
Cases for this item 5289 Discrimination 0.51
Item Threshold(s): -1.05 Weighted MNSQ 0.89
Item Delta(s): -1.05

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.04	-2.62(.009)	-2.11	0.00
9	0.00	81	1.53	-0.10	-7.00(.000)	-0.51	1.00
A	0.00	539	10.19	-0.26	-19.56(.000)	-0.39	0.73
B	1.00	3983	75.31	0.51	43.19(.000)	0.56	0.92
C	0.00	362	6.84	-0.25	-18.46(.000)	-0.56	0.73
D	0.00	323	6.11	-0.28	-21.27(.000)	-0.75	0.71

Item 11
----
item:11 (n3q11)
Cases for this item 5288 Discrimination 0.40
Item Threshold(s): -0.66 Weighted MNSQ 1.02
Item Delta(s): -0.66

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.02	-1.17(.240)	-0.69	0.00
9	0.00	24	0.45	-0.06	-4.21(.000)	-0.40	0.90
A	0.00	313	5.92	-0.13	-9.22(.000)	-0.16	0.90
B	0.00	256	4.84	-0.23	-17.19(.000)	-0.68	0.76
C	0.00	1059	20.03	-0.26	-19.48(.000)	-0.17	0.85
D	1.00	3635	68.74	0.40	32.00(.000)	0.53	0.96

Item 12
----
item:12 (n3q12)
Cases for this item 5288 Discrimination 0.32
Item Threshold(s): -0.51 Weighted MNSQ 1.10
Item Delta(s): -0.51

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.09	-0.01	-0.66(.506)	-0.01	0.47
9	0.00	51	0.96	-0.07	-5.02(.000)	-0.40	1.08
A	0.00	1087	20.56	-0.17	-12.20(.000)	-0.00	0.87
B	0.00	301	5.69	-0.16	-11.81(.000)	-0.31	0.92
C	1.00	3485	65.90	0.32	24.82(.000)	0.50	0.98
D	0.00	359	6.79	-0.17	-12.33(.000)	-0.27	0.88

Item 13
---
item:13 (n3q13)
Cases for this item 5288 Discrimination 0.60
Item Threshold(s): 0.01 Weighted MNSQ 0.85
Item Delta(s): 0.01

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2229	42.15	-0.57	-50.06(.000)	-0.31	0.78
1	1.00	2943	55.65	0.60	54.46(.000)	0.77	0.87
9	0.00	116	2.19	-0.12	-8.92(.000)	-0.56	0.85

Item 14
---
item:14 (n3q14)
Cases for this item 5287 Discrimination 0.47
Item Threshold(s): -0.55 Weighted MNSQ 0.96
Item Delta(s): -0.56

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.01	-1.01(.312)	-0.28	0.00
9	0.00	46	0.87	-0.07	-5.07(.000)	-0.37	0.75
A	0.00	695	13.15	-0.22	-16.63(.000)	-0.24	0.84
B	1.00	3532	66.81	0.47	38.49(.000)	0.59	0.94
C	0.00	521	9.85	-0.22	-16.65(.000)	-0.34	0.75
D	0.00	492	9.31	-0.25	-18.55(.000)	-0.42	0.82

Item 15
---
item:15 (n3q15)
Cases for this item 5287 Discrimination 0.42
Item Threshold(s): -0.57 Weighted MNSQ 1.01
Item Delta(s): -0.57

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	41	0.78	-0.06	-4.26(.000)	-0.34	0.88
9	0.00	62	1.17	-0.09	-6.83(.000)	-0.58	0.99
A	0.00	245	4.63	-0.23	-16.94(.000)	-0.59	0.80
B	1.00	3547	67.09	0.42	33.53(.000)	0.55	0.97
C	0.00	1150	21.75	-0.24	-17.93(.000)	-0.13	0.77
D	0.00	242	4.58	-0.17	-12.39(.000)	-0.41	0.84

Item 16
---
item:16 (n3q16)
Cases for this item 5284 Discrimination 0.57
Item Threshold(s): -0.31 Weighted MNSQ 0.88
Item Delta(s): -0.31

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	137	2.59	-0.07	-4.90(.000)	-0.12	1.10
A	0.00	1021	19.32	-0.35	-27.42(.000)	-0.36	0.75
B	0.00	473	8.95	-0.22	-16.60(.000)	-0.35	0.74
C	1.00	3283	62.13	0.57	49.99(.000)	0.69	0.89
D	0.00	370	7.00	-0.24	-17.97(.000)	-0.49	0.85

Item 17
---
item:17 (n3q17)
Cases for this item 5281 Discrimination 0.29
Item Threshold(s): -0.36 Weighted MNSQ 1.14
Item Delta(s): -0.36

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	0.00	0.12(.901)	-0.09	0.00
9	0.00	35	0.66	-0.06	-4.41(.000)	-0.51	1.00
A	0.00	1500	28.40	-0.12	-8.55(.000)	0.12	0.84
B	1.00	3332	63.09	0.29	21.75(.000)	0.49	1.00
C	0.00	239	4.53	-0.20	-15.16(.000)	-0.54	0.82
D	0.00	174	3.29	-0.21	-15.97(.000)	-0.74	0.68

Item 18
---
item:18 (n3q18)
Cases for this item 5280 Discrimination 0.30
Item Threshold(s): -0.51 Weighted MNSQ 1.11
Item Delta(s): -0.51

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	60	1.14	-0.07	-4.86(.000)	-0.41	1.16
A	0.00	1382	26.17	-0.12	-8.46(.000)	0.11	0.89
B	1.00	3483	65.97	0.30	22.75(.000)	0.49	0.96
C	0.00	108	2.05	-0.18	-13.09(.000)	-0.79	0.73
D	0.00	247	4.68	-0.28	-20.97(.000)	-0.86	0.72

Item 19
---
item:19 (n3q19)
Cases for this item 5276 Discrimination 0.51
Item Threshold(s): 0.57 Weighted MNSQ 0.93
Item Delta(s): 0.57

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	0.03	1.91(.056)	1.69	0.00
9	0.00	147	2.79	-0.10	-6.94(.000)	-0.32	0.93
A	0.00	1483	28.11	-0.27	-20.14(.000)	-0.10	0.77
B	0.00	914	17.32	-0.18	-13.56(.000)	-0.06	0.85
C	1.00	2326	44.09	0.51	43.07(.000)	0.81	0.96
D	0.00	405	7.68	-0.18	-13.44(.000)	-0.30	0.78

Item 20
---
item:20 (n3q20)
Cases for this item 5268 Discrimination 0.44
Item Threshold(s): 0.18 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	4	0.08	-0.02	-1.70(.088)	-0.22	0.91
9	0.00	36	0.68	-0.05	-3.46(.001)	-0.36	1.10
A	0.00	1534	29.12	-0.39	-30.88(.000)	-0.26	0.86
B	0.00	656	12.45	-0.11	-8.30(.000)	0.01	0.86
C	1.00	2748	52.16	0.44	35.81(.000)	0.67	0.94
D	0.00	290	5.50	-0.00	-0.34(.733)	0.26	0.87

Item 21
---
item:21 (n3q21)
Cases for this item 5268 Discrimination 0.50
Item Threshold(s): 0.37 Weighted MNSQ 0.95
Item Delta(s): 0.36

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	110	2.09	-0.05	-3.63(.000)	-0.19	0.93
A	0.00	789	14.98	-0.35	-27.34(.000)	-0.45	0.74
B	0.00	707	13.42	-0.31	-24.01(.000)	-0.43	0.73
C	1.00	2549	48.39	0.50	42.00(.000)	0.76	0.94
D	0.00	1113	21.13	-0.03	-1.83(.067)	0.25	0.79

Item 22
---
item:22 (n3q22)
Cases for this item 5265 Discrimination 0.43
Item Threshold(s): 0.47 Weighted MNSQ 1.02
Item Delta(s): 0.47

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.09	-0.02	-1.09(.275)	-0.13	1.08
9	0.00	53	1.01	-0.05	-3.56(.000)	-0.37	1.10
A	0.00	727	13.81	-0.21	-15.59(.000)	-0.20	0.82
B	0.00	917	17.42	-0.20	-15.13(.000)	-0.11	0.86
C	0.00	1125	21.37	-0.14	-10.25(.000)	0.06	0.85
D	1.00	2438	46.31	0.43	34.20(.000)	0.71	0.98

Item 23
---
item:23 (n3q23)
Cases for this item 5258 Discrimination 0.49
Item Threshold(s): 0.77 Weighted MNSQ 0.95
Item Delta(s): 0.77

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	80	1.52	-0.05	-3.86(.000)	-0.24	1.05
A	1.00	2116	40.24	0.49	40.85(.000)	0.84	0.94
B	0.00	1307	24.86	-0.14	-10.36(.000)	0.06	0.80
C	0.00	1423	27.06	-0.24	-18.02(.000)	-0.06	0.83
D	0.00	332	6.31	-0.27	-20.40(.000)	-0.67	0.81

Item 24
---
item:24 (n3q24)
Cases for this item 5247 Discrimination 0.32
Item Threshold(s): 0.63 Weighted MNSQ 1.11
Item Delta(s): 0.63

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.08	-0.00	-0.08(.937)	0.20	0.61
9	0.00	71	1.35	-0.08	-5.94(.000)	-0.42	0.98
A	0.00	499	9.51	-0.23	-17.26(.000)	-0.34	0.80
B	0.00	667	12.71	-0.03	-2.33(.020)	0.20	0.95
C	0.00	1747	33.30	-0.15	-11.20(.000)	0.10	0.87
D	1.00	2259	43.05	0.32	24.76(.000)	0.63	1.01

Item 25
---
item:25 (n3q25)
Cases for this item 5238 Discrimination 0.40
Item Threshold(s): 0.52 Weighted MNSQ 1.04
Item Delta(s): 0.52

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	10	0.19	-0.03	-2.44(.015)	-0.52	0.84
9	0.00	43	0.82	-0.04	-2.80(.005)	-0.17	1.00
A	0.00	2252	42.99	-0.24	-17.56(.000)	0.06	0.86
B	0.00	201	3.84	-0.12	-8.96(.000)	-0.27	0.95
C	0.00	357	6.82	-0.21	-15.64(.000)	-0.43	0.86
D	1.00	2375	45.34	0.40	31.48(.000)	0.69	0.98

Item 26
---
item:26 (n3q26)
Cases for this item 5233 Discrimination 0.45
Item Threshold(s): 0.83 Weighted MNSQ 0.98
Item Delta(s): 0.83

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.04	0.01	0.75(.454)	0.76	0.36
9	0.00	143	2.73	-0.05	-3.54(.000)	-0.07	0.98
A	1.00	2042	39.02	0.45	36.31(.000)	0.81	0.99
B	0.00	1705	32.58	-0.30	-22.86(.000)	-0.09	0.80
C	0.00	673	12.86	-0.10	-7.04(.000)	0.06	0.90
D	0.00	668	12.77	-0.11	-8.16(.000)	0.01	0.86

Item 27
---
item:27 (n3q27)
Cases for this item 5216 Discrimination 0.26
Item Threshold(s): 0.81 Weighted MNSQ 1.17
Item Delta(s): 0.81

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	92	1.76	-0.12	-8.39(.000)	-0.57	0.91
A	0.00	2279	43.69	-0.05	-3.69(.000)	0.23	0.91
B	0.00	792	15.18	-0.24	-18.01(.000)	-0.24	0.90
C	1.00	2053	39.36	0.26	19.50(.000)	0.60	1.00

Item 28
---
item:28 (n3q28)
Cases for this item 5208 Discrimination 0.44
Item Threshold(s): 1.10 Weighted MNSQ 0.98
Item Delta(s): 1.10

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.02	-1.50(.134)	-1.00	0.00
9	0.00	109	2.09	-0.09	-6.38(.000)	-0.32	0.89
A	0.00	408	7.83	-0.21	-15.24(.000)	-0.33	0.80
B	0.00	769	14.77	-0.05	-3.31(.001)	0.18	0.98
C	1.00	1761	33.81	0.44	35.60(.000)	0.87	0.98
D	0.00	2160	41.47	-0.25	-18.86(.000)	0.01	0.81

Item 29
---
item:29 (n3q29)
Cases for this item 5197 Discrimination 0.36
Item Threshold(s): 1.17 Weighted MNSQ 1.06
Item Delta(s): 1.17

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.00	-0.04(.972)	-0.22	0.00
9	0.00	98	1.89	-0.08	-5.73(.000)	-0.32	0.98
A	0.00	735	14.14	-0.10	-7.12(.000)	0.07	0.93
B	0.00	1036	19.93	-0.14	-10.05(.000)	0.05	0.89
C	0.00	1636	31.48	-0.15	-10.60(.000)	0.09	0.87
D	1.00	1691	32.54	0.36	27.64(.000)	0.77	1.03

Item 30
---
item:30 (n3q30)
Cases for this item 5186 Discrimination 0.30
Item Threshold(s): 1.04 Weighted MNSQ 1.10
Item Delta(s): 1.04

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	107	2.06	-0.08	-5.59(.000)	-0.24	0.97
A	1.00	1816	35.02	0.30	22.40(.000)	0.68	1.10
B	0.00	1425	27.48	-0.14	-10.31(.000)	0.08	0.90
C	0.00	1160	22.37	-0.10	-7.46(.000)	0.12	0.84
D	0.00	678	13.07	-0.07	-5.23(.000)	0.11	0.83

Item 31
---
item:31 (n3q31)
Cases for this item 5165 Discrimination 0.35
Item Threshold(s): 1.38 Weighted MNSQ 1.05
Item Delta(s): 1.37

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.06	-0.02	-1.37(.170)	-0.65	1.02
9	0.00	143	2.77	-0.06	-3.99(.000)	-0.06	0.95
A	1.00	1497	28.98	0.35	26.49(.000)	0.81	1.07
B	0.00	870	16.84	-0.12	-8.51(.000)	0.05	0.89
C	0.00	1061	20.54	-0.09	-6.36(.000)	0.14	0.88
D	0.00	1591	30.80	-0.15	-10.66(.000)	0.09	0.87

Item 32
---
item:32 (n3q32)
Cases for this item 5151 Discrimination 0.31
Item Threshold(s): 1.86 Weighted MNSQ 1.05
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	-0.03	-2.23(.026)	-1.24	0.16
9	0.00	29	0.56	-0.02	-1.63(.103)	-0.04	0.80
A	1.00	1100	21.36	0.31	23.51(.000)	0.87	1.08
B	0.00	2507	48.67	0.19	13.62(.000)	0.45	0.86
C	0.00	296	5.75	-0.19	-13.79(.000)	-0.36	0.79
D	0.00	1217	23.63	-0.41	-32.34(.000)	-0.37	0.75

Item 33
----
item:33 (n3q33)
Cases for this item 5144 Discrimination 0.32
Item Threshold(s): 1.77 Weighted MNSQ 1.04
Item Delta(s): 1.77

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.10	-0.03	-2.33(.020)	-0.65	1.29
9	0.00	137	2.66	-0.01	-1.05(.296)	0.14	0.98
A	0.00	839	16.31	-0.10	-7.40(.000)	0.08	0.93
B	1.00	1165	22.65	0.32	23.81(.000)	0.83	1.10
C	0.00	2101	40.84	-0.15	-10.92(.000)	0.14	0.87
D	0.00	897	17.44	-0.04	-3.15(.002)	0.20	0.93

Item 34
----
item:34 (n3q34)
Cases for this item 5095 Discrimination 0.30
Item Threshold(s): 3.59 Weighted MNSQ 0.99
Item Delta(s): 3.59

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	4665	91.56	-0.20	-14.88(.000)	0.24	0.96
1	1.00	280	5.50	0.30	22.37(.000)	1.50	0.95
9	0.00	150	2.94	-0.07	-4.84(.000)	-0.05	0.84

Item 35
----
item:35 (n3q35)
Cases for this item 5026 Discrimination 0.29
Item Threshold(s): 3.69 Weighted MNSQ 0.99
Item Delta(s): 3.69

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	4696	93.43	-0.27	-19.88(.000)	0.24	0.96
1	1.00	256	5.09	0.29	21.66(.000)	1.53	0.94
9	0.00	74	1.47	0.02	1.54(.123)	0.44	0.90

The following traditional statistics are only meaningful for complete designs and when the amount of missing data is minimal.
In this analysis 0.84% of the data are missing.

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

N	5291
Mean	19.23
Standard Deviation	6.16
Variance	37.92
Skewness	0.05
Kurtosis	-0.58
Standard error of mean	0.08
Standard error of measurement	2.46
Coefficient Alpha	0.84

Appendix B.14 Year 5 Numeracy

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================================================================================
NAPLAN 2016, Calibration, Grade 5, numeracy
GENERALISED ITEM ANALYSIS
================================================================================
Item 1
------
item:1 (n5q01)
Cases for this item   4993   Discrimination  0.39
Item Threshold(s):    -2.62   Weighted MNSQ   0.90
Item Delta(s):     -2.62
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   9       0.00       14       0.28   -0.07    -4.90(.000) -1.13     1.18
   A       0.00      104       2.08   -0.22   -15.70(.000) -1.26     0.80
   B       1.00     4606      92.25    0.39    29.61(.000)  0.57     1.19
   C       0.00      152       3.04   -0.25   -18.33(.000) -1.14     0.97
   D       0.00      117       2.34   -0.17   -12.12(.000) -0.79     0.95
================================================================================

Item 2
------
item:2 (n5q02)
Cases for this item   4993   Discrimination  0.35
Item Threshold(s):    -1.97   Weighted MNSQ   1.00
Item Delta(s):     -1.97
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   0       0.00      626      12.54   -0.34   -25.21(.000) -0.55     1.18
   1       1.00     4349      87.10    0.35    26.14(.000)  0.59     1.19
   9       0.00       18       0.36   -0.08    -5.91(.000) -1.27     1.11
================================================================================

Item 3
------
item:3 (n5q03)
Cases for this item   4993   Discrimination  0.45
Item Threshold(s):    -2.22   Weighted MNSQ   0.88
Item Delta(s):     -2.22
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   8       0.00        1       0.02   -0.01    -0.51(.608) -0.04     0.00
   9       0.00       27       0.54   -0.08    -5.45(.000) -0.80     1.02
   A       0.00      233       4.67   -0.28   -20.64(.000) -1.00     0.92
   B       1.00     4462      89.37    0.45    35.27(.000)  0.62     1.17
   C       0.00      155       3.10   -0.22   -16.09(.000) -0.91     0.80
   D       0.00      115       2.30   -0.23   -16.59(.000) -1.28     0.94
================================================================================

Item 4
------
item:4 (n5q04)
Cases for this item   4993   Discrimination  0.35
Item Threshold(s):    -2.10   Weighted MNSQ   1.00
Item Delta(s):     -2.10
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   9       0.00       17       0.34   -0.06    -4.43(.000) -0.85     1.24
   A       0.00      109       2.18   -0.14    -9.84(.000) -0.63     1.05
   B       0.00       79       1.58   -0.16   -11.28(.000) -0.99     1.12
   C       0.00      377       7.55   -0.26   -18.98(.000) -0.58     1.00
   D       1.00     4411      88.34    0.35    26.32(.000)  0.59     1.20
================================================================================
```

Item 5
------
item:5 (n5q05)
Cases for this item 4993 Discrimination 0.51
Item Threshold(s): -1.58 Weighted MNSQ 0.87
Item Delta(s): -1.58

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	806	16.14	-0.49	-39.91(.000)	-0.82	0.95
1	1.00	4139	82.90	0.51	42.03(.000)	0.70	1.14
9	0.00	48	0.96	-0.12	-8.42(.000)	-1.14	1.02

Item 6
------
item:6 (n5q06)
Cases for this item 4993 Discrimination 0.44
Item Threshold(s): -1.98 Weighted MNSQ 0.92
Item Delta(s): -1.97

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	12	0.24	-0.07	-4.73(.000)	-1.27	1.30
A	0.00	264	5.29	-0.25	-18.40(.000)	-0.80	0.99
B	1.00	4352	87.16	0.44	34.45(.000)	0.63	1.17
C	0.00	225	4.51	-0.25	-18.41(.000)	-0.88	0.95
D	0.00	140	2.80	-0.21	-15.17(.000)	-0.94	0.95

Item 7
------
item:7 (n5q07)
Cases for this item 4992 Discrimination 0.55
Item Threshold(s): -0.99 Weighted MNSQ 0.89
Item Delta(s): -0.99

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	38	0.76	-0.09	-6.50(.000)	-1.00	1.00
A	0.00	502	10.06	-0.31	-23.42(.000)	-0.62	0.89
B	0.00	529	10.60	-0.32	-23.80(.000)	-0.59	0.91
C	1.00	3748	75.08	0.55	46.69(.000)	0.80	1.14
D	0.00	175	3.51	-0.20	-14.75(.000)	-0.80	0.84

Item 8
------
item:8 (n5q08)
Cases for this item 4992 Discrimination 0.40
Item Threshold(s): -1.34 Weighted MNSQ 1.02
Item Delta(s): -1.33

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	29	0.58	-0.03	-2.36(.018)	-0.19	1.41
A	0.00	491	9.84	-0.25	-17.99(.000)	-0.41	1.18
B	0.00	424	8.49	-0.26	-19.01(.000)	-0.51	1.01
C	1.00	3987	79.87	0.40	30.66(.000)	0.67	1.18
D	0.00	61	1.22	-0.10	-7.21(.000)	-0.64	1.10

Item 9
------
item:9 (n5q09)
Cases for this item 4992 Discrimination 0.45
Item Threshold(s): -1.53 Weighted MNSQ 0.93
Item Delta(s): -1.53

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	14	0.28	-0.08	-5.89(.000)	-1.52	1.50
A	0.00	183	3.67	-0.26	-19.35(.000)	-1.12	0.88
B	0.00	239	4.79	-0.16	-11.51(.000)	-0.38	1.16
C	0.00	444	8.89	-0.30	-21.99(.000)	-0.62	1.03
D	1.00	4112	82.37	0.45	35.99(.000)	0.68	1.15

Item 10
---
item:10 (n5q10)
Cases for this item 4992 Discrimination 0.50
Item Threshold(s): -1.58 Weighted MNSQ 0.89
Item Delta(s): -1.58

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.04	-2.69(.007)	-3.04	0.00
9	0.00	24	0.48	-0.07	-5.07(.000)	-1.08	1.26
A	0.00	369	7.39	-0.37	-27.91(.000)	-1.01	0.85
B	0.00	249	4.99	-0.21	-15.43(.000)	-0.60	1.02
C	1.00	4139	82.91	0.50	40.24(.000)	0.70	1.14
D	0.00	210	4.21	-0.19	-13.70(.000)	-0.61	1.09

Item 11
---
item:11 (n5q11)
Cases for this item 4990 Discrimination 0.47
Item Threshold(s): -1.47 Weighted MNSQ 0.94
Item Delta(s): -1.47

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	43	0.86	-0.06	-4.20(.000)	-0.31	1.67
A	0.00	158	3.17	-0.20	-14.06(.000)	-0.76	1.12
B	1.00	4074	81.64	0.47	37.19(.000)	0.69	1.16
C	0.00	715	14.33	-0.40	-30.97(.000)	-0.67	0.93

Item 12
---
item:12 (n5q12)
Cases for this item 4990 Discrimination 0.57
Item Threshold(s): -0.77 Weighted MNSQ 0.87
Item Delta(s): -0.76

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	14	0.28	-0.10	-7.00(.000)	-1.73	0.90
9	0.00	21	0.42	-0.06	-4.10(.000)	-0.79	1.23
A	1.00	3567	71.48	0.57	49.01(.000)	0.85	1.10
B	0.00	102	2.04	-0.15	-10.39(.000)	-0.71	0.91
C	0.00	1213	24.31	-0.50	-40.29(.000)	-0.56	0.96
D	0.00	73	1.46	-0.13	-9.06(.000)	-0.73	0.95

Item 13
---
item:13 (n5q13)
Cases for this item 4989 Discrimination 0.40
Item Threshold(s): -0.43 Weighted MNSQ 1.11
Item Delta(s): -0.43

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.00	-0.13(.897)	0.15	0.00
9	0.00	35	0.70	-0.06	-4.02(.000)	-0.56	1.42
A	0.00	589	11.81	-0.18	-12.84(.000)	-0.14	1.10
B	0.00	1078	21.61	-0.31	-23.32(.000)	-0.25	1.02
C	1.00	3286	65.86	0.40	31.18(.000)	0.78	1.20

Item 14
---
item:14 (n5q14)
Cases for this item 4989 Discrimination 0.36
Item Threshold(s): -0.70 Weighted MNSQ 1.14
Item Delta(s): -0.70

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.10	-0.07	-4.71(.000)	-2.25	0.45
9	0.00	60	1.20	-0.06	-4.17(.000)	-0.24	1.17
A	0.00	83	1.66	-0.19	-13.73(.000)	-1.16	0.88
B	0.00	432	8.66	-0.26	-19.35(.000)	-0.54	0.99
C	1.00	3511	70.37	0.36	27.00(.000)	0.71	1.20
D	0.00	898	18.00	-0.15	-10.37(.000)	0.08	1.11

Item 15
---
item:15 (n5q15)
Cases for this item 4989 Discrimination 0.50
Item Threshold(s): -0.31 Weighted MNSQ 0.99
Item Delta(s): -0.31

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.02	-1.28(.200)	-0.87	0.00
9	0.00	20	0.40	-0.05	-3.40(.001)	-0.59	1.15
A	0.00	1041	20.87	-0.27	-20.05(.000)	-0.18	1.01
B	1.00	3181	63.76	0.50	41.06(.000)	0.88	1.14
C	0.00	234	4.69	-0.14	-9.98(.000)	-0.31	0.96
D	0.00	512	10.26	-0.32	-24.02(.000)	-0.62	1.10

Item 16
---
item:16 (n5q16)
Cases for this item 4989 Discrimination 0.52
Item Threshold(s): -0.58 Weighted MNSQ 0.95
Item Delta(s): -0.58

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.06	-0.03	-2.15(.032)	-1.00	1.58
9	0.00	21	0.42	-0.06	-4.00(.000)	-0.66	1.42
A	1.00	3413	68.41	0.52	42.96(.000)	0.85	1.12
B	0.00	668	13.39	-0.30	-22.46(.000)	-0.45	0.92
C	0.00	808	16.20	-0.30	-21.92(.000)	-0.33	1.07
D	0.00	76	1.52	-0.20	-14.59(.000)	-1.38	0.95

Item 17
---
item:17 (n5q17)
Cases for this item 4988 Discrimination 0.40
Item Threshold(s): -0.60 Weighted MNSQ 1.10
Item Delta(s): -0.60

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.06	-0.04	-2.66(.008)	-1.11	1.86
9	0.00	24	0.48	-0.05	-3.32(.001)	-0.23	1.66
A	0.00	227	4.55	-0.19	-13.71(.000)	-0.56	1.02
B	0.00	551	11.05	-0.11	-7.99(.000)	0.05	1.04
C	0.00	749	15.02	-0.29	-21.72(.000)	-0.36	1.05
D	1.00	3434	68.85	0.40	30.60(.000)	0.75	1.20

Item 18
---
item:18 (n5q18)
Cases for this item 4988 Discrimination 0.47
Item Threshold(s): -0.34 Weighted MNSQ 1.02
Item Delta(s): -0.35

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	7	0.14	-0.04	-3.03(.002)	-0.85	0.96
9	0.00	21	0.42	-0.05	-3.36(.001)	-0.51	1.49
A	0.00	1429	28.65	-0.39	-29.56(.000)	-0.27	0.98
B	0.00	155	3.11	-0.06	-4.43(.000)	0.04	1.10
C	0.00	166	3.33	-0.20	-14.44(.000)	-0.80	1.10
D	1.00	3210	64.35	0.47	37.80(.000)	0.85	1.17

Item 19
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item:19 (n5q19)
Cases for this item 4988 Discrimination 0.40
Item Threshold(s): -0.40 Weighted MNSQ 1.11
Item Delta(s): -0.40

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	0.01	1.02(.306)	1.44	0.00
9	0.00	49	0.98	-0.05	-3.20(.001)	-0.23	1.20
A	0.00	672	13.47	-0.04	-3.04(.002)	0.30	1.10
B	0.00	607	12.17	-0.33	-24.51(.000)	-0.58	0.93
C	0.00	401	8.04	-0.23	-16.64(.000)	-0.43	1.04
D	1.00	3258	65.32	0.40	30.45(.000)	0.78	1.19

Item 20
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item:20 (n5q20)
Cases for this item 4987 Discrimination 0.43
Item Threshold(s): 0.08 Weighted MNSQ 1.08
Item Delta(s): 0.07

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.06	-0.03	-1.85(.064)	-0.59	1.97
9	0.00	14	0.28	-0.04	-2.89(.004)	-0.43	1.33
A	0.00	632	12.67	-0.32	-23.61(.000)	-0.52	1.03
B	1.00	2821	56.57	0.43	33.80(.000)	0.89	1.20
C	0.00	1051	21.07	-0.17	-11.91(.000)	0.07	1.02
D	0.00	466	9.34	-0.13	-9.27(.000)	-0.06	1.04

Item 21
---
item:21 (n5q21)
Cases for this item 4987 Discrimination 0.53
Item Threshold(s): -0.06 Weighted MNSQ 0.96
Item Delta(s): -0.06

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.04	-0.01	-0.91(.364)	-0.48	3.31
9	0.00	50	1.00	-0.08	-5.75(.000)	-0.60	1.08
A	0.00	1349	27.05	-0.38	-29.44(.000)	-0.29	0.97
B	0.00	348	6.98	-0.22	-15.55(.000)	-0.46	0.96
C	1.00	2946	59.07	0.53	43.92(.000)	0.96	1.14
D	0.00	292	5.86	-0.11	-7.73(.000)	-0.07	1.09

Item 22
---
item:22 (n5q22)
Cases for this item 4986 Discrimination 0.45
Item Threshold(s): 0.16 Weighted MNSQ 1.06
Item Delta(s): 0.16

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.04	-2.69(.007)	-2.82	0.00
9	0.00	27	0.54	-0.04	-2.95(.003)	-0.31	1.23
A	0.00	386	7.74	-0.14	-10.19(.000)	-0.13	1.24
B	0.00	1389	27.86	-0.21	-14.81(.000)	0.04	0.97
C	1.00	2743	55.01	0.45	35.43(.000)	0.92	1.19
D	0.00	440	8.82	-0.31	-23.42(.000)	-0.70	0.93

Item 23
---
item:23 (n5q23)
Cases for this item 4984 Discrimination 0.47
Item Threshold(s): 0.12 Weighted MNSQ 1.04
Item Delta(s): 0.12

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.04	-0.02	-1.09(.276)	-0.78	2.89
9	0.00	12	0.24	-0.04	-3.12(.002)	-0.86	1.38
A	0.00	94	1.89	-0.12	-8.29(.000)	-0.48	0.93
B	0.00	674	13.52	-0.32	-23.43(.000)	-0.46	1.02
C	0.00	131	2.63	-0.16	-11.76(.000)	-0.64	0.91
D	1.00	2779	55.76	0.47	37.40(.000)	0.93	1.17
E	0.00	1292	25.92	-0.18	-13.13(.000)	0.07	1.05

Item 24
---
item:24 (n5q24)
Cases for this item 4983 Discrimination 0.39
Item Threshold(s): 0.09 Weighted MNSQ 1.13
Item Delta(s): 0.09

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.04	-0.02	-1.63(.102)	-0.79	2.87
9	0.00	88	1.77	-0.09	-6.24(.000)	-0.45	1.00
A	0.00	643	12.90	-0.06	-4.06(.000)	0.26	1.22
B	1.00	2803	56.25	0.39	29.67(.000)	0.85	1.19
C	0.00	780	15.65	-0.16	-11.31(.000)	0.01	1.13
D	0.00	667	13.39	-0.30	-22.51(.000)	-0.44	0.91

Item 25
---
item:25 (n5q25)
Cases for this item 4981 Discrimination 0.45
Item Threshold(s): 0.36 Weighted MNSQ 1.06
Item Delta(s): 0.36

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.04	-0.03	-2.00(.046)	-1.39	2.03
9	0.00	48	0.96	-0.07	-5.30(.000)	-0.67	1.23
A	0.00	1006	20.20	-0.21	-14.84(.000)	-0.05	1.05
B	0.00	255	5.12	-0.23	-16.36(.000)	-0.68	0.84
C	0.00	548	11.00	-0.25	-18.53(.000)	-0.39	0.91
D	0.00	572	11.48	-0.02	-1.32(.188)	0.39	1.22
E	1.00	2550	51.19	0.45	35.71(.000)	0.97	1.15

Item 26
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item:26 (n5q26)
Cases for this item 4975 Discrimination 0.46
Item Threshold(s): 0.26 Weighted MNSQ 1.06
Item Delta(s): 0.26

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.04	-0.02	-1.37(.172)	-1.00	2.58
9	0.00	43	0.86	-0.07	-4.92(.000)	-0.56	1.29
A	0.00	485	9.75	-0.07	-5.11(.000)	0.19	1.21
B	0.00	745	14.97	-0.23	-16.53(.000)	-0.19	1.03
C	0.00	1054	21.19	-0.29	-21.36(.000)	-0.20	1.02
D	1.00	2646	53.19	0.46	36.25(.000)	0.95	1.16

Item 27
---
item:27 (n5q27)
Cases for this item 4972 Discrimination 0.59
Item Threshold(s): 0.38 Weighted MNSQ 0.88
Item Delta(s): 0.39

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.04	-2.70(.007)	-2.82	0.00
9	0.00	94	1.89	-0.07	-4.93(.000)	-0.30	1.01
A	1.00	2521	50.70	0.59	51.93(.000)	1.13	1.11
B	0.00	686	13.80	-0.22	-15.78(.000)	-0.19	0.93
C	0.00	868	17.46	-0.28	-20.65(.000)	-0.25	0.93
D	0.00	802	16.13	-0.28	-20.87(.000)	-0.30	0.98

Item 28
---
item:28 (n5q28)
Cases for this item 4968 Discrimination 0.43
Item Threshold(s): 0.70 Weighted MNSQ 1.08
Item Delta(s): 0.69

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.04	-0.03	-2.09(.036)	-1.57	1.77
9	0.00	103	2.07	-0.07	-5.16(.000)	-0.22	1.13
A	1.00	2228	44.85	0.43	33.56(.000)	1.02	1.20
B	0.00	1725	34.72	-0.16	-11.40(.000)	0.19	1.08
C	0.00	623	12.54	-0.26	-18.65(.000)	-0.36	1.00
D	0.00	287	5.78	-0.18	-12.92(.000)	-0.39	0.89

Item 29
---
item:29 (n5q29)
Cases for this item 4967 Discrimination 0.53
Item Threshold(s): 0.19 Weighted MNSQ 0.96
Item Delta(s): 0.19

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.06	-0.02	-1.64(.101)	-0.72	1.88
9	0.00	34	0.68	-0.08	-5.69(.000)	-0.80	1.30
A	0.00	371	7.47	-0.23	-16.94(.000)	-0.49	0.92
B	0.00	546	10.99	-0.39	-30.07(.000)	-0.77	0.79
C	1.00	2705	54.46	0.53	44.45(.000)	1.04	1.15
D	0.00	1308	26.33	-0.17	-12.05(.000)	0.06	0.89

Item 30
---
item:30 (n5q30)
Cases for this item 4964 Discrimination 0.46
Item Threshold(s): 1.17 Weighted MNSQ 1.03
Item Delta(s): 1.17

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.10	-0.01	-0.97(.333)	-0.16	1.64
9	0.00	54	1.09	-0.04	-2.59(.010)	-0.09	1.15
A	0.00	464	9.35	-0.37	-27.83(.000)	-0.82	0.90
B	0.00	1748	35.21	-0.20	-14.49(.000)	0.12	1.02
C	0.00	904	18.21	-0.03	-2.39(.017)	0.35	1.12
D	1.00	1789	36.04	0.46	36.43(.000)	1.18	1.14

Item 31
---
item:31 (n5q31)
Cases for this item 4959 Discrimination 0.39
Item Threshold(s): 0.70 Weighted MNSQ 1.12
Item Delta(s): 0.70

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.12	0.01	0.85(.397)	0.38	1.62
9	0.00	136	2.74	-0.02	-1.38(.167)	0.27	1.36
A	1.00	2218	44.73	0.39	30.05(.000)	0.98	1.26
B	0.00	662	13.35	-0.22	-16.22(.000)	-0.20	1.02
C	0.00	1058	21.33	-0.20	-14.16(.000)	0.00	1.05
D	0.00	879	17.73	-0.09	-6.54(.000)	0.20	0.98

Item 32
---
item:32 (n5q32)
Cases for this item 4950 Discrimination 0.55
Item Threshold(s): 1.02 Weighted MNSQ 0.92
Item Delta(s): 1.02

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.06	-0.03	-1.93(.054)	-0.33	1.17
9	0.00	120	2.42	-0.05	-3.29(.001)	-0.01	0.99
A	1.00	1922	38.83	0.55	46.16(.000)	1.28	1.13
B	0.00	1474	29.78	-0.20	-14.44(.000)	0.06	1.00
C	0.00	997	20.14	-0.24	-17.40(.000)	-0.10	0.96
D	0.00	434	8.77	-0.25	-18.32(.000)	-0.46	0.98

Item 33
---
item:33 (n5q33)
Cases for this item 4941 Discrimination 0.50
Item Threshold(s): 0.98 Weighted MNSQ 0.98
Item Delta(s): 0.97

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.04	-2.70(.007)	-2.82	0.00
9	0.00	36	0.73	-0.05	-3.53(.000)	-0.30	1.14
A	1.00	1960	39.67	0.50	40.55(.000)	1.19	1.15
B	0.00	2412	48.82	-0.21	-14.86(.000)	0.18	0.96
C	0.00	119	2.41	-0.18	-12.83(.000)	-0.82	0.89
D	0.00	413	8.36	-0.39	-30.02(.000)	-0.98	0.88

Item 34
---
item:34 (n5q34)
Cases for this item 4939 Discrimination 0.38
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	4	0.08	-0.03	-2.00(.045)	-0.77	1.44
9	0.00	18	0.36	-0.03	-1.92(.054)	-0.14	1.13
A	0.00	1683	34.08	-0.13	-9.52(.000)	0.22	1.06
B	0.00	551	11.16	-0.32	-23.59(.000)	-0.56	1.17
C	0.00	769	15.57	-0.05	-3.47(.001)	0.31	1.09
D	1.00	1914	38.75	0.38	28.70(.000)	1.02	1.19

Item 35
---
item:35 (n5q35)
Cases for this item 4932 Discrimination 0.51
Item Threshold(s): 2.43 Weighted MNSQ 0.87
Item Delta(s): 2.43

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3883	78.73	-0.45	-35.80(.000)	0.17	1.07
1	1.00	855	17.34	0.51	41.39(.000)	1.85	1.00
9	0.00	194	3.93	-0.03	-2.30(.022)	0.15	1.17

Item 36
---
item:36 (n5q36)
Cases for this item 4910 Discrimination 0.47
Item Threshold(s): 2.56 Weighted MNSQ 0.90
Item Delta(s): 2.56

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3962	80.69	-0.41	-31.24(.000)	0.22	1.11
1	1.00	780	15.89	0.47	37.71(.000)	1.81	1.03
9	0.00	168	3.42	-0.07	-4.83(.000)	-0.06	0.98

Item 37
---
item:37 (n5q37)
Cases for this item 4895 Discrimination 0.47
Item Threshold(s): 1.86 Weighted MNSQ 0.91
Item Delta(s): 1.86

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.08	-0.01	-1.05(.296)	-0.38	1.66
9	0.00	42	0.86	-0.02	-1.13(.257)	0.26	1.15
A	0.00	1493	30.50	-0.23	-16.18(.000)	0.05	1.02
B	1.00	1221	24.94	0.47	37.54(.000)	1.47	1.28
C	0.00	518	10.58	-0.14	-9.80(.000)	-0.02	1.08
D	0.00	1617	33.03	-0.12	-8.42(.000)	0.24	1.00

Item 38
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item:38 (n5q38)
Cases for this item 4883 Discrimination 0.36
Item Threshold(s): 2.39 Weighted MNSQ 0.98
Item Delta(s): 2.39

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.08	-0.05	-3.35(.001)	-1.51	1.03
9	0.00	53	1.09	-0.02	-1.24(.214)	0.17	1.27
A	1.00	872	17.86	0.36	27.32(.000)	1.48	1.41
B	0.00	492	10.08	-0.26	-18.75(.000)	-0.45	1.03
C	0.00	647	13.25	-0.00	-0.24(.811)	0.47	1.24
D	0.00	2815	57.65	-0.12	-8.13(.000)	0.31	0.99

Item 39
----
item:39 (n5q39)
Cases for this item 4863 Discrimination 0.35
Item Threshold(s): 4.10 Weighted MNSQ 0.94
Item Delta(s): 4.10

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	4414	90.77	-0.28	-20.49(.000)	0.35	1.16
1	1.00	235	4.83	0.35	25.65(.000)	2.51	0.93
9	0.00	214	4.40	0.04	2.57(.010)	0.57	1.25

Item 40
----
item:40 (n5q40)
Cases for this item 4718 Discrimination 0.41
Item Threshold(s): 3.01 Weighted MNSQ 0.93
Item Delta(s): 3.01

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	4007	84.93	-0.36	-26.43(.000)	0.27	1.13
1	1.00	546	11.57	0.41	30.81(.000)	1.91	1.11
9	0.00	165	3.50	-0.01	-0.91(.363)	0.35	0.96

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	4993
Mean	23.00
Standard Deviation	7.81
Variance	61.01
Skewness	-0.18
Kurtosis	-0.60
Standard error of mean	0.11
Standard error of measurement	2.52
Coefficient Alpha	0.90

Appendix B.15 Year 7 Numeracy

```
================================================================================
NAPLAN 2016, Calibration, Grade 7, numeracy
GENERALISED ITEM ANALYSIS
================================================================================
Item 1
------
item:1 (n7CAq01)
Cases for this item   6257   Discrimination  0.52
Item Threshold(s):    -1.60   Weighted MNSQ   0.85
Item Delta(s):     -1.60
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   9       0.00       25       0.40   -0.05    -4.00(.000) -1.09     1.07
   A       0.00      517       8.26   -0.23   -18.40(.000) -0.79     0.82
   B       0.00      239       3.82   -0.17   -13.86(.000) -0.91     0.75
   C       0.00      544       8.69   -0.41   -35.64(.000) -1.45     0.76
   D       1.00     4932      78.82    0.52    48.77(.000)  0.36     1.07
================================================================================

Item 2
------
item:2 (n7CAq02)
Cases for this item   6257   Discrimination  0.44
Item Threshold(s):    -1.89   Weighted MNSQ   0.91
Item Delta(s):     -1.89
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   8       0.00        1       0.02   -0.02    -1.27(.203) -1.52     0.00
   9       0.00       27       0.43   -0.07    -5.86(.000) -1.26     1.13
   A       1.00     5169      82.61    0.44    38.51(.000)  0.27     1.10
   B       0.00      181       2.89   -0.21   -16.71(.000) -1.30     0.90
   C       0.00      229       3.66   -0.29   -24.05(.000) -1.63     0.67
   D       0.00      650      10.39   -0.23   -19.09(.000) -0.71     0.93
================================================================================

Item 3
------
item:3 (n7CAq03)
Cases for this item   6257   Discrimination  0.35
Item Threshold(s):    -1.23   Weighted MNSQ   1.09
Item Delta(s):     -1.23
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   8       0.00        2       0.03   -0.01    -0.72(.472) -0.59     0.04
   9       0.00       50       0.80   -0.06    -4.80(.000) -0.79     0.98
   A       0.00       98       1.57   -0.12    -9.22(.000) -1.02     0.96
   B       0.00      870      13.90   -0.17   -14.05(.000) -0.44     1.09
   C       1.00     4587      73.31    0.35    29.79(.000)  0.29     1.15
   D       0.00      650      10.39   -0.25   -20.18(.000) -0.77     0.86
================================================================================

Item 4
------
item:4 (n7CAq04)
Cases for this item   6256   Discrimination  0.49
Item Threshold(s):    -1.77   Weighted MNSQ   0.86
Item Delta(s):     -1.78
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   0       0.00      933      14.91   -0.43   -37.57(.000) -1.10     0.90
   1       1.00     5079      81.19    0.49    44.86(.000)  0.32     1.07
   9       0.00      244       3.90   -0.21   -16.68(.000) -1.13     0.87
================================================================================
```

Item 5
------
item:5 (n7CAq05)
Cases for this item 6253 Discrimination 0.36
Item Threshold(s): -1.66 Weighted MNSQ 1.03
Item Delta(s): -1.66

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	32	0.51	-0.06	-4.64(.000)	-1.02	1.25
A	0.00	131	2.09	-0.15	-11.91(.000)	-1.13	1.07
B	0.00	493	7.88	-0.18	-14.80(.000)	-0.65	1.01
C	0.00	490	7.84	-0.19	-15.39(.000)	-0.68	0.97
D	1.00	4984	79.71	0.36	30.23(.000)	0.25	1.13
E	0.00	123	1.97	-0.12	-9.86(.000)	-0.90	0.84

Item 6
------
item:6 (n7CAq06)
Cases for this item 6253 Discrimination 0.38
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	2	0.03	-0.00	-0.10(.924)	0.34	0.57
9	0.00	37	0.59	-0.06	-4.77(.000)	-0.93	1.40
A	0.00	88	1.41	-0.16	-13.08(.000)	-1.55	0.88
B	0.00	360	5.76	-0.23	-18.91(.000)	-1.01	0.96
C	1.00	4698	75.13	0.38	32.70(.000)	0.30	1.13
D	0.00	1068	17.08	-0.23	-18.83(.000)	-0.51	0.97

Item 7
------
item:7 (n7CAq07)
Cases for this item 6253 Discrimination 0.56
Item Threshold(s): -0.50 Weighted MNSQ 0.90
Item Delta(s): -0.50

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	28	0.45	-0.07	-5.35(.000)	-1.23	1.13
A	0.00	445	7.12	-0.28	-23.15(.000)	-1.06	0.80
B	0.00	541	8.65	-0.22	-18.12(.000)	-0.78	0.96
C	1.00	3779	60.43	0.56	52.94(.000)	0.56	1.07
D	0.00	1460	23.35	-0.31	-26.08(.000)	-0.59	0.85

Item 8
------
item:8 (n7CAq08)
Cases for this item 6253 Discrimination 0.42
Item Threshold(s): -1.02 Weighted MNSQ 1.03
Item Delta(s): -1.01

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	63	1.01	-0.06	-4.60(.000)	-0.71	1.24
A	0.00	700	11.19	-0.19	-15.31(.000)	-0.55	1.01
B	1.00	4358	69.69	0.42	36.96(.000)	0.36	1.13
C	0.00	991	15.85	-0.29	-23.88(.000)	-0.68	0.87
D	0.00	141	2.25	-0.16	-12.55(.000)	-1.16	0.89

Item 9
------
item:9 (n7CAq09)
Cases for this item 6250 Discrimination 0.39
Item Threshold(s): -0.90 Weighted MNSQ 1.06
Item Delta(s): -0.90

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.05	-0.03	-2.38(.017)	-1.15	0.16
9	0.00	84	1.34	-0.04	-3.17(.002)	-0.41	1.28
A	0.00	361	5.78	-0.23	-18.57(.000)	-0.98	0.95
B	0.00	1242	19.87	-0.21	-17.03(.000)	-0.43	1.02
C	1.00	4234	67.74	0.39	33.58(.000)	0.36	1.12
D	0.00	326	5.22	-0.18	-14.49(.000)	-0.79	0.99

Item 10
----
item:10 (n7CAq10)
Cases for this item 6249 Discrimination 0.59
Item Threshold(s): -1.11 Weighted MNSQ 0.82
Item Delta(s): -1.11

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	58	0.93	-0.09	-6.95(.000)	-1.06	1.08
A	0.00	783	12.53	-0.27	-21.74(.000)	-0.71	0.87
B	0.00	438	7.01	-0.32	-26.73(.000)	-1.25	0.73
C	0.00	515	8.24	-0.32	-26.37(.000)	-1.12	0.72
D	1.00	4455	71.29	0.59	57.13(.000)	0.47	1.04

Item 11
----
item:11 (n7CAq11)
Cases for this item 6249 Discrimination 0.44
Item Threshold(s): -0.55 Weighted MNSQ 1.03
Item Delta(s): -0.55

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.00	-0.23(.819)	-0.62	0.00
9	0.00	71	1.14	-0.07	-5.58(.000)	-0.75	1.12
A	0.00	886	14.18	-0.32	-27.07(.000)	-0.82	0.85
B	1.00	3838	61.42	0.44	38.69(.000)	0.44	1.15
C	0.00	735	11.76	-0.19	-15.23(.000)	-0.52	0.93
D	0.00	718	11.49	-0.10	-8.11(.000)	-0.28	0.94

Item 12
----
item:12 (n7CAq12)
Cases for this item 6247 Discrimination 0.34
Item Threshold(s): -0.24 Weighted MNSQ 1.16
Item Delta(s): -0.24

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	0.00	0.01(.990)	0.62	0.00
9	0.00	134	2.15	-0.04	-3.54(.000)	-0.43	1.23
A	1.00	3464	55.45	0.34	28.31(.000)	0.41	1.15
B	0.00	1070	17.13	-0.11	-9.08(.000)	-0.23	1.10
C	0.00	1035	16.57	-0.20	-15.77(.000)	-0.44	1.01
D	0.00	543	8.69	-0.16	-12.91(.000)	-0.57	1.00

Item 13
---
item:13 (n7CAq13)
Cases for this item 6244 Discrimination 0.51
Item Threshold(s): -0.40 Weighted MNSQ 0.96
Item Delta(s): -0.40

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.03	-0.01	-0.90(.370)	-0.65	0.91
9	0.00	76	1.22	-0.04	-3.46(.001)	-0.48	1.23
A	0.00	415	6.65	-0.23	-18.57(.000)	-0.91	0.91
B	0.00	1442	23.09	-0.30	-24.70(.000)	-0.54	0.91
C	1.00	3652	58.49	0.51	46.45(.000)	0.53	1.11
D	0.00	657	10.52	-0.20	-16.29(.000)	-0.61	0.88

Item 14
---
item:14 (n7CAq14)
Cases for this item 6244 Discrimination 0.50
Item Threshold(s): -0.68 Weighted MNSQ 0.95
Item Delta(s): -0.68

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2044	32.74	-0.44	-38.95(.000)	-0.66	1.00
1	1.00	3982	63.77	0.50	45.16(.000)	0.47	1.07
9	0.00	218	3.49	-0.17	-13.55(.000)	-0.96	0.84

Item 15
---
item:15 (n7CAq15)
Cases for this item 6238 Discrimination 0.32
Item Threshold(s): 0.38 Weighted MNSQ 1.17
Item Delta(s): 0.37

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.01	-1.14(.256)	-1.67	0.00
9	0.00	64	1.03	-0.02	-1.40(.160)	-0.26	1.29
A	0.00	138	2.21	-0.07	-5.65(.000)	-0.45	1.13
B	1.00	2711	43.46	0.32	26.77(.000)	0.47	1.21
C	0.00	964	15.45	-0.16	-12.53(.000)	-0.37	1.21
D	0.00	2360	37.83	-0.19	-14.92(.000)	-0.21	0.95

Item 16
---
item:16 (n7CAq16)
Cases for this item 6236 Discrimination 0.46
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	5	0.08	-0.01	-0.95(.342)	-0.24	0.91
9	0.00	84	1.35	-0.06	-4.96(.000)	-0.62	1.08
A	1.00	2998	48.08	0.46	40.81(.000)	0.59	1.15
B	0.00	2043	32.76	-0.24	-19.53(.000)	-0.34	0.99
C	0.00	1106	17.74	-0.29	-23.55(.000)	-0.62	0.86

Item 17
---
item:17 (n7CAq17)
Cases for this item 6233 Discrimination 0.41
Item Threshold(s): -0.23 Weighted MNSQ 1.08
Item Delta(s): -0.24

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.01	-0.55(.580)	-0.28	0.00
9	0.00	120	1.93	-0.07	-5.49(.000)	-0.59	1.08
A	0.00	692	11.10	-0.04	-3.05(.002)	-0.08	1.01
B	0.00	609	9.77	-0.23	-18.87(.000)	-0.72	0.88
C	0.00	1359	21.80	-0.27	-22.07(.000)	-0.50	0.92
D	1.00	3452	55.38	0.41	35.10(.000)	0.46	1.17

Item 18
---
item:18 (n7CAq18)
Cases for this item 6227 Discrimination 0.29
Item Threshold(s): 0.34 Weighted MNSQ 1.21
Item Delta(s): 0.35

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.05	-0.02	-1.89(.059)	-1.20	0.87
9	0.00	141	2.26	-0.01	-0.51(.613)	-0.11	1.13
A	0.00	1351	21.70	-0.21	-17.25(.000)	-0.40	0.93
B	1.00	2741	44.02	0.29	23.59(.000)	0.43	1.27
C	0.00	1265	20.31	-0.08	-6.27(.000)	-0.13	1.01
D	0.00	726	11.66	-0.06	-5.12(.000)	-0.14	1.03

Item 19
---
item:19 (n7CAq19)
Cases for this item 6221 Discrimination 0.31
Item Threshold(s): 0.16 Weighted MNSQ 1.19
Item Delta(s): 0.16

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.03	0.00	0.07(.945)	-0.02	0.71
9	0.00	69	1.11	-0.05	-3.79(.000)	-0.54	1.26
A	0.00	1048	16.85	-0.18	-14.20(.000)	-0.39	1.12
B	0.00	1605	25.80	-0.15	-11.77(.000)	-0.22	1.01
C	1.00	2963	47.63	0.31	26.15(.000)	0.44	1.17
D	0.00	534	8.58	-0.08	-6.01(.000)	-0.24	1.09

Item 20
---
item:20 (n7CAq20)
Cases for this item 6217 Discrimination 0.49
Item Threshold(s): 1.23 Weighted MNSQ 0.95
Item Delta(s): 1.24

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	4072	65.50	-0.40	-34.09(.000)	-0.26	1.00
1	1.00	1747	28.10	0.49	43.74(.000)	0.94	1.12
9	0.00	398	6.40	-0.12	-9.53(.000)	-0.50	1.05

Item 21
---
item:21 (n7CAq21)
Cases for this item 6207 Discrimination 0.38
Item Threshold(s): 0.50 Weighted MNSQ 1.09
Item Delta(s): 0.50

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.08	0.00	0.20(.843)	0.26	0.86
9	0.00	101	1.63	-0.05	-3.78(.000)	-0.44	1.09
A	0.00	1022	16.47	-0.24	-19.26(.000)	-0.53	0.95
B	1.00	2550	41.08	0.38	32.32(.000)	0.59	1.27
C	0.00	1671	26.92	-0.12	-9.69(.000)	-0.19	0.93
D	0.00	858	13.82	-0.11	-8.84(.000)	-0.26	0.88

Item 22
---
item:22 (n7CAq22)
Cases for this item 6205 Discrimination 0.57
Item Threshold(s): 0.63 Weighted MNSQ 0.89
Item Delta(s): 0.63

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3270	52.70	-0.44	-38.46(.000)	-0.41	0.97
1	1.00	2402	38.71	0.57	54.09(.000)	0.87	1.02
9	0.00	533	8.59	-0.20	-16.27(.000)	-0.70	0.87

Item 23
---
item:23 (n7CAq23)
Cases for this item 6192 Discrimination 0.42
Item Threshold(s): 0.48 Weighted MNSQ 1.06
Item Delta(s): 0.48

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.06	0.01	0.46(.647)	0.24	0.75
9	0.00	80	1.29	-0.02	-1.30(.192)	-0.17	0.99
A	1.00	2570	41.51	0.42	36.11(.000)	0.63	1.17
B	0.00	1362	22.00	-0.07	-5.49(.000)	-0.11	1.03
C	0.00	1069	17.26	-0.21	-16.97(.000)	-0.46	0.97
D	0.00	1107	17.88	-0.25	-20.20(.000)	-0.52	0.95

Item 24
---
item:24 (n7CAq24)
Cases for this item 6184 Discrimination 0.28
Item Threshold(s): 0.68 Weighted MNSQ 1.22
Item Delta(s): 0.68

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.03	0.01	0.52(.601)	0.29	0.06
9	0.00	226	3.65	-0.05	-3.89(.000)	-0.31	1.05
A	1.00	2335	37.76	0.28	23.02(.000)	0.48	1.17
B	0.00	1328	21.47	-0.22	-17.62(.000)	-0.41	1.07
C	0.00	1398	22.61	-0.14	-11.05(.000)	-0.22	1.06
D	0.00	895	14.47	0.06	4.70(.000)	0.22	1.13

Item 25
---
item:25 (n7CAq25)
Cases for this item 6153 Discrimination 0.44
Item Threshold(s): 1.39 Weighted MNSQ 0.95
Item Delta(s): 1.39

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.03	-0.00	-0.16(.871)	-0.08	0.46
9	0.00	202	3.28	0.03	2.60(.009)	0.17	0.97
A	1.00	1584	25.74	0.44	38.95(.000)	0.96	1.26
B	0.00	1291	20.98	-0.19	-15.35(.000)	-0.37	1.03
C	0.00	857	13.93	-0.13	-10.53(.000)	-0.31	0.98
D	0.00	2217	36.03	-0.16	-12.58(.000)	-0.19	0.91

Item 26
---
item:26 (n7CAq26)
Cases for this item 6136 Discrimination 0.58
Item Threshold(s): 0.87 Weighted MNSQ 0.87
Item Delta(s): 0.87

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3659	59.63	-0.49	-44.48(.000)	-0.39	0.94
1	1.00	2115	34.47	0.58	55.27(.000)	0.97	1.02
9	0.00	362	5.90	-0.13	-10.64(.000)	-0.56	1.07

Item 27
---
item:27 (n7CAq27)
Cases for this item 6105 Discrimination 0.43
Item Threshold(s): 2.18 Weighted MNSQ 0.95
Item Delta(s): 2.18

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	4662	76.36	-0.35	-29.20(.000)	-0.15	1.05
1	1.00	945	15.48	0.43	37.05(.000)	1.24	1.10
9	0.00	498	8.16	-0.02	-1.79(.074)	-0.08	1.11

Item 28
---
item:28 (n7CAq28)
Cases for this item 6033 Discrimination 0.32
Item Threshold(s): 1.21 Weighted MNSQ 1.13
Item Delta(s): 1.21

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.08	0.00	0.31(.757)	0.36	1.39
9	0.00	274	4.54	-0.00	-0.21(.832)	-0.00	0.94
A	0.00	713	11.82	-0.09	-7.28(.000)	-0.21	1.10
B	0.00	2027	33.60	-0.08	-6.09(.000)	-0.06	1.07
C	0.00	1284	21.28	-0.19	-15.23(.000)	-0.35	1.01
D	1.00	1730	28.68	0.32	26.55(.000)	0.66	1.25

Item 29
---
item:29 (n7CAq29)
Cases for this item 5955 Discrimination 0.50
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	4190	70.36	-0.41	-34.99(.000)	-0.24	1.03
1	1.00	1165	19.56	0.50	44.96(.000)	1.26	0.99
9	0.00	600	10.08	-0.04	-2.85(.004)	-0.11	1.06

Item 30
---
item:30 (n7CAq30)
Cases for this item 5853 Discrimination 0.45
Item Threshold(s): 2.66 Weighted MNSQ 0.89
Item Delta(s): 2.66

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	4519	77.21	-0.29	-23.39(.000)	-0.13	1.06
1	1.00	642	10.97	0.45	38.17(.000)	1.59	1.08
9	0.00	692	11.82	-0.05	-4.00(.000)	-0.13	1.03

Item 31
---
item:31 (n7CAq31)
Cases for this item 5735 Discrimination 0.11
Item Threshold(s): 1.38 Weighted MNSQ 1.35
Item Delta(s): 1.38

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.03	0.01	0.82(.411)	0.74	0.70
9	0.00	221	3.85	0.02	1.53(.126)	0.11	0.99
A	0.00	2050	35.75	-0.00	-0.06(.949)	0.05	1.03
B	0.00	1307	22.79	-0.13	-9.86(.000)	-0.22	1.15
C	1.00	1484	25.88	0.11	8.39(.000)	0.29	1.37
D	0.00	671	11.70	0.01	0.54(.592)	0.07	1.24

Item 32
---
item:32 (n7CAq32)
Cases for this item 5636 Discrimination 0.45
Item Threshold(s): 2.87 Weighted MNSQ 0.87
Item Delta(s): 2.87

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	4643	82.38	-0.34	-27.54(.000)	-0.14	1.06
1	1.00	527	9.35	0.45	37.99(.000)	1.77	1.03
9	0.00	466	8.27	-0.00	-0.07(.943)	0.05	1.09

Item 33
---
item:33 (n7NCq01)
Cases for this item 6251 Discrimination 0.40
Item Threshold(s): -2.39 Weighted MNSQ 0.90
Item Delta(s): -2.39

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	15	0.24	-0.07	-5.26(.000)	-1.55	1.02
A	0.00	281	4.50	-0.29	-23.71(.000)	-1.48	0.79
B	0.00	265	4.24	-0.21	-16.84(.000)	-1.07	1.02
C	1.00	5500	87.99	0.40	34.47(.000)	0.22	1.11
D	0.00	190	3.04	-0.15	-11.73(.000)	-0.89	1.00

Item 34
---
item:34 (n7NCq02)
Cases for this item 6251 Discrimination 0.41
Item Threshold(s): -2.21 Weighted MNSQ 0.94
Item Delta(s): -2.21

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.05	-0.02	-1.33(.183)	-0.80	0.69
9	0.00	38	0.61	-0.11	-9.00(.000)	-1.66	1.02
A	0.00	189	3.02	-0.15	-12.05(.000)	-0.92	0.99
B	1.00	5389	86.21	0.41	35.09(.000)	0.23	1.12
C	0.00	632	10.11	-0.35	-29.35(.000)	-1.10	0.81

Item 35
---
item:35 (n7NCq03)
Cases for this item 6251 Discrimination 0.50
Item Threshold(s): -2.02 Weighted MNSQ 0.85
Item Delta(s): -2.02

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.02	-1.59(.112)	-1.81	0.00
9	0.00	18	0.29	-0.05	-4.04(.000)	-1.13	1.43
A	0.00	380	6.08	-0.26	-20.93(.000)	-1.06	0.80
B	1.00	5255	84.07	0.50	45.62(.000)	0.29	1.09
C	0.00	439	7.02	-0.33	-27.37(.000)	-1.27	0.65
D	0.00	158	2.53	-0.22	-18.17(.000)	-1.52	0.72

Item 36
---
item:36 (n7NCq04)
Cases for this item 6251 Discrimination 0.46
Item Threshold(s): -2.11 Weighted MNSQ 0.86
Item Delta(s): -2.11

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	21	0.34	-0.08	-6.61(.000)	-1.72	0.75
9	0.00	16	0.26	-0.09	-6.94(.000)	-2.12	0.73
A	1.00	5323	85.15	0.46	40.64(.000)	0.26	1.09
B	0.00	121	1.94	-0.18	-14.77(.000)	-1.43	0.75
C	0.00	693	11.09	-0.36	-30.43(.000)	-1.10	0.96
D	0.00	77	1.23	-0.14	-11.01(.000)	-1.31	0.75

Item 37
---
item:37 (n7NCq05)
Cases for this item 6251 Discrimination 0.22
Item Threshold(s): -2.07 Weighted MNSQ 1.11
Item Delta(s): -2.07

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.03	0.02	1.21(.225)	1.26	1.59
9	0.00	53	0.85	-0.08	-6.47(.000)	-1.11	1.33
A	0.00	565	9.04	-0.06	-4.78(.000)	-0.18	1.14
B	1.00	5296	84.72	0.22	18.03(.000)	0.16	1.15
C	0.00	218	3.49	-0.20	-16.47(.000)	-1.15	0.91
D	0.00	117	1.87	-0.13	-10.64(.000)	-1.05	0.77

Item 38
---
item:38 (n7NCq06)
Cases for this item 6249 Discrimination 0.59
Item Threshold(s): -0.80 Weighted MNSQ 0.83
Item Delta(s): -0.80

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1903	30.45	-0.56	-53.43(.000)	-0.89	0.84
1	1.00	4116	65.87	0.59	57.84(.000)	0.52	1.02
9	0.00	230	3.68	-0.12	-9.43(.000)	-0.68	1.21

Item 39
---
item:39 (n7NCq07)
Cases for this item 6248 Discrimination 0.54
Item Threshold(s): -0.98 Weighted MNSQ 0.89
Item Delta(s): -0.98

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	58	0.93	-0.09	-7.49(.000)	-1.11	1.03
A	1.00	4318	69.11	0.54	50.60(.000)	0.45	1.07
B	0.00	369	5.91	-0.23	-18.36(.000)	-0.99	0.91
C	0.00	259	4.15	-0.20	-15.85(.000)	-1.00	0.89
D	0.00	1244	19.91	-0.37	-31.42(.000)	-0.77	0.86

Item 40
---
item:40 (n7NCq08)
Cases for this item 6246 Discrimination 0.49
Item Threshold(s): -1.90 Weighted MNSQ 0.87
Item Delta(s): -1.90

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	68	1.09	-0.12	-9.91(.000)	-1.37	0.95
A	0.00	287	4.59	-0.22	-18.16(.000)	-1.08	0.83
B	0.00	726	11.62	-0.39	-33.58(.000)	-1.13	0.81
C	1.00	5165	82.69	0.49	44.35(.000)	0.30	1.09

Item 41
---
item:41 (n7NCq09)
Cases for this item 6246 Discrimination 0.46
Item Threshold(s): -1.21 Weighted MNSQ 0.96
Item Delta(s): -1.21

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.06	-0.03	-2.16(.030)	-1.12	1.03
9	0.00	41	0.66	-0.09	-7.43(.000)	-1.30	1.15
A	0.00	380	6.08	-0.16	-13.13(.000)	-0.69	1.04
B	0.00	959	15.35	-0.28	-23.35(.000)	-0.70	0.87
C	1.00	4553	72.89	0.46	41.47(.000)	0.37	1.10
D	0.00	309	4.95	-0.26	-21.51(.000)	-1.22	0.87

Item 42
---
item:42 (n7NCq10)
Cases for this item 6246 Discrimination 0.42
Item Threshold(s): -0.91 Weighted MNSQ 1.03
Item Delta(s): -0.92

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.03	-0.02	-1.63(.104)	-1.12	1.08
9	0.00	24	0.38	-0.07	-5.73(.000)	-1.32	1.11
A	0.00	103	1.65	-0.10	-8.11(.000)	-0.78	1.02
B	0.00	575	9.21	-0.24	-19.86(.000)	-0.80	1.04
C	0.00	135	2.16	-0.18	-14.79(.000)	-1.35	0.82
D	1.00	4246	67.98	0.42	36.66(.000)	0.37	1.12
E	0.00	1161	18.59	-0.21	-16.88(.000)	-0.44	0.93

Item 43
---
item:43 (n7NCq11)
Cases for this item 6246 Discrimination 0.39
Item Threshold(s): -0.93 Weighted MNSQ 1.06
Item Delta(s): -0.93

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	0.00	0.26(.799)	0.74	0.00
9	0.00	68	1.09	-0.10	-7.97(.000)	-1.12	1.05
A	0.00	705	11.29	-0.05	-4.32(.000)	-0.14	1.02
B	1.00	4257	68.16	0.39	33.82(.000)	0.35	1.13
C	0.00	784	12.55	-0.26	-21.35(.000)	-0.71	0.91
D	0.00	431	6.90	-0.27	-22.45(.000)	-1.06	0.84

Item 44
---
item:44 (n7NCq12)
Cases for this item 6246 Discrimination 0.43
Item Threshold(s): -0.75 Weighted MNSQ 1.01
Item Delta(s): -0.75

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.02	-1.35(.176)	-1.09	0.00
9	0.00	50	0.80	-0.11	-8.69(.000)	-1.49	1.01
A	0.00	842	13.48	-0.23	-18.28(.000)	-0.59	0.91
B	0.00	185	2.96	-0.22	-18.05(.000)	-1.39	0.71
C	0.00	452	7.24	-0.27	-22.18(.000)	-1.00	0.87
D	0.00	652	10.44	-0.04	-2.87(.004)	-0.07	1.24
E	1.00	4064	65.07	0.43	37.81(.000)	0.40	1.07

Item 45
---
item:45 (n7NCq13)
Cases for this item 6245 Discrimination 0.60
Item Threshold(s): -0.42 Weighted MNSQ 0.84
Item Delta(s): -0.42

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2235	35.79	-0.52	-47.91(.000)	-0.72	0.92
1	1.00	3673	58.82	0.60	59.15(.000)	0.61	1.01
9	0.00	337	5.40	-0.21	-16.58(.000)	-0.93	0.92

Item 46
---
item:46 (n7NCq14)
Cases for this item 6244 Discrimination 0.44
Item Threshold(s): -0.35 Weighted MNSQ 1.03
Item Delta(s): -0.35

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.01	-0.71(.478)	-0.67	0.00
9	0.00	39	0.62	-0.08	-6.31(.000)	-1.24	1.15
A	0.00	172	2.75	-0.23	-18.45(.000)	-1.47	0.75
B	0.00	1321	21.16	-0.32	-26.60(.000)	-0.63	0.99
C	0.00	1116	17.87	-0.11	-8.57(.000)	-0.21	1.10
D	1.00	3595	57.58	0.44	38.22(.000)	0.47	1.07

Item 47
---
item:47 (n7NCq15)
Cases for this item 6243 Discrimination 0.49
Item Threshold(s): -0.29 Weighted MNSQ 0.98
Item Delta(s): -0.29

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.05	0.00	0.35(.728)	0.43	0.92
9	0.00	162	2.59	-0.10	-7.80(.000)	-0.75	1.07
A	0.00	301	4.82	-0.16	-13.06(.000)	-0.76	0.91
B	0.00	729	11.68	-0.27	-21.92(.000)	-0.77	0.95
C	0.00	1529	24.49	-0.24	-19.96(.000)	-0.43	0.95
D	1.00	3519	56.37	0.49	44.08(.000)	0.53	1.10

Item 48
---
item:48 (n7NCq16)
Cases for this item 6240 Discrimination 0.51
Item Threshold(s): -0.19 Weighted MNSQ 0.96
Item Delta(s): -0.19

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	16	0.26	0.01	0.68(.495)	0.18	0.59
9	0.00	135	2.16	-0.09	-6.77(.000)	-0.69	1.08
A	1.00	3389	54.31	0.51	47.11(.000)	0.58	1.11
B	0.00	697	11.17	-0.25	-20.81(.000)	-0.75	0.94
C	0.00	1138	18.24	-0.28	-22.83(.000)	-0.61	0.88
D	0.00	865	13.86	-0.16	-12.90(.000)	-0.40	0.91

Item 49
---
item:49 (n7NCq17)
Cases for this item 6239 Discrimination 0.58
Item Threshold(s): 0.29 Weighted MNSQ 0.88
Item Delta(s): 0.29

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3036	48.66	-0.48	-42.94(.000)	-0.50	0.96
1	1.00	2812	45.07	0.58	56.46(.000)	0.77	1.02
9	0.00	391	6.27	-0.21	-16.87(.000)	-0.87	0.84

Item 50
---
item:50 (n7NCq18)
Cases for this item 6238 Discrimination 0.45
Item Threshold(s): -0.09 Weighted MNSQ 1.03
Item Delta(s): -0.10

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.02	-1.43(.152)	-0.99	0.00
9	0.00	25	0.40	-0.09	-7.03(.000)	-1.73	0.97
A	0.00	1741	27.91	-0.28	-22.69(.000)	-0.44	0.98
B	0.00	389	6.24	-0.23	-18.85(.000)	-0.99	1.13
C	0.00	802	12.86	-0.12	-9.32(.000)	-0.29	0.93
D	1.00	3280	52.58	0.45	39.87(.000)	0.54	1.11

Item 51
---
item:51 (n7NCq19)
Cases for this item 6237 Discrimination 0.41
Item Threshold(s): -0.39 Weighted MNSQ 1.07
Item Delta(s): -0.39

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.08	0.01	0.63(.530)	0.22	0.75
9	0.00	83	1.33	-0.09	-7.48(.000)	-0.96	1.22
A	0.00	675	10.82	-0.16	-13.13(.000)	-0.48	0.97
B	0.00	915	14.67	-0.26	-21.63(.000)	-0.67	0.97
C	1.00	3635	58.28	0.41	35.12(.000)	0.44	1.14
D	0.00	924	14.81	-0.13	-10.16(.000)	-0.28	1.02

Item 52
---
item:52 (n7NCq20)
Cases for this item 6228 Discrimination 0.24
Item Threshold(s): 0.05 Weighted MNSQ 1.29
Item Delta(s): 0.06

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	74	1.19	-0.08	-6.58(.000)	-0.90	1.13
A	0.00	1417	22.75	0.11	8.53(.000)	0.24	0.99
B	0.00	883	14.18	-0.34	-28.10(.000)	-0.86	0.85
C	1.00	3090	49.61	0.24	19.60(.000)	0.34	1.22
D	0.00	764	12.27	-0.12	-9.59(.000)	-0.31	1.01

Item 53
---
item:53 (n7NCq21)
Cases for this item 6227 Discrimination 0.56
Item Threshold(s): -0.73 Weighted MNSQ 0.88
Item Delta(s): -0.73

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.02	-0.01	-0.47(.639)	-0.58	0.00
9	0.00	139	2.23	-0.10	-8.11(.000)	-0.78	1.06
A	1.00	4034	64.78	0.56	52.70(.000)	0.51	1.06
B	0.00	1220	19.59	-0.35	-29.26(.000)	-0.72	0.82
C	0.00	614	9.86	-0.25	-20.80(.000)	-0.80	0.96
D	0.00	219	3.52	-0.20	-15.78(.000)	-1.10	0.87

Item 54
---
item:54 (n7NCq22)
Cases for this item 6226 Discrimination 0.23
Item Threshold(s): 0.63 Weighted MNSQ 1.28
Item Delta(s): 0.63

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.03	0.00	0.15(.883)	0.32	0.10
9	0.00	104	1.67	-0.09	-7.28(.000)	-0.84	1.17
A	0.00	1955	31.40	0.06	4.81(.000)	0.15	1.08
B	1.00	2398	38.52	0.23	18.47(.000)	0.38	1.22
C	0.00	1012	16.25	-0.18	-14.46(.000)	-0.40	1.05
D	0.00	755	12.13	-0.19	-14.98(.000)	-0.51	0.99

Item 55
----
item:55 (n7NCq23)
Cases for this item 6222 Discrimination 0.55
Item Threshold(s): 1.16 Weighted MNSQ 0.89
Item Delta(s): 1.15

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	4066	65.35	-0.46	-41.31(.000)	-0.33	0.99
1	1.00	1830	29.41	0.55	51.77(.000)	1.02	1.01
9	0.00	326	5.24	-0.13	-10.44(.000)	-0.61	0.98

Item 56
----
item:56 (n7NCq24)
Cases for this item 6218 Discrimination 0.63
Item Threshold(s): 0.72 Weighted MNSQ 0.81
Item Delta(s): 0.72

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3442	55.36	-0.51	-46.38(.000)	-0.45	0.92
1	1.00	2301	37.01	0.63	63.34(.000)	0.98	0.97
9	0.00	475	7.64	-0.19	-15.21(.000)	-0.72	0.91

Item 57
----
item:57 (n7NCq25)
Cases for this item 6210 Discrimination 0.39
Item Threshold(s): 0.92 Weighted MNSQ 1.07
Item Delta(s): 0.93

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.08	-0.01	-0.96(.335)	-0.61	1.04
9	0.00	92	1.48	-0.06	-4.70(.000)	-0.57	1.16
A	0.00	898	14.46	-0.05	-4.04(.000)	-0.10	0.99
B	0.00	1451	23.37	-0.26	-21.47(.000)	-0.48	0.94
C	0.00	1376	22.16	-0.06	-4.37(.000)	-0.07	1.05
D	1.00	2067	33.29	0.39	33.47(.000)	0.70	1.22
E	0.00	321	5.17	-0.11	-8.75(.000)	-0.48	1.02

Item 58
----
item:58 (n7NCq26)
Cases for this item 6199 Discrimination 0.52
Item Threshold(s): 1.19 Weighted MNSQ 0.91
Item Delta(s): 1.19

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.05	-0.03	-2.71(.007)	-1.56	0.24
9	0.00	62	1.00	-0.05	-4.23(.000)	-0.68	1.04
A	1.00	1792	28.91	0.52	47.52(.000)	0.98	1.12
B	0.00	583	9.40	-0.30	-24.69(.000)	-0.98	0.98
C	0.00	1220	19.68	-0.04	-3.22(.001)	-0.04	1.03
D	0.00	2539	40.96	-0.25	-20.62(.000)	-0.29	0.87

Item 59
----
item:59 (n7NCq27)
Cases for this item 6192 Discrimination 0.57
Item Threshold(s): 2.05 Weighted MNSQ 0.78
Item Delta(s): 2.06

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	4630	74.77	-0.43	-37.85(.000)	-0.23	0.98
1	1.00	1040	16.80	0.57	55.00(.000)	1.53	0.93
9	0.00	522	8.43	-0.09	-7.36(.000)	-0.33	0.99

Item 60
---
item:60 (n7NCq28)
Cases for this item 6177 Discrimination 0.58
Item Threshold(s): 1.50 Weighted MNSQ 0.81
Item Delta(s): 1.50

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	4256	68.90	-0.46	-40.44(.000)	-0.29	0.96
1	1.00	1487	24.07	0.58	56.57(.000)	1.25	1.00
9	0.00	434	7.03	-0.15	-11.81(.000)	-0.58	0.98

Item 61
---
item:61 (n7NCq29)
Cases for this item 6169 Discrimination 0.43
Item Threshold(s): 1.69 Weighted MNSQ 0.98
Item Delta(s): 1.69

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	4583	74.29	-0.34	-28.23(.000)	-0.17	1.03
1	1.00	1321	21.41	0.43	37.14(.000)	1.01	1.17
9	0.00	265	4.30	-0.14	-10.76(.000)	-0.71	1.09

Item 62
---
item:62 (n7NCq30)
Cases for this item 6157 Discrimination 0.32
Item Threshold(s): 1.63 Weighted MNSQ 1.07
Item Delta(s): 1.63

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.06	-0.02	-1.54(.123)	-0.87	0.60
9	0.00	130	2.11	-0.05	-4.23(.000)	-0.44	1.03
A	0.00	248	4.03	-0.13	-10.50(.000)	-0.66	1.11
B	0.00	2624	42.62	0.03	2.09(.037)	0.08	1.01
C	0.00	1783	28.96	-0.25	-20.15(.000)	-0.38	0.98
D	1.00	1368	22.22	0.32	26.71(.000)	0.78	1.35

Item 63
---
item:63 (n7NCq31)
Cases for this item 6145 Discrimination 0.45
Item Threshold(s): 2.25 Weighted MNSQ 0.92
Item Delta(s): 2.25

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	4429	72.07	-0.27	-21.79(.000)	-0.13	1.08
1	1.00	902	14.68	0.45	39.12(.000)	1.32	1.06
9	0.00	814	13.25	-0.11	-8.82(.000)	-0.29	0.92

Item 64
---
item:64 (n7NCq32)
Cases for this item 6056 Discrimination 0.32
Item Threshold(s): 2.87 Weighted MNSQ 1.01
Item Delta(s): 2.87

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	5467	90.27	-0.30	-24.72(.000)	-0.04	1.10
1	1.00	567	9.36	0.32	25.97(.000)	1.24	1.24
9	0.00	22	0.36	-0.04	-3.25(.001)	-0.76	0.84

The following traditional statistics are only meaningful for complete designs and when the amount of missing data is minimal.
In this analysis 1.16% of the data are missing.

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

N	6266
Mean	32.81
Standard Deviation	12.45
Variance	154.98
Skewness	0.09
Kurtosis	-0.64
Standard error of mean	0.16
Standard error of measurement	3.29
Coefficient Alpha	0.93

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Appendix B.16 Year 9 Numeracy

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================================================================================
NAPLAN 2016, Calibration, Grade 9, numeracy
GENERALISED ITEM ANALYSIS
================================================================================
Item 1
------
item:1 (n9CAq01)
Cases for this item   5735   Discrimination  0.25
Item Threshold(s):    -4.35   Weighted MNSQ   0.90
Item Delta(s):     -4.35
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   8       0.00         4       0.07   -0.05    -4.06(.000) -2.62     1.42
   9       0.00        10       0.17   -0.08    -6.13(.000) -2.55     1.20
   A       0.00        15       0.26   -0.08    -6.41(.000) -1.88     0.61
   B       0.00        71       1.24   -0.18   -14.22(.000) -2.07     0.88
   C       1.00      5604      97.72    0.25    19.86(.000)  0.08     1.21
   D       0.00        31       0.54   -0.11    -8.74(.000) -1.80     0.67
================================================================================

Item 2
------
item:2 (n9CAq02)
Cases for this item   5735   Discrimination  0.29
Item Threshold(s):    -2.20   Weighted MNSQ   1.02
Item Delta(s):     -2.20
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   8       0.00         5       0.09   -0.05    -3.61(.000) -2.13     1.65
   9       0.00        59       1.03   -0.09    -6.82(.000) -1.14     1.27
   A       0.00       289       5.04   -0.11    -8.11(.000) -0.51     1.16
   B       0.00       132       2.30   -0.18   -14.19(.000) -1.38     0.86
   C       0.00       340       5.93   -0.17   -12.84(.000) -0.74     1.13
   D       1.00      4910      85.61    0.29    22.72(.000)  0.17     1.20
================================================================================

Item 3
------
item:3 (n9CAq03)
Cases for this item   5735   Discrimination  0.39
Item Threshold(s):    -2.23   Weighted MNSQ   0.91
Item Delta(s):     -2.23
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   8       0.00         5       0.09   -0.06    -4.26(.000) -2.36     1.36
   9       0.00        24       0.42   -0.09    -6.60(.000) -1.79     1.75
   A       1.00      4929      85.95    0.39    32.31(.000)  0.22     1.17
   B       0.00       102       1.78   -0.16   -12.13(.000) -1.34     0.78
   C       0.00       140       2.44   -0.23   -17.95(.000) -1.71     0.69
   D       0.00       535       9.33   -0.25   -19.53(.000) -0.89     0.94
================================================================================

Item 4
------
item:4 (n9CAq04)
Cases for this item   5735   Discrimination  0.31
Item Threshold(s):    -1.56   Weighted MNSQ   1.09
Item Delta(s):     -1.56
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   8       0.00         6       0.10   -0.06    -4.41(.000) -2.24     1.25
   9       0.00        87       1.52   -0.08    -5.90(.000) -0.79     1.11
   A       0.00       724      12.62   -0.18   -13.54(.000) -0.53     1.08
   B       1.00      4451      77.61    0.31    25.07(.000)  0.23     1.21
   C       0.00       309       5.39   -0.20   -15.68(.000) -0.97     0.87
   D       0.00       158       2.76   -0.09    -7.16(.000) -0.60     1.10
================================================================================
```

Item 5
------
item:5 (n9CAq05)
Cases for this item 5734 Discrimination 0.53
Item Threshold(s): -0.98 Weighted MNSQ 0.88
Item Delta(s): -0.98

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1510	26.33	-0.44	-36.88(.000)	-0.83	0.93
1	1.00	3914	68.26	0.53	47.79(.000)	0.46	1.13
9	0.00	310	5.41	-0.25	-19.19(.000)	-1.24	0.76

Item 6
------
item:6 (n9CAq06)
Cases for this item 5731 Discrimination 0.32
Item Threshold(s): -2.09 Weighted MNSQ 1.02
Item Delta(s): -2.08

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.10	-0.05	-4.14(.000)	-2.01	1.49
9	0.00	19	0.33	-0.07	-5.44(.000)	-1.58	1.53
A	0.00	71	1.24	-0.12	-8.78(.000)	-1.19	0.92
B	0.00	370	6.46	-0.16	-12.43(.000)	-0.69	1.06
C	0.00	357	6.23	-0.18	-14.19(.000)	-0.81	0.99
D	1.00	4835	84.37	0.32	25.62(.000)	0.19	1.20
E	0.00	73	1.27	-0.12	-9.14(.000)	-1.17	0.78

Item 7
------
item:7 (n9CAq07)
Cases for this item 5731 Discrimination 0.42
Item Threshold(s): -1.66 Weighted MNSQ 0.97
Item Delta(s): -1.66

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	9	0.16	-0.06	-4.69(.000)	-1.93	1.16
9	0.00	50	0.87	-0.07	-5.65(.000)	-1.00	1.26
A	0.00	417	7.28	-0.19	-14.52(.000)	-0.76	0.98
B	1.00	4528	79.01	0.42	35.19(.000)	0.29	1.19
C	0.00	637	11.11	-0.31	-24.50(.000)	-0.97	0.75
D	0.00	90	1.57	-0.13	-10.21(.000)	-1.25	0.89

Item 8
------
item:8 (n9CAq08)
Cases for this item 5730 Discrimination 0.42
Item Threshold(s): -0.77 Weighted MNSQ 1.04
Item Delta(s): -0.77

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	7	0.12	-0.04	-3.34(.001)	-1.52	1.84
9	0.00	37	0.65	-0.06	-4.69(.000)	-1.05	1.47
A	0.00	94	1.64	-0.08	-5.80(.000)	-0.61	1.42
B	1.00	3707	64.69	0.42	35.14(.000)	0.39	1.19
C	0.00	497	8.67	-0.20	-15.83(.000)	-0.74	1.21
D	0.00	1388	24.22	-0.30	-23.58(.000)	-0.58	0.90

Item 9
------
item:9 (n9CAq09)
Cases for this item 5730 Discrimination 0.53
Item Threshold(s): -0.84 Weighted MNSQ 0.91
Item Delta(s): -0.84

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	7	0.12	-0.06	-4.74(.000)	-2.27	1.12
9	0.00	34	0.59	-0.07	-4.97(.000)	-1.31	1.40
A	1.00	3772	65.83	0.53	47.30(.000)	0.48	1.17
B	0.00	771	13.46	-0.34	-27.23(.000)	-0.96	0.84
C	0.00	1146	20.00	-0.32	-25.70(.000)	-0.73	0.81

Item 10
----
item:10 (n9CAq10)
Cases for this item 5728 Discrimination 0.42
Item Threshold(s): -0.61 Weighted MNSQ 1.06
Item Delta(s): -0.61

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	7	0.12	-0.05	-3.97(.000)	-1.81	1.49
9	0.00	53	0.93	-0.06	-4.50(.000)	-0.79	1.23
A	0.00	587	10.25	-0.06	-4.76(.000)	-0.21	1.07
B	0.00	410	7.16	-0.24	-18.81(.000)	-1.03	0.90
C	1.00	3532	61.66	0.42	35.49(.000)	0.43	1.22
D	0.00	886	15.47	-0.26	-20.04(.000)	-0.66	0.80
E	0.00	253	4.42	-0.12	-9.33(.000)	-0.65	0.82

Item 11
----
item:11 (n9CAq11)
Cases for this item 5728 Discrimination 0.39
Item Threshold(s): -1.43 Weighted MNSQ 1.01
Item Delta(s): -1.43

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.10	-0.05	-4.13(.000)	-2.01	1.48
9	0.00	58	1.01	-0.04	-3.30(.001)	-0.65	1.35
A	0.00	563	9.83	-0.15	-11.61(.000)	-0.51	1.05
B	0.00	476	8.31	-0.28	-21.88(.000)	-1.02	0.81
C	1.00	4335	75.68	0.39	32.47(.000)	0.29	1.19
D	0.00	290	5.06	-0.19	-14.49(.000)	-0.92	0.95

Item 12
----
item:12 (n9CAq12)
Cases for this item 5725 Discrimination 0.60
Item Threshold(s): -0.14 Weighted MNSQ 0.85
Item Delta(s): -0.14

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2448	42.76	-0.54	-48.83(.000)	-0.70	0.87
1	1.00	3017	52.70	0.60	57.36(.000)	0.70	1.12
9	0.00	260	4.54	-0.16	-12.29(.000)	-0.87	0.91

Item 13
---
item:13 (n9CAq13)
Cases for this item 5723 Discrimination 0.49
Item Threshold(s): -0.24 Weighted MNSQ 1.00
Item Delta(s): -0.24

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.09	-0.06	-4.17(.000)	-2.45	1.28
9	0.00	83	1.45	-0.07	-5.46(.000)	-0.75	1.25
A	0.00	671	11.72	-0.26	-20.40(.000)	-0.79	0.91
B	1.00	3132	54.73	0.49	42.07(.000)	0.55	1.24
C	0.00	1233	21.54	-0.21	-16.51(.000)	-0.44	0.85
D	0.00	599	10.47	-0.20	-15.19(.000)	-0.64	0.83

Item 14
---
item:14 (n9CAq14)
Cases for this item 5721 Discrimination 0.58
Item Threshold(s): -0.10 Weighted MNSQ 0.89
Item Delta(s): -0.10

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2281	39.87	-0.44	-37.48(.000)	-0.60	0.91
1	1.00	2972	51.95	0.58	53.76(.000)	0.69	1.13
9	0.00	468	8.18	-0.26	-20.61(.000)	-1.05	0.81

Item 15
---
item:15 (n9CAq15)
Cases for this item 5717 Discrimination 0.48
Item Threshold(s): -0.28 Weighted MNSQ 0.99
Item Delta(s): -0.28

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	7	0.12	-0.05	-4.11(.000)	-1.87	1.44
9	0.00	32	0.56	-0.04	-3.24(.001)	-0.80	1.41
A	1.00	3177	55.57	0.48	41.80(.000)	0.55	1.19
B	0.00	1037	18.14	-0.15	-11.83(.000)	-0.36	0.93
C	0.00	629	11.00	-0.25	-19.57(.000)	-0.78	0.95
D	0.00	835	14.61	-0.28	-21.68(.000)	-0.76	0.89

Item 16
---
item:16 (n9CAq16)
Cases for this item 5715 Discrimination 0.62
Item Threshold(s): -0.30 Weighted MNSQ 0.83
Item Delta(s): -0.30

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2156	37.73	-0.52	-46.28(.000)	-0.73	0.86
1	1.00	3190	55.82	0.62	59.34(.000)	0.68	1.09
9	0.00	369	6.46	-0.22	-16.87(.000)	-1.01	0.89

Item 17
---
item:17 (n9CAq17)
Cases for this item 5712 Discrimination 0.24
Item Threshold(s): 0.34 Weighted MNSQ 1.31
Item Delta(s): 0.34

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	7	0.12	-0.06	-4.47(.000)	-2.11	1.38
9	0.00	133	2.33	-0.02	-1.73(.084)	-0.22	1.09
A	0.00	1336	23.39	0.01	0.60(.548)	0.05	1.08
B	1.00	2493	43.64	0.24	19.05(.000)	0.38	1.31
C	0.00	1429	25.02	-0.23	-17.67(.000)	-0.43	0.97
D	0.00	314	5.50	-0.09	-6.81(.000)	-0.41	1.40

Item 18
---
item:18 (n9CAq18)
Cases for this item 5708 Discrimination 0.47
Item Threshold(s): 0.47 Weighted MNSQ 1.03
Item Delta(s): 0.47

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.11	-0.06	-4.32(.000)	-2.17	1.32
9	0.00	199	3.49	-0.06	-4.44(.000)	-0.40	1.12
A	0.00	1143	20.02	-0.14	-10.56(.000)	-0.29	0.88
B	0.00	1103	19.32	-0.15	-11.73(.000)	-0.33	1.09
C	0.00	908	15.91	-0.28	-21.81(.000)	-0.71	0.91
D	1.00	2349	41.15	0.47	39.95(.000)	0.70	1.24

Item 19
---
item:19 (n9CAq19)
Cases for this item 5705 Discrimination 0.48
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	6	0.11	-0.06	-4.32(.000)	-2.17	1.32
9	0.00	176	3.09	-0.06	-4.20(.000)	-0.44	1.10
A	0.00	453	7.94	-0.10	-7.88(.000)	-0.39	0.99
B	0.00	768	13.46	-0.23	-17.97(.000)	-0.64	0.91
C	0.00	1115	19.54	-0.20	-15.59(.000)	-0.44	0.97
D	1.00	2671	46.82	0.48	41.07(.000)	0.65	1.22
E	0.00	516	9.04	-0.14	-10.55(.000)	-0.49	0.90

Item 20
---
item:20 (n9CAq20)
Cases for this item 5703 Discrimination 0.48
Item Threshold(s): 0.23 Weighted MNSQ 1.02
Item Delta(s): 0.24

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	8	0.14	-0.06	-4.55(.000)	-1.84	1.31
9	0.00	123	2.16	-0.07	-5.29(.000)	-0.60	1.13
A	0.00	443	7.77	-0.16	-11.88(.000)	-0.58	0.99
B	0.00	1733	30.39	-0.19	-14.97(.000)	-0.32	0.96
C	0.00	794	13.92	-0.27	-21.31(.000)	-0.75	0.87
D	1.00	2602	45.63	0.48	40.95(.000)	0.66	1.22

Item 21
---
item:21 (n9CAq21)
Cases for this item 5701 Discrimination 0.50
Item Threshold(s): 0.45 Weighted MNSQ 0.98
Item Delta(s): 0.45

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	8	0.14	-0.06	-4.77(.000)	-2.01	1.18
9	0.00	65	1.14	-0.04	-2.74(.006)	-0.57	1.25
A	0.00	161	2.82	-0.09	-6.72(.000)	-0.57	1.04
B	1.00	2367	41.52	0.50	43.86(.000)	0.75	1.23
C	0.00	468	8.21	-0.06	-4.63(.000)	-0.19	1.01
D	0.00	2632	46.17	-0.42	-35.02(.000)	-0.50	0.91

Item 22
---
item:22 (n9CAq22)
Cases for this item 5696 Discrimination 0.61
Item Threshold(s): 1.33 Weighted MNSQ 0.83
Item Delta(s): 1.32

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3606	63.31	-0.48	-40.73(.000)	-0.38	0.96
1	1.00	1520	26.69	0.61	58.28(.000)	1.25	1.06
9	0.00	570	10.01	-0.14	-10.52(.000)	-0.50	0.98

Item 23
---
item:23 (n9CAq23)
Cases for this item 5685 Discrimination 0.58
Item Threshold(s): 0.74 Weighted MNSQ 0.89
Item Delta(s): 0.75

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3169	55.74	-0.47	-40.01(.000)	-0.44	0.97
1	1.00	2061	36.25	0.58	54.14(.000)	0.96	1.09
9	0.00	455	8.00	-0.18	-13.42(.000)	-0.70	0.96

Item 24
---
item:24 (n9CAq24)
Cases for this item 5675 Discrimination 0.49
Item Threshold(s): 0.63 Weighted MNSQ 0.99
Item Delta(s): 0.63

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	9	0.16	-0.05	-3.46(.001)	-1.52	1.52
9	0.00	93	1.64	0.01	0.90(.366)	0.04	1.07
A	1.00	2171	38.26	0.49	42.74(.000)	0.79	1.25
B	0.00	1460	25.73	-0.19	-14.88(.000)	-0.35	0.86
C	0.00	962	16.95	-0.25	-19.62(.000)	-0.61	1.07
D	0.00	980	17.27	-0.16	-12.17(.000)	-0.36	0.94

Item 25
---
item:25 (n9CAq25)
Cases for this item 5663 Discrimination 0.59
Item Threshold(s): 1.82 Weighted MNSQ 0.82
Item Delta(s): 1.82

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3131	55.29	-0.34	-27.00(.000)	-0.31	1.00
1	1.00	1127	19.90	0.59	54.57(.000)	1.48	1.07
9	0.00	1405	24.81	-0.15	-11.72(.000)	-0.32	0.95

Item 26
---
item:26 (n9CAq26)
Cases for this item 5611 Discrimination 0.36
Item Threshold(s): 0.83 Weighted MNSQ 1.14
Item Delta(s): 0.83

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	10	0.18	-0.04	-2.95(.003)	-1.22	1.74
9	0.00	128	2.28	-0.04	-2.84(.004)	-0.32	1.01
A	0.00	1961	34.95	-0.21	-15.88(.000)	-0.28	0.93
B	0.00	782	13.94	-0.19	-14.45(.000)	-0.51	1.03
C	1.00	1960	34.93	0.36	28.73(.000)	0.64	1.39
D	0.00	770	13.72	0.00	0.23(.815)	0.07	1.08

Item 27
---
item:27 (n9CAq27)
Cases for this item 5599 Discrimination 0.58
Item Threshold(s): 2.13 Weighted MNSQ 0.81
Item Delta(s): 2.12

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3988	71.23	-0.38	-30.91(.000)	-0.23	1.02
1	1.00	922	16.47	0.58	52.80(.000)	1.63	1.03
9	0.00	689	12.31	-0.12	-9.41(.000)	-0.41	0.96

Item 28
---
item:28 (n9CAq28)
Cases for this item 5442 Discrimination 0.42
Item Threshold(s): 1.41 Weighted MNSQ 1.06
Item Delta(s): 1.41

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3448	63.36	-0.31	-24.33(.000)	-0.21	1.09
1	1.00	1412	25.95	0.42	33.70(.000)	0.94	1.25
9	0.00	582	10.69	-0.10	-7.49(.000)	-0.31	0.95

Item 29
---
item:29 (n9CAq29)
Cases for this item 5383 Discrimination 0.51
Item Threshold(s): 2.39 Weighted MNSQ 0.88
Item Delta(s): 2.39

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	4074	75.68	-0.37	-29.52(.000)	-0.17	1.07
1	1.00	758	14.08	0.51	43.97(.000)	1.62	1.06
9	0.00	551	10.24	-0.06	-4.53(.000)	-0.17	1.03

Item 30
---
item:30 (n9CAq30)
Cases for this item 5238 Discrimination 0.48
Item Threshold(s): 2.45 Weighted MNSQ 0.90
Item Delta(s): 2.44

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3756	71.71	-0.36	-27.92(.000)	-0.19	1.09
1	1.00	716	13.67	0.48	39.75(.000)	1.59	1.16
9	0.00	766	14.62	-0.01	-0.67(.503)	0.02	0.98

Item 31
---
item:31 (n9CAq31)
Cases for this item 4876 Discrimination 0.50
Item Threshold(s): 2.25 Weighted MNSQ 0.90
Item Delta(s): 2.25

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3129	64.17	-0.30	-21.95(.000)	-0.19	1.09
1	1.00	770	15.79	0.50	39.86(.000)	1.54	1.20
9	0.00	977	20.04	-0.09	-6.48(.000)	-0.14	1.03

Item 32
---
item:32 (n9CAq32)
Cases for this item 4451 Discrimination 0.35
Item Threshold(s): 3.45 Weighted MNSQ 0.99
Item Delta(s): 3.44

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3803	85.44	-0.28	-19.51(.000)	-0.04	1.19
1	1.00	305	6.85	0.35	24.98(.000)	1.82	1.39
9	0.00	343	7.71	0.04	2.61(.009)	0.26	1.07

Item 33
---
item:33 (n9NCq01)
Cases for this item 5731 Discrimination 0.34
Item Threshold(s): -3.16 Weighted MNSQ 0.89
Item Delta(s): -3.15

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.05	-0.05	-4.12(.000)	-3.14	1.21
9	0.00	10	0.17	-0.07	-4.95(.000)	-2.07	1.31
A	1.00	5348	93.32	0.34	27.03(.000)	0.14	1.19
B	0.00	157	2.74	-0.19	-14.35(.000)	-1.29	0.88
C	0.00	144	2.51	-0.24	-19.08(.000)	-1.83	0.68
D	0.00	69	1.20	-0.10	-7.93(.000)	-0.97	0.89

Item 34
---
item:34 (n9NCq02)
Cases for this item 5731 Discrimination 0.21
Item Threshold(s): -2.31 Weighted MNSQ 1.09
Item Delta(s): -2.31

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.05	-0.05	-4.12(.000)	-3.14	1.21
9	0.00	20	0.35	-0.08	-6.32(.000)	-1.83	1.19
A	0.00	521	9.09	-0.09	-6.61(.000)	-0.30	1.14
B	1.00	4976	86.83	0.21	16.56(.000)	0.13	1.21
C	0.00	136	2.37	-0.19	-14.84(.000)	-1.43	0.87
D	0.00	75	1.31	-0.10	-7.95(.000)	-1.04	0.92

Item 35
---
item:35 (n9NCq03)
Cases for this item 5730 Discrimination 0.54
Item Threshold(s): -1.64 Weighted MNSQ 0.81
Item Delta(s): -1.64

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1064	18.57	-0.48	-41.85(.000)	-1.15	0.77
1	1.00	4514	78.78	0.54	48.31(.000)	0.36	1.13
9	0.00	152	2.65	-0.20	-15.30(.000)	-1.45	0.90

Item 36
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item:36 (n9NCq04)
Cases for this item 5729 Discrimination 0.33
Item Threshold(s): -1.41 Weighted MNSQ 1.08
Item Delta(s): -1.41

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	7	0.12	-0.07	-5.17(.000)	-2.52	1.01
9	0.00	24	0.42	-0.10	-7.24(.000)	-1.93	1.01
A	0.00	1009	17.61	-0.20	-15.21(.000)	-0.46	1.05
B	0.00	176	3.07	-0.18	-13.78(.000)	-1.17	1.05
C	1.00	4319	75.39	0.33	26.15(.000)	0.25	1.19
D	0.00	194	3.39	-0.14	-11.08(.000)	-0.89	1.16

Item 37
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item:37 (n9NCq05)
Cases for this item 5728 Discrimination 0.50
Item Threshold(s): -1.62 Weighted MNSQ 0.86
Item Delta(s): -1.62

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.05	-0.05	-4.12(.000)	-3.14	1.21
9	0.00	50	0.87	-0.09	-7.09(.000)	-1.32	1.07
A	1.00	4496	78.49	0.50	43.20(.000)	0.34	1.14
B	0.00	266	4.64	-0.22	-17.39(.000)	-1.17	0.97
C	0.00	163	2.85	-0.18	-13.75(.000)	-1.23	0.84
D	0.00	750	13.09	-0.35	-27.97(.000)	-1.00	0.83

Item 38
----
item:38 (n9NCq06)
Cases for this item 5725 Discrimination 0.38
Item Threshold(s): -2.75 Weighted MNSQ 0.88
Item Delta(s): -2.75

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.09	-0.06	-4.70(.000)	-2.62	1.15
9	0.00	31	0.54	-0.07	-5.51(.000)	-1.27	1.51
A	0.00	120	2.10	-0.17	-12.98(.000)	-1.36	0.92
B	0.00	376	6.57	-0.32	-25.43(.000)	-1.38	0.72
C	1.00	5193	90.71	0.38	31.08(.000)	0.18	1.18

Item 39
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item:39 (n9NCq07)
Cases for this item 5725 Discrimination 0.42
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
8	0.00	6	0.10	-0.05	-3.86(.000)	-1.97	1.53
9	0.00	71	1.24	-0.08	-5.87(.000)	-0.85	0.90
A	0.00	478	8.35	-0.20	-15.65(.000)	-0.74	0.82
B	1.00	3960	69.17	0.42	35.01(.000)	0.37	1.21
C	0.00	923	16.12	-0.29	-23.23(.000)	-0.76	0.90
D	0.00	287	5.01	-0.09	-6.88(.000)	-0.46	1.09

Item 40
---
item:40 (n9NCq08)
Cases for this item 5724 Discrimination 0.43
Item Threshold(s): -1.50 Weighted MNSQ 0.95
Item Delta(s): -1.50

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	7	0.12	-0.06	-4.42(.000)	-2.18	1.43
9	0.00	38	0.66	-0.06	-4.26(.000)	-0.91	1.29
A	0.00	121	2.11	-0.16	-12.39(.000)	-1.27	0.86
B	0.00	330	5.77	-0.25	-19.78(.000)	-1.16	0.77
C	0.00	828	14.47	-0.27	-21.09(.000)	-0.72	0.95
D	1.00	4400	76.87	0.43	36.51(.000)	0.31	1.17

Item 41
---
item:41 (n9NCq09)
Cases for this item 5724 Discrimination 0.42
Item Threshold(s): -1.64 Weighted MNSQ 0.95
Item Delta(s): -1.64

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.09	-0.06	-4.81(.000)	-2.75	1.06
9	0.00	23	0.40	-0.06	-4.39(.000)	-1.15	1.12
A	1.00	4515	78.88	0.42	34.98(.000)	0.29	1.18
B	0.00	312	5.45	-0.20	-15.66(.000)	-0.96	1.02
C	0.00	182	3.18	-0.20	-15.31(.000)	-1.25	0.80
D	0.00	687	12.00	-0.26	-20.49(.000)	-0.78	0.90

Item 42
---
item:42 (n9NCq10)
Cases for this item 5723 Discrimination 0.43
Item Threshold(s): -1.41 Weighted MNSQ 0.98
Item Delta(s): -1.41

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.09	-0.05	-3.65(.000)	-2.34	1.64
9	0.00	19	0.33	-0.06	-4.30(.000)	-1.26	0.92
A	0.00	786	13.73	-0.34	-27.45(.000)	-0.96	0.84
B	1.00	4318	75.45	0.43	35.55(.000)	0.32	1.18
C	0.00	228	3.98	-0.21	-15.98(.000)	-1.19	0.75
D	0.00	367	6.41	-0.08	-6.37(.000)	-0.32	1.06

Item 43
---
item:43 (n9NCq11)
Cases for this item 5722 Discrimination 0.46
Item Threshold(s): 0.34 Weighted MNSQ 1.04
Item Delta(s): 0.33

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.05	-0.05	-4.13(.000)	-3.14	1.21
9	0.00	105	1.84	-0.08	-6.15(.000)	-0.82	1.10
A	1.00	2499	43.67	0.46	39.61(.000)	0.66	1.25
B	0.00	1100	19.22	-0.16	-12.04(.000)	-0.34	1.03
C	0.00	1148	20.06	-0.27	-21.23(.000)	-0.60	0.87
D	0.00	867	15.15	-0.13	-10.17(.000)	-0.34	0.96

Item 44
---
item:44 (n9NCq12)
Cases for this item 5718 Discrimination 0.27
Item Threshold(s): -0.19 Weighted MNSQ 1.27
Item Delta(s): -0.19

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	7	0.12	-0.04	-3.16(.002)	-1.48	1.95
9	0.00	50	0.87	-0.04	-3.08(.002)	-0.59	1.26
A	0.00	1402	24.52	0.01	1.11(.269)	0.05	1.02
B	0.00	571	9.99	-0.29	-22.87(.000)	-0.96	0.88
C	1.00	3072	53.73	0.27	21.44(.000)	0.34	1.27
D	0.00	616	10.77	-0.16	-12.42(.000)	-0.51	1.00

Item 45
---
item:45 (n9NCq13)
Cases for this item 5718 Discrimination 0.48
Item Threshold(s): -1.68 Weighted MNSQ 0.88
Item Delta(s): -1.68

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.05	-0.05	-4.13(.000)	-3.14	1.21
9	0.00	59	1.03	-0.09	-6.49(.000)	-1.05	1.07
A	1.00	4542	79.43	0.48	41.24(.000)	0.32	1.15
B	0.00	711	12.43	-0.37	-30.36(.000)	-1.12	0.73
C	0.00	291	5.09	-0.17	-12.86(.000)	-0.81	1.11
D	0.00	112	1.96	-0.17	-13.19(.000)	-1.36	0.74

Item 46
---
item:46 (n9NCq14)
Cases for this item 5717 Discrimination 0.33
Item Threshold(s): 0.06 Weighted MNSQ 1.20
Item Delta(s): 0.06

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.10	-0.05	-3.53(.000)	-1.99	1.58
9	0.00	24	0.42	-0.03	-2.63(.009)	-0.49	1.45
A	0.00	150	2.62	-0.06	-4.40(.000)	-0.44	1.20
B	1.00	2798	48.94	0.33	26.54(.000)	0.44	1.24
C	0.00	618	10.81	-0.01	-0.46(.644)	-0.01	1.31
D	0.00	2121	37.10	-0.31	-24.81(.000)	-0.44	0.98

Item 47
---
item:47 (n9NCq15)
Cases for this item 5717 Discrimination 0.40
Item Threshold(s): -0.13 Weighted MNSQ 1.11
Item Delta(s): -0.13

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.10	-0.04	-3.13(.002)	-1.68	1.91
9	0.00	67	1.17	-0.06	-4.59(.000)	-0.77	0.97
A	0.00	246	4.30	-0.13	-9.94(.000)	-0.67	0.89
B	0.00	1637	28.63	-0.26	-20.71(.000)	-0.45	0.90
C	1.00	3011	52.67	0.40	32.97(.000)	0.48	1.28
D	0.00	750	13.12	-0.14	-10.35(.000)	-0.37	1.05

Item 48
---
item:48 (n9NCq16)
Cases for this item 5716 Discrimination 0.43
Item Threshold(s): -0.48 Weighted MNSQ 1.05
Item Delta(s): -0.48

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	7	0.12	-0.06	-4.66(.000)	-2.17	1.18
9	0.00	15	0.26	-0.06	-4.82(.000)	-1.57	0.97
A	0.00	602	10.53	-0.28	-22.13(.000)	-0.90	0.94
B	0.00	1483	25.94	-0.19	-14.95(.000)	-0.34	0.98
C	1.00	3397	59.43	0.43	35.88(.000)	0.45	1.20
D	0.00	212	3.71	-0.18	-13.78(.000)	-1.06	0.98

Item 49
---
item:49 (n9NCq17)
Cases for this item 5715 Discrimination 0.37
Item Threshold(s): 0.02 Weighted MNSQ 1.15
Item Delta(s): 0.01

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	7	0.12	-0.05	-3.84(.000)	-1.76	1.57
9	0.00	66	1.15	-0.06	-4.62(.000)	-0.75	0.97
A	0.00	1082	18.93	-0.07	-5.16(.000)	-0.15	1.04
B	0.00	611	10.69	-0.26	-20.22(.000)	-0.83	0.95
C	0.00	1100	19.25	-0.18	-13.92(.000)	-0.40	1.02
D	1.00	2849	49.85	0.37	30.33(.000)	0.49	1.24

Item 50
---
item:50 (n9NCq18)
Cases for this item 5715 Discrimination 0.44
Item Threshold(s): 0.24 Weighted MNSQ 1.07
Item Delta(s): 0.24

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2803	49.05	-0.36	-29.25(.000)	-0.39	1.05
1	1.00	2600	45.49	0.44	37.20(.000)	0.61	1.19
9	0.00	312	5.46	-0.17	-13.34(.000)	-0.87	0.95

Item 51
---
item:51 (n9NCq19)
Cases for this item 5712 Discrimination 0.30
Item Threshold(s): 0.21 Weighted MNSQ 1.24
Item Delta(s): 0.21

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	8	0.14	-0.04	-3.39(.001)	-1.40	1.73
9	0.00	46	0.81	-0.09	-6.61(.000)	-1.25	1.00
A	0.00	1799	31.50	-0.06	-4.45(.000)	-0.07	1.01
B	1.00	2628	46.01	0.30	23.92(.000)	0.44	1.30
C	0.00	779	13.64	-0.19	-14.24(.000)	-0.53	1.06
D	0.00	452	7.91	-0.19	-14.28(.000)	-0.70	0.96

Item 52
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item:52 (n9NCq20)
Cases for this item 5710 Discrimination 0.32
Item Threshold(s): 0.19 Weighted MNSQ 1.21
Item Delta(s): 0.19

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.09	-0.04	-2.94(.003)	-1.75	2.13
9	0.00	39	0.68	-0.04	-2.78(.006)	-0.57	1.21
A	0.00	1023	17.92	-0.08	-5.86(.000)	-0.16	1.10
B	0.00	1704	29.84	-0.22	-17.23(.000)	-0.37	1.00
C	1.00	2658	46.55	0.32	25.51(.000)	0.46	1.28
D	0.00	281	4.92	-0.11	-8.43(.000)	-0.58	1.07

Item 53
---
item:53 (n9NCq21)
Cases for this item 5707 Discrimination 0.52
Item Threshold(s): 0.90 Weighted MNSQ 0.95
Item Delta(s): 0.90

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	14	0.25	-0.02	-1.65(.099)	-0.56	1.98
9	0.00	61	1.07	-0.04	-3.28(.001)	-0.51	1.12
A	0.00	550	9.64	-0.13	-9.75(.000)	-0.42	0.98
B	0.00	1327	23.25	-0.06	-4.87(.000)	-0.11	1.06
C	0.00	1838	32.21	-0.37	-30.31(.000)	-0.59	0.81
D	1.00	1917	33.59	0.52	45.71(.000)	0.90	1.24

Item 54
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item:54 (n9NCq22)
Cases for this item 5707 Discrimination 0.63
Item Threshold(s): 0.91 Weighted MNSQ 0.81
Item Delta(s): 0.91

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3553	62.26	-0.55	-49.34(.000)	-0.46	0.90
1	1.00	1902	33.33	0.63	61.71(.000)	1.09	1.11
9	0.00	252	4.42	-0.16	-12.34(.000)	-0.91	0.90

Item 55
---
item:55 (n9NCq23)
Cases for this item 5702 Discrimination 0.46
Item Threshold(s): 0.48 Weighted MNSQ 1.04
Item Delta(s): 0.48

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.09	-0.05	-3.41(.001)	-1.82	2.08
9	0.00	57	1.00	-0.05	-3.55(.000)	-0.59	0.90
A	0.00	715	12.54	-0.10	-7.66(.000)	-0.26	1.00
B	0.00	965	16.92	-0.31	-24.78(.000)	-0.76	0.88
C	0.00	1408	24.69	-0.10	-7.75(.000)	-0.18	0.98
D	1.00	2336	40.97	0.46	39.42(.000)	0.69	1.24
E	0.00	216	3.79	-0.14	-10.89(.000)	-0.79	1.02

Item 56
---
item:56 (n9NCq24)
Cases for this item 5702 Discrimination 0.63
Item Threshold(s): 1.13 Weighted MNSQ 0.80
Item Delta(s): 1.12

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3591	62.98	-0.50	-43.20(.000)	-0.41	0.91
1	1.00	1701	29.83	0.63	61.27(.000)	1.20	1.09
9	0.00	410	7.19	-0.19	-14.43(.000)	-0.79	0.92

Item 57
---
item:57 (n9NCq25)
Cases for this item 5698 Discrimination 0.50
Item Threshold(s): 0.82 Weighted MNSQ 1.00
Item Delta(s): 0.82

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	8	0.14	-0.05	-3.93(.000)	-1.71	1.67
9	0.00	124	2.18	-0.02	-1.81(.070)	-0.24	1.06
A	0.00	638	11.20	-0.03	-2.22(.027)	-0.07	1.26
B	0.00	724	12.71	-0.23	-17.43(.000)	-0.65	0.96
C	0.00	783	13.74	-0.23	-17.49(.000)	-0.60	0.89
D	0.00	1429	25.08	-0.16	-12.24(.000)	-0.28	0.94
E	1.00	1992	34.96	0.50	43.18(.000)	0.84	1.17

Item 58
---
item:58 (n9NCq26)
Cases for this item 5694 Discrimination 0.26
Item Threshold(s): 1.45 Weighted MNSQ 1.18
Item Delta(s): 1.45

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.11	-0.06	-4.16(.000)	-2.20	1.37
9	0.00	60	1.05	-0.05	-4.01(.000)	-0.65	1.00
A	0.00	2835	49.79	-0.05	-3.91(.000)	-0.03	0.98
B	0.00	697	12.24	-0.23	-17.94(.000)	-0.68	0.94
C	1.00	1412	24.80	0.26	20.54(.000)	0.61	1.53
D	0.00	684	12.01	-0.01	-1.04(.296)	-0.01	1.20

Item 59
---
item:59 (n9NCq27)
Cases for this item 5690 Discrimination 0.63
Item Threshold(s): 1.64 Weighted MNSQ 0.77
Item Delta(s): 1.64

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3477	61.11	-0.40	-32.90(.000)	-0.34	0.95
1	1.00	1263	22.20	0.63	61.12(.000)	1.47	1.03
9	0.00	950	16.70	-0.18	-13.71(.000)	-0.46	0.93

Item 60
---
item:60 (n9NCq28)
Cases for this item 5680 Discrimination 0.62
Item Threshold(s): 1.45 Weighted MNSQ 0.80
Item Delta(s): 1.46

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3796	66.83	-0.49	-42.42(.000)	-0.36	0.96
1	1.00	1408	24.79	0.62	60.30(.000)	1.34	1.05
9	0.00	476	8.38	-0.14	-10.66(.000)	-0.54	0.91

Item 61
---
item:61 (n9NCq29)
Cases for this item 5679 Discrimination 0.34
Item Threshold(s): 2.41 Weighted MNSQ 1.02
Item Delta(s): 2.41

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.11	-0.04	-2.77(.006)	-1.15	1.65
9	0.00	50	0.88	-0.04	-3.16(.002)	-0.50	1.02
A	0.00	416	7.33	-0.17	-13.19(.000)	-0.66	0.88
B	0.00	822	14.47	-0.33	-26.23(.000)	-0.88	0.88
C	0.00	3471	61.12	0.08	5.72(.000)	0.10	1.03
D	1.00	768	13.52	0.34	27.51(.000)	1.13	1.51
E	0.00	146	2.57	0.07	5.49(.000)	0.54	1.39

Item 62
---
item:62 (n9NCq30)
Cases for this item 5677 Discrimination 0.51
Item Threshold(s): 2.41 Weighted MNSQ 0.87
Item Delta(s): 2.41

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	4004	70.53	-0.28	-22.15(.000)	-0.17	1.07
1	1.00	766	13.49	0.51	44.43(.000)	1.61	1.10
9	0.00	907	15.98	-0.12	-9.32(.000)	-0.32	0.97

Item 63
---
item:63 (n9NCq31)
Cases for this item 5638 Discrimination 0.38
Item Threshold(s): 1.87 Weighted MNSQ 1.06
Item Delta(s): 1.87

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	4118	73.04	-0.27	-21.38(.000)	-0.16	1.08
1	1.00	1091	19.35	0.38	30.63(.000)	1.00	1.33
9	0.00	429	7.61	-0.10	-7.88(.000)	-0.42	1.11

Item 64
---
item:64 (n9NCq32)
Cases for this item 5628 Discrimination 0.18
Item Threshold(s): 3.10 Weighted MNSQ 1.10
Item Delta(s): 3.10

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	7	0.12	-0.04	-3.21(.001)	-1.57	1.78
9	0.00	31	0.55	-0.01	-1.02(.307)	-0.19	1.00
A	0.00	2259	40.14	0.27	21.37(.000)	0.42	1.10
B	0.00	604	10.73	-0.18	-13.49(.000)	-0.54	1.18
C	0.00	665	11.82	-0.24	-18.38(.000)	-0.71	1.02
D	1.00	460	8.17	0.18	13.62(.000)	0.84	1.78
E	0.00	1602	28.46	-0.11	-8.22(.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 1.70% of the data are missing.

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

N	5756
Mean	32.26
Standard Deviation	12.25
Variance	150.15
Skewness	0.31
Kurtosis	-0.50
Standard error of mean	0.16
Standard error of measurement	3.23
Coefficient Alpha	0.93

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Appendix B.17 Year 3, 5, 7, 9 Writing

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================================================================================
NAPLAN 2016, Calibration, All Grades, Writing
GENERALISED ITEM ANALYSIS
================================================================================
Item 1
------
item:1 (WQ01_Audience)
Cases for this item  22384   Discrimination  0.91
Item Threshold(s):   -10.10 -6.18 -1.25  2.55  5.27  8.27   Weighted MNSQ   0.74
Item Delta(s):    -10.08 -6.19 -1.24  2.60  5.25  8.23
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   0       0.00        71       0.32   -0.20   -30.23(.000) -8.31     1.72
   1       1.00       526       2.35   -0.37   -58.80(.000) -6.28     1.66
   2       2.00      5793      25.88   -0.56   _BIG_ (.000) -2.22     1.47
   3       3.00      9901      44.23   -0.01    -1.47(.142)  0.61     1.35
   4       4.00      4510      20.15    0.45    75.89(.000)  3.11     1.17
   5       5.00      1387       6.20    0.46    78.37(.000)  5.46     1.19
   6       6.00       196       0.88    0.25    38.74(.000)  7.79     1.13
================================================================================

Item 2
------
item:2 (WQ02_Text_Structure)
Cases for this item  22384   Discrimination  0.81
Item Threshold(s):    -7.23 -2.73  2.20  6.65   Weighted MNSQ   1.09
Item Delta(s):     -7.21 -2.74  2.20  6.64
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   0       0.00       334       1.49   -0.32   -50.32(.000) -6.48     2.84
   1       1.00      3206      14.32   -0.46   -78.33(.000) -2.80     2.02
   2       2.00     11880      53.07   -0.21   -32.53(.000)  0.04     1.79
   3       3.00      6218      27.78    0.53    92.58(.000)  2.95     1.62
   4       4.00       746       3.33    0.40    64.97(.000)  6.37     1.46
================================================================================

Item 3
------
item:3 (WQ03_Ideas)
Cases for this item  22384   Discrimination  0.87
Item Threshold(s):    -8.29 -4.54 -0.55  4.35  7.62   Weighted MNSQ   0.88
Item Delta(s):     -8.26 -4.55 -0.56  4.39  7.58
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   0       0.00       187       0.84   -0.31   -48.01(.000) -8.26     1.81
   1       1.00      1219       5.45   -0.38   -62.31(.000) -4.20     1.93
   2       2.00      6783      30.30   -0.48   -82.71(.000) -1.57     1.49
   3       3.00     11375      50.82    0.28    43.17(.000)  1.40     1.55
   4       4.00      2477      11.07    0.51    89.70(.000)  4.57     1.37
   5       5.00       343       1.53    0.31    47.96(.000)  7.18     1.30
================================================================================

Item 4
------
item:4 (WQ04_Character_and_Setting)
Cases for this item  22384   Discrimination  0.85
Item Threshold(s):    -7.17 -3.27  1.50  6.02   Weighted MNSQ   0.91
Item Delta(s):     -7.16 -3.28  1.50  6.00
--------------------------------------------------------------------------------
 Label    Score     Count   % of tot  Pt Bis     t  (p)   PV1Avg:1 PV1 SD:1
--------------------------------------------------------------------------------
   0       0.00       332       1.48   -0.32   -49.78(.000) -6.40     2.84
   1       1.00      2428      10.85   -0.47   -79.71(.000) -3.45     1.71
   2       2.00     10900      48.70   -0.33   -51.53(.000) -0.36     1.59
   3       3.00      7604      33.97    0.52    91.34(.000)  2.64     1.55
   4       4.00      1120       5.00    0.46    77.58(.000)  5.99     1.52
================================================================================
```

Item 5
------
item:5 (WQ05_Vocabulary)
Cases for this item 22384 Discrimination 0.86
Item Threshold(s): -8.33 -5.91 0.70 4.23 7.54 Weighted MNSQ 0.90
Item Delta(s): -8.24 -6.00 0.72 4.23 7.50

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	168	0.75	-0.30	-46.37(.000)	-8.44	1.63
1	1.00	540	2.41	-0.32	-50.31(.000)	-5.41	1.48
2	2.00	10724	47.91	-0.56	_BIG_ (.000)	-1.11	1.75
3	3.00	8047	35.95	0.32	50.14(.000)	1.82	1.48
4	4.00	2539	11.34	0.51	89.30(.000)	4.49	1.40
5	5.00	366	1.64	0.31	49.05(.000)	7.15	1.29

Item 6
------
item:6 (WQ06_Cohesion)
Cases for this item 22384 Discrimination 0.83
Item Threshold(s): -8.39 -4.44 2.15 6.92 Weighted MNSQ 0.91
Item Delta(s): -8.38 -4.46 2.15 6.92

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	179	0.80	-0.30	-47.57(.000)	-8.36	1.62
1	1.00	1393	6.22	-0.42	-69.30(.000)	-4.29	1.70
2	2.00	13687	61.15	-0.40	-64.37(.000)	-0.31	1.81
3	3.00	6494	29.01	0.57	103.75(.000)	3.08	1.60
4	4.00	631	2.82	0.38	61.08(.000)	6.58	1.44

Item 7
------
item:7 (WQ07_Paragraphing)
Cases for this item 22384 Discrimination 0.61
Item Threshold(s): -0.91 4.44 Weighted MNSQ 1.61
Item Delta(s): -0.91 4.43

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	7261	32.44	-0.51	-87.66(.000)	-1.55	2.70
1	1.00	12395	55.37	0.18	26.83(.000)	1.04	2.13
2	2.00	2728	12.19	0.46	76.49(.000)	3.94	2.16

Item 8
------
item:8 (WQ08_Sentance_Structure)
Cases for this item 22384 Discrimination 0.88
Item Threshold(s): -7.94 -4.70 -0.43 2.58 5.96 9.02 Weighted MNSQ 0.93
Item Delta(s): -7.90 -4.72 -0.39 2.56 5.97 8.98

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	215	0.96	-0.32	-49.98(.000)	-8.05	1.77
1	1.00	1091	4.87	-0.39	-62.56(.000)	-4.49	1.53
2	2.00	7053	31.51	-0.48	-80.79(.000)	-1.46	1.54
3	3.00	8095	36.16	0.07	9.89(.000)	0.88	1.42
4	4.00	4845	21.64	0.50	86.78(.000)	3.25	1.40
5	5.00	982	4.39	0.41	67.43(.000)	5.76	1.45
6	6.00	103	0.46	0.18	27.53(.000)	7.82	1.33

Item 9
------
item:9 (WQ09_Punctuation)
Cases for this item 22384 Discrimination 0.79
Item Threshold(s): -7.20 -3.05 0.93 5.07 8.73 Weighted MNSQ 1.27
Item Delta(s): -7.18 -3.05 0.93 5.08 8.71

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	333	1.49	-0.33	-52.58(.000)	-6.88	2.30
1	1.00	2669	11.92	-0.46	-77.07(.000)	-3.11	1.79
2	2.00	9173	40.98	-0.27	-42.34(.000)	-0.33	1.80
3	3.00	8303	37.09	0.41	66.30(.000)	2.08	1.86
4	4.00	1761	7.87	0.42	68.34(.000)	4.46	1.82
5	5.00	145	0.65	0.19	28.26(.000)	6.77	1.95

Item 10
----
item:10 (WQ10_Spelling)
Cases for this item 22384 Discrimination 0.85
Item Threshold(s): -8.54 -5.70 -2.38 0.84 4.04 8.27 Weighted MNSQ 1.14
Item Delta(s): -8.48 -5.73 -2.37 0.84 4.01 8.25

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	156	0.70	-0.29	-44.63(.000)	-8.45	1.65
1	1.00	555	2.48	-0.32	-50.94(.000)	-5.37	1.52
2	2.00	3303	14.76	-0.45	-74.84(.000)	-2.62	1.51
3	3.00	7896	35.28	-0.22	-33.88(.000)	-0.25	1.58
4	4.00	7326	32.73	0.31	48.01(.000)	1.85	1.65
5	5.00	2921	13.05	0.51	89.32(.000)	4.20	1.77
6	6.00	227	1.01	0.22	33.78(.000)	6.48	1.77

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	22384
Mean	24.55
Standard Deviation	6.96
Variance	48.45
Skewness	-0.04
Kurtosis	0.65
Standard error of mean	0.05
Standard error of measurement	1.60
Coefficient Alpha	0.95

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	-2.099	0.029	0.44	90.32	0.88	0.93	1.07	-3.6	1.10
r3q02	-1.968	0.028	0.46	89.29	0.89	0.94	1.06	-3.6	1.11
r3q03	-2.286	0.029	0.50	91.64	0.80	0.93	1.07	-5.7	1.18
r3q04	-1.859	0.028	0.50	88.38	0.84	0.94	1.06	-5.5	1.15
r3q05	-0.981	0.026	0.52	78.77	0.91	0.96	1.04	-4.6	1.11
r3q06	-0.179	0.024	0.46	66.58	1.07	0.97	1.03	4.4	0.87
r3q07	-0.899	0.026	0.49	77.71	0.97	0.96	1.04	-1.7	1.04
r3q08	-1.527	0.027	0.55	85.28	0.83	0.95	1.05	-6.8	1.20
r3q09	-1.689	0.028	0.54	86.89	0.83	0.95	1.05	-6.5	1.19
r3q10	-0.233	0.024	0.49	67.62	1.02	0.97	1.03	1.2	0.98
r3q11	0.068	0.024	0.42	62.42	1.12	0.97	1.03	8.0	0.74
r3q12	-1.274	0.026	0.57	82.57	0.84	0.95	1.05	-7.4	1.22
r3q13	0.002	0.024	0.45	63.63	1.08	0.97	1.03	5.2	0.83
r3q14	-0.996	0.026	0.51	79.16	0.94	0.96	1.04	-3.2	1.11
r3q15	0.943	0.024	0.43	46.31	1.09	0.97	1.03	6.7	0.76
r3q16	0.202	0.024	0.55	60.10	0.95	0.97	1.03	-3.3	1.11
r3q17	-1.353	0.027	0.55	83.55	0.86	0.95	1.05	-6.0	1.19
r3q18	0.602	0.024	0.43	52.78	1.10	0.97	1.03	7.4	0.74
r3q19	0.908	0.024	0.40	47.05	1.14	0.97	1.03	10.1	0.63
r3q20	-0.162	0.024	0.55	66.65	0.95	0.97	1.03	-3.1	1.11
r3q21	0.404	0.024	0.61	56.57	0.88	0.97	1.03	-9.2	1.29
r3q22	-0.417	0.025	0.62	70.91	0.85	0.97	1.03	-9.5	1.29
r3q23	1.489	0.024	0.43	36.53	1.05	0.97	1.03	3.1	0.86
r3q24	-0.124	0.024	0.46	66.09	1.07	0.97	1.03	4.3	0.86
r3q25	1.888	0.025	0.39	29.76	1.06	0.97	1.03	4.0	0.83
r3q26	1.192	0.024	0.49	42.01	1.01	0.97	1.03	0.4	0.96
r3q27	0.581	0.024	0.50	53.52	1.02	0.97	1.03	1.5	0.95
r3q28	-0.384	0.025	0.35	70.57	1.19	0.97	1.03	10.7	0.66
r3q29	-0.779	0.026	0.56	76.59	0.89	0.96	1.04	-5.8	1.16
r3q30	0.270	0.024	0.49	59.39	1.04	0.97	1.03	2.8	0.92
r3q31	1.948	0.025	0.35	29.06	1.10	0.97	1.03	5.9	0.74
r3q32	-0.257	0.025	0.51	68.65	1.00	0.97	1.03	-0.2	1.03
r3q33	2.465	0.026	0.26	21.43	1.14	0.96	1.04	6.6	0.70
r3q34	0.090	0.024	0.54	62.76	0.97	0.97	1.03	-1.7	1.06
r3q35	1.003	0.024	0.58	45.92	0.90	0.97	1.03	-7.8	1.24
r3q36	0.506	0.024	0.57	55.26	0.93	0.97	1.03	-5.3	1.18
r3q37	3.091	0.028	0.33	14.17	1.02	0.95	1.05	0.7	0.96
r3q38	1.812	0.154	0.28	31.79	1.22	0.97	1.03	12.9	0.47

C.2 Year 5 Reading Item Calibration Results

Item_Label	Delta_Centered	Error	Discrimination	Facility	MnSQ	CI_L	CI_H	T	Slope
r5q01	-0.958	0.025	0.45	80.82	0.93	0.96	1.04	-3.1	1.08
r5q02	-2.225	0.029	0.39	92.89	0.91	0.91	1.09	-2.1	1.08
r5q03	-1.021	0.026	0.44	81.66	0.94	0.96	1.04	-2.6	1.06
r5q04	-0.938	0.025	0.43	80.56	0.96	0.96	1.04	-1.9	1.06
r5q05	-2.604	0.030	0.43	94.89	0.87	0.89	1.11	-2.5	1.13
r5q06	-0.910	0.025	0.42	80.18	0.97	0.96	1.04	-1.5	1.03
r5q07	-2.099	0.029	0.43	92.08	0.89	0.92	1.08	-2.7	1.11
r5q08	-0.227	0.024	0.51	69.36	0.92	0.97	1.03	-5.2	1.17
r5q09	-1.046	0.026	0.51	81.99	0.88	0.95	1.05	-5.3	1.16
r5q10	-2.567	0.030	0.41	94.74	0.89	0.90	1.10	-2.1	1.11
r5q11	-0.490	0.024	0.51	73.90	0.92	0.97	1.03	-4.7	1.16
r5q12	0.118	0.023	0.49	62.93	0.95	0.97	1.03	-3.7	1.14
r5q13	-0.193	0.024	0.49	68.80	0.95	0.97	1.03	-3.4	1.12
r5q14	-1.499	0.027	0.31	87.18	1.02	0.94	1.06	0.6	0.96
r5q15	-2.012	0.028	0.41	91.53	0.90	0.92	1.08	-2.6	1.09
r5q16	-0.666	0.025	0.41	76.72	0.99	0.96	1.04	-0.6	1.01
r5q17	0.645	0.023	0.53	52.29	0.91	0.98	1.02	-7.8	1.32
r5q18	-1.533	0.027	0.44	87.56	0.91	0.94	1.06	-2.9	1.10
r5q19	-0.608	0.025	0.30	75.86	1.09	0.96	1.04	4.7	0.83
r5q20	-0.202	0.024	0.45	69.03	0.98	0.97	1.03	-1.4	1.06
r5q21	1.592	0.023	0.41	33.20	0.98	0.97	1.03	-1.8	1.04
r5q22	2.028	0.024	0.20	25.49	1.14	0.97	1.03	8.0	0.66
r5q23	0.364	0.023	0.50	58.13	0.94	0.98	1.02	-4.8	1.20
r5q24	-0.147	0.024	0.26	68.04	1.14	0.97	1.03	9.3	0.62
r5q25	0.661	0.023	0.49	52.04	0.95	0.98	1.02	-4.9	1.20
r5q26	0.268	0.023	0.45	60.09	0.99	0.98	1.02	-0.9	1.04
r5q27	1.880	0.024	0.25	28.05	1.10	0.97	1.03	6.1	0.74
r5q28	0.530	0.023	0.44	54.84	1.00	0.98	1.02	0.0	1.02
r5q29	1.629	0.023	0.23	32.59	1.14	0.97	1.03	9.6	0.58
r5q30	1.668	0.024	0.42	31.88	0.96	0.97	1.03	-2.9	1.08
r5q31	0.999	0.023	0.37	45.14	1.06	0.98	1.02	4.9	0.81
r5q32	0.326	0.023	0.53	59.06	0.92	0.98	1.02	-6.7	1.28
r5q33	0.829	0.023	0.21	48.69	1.22	0.98	1.02	18.0	0.21
r5q34	0.938	0.023	0.41	46.50	1.01	0.98	1.02	1.2	0.95
r5q35	0.572	0.023	0.35	54.16	1.08	0.98	1.02	6.8	0.74
r5q36	1.183	0.023	0.35	41.51	1.05	0.98	1.02	4.3	0.81
r5q37	3.993	0.030	0.15	5.52	1.03	0.90	1.10	0.5	0.97
r5q38	1.724	0.152	0.28	31.06	1.09	0.97	1.03	6.4	0.73

C.3 Year 7 Reading Item Calibration Results

Item_Label	Delta_Centered	Error	Discrimination	Facility	MnSQ	CI_L	CI_H	T	Slope
r7q01	-2.914	0.026	0.23	94.61	0.97	0.91	1.09	-0.5	1.02
r7q02	-2.059	0.024	0.37	88.69	0.92	0.94	1.06	-3.0	1.09
r7q03	-1.042	0.021	0.39	75.76	0.97	0.97	1.03	-1.8	1.06
r7q04	-1.593	0.023	0.38	83.66	0.94	0.96	1.04	-3.0	1.08
r7q05	-2.446	0.025	0.32	91.85	0.95	0.93	1.07	-1.5	1.06
r7q06	-1.318	0.022	0.36	80.00	0.97	0.96	1.04	-1.4	1.04
r7q07	0.212	0.020	0.49	51.34	0.93	0.98	1.02	-7.8	1.27
r7q08	1.220	0.021	0.28	30.78	1.07	0.97	1.03	5.5	0.79
r7q09	-0.879	0.021	0.45	73.06	0.94	0.97	1.03	-4.6	1.15
r7q10	-0.753	0.021	0.15	70.83	1.16	0.97	1.03	11.7	0.56
r7q11	-0.719	0.021	0.46	70.21	0.93	0.97	1.03	-5.8	1.17
r7q12	-2.145	0.024	0.41	89.52	0.89	0.94	1.06	-3.7	1.12
r7q13	0.661	0.020	0.40	41.85	1.00	0.98	1.02	0.1	0.97
r7q14	-0.753	0.021	0.46	70.89	0.92	0.97	1.03	-5.8	1.18
r7q15	0.531	0.020	0.48	44.61	0.93	0.98	1.02	-7.2	1.24
r7q16	-0.253	0.020	0.36	61.22	1.03	0.98	1.02	3.3	0.91
r7q17	-0.339	0.020	0.42	62.98	0.97	0.98	1.02	-2.6	1.08
r7q18	-0.701	0.021	0.40	69.98	0.97	0.97	1.03	-2.4	1.07
r7q19	0.820	0.020	0.32	38.63	1.06	0.98	1.02	5.8	0.78
r7q20	-0.645	0.021	0.46	68.96	0.93	0.98	1.02	-5.5	1.18
r7q21	0.690	0.020	0.31	41.32	1.07	0.98	1.02	6.9	0.74
r7q22	0.109	0.020	0.55	53.67	0.88	0.98	1.02	-13.5	1.48
r7q23	-0.002	0.020	0.39	56.04	1.01	0.98	1.02	0.7	0.97
r7q24	-1.081	0.022	0.54	76.56	0.85	0.97	1.03	-9.8	1.29
r7q25	-0.306	0.020	0.33	62.37	1.05	0.98	1.02	4.5	0.84
r7q26	-0.219	0.020	0.40	60.62	1.00	0.98	1.02	-0.2	1.01
r7q27	-0.486	0.021	0.41	65.98	0.98	0.98	1.02	-1.8	1.07
r7q28	1.248	0.021	0.45	30.39	0.93	0.97	1.03	-5.4	1.13
r7q29	0.529	0.020	0.42	44.77	0.99	0.98	1.02	-1.4	1.05
r7q30	0.152	0.020	0.41	52.82	1.00	0.98	1.02	-0.4	1.02
r7q31	0.676	0.020	0.37	41.68	1.02	0.98	1.02	2.4	0.90
r7q32	-0.714	0.021	0.40	70.32	0.97	0.97	1.03	-2.1	1.07
r7q33	0.460	0.020	0.38	46.26	1.02	0.98	1.02	1.8	0.94
r7q34	0.028	0.020	0.43	55.50	0.98	0.98	1.02	-2.6	1.09
r7q35	0.680	0.020	0.27	41.64	1.11	0.98	1.02	10.2	0.60
r7q36	0.747	0.020	0.30	40.24	1.08	0.98	1.02	7.5	0.71
r7q37	0.505	0.020	0.41	45.31	0.99	0.98	1.02	-1.0	1.03
r7q38	0.891	0.020	0.31	37.32	1.06	0.98	1.02	5.2	0.80
r7q39	0.696	0.020	0.34	41.32	1.05	0.98	1.02	4.6	0.83
r7q40	0.477	0.020	0.43	45.96	0.98	0.98	1.02	-2.4	1.08
r7q41	1.632	0.022	0.29	23.86	1.03	0.97	1.03	2.0	0.90
r7q42	2.387	0.023	0.14	13.78	1.08	0.95	1.05	3.3	0.85
r7q43	0.406	0.020	0.45	47.50	0.96	0.98	1.02	-4.8	1.17
r7q44	1.553	0.021	0.12	25.16	1.17	0.97	1.03	10.2	0.62
r7q45	1.152	0.021	0.21	32.28	1.12	0.98	1.02	9.5	0.65
r7q46	-0.217	0.020	0.52	60.73	0.90	0.98	1.02	-10.0	1.38
r7q47	0.536	0.020	0.25	44.76	1.13	0.98	1.02	12.6	0.50
r7q48	0.924	0.021	0.53	36.75	0.88	0.98	1.02	-11.5	1.33
r7q49	0.504	0.020	0.40	45.45	1.00	0.98	1.02	-0.1	1.00
r7q50	1.159	0.147	0.39	32.25	0.98	0.98	1.02	-1.4	1.01

C.4 Year 9 Reading Item Calibration Results

Item_Label	Delta_Centered	Error	Discrimination	Facility	MnSQ	CI_L	CI_H	T	Slope
r9q01	-2.857	0.029	0.30	94.90	0.94	0.90	1.10	-1.2	1.04
r9q02	-2.691	0.028	0.29	94.09	0.95	0.91	1.09	-1.0	1.04
r9q03	-2.780	0.028	0.38	94.54	0.88	0.90	1.10	-2.6	1.11
r9q04	-1.425	0.025	0.44	83.44	0.90	0.96	1.04	-4.5	1.12
r9q05	-1.458	0.025	0.47	83.83	0.88	0.95	1.05	-5.4	1.15
r9q06	0.135	0.022	0.40	57.06	1.03	0.98	1.02	2.6	0.90
r9q07	-1.754	0.025	0.47	87.11	0.87	0.95	1.05	-5.1	1.15
r9q08	-1.798	0.026	0.46	87.55	0.86	0.95	1.05	-5.1	1.15
r9q09	1.261	0.022	0.32	34.20	1.08	0.98	1.02	6.2	0.77
r9q10	-2.023	0.026	0.45	89.63	0.85	0.94	1.06	-4.9	1.15
r9q11	0.309	0.022	0.38	53.52	1.05	0.98	1.02	4.9	0.83
r9q12	-1.559	0.025	0.42	85.05	0.91	0.95	1.05	-3.8	1.09
r9q13	-0.375	0.022	0.44	67.14	0.97	0.97	1.03	-2.1	1.06
r9q14	-1.141	0.024	0.47	79.79	0.91	0.96	1.04	-4.9	1.15
r9q15	-0.609	0.023	0.38	71.41	1.02	0.97	1.03	1.2	0.96
r9q16	-1.291	0.024	0.48	81.86	0.88	0.96	1.04	-5.7	1.17
r9q17	-1.277	0.024	0.35	81.68	0.99	0.96	1.04	-0.5	0.99
r9q18	-0.219	0.022	0.30	64.27	1.11	0.98	1.02	8.6	0.69
r9q19	0.044	0.022	0.41	59.07	1.01	0.98	1.02	0.8	0.96
r9q20	-0.035	0.022	0.41	60.66	1.01	0.98	1.02	1.2	0.97
r9q21	0.204	0.022	0.40	55.81	1.03	0.98	1.02	2.6	0.92
r9q22	0.312	0.022	0.27	53.60	1.15	0.98	1.02	13.6	0.45
r9q23	1.740	0.023	0.24	25.81	1.11	0.97	1.03	6.7	0.74
r9q24	1.709	0.023	0.48	26.31	0.92	0.97	1.03	-5.2	1.16
r9q25	0.023	0.022	0.36	59.56	1.06	0.98	1.02	5.2	0.81
r9q26	-0.660	0.023	0.43	72.49	0.97	0.97	1.03	-2.2	1.07
r9q27	-0.655	0.023	0.44	72.43	0.96	0.97	1.03	-2.5	1.09
r9q28	0.823	0.022	0.53	43.09	0.90	0.98	1.02	-10.1	1.32
r9q29	0.070	0.022	0.44	58.71	0.98	0.98	1.02	-1.7	1.06
r9q30	-0.279	0.022	0.44	65.61	0.97	0.98	1.02	-2.5	1.08
r9q31	2.020	0.024	0.27	21.52	1.07	0.96	1.04	3.7	0.86
r9q32	0.177	0.022	0.44	56.54	0.99	0.98	1.02	-0.9	1.05
r9q33	-0.271	0.022	0.51	65.49	0.91	0.98	1.02	-7.2	1.25
r9q34	1.122	0.022	0.44	37.12	0.96	0.98	1.02	-3.1	1.08
r9q35	1.739	0.023	0.35	25.91	1.01	0.97	1.03	0.8	0.94
r9q36	0.039	0.022	0.48	59.38	0.94	0.98	1.02	-5.0	1.16
r9q37	1.303	0.022	0.32	33.65	1.06	0.98	1.02	4.8	0.80
r9q38	0.678	0.022	0.34	46.15	1.07	0.98	1.02	6.9	0.74
r9q39	0.427	0.022	0.44	51.42	0.99	0.98	1.02	-0.8	1.05
r9q40	1.026	0.022	0.35	39.08	1.05	0.98	1.02	4.3	0.82
r9q41	0.618	0.022	0.42	47.45	1.01	0.98	1.02	1.2	0.98
r9q42	0.708	0.022	0.45	45.61	0.98	0.98	1.02	-1.8	1.07
r9q43	0.975	0.022	0.43	40.13	0.99	0.98	1.02	-1.3	1.03
r9q44	1.246	0.022	0.30	34.81	1.08	0.98	1.02	6.4	0.75
r9q45	1.239	0.022	0.27	34.98	1.12	0.98	1.02	9.0	0.65
r9q46	0.301	0.022	0.47	54.16	0.96	0.98	1.02	-4.3	1.15
r9q47	1.593	0.023	0.27	28.49	1.10	0.97	1.03	6.5	0.76
r9q48	0.794	0.022	0.53	43.88	0.89	0.98	1.02	-10.2	1.34
r9q49	0.876	0.022	0.40	42.21	1.01	0.98	1.02	0.8	0.94
r9q50	1.645	0.161	0.22	27.68	1.12	0.97	1.03	7.4	0.69

C.5 Year 3 Spelling Item Calibration Results

Item_Label	Delta_Centered	Error	Discrimination	Facility	MnSQ	CI_L	CI_H	T	Slope
lc3q01	-4.109	0.043	0.42	91.26	0.97	0.93	1.07	-0.7	0.94
lc3q02	-3.191	0.038	0.46	84.84	1.04	0.94	1.06	1.4	0.88
lc3q03	-3.141	0.038	0.40	84.43	1.23	0.95	1.05	7.6	0.63
lc3q04	-2.264	0.034	0.63	75.51	0.82	0.96	1.04	-8.7	1.24
lc3q05	-1.424	0.032	0.62	64.67	0.98	0.96	1.04	-0.9	1.04
lc3q06	-1.735	0.032	0.63	68.97	0.91	0.96	1.04	-4.5	1.14
lc3q07	-1.876	0.033	0.60	70.83	0.96	0.96	1.04	-1.9	1.04
lc3q08	-1.399	0.032	0.64	64.41	0.93	0.96	1.04	-3.9	1.12
lc3q09	-1.151	0.031	0.57	60.90	1.11	0.97	1.03	6.1	0.81
lc3q10	0.618	0.032	0.67	34.33	0.87	0.96	1.04	-7.5	1.24
lc3q11	0.117	0.031	0.64	41.72	0.98	0.97	1.03	-1.2	1.07
lc3q12	0.370	0.031	0.62	38.07	1.00	0.97	1.03	0.3	1.03
lc3q13	2.101	0.037	0.51	16.72	1.01	0.95	1.05	0.3	0.99
lc3q14	3.004	0.042	0.39	9.62	1.07	0.93	1.07	1.9	0.90
lc3q15	-0.862	0.031	0.54	57.25	1.18	0.97	1.03	9.8	0.68
lc3q16	-0.306	0.031	0.59	49.07	1.08	0.97	1.03	4.6	0.88
lc3q17	0.831	0.032	0.60	32.17	1.01	0.96	1.04	0.4	1.01
lc3q18	0.920	0.033	0.63	31.10	0.93	0.96	1.04	-4.0	1.14
lc3q19	1.305	0.034	0.64	26.17	0.86	0.96	1.04	-7.3	1.22
lc3q20	-0.139	0.031	0.58	47.13	1.11	0.97	1.03	6.2	0.81
lc3q21	1.660	0.035	0.62	22.06	0.86	0.96	1.04	-6.5	1.20
lc3q22	1.245	0.034	0.57	27.47	1.02	0.96	1.04	1.2	0.98
lc3q23	2.549	0.039	0.45	13.74	1.02	0.94	1.06	0.7	0.93
lc3q24	3.418	0.045	0.43	7.89	0.95	0.92	1.08	-1.3	1.06
lc3q25	3.459	0.171	0.40	7.76	0.97	0.92	1.08	-0.8	1.02

C.6 Year 5 Spelling Item Calibration Results

Item_Label	Delta_Centered	Error	Discrimination	Facility	MnSQ	CI_L	CI_H	T	Slope
lc5q01	-3.538	0.039	0.46	89.42	0.92	0.93	1.07	-2.2	0.98
lc5q02	-3.023	0.036	0.48	85.70	0.98	0.94	1.06	-0.7	0.95
lc5q03	-3.081	0.037	0.47	86.21	1.00	0.94	1.06	0.1	0.93
lc5q04	-2.764	0.035	0.48	83.57	1.06	0.94	1.06	2.0	0.86
lc5q05	-1.124	0.031	0.66	64.34	0.90	0.96	1.04	-5.4	1.18
lc5q06	-1.226	0.031	0.58	65.80	1.05	0.96	1.04	2.3	0.92
lc5q07	-0.669	0.030	0.58	57.69	1.12	0.97	1.03	6.3	0.82
lc5q08	0.062	0.030	0.65	46.44	0.97	0.97	1.03	-2.0	1.11
lc5q09	0.132	0.030	0.67	45.38	0.92	0.97	1.03	-4.5	1.17
lc5q10	0.213	0.030	0.65	44.17	0.97	0.97	1.03	-1.8	1.10
lc5q11	0.838	0.031	0.54	34.85	1.13	0.96	1.04	6.8	0.75
lc5q12	1.323	0.032	0.57	28.26	1.03	0.96	1.04	1.3	0.96
lc5q13	1.806	0.033	0.58	22.34	0.95	0.96	1.04	-2.3	1.07
lc5q14	-1.736	0.032	0.55	72.92	1.05	0.96	1.04	2.5	0.91
lc5q15	-0.262	0.030	0.61	51.94	1.06	0.97	1.03	3.2	0.93
lc5q16	-0.523	0.030	0.67	56.11	0.91	0.97	1.03	-5.3	1.20
lc5q17	0.061	0.030	0.65	47.13	0.96	0.97	1.03	-2.6	1.12
lc5q18	-0.594	0.030	0.59	57.47	1.07	0.97	1.03	3.7	0.90
lc5q19	1.038	0.031	0.60	32.69	0.99	0.96	1.04	-0.3	1.01
lc5q20	0.861	0.031	0.66	35.39	0.90	0.96	1.04	-5.6	1.20
lc5q21	1.953	0.034	0.59	21.30	0.88	0.95	1.05	-5.2	1.15
lc5q22	2.057	0.034	0.51	20.31	1.04	0.95	1.05	1.6	0.93
lc5q23	2.377	0.035	0.43	17.12	1.12	0.95	1.05	4.2	0.80
lc5q24	2.840	0.037	0.49	13.09	0.94	0.94	1.06	-1.9	1.04
lc5q25	2.979	0.159	0.49	12.15	0.90	0.94	1.06	-3.1	1.08

C.7 Year 7 Spelling Item Calibration Results

Item_Label	Delta_Centered	Error	Discrimination	Facility	MnSQ	CI_L	CI_H	T	Slope
lc7q01	-3.934	0.041	0.39	89.93	1.02	0.94	1.06	0.6	0.88
lc7q02	-4.057	0.042	0.36	90.69	1.09	0.94	1.06	2.7	0.81
lc7q03	-3.170	0.036	0.53	84.09	0.87	0.95	1.05	-5.5	1.12
lc7q04	-1.776	0.031	0.59	68.09	1.01	0.97	1.03	0.4	1.00
lc7q05	-1.029	0.029	0.60	57.16	1.05	0.97	1.03	3.3	0.94
lc7q06	-0.752	0.029	0.57	52.90	1.12	0.97	1.03	7.4	0.79
lc7q07	-0.601	0.029	0.66	50.58	0.94	0.97	1.03	-4.3	1.16
lc7q08	-1.018	0.029	0.55	57.08	1.16	0.97	1.03	9.9	0.74
lc7q09	-0.286	0.029	0.61	45.72	1.04	0.97	1.03	2.6	0.96
lc7q10	0.552	0.030	0.64	33.17	0.93	0.97	1.03	-4.3	1.13
lc7q11	0.818	0.031	0.57	29.52	1.05	0.97	1.03	3.0	0.93
lc7q12	1.098	0.032	0.66	25.92	0.82	0.96	1.04	-10.4	1.26
lc7q13	2.699	0.040	0.47	10.52	0.95	0.94	1.06	-1.8	1.04
lc7q14	-2.253	0.032	0.53	74.63	1.03	0.96	1.04	1.7	0.93
lc7q15	-2.117	0.032	0.60	73.11	0.91	0.96	1.04	-5.2	1.13
lc7q16	-1.121	0.030	0.61	59.09	1.00	0.97	1.03	0.1	1.03
lc7q17	-1.507	0.030	0.60	64.91	1.00	0.97	1.03	-0.3	1.03
lc7q18	-0.972	0.029	0.60	56.90	1.04	0.97	1.03	2.7	0.96
lc7q19	-0.724	0.029	0.66	53.14	0.92	0.97	1.03	-5.1	1.19
lc7q20	-0.547	0.029	0.64	50.49	0.97	0.97	1.03	-1.9	1.09
lc7q21	0.146	0.030	0.57	39.73	1.10	0.97	1.03	6.4	0.83
lc7q22	1.282	0.033	0.61	24.16	0.91	0.96	1.04	-4.6	1.12
lc7q23	0.936	0.032	0.58	28.63	1.01	0.96	1.04	0.8	1.00
lc7q24	1.685	0.034	0.57	19.74	0.94	0.96	1.04	-2.8	1.08
lc7q25	1.498	0.034	0.59	21.93	0.92	0.96	1.04	-4.2	1.12
lc7q26	1.863	0.035	0.47	18.09	1.10	0.95	1.05	4.1	0.86
lc7q27	2.949	0.042	0.35	9.34	1.10	0.93	1.07	2.9	0.83
lc7q28	2.769	0.041	0.47	10.58	0.93	0.94	1.06	-2.3	1.06
lc7q29	3.572	0.047	0.37	6.16	0.99	0.92	1.08	-0.3	1.01
lc7q30	3.998	0.182	0.32	4.59	1.04	0.90	1.10	0.7	0.97

C.8 Year 9 Spelling Item Calibration Results

Item_Label	Delta_Centered	Error	Discrimination	Facility	MnSQ	CI_L	CI_H	T	Slope
lc9q01	-4.331	0.043	0.35	93.18	1.06	0.92	1.08	1.4	0.79
lc9q02	-3.029	0.036	0.41	84.72	1.15	0.95	1.05	5.3	0.74
lc9q03	-3.366	0.038	0.48	87.51	0.91	0.94	1.06	-3.1	1.03
lc9q04	-2.478	0.034	0.52	79.57	1.00	0.95	1.05	0.2	0.96
lc9q05	-1.303	0.030	0.65	64.67	0.90	0.97	1.03	-6.2	1.19
lc9q06	-1.418	0.030	0.61	66.36	0.96	0.97	1.03	-2.3	1.08
lc9q07	-0.717	0.029	0.53	55.89	1.17	0.97	1.03	10.0	0.69
lc9q08	-0.223	0.029	0.59	48.08	1.05	0.97	1.03	3.4	0.93
lc9q09	-0.135	0.029	0.58	46.72	1.07	0.97	1.03	4.2	0.90
lc9q10	0.044	0.029	0.53	43.89	1.16	0.97	1.03	10.0	0.71
lc9q11	0.207	0.029	0.55	41.37	1.13	0.97	1.03	7.7	0.81
lc9q12	-0.087	0.029	0.62	46.07	0.98	0.97	1.03	-1.0	1.07
lc9q13	1.086	0.031	0.57	28.47	0.98	0.96	1.04	-0.9	1.03
lc9q14	1.172	0.031	0.61	27.33	0.91	0.96	1.04	-5.2	1.15
lc9q15	1.372	0.032	0.55	24.75	1.00	0.96	1.04	0.1	1.01
lc9q16	-3.069	0.037	0.53	85.72	0.84	0.94	1.06	-6.0	1.13
lc9q17	-1.687	0.031	0.56	70.87	1.02	0.96	1.04	1.1	0.96
lc9q18	-1.327	0.030	0.63	66.02	0.92	0.97	1.03	-5.0	1.16
lc9q19	-1.083	0.030	0.62	62.55	0.97	0.97	1.03	-1.8	1.09
lc9q20	-0.705	0.029	0.62	56.76	0.97	0.97	1.03	-1.9	1.09
lc9q21	0.173	0.029	0.58	42.77	1.04	0.97	1.03	2.6	0.95
lc9q22	0.549	0.030	0.63	37.02	0.93	0.97	1.03	-4.3	1.16
lc9q23	0.639	0.030	0.63	35.93	0.93	0.97	1.03	-4.4	1.17
lc9q24	2.020	0.034	0.55	18.06	0.88	0.95	1.05	-5.1	1.14
lc9q25	2.083	0.035	0.48	17.54	1.01	0.95	1.05	0.4	0.97
lc9q26	2.646	0.038	0.49	12.51	0.90	0.94	1.06	-3.4	1.10
lc9q27	2.831	0.039	0.40	11.21	1.05	0.94	1.06	1.6	0.93
lc9q28	2.965	0.040	0.43	10.34	0.97	0.93	1.07	-0.8	1.01
lc9q29	3.702	0.044	0.40	6.20	0.90	0.91	1.09	-2.4	1.10
lc9q30	3.470	0.178	0.35	7.51	1.03	0.92	1.08	0.7	0.95

C.9 Year 3 G&P Item Calibration Results

Item_Label	Delta_Centered	Error	Discrimination	Facility	MnSQ	CI_L	CI_H	T	Slope
lc3q26	-2.711	0.030	0.35	93.66	0.91	0.91	1.09	-2.0	1.08
lc3q27	-2.668	0.030	0.35	93.42	0.92	0.91	1.09	-1.9	1.08
lc3q28	-1.399	0.026	0.42	81.84	0.96	0.96	1.04	-2.0	1.07
lc3q29	-1.352	0.025	0.43	81.27	0.94	0.96	1.04	-3.0	1.09
lc3q30	-0.630	0.024	0.53	70.00	0.91	0.97	1.03	-6.6	1.24
lc3q31	-0.358	0.023	0.48	65.00	0.96	0.97	1.03	-2.9	1.14
lc3q32	-0.626	0.024	0.47	69.96	0.97	0.97	1.03	-2.4	1.11
lc3q33	-0.540	0.024	0.51	68.45	0.93	0.97	1.03	-5.3	1.21
lc3q34	-0.789	0.024	0.48	72.81	0.94	0.97	1.03	-3.6	1.14
lc3q35	-0.069	0.023	0.35	59.47	1.11	0.98	1.02	8.6	0.68
lc3q36	0.002	0.023	0.53	58.13	0.93	0.98	1.02	-6.2	1.28
lc3q37	0.216	0.023	0.52	53.94	0.94	0.98	1.02	-5.2	1.23
lc3q38	0.440	0.023	0.49	49.36	0.97	0.98	1.02	-2.5	1.11
lc3q39	0.081	0.023	0.53	56.77	0.94	0.98	1.02	-5.7	1.24
lc3q40	-0.016	0.023	0.50	58.77	0.95	0.98	1.02	-4.4	1.18
lc3q41	0.085	0.023	0.51	56.80	0.95	0.98	1.02	-4.2	1.19
lc3q42	0.544	0.023	0.53	47.43	0.93	0.98	1.02	-5.9	1.24
lc3q43	1.144	0.024	0.43	35.52	1.00	0.97	1.03	0.1	0.96
lc3q44	1.041	0.023	0.20	37.51	1.22	0.97	1.03	15.9	0.31
lc3q45	0.575	0.023	0.27	46.93	1.18	0.98	1.02	14.2	0.40
lc3q46	0.904	0.023	0.39	40.30	1.05	0.98	1.02	3.9	0.81
lc3q47	1.072	0.024	0.42	37.08	1.02	0.97	1.03	1.3	0.92
lc3q48	1.435	0.024	0.41	30.41	1.01	0.97	1.03	0.9	0.93
lc3q49	0.908	0.024	0.39	40.40	1.06	0.98	1.02	4.3	0.81
lc3q50	1.247	0.024	0.31	33.89	1.11	0.97	1.03	7.6	0.67
lc3q51	1.462	0.121	0.31	30.05	1.10	0.97	1.03	6.4	0.71

C.10 Year 5 G&P Item Calibration Results

Item_Label	Delta_Centered	Error	Discrimination	Facility	MnSQ	CI_L	CI_H	T	Slope
lc5q26	-3.958	0.032	0.21	98.33	0.96	0.80	1.20	-0.3	1.03
lc5q27	-2.024	0.028	0.34	90.18	0.95	0.93	1.07	-1.5	1.05
lc5q28	-1.535	0.026	0.43	85.44	0.92	0.95	1.05	-3.0	1.12
lc5q29	-1.412	0.026	0.42	84.03	0.94	0.95	1.05	-2.5	1.10
lc5q30	-1.454	0.026	0.38	84.54	0.95	0.95	1.05	-2.0	1.07
lc5q31	-1.125	0.025	0.45	80.30	0.92	0.96	1.04	-3.8	1.15
lc5q32	-0.859	0.024	0.50	76.29	0.90	0.96	1.04	-5.7	1.22
lc5q33	-0.403	0.023	0.38	68.37	1.03	0.97	1.03	2.1	0.95
lc5q34	-0.555	0.024	0.44	71.16	0.97	0.97	1.03	-1.9	1.09
lc5q35	-0.338	0.023	0.43	67.15	0.99	0.97	1.03	-0.5	1.05
lc5q36	-0.237	0.023	0.37	65.23	1.04	0.97	1.03	2.9	0.90
lc5q37	0.223	0.023	0.42	55.86	1.01	0.98	1.02	0.5	0.99
lc5q38	0.221	0.023	0.40	55.97	1.03	0.98	1.02	2.5	0.90
lc5q39	0.720	0.023	0.46	45.43	0.98	0.98	1.02	-1.9	1.10
lc5q40	0.322	0.023	0.42	53.93	1.01	0.98	1.02	0.8	0.98
lc5q41	0.863	0.023	0.44	42.49	0.99	0.98	1.02	-0.8	1.03
lc5q42	0.775	0.023	0.36	44.35	1.06	0.98	1.02	5.6	0.76
lc5q43	0.581	0.023	0.45	48.49	0.98	0.98	1.02	-1.6	1.07
lc5q44	0.914	0.023	0.42	41.51	1.00	0.98	1.02	0.4	0.97
lc5q45	1.037	0.023	0.37	39.02	1.04	0.98	1.02	3.4	0.84
lc5q46	0.498	0.023	0.39	50.32	1.03	0.98	1.02	2.9	0.89
lc5q47	1.043	0.023	0.43	39.00	0.99	0.98	1.02	-0.9	1.01
lc5q48	1.635	0.024	0.38	27.81	1.01	0.97	1.03	0.5	0.94
lc5q49	1.672	0.024	0.39	27.20	0.99	0.97	1.03	-0.4	0.97
lc5q50	1.912	0.025	0.19	23.28	1.13	0.96	1.04	6.7	0.68
lc5q51	1.485	0.122	0.33	30.56	1.06	0.97	1.03	3.7	0.82

C.11 Year 7 G&P Item Calibration Results

Item_Label	Delta_Centered	Error	Discrimination	Facility	MnSQ	CI_L	CI_H	T	Slope
lc7q31	-1.987	0.025	0.37	88.10	0.94	0.95	1.05	-2.2	1.08
lc7q32	-1.524	0.023	0.33	82.88	1.00	0.96	1.04	-0.2	1.01
lc7q33	-2.185	0.025	0.27	89.89	0.98	0.94	1.06	-0.6	1.00
lc7q34	-1.428	0.023	0.41	81.60	0.95	0.96	1.04	-2.8	1.10
lc7q35	-0.981	0.022	0.50	74.83	0.90	0.97	1.03	-6.8	1.24
lc7q36	-0.554	0.021	0.47	67.18	0.95	0.98	1.02	-4.3	1.18
lc7q37	-0.781	0.021	0.43	71.41	0.97	0.97	1.03	-2.6	1.10
lc7q38	-0.654	0.021	0.47	69.09	0.94	0.98	1.02	-4.7	1.18
lc7q39	-0.071	0.021	0.52	57.39	0.92	0.98	1.02	-8.9	1.36
lc7q40	-0.383	0.021	0.35	63.84	1.04	0.98	1.02	3.9	0.85
lc7q41	-0.019	0.021	0.50	56.32	0.93	0.98	1.02	-7.2	1.30
lc7q42	-0.351	0.021	0.43	63.21	0.98	0.98	1.02	-1.8	1.10
lc7q43	-0.294	0.021	0.33	62.07	1.06	0.98	1.02	5.2	0.80
lc7q44	0.477	0.021	0.37	45.72	1.04	0.98	1.02	3.9	0.85
lc7q45	-0.327	0.021	0.43	62.78	0.98	0.98	1.02	-1.4	1.08
lc7q46	0.236	0.020	0.44	50.96	0.98	0.98	1.02	-2.4	1.09
lc7q47	0.297	0.020	0.51	49.66	0.93	0.98	1.02	-7.7	1.31
lc7q48	0.704	0.021	0.35	41.02	1.05	0.98	1.02	4.6	0.83
lc7q49	0.497	0.021	0.40	45.40	1.02	0.98	1.02	1.8	0.94
lc7q50	0.528	0.021	0.40	44.76	1.02	0.98	1.02	1.8	0.94
lc7q51	0.723	0.021	0.25	40.70	1.13	0.98	1.02	12.2	0.50
lc7q52	0.784	0.021	0.32	39.45	1.07	0.98	1.02	6.4	0.75
lc7q53	0.677	0.021	0.34	41.69	1.06	0.98	1.02	5.9	0.77
lc7q54	0.974	0.021	0.38	35.64	1.01	0.98	1.02	0.8	0.94
lc7q55	0.897	0.021	0.46	37.20	0.96	0.98	1.02	-3.6	1.11
lc7q56	1.599	0.022	0.35	24.38	1.01	0.97	1.03	0.3	0.96
lc7q57	1.681	0.022	0.19	23.08	1.12	0.97	1.03	6.7	0.71
lc7q58	1.465	0.111	0.32	26.64	1.04	0.97	1.03	2.6	0.88

C.12 Year 9 G&P Item Calibration Results

Item_Label	Delta_Centered	Error	Discrimination	Facility	MnSQ	CI_L	CI_H	T	Slope
lc9q31	-2.576	0.030	0.36	93.00	0.91	0.92	1.08	-2.1	1.09
lc9q32	-1.819	0.027	0.42	86.81	0.92	0.95	1.05	-3.2	1.11
lc9q33	-2.149	0.029	0.28	89.91	1.00	0.94	1.06	-0.1	0.99
lc9q34	-1.420	0.026	0.47	82.11	0.90	0.96	1.04	-5.0	1.17
lc9q35	-1.109	0.025	0.51	77.70	0.89	0.97	1.03	-6.5	1.23
lc9q36	-1.750	0.027	0.34	86.11	0.97	0.95	1.05	-1.1	1.03
lc9q37	-0.924	0.024	0.52	74.80	0.90	0.97	1.03	-6.7	1.25
lc9q38	-1.080	0.025	0.44	77.30	0.95	0.97	1.03	-3.1	1.12
lc9q39	-0.449	0.023	0.56	66.29	0.88	0.98	1.02	-10.1	1.39
lc9q40	-0.717	0.024	0.21	71.27	1.15	0.97	1.03	9.9	0.62
lc9q41	-0.206	0.023	0.44	61.49	0.99	0.98	1.02	-1.0	1.07
lc9q42	-0.553	0.023	0.38	68.31	1.02	0.97	1.03	1.7	0.94
lc9q43	-0.176	0.023	0.44	60.94	0.99	0.98	1.02	-1.0	1.06
lc9q44	0.371	0.023	0.41	49.49	1.02	0.98	1.02	1.7	0.94
lc9q45	0.492	0.023	0.55	46.96	0.90	0.98	1.02	-10.3	1.41
lc9q46	-0.112	0.023	0.41	59.68	1.02	0.98	1.02	1.6	0.95
lc9q47	0.770	0.023	0.45	41.18	0.98	0.98	1.02	-1.6	1.06
lc9q48	0.247	0.023	0.45	52.17	0.99	0.98	1.02	-1.1	1.08
lc9q49	0.829	0.023	0.47	39.97	0.96	0.98	1.02	-3.8	1.13
lc9q50	0.803	0.023	0.42	40.52	1.01	0.98	1.02	0.7	0.98
lc9q51	1.133	0.023	0.33	33.97	1.07	0.98	1.02	5.4	0.77
lc9q52	0.804	0.023	0.40	40.50	1.02	0.98	1.02	1.8	0.93
lc9q53	1.073	0.023	0.26	35.13	1.12	0.98	1.02	9.3	0.62
lc9q54	1.043	0.023	0.39	35.74	1.02	0.98	1.02	1.6	0.91
lc9q55	1.166	0.023	0.29	33.37	1.09	0.98	1.02	7.0	0.71
lc9q56	1.863	0.025	0.34	21.53	1.00	0.96	1.04	0.0	0.95
lc9q57	2.285	0.027	0.24	15.89	1.04	0.95	1.05	1.7	0.88
lc9q58	2.160	0.126	0.14	17.44	1.14	0.96	1.04	6.1	0.71

C.13 Year 3 Numeracy Item Calibration Results

Item_Label	Delta_Centered	Error	Discrimination	Facility	MnSQ	CI_L	CI_H	T	Slope
n3q01	-4.442	0.058	0.16	98.64	0.97	0.78	1.22	-0.2	1.03
n3q02	-2.139	0.038	0.34	88.94	0.95	0.94	1.06	-1.5	1.05
n3q03	-1.752	0.035	0.46	85.01	0.89	0.95	1.05	-4.6	1.16
n3q04	-2.686	0.043	0.27	93.02	0.96	0.92	1.08	-0.9	1.03
n3q05	-1.243	0.032	0.45	78.36	0.93	0.96	1.04	-3.7	1.13
n3q06	-1.098	0.031	0.51	76.14	0.89	0.97	1.03	-6.7	1.22
n3q07	-0.808	0.030	0.41	71.34	1.00	0.97	1.03	0.2	1.02
n3q08	-1.254	0.032	0.45	78.52	0.92	0.96	1.04	-4.1	1.13
n3q09	-0.777	0.029	0.51	70.79	0.90	0.97	1.03	-6.8	1.24
n3q10	-1.045	0.031	0.51	75.31	0.89	0.97	1.03	-6.5	1.23
n3q11	-0.662	0.029	0.40	68.74	1.02	0.97	1.03	1.2	0.97
n3q12	-0.509	0.029	0.32	65.90	1.10	0.97	1.03	7.5	0.75
n3q13	0.008	0.028	0.60	55.65	0.85	0.98	1.02	-14.0	1.53
n3q14	-0.557	0.029	0.47	66.81	0.96	0.97	1.03	-3.0	1.13
n3q15	-0.572	0.029	0.42	67.09	1.01	0.97	1.03	0.9	1.00
n3q16	-0.313	0.028	0.57	62.13	0.88	0.98	1.02	-10.7	1.40
n3q17	-0.361	0.028	0.29	63.09	1.14	0.98	1.02	10.8	0.61
n3q18	-0.510	0.029	0.30	65.97	1.11	0.97	1.03	8.0	0.68
n3q19	0.572	0.028	0.51	44.09	0.93	0.98	1.02	-6.1	1.21
n3q20	0.181	0.028	0.44	52.16	1.00	0.98	1.02	0.4	0.98
n3q21	0.364	0.028	0.50	48.39	0.95	0.98	1.02	-4.6	1.18
n3q22	0.465	0.028	0.43	46.31	1.02	0.98	1.02	1.4	0.94
n3q23	0.765	0.028	0.49	40.24	0.95	0.98	1.02	-4.5	1.13
n3q24	0.627	0.028	0.32	43.05	1.11	0.98	1.02	9.1	0.62
n3q25	0.516	0.028	0.40	45.34	1.04	0.98	1.02	3.7	0.84
n3q26	0.830	0.028	0.45	39.02	0.98	0.98	1.02	-1.3	1.02
n3q27	0.811	0.028	0.26	39.36	1.17	0.98	1.02	12.8	0.47
n3q28	1.101	0.029	0.44	33.81	0.98	0.97	1.03	-1.5	1.01
n3q29	1.171	0.029	0.36	32.54	1.06	0.97	1.03	4.0	0.82
n3q30	1.037	0.029	0.30	35.02	1.10	0.97	1.03	7.5	0.65
n3q31	1.372	0.030	0.35	28.98	1.05	0.97	1.03	3.1	0.84
n3q32	1.856	0.032	0.31	21.36	1.05	0.96	1.04	2.5	0.86
n3q33	1.768	0.032	0.32	22.65	1.04	0.96	1.04	2.3	0.86
n3q34	3.595	0.046	0.30	5.50	0.99	0.90	1.10	-0.2	1.03
n3q35	3.688	0.186	0.29	5.09	0.99	0.89	1.11	-0.2	1.04

C.14 Year 5 Numeracy Item Calibration Results

Item_Label	Delta_Centered	Error	Discrimination	Facility	MnSQ	CI_L	CI_H	T	Slope
n5q01	-2.617	0.037	0.39	92.25	0.90	0.92	1.08	-2.5	1.09
n5q02	-1.969	0.034	0.35	87.10	1.00	0.94	1.06	0.1	0.97
n5q03	-2.222	0.035	0.45	89.37	0.88	0.94	1.06	-3.8	1.13
n5q04	-2.103	0.034	0.35	88.34	1.00	0.94	1.06	0.1	1.00
n5q05	-1.575	0.032	0.51	82.90	0.87	0.95	1.05	-5.6	1.17
n5q06	-1.975	0.034	0.44	87.16	0.92	0.94	1.06	-3.0	1.09
n5q07	-0.994	0.029	0.55	75.08	0.89	0.96	1.04	-6.2	1.22
n5q08	-1.332	0.031	0.40	79.87	1.02	0.96	1.04	0.9	0.95
n5q09	-1.530	0.032	0.45	82.37	0.93	0.95	1.05	-3.0	1.08
n5q10	-1.576	0.032	0.50	82.91	0.89	0.95	1.05	-5.0	1.15
n5q11	-1.471	0.031	0.47	81.64	0.94	0.96	1.04	-2.7	1.09
n5q12	-0.764	0.029	0.57	71.48	0.87	0.97	1.03	-8.0	1.25
n5q13	-0.432	0.028	0.40	65.86	1.11	0.97	1.03	6.8	0.79
n5q14	-0.696	0.029	0.36	70.37	1.14	0.97	1.03	7.9	0.72
n5q15	-0.314	0.028	0.50	63.76	0.99	0.97	1.03	-1.0	1.04
n5q16	-0.579	0.028	0.52	68.41	0.95	0.97	1.03	-3.4	1.11
n5q17	-0.604	0.028	0.40	68.85	1.10	0.97	1.03	6.0	0.80
n5q18	-0.347	0.028	0.47	64.35	1.02	0.97	1.03	1.5	0.97
n5q19	-0.401	0.028	0.40	65.32	1.11	0.97	1.03	7.1	0.76
n5q20	0.074	0.027	0.43	56.57	1.08	0.97	1.03	6.1	0.78
n5q21	-0.059	0.027	0.53	59.07	0.96	0.97	1.03	-2.6	1.11
n5q22	0.156	0.027	0.45	55.01	1.06	0.97	1.03	4.7	0.83
n5q23	0.118	0.027	0.47	55.76	1.04	0.97	1.03	2.9	0.88
n5q24	0.092	0.027	0.39	56.25	1.13	0.97	1.03	9.6	0.62
n5q25	0.357	0.027	0.45	51.19	1.06	0.97	1.03	4.5	0.81
n5q26	0.255	0.027	0.46	53.19	1.06	0.97	1.03	4.1	0.84
n5q27	0.386	0.027	0.59	50.70	0.88	0.97	1.03	-9.5	1.32
n5q28	0.692	0.027	0.43	44.85	1.08	0.97	1.03	5.9	0.76
n5q29	0.191	0.027	0.53	54.46	0.96	0.97	1.03	-3.3	1.14
n5q30	1.170	0.028	0.46	36.04	1.03	0.97	1.03	1.9	0.89
n5q31	0.701	0.027	0.39	44.73	1.12	0.97	1.03	8.4	0.66
n5q32	1.018	0.028	0.55	38.83	0.92	0.97	1.03	-5.9	1.18
n5q33	0.973	0.028	0.50	39.67	0.98	0.97	1.03	-1.2	1.03
n5q34	1.024	0.028	0.38	38.75	1.14	0.97	1.03	9.3	0.65
n5q35	2.429	0.032	0.51	17.34	0.87	0.95	1.05	-5.7	1.17
n5q36	2.561	0.033	0.47	15.89	0.90	0.95	1.05	-3.8	1.11
n5q37	1.858	0.030	0.47	24.94	0.91	0.96	1.04	-4.9	1.08
n5q38	2.390	0.032	0.36	17.86	0.98	0.95	1.05	-0.9	0.94
n5q39	4.103	0.041	0.35	4.83	0.94	0.89	1.11	-1.1	1.11
n5q40	3.008	0.187	0.41	11.57	0.93	0.94	1.06	-2.2	1.07

C.15 Year 7 Numeracy Item Calibration Results

Item_Label	Delta_Centered	Error	Discrimination	Facility	MnSQ	CI_L	CI_H	T	Slope
n7CAq01	-1.602	0.028	0.52	78.82	0.85	0.96	1.04	-8.6	1.23
n7CAq02	-1.891	0.029	0.44	82.61	0.91	0.96	1.04	-4.4	1.11
n7CAq03	-1.234	0.026	0.35	73.31	1.09	0.97	1.03	5.6	0.85
n7CAq04	-1.777	0.028	0.49	81.19	0.86	0.96	1.04	-7.5	1.19
n7CAq05	-1.664	0.028	0.36	79.71	1.03	0.96	1.04	1.7	0.95
n7CAq06	-1.349	0.027	0.38	75.13	1.04	0.97	1.03	2.2	0.94
n7CAq07	-0.503	0.025	0.56	60.43	0.90	0.98	1.02	-9.0	1.28
n7CAq08	-1.014	0.026	0.42	69.69	1.03	0.97	1.03	1.8	0.96
n7CAq09	-0.901	0.025	0.39	67.74	1.06	0.97	1.03	4.4	0.87
n7CAq10	-1.107	0.026	0.59	71.29	0.82	0.97	1.03	-13.4	1.36
n7CAq11	-0.554	0.025	0.44	61.42	1.03	0.98	1.02	2.9	0.94
n7CAq12	-0.242	0.025	0.34	55.45	1.16	0.98	1.02	13.3	0.56
n7CAq13	-0.399	0.025	0.51	58.49	0.96	0.98	1.02	-3.7	1.13
n7CAq14	-0.679	0.025	0.50	63.77	0.95	0.98	1.02	-4.5	1.12
n7CAq15	0.374	0.025	0.32	43.46	1.17	0.98	1.02	14.0	0.49
n7CAq16	0.137	0.025	0.46	48.08	1.02	0.98	1.02	1.9	0.94
n7CAq17	-0.235	0.025	0.41	55.38	1.08	0.98	1.02	7.1	0.79
n7CAq18	0.347	0.025	0.29	44.02	1.21	0.98	1.02	16.8	0.41
n7CAq19	0.163	0.025	0.31	47.63	1.19	0.98	1.02	15.3	0.45
n7CAq20	1.237	0.026	0.49	28.10	0.95	0.97	1.03	-3.4	1.08
n7CAq21	0.503	0.025	0.38	41.08	1.09	0.98	1.02	7.2	0.72
n7CAq22	0.630	0.025	0.57	38.71	0.89	0.98	1.02	-9.2	1.27
n7CAq23	0.483	0.025	0.42	41.51	1.06	0.98	1.02	5.1	0.83
n7CAq24	0.683	0.025	0.28	37.76	1.22	0.98	1.02	16.4	0.44
n7CAq25	1.393	0.027	0.44	25.74	0.95	0.97	1.03	-3.0	1.02
n7CAq26	0.867	0.026	0.58	34.47	0.87	0.97	1.03	-10.4	1.28
n7CAq27	2.183	0.030	0.43	15.48	0.95	0.95	1.05	-2.3	1.05
n7CAq28	1.209	0.027	0.32	28.68	1.13	0.97	1.03	8.0	0.72
n7CAq29	1.837	0.029	0.50	19.56	0.90	0.96	1.04	-4.8	1.13
n7CAq30	2.658	0.033	0.45	10.97	0.89	0.94	1.06	-3.8	1.11
n7CAq31	1.382	0.028	0.11	25.88	1.35	0.97	1.03	18.4	0.33
n7CAq32	2.870	0.034	0.45	9.35	0.87	0.93	1.07	-3.8	1.13

(table continues)

C.15 (continued)

Item_Label	Delta_Centered	Error	Discrimination	Facility	MnSQ	CI_L	CI_H	T	Slope
n7NCq01	-2.393	0.031	0.40	87.99	0.90	0.95	1.05	-3.8	1.10
n7NCq02	-2.212	0.030	0.41	86.21	0.94	0.95	1.05	-2.7	1.09
n7NCq03	-2.015	0.029	0.50	84.07	0.85	0.96	1.04	-7.2	1.20
n7NCq04	-2.113	0.030	0.46	85.15	0.86	0.95	1.05	-6.1	1.15
n7NCq05	-2.073	0.030	0.22	84.72	1.11	0.96	1.04	4.6	0.83
n7NCq06	-0.799	0.025	0.59	65.87	0.83	0.97	1.03	-13.6	1.38
n7NCq07	-0.982	0.026	0.54	69.11	0.89	0.97	1.03	-8.3	1.25
n7NCq08	-1.897	0.029	0.49	82.69	0.87	0.96	1.04	-6.5	1.18
n7NCq09	-1.208	0.026	0.46	72.89	0.96	0.97	1.03	-2.9	1.09
n7NCq10	-0.917	0.026	0.42	67.98	1.03	0.97	1.03	2.5	0.93
n7NCq11	-0.927	0.026	0.39	68.16	1.06	0.97	1.03	4.4	0.87
n7NCq12	-0.754	0.025	0.43	65.07	1.01	0.97	1.03	0.8	0.93
n7NCq13	-0.419	0.025	0.60	58.82	0.84	0.98	1.02	-14.1	1.42
n7NCq14	-0.354	0.025	0.44	57.58	1.03	0.98	1.02	2.8	0.87
n7NCq15	-0.292	0.025	0.49	56.37	0.98	0.98	1.02	-1.4	1.05
n7NCq16	-0.186	0.025	0.51	54.31	0.96	0.98	1.02	-3.8	1.13
n7NCq17	0.287	0.025	0.58	45.07	0.88	0.98	1.02	-11.0	1.33
n7NCq18	-0.097	0.025	0.45	52.58	1.03	0.98	1.02	3.0	0.92
n7NCq19	-0.390	0.025	0.41	58.28	1.07	0.98	1.02	6.3	0.80
n7NCq20	0.056	0.025	0.24	49.61	1.29	0.98	1.02	23.1	0.21
n7NCq21	-0.734	0.025	0.56	64.78	0.88	0.98	1.02	-9.7	1.28
n7NCq22	0.634	0.025	0.23	38.52	1.28	0.98	1.02	20.8	0.27
n7NCq23	1.152	0.026	0.55	29.41	0.89	0.97	1.03	-7.7	1.20
n7NCq24	0.717	0.025	0.63	37.01	0.81	0.97	1.03	-15.5	1.42
n7NCq25	0.925	0.026	0.39	33.29	1.07	0.97	1.03	5.0	0.81
n7NCq26	1.186	0.026	0.52	28.91	0.91	0.97	1.03	-6.3	1.14
n7NCq27	2.055	0.029	0.57	16.80	0.78	0.96	1.04	-10.5	1.26
n7NCq28	1.500	0.027	0.58	24.07	0.81	0.97	1.03	-11.8	1.28
n7NCq29	1.690	0.028	0.43	21.41	0.98	0.96	1.04	-0.9	1.01
n7NCq30	1.632	0.028	0.32	22.22	1.07	0.96	1.04	3.8	0.83
n7NCq31	2.254	0.030	0.45	14.68	0.92	0.95	1.05	-3.2	1.08
n7NCq32	2.870	0.212	0.32	9.36	1.01	0.93	1.07	0.2	0.97

C.16 Year 9 Numeracy Item Calibration Results

Item_Label	Delta_Centered	Error	Discrimination	Facility	MnSQ	CI_L	CI_H	T	Slope
n9CAq01	-4.350	0.046	0.25	97.72	0.90	0.84	1.16	-1.3	1.09
n9CAq02	-2.199	0.032	0.29	85.61	1.02	0.95	1.05	0.9	0.94
n9CAq03	-2.230	0.032	0.39	85.95	0.91	0.95	1.05	-3.4	1.10
n9CAq04	-1.561	0.029	0.31	77.61	1.09	0.96	1.04	4.8	0.85
n9CAq05	-0.976	0.027	0.53	68.26	0.88	0.97	1.03	-9.1	1.27
n9CAq06	-2.082	0.032	0.32	84.37	1.02	0.95	1.05	0.8	0.97
n9CAq07	-1.658	0.030	0.42	79.01	0.97	0.96	1.04	-1.6	1.07
n9CAq08	-0.774	0.027	0.42	64.69	1.04	0.97	1.03	3.0	0.89
n9CAq09	-0.837	0.027	0.53	65.83	0.91	0.97	1.03	-6.9	1.24
n9CAq10	-0.609	0.027	0.42	61.66	1.06	0.98	1.02	4.5	0.87
n9CAq11	-1.427	0.029	0.39	75.68	1.01	0.97	1.03	0.5	0.99
n9CAq12	-0.138	0.026	0.60	52.70	0.85	0.98	1.02	-13.3	1.41
n9CAq13	-0.242	0.026	0.49	54.73	1.00	0.98	1.02	0.0	1.01
n9CAq14	-0.098	0.026	0.58	51.95	0.89	0.98	1.02	-9.8	1.33
n9CAq15	-0.284	0.026	0.48	55.57	0.99	0.98	1.02	-0.4	1.02
n9CAq16	-0.296	0.026	0.62	55.82	0.83	0.98	1.02	-15.3	1.49
n9CAq17	0.338	0.026	0.24	43.64	1.31	0.97	1.03	22.0	0.20
n9CAq18	0.471	0.027	0.47	41.15	1.03	0.97	1.03	2.2	0.92
n9CAq19	0.173	0.026	0.48	46.82	1.02	0.98	1.02	1.3	0.96
n9CAq20	0.236	0.026	0.48	45.63	1.02	0.98	1.02	1.3	0.95
n9CAq21	0.453	0.027	0.50	41.52	0.98	0.97	1.03	-1.6	1.03
n9CAq22	1.325	0.029	0.61	26.69	0.83	0.97	1.03	-10.6	1.26
n9CAq23	0.745	0.027	0.58	36.25	0.89	0.97	1.03	-8.0	1.22
n9CAq24	0.634	0.027	0.49	38.26	0.99	0.97	1.03	-0.7	1.01
n9CAq25	1.822	0.031	0.59	19.90	0.82	0.96	1.04	-9.1	1.22
n9CAq26	0.829	0.027	0.36	34.93	1.14	0.97	1.03	9.1	0.66
n9CAq27	2.125	0.032	0.58	16.47	0.81	0.95	1.05	-8.4	1.21
n9CAq28	1.410	0.029	0.42	25.95	1.06	0.96	1.04	3.5	0.87
n9CAq29	2.388	0.034	0.51	14.08	0.88	0.95	1.05	-4.6	1.12
n9CAq30	2.443	0.034	0.48	13.67	0.90	0.94	1.06	-3.7	1.09
n9CAq31	2.250	0.034	0.50	15.79	0.90	0.95	1.05	-3.8	1.08
n9CAq32	3.444	0.041	0.35	6.85	0.99	0.91	1.09	-0.2	1.01

(table continues)

C.16 (continued)

Item_Label	Delta_Centered	Error	Discrimination	Facility	MnSQ	CI_L	CI_H	T	Slope
n9NCq01	-3.152	0.038	0.34	93.32	0.89	0.92	1.08	-2.7	1.10
n9NCq02	-2.313	0.033	0.21	86.83	1.09	0.95	1.05	3.4	0.86
n9NCq03	-1.640	0.029	0.54	78.78	0.81	0.96	1.04	-10.8	1.30
n9NCq04	-1.408	0.029	0.33	75.39	1.08	0.97	1.03	4.8	0.83
n9NCq05	-1.619	0.029	0.50	78.49	0.86	0.96	1.04	-7.8	1.21
n9NCq06	-2.751	0.036	0.38	90.71	0.88	0.93	1.07	-3.6	1.12
n9NCq07	-1.024	0.027	0.42	69.17	1.03	0.97	1.03	2.2	0.97
n9NCq08	-1.504	0.029	0.43	76.87	0.95	0.97	1.03	-2.8	1.09
n9NCq09	-1.644	0.029	0.42	78.88	0.95	0.96	1.04	-2.6	1.07
n9NCq10	-1.409	0.029	0.43	75.45	0.98	0.97	1.03	-1.1	1.05
n9NCq11	0.334	0.026	0.46	43.67	1.04	0.97	1.03	2.7	0.91
n9NCq12	-0.188	0.026	0.27	53.73	1.27	0.98	1.02	20.7	0.28
n9NCq13	-1.680	0.030	0.48	79.43	0.88	0.96	1.04	-6.6	1.19
n9NCq14	0.060	0.026	0.33	48.94	1.20	0.98	1.02	15.5	0.45
n9NCq15	-0.133	0.026	0.40	52.67	1.11	0.98	1.02	8.9	0.70
n9NCq16	-0.484	0.026	0.43	59.43	1.05	0.98	1.02	4.0	0.86
n9NCq17	0.014	0.026	0.37	49.85	1.15	0.98	1.02	11.5	0.60
n9NCq18	0.240	0.026	0.44	45.49	1.07	0.98	1.02	5.1	0.83
n9NCq19	0.214	0.026	0.30	46.01	1.24	0.98	1.02	17.6	0.38
n9NCq20	0.187	0.026	0.32	46.55	1.21	0.98	1.02	16	0.42
n9NCq21	0.896	0.027	0.52	33.59	0.95	0.97	1.03	-3.6	1.06
n9NCq22	0.912	0.027	0.63	33.33	0.81	0.97	1.03	-13.3	1.34
n9NCq23	0.484	0.027	0.46	40.97	1.04	0.97	1.03	2.8	0.91
n9NCq24	1.123	0.028	0.63	29.83	0.80	0.97	1.03	-12.9	1.32
n9NCq25	0.818	0.027	0.50	34.96	1.00	0.97	1.03	0.0	1.01
n9NCq26	1.454	0.029	0.26	24.80	1.18	0.96	1.04	9.4	0.61
n9NCq27	1.642	0.030	0.63	22.20	0.77	0.96	1.04	-12.4	1.29
n9NCq28	1.457	0.029	0.62	24.79	0.80	0.96	1.04	-11.6	1.28
n9NCq29	2.407	0.034	0.34	13.52	1.02	0.95	1.05	0.8	0.91
n9NCq30	2.410	0.034	0.51	13.49	0.87	0.95	1.05	-4.8	1.13
n9NCq31	1.870	0.031	0.38	19.35	1.06	0.96	1.04	2.9	0.88
n9NCq32	3.102	0.234	0.18	8.17	1.10	0.93	1.07	2.7	0.81

C.17 Years 3, 5, 7, and 9 Writing Item Calibration Results

Item_Label	Delta_ Centered	Error	Discrim ination	MnSQ	CI_L	CI_H	T	Slope
Audience	-0.239	0.009	0.91	0.74	0.98	1.02	-29.0	1.37
Text Structure	-0.279	0.009	0.81	1.09	0.98	1.02	8.8	0.92
Ideas	-0.282	0.009	0.87	0.88	0.98	1.02	-13.3	1.20
Character and	-0.733	0.009	0.85	0.91	0.98	1.02	-9.9	1.13
Vocabulary	-0.356	0.009	0.86	0.90	0.98	1.02	-10.1	1.19
Cohesion	-0.942	0.010	0.83	0.91	0.98	1.02	-8.8	1.14
Paragraphing	1.761	0.010	0.61	1.61	0.98	1.02	53.8	0.15
Sentence Structure	0.749	0.009	0.88	0.93	0.98	1.02	-7.1	1.16
Punctuation	0.898	0.009	0.79	1.27	0.98	1.02	26.0	0.72
Spelling	-0.578	0.028	0.85	1.14	0.98	1.02	14.5	0.89

(continued)

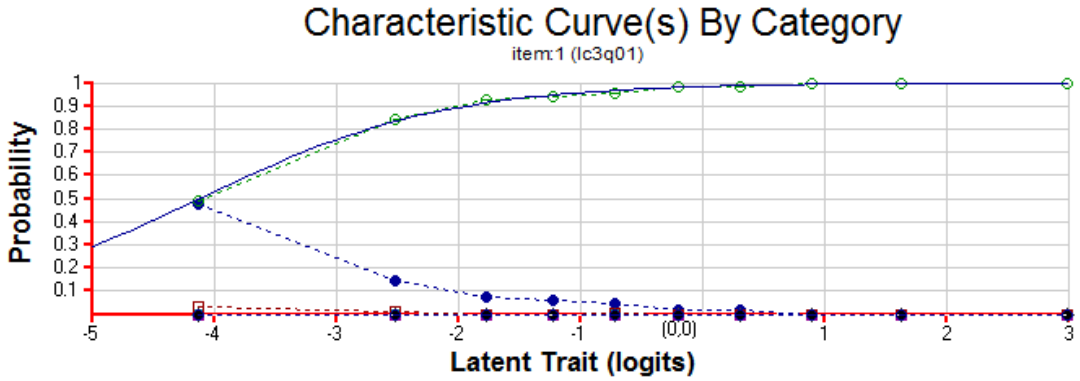
C.17 (continued)

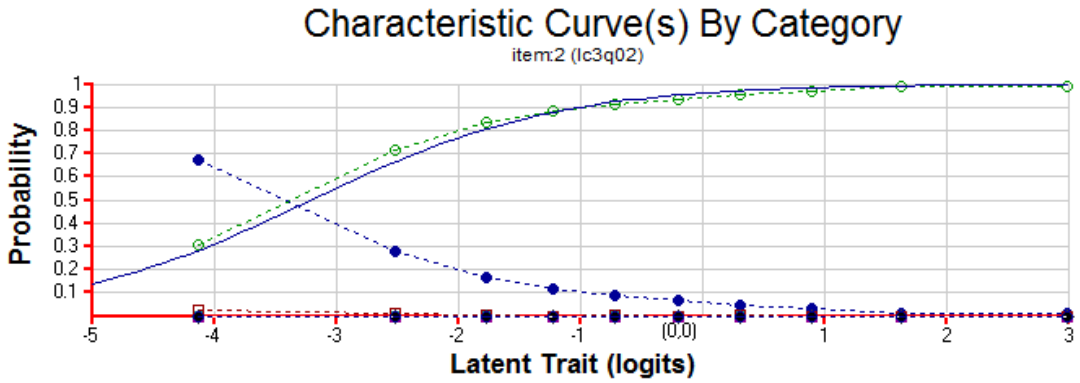
Item Level	Step	Tau	Error
Audience	0		
	1	-9.836	0.076
	2	-5.954	0.048
	3	-0.998	0.021
	4	2.835	0.022
	5	5.485	0.035
	6	8.467*	
Text Structure	0		
	1	-6.935	0.041
	2	-2.463	0.023
	3	2.482	0.019
	4	6.916*	
Ideas	0		
	1	-7.981	0.058
	2	-4.265	0.034
	3	-0.282	0.019
	4	4.668	0.026
	5	7.859*	
Persuasive Devices	0		
	1	-6.422	0.036
	2	-2.545	0.023
	3	2.232	0.018
	4	6.735*	
Vocabulary	0		
	1	-7.880	0.058
	2	-5.646	0.041
	3	1.080	0.019
	4	4.589	0.027
	5	7.857*	
Cohesion	0		
	1	-7.436	0.046
	2	-3.517	0.029
	3	3.095	0.019
	4	7.857*	
Paragraphing	0		
	1	-2.672	0.017
	2	2.672*	
Sentence Structure	0		
	1	-8.649	0.078
	2	-5.472	0.038
	3	-1.143	0.020
	4	1.813	0.022
	5	5.223	0.040
	6	8.227*	
Punctuation	0		
	1	-8.078	0.062
	2	-3.949	0.027
	3	0.032	0.019
	4	4.181	0.031
	5	7.814*	
Spelling	0		
	1	-7.900	0.067
	2	-5.148	0.045
	3	-1.790	0.024
	4	1.414	0.020
	5	4.592	0.026
	6	8.832*	

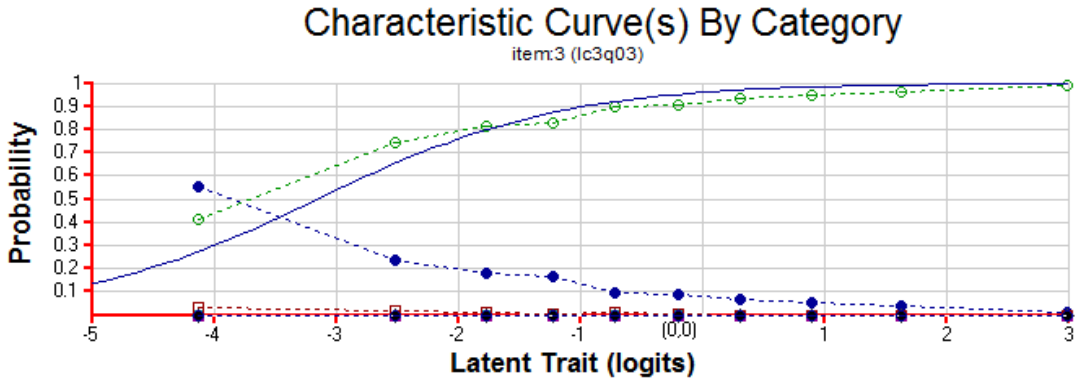
*An asterisk next to a parameter estimate indicates that it is constrained

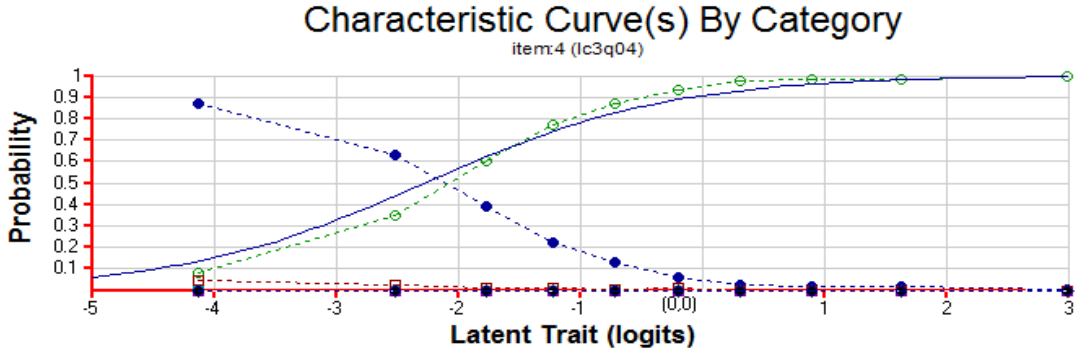
APPENDIX D. ICC PLOTS

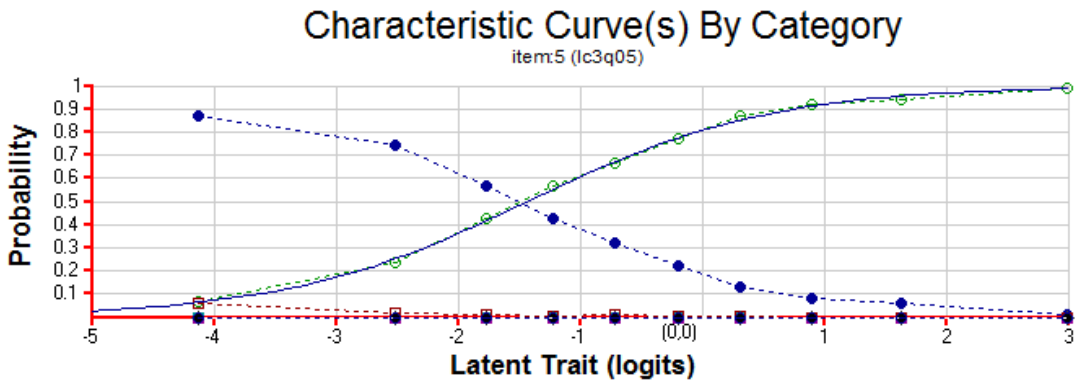
Year 3 Spelling

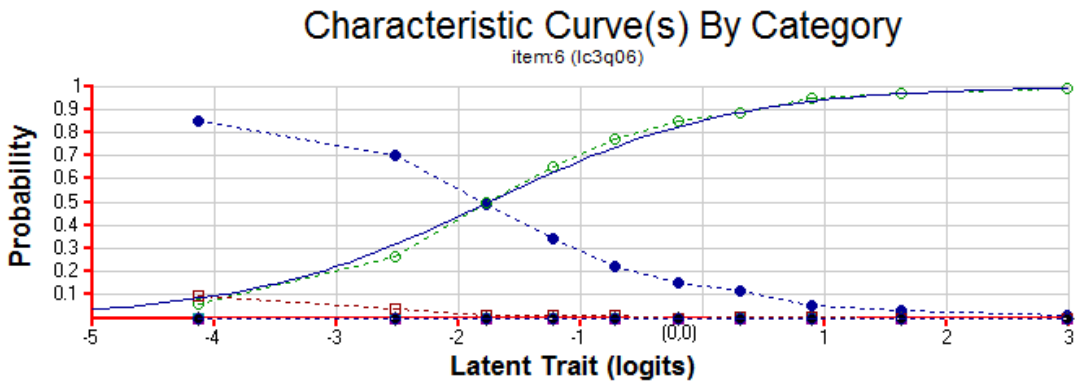


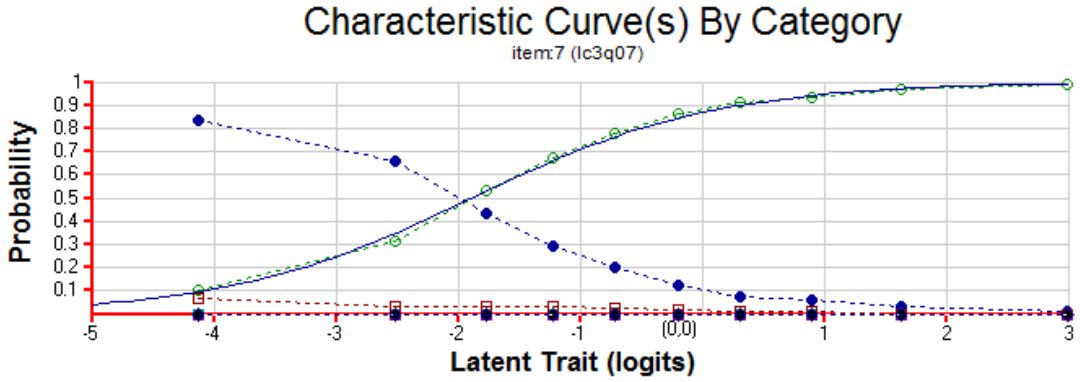


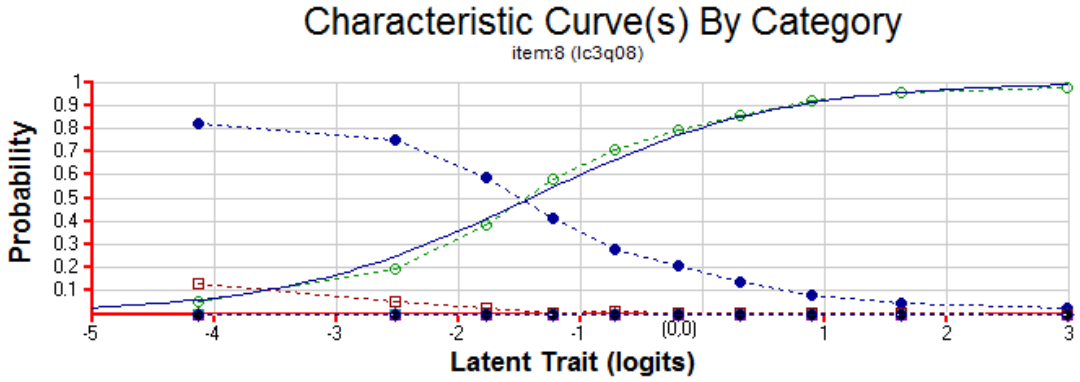





Characteristic Curve(s) By Category
item:5 (lc3q05)
Probability
Latent Trait (logits)
(0,0)


Characteristic Curve(s) By Category
item:6 (lc3q06)
Probability
Latent Trait (logits)
(0,0)


Characteristic Curve(s) By Category
item:7 (lc3q07)
Probability
Latent Trait (logits)
(0,0)


Characteristic Curve(s) By Category
item:8 (lc3q08)
Probability
Latent Trait (logits)
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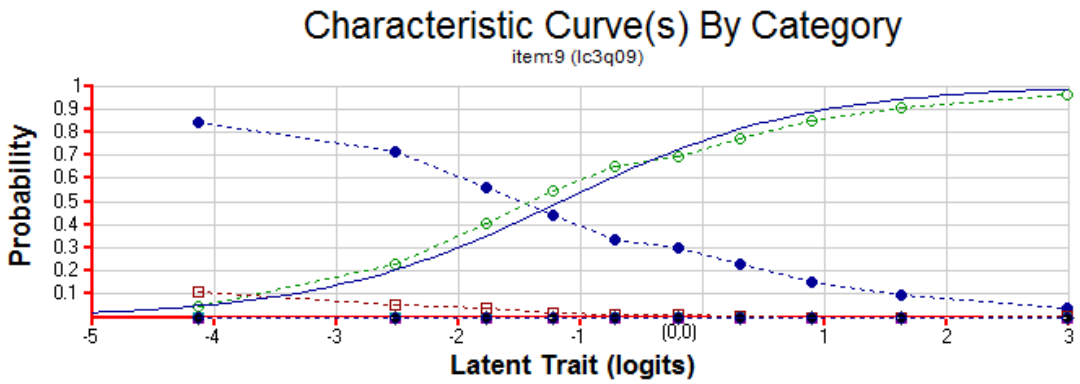
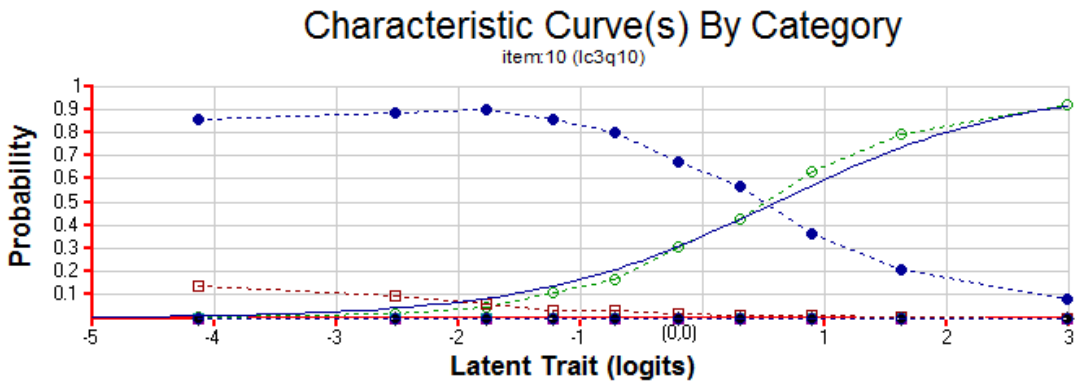
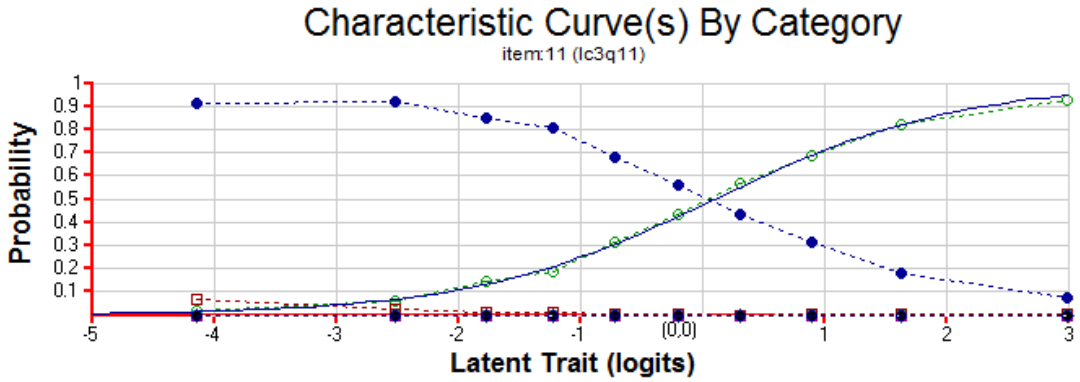
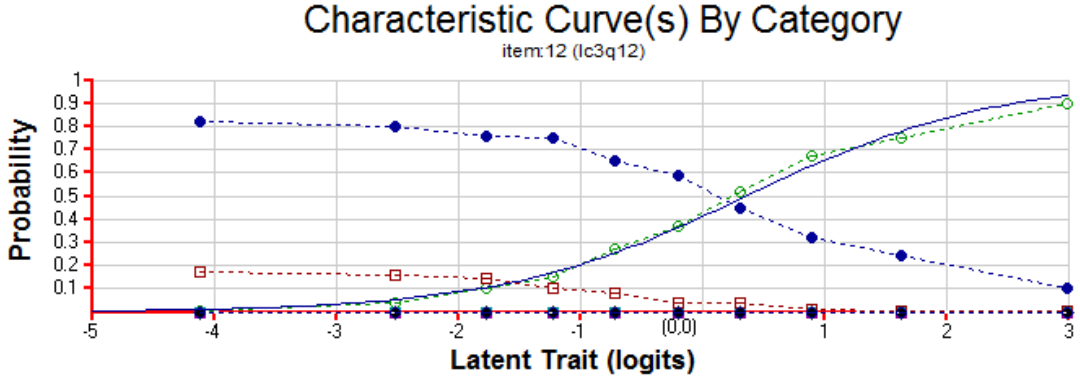
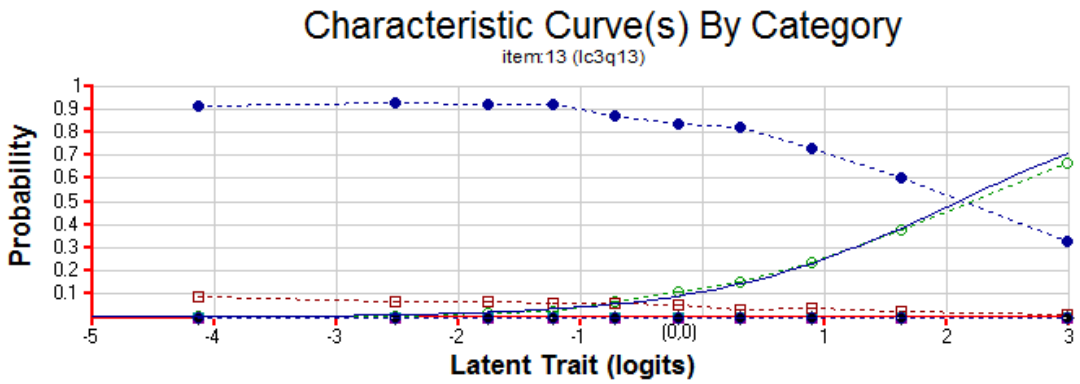
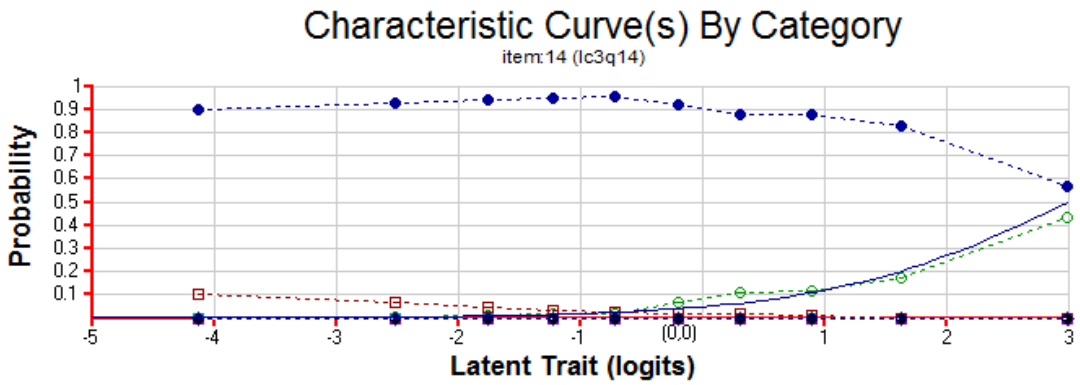

Characteristic Curve(s) By Category
item:9 (lc3q09)
Probability
Latent Trait (logits)
(0,0)

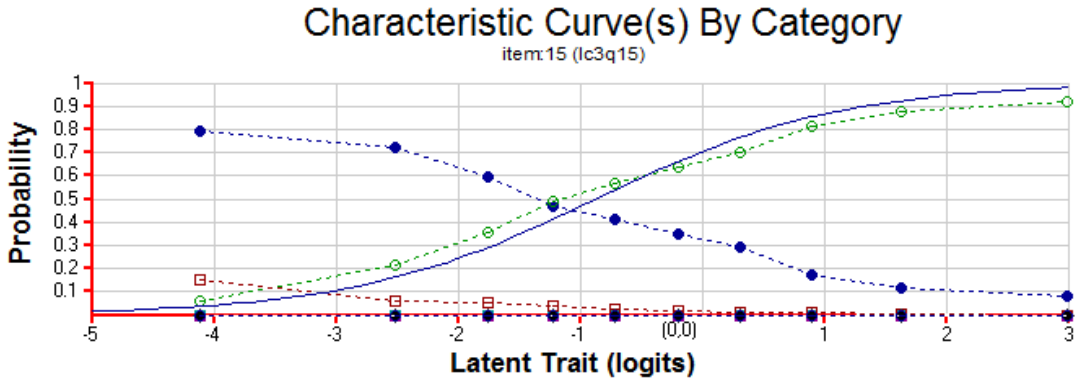

Characteristic Curve(s) By Category
item:10 (lc3q10)
Probability
Latent Trait (logits)
(0,0)

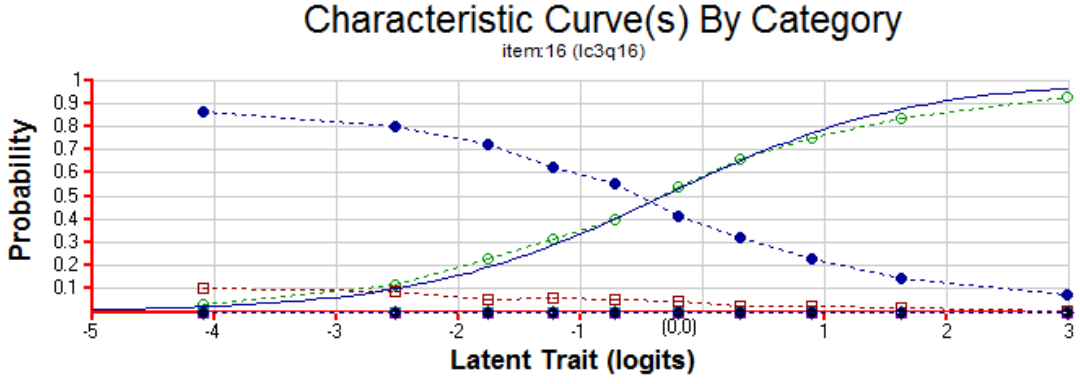

Characteristic Curve(s) By Category
item:11 (lc3q11)
Probability
Latent Trait (logits)
(0,0)

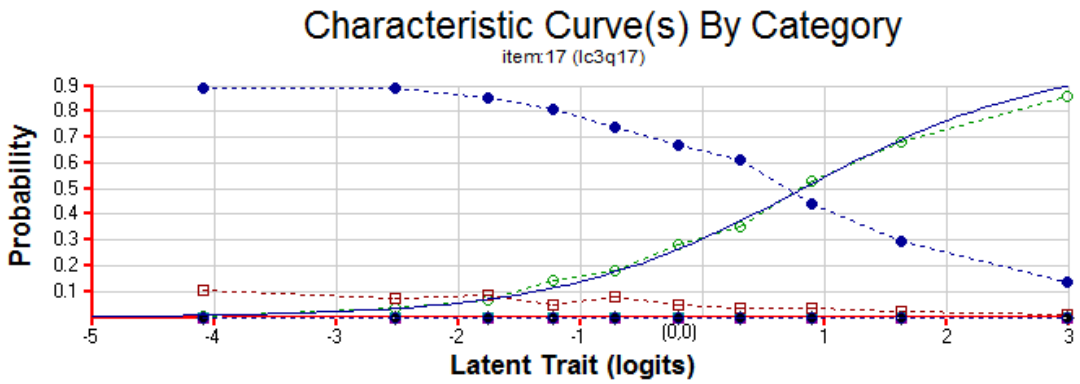

Characteristic Curve(s) By Category
item:12 (lc3q12)
Probability
Latent Trait (logits)
(0,0)

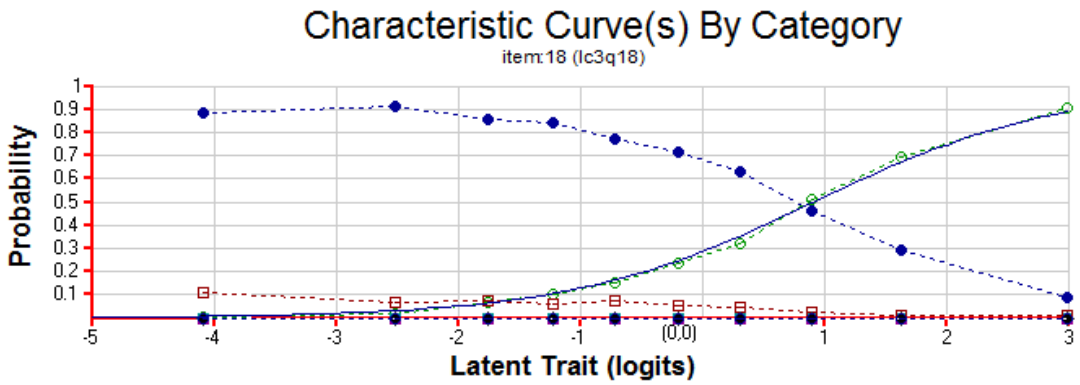

Characteristic Curve(s) By Category
item:13 (lc3q13)
Probability
Latent Trait (logits)
(0,0)

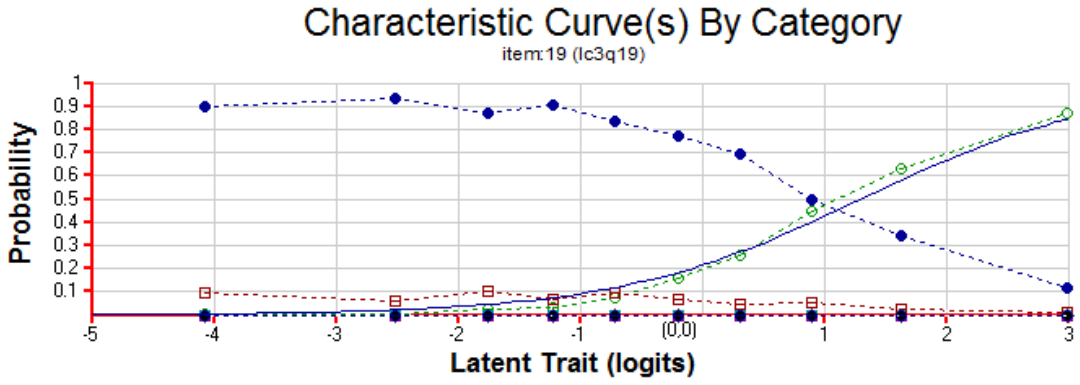

Characteristic Curve(s) By Category
item:14 (lc3q14)
Probability
Latent Trait (logits)
(0,0)

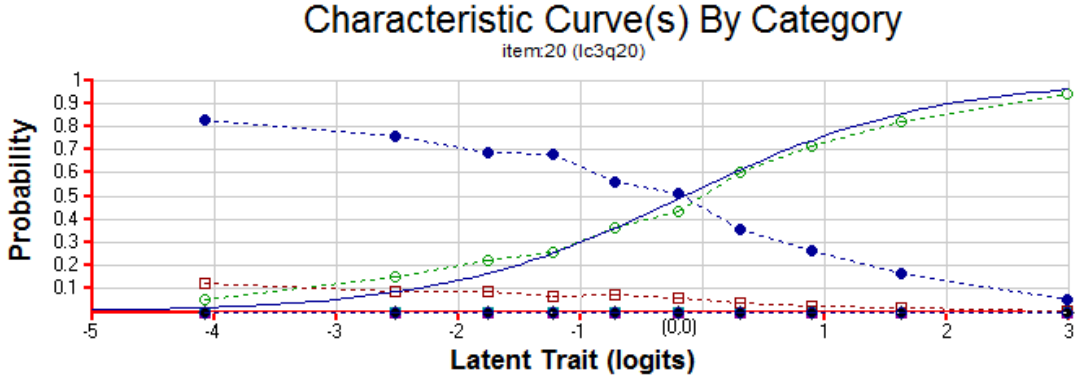

Characteristic Curve(s) By Category
item:15 (lc3q15)
Probability
Latent Trait (logits)
(0,0)

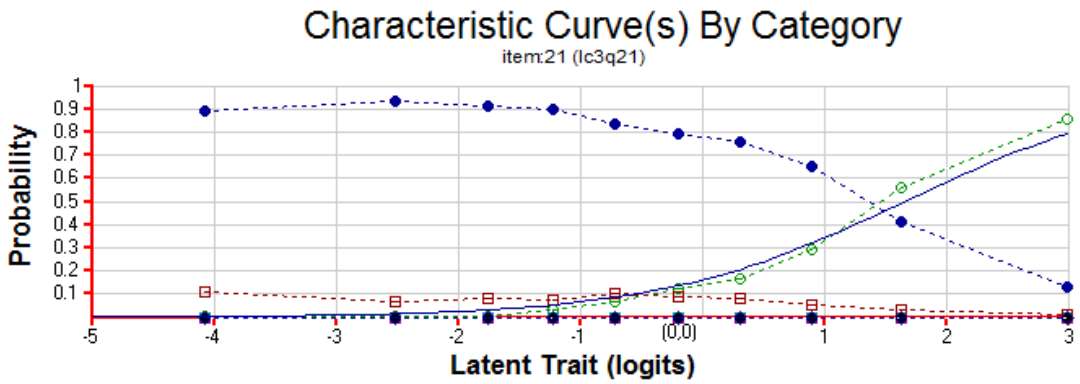

Characteristic Curve(s) By Category
item:16 (lc3q16)
Probability
Latent Trait (logits)
(0,0)

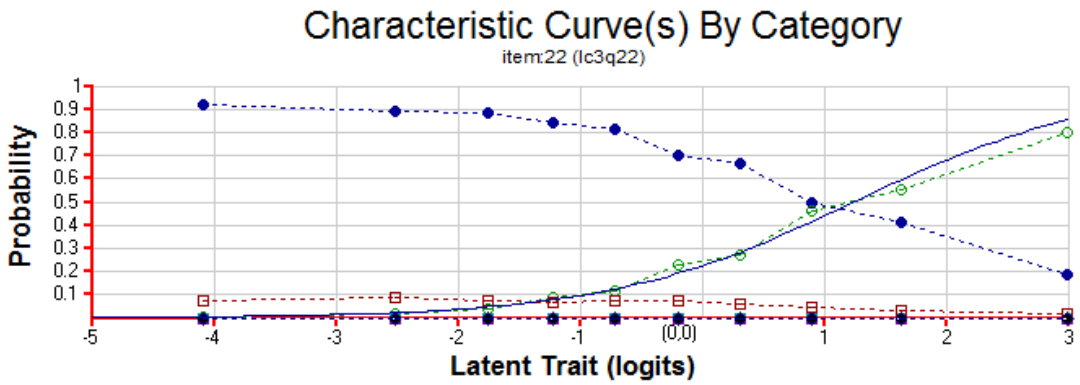

Characteristic Curve(s) By Category
item:17 (lc3q17)
Probability
Latent Trait (logits)
(0,0)

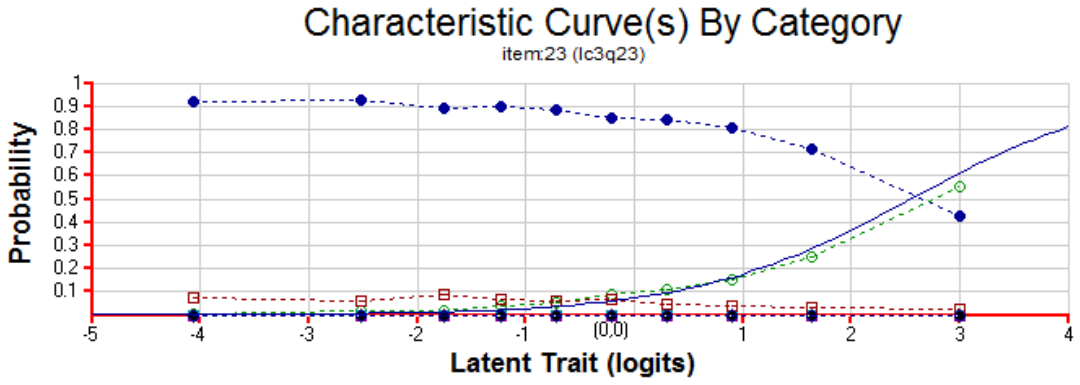

Characteristic Curve(s) By Category
item:18 (lc3q18)
Probability
Latent Trait (logits)
(0,0)

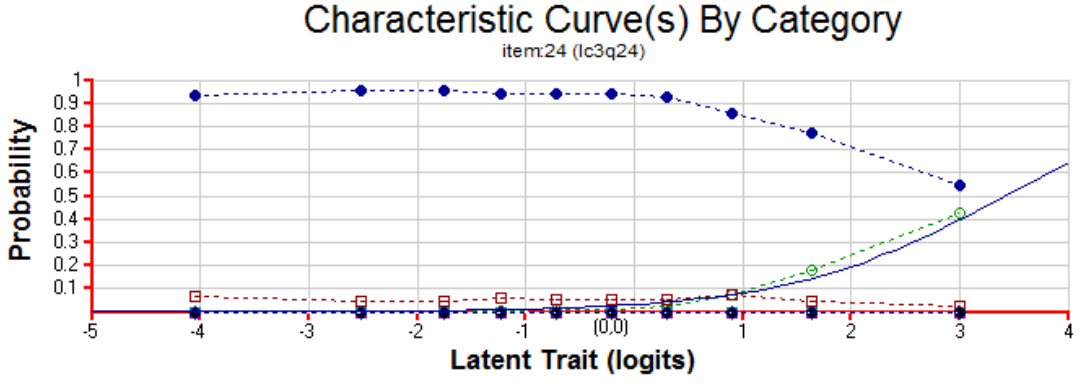

Characteristic Curve(s) By Category
item:19 (lc3q19)
Probability
Latent Trait (logits)
(0,0)

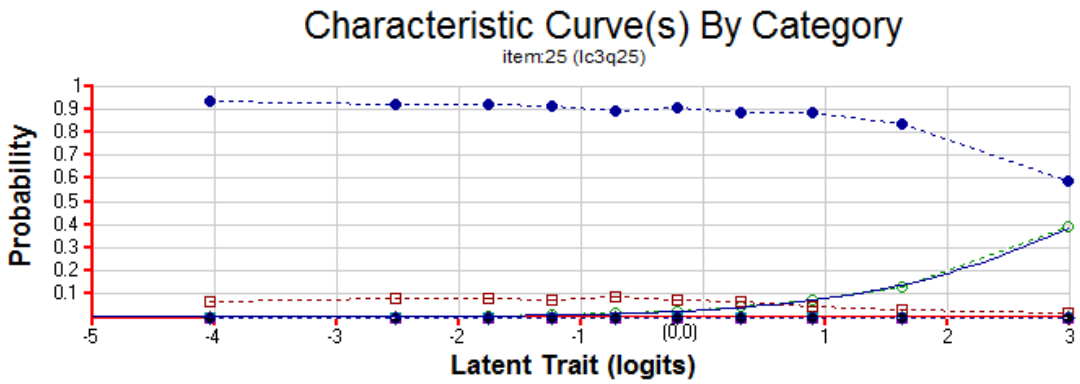

Characteristic Curve(s) By Category
item:20 (lc3q20)
Probability
Latent Trait (logits)
(0,0)


Characteristic Curve(s) By Category
item:21 (lc3q21)
Probability
Latent Trait (logits)
(0,0)

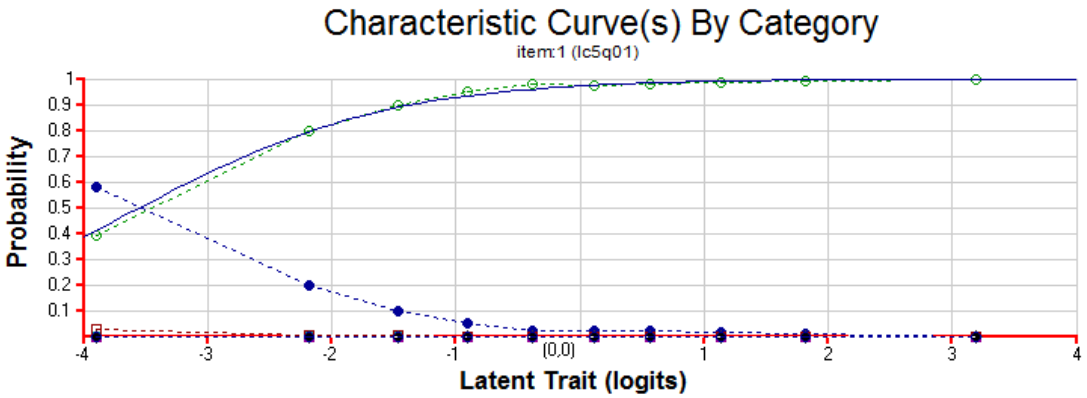

Characteristic Curve(s) By Category
item:22 (lc3q22)
Probability
Latent Trait (logits)
(0,0)

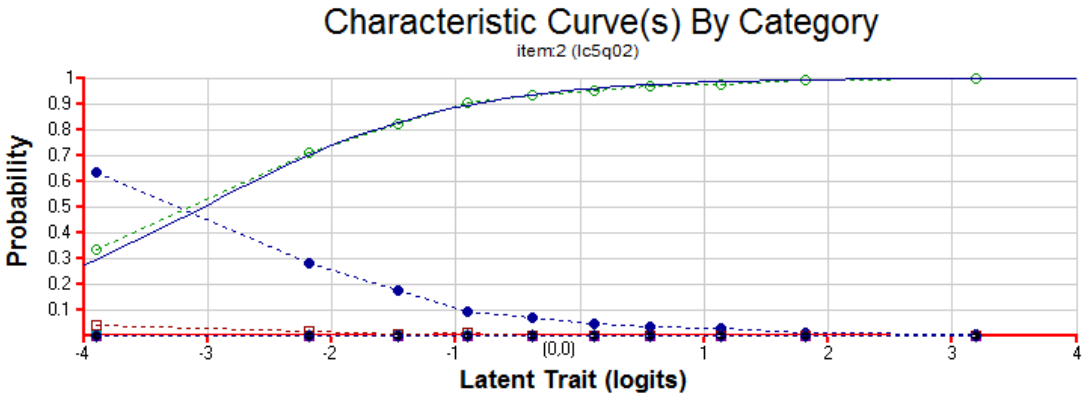

Characteristic Curve(s) By Category
item:23 (lc3q23)
Probability
Latent Trait (logits)
(0,0)

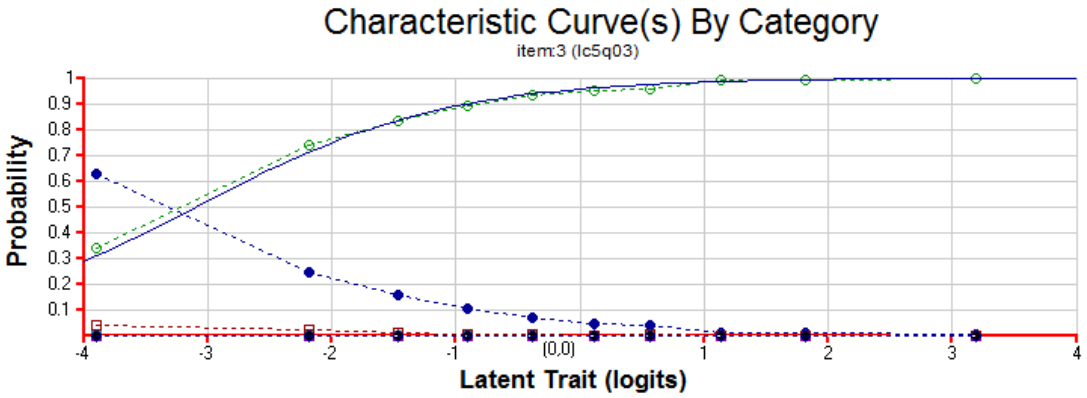

Characteristic Curve(s) By Category
item:24 (lc3q24)
Probability
Latent Trait (logits)
(0,0)

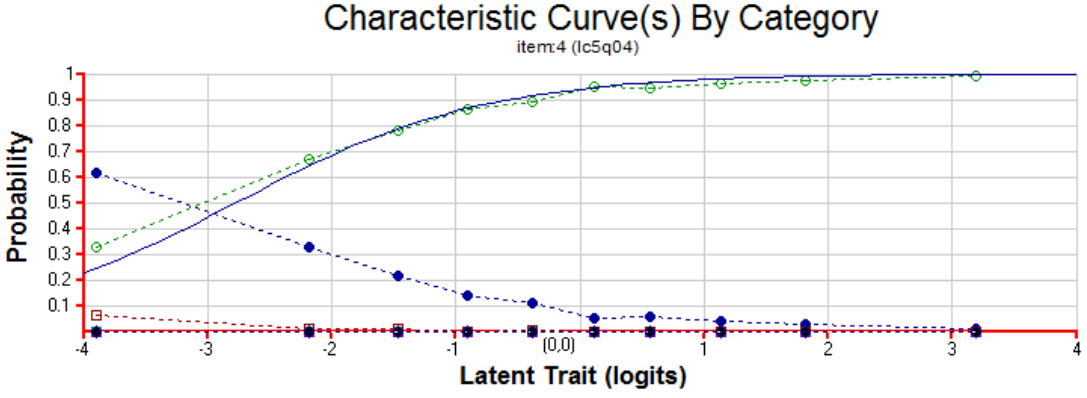

Characteristic Curve(s) By Category
item:25 (lc3q25)
Probability
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-5
-4
-3
-2
-1
(0,0)
1
2
3
Latent Trait (logits)

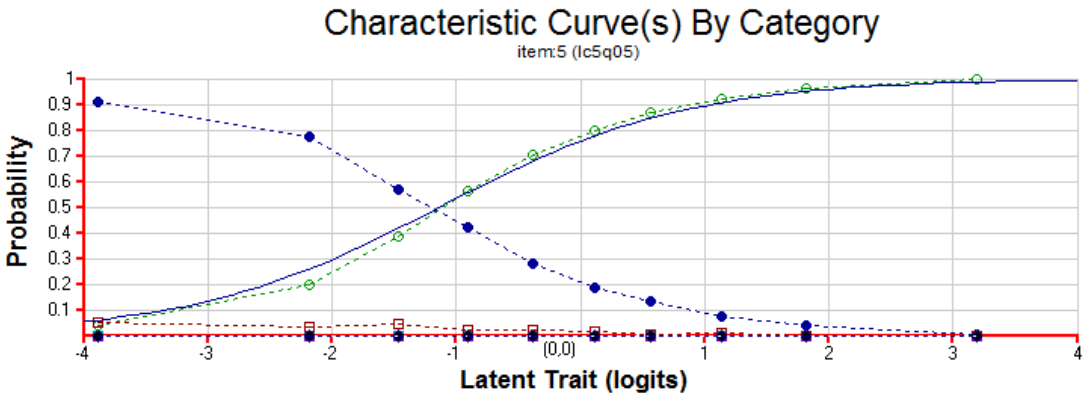
Year 5 Spelling

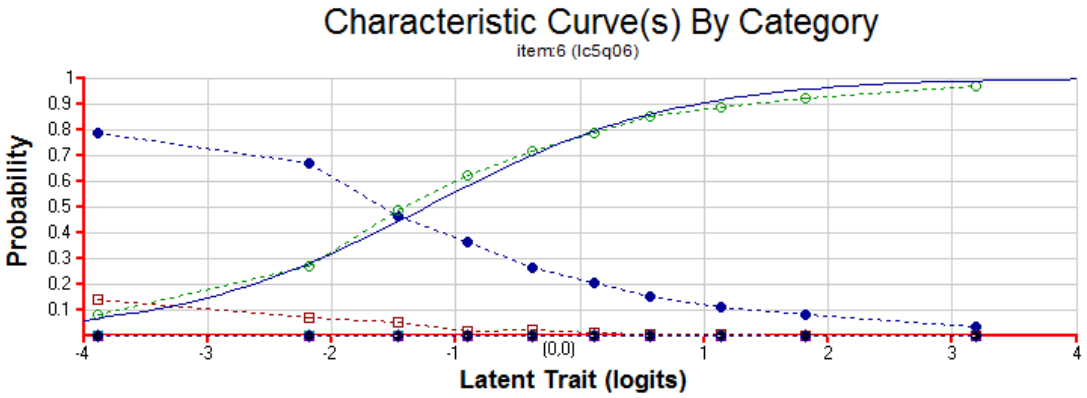


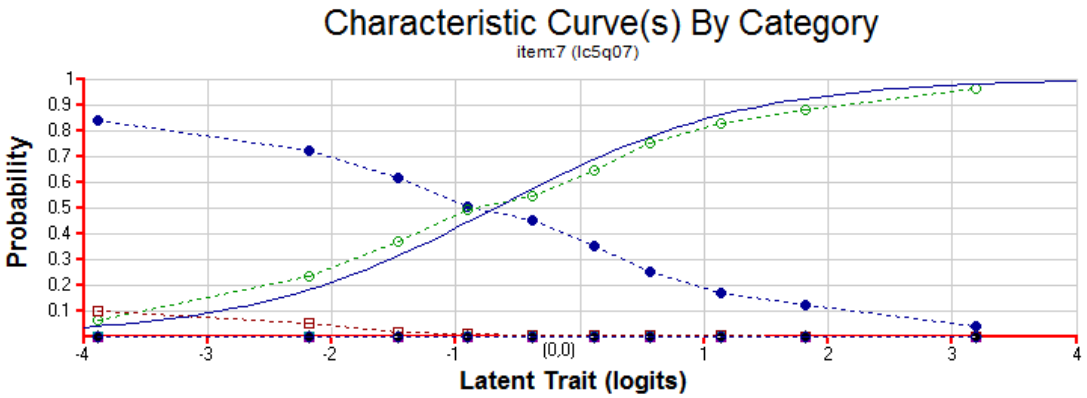







Characteristic Curve(s) By Category
item:5 (lc5q05)
Probability
Latent Trait (logits)
(0,0)


Characteristic Curve(s) By Category
item:6 (lc5q06)
Probability
Latent Trait (logits)
(0,0)


Characteristic Curve(s) By Category
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Probability
Latent Trait (logits)
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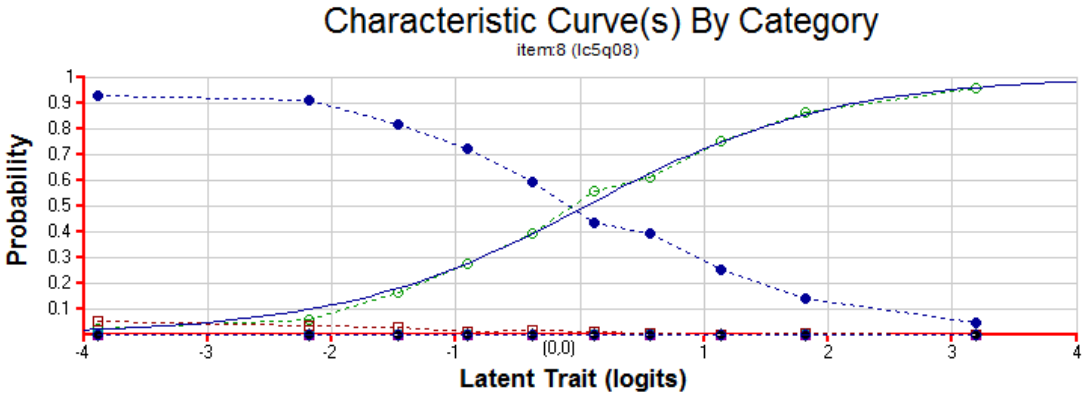
Characteristic Curve(s) By Category
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Probability
Latent Trait (logits)
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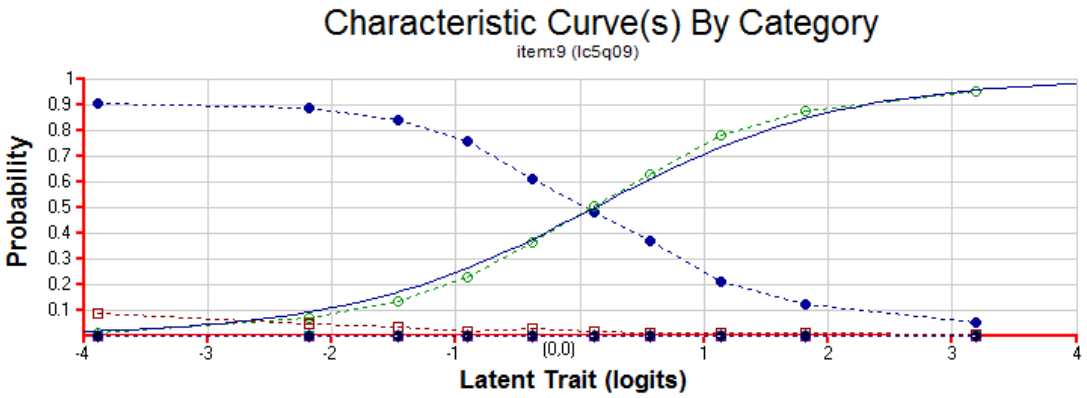
Characteristic Curve(s) By Category
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Probability
Latent Trait (logits)
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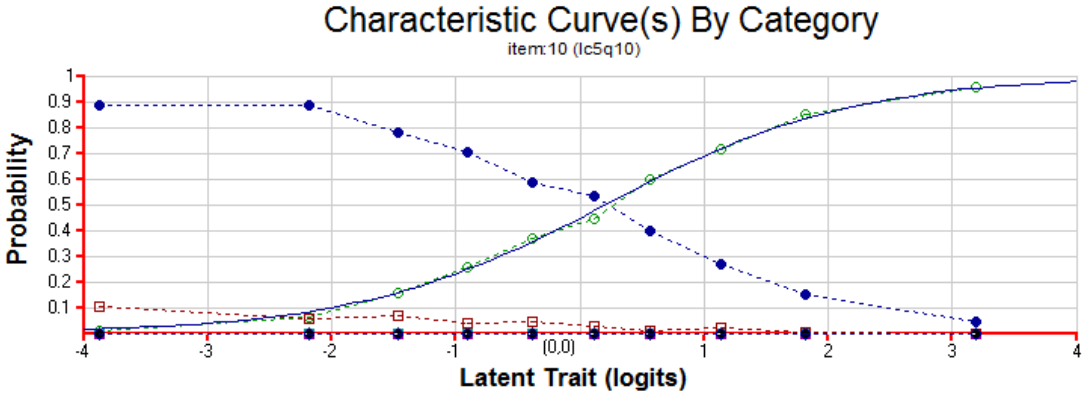
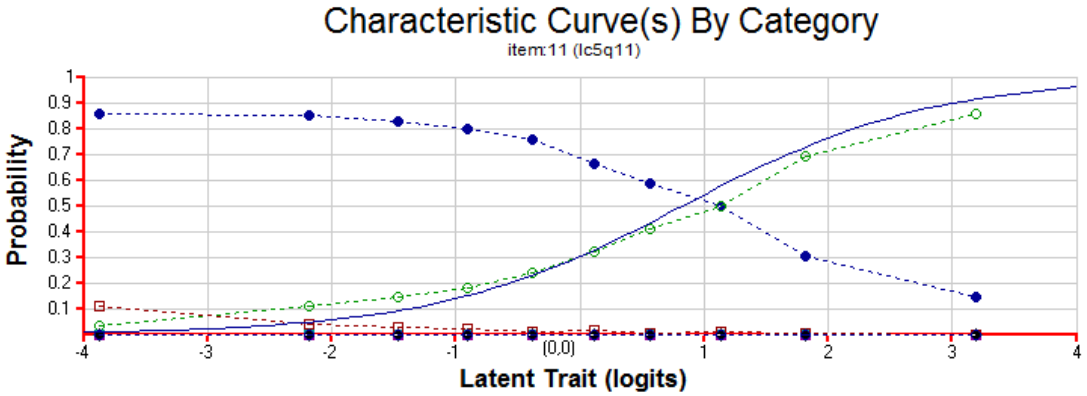
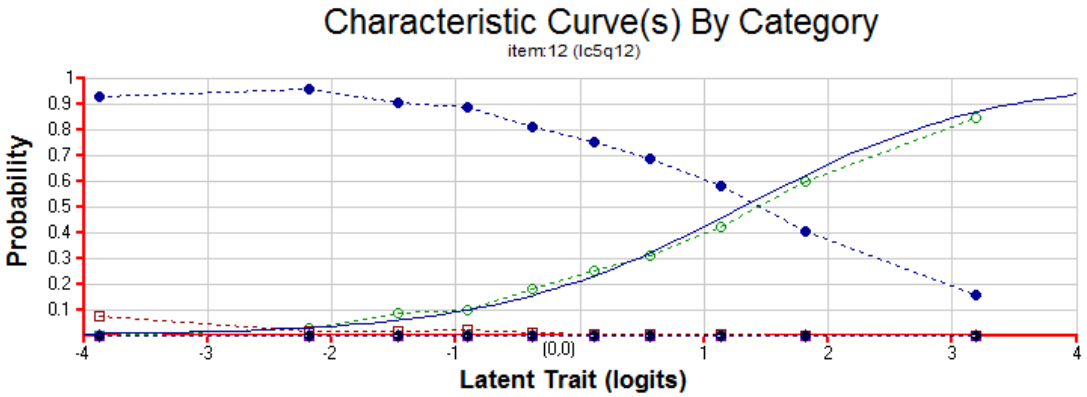
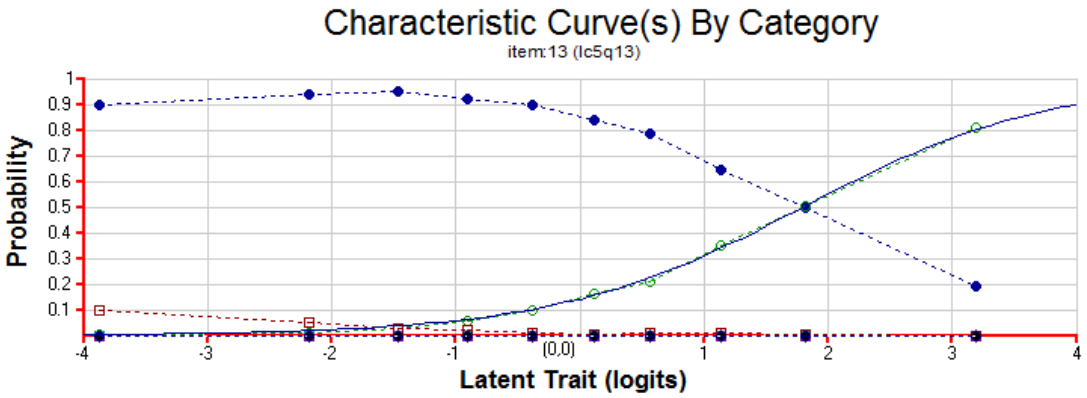
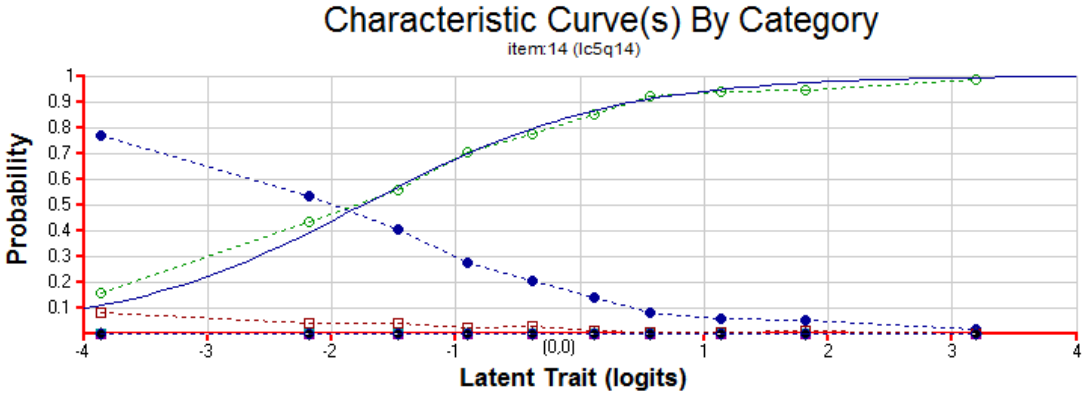
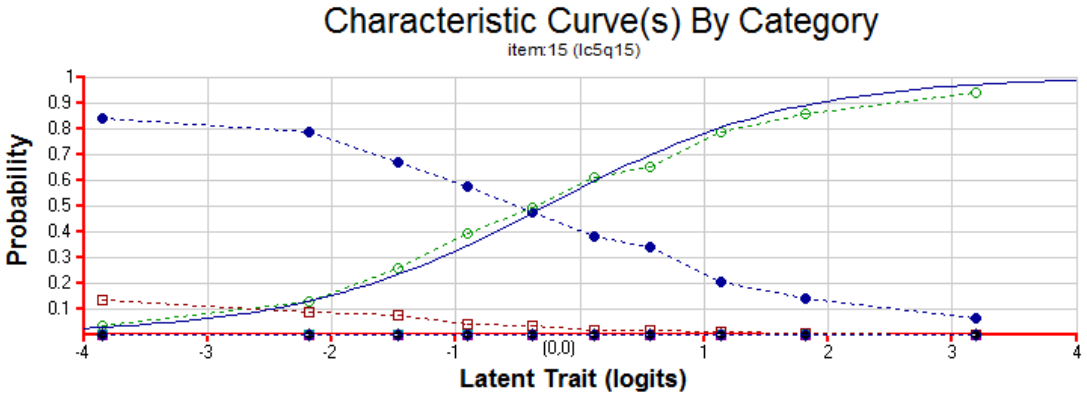

Characteristic Curve(s) By Category
item:10 (lc5q10)
Probability
Latent Trait (logits)
(0,0)

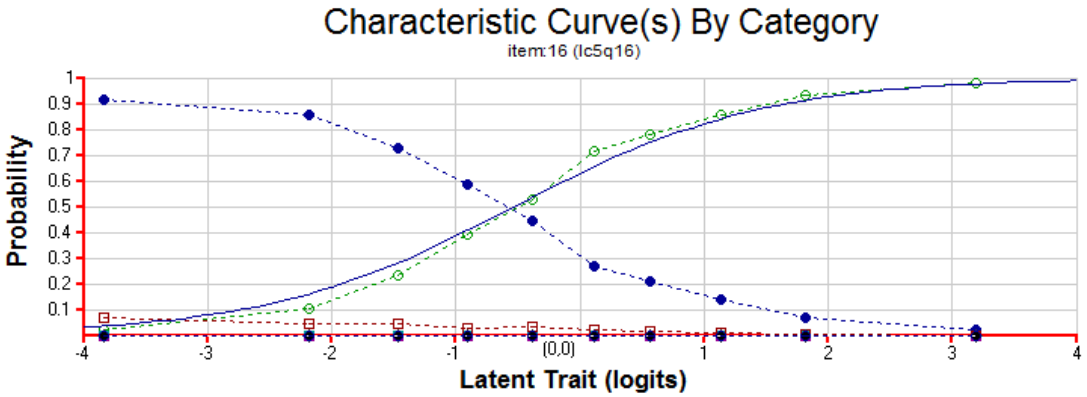

Characteristic Curve(s) By Category
item:11 (lc5q11)
Probability
Latent Trait (logits)
(0,0)

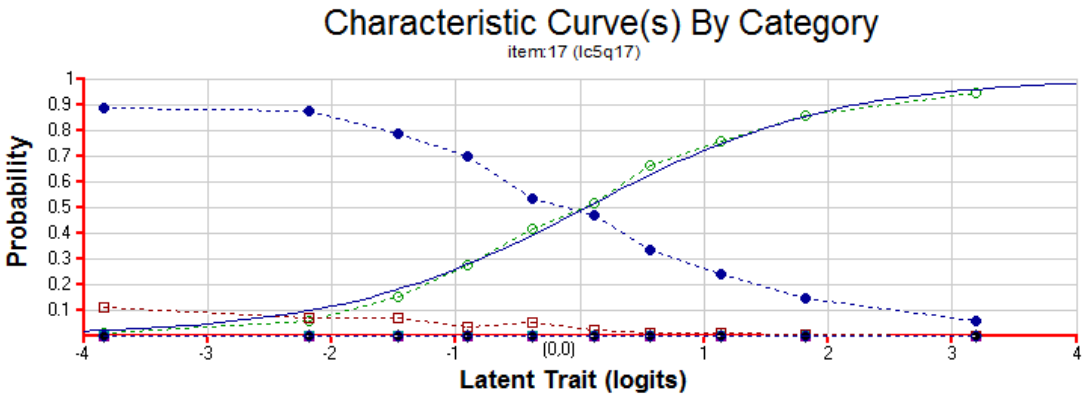

Characteristic Curve(s) By Category
item:12 (lc5q12)
Probability
Latent Trait (logits)
(0,0)

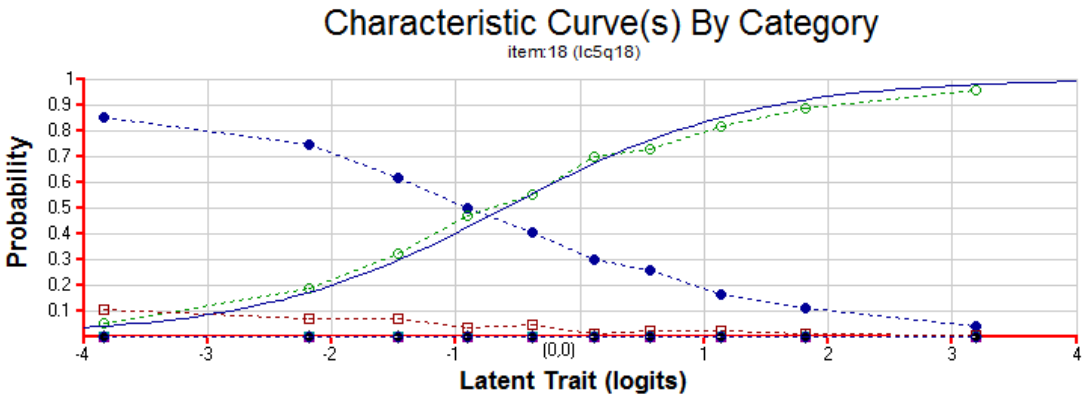

Characteristic Curve(s) By Category
item:13 (lc5q13)
Probability
Latent Trait (logits)
(0,0)

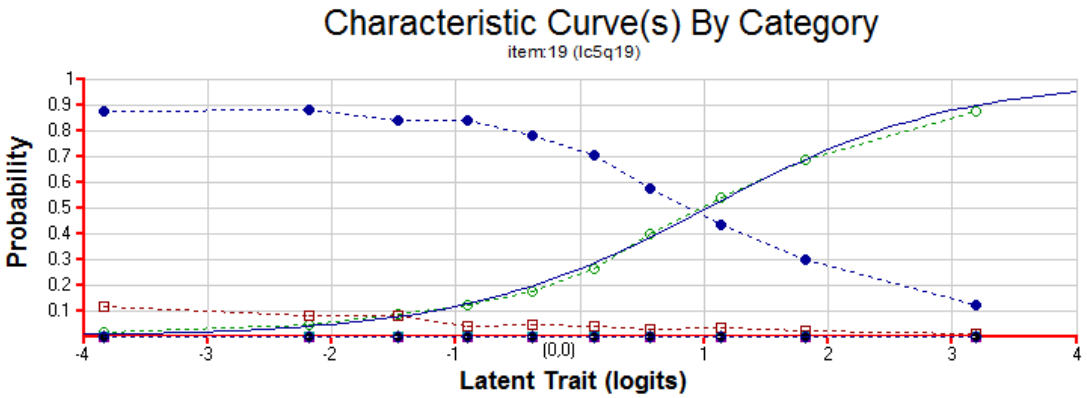

Characteristic Curve(s) By Category
item:14 (lc5q14)
Probability
Latent Trait (logits)
(0,0)

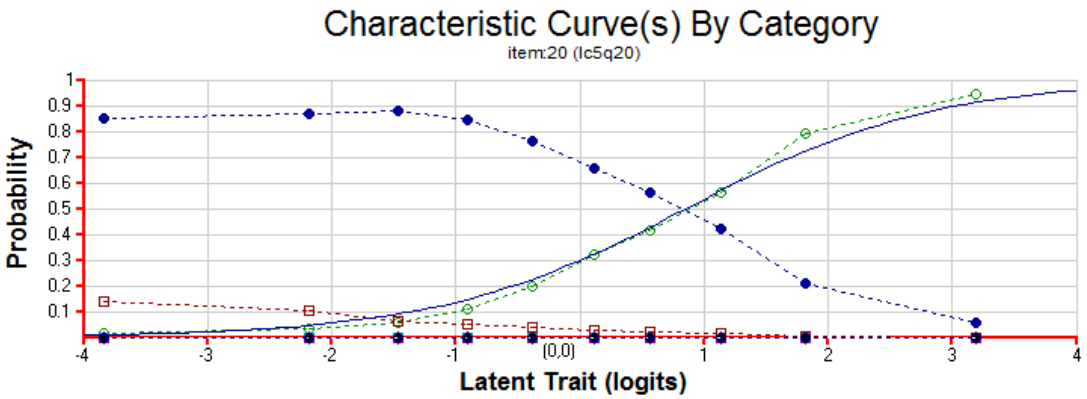

Characteristic Curve(s) By Category
item:15 (lc5q15)
Probability
Latent Trait (logits)
(0,0)

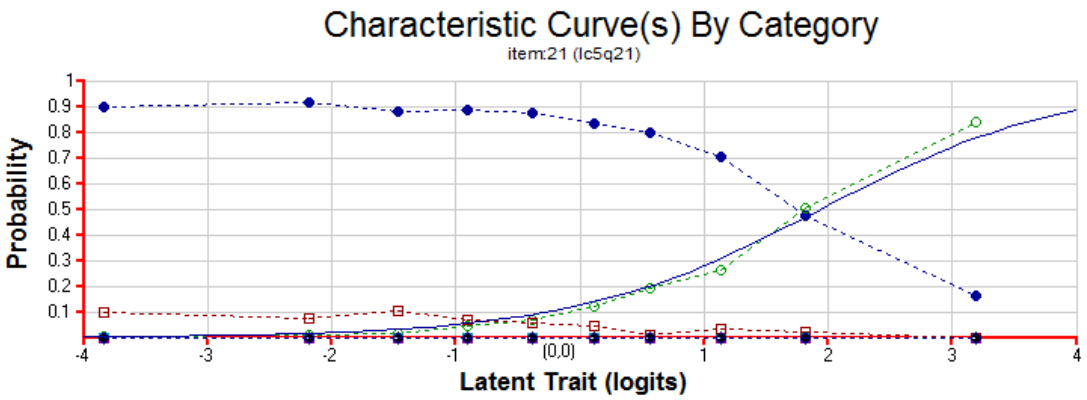

Characteristic Curve(s) By Category
item:16 (lc5q16)
Probability
Latent Trait (logits)
(0,0)

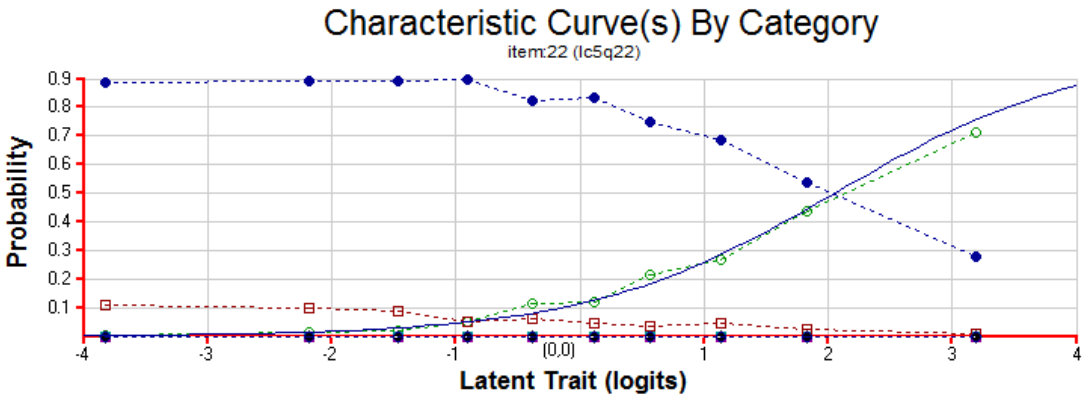

Characteristic Curve(s) By Category
item:17 (lc5q17)
Probability
Latent Trait (logits)
(0,0)

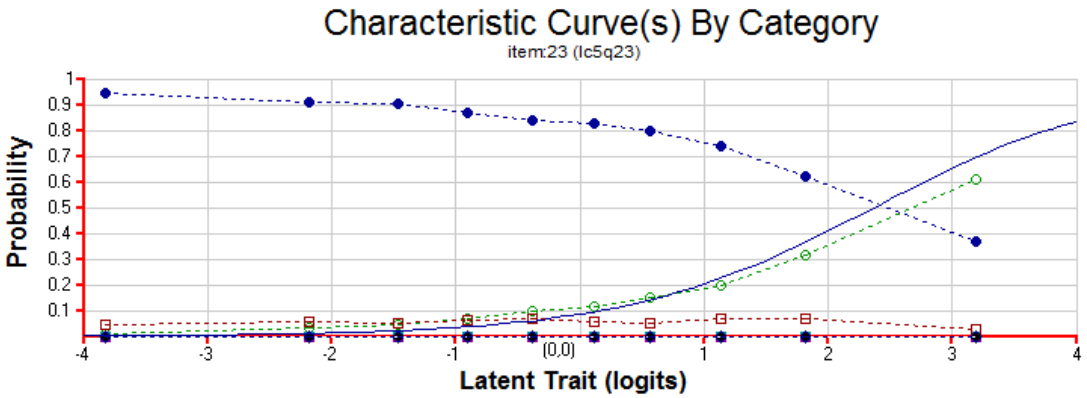

Characteristic Curve(s) By Category
item:18 (lc5q18)
Probability
Latent Trait (logits)
(0,0)

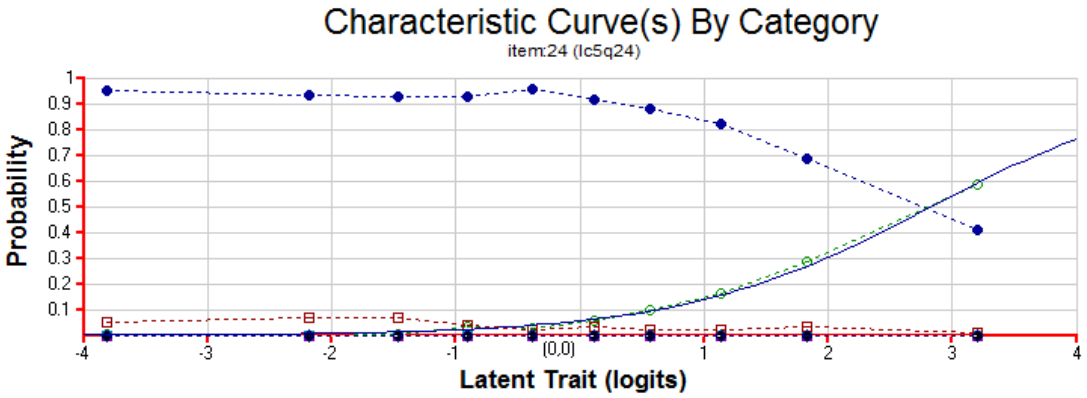

Characteristic Curve(s) By Category
item:19 (lc5q19)
Probability
Latent Trait (logits)
(0,0)

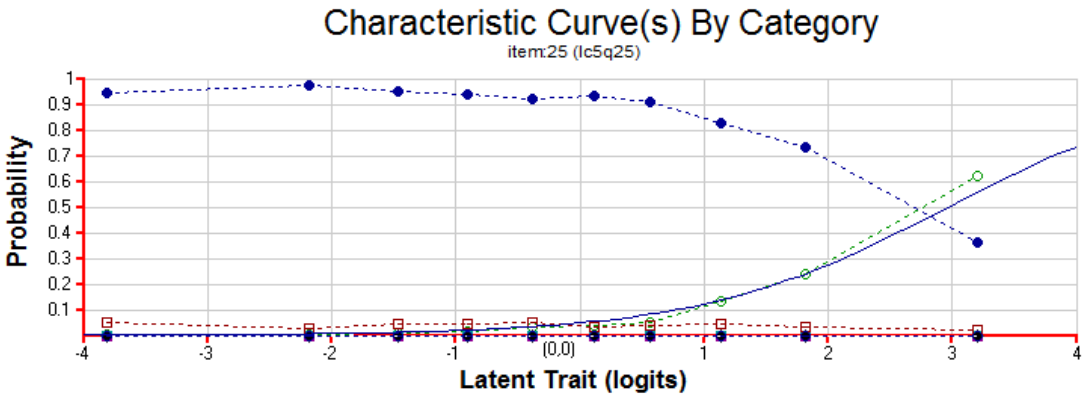

Characteristic Curve(s) By Category
item:20 (lc5q20)
Probability
Latent Trait (logits)
(0,0)


Characteristic Curve(s) By Category
item:21 (lc5q21)
Probability
Latent Trait (logits)
(0,0)

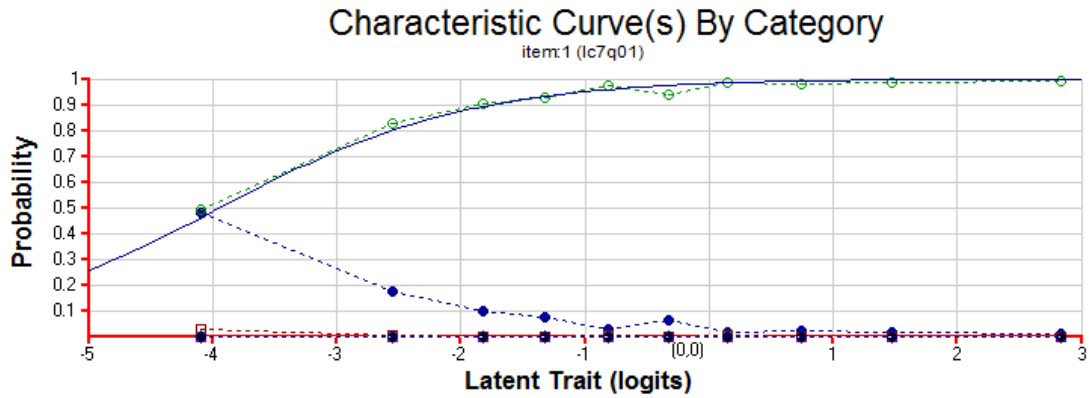

Characteristic Curve(s) By Category
item:22 (lc5q22)
Probability
Latent Trait (logits)
(0,0)

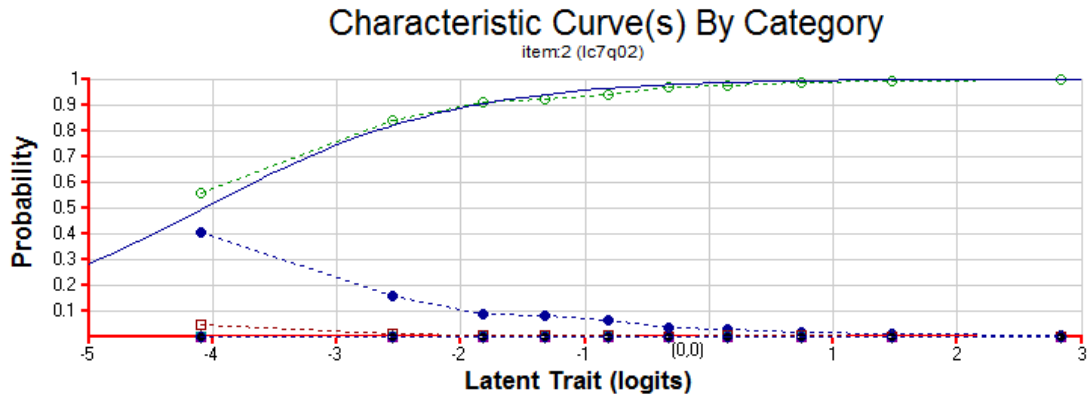

Characteristic Curve(s) By Category
item:23 (lc5q23)
Probability
Latent Trait (logits)
(0,0)

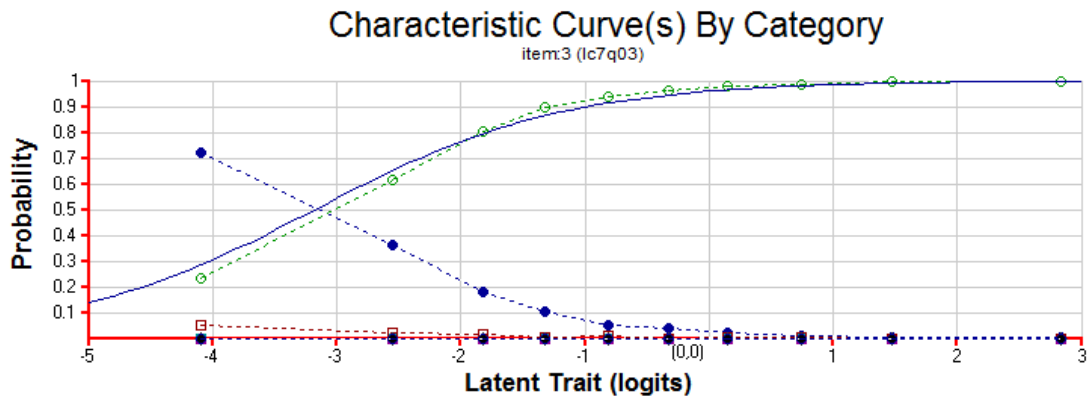

Characteristic Curve(s) By Category
item:24 (lc5q24)
Probability
Latent Trait (logits)
(0,0)

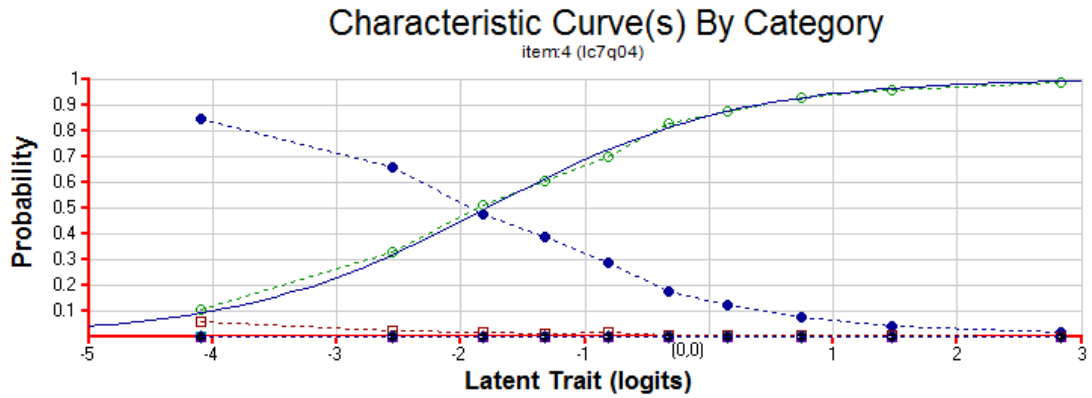

Characteristic Curve(s) By Category
item:25 (Ic5q25)
Probability
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-4
-3
-2
-1
(0,0)
1
2
3
4
Latent Trait (logits)

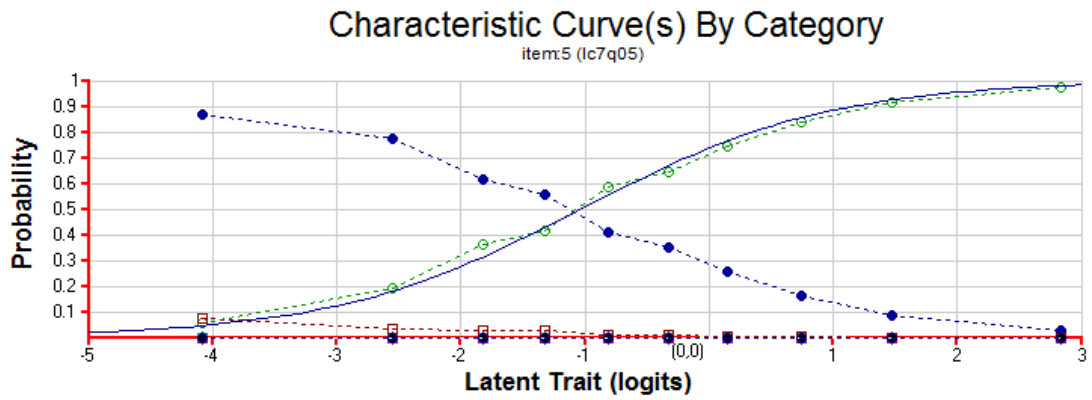
Year 7 Spelling

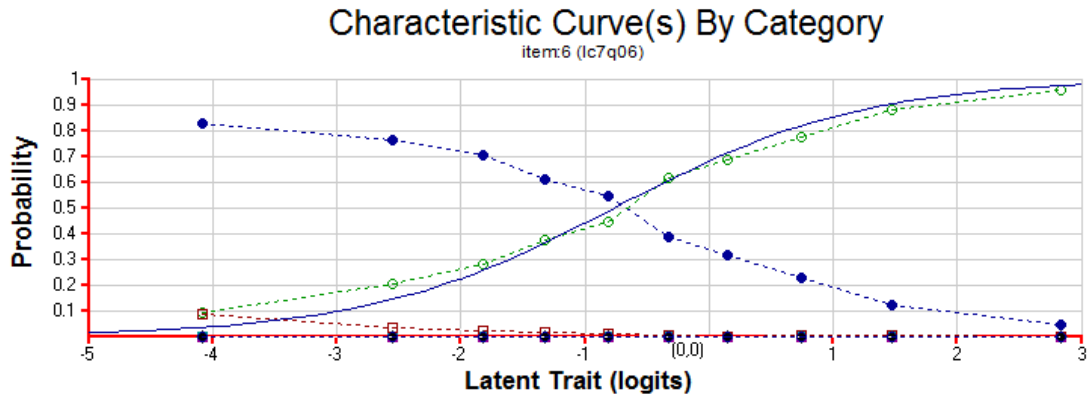


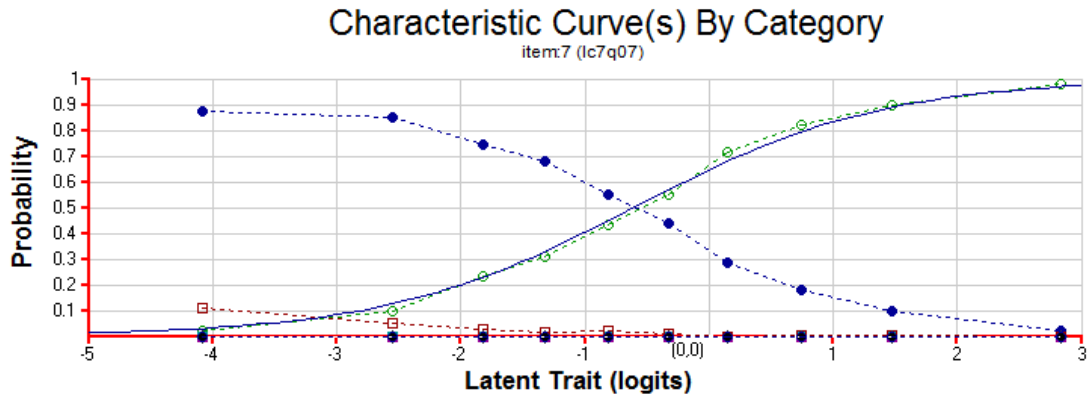


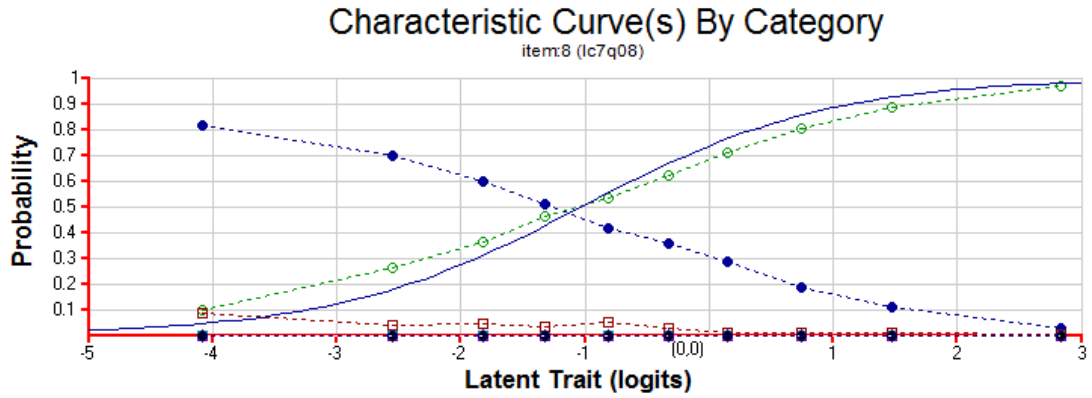


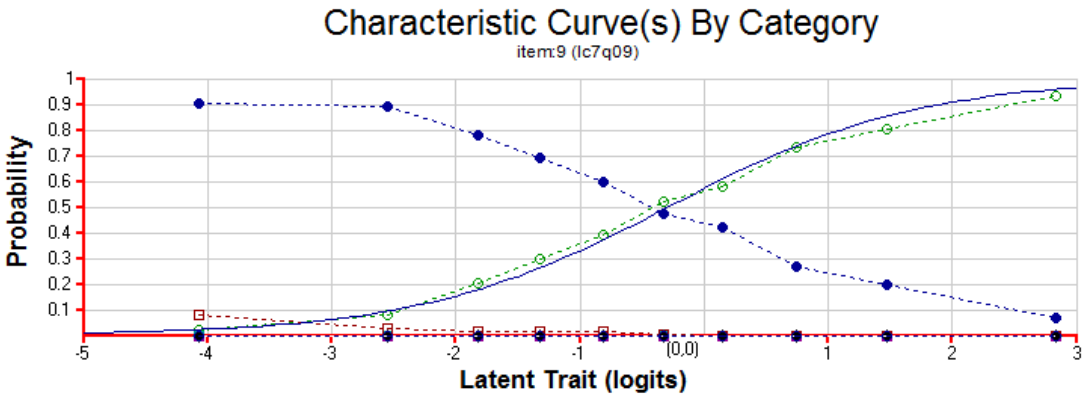


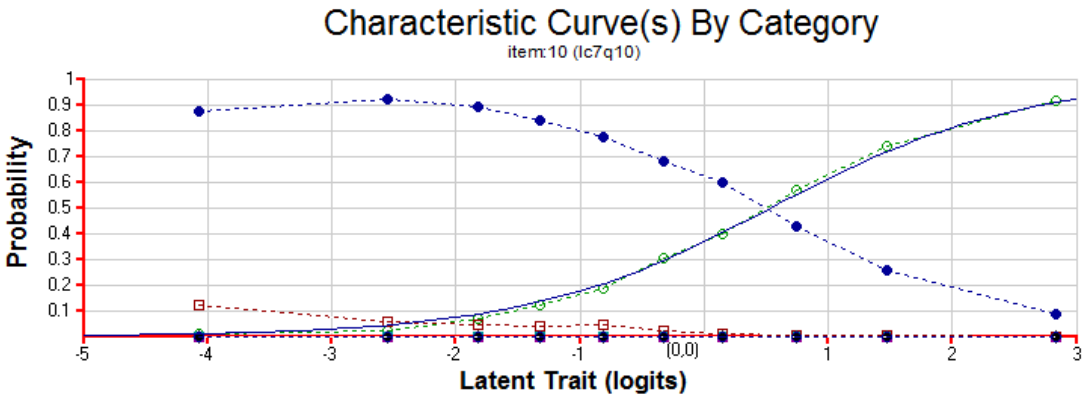

Characteristic Curve(s) By Category
item:5 (lc7q05)
Probability
Latent Trait (logits)
(0,0)

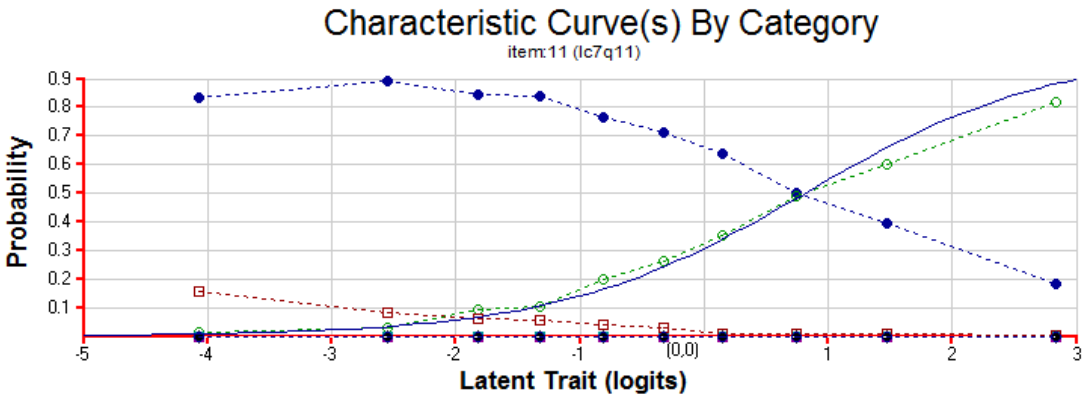

Characteristic Curve(s) By Category
item:6 (lc7q06)
Probability
Latent Trait (logits)
(0,0)

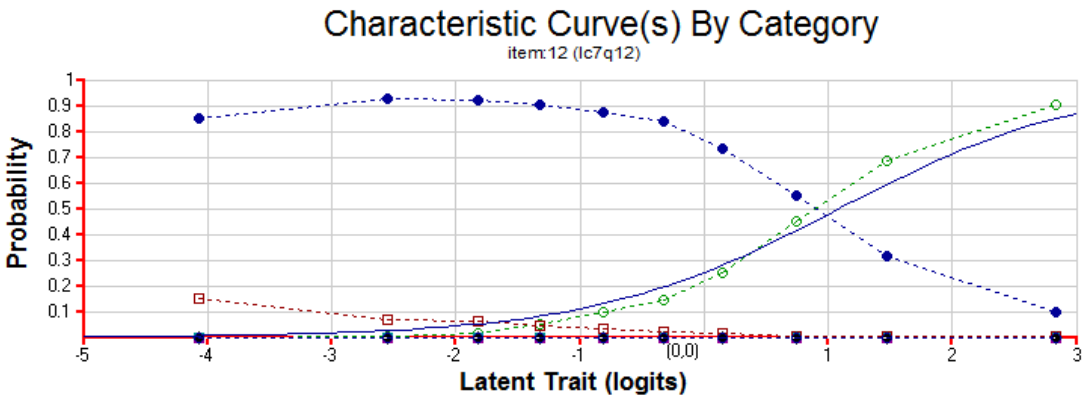

Characteristic Curve(s) By Category
item:7 (lc7q07)
Probability
Latent Trait (logits)
(0,0)

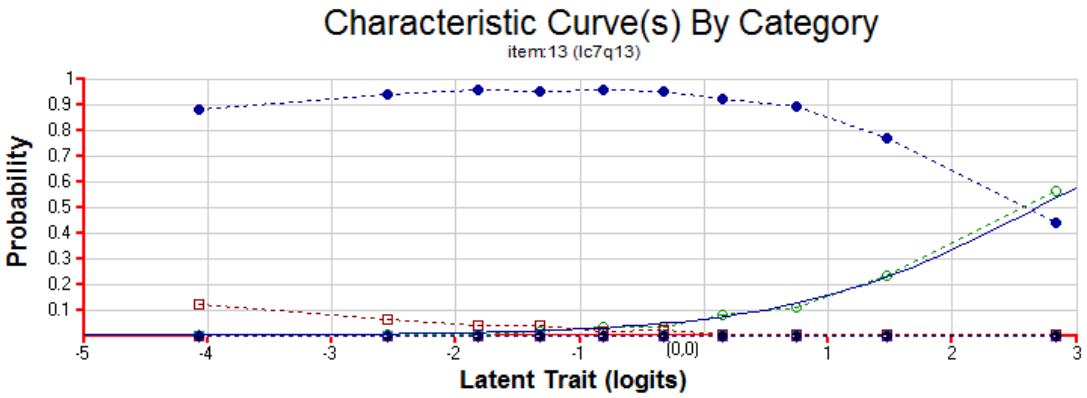

Characteristic Curve(s) By Category
item:8 (lc7q08)
Probability
Latent Trait (logits)
(0,0)

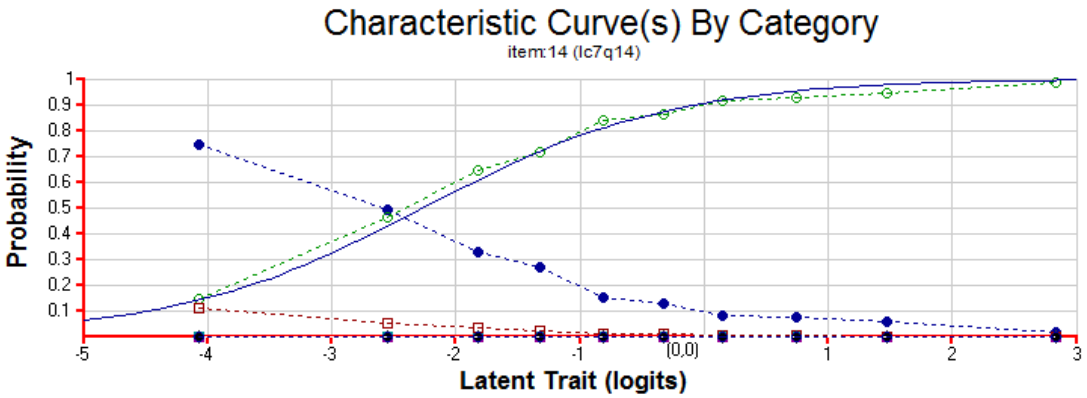

Characteristic Curve(s) By Category
item:9 (lc7q09)
Probability
Latent Trait (logits)
(0,0)

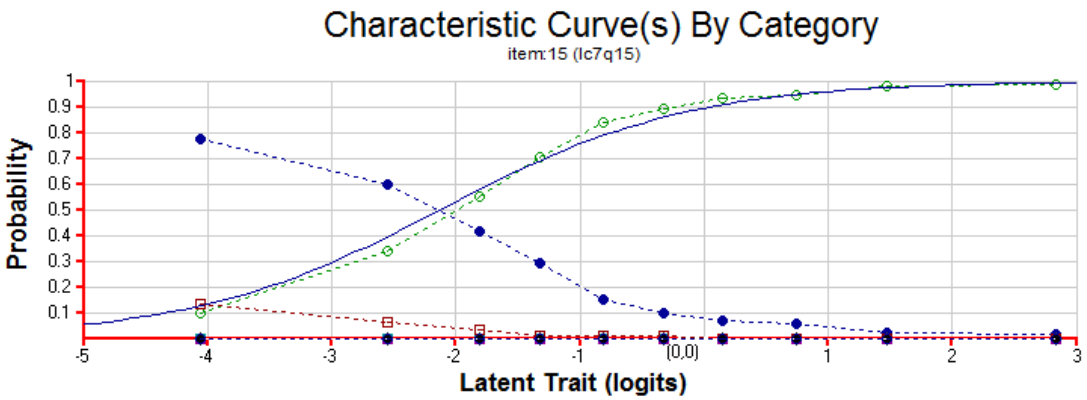

Characteristic Curve(s) By Category
item:10 (lc7q10)
Probability
Latent Trait (logits)
(0,0)

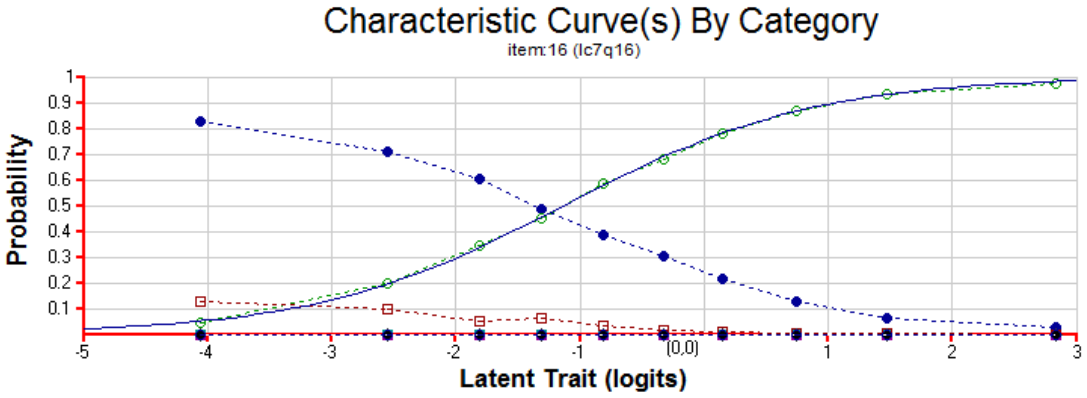

Characteristic Curve(s) By Category
item:11 (lc7q11)
Probability
Latent Trait (logits)
(0,0)

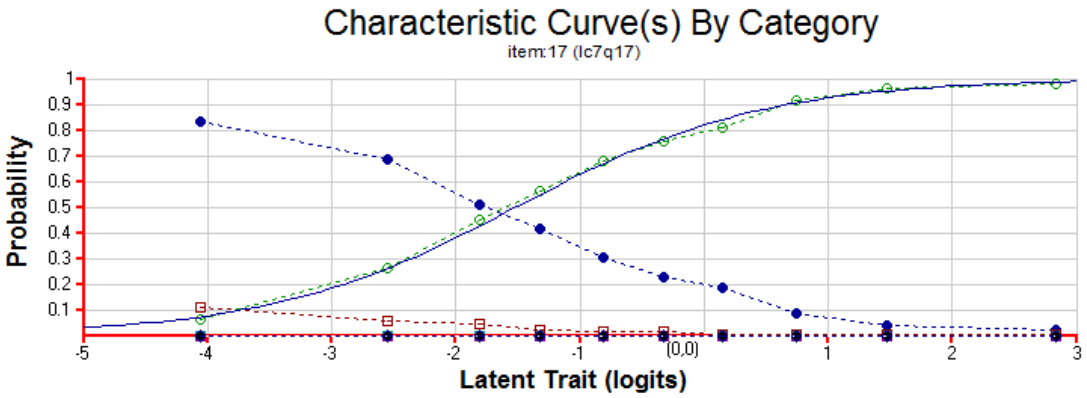

Characteristic Curve(s) By Category
item:12 (lc7q12)
Probability
Latent Trait (logits)
(0,0)

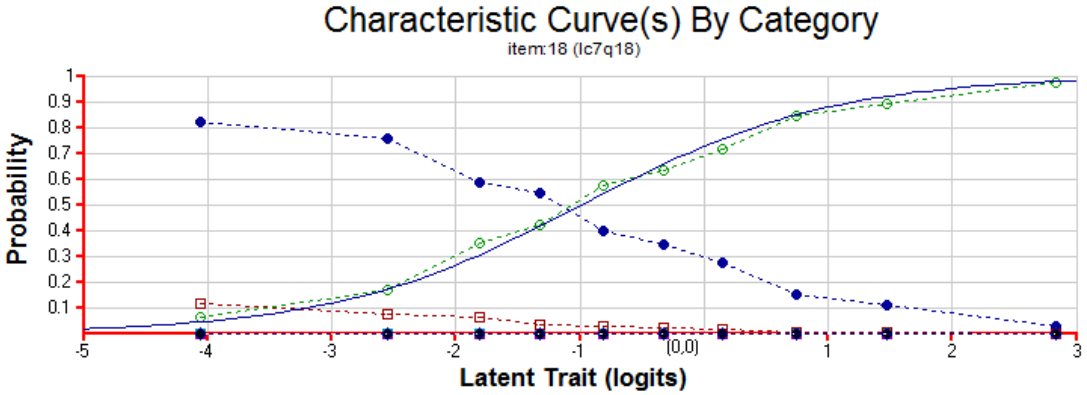

Characteristic Curve(s) By Category
item:13 (lc7q13)
Probability
Latent Trait (logits)
(0,0)

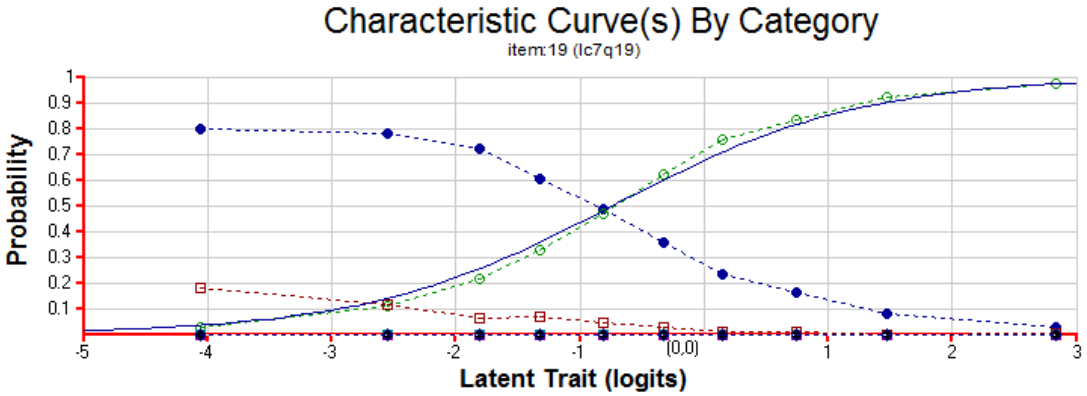

Characteristic Curve(s) By Category
item:14 (lc7q14)
Probability
Latent Trait (logits)
(0,0)

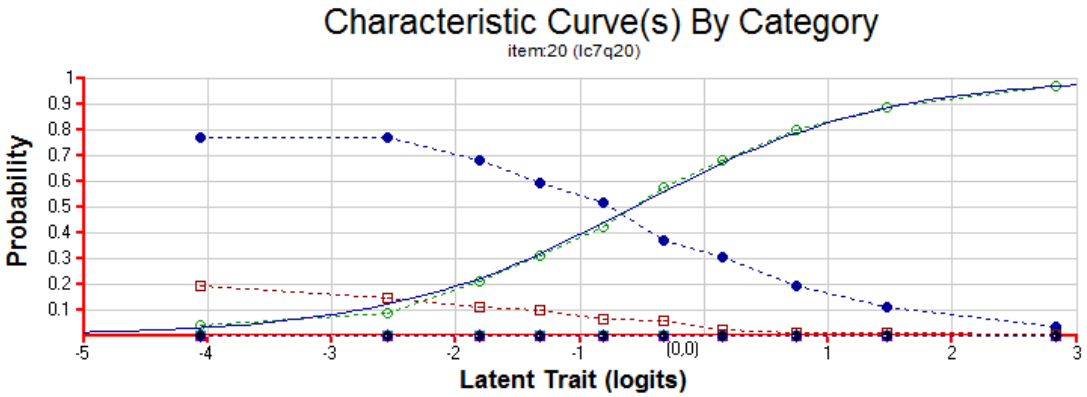

Characteristic Curve(s) By Category
item:15 (lc7q15)
Probability
Latent Trait (logits)
(0,0)

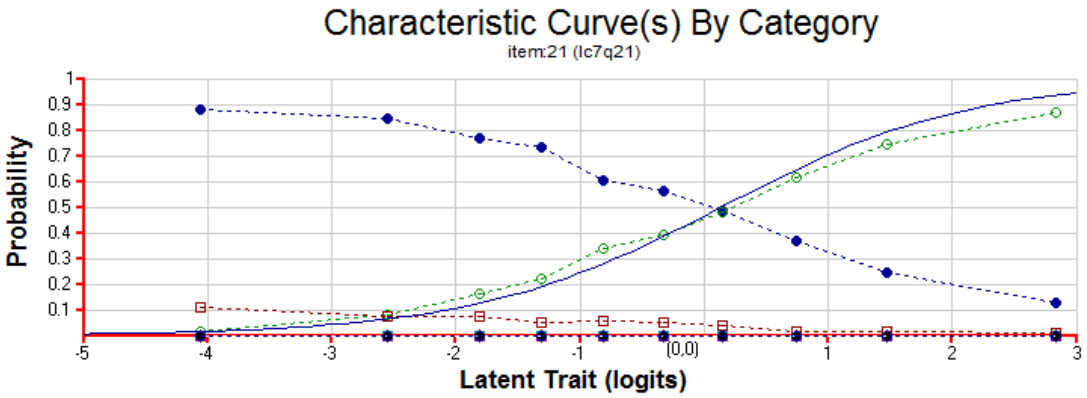

Characteristic Curve(s) By Category
item:16 (lc7q16)
Probability
Latent Trait (logits)
(0,0)

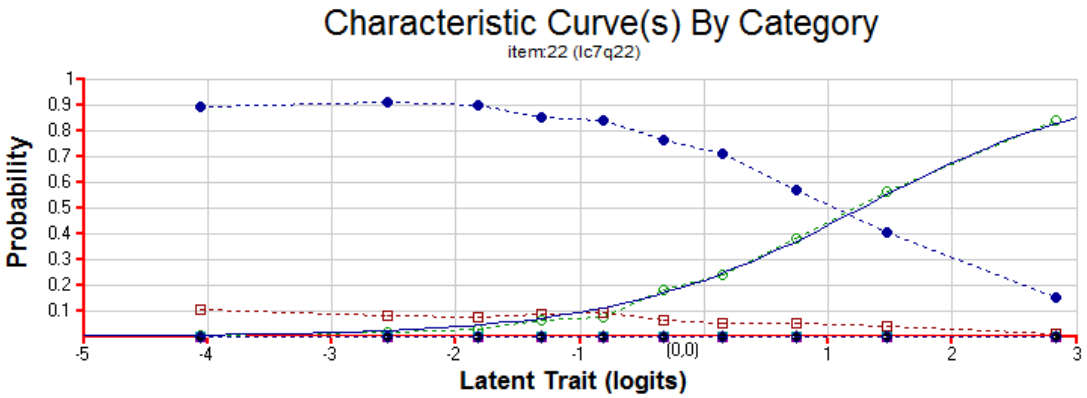

Characteristic Curve(s) By Category
item:17 (lc7q17)
Probability
Latent Trait (logits)
(0,0)

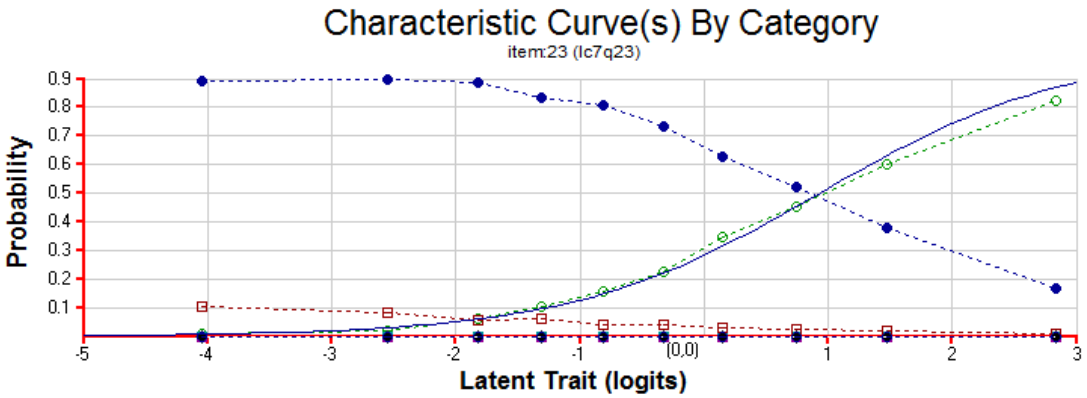

Characteristic Curve(s) By Category
item:18 (lc7q18)
Probability
Latent Trait (logits)
(0,0)

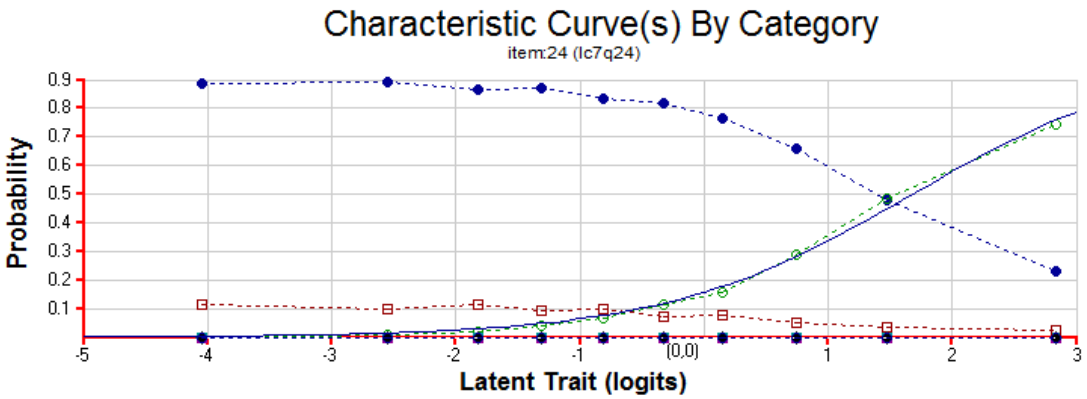

Characteristic Curve(s) By Category
item:19 (lc7q19)
Probability
Latent Trait (logits)
(0,0)

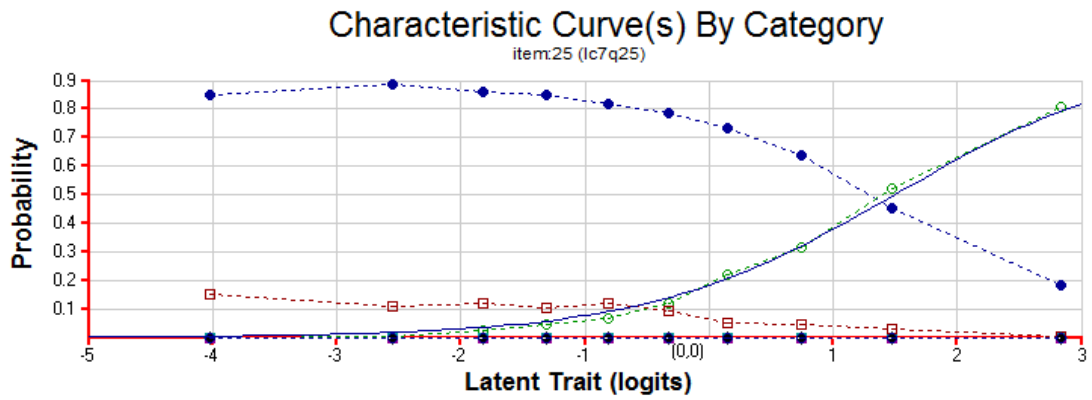

Characteristic Curve(s) By Category
item:20 (lc7q20)
Probability
Latent Trait (logits)
(0,0)

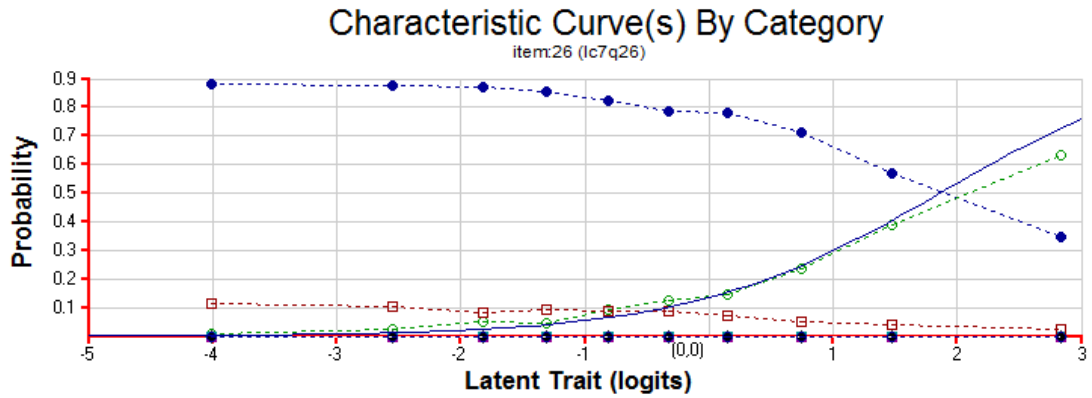

Characteristic Curve(s) By Category
item:21 (lc7q21)
Probability
Latent Trait (logits)
(0,0)

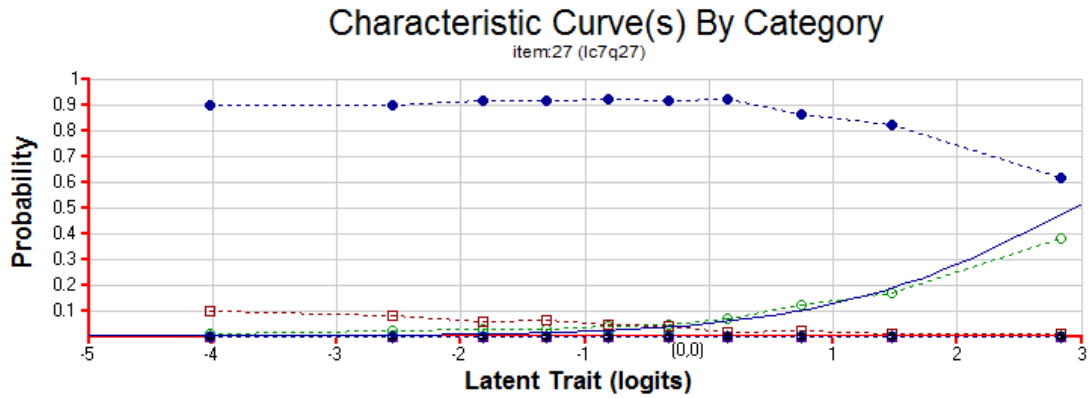

Characteristic Curve(s) By Category
item:22 (lc7q22)
Probability
Latent Trait (logits)
(0,0)

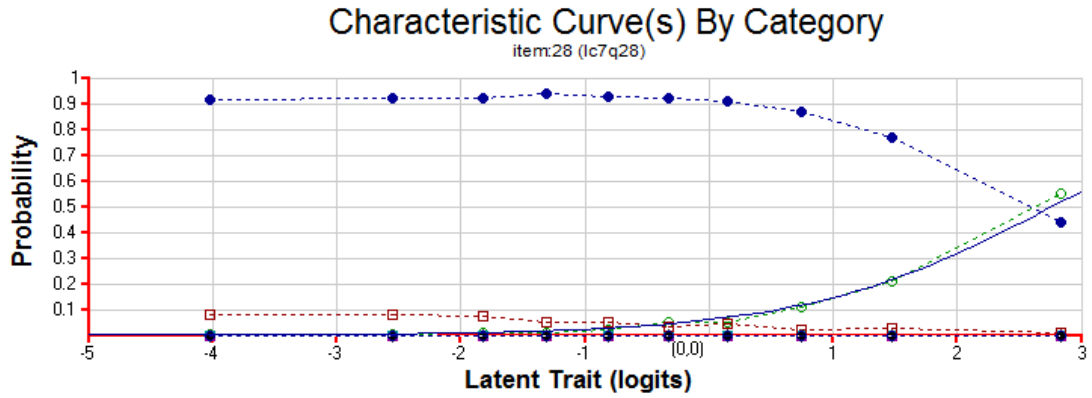

Characteristic Curve(s) By Category
item:23 (lc7q23)
Probability
Latent Trait (logits)
(0,0)

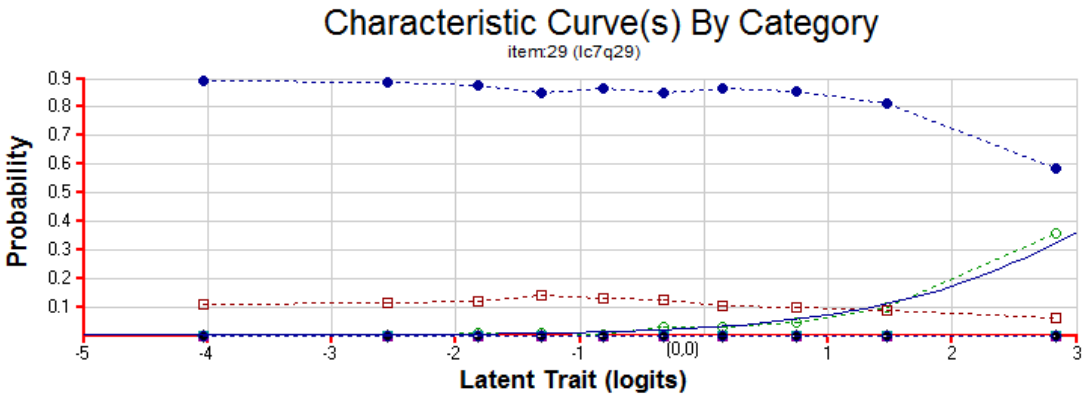

Characteristic Curve(s) By Category
item:24 (lc7q24)
Probability
Latent Trait (logits)
(0,0)

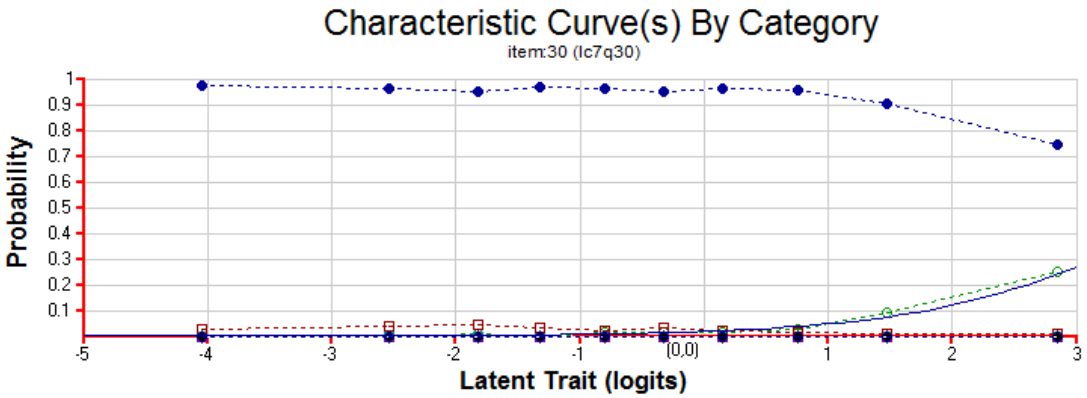

Characteristic Curve(s) By Category
item:25 (lc7q25)
Probability
Latent Trait (logits)
(0,0)


Characteristic Curve(s) By Category
item:26 (lc7q26)
Probability
Latent Trait (logits)
(0,0)

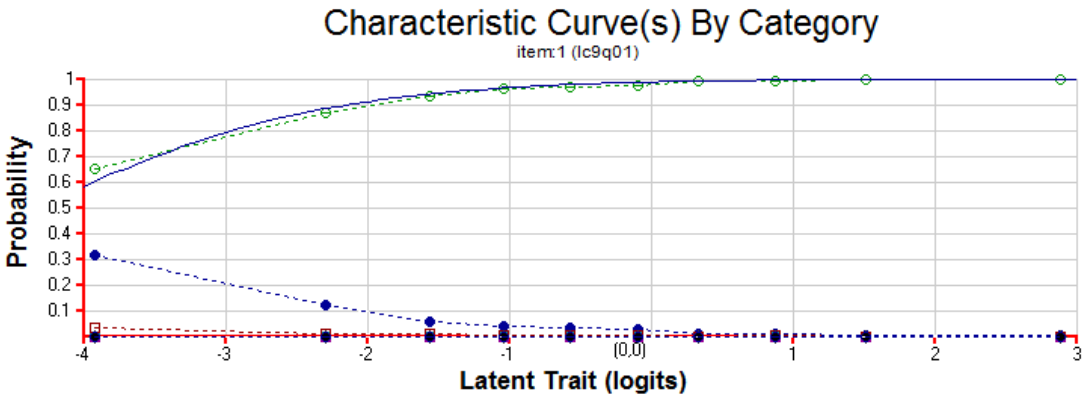

Characteristic Curve(s) By Category
item:27 (lc7q27)
Probability
Latent Trait (logits)
(0,0)

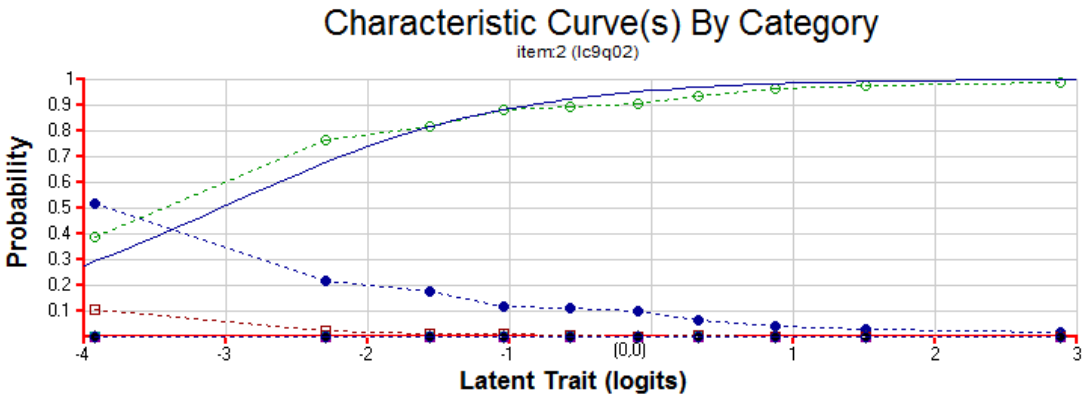

Characteristic Curve(s) By Category
item:28 (lc7q28)
Probability
Latent Trait (logits)
(0,0)

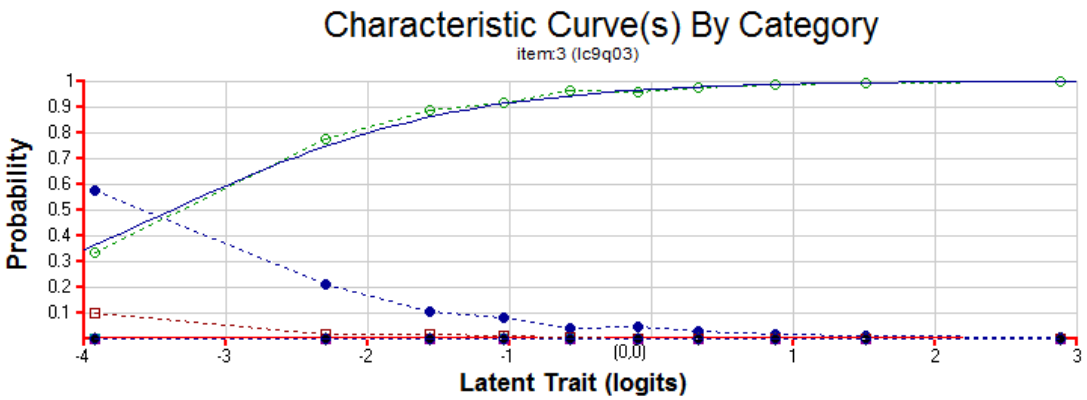

Characteristic Curve(s) By Category
item:29 (Ic7q29)
Probability
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-5
-4
-3
-2
-1
(0,0)
1
2
3
Latent Trait (logits)

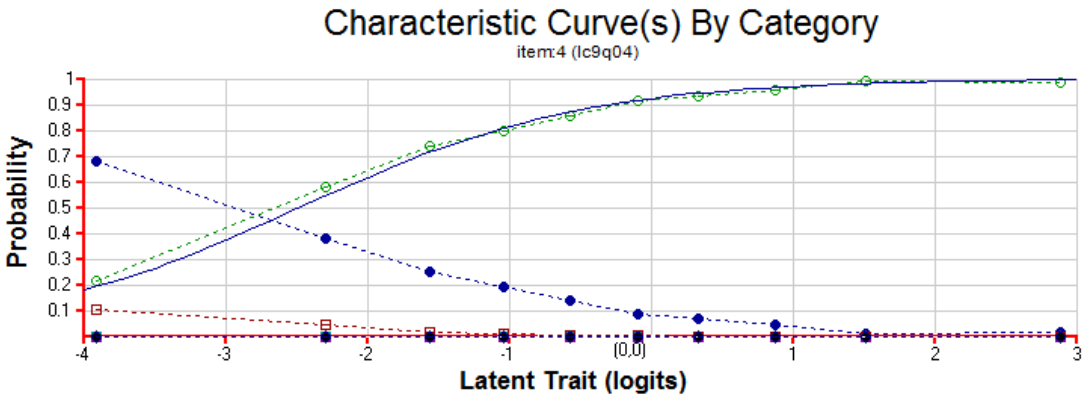

Characteristic Curve(s) By Category
item:30 (Ic7q30)
Probability
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-5
-4
-3
-2
-1
(0,0)
1
2
3
Latent Trait (logits)

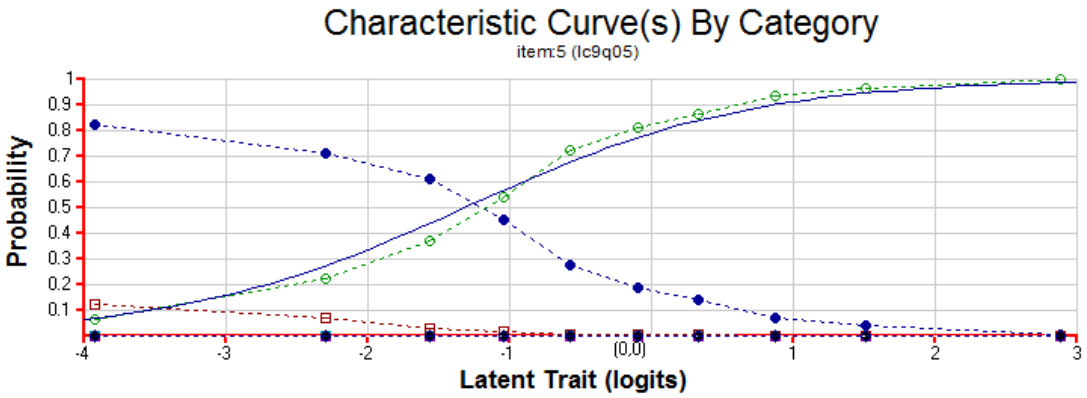
Year 9 Spelling

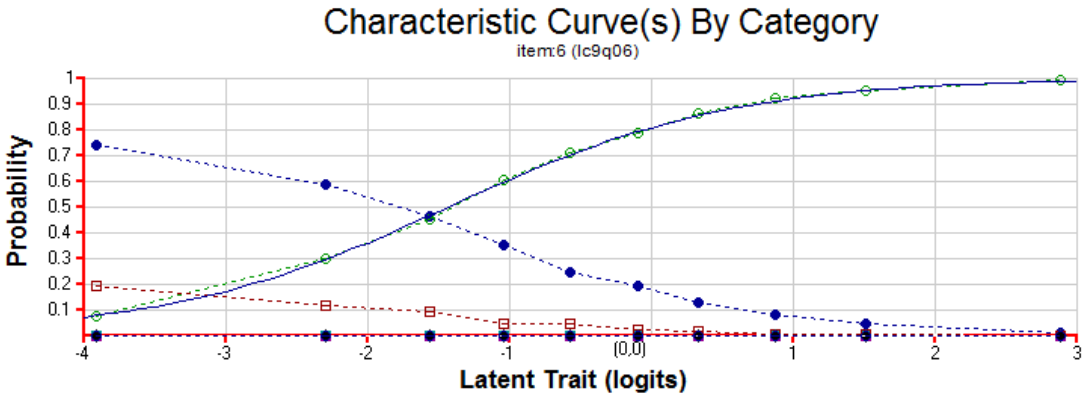


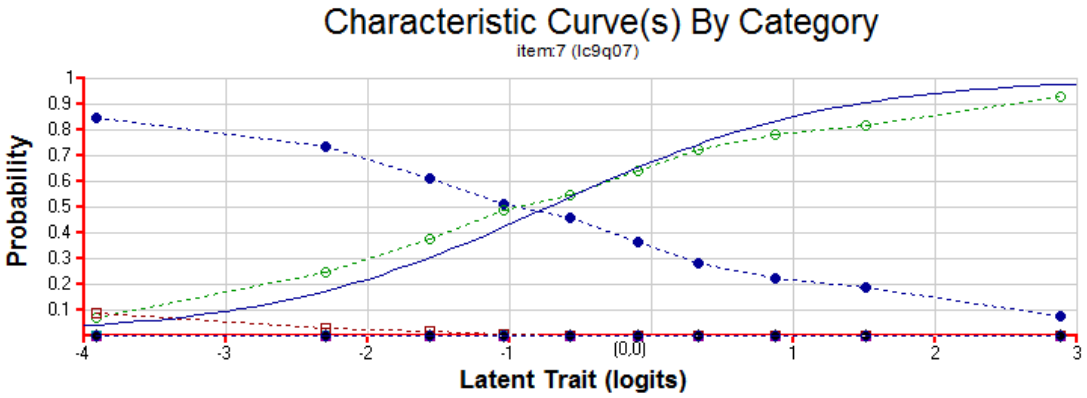


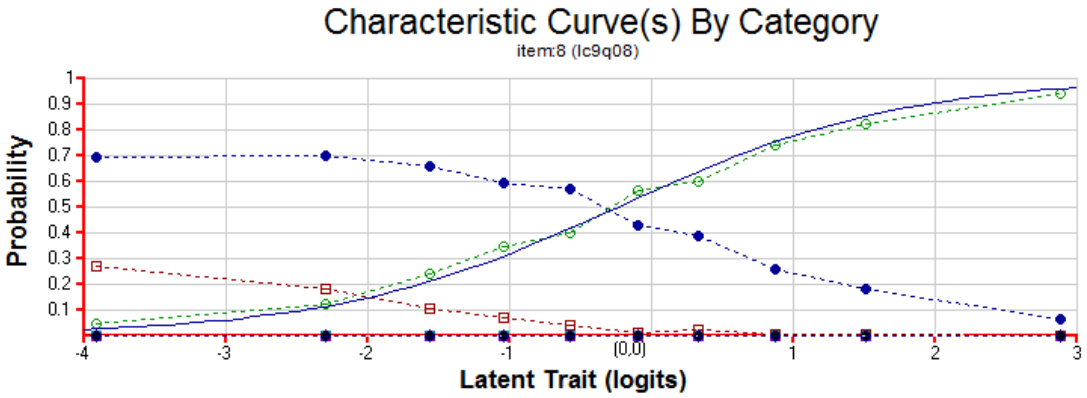


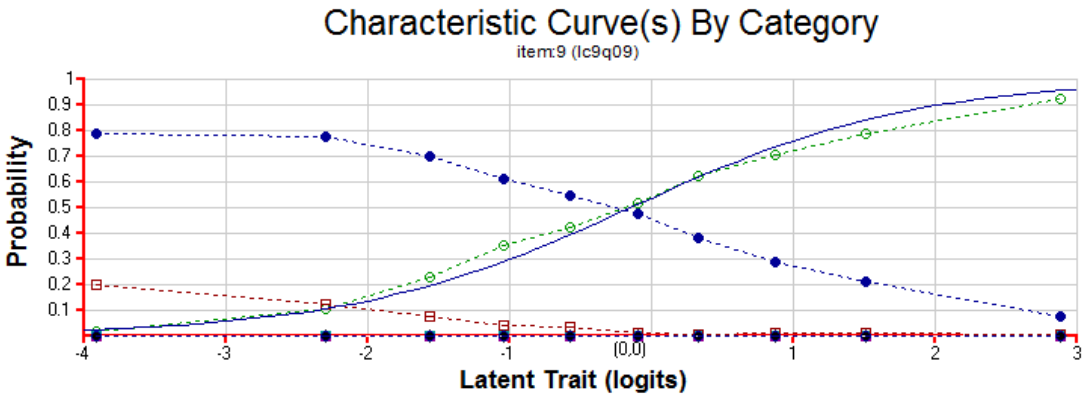


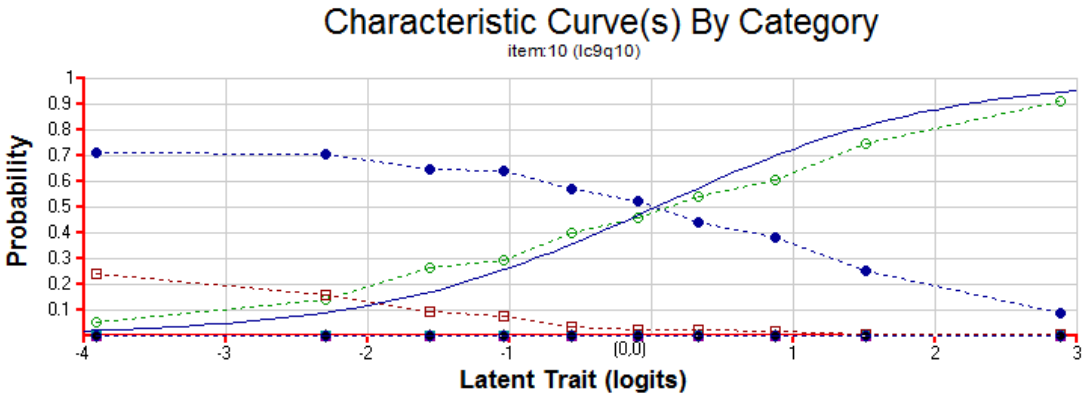

Characteristic Curve(s) By Category
item:5 (lc9q05)
Probability
Latent Trait (logits)
(0,0)

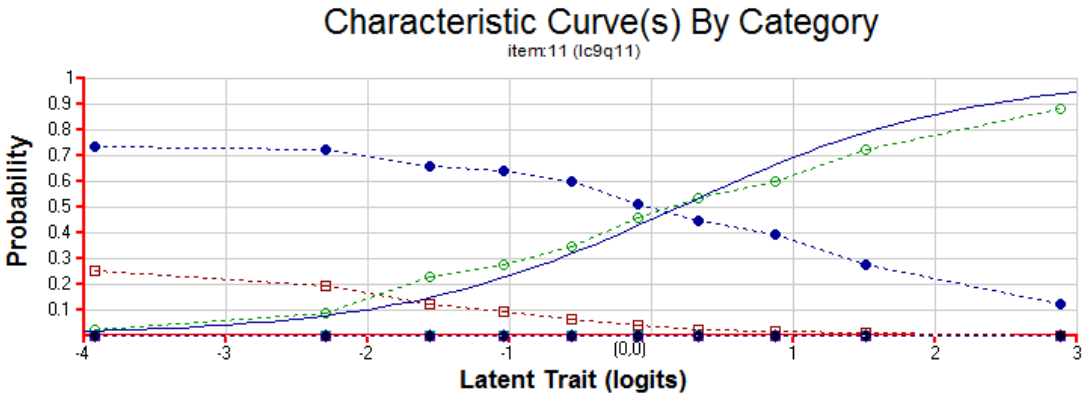

Characteristic Curve(s) By Category
item:6 (lc9q06)
Probability
Latent Trait (logits)
(0,0)

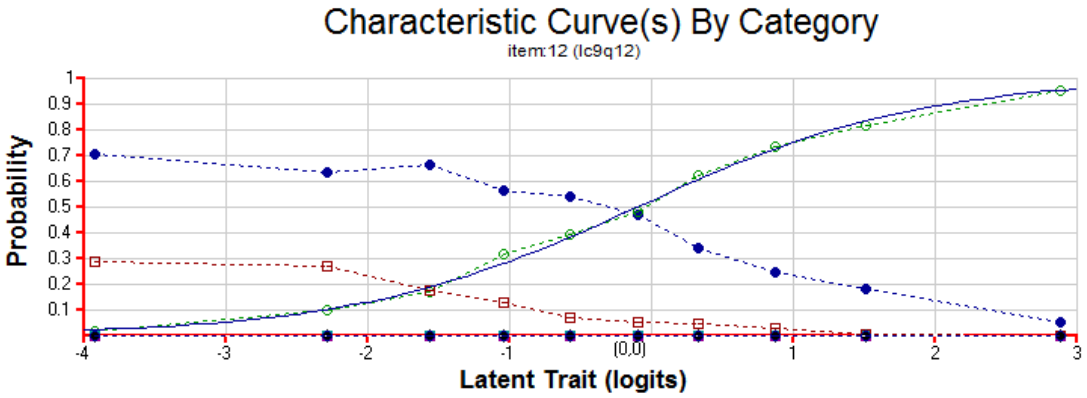

Characteristic Curve(s) By Category
item:7 (lc9q07)
Probability
Latent Trait (logits)
(0,0)

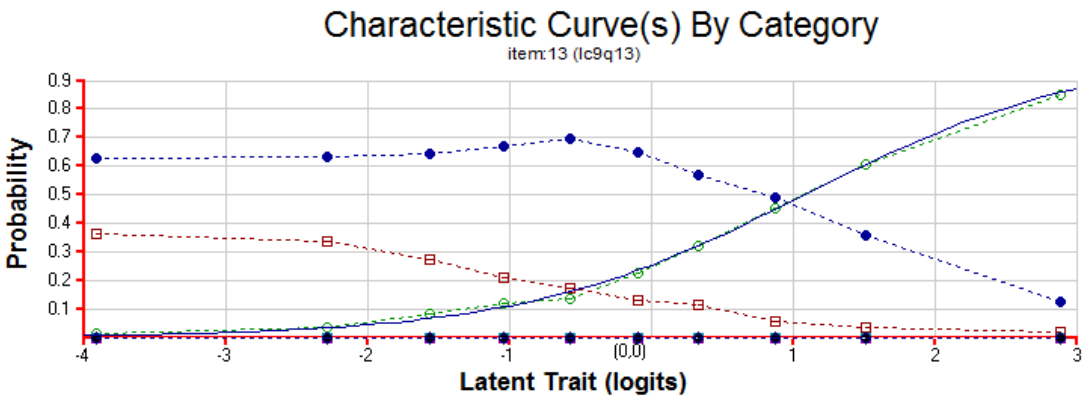

Characteristic Curve(s) By Category
item:8 (lc9q08)
Probability
Latent Trait (logits)
(0,0)

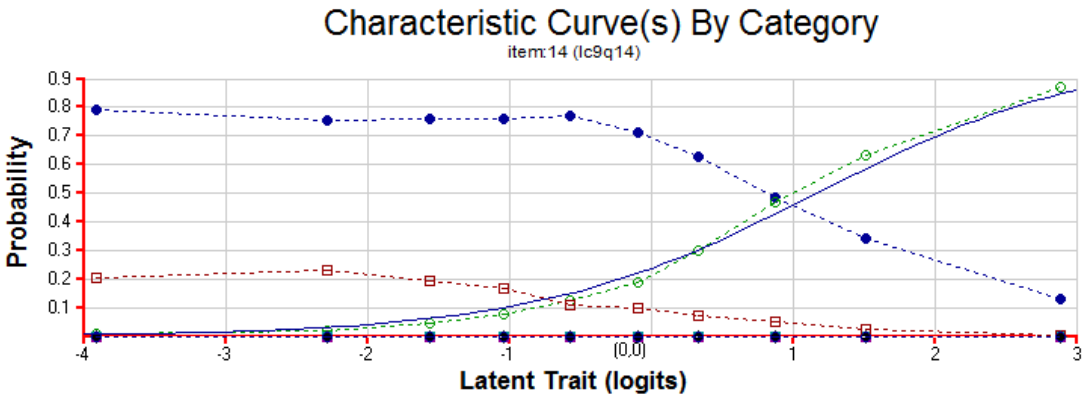

Characteristic Curve(s) By Category
item:9 (lc9q09)
Probability
Latent Trait (logits)
(0,0)

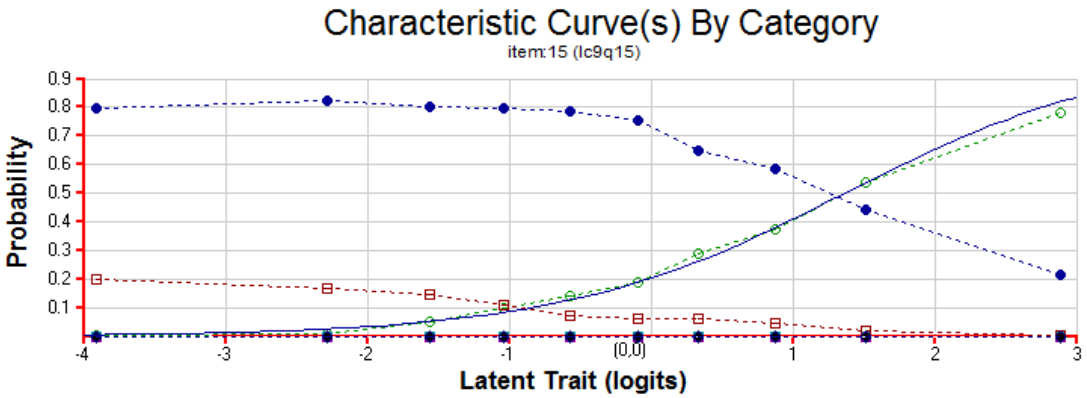

Characteristic Curve(s) By Category
item:10 (lc9q10)
Probability
Latent Trait (logits)
(0,0)

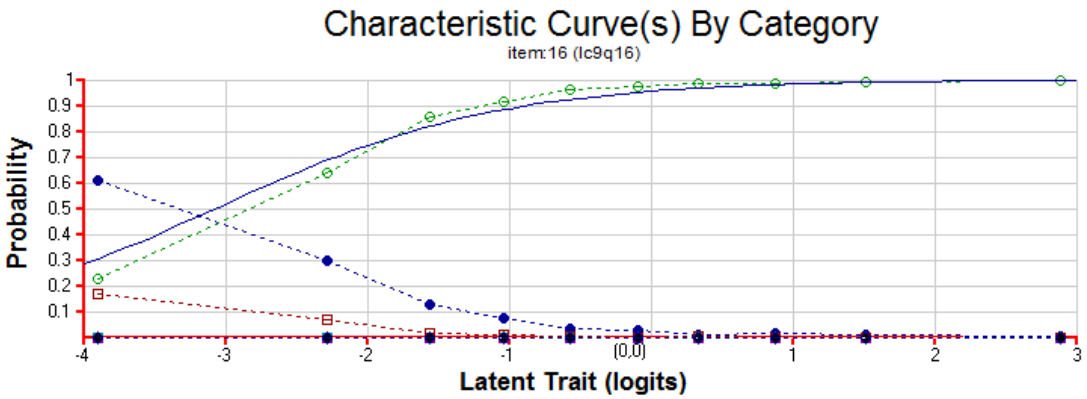

Characteristic Curve(s) By Category
item:11 (lc9q11)
Probability
Latent Trait (logits)
(0,0)

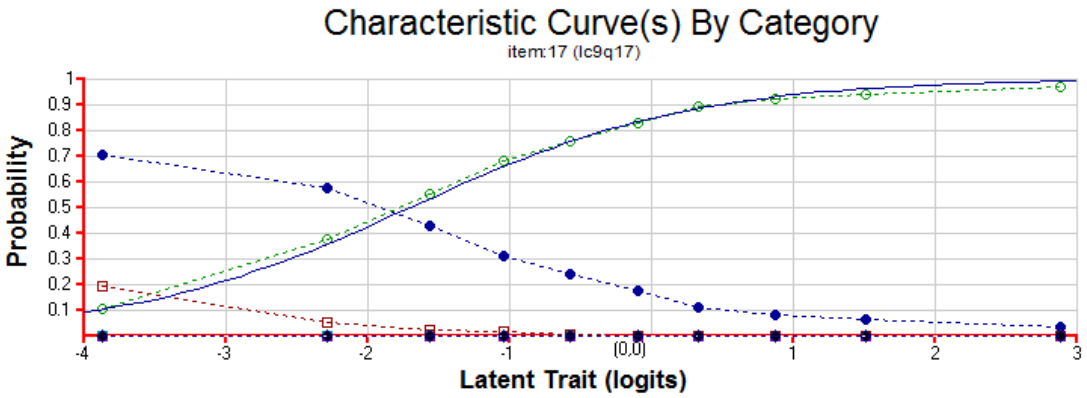

Characteristic Curve(s) By Category
item:12 (lc9q12)
Probability
Latent Trait (logits)
(0,0)

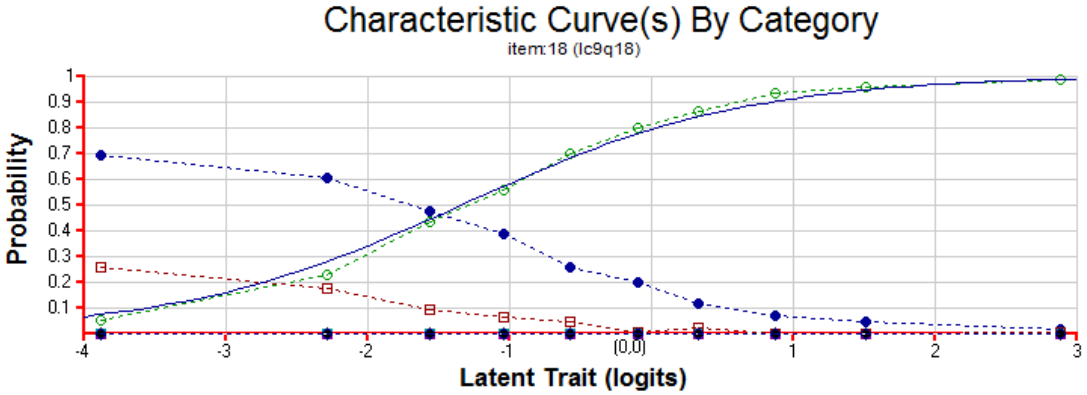

Characteristic Curve(s) By Category
item:13 (lc9q13)
Probability
Latent Trait (logits)
(0,0)

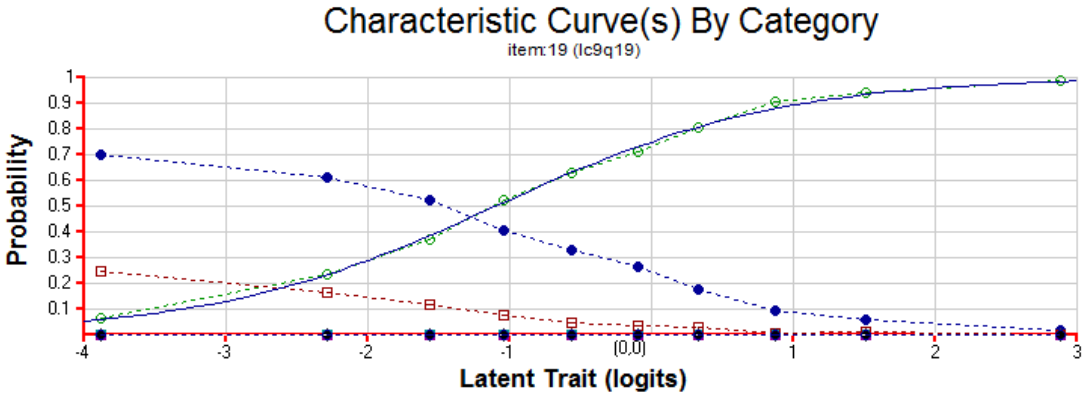

Characteristic Curve(s) By Category
item:14 (lc9q14)
Probability
Latent Trait (logits)
(0,0)

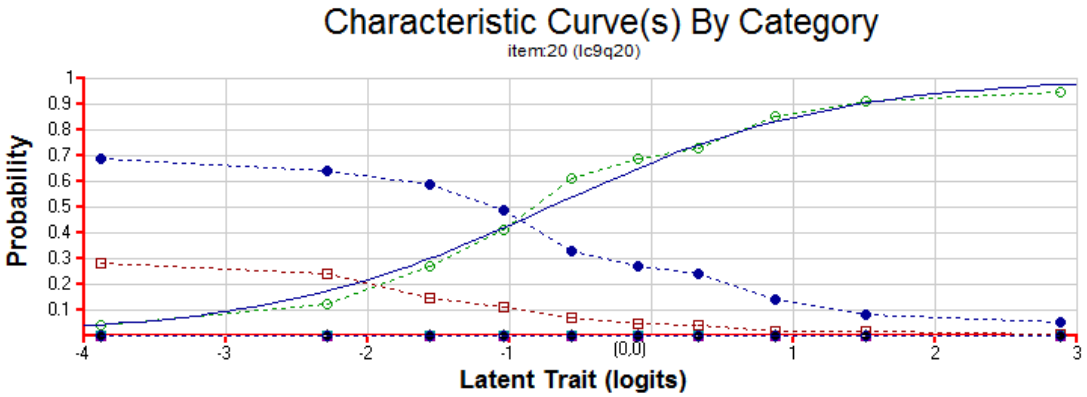

Characteristic Curve(s) By Category
item:15 (lc9q15)
Probability
Latent Trait (logits)
(0,0)

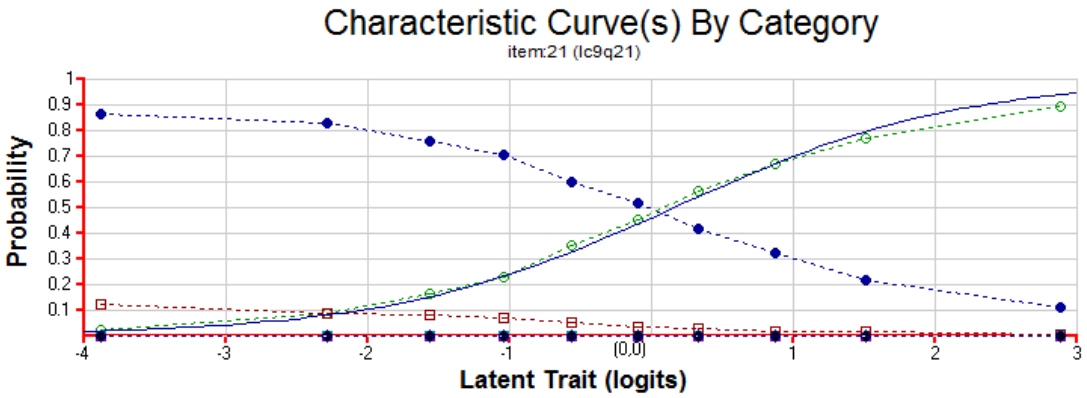

Characteristic Curve(s) By Category
item:16 (lc9q16)
Probability
Latent Trait (logits)
(0,0)

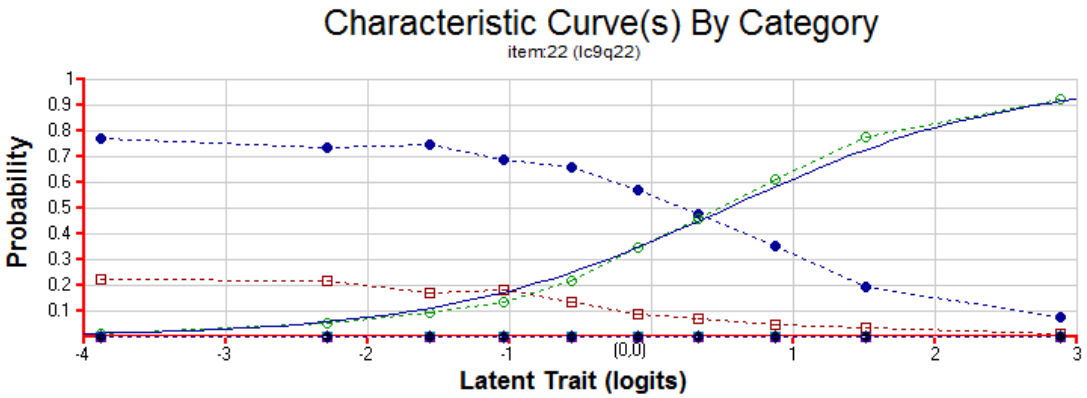

Characteristic Curve(s) By Category
item:17 (lc9q17)
Probability
Latent Trait (logits)
(0,0)

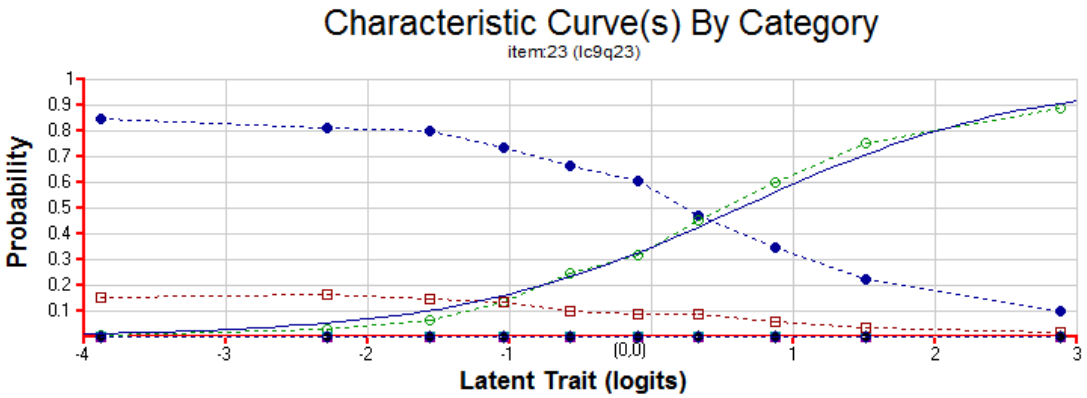

Characteristic Curve(s) By Category
item:18 (lc9q18)
Probability
Latent Trait (logits)
(0,0)

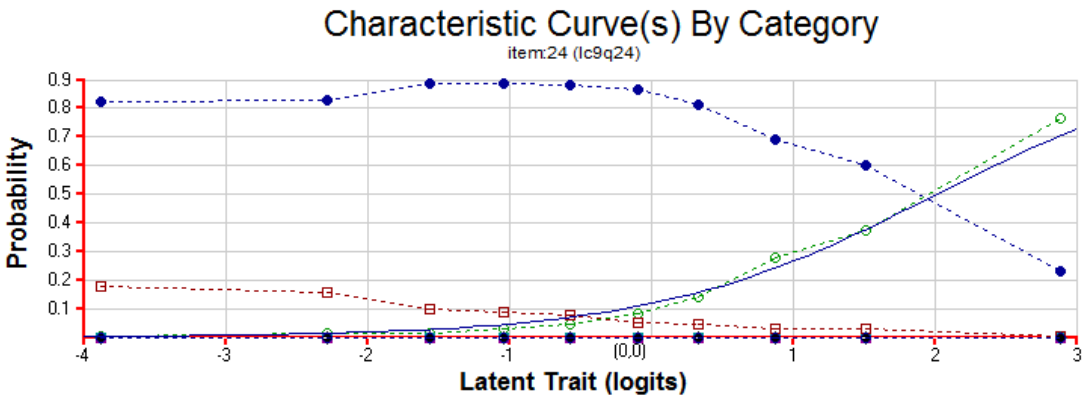

Characteristic Curve(s) By Category
item:19 (lc9q19)
Probability
Latent Trait (logits)
(0,0)

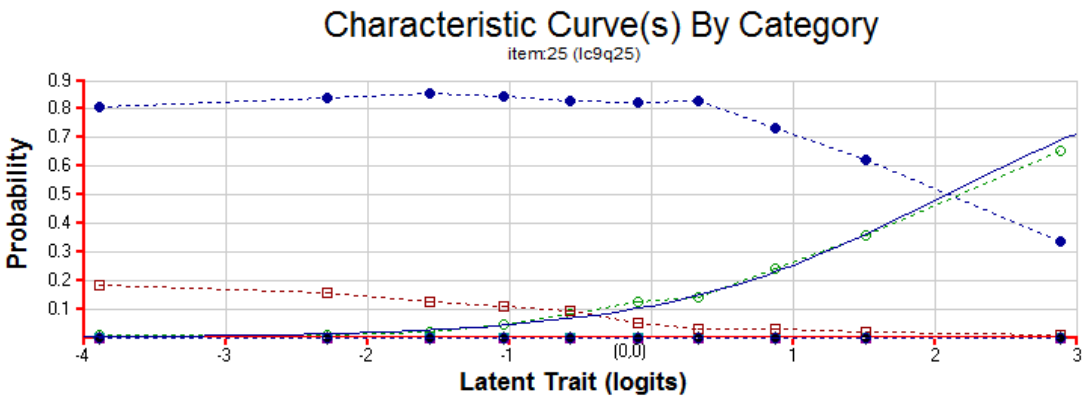

Characteristic Curve(s) By Category
item:20 (lc9q20)
Probability
Latent Trait (logits)
(0,0)

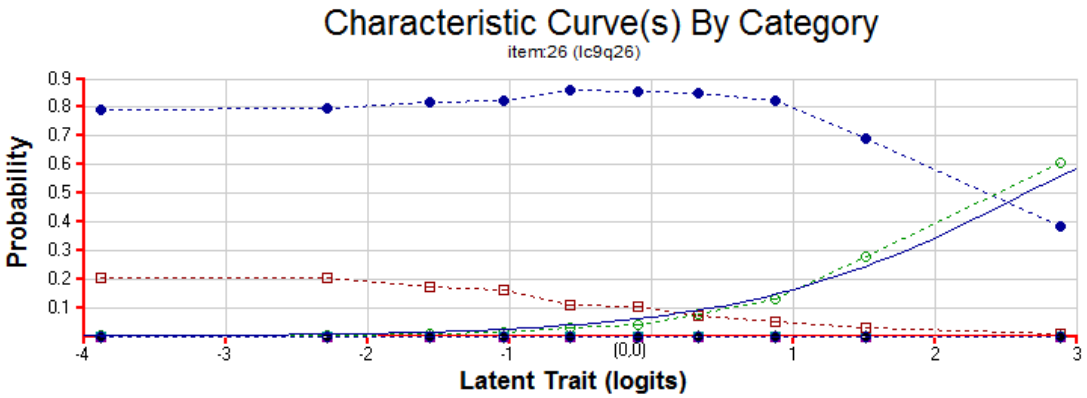

Characteristic Curve(s) By Category
item:21 (lc9q21)
Probability
Latent Trait (logits)
(0,0)

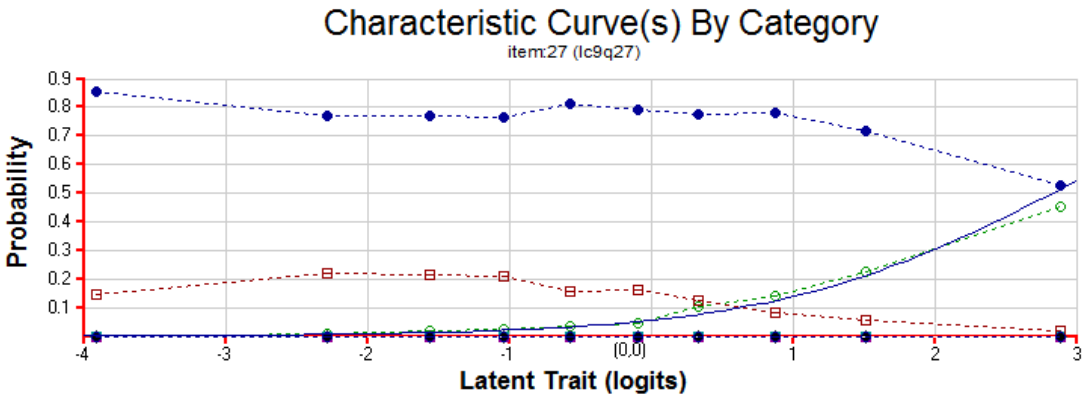

Characteristic Curve(s) By Category
item:22 (lc9q22)
Probability
Latent Trait (logits)
(0,0)

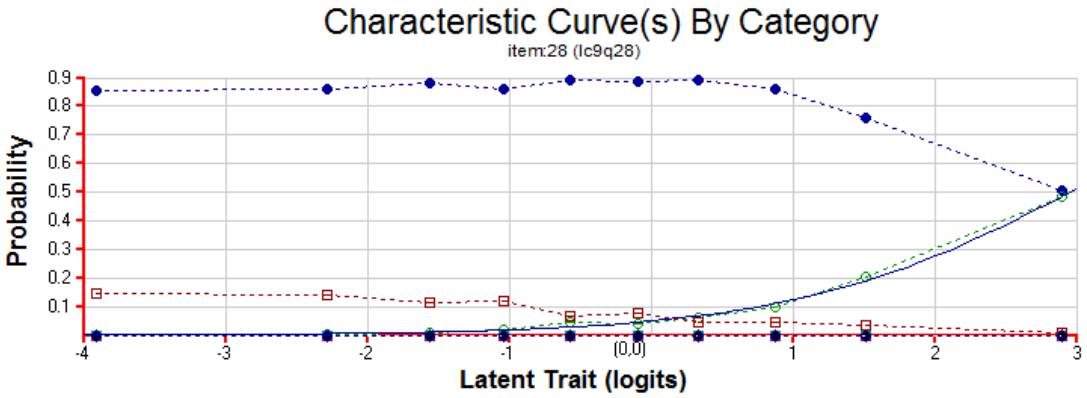

Characteristic Curve(s) By Category
item:23 (lc9q23)
Probability
Latent Trait (logits)
(0,0)

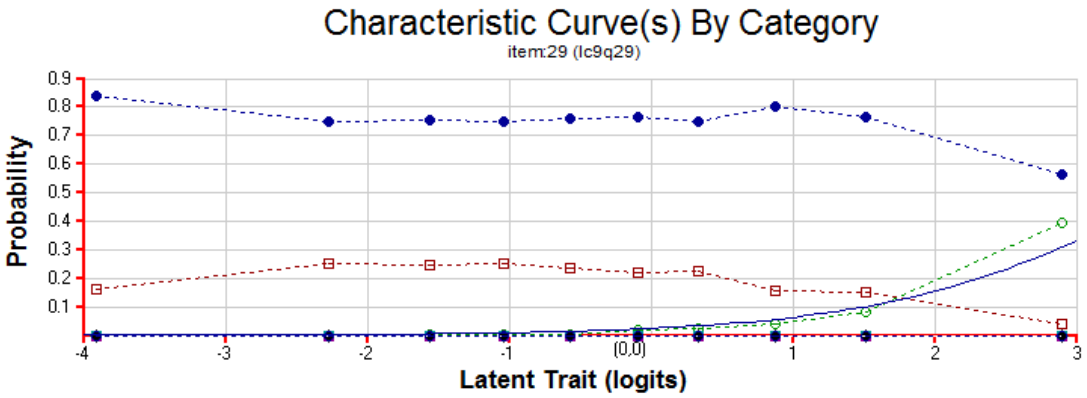

Characteristic Curve(s) By Category
item:24 (lc9q24)
Probability
Latent Trait (logits)
(0,0)

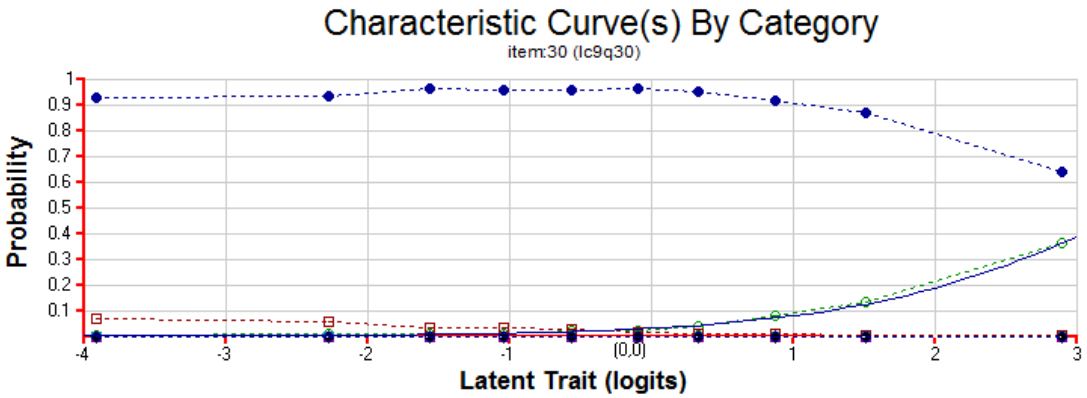

Characteristic Curve(s) By Category
item:25 (lc9q25)
Probability
Latent Trait (logits)
(0,0)


Characteristic Curve(s) By Category
item:26 (lc9q26)
Probability
Latent Trait (logits)
(0,0)

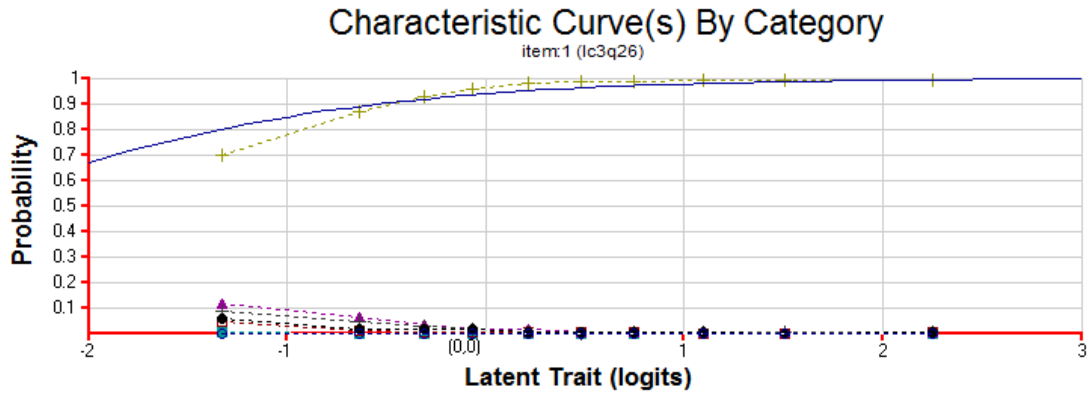

Characteristic Curve(s) By Category
item:27 (lc9q27)
Probability
Latent Trait (logits)
(0,0)

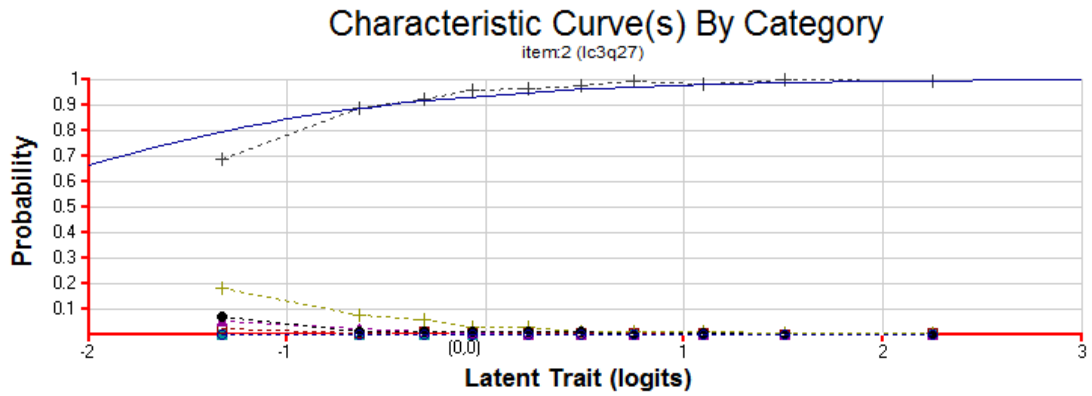

Characteristic Curve(s) By Category
item:28 (lc9q28)
Probability
Latent Trait (logits)
(0,0)

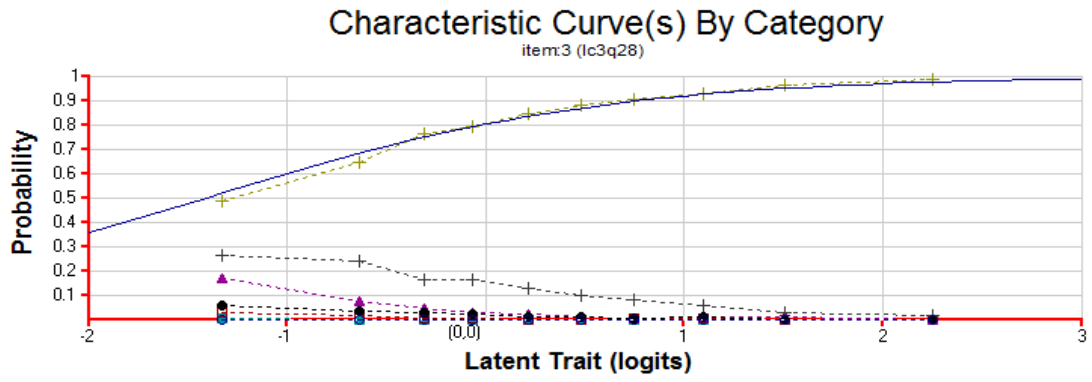

Characteristic Curve(s) By Category
item:29 (lc9q29)
Probability
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-4
-3
-2
-1
(0,0)
1
2
3
Latent Trait (logits)

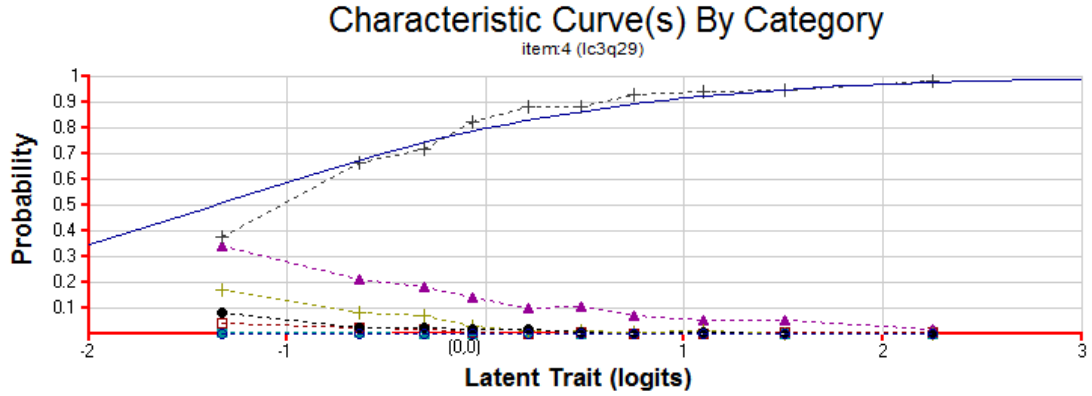

Characteristic Curve(s) By Category
item:30 (lc9q30)
Probability
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-4
-3
-2
-1
(0,0)
1
2
3
Latent Trait (logits)

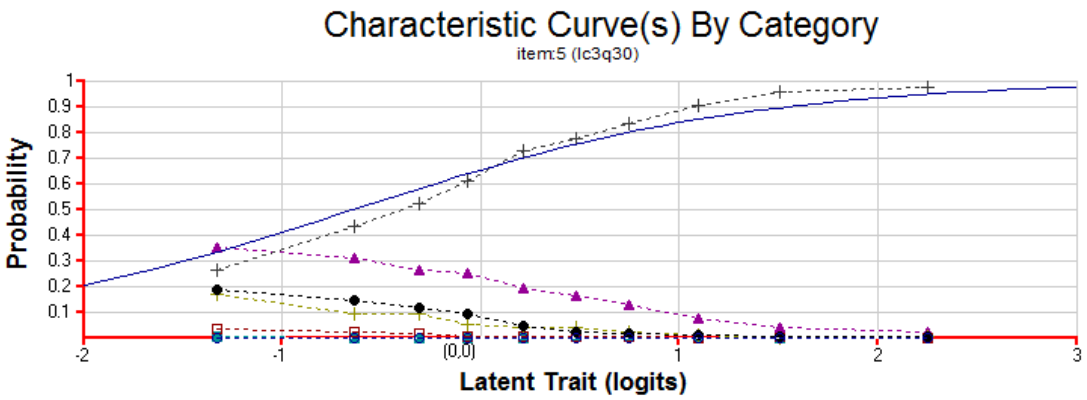
Year 3 Grammar and Punctuation

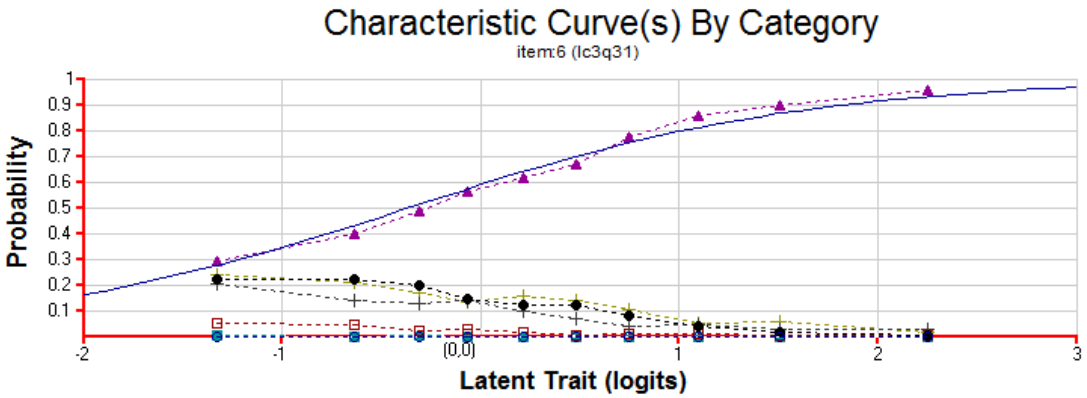


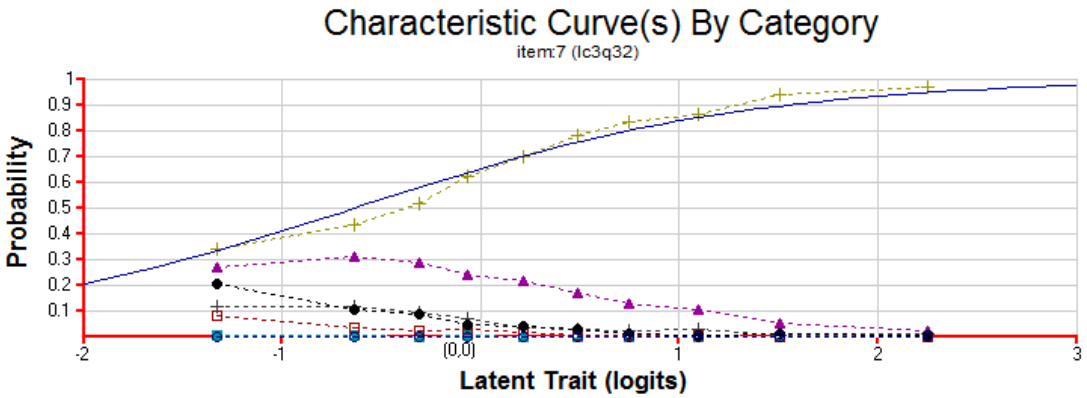


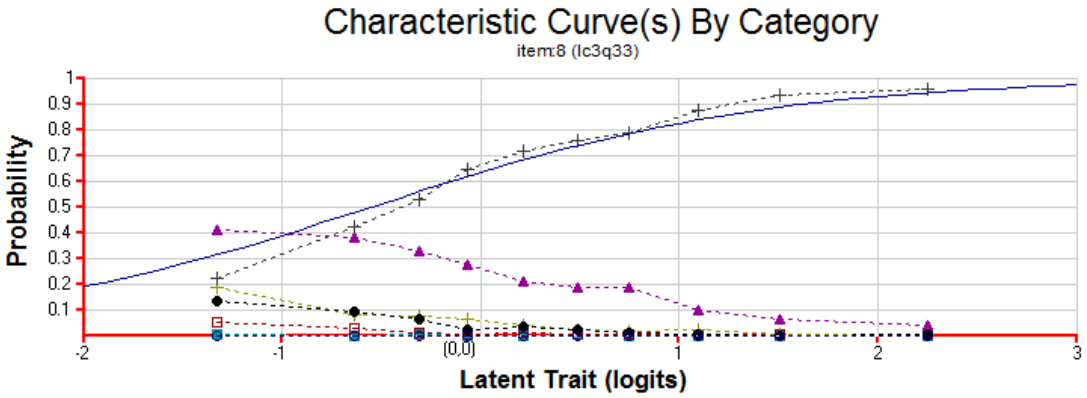


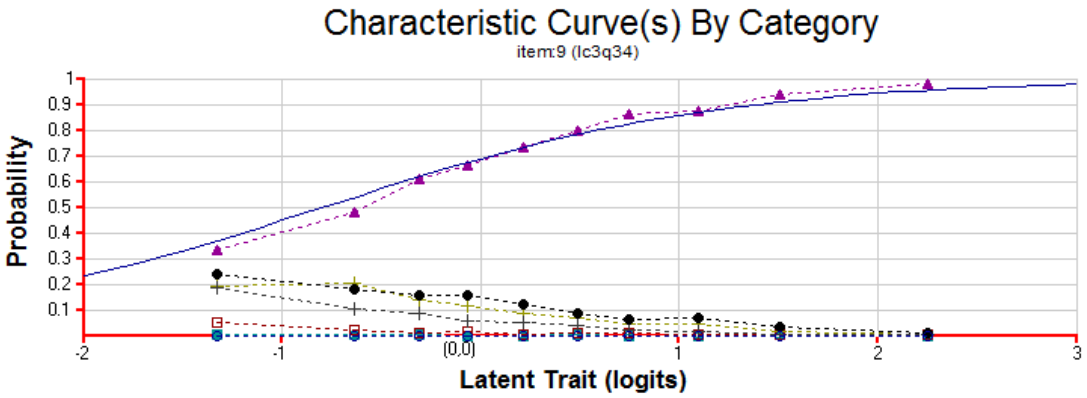


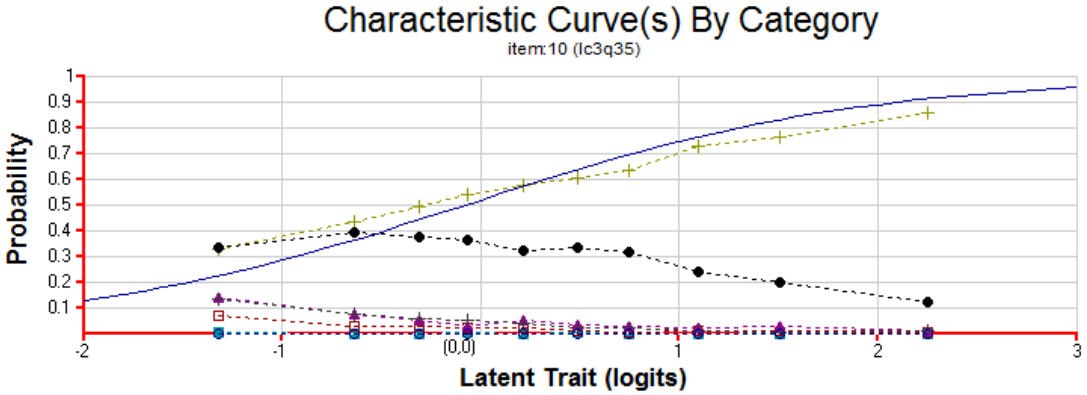

Characteristic Curve(s) By Category
item:5 (Ic3q30)
Probability
Latent Trait (logits)
(0,0)

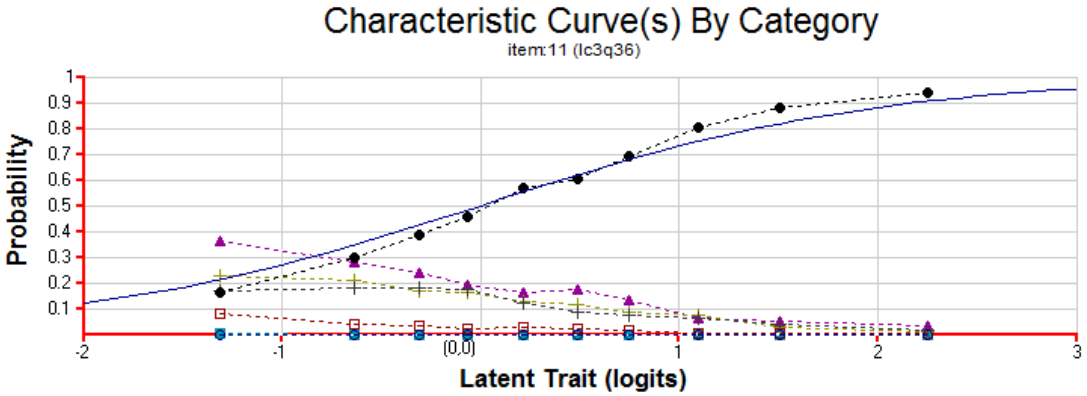

Characteristic Curve(s) By Category
item:6 (Ic3q31)
Probability
Latent Trait (logits)
(0,0)

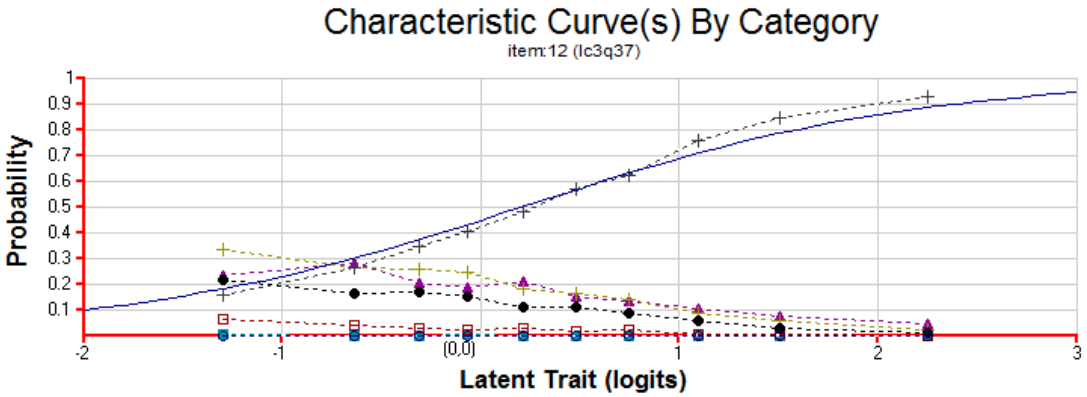

Characteristic Curve(s) By Category
item:7 (Ic3q32)
Probability
Latent Trait (logits)
(0,0)

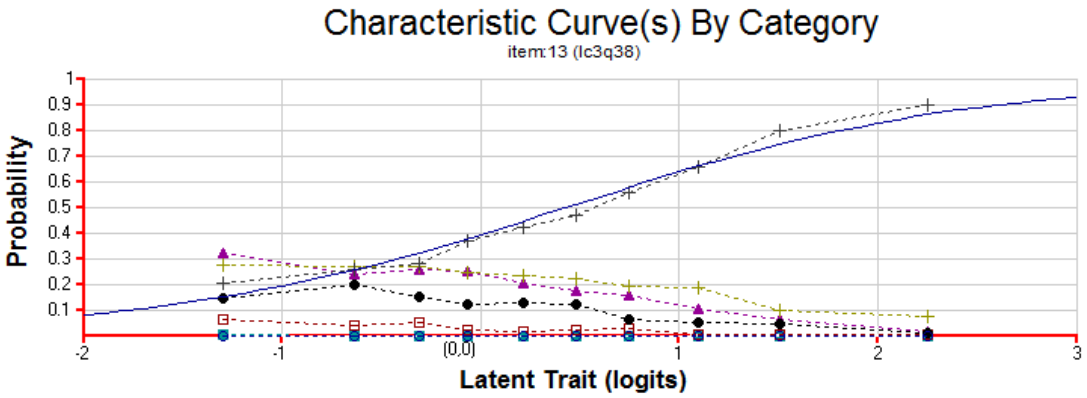

Characteristic Curve(s) By Category
item:8 (Ic3q33)
Probability
Latent Trait (logits)
(0,0)

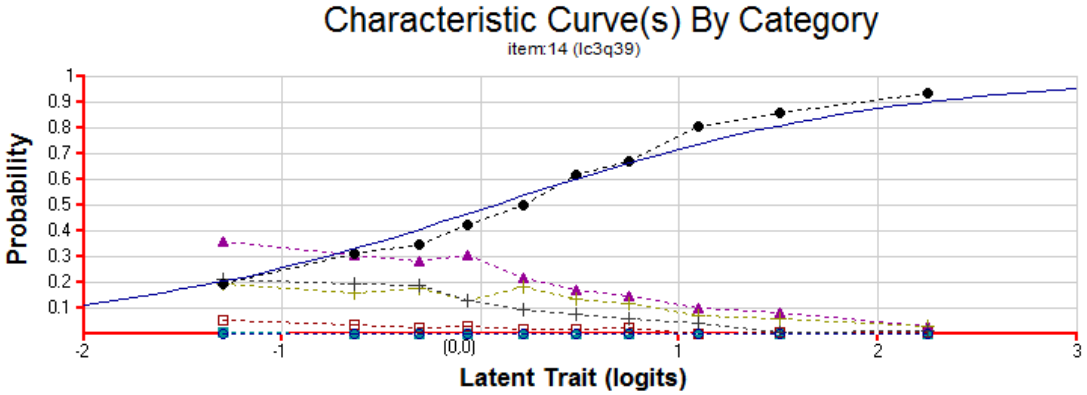

Characteristic Curve(s) By Category
item:9 (Ic3q34)
Probability
Latent Trait (logits)
(0,0)

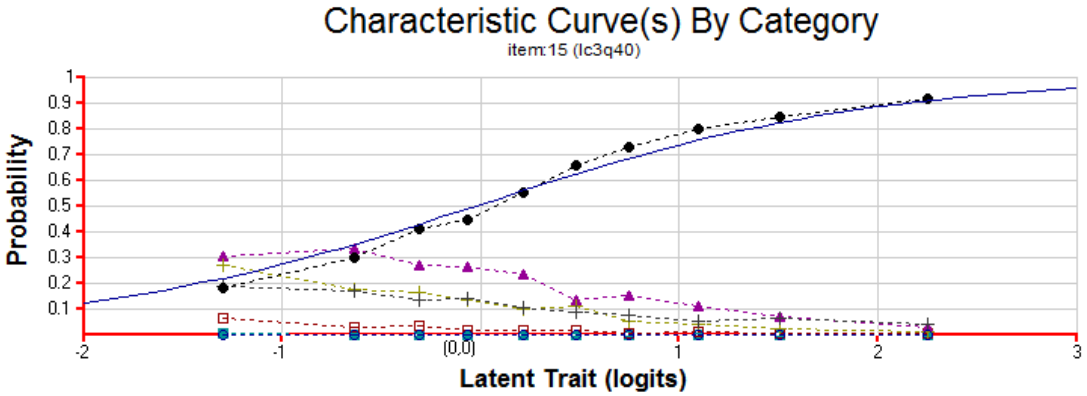

Characteristic Curve(s) By Category
item:10 (Ic3q35)
Probability
Latent Trait (logits)
(0,0)

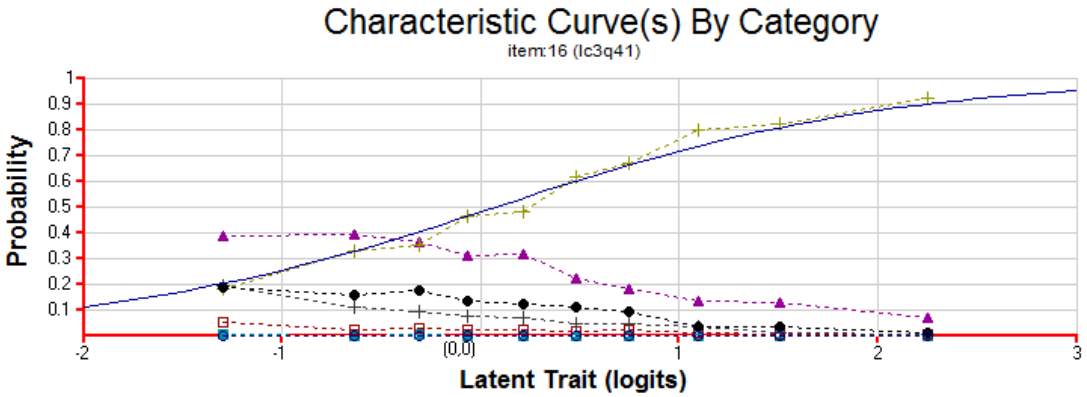

Characteristic Curve(s) By Category
item:11 (Ic3q36)
Probability
Latent Trait (logits)
(0,0)

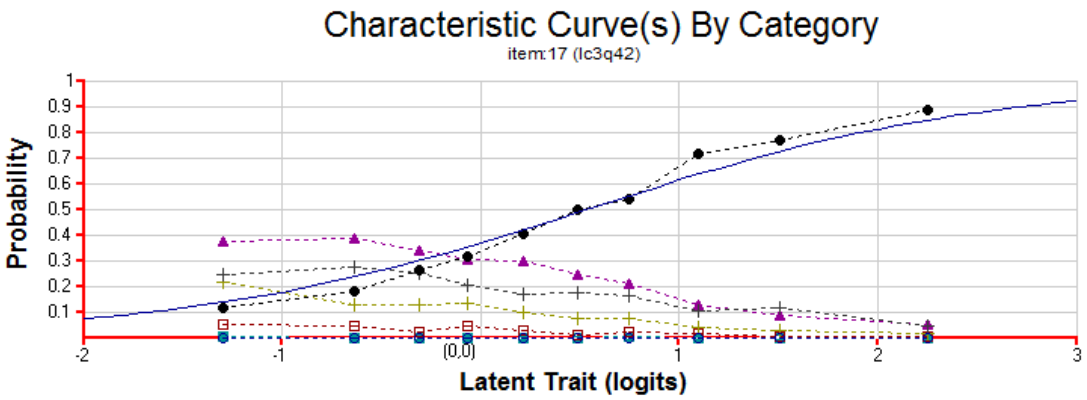

Characteristic Curve(s) By Category
item:12 (Ic3q37)
Probability
Latent Trait (logits)
(0,0)

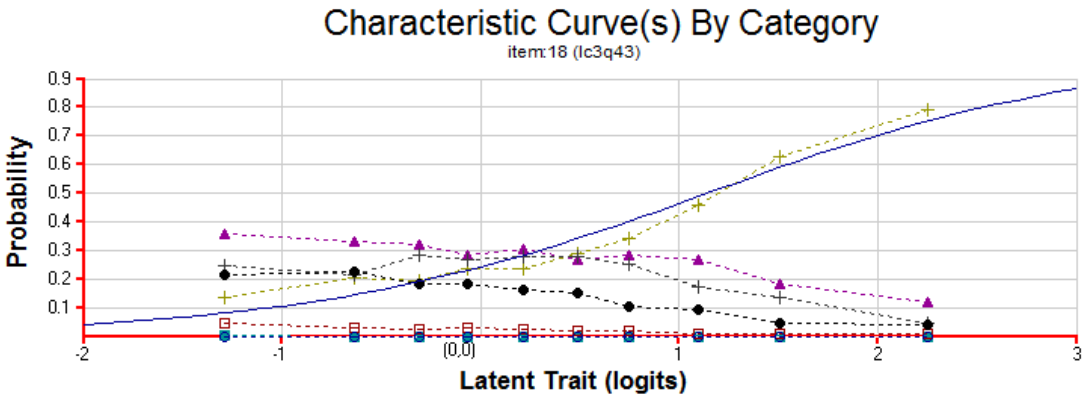

Characteristic Curve(s) By Category
item:13 (lc3q38)
Probability
Latent Trait (logits)
(0,0)

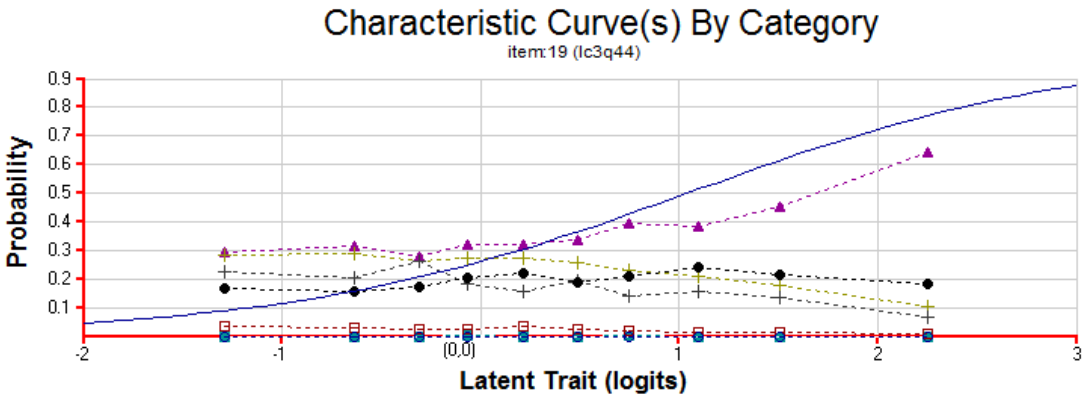

Characteristic Curve(s) By Category
item:14 (lc3q39)
Probability
Latent Trait (logits)
(0,0)

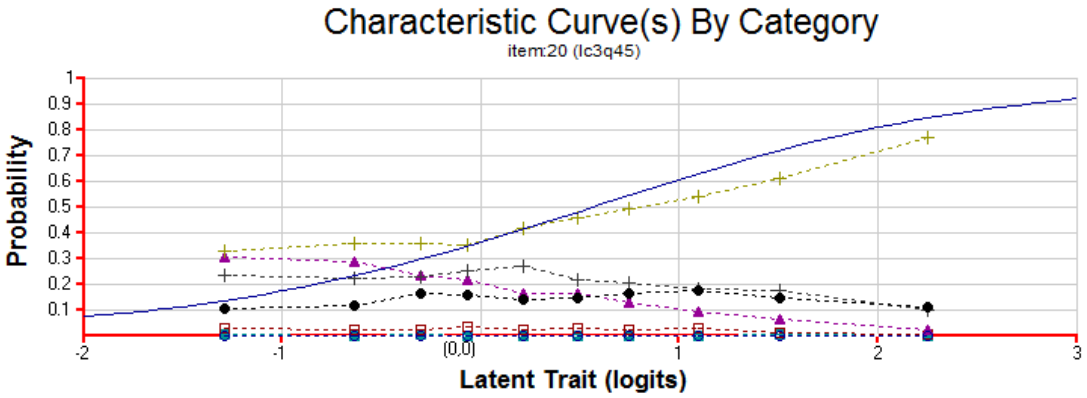

Characteristic Curve(s) By Category
item:15 (lc3q40)
Probability
Latent Trait (logits)
(0,0)

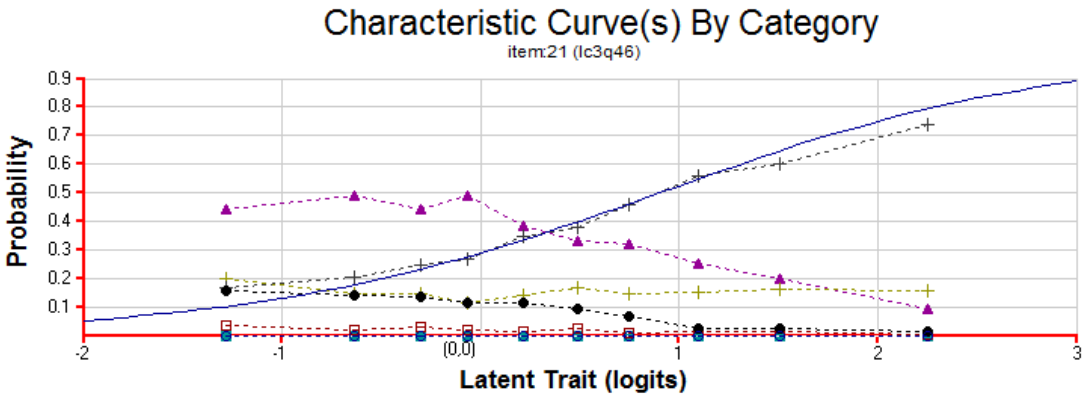

Characteristic Curve(s) By Category
item:16 (lc3q41)
Probability
Latent Trait (logits)
(0,0)

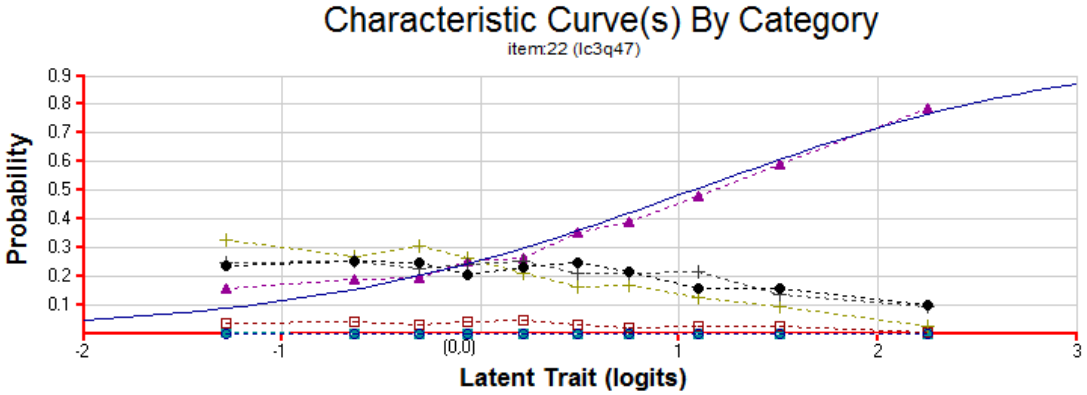

Characteristic Curve(s) By Category
item:17 (Ic3q42)
Probability
Latent Trait (logits)
(0,0)

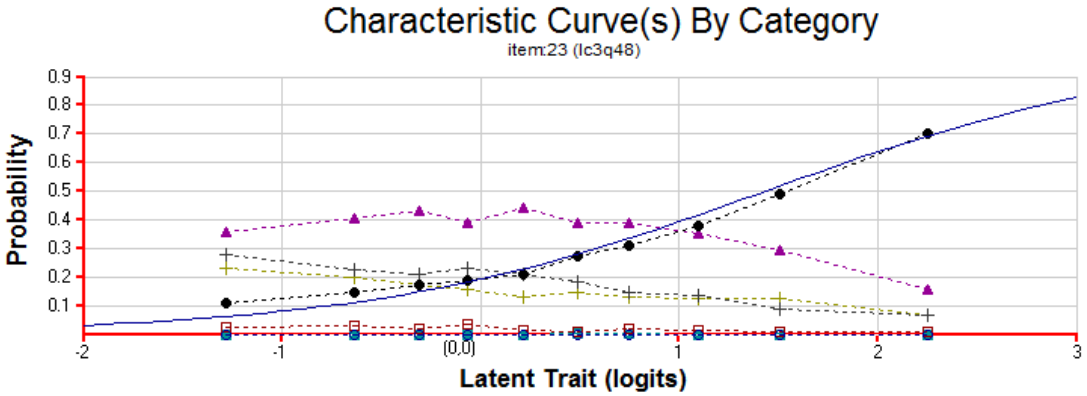

Characteristic Curve(s) By Category
item:18 (Ic3q43)
Probability
Latent Trait (logits)
(0,0)

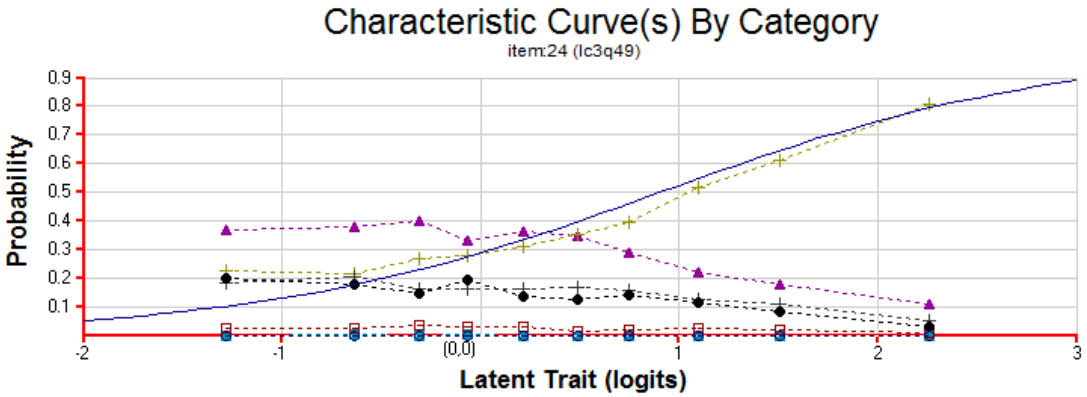

Characteristic Curve(s) By Category
item:19 (Ic3q44)
Probability
Latent Trait (logits)
(0,0)

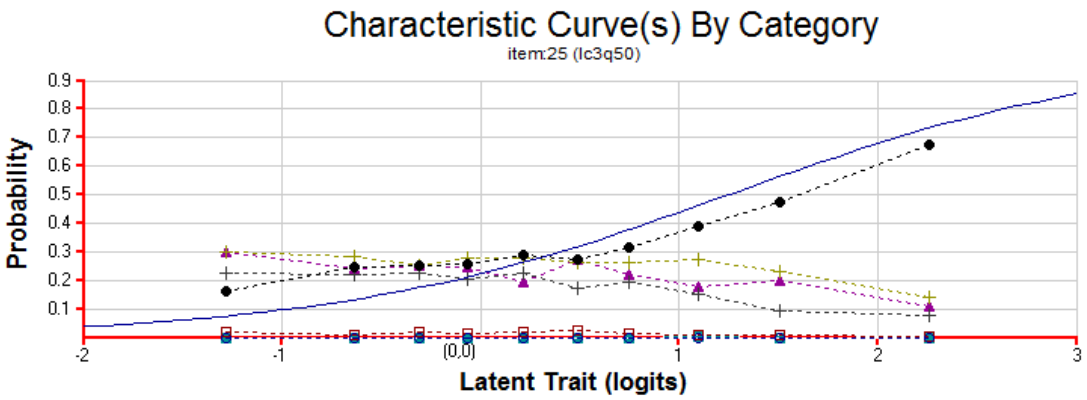

Characteristic Curve(s) By Category
item:20 (Ic3q45)
Probability
Latent Trait (logits)
(0,0)

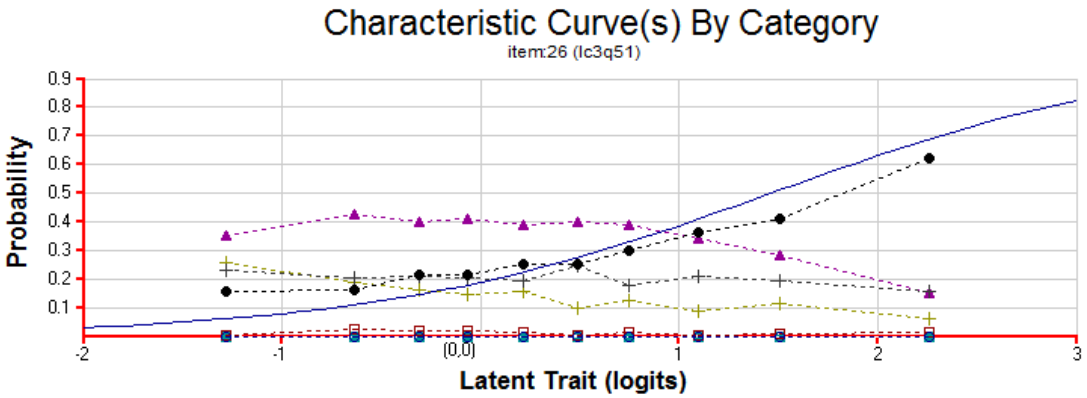

Characteristic Curve(s) By Category
item:21 (lc3q46)
Probability
Latent Trait (logits)
(0,0)


Characteristic Curve(s) By Category
item:22 (lc3q47)
Probability
Latent Trait (logits)
(0,0)

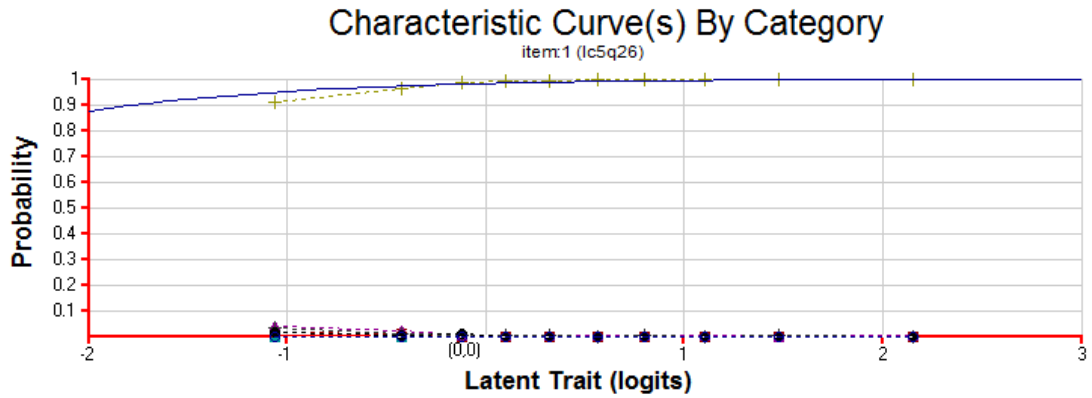

Characteristic Curve(s) By Category
item:23 (lc3q48)
Probability
Latent Trait (logits)
(0,0)

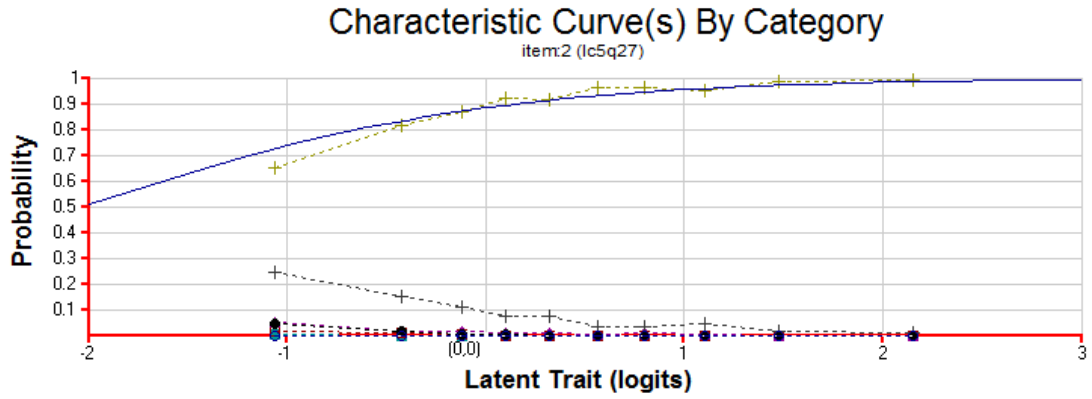

Characteristic Curve(s) By Category
item:24 (lc3q49)
Probability
Latent Trait (logits)
(0,0)

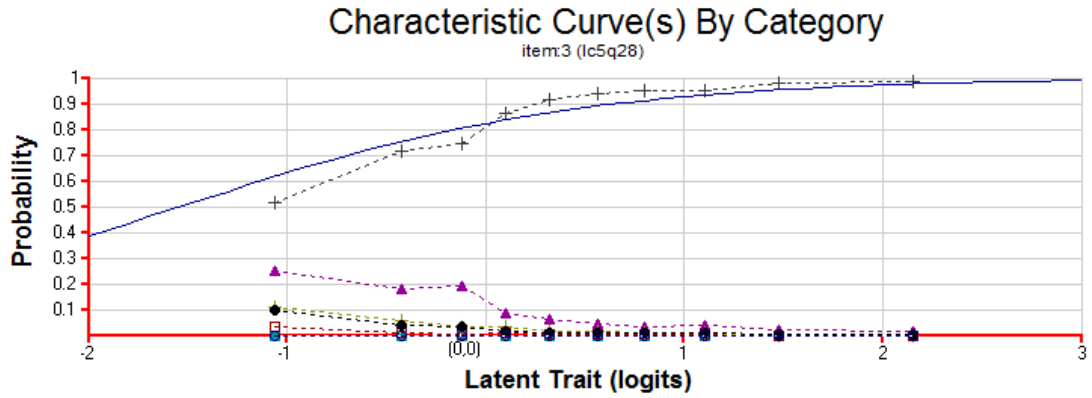

Characteristic Curve(s) By Category
item:25 (Ic3q50)
Probability
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
3
Latent Trait (logits)

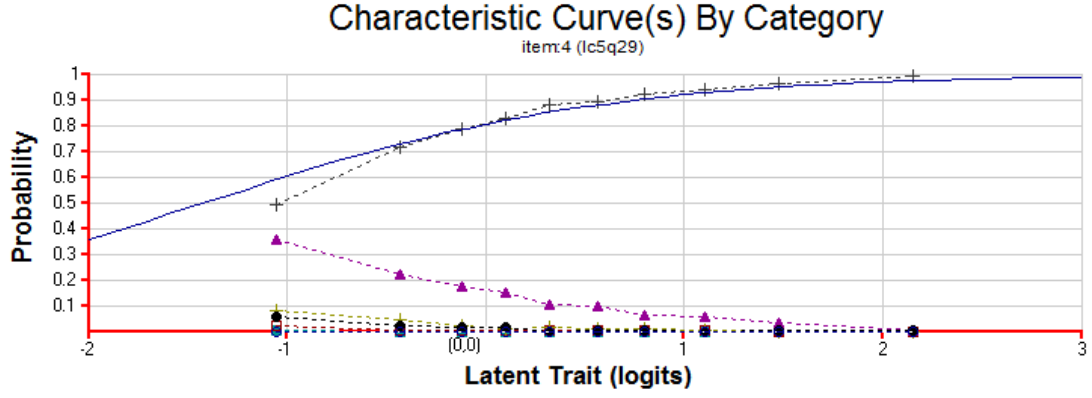

Characteristic Curve(s) By Category
item:26 (Ic3q51)
Probability
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
3
Latent Trait (logits)

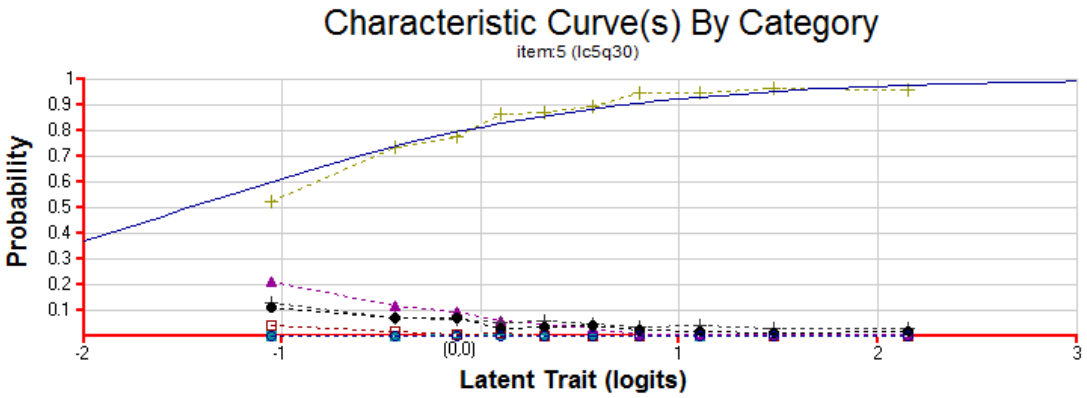
Year 5 Grammar and Punctuation

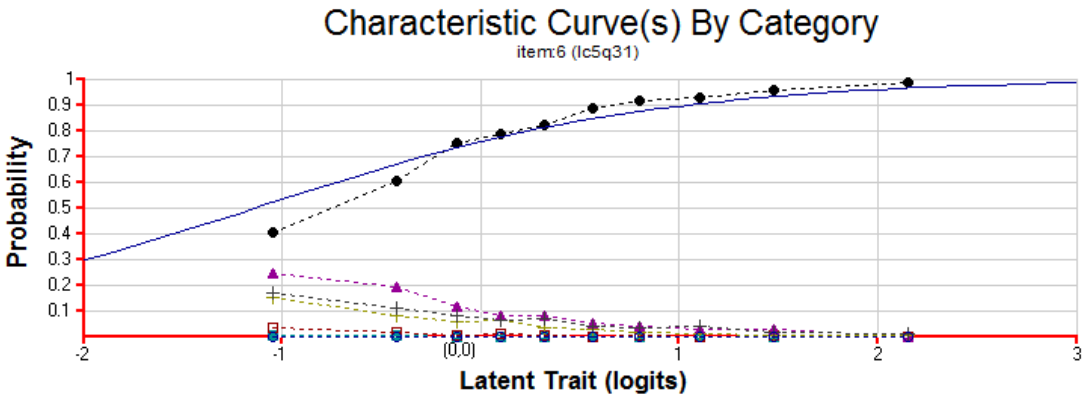


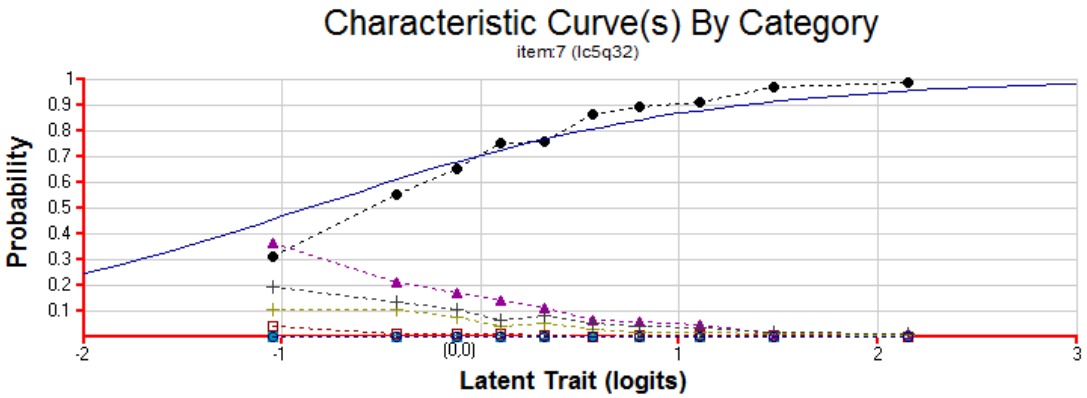


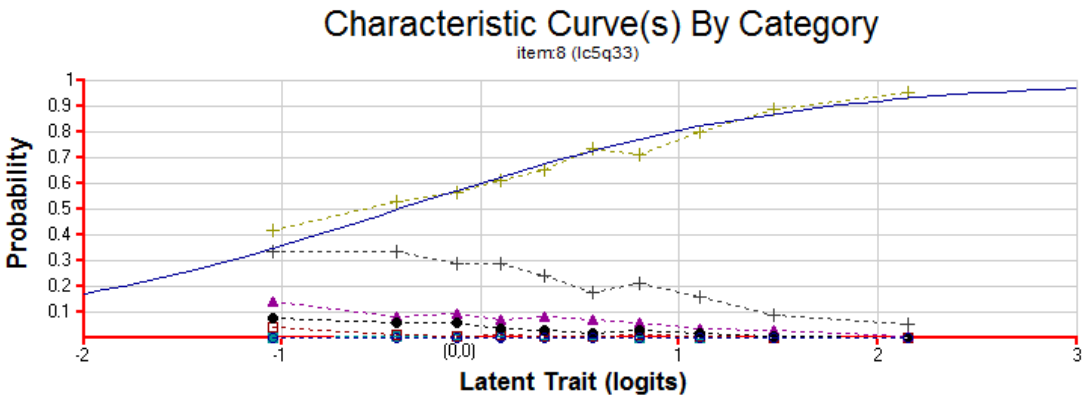


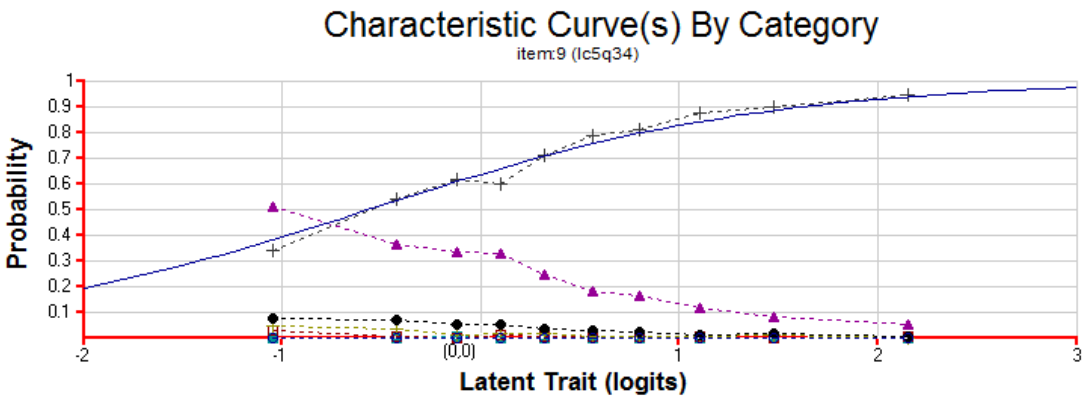


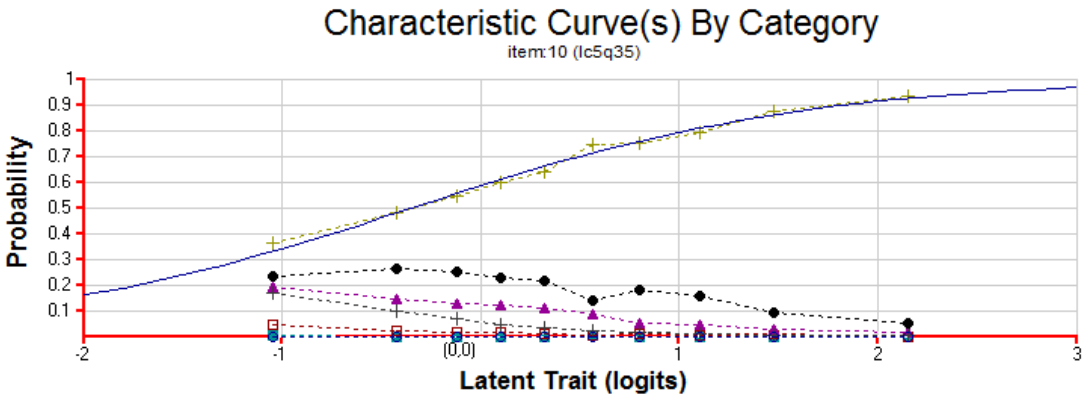

Characteristic Curve(s) By Category
item:5 (lc5q30)
Probability
Latent Trait (logits)
(0,0)

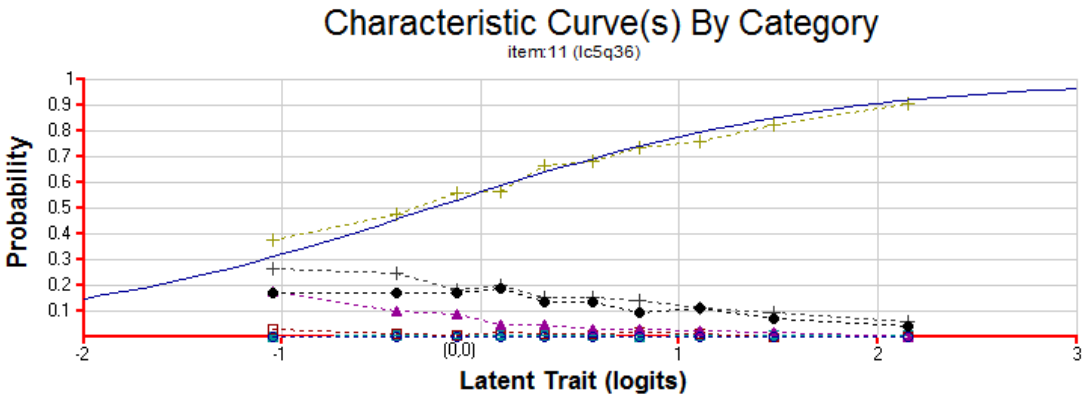

Characteristic Curve(s) By Category
item:6 (lc5q31)
Probability
Latent Trait (logits)
(0,0)

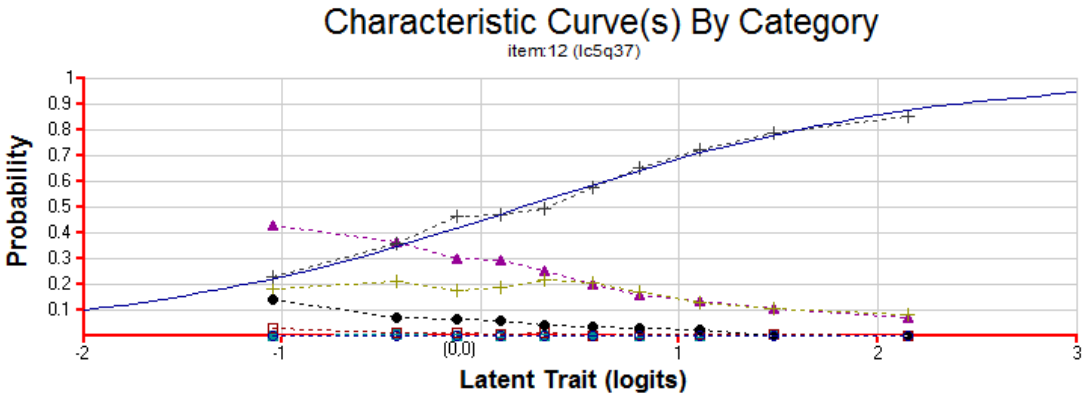

Characteristic Curve(s) By Category
item:7 (lc5q32)
Probability
Latent Trait (logits)
(0,0)

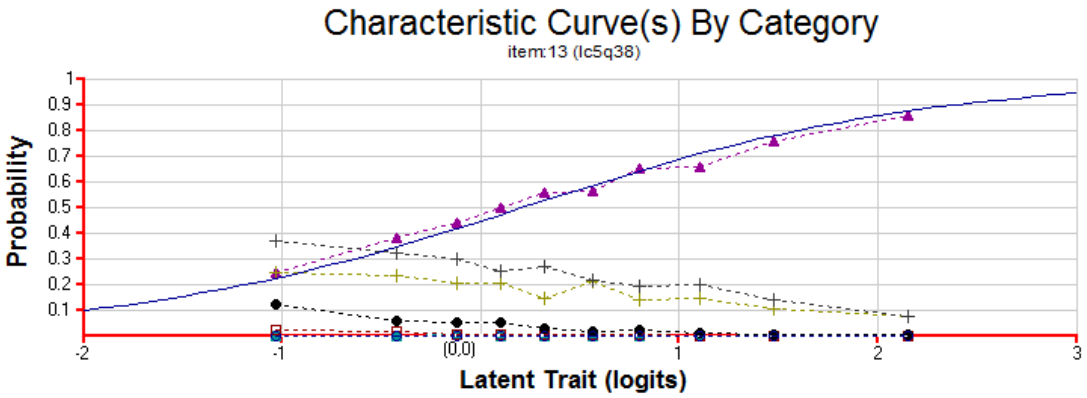

Characteristic Curve(s) By Category
item:8 (lc5q33)
Probability
Latent Trait (logits)
(0,0)

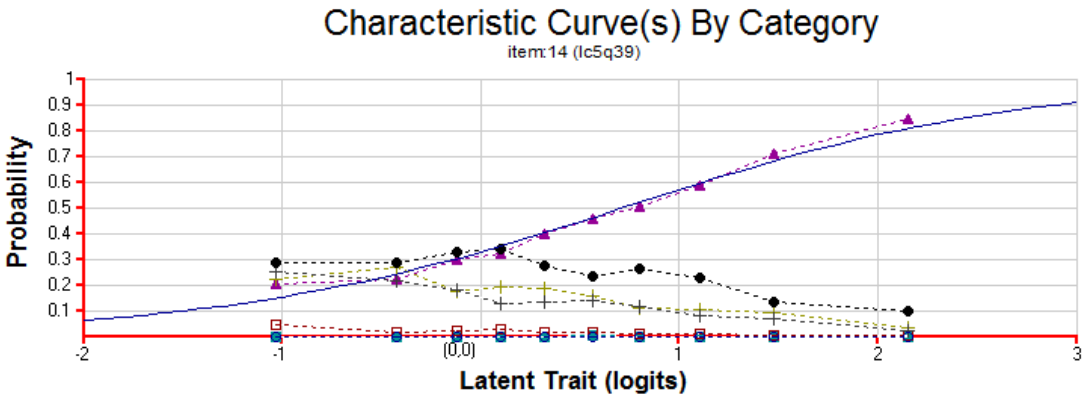

Characteristic Curve(s) By Category
item:9 (lc5q34)
Probability
Latent Trait (logits)
(0,0)

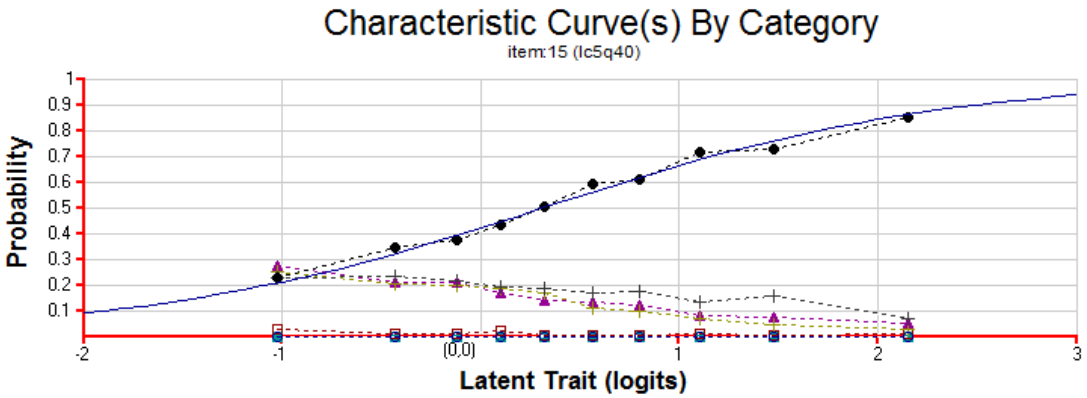

Characteristic Curve(s) By Category
item:10 (lc5q35)
Probability
Latent Trait (logits)
(0,0)

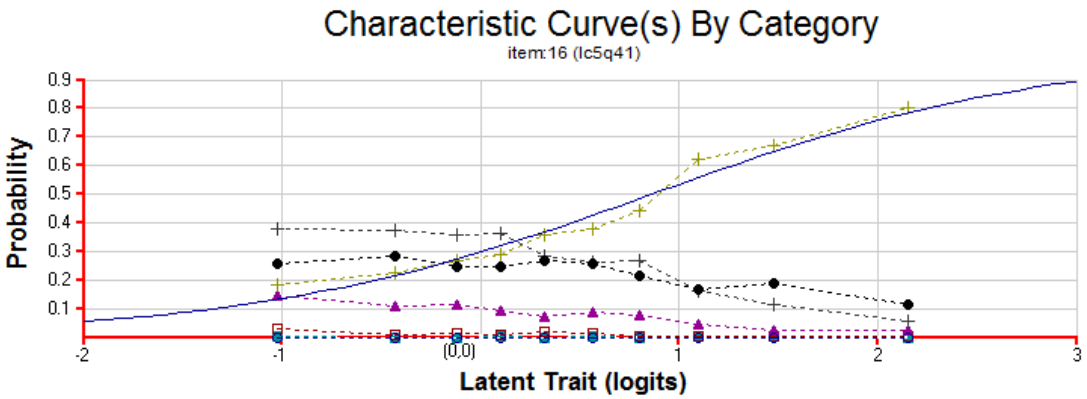

Characteristic Curve(s) By Category
item:11 (lc5q36)
Probability
Latent Trait (logits)
(0,0)

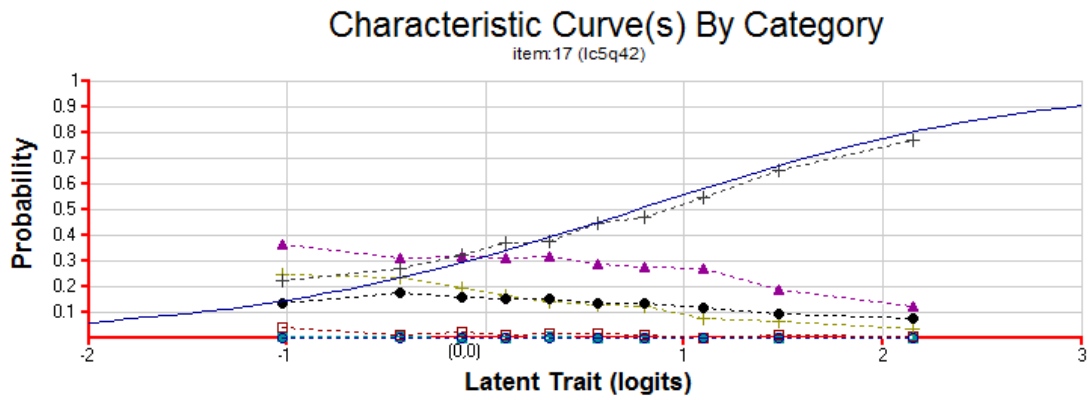

Characteristic Curve(s) By Category
item:12 (lc5q37)
Probability
Latent Trait (logits)
(0,0)

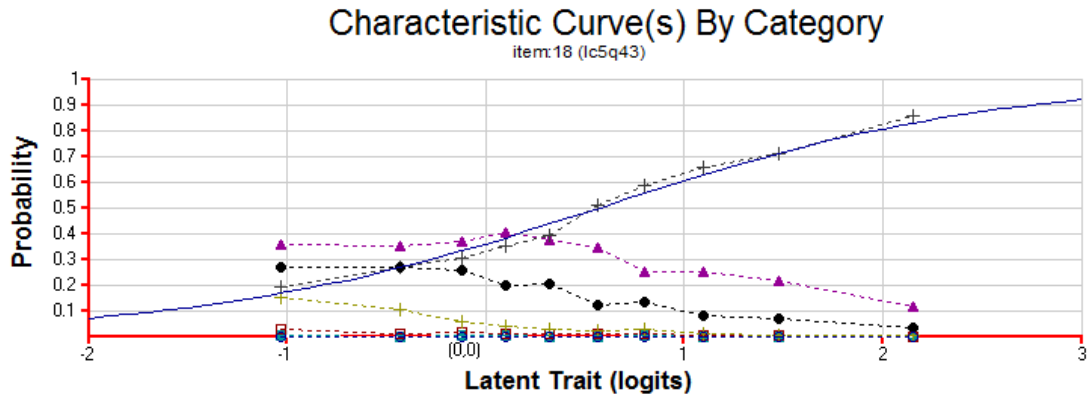

Characteristic Curve(s) By Category
item:13 (lc5q38)
Probability
Latent Trait (logits)
(0,0)

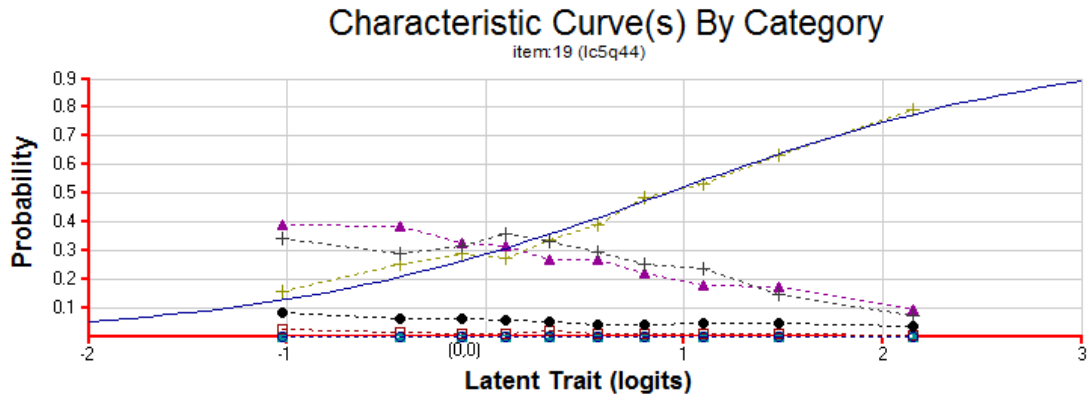

Characteristic Curve(s) By Category
item:14 (lc5q39)
Probability
Latent Trait (logits)
(0,0)

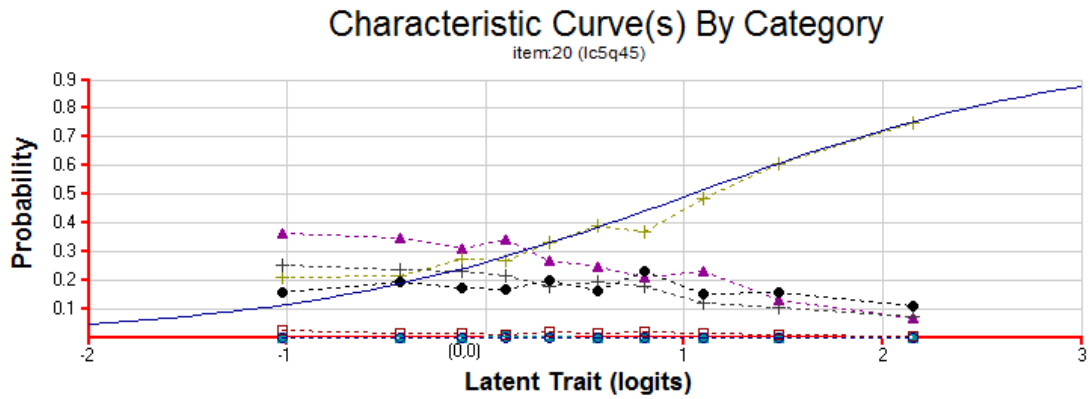

Characteristic Curve(s) By Category
item:15 (lc5q40)
Probability
Latent Trait (logits)
(0,0)

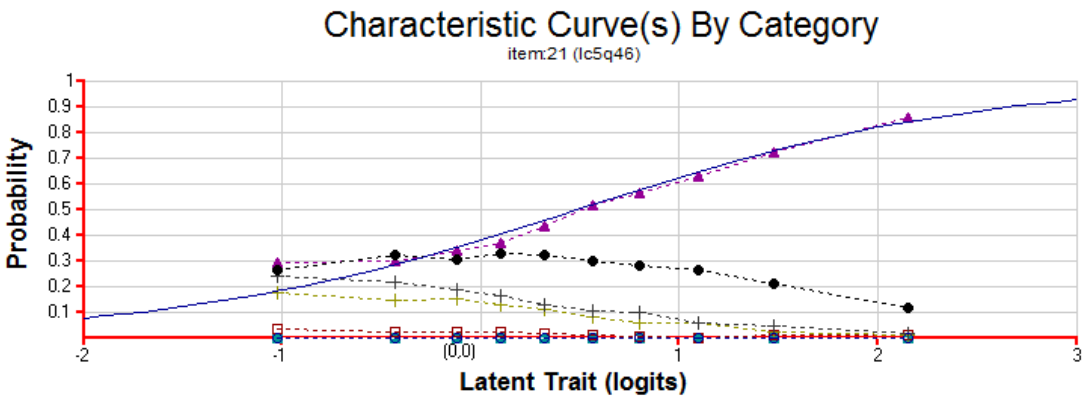

Characteristic Curve(s) By Category
item:16 (lc5q41)
Probability
Latent Trait (logits)
(0,0)

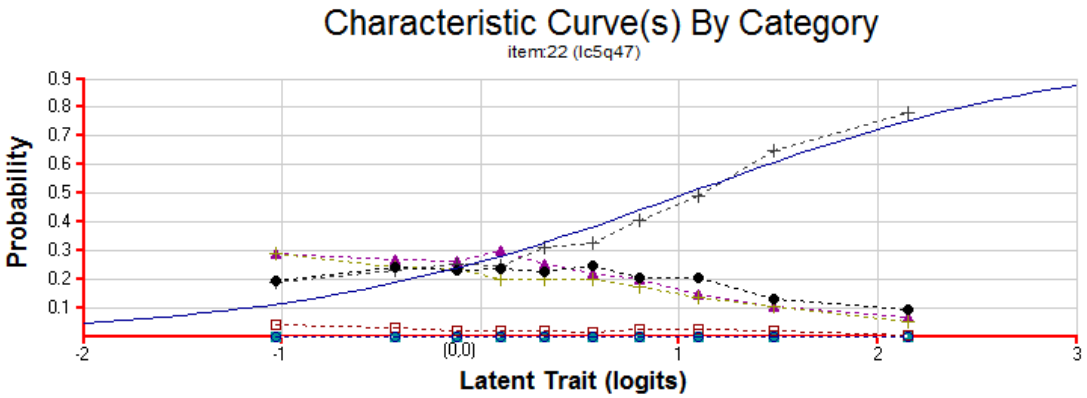

Characteristic Curve(s) By Category
item:17 (lc5q42)
Probability
Latent Trait (logits)
(0,0)

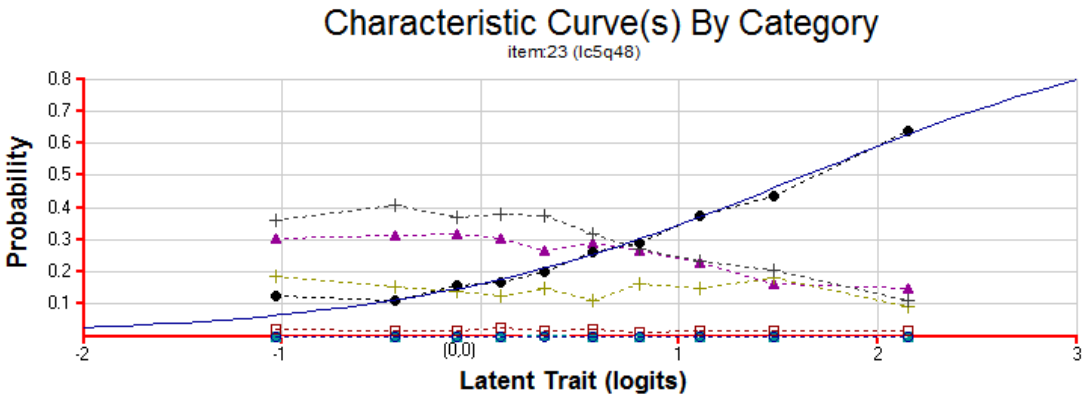

Characteristic Curve(s) By Category
item:18 (lc5q43)
Probability
Latent Trait (logits)
(0,0)

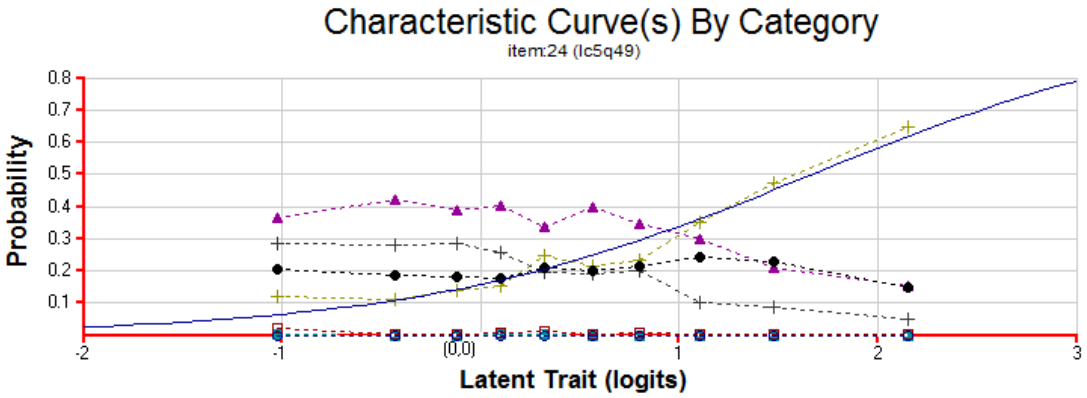

Characteristic Curve(s) By Category
item:19 (lc5q44)
Probability
Latent Trait (logits)
(0,0)

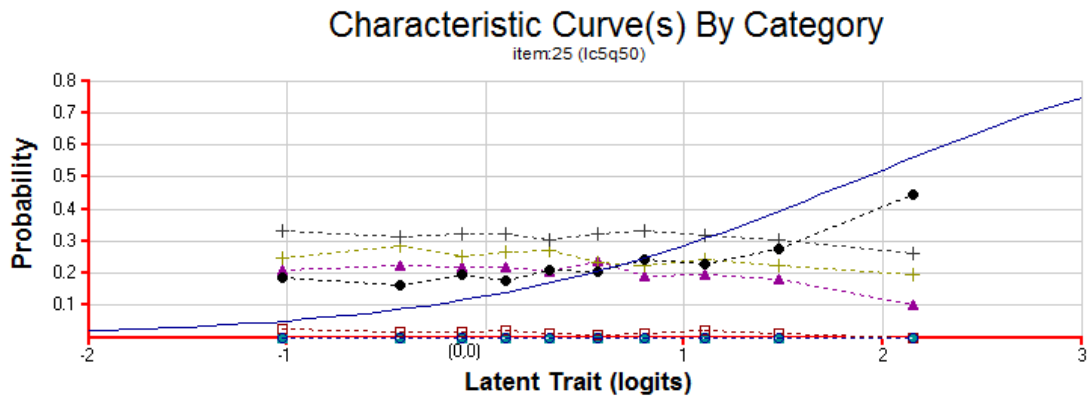

Characteristic Curve(s) By Category
item:20 (lc5q45)
Probability
Latent Trait (logits)
(0,0)

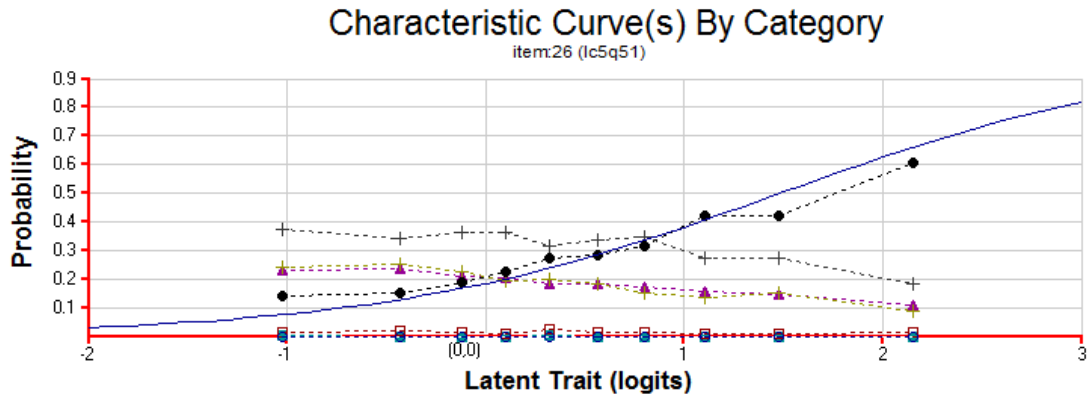

Characteristic Curve(s) By Category
item:21 (lc5q46)
Probability
Latent Trait (logits)
(0,0)


Characteristic Curve(s) By Category
item:22 (lc5q47)
Probability
Latent Trait (logits)
(0,0)

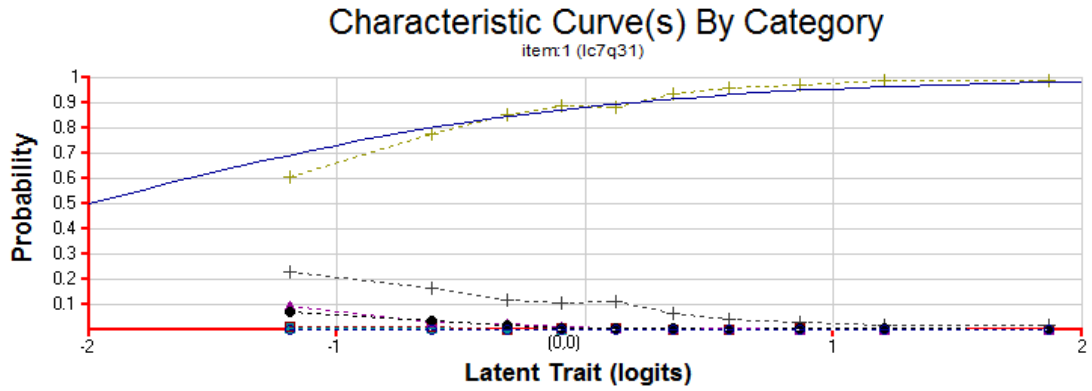

Characteristic Curve(s) By Category
item:23 (lc5q48)
Probability
Latent Trait (logits)
(0,0)

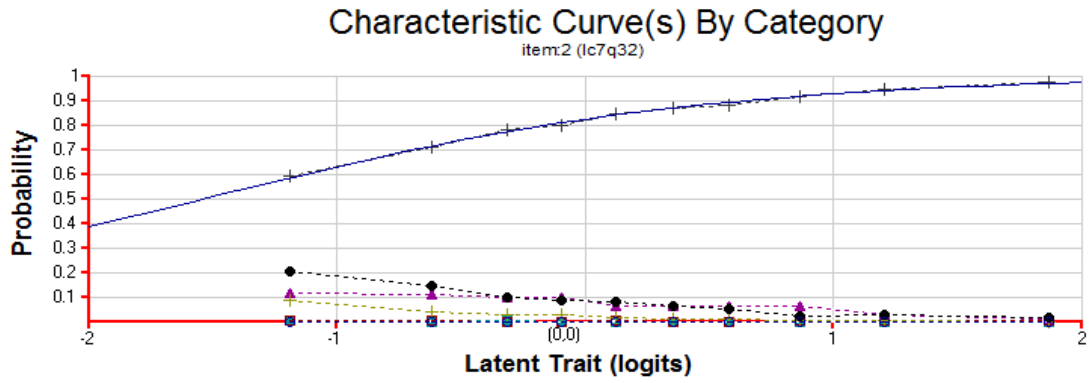

Characteristic Curve(s) By Category
item:24 (lc5q49)
Probability
Latent Trait (logits)
(0,0)

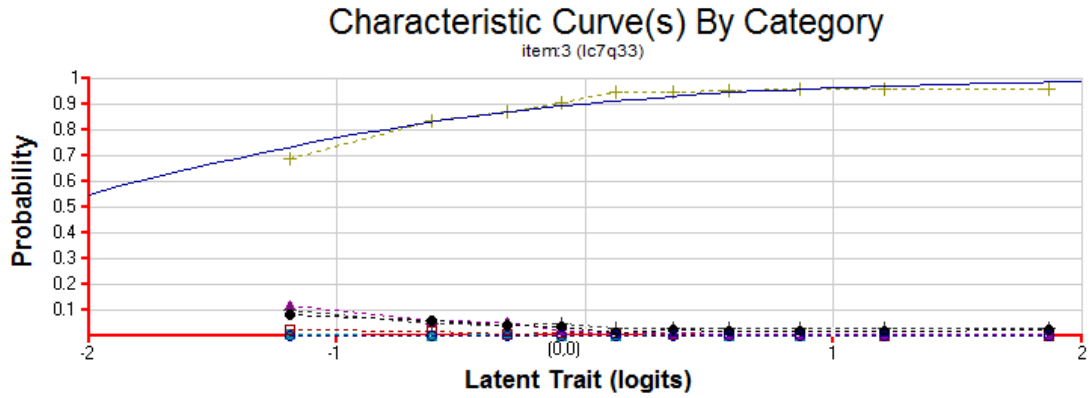

Characteristic Curve(s) By Category
item:25 (lc5q50)
Probability
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
3
Latent Trait (logits)

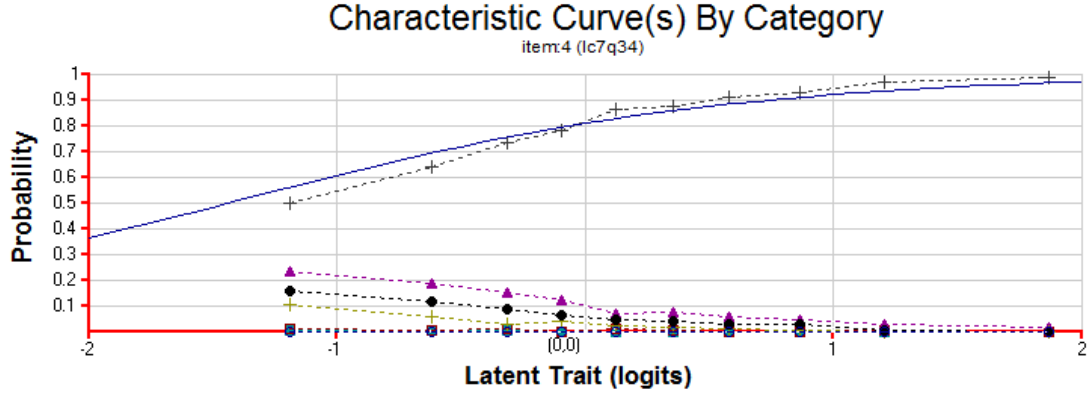

Characteristic Curve(s) By Category
item:26 (lc5q51)
Probability
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
3
Latent Trait (logits)

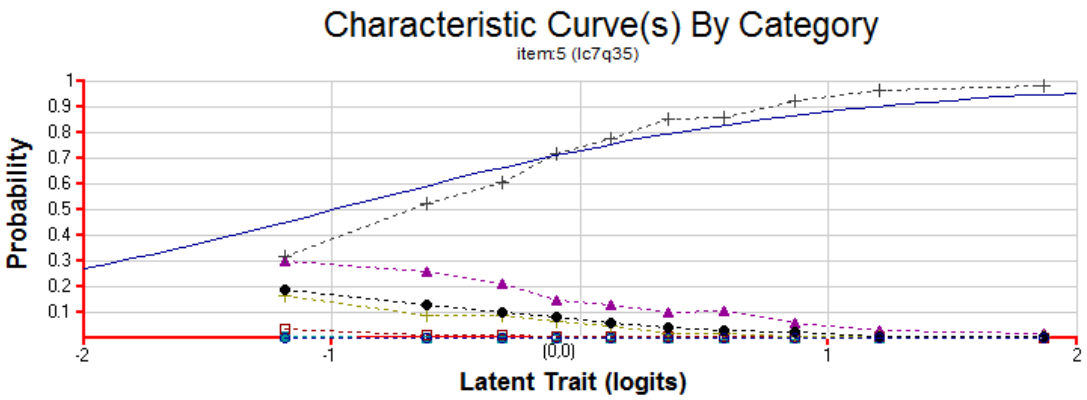
Year 7 Grammar and Punctuation

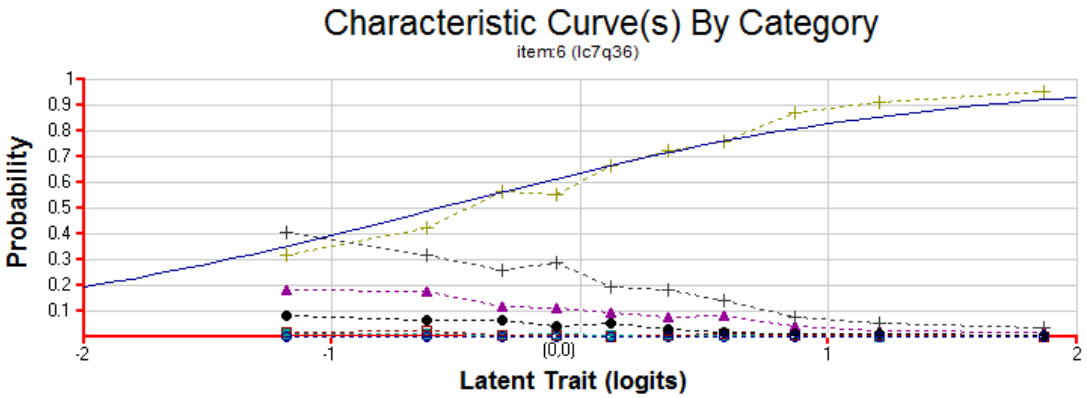


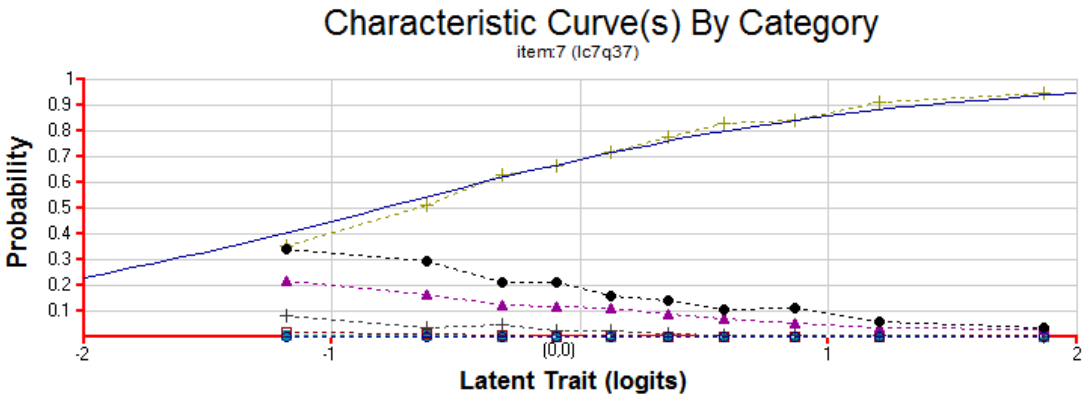


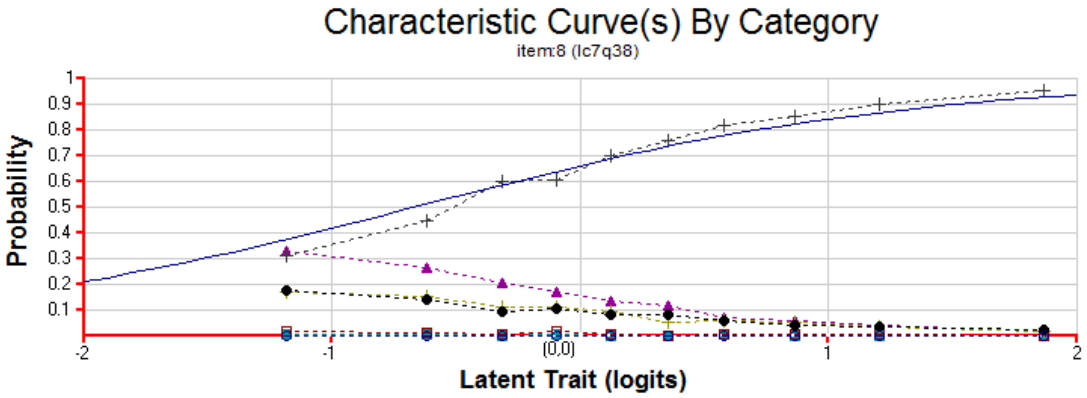


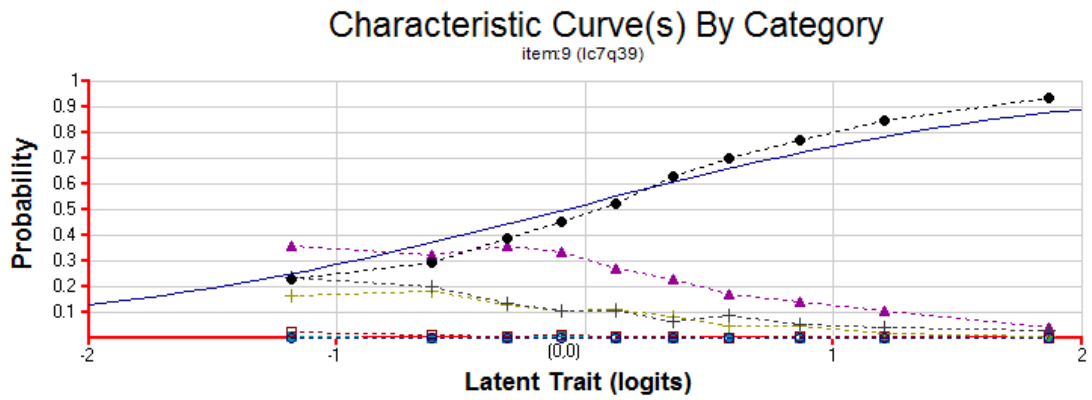


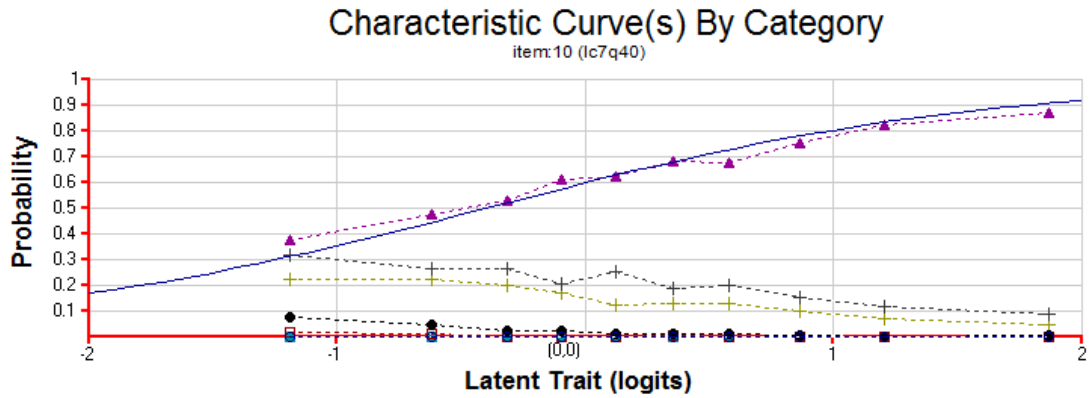

Characteristic Curve(s) By Category
item:5 (Ic7q35)
Probability
Latent Trait (logits)
(0,0)

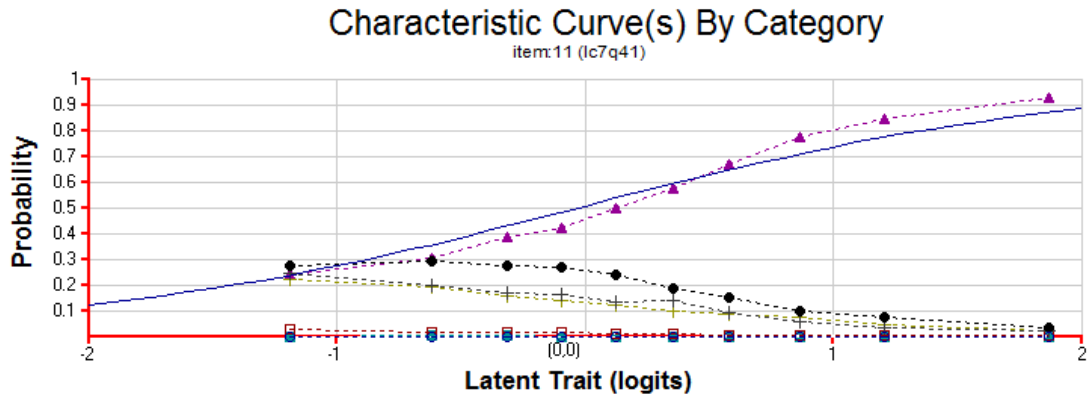

Characteristic Curve(s) By Category
item:6 (Ic7q36)
Probability
Latent Trait (logits)
(0,0)

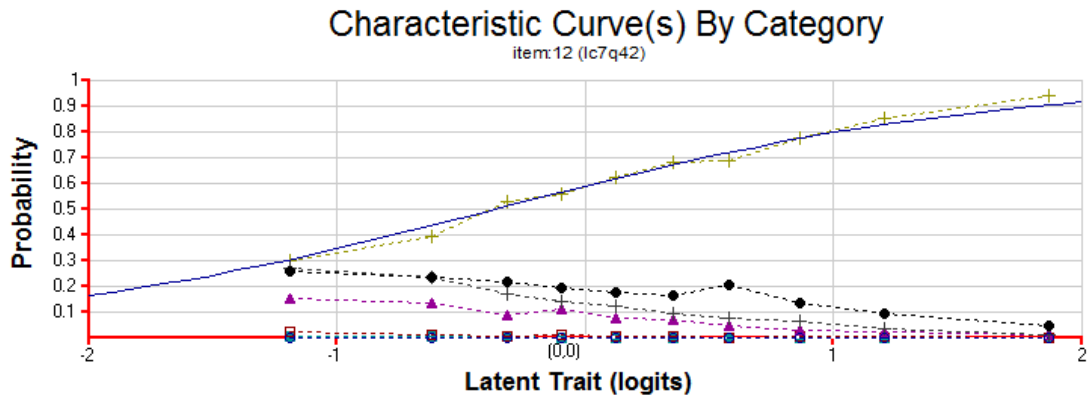

Characteristic Curve(s) By Category
item:7 (Ic7q37)
Probability
Latent Trait (logits)
(0,0)

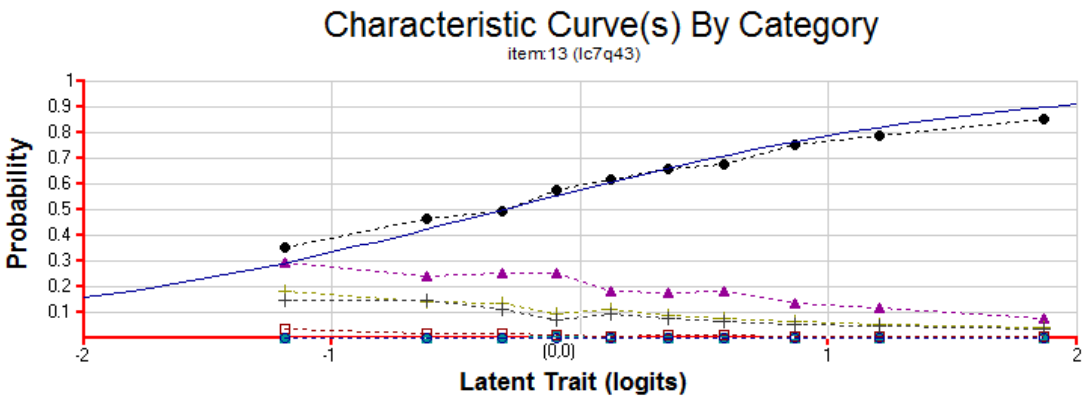

Characteristic Curve(s) By Category
item:8 (Ic7q38)
Probability
Latent Trait (logits)
(0,0)

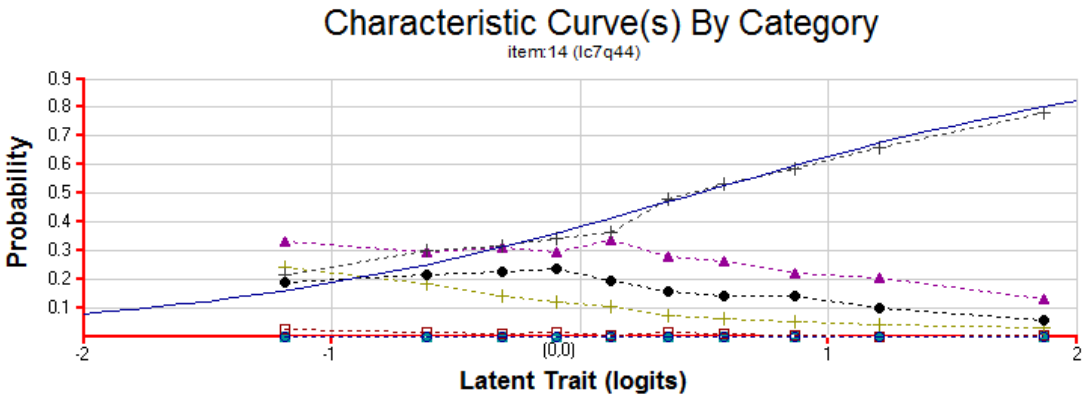

Characteristic Curve(s) By Category
item:9 (lc7q39)
Probability
Latent Trait (logits)
(0,0)

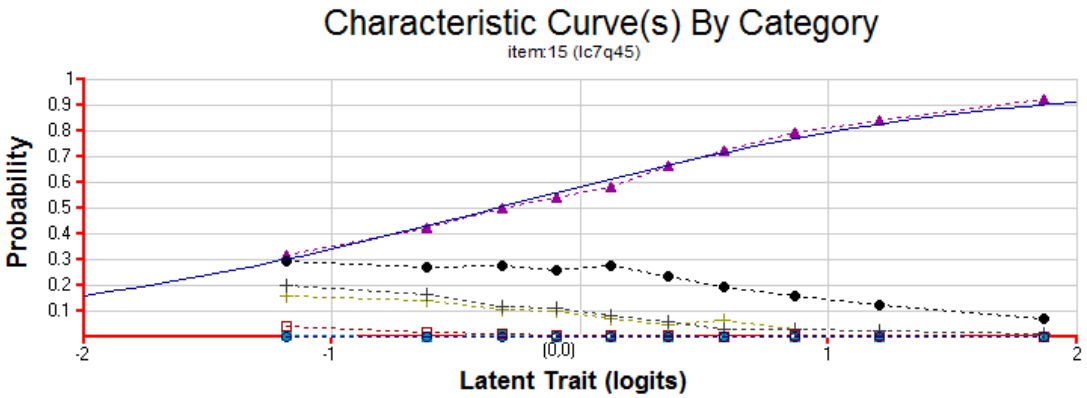

Characteristic Curve(s) By Category
item:10 (lc7q40)
Probability
Latent Trait (logits)
(0,0)

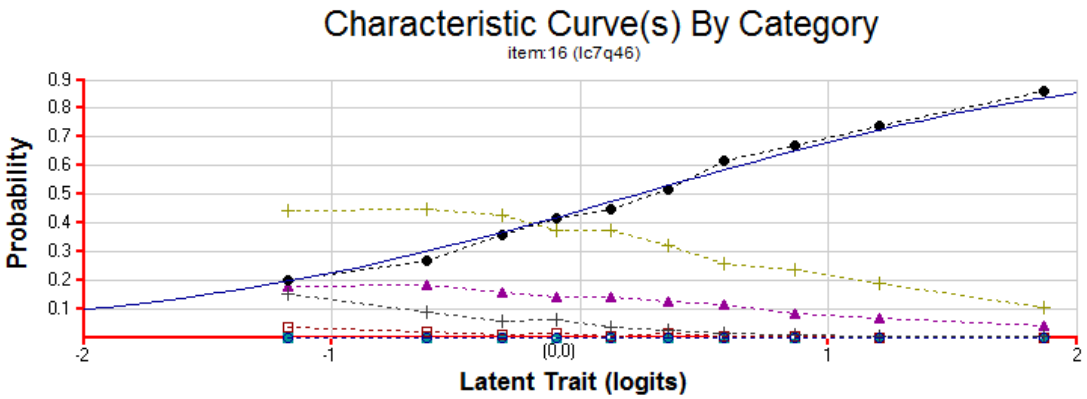

Characteristic Curve(s) By Category
item:11 (lc7q41)
Probability
Latent Trait (logits)
(0,0)

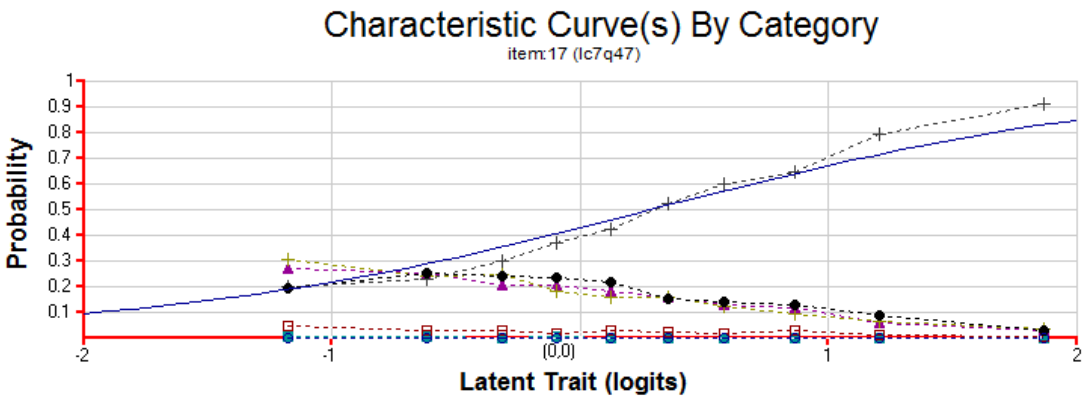

Characteristic Curve(s) By Category
item:12 (lc7q42)
Probability
Latent Trait (logits)
(0,0)

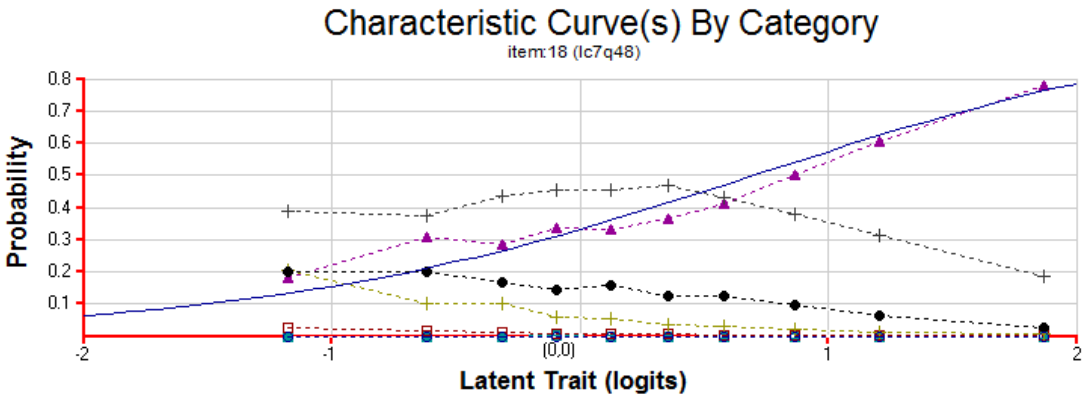

Characteristic Curve(s) By Category
item:13 (lc7q43)
Probability
Latent Trait (logits)
(0,0)

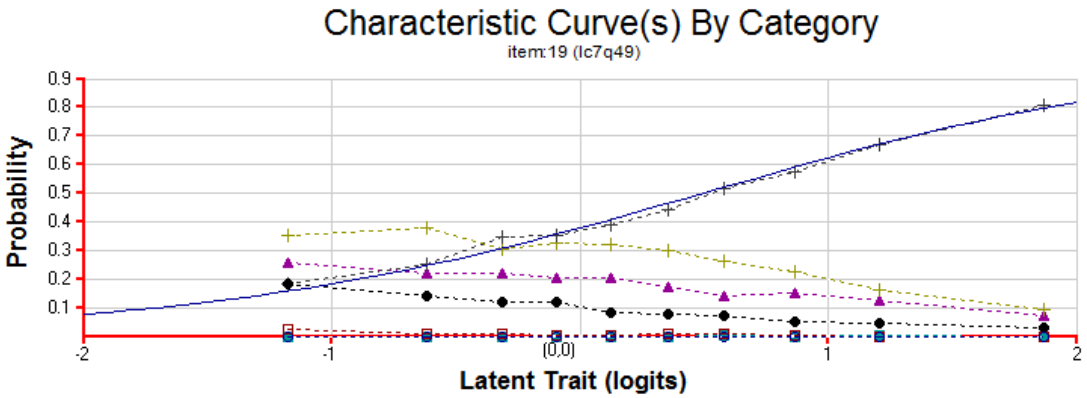

Characteristic Curve(s) By Category
item:14 (lc7q44)
Probability
Latent Trait (logits)
(0,0)

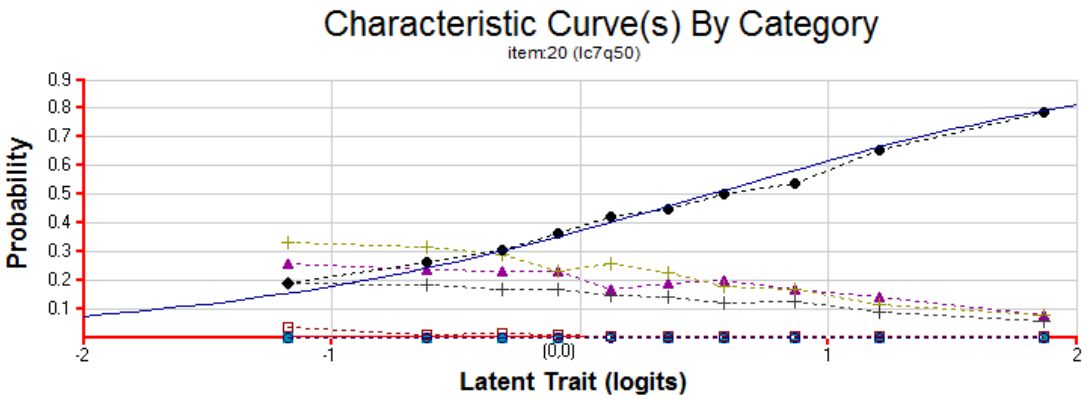

Characteristic Curve(s) By Category
item:15 (lc7q45)
Probability
Latent Trait (logits)
(0,0)

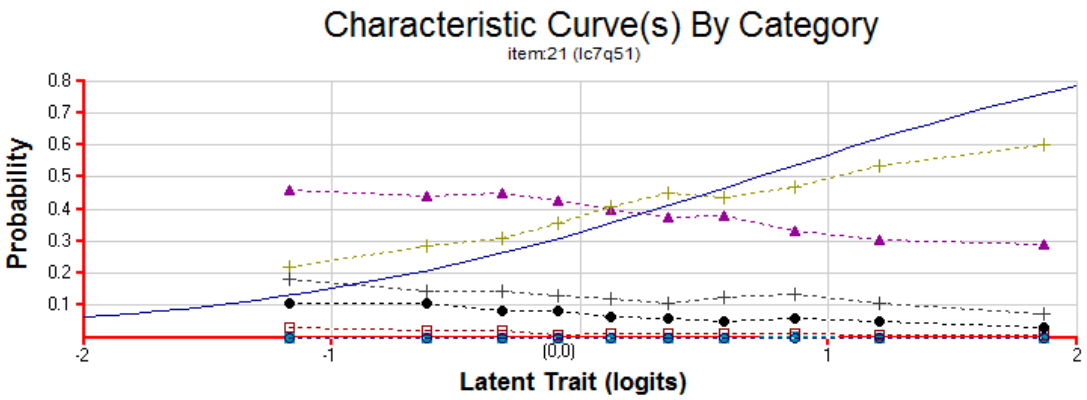

Characteristic Curve(s) By Category
item:16 (lc7q46)
Probability
Latent Trait (logits)
(0,0)

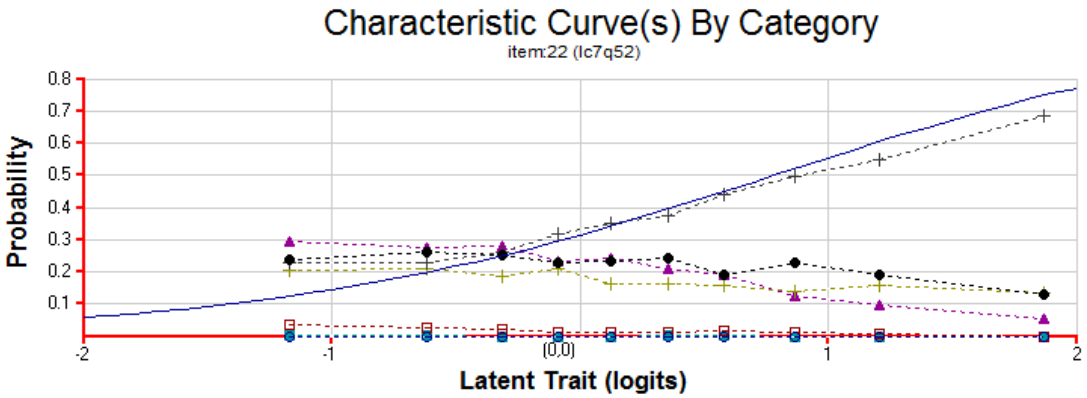

Characteristic Curve(s) By Category
item:17 (lc7q47)
Probability
Latent Trait (logits)
(0,0)

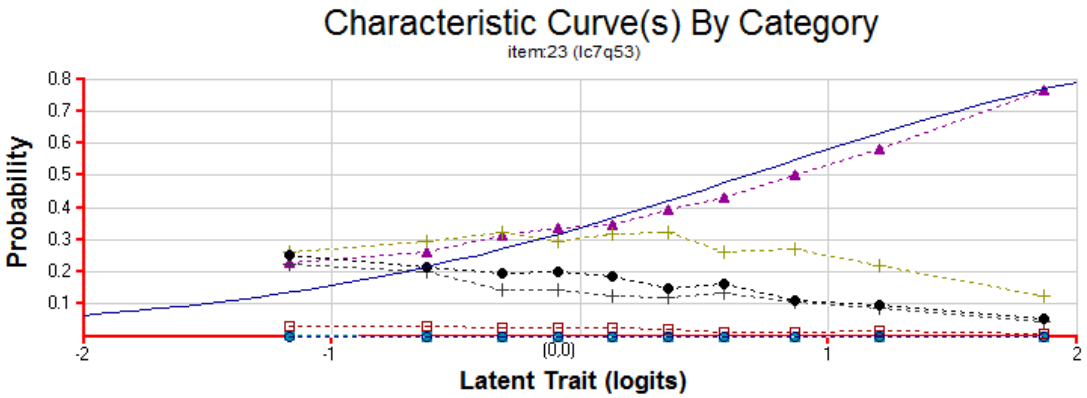

Characteristic Curve(s) By Category
item:18 (lc7q48)
Probability
Latent Trait (logits)
(0,0)

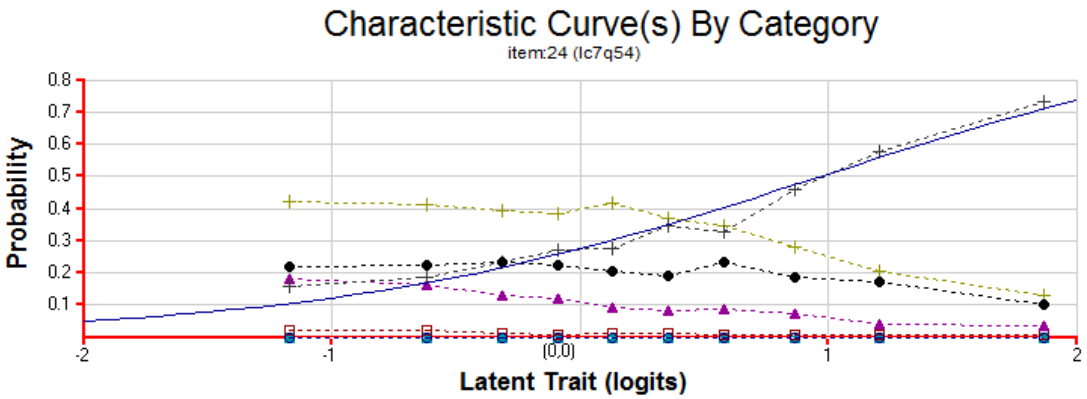

Characteristic Curve(s) By Category
item:19 (lc7q49)
Probability
Latent Trait (logits)
(0,0)

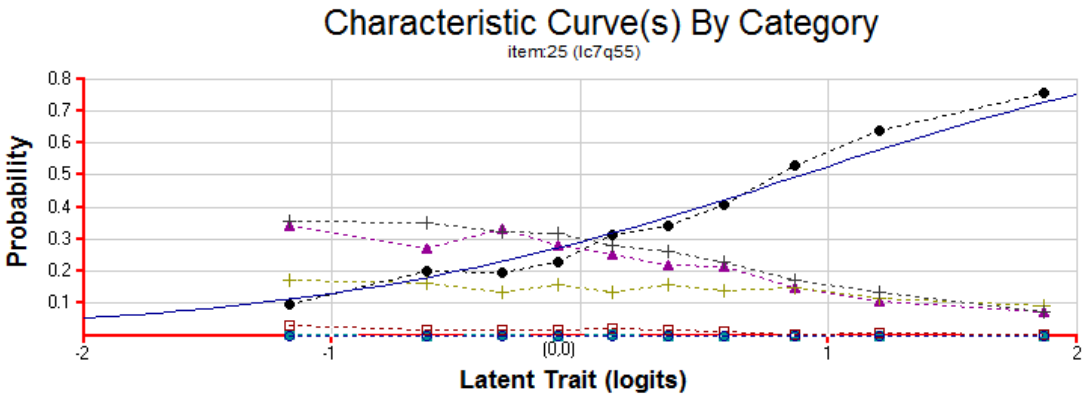

Characteristic Curve(s) By Category
item:20 (lc7q50)
Probability
Latent Trait (logits)
(0,0)

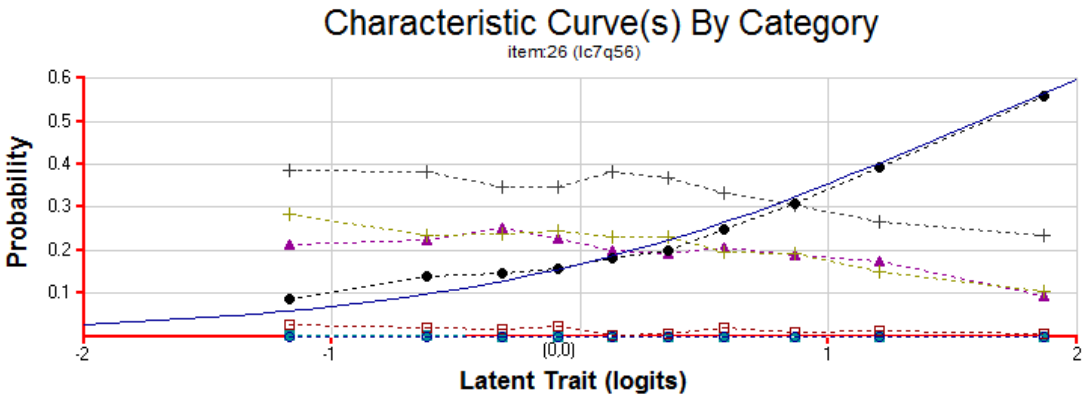

Characteristic Curve(s) By Category
item:21 (lc7q51)
Probability
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)

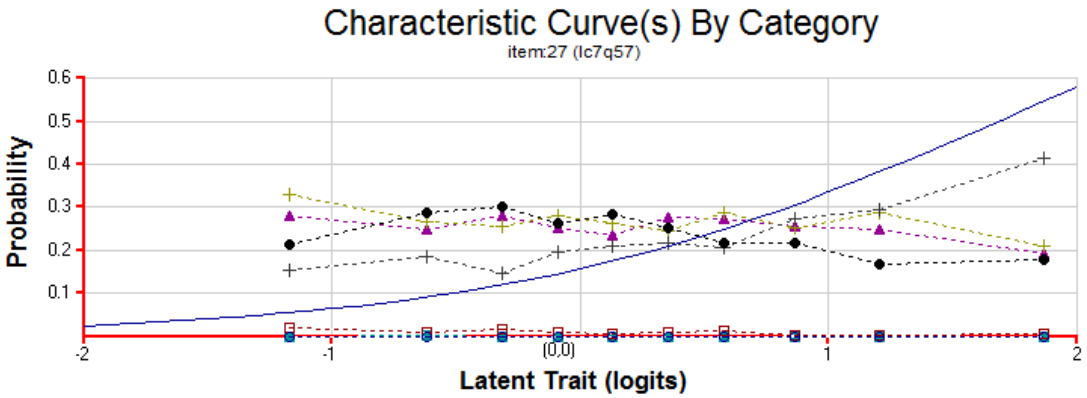

Characteristic Curve(s) By Category
item:22 (lc7q52)
Probability
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)

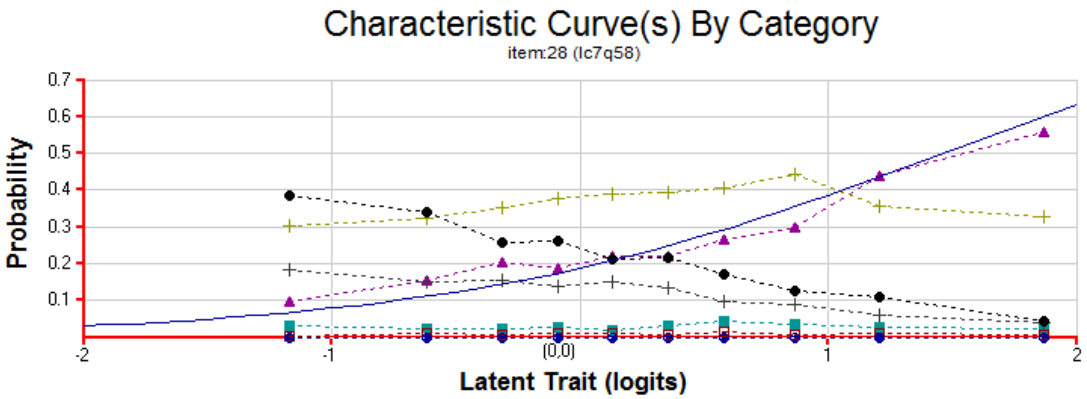

Characteristic Curve(s) By Category
item:23 (lc7q53)
Probability
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)


Characteristic Curve(s) By Category
item:24 (lc7q54)
Probability
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)

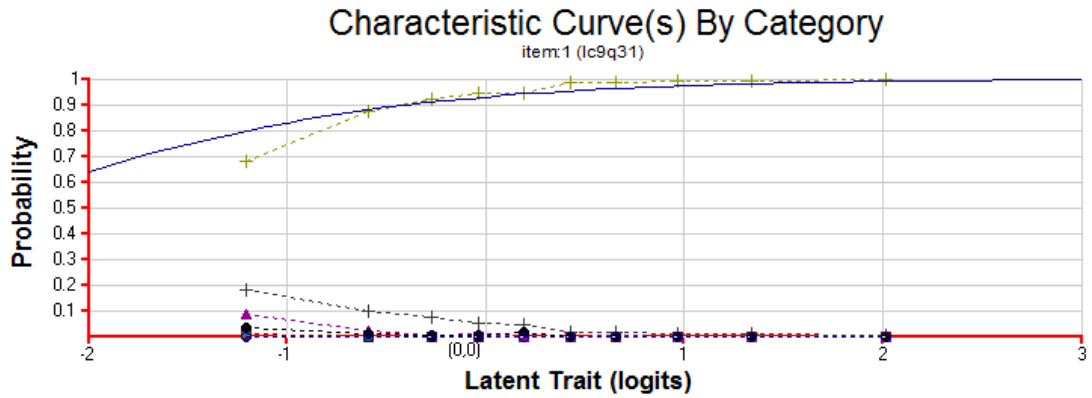

Characteristic Curve(s) By Category
item:25 (lc7q55)
Probability
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)

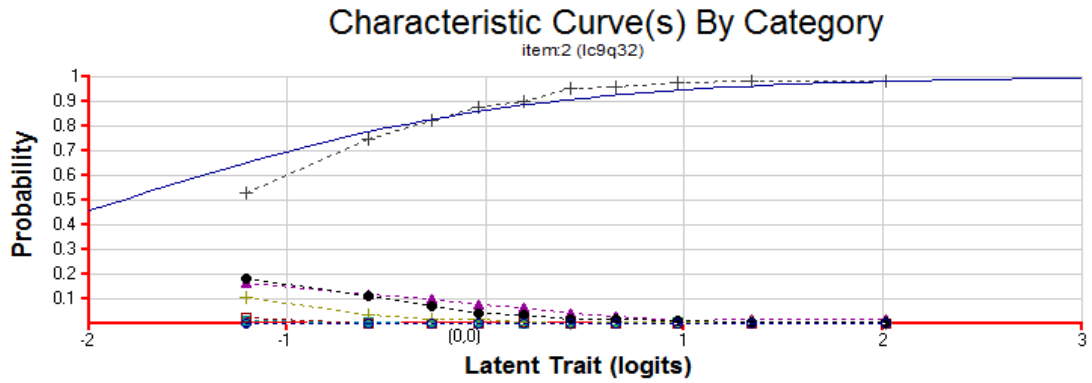

Characteristic Curve(s) By Category
item:26 (lc7q56)
Probability
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)

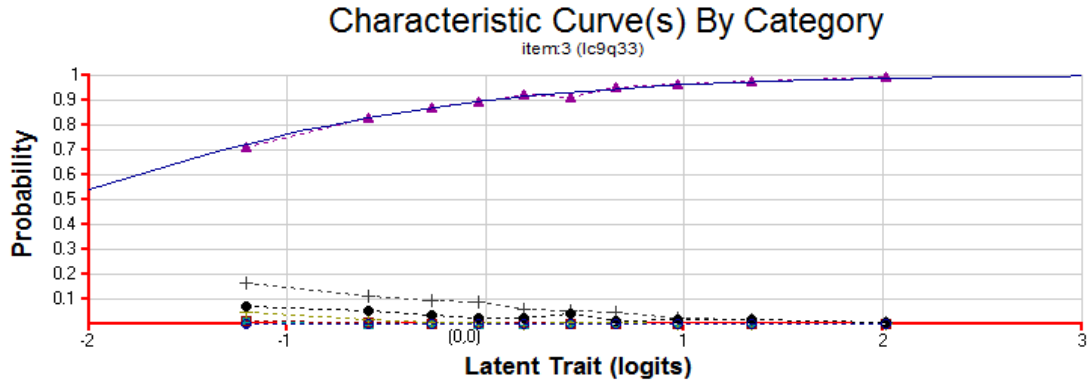

Characteristic Curve(s) By Category
item:27 (lc7q57)
Probability
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)

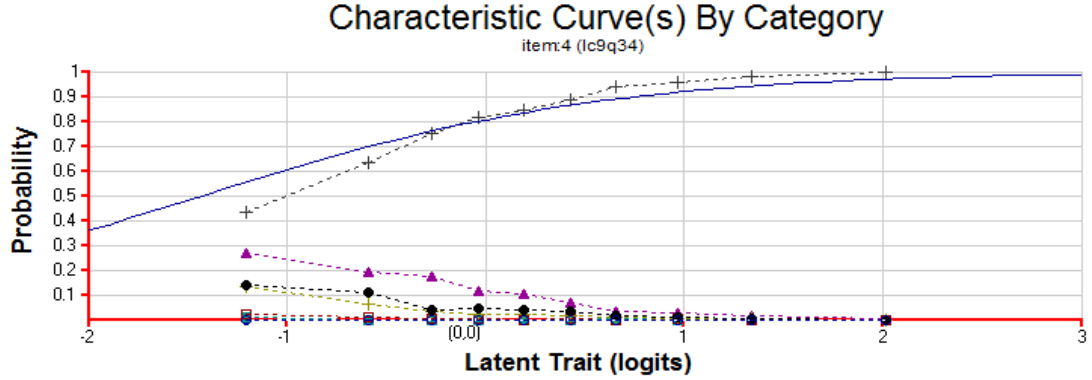

Characteristic Curve(s) By Category
item:28 (lc7q58)
Probability
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)

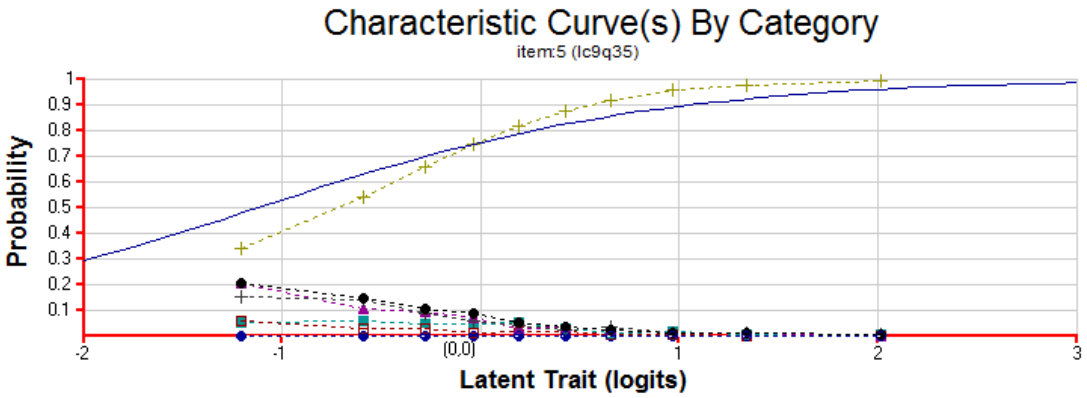
Year 9 Grammar and Punctuation

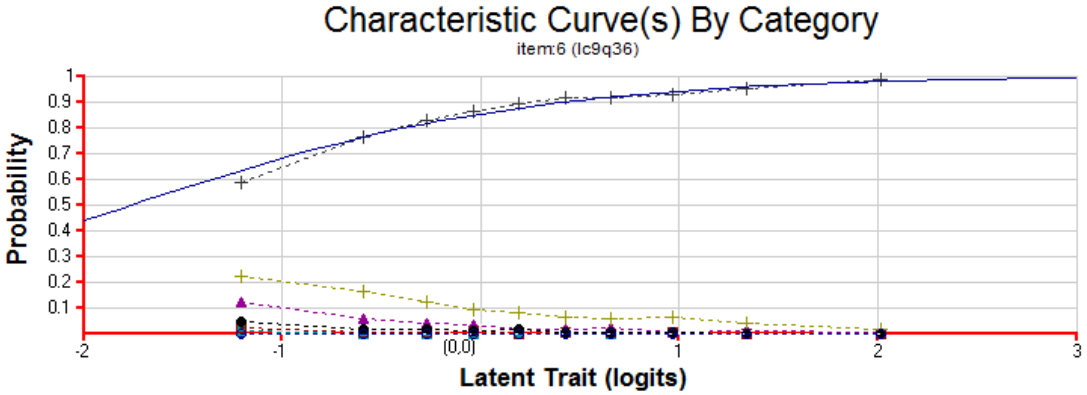


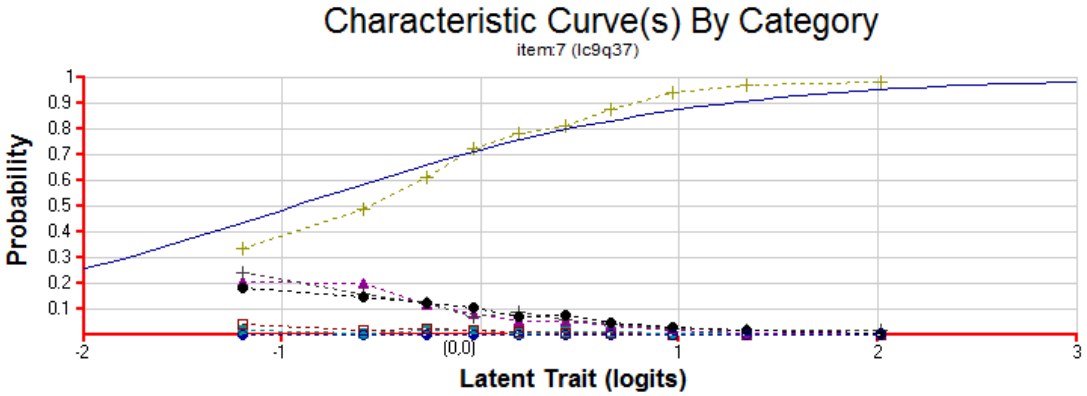


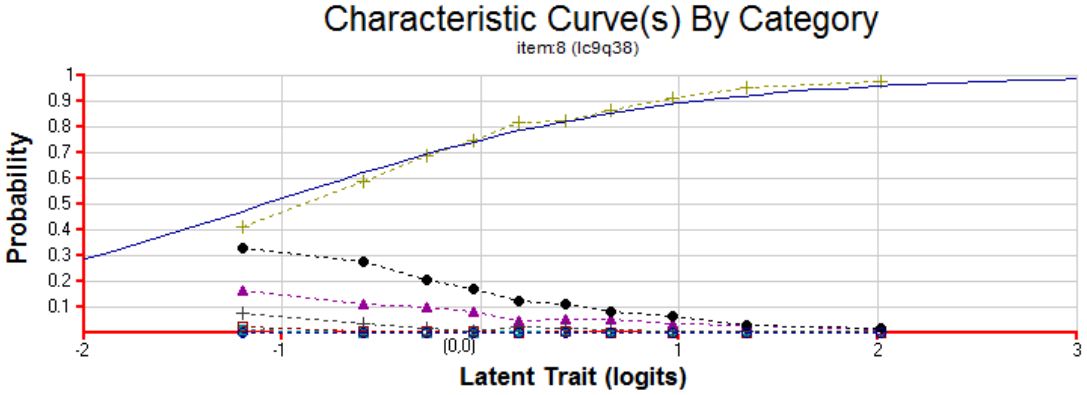


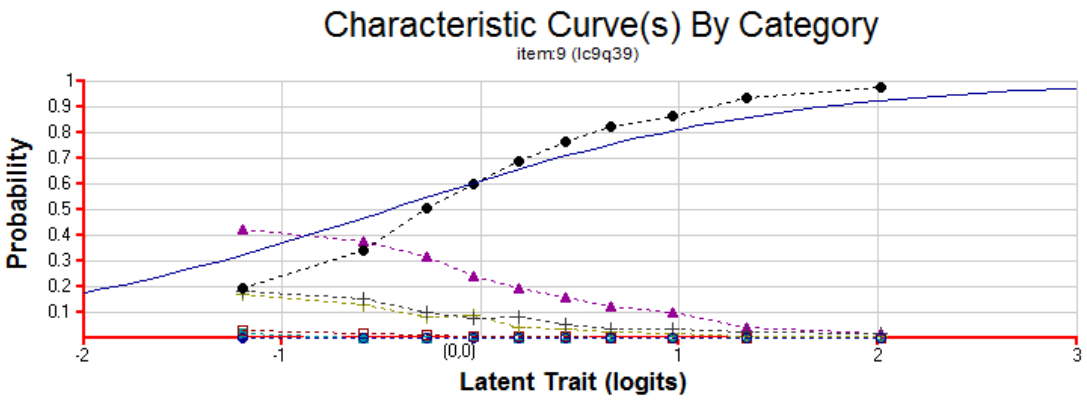


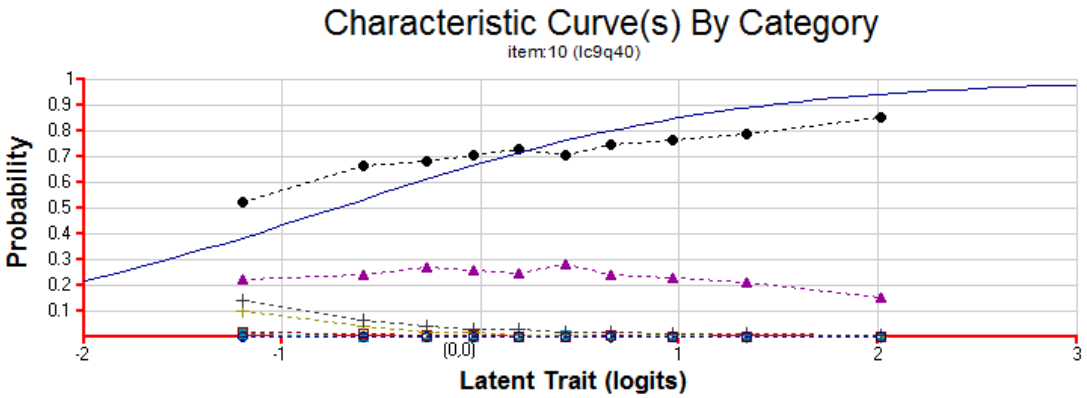

Characteristic Curve(s) By Category
item:5 (Ic9q35)
Probability
Latent Trait (logits)
(0,0)

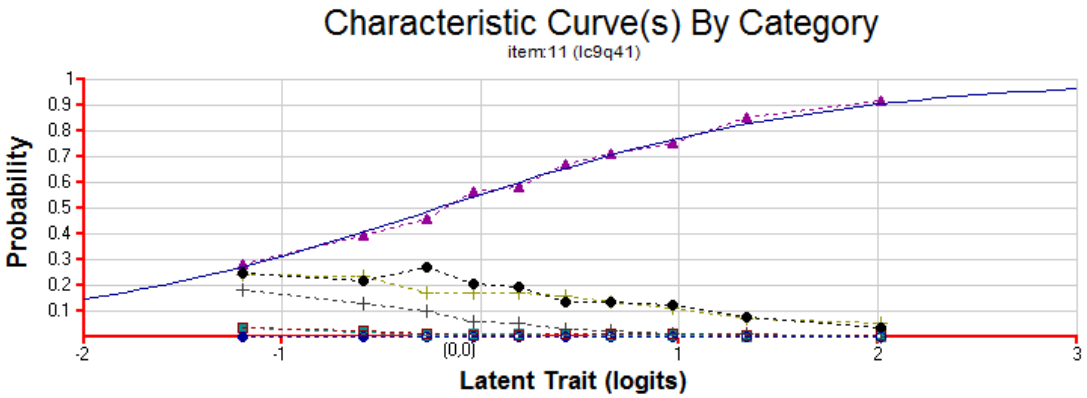

Characteristic Curve(s) By Category
item:6 (Ic9q36)
Probability
Latent Trait (logits)
(0,0)

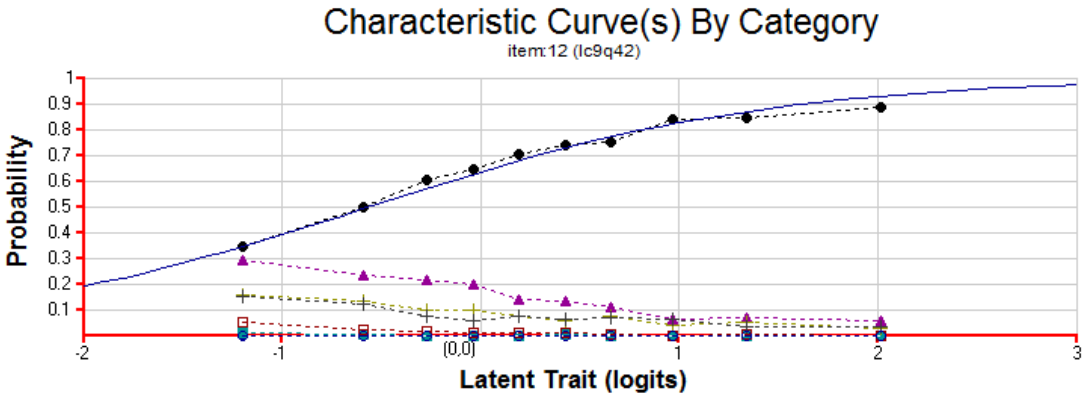

Characteristic Curve(s) By Category
item:7 (Ic9q37)
Probability
Latent Trait (logits)
(0,0)

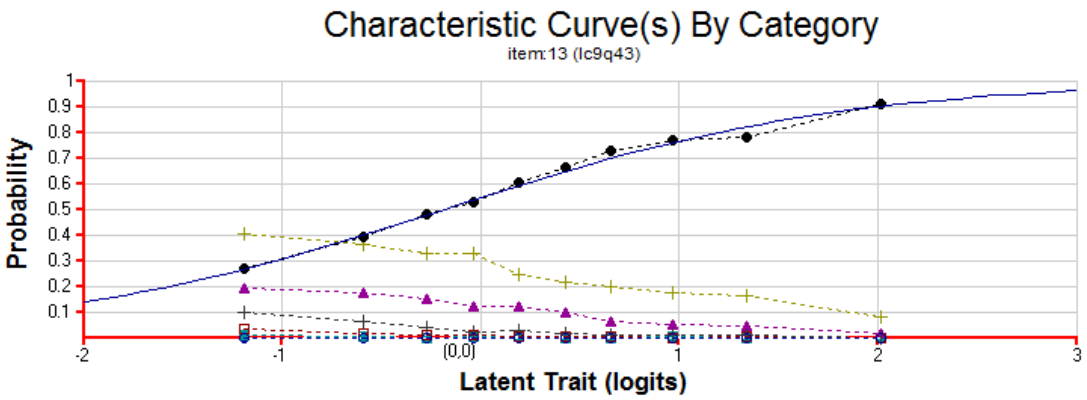

Characteristic Curve(s) By Category
item:8 (Ic9q38)
Probability
Latent Trait (logits)
(0,0)

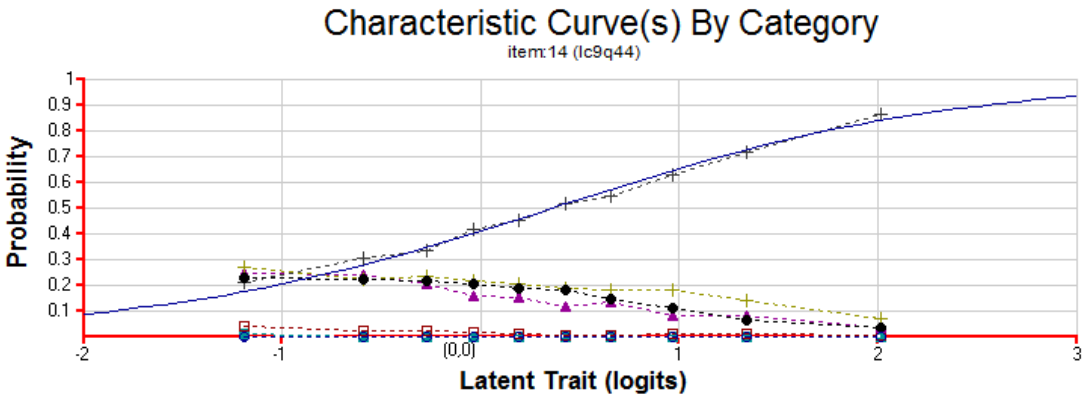

Characteristic Curve(s) By Category
item:9 (lc9q39)
Probability
Latent Trait (logits)
(0,0)

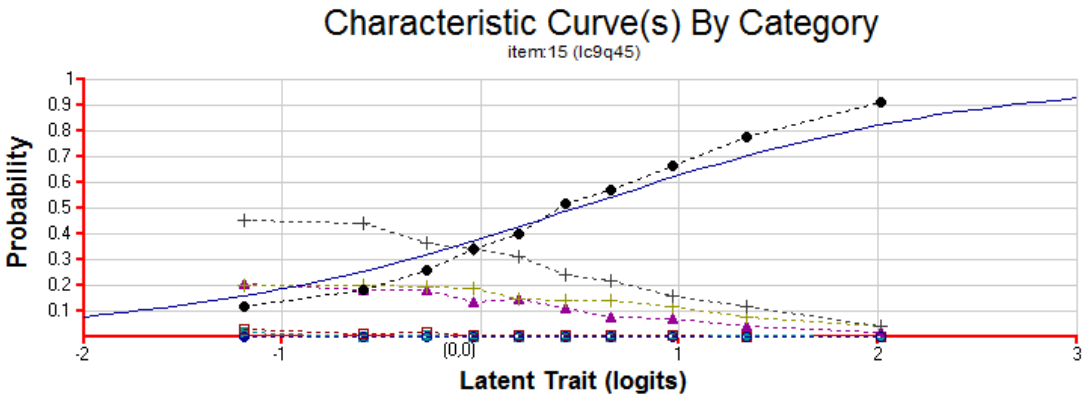

Characteristic Curve(s) By Category
item:10 (lc9q40)
Probability
Latent Trait (logits)
(0,0)

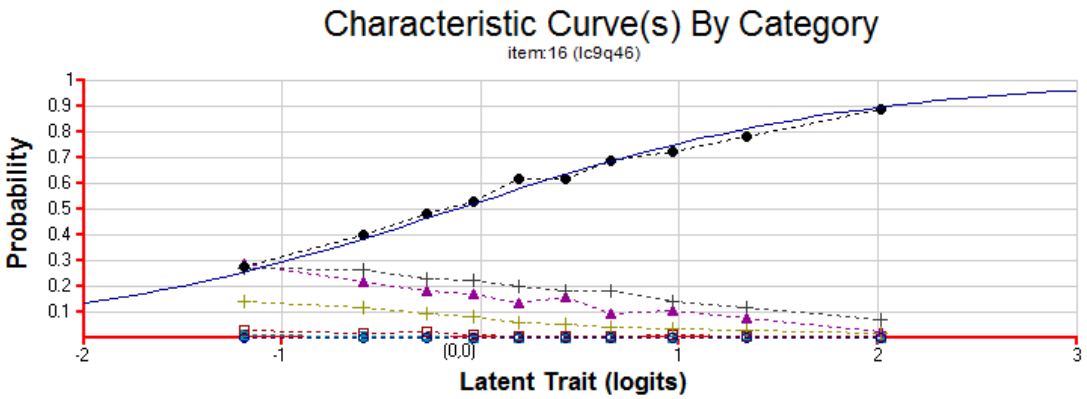

Characteristic Curve(s) By Category
item:11 (lc9q41)
Probability
Latent Trait (logits)
(0,0)

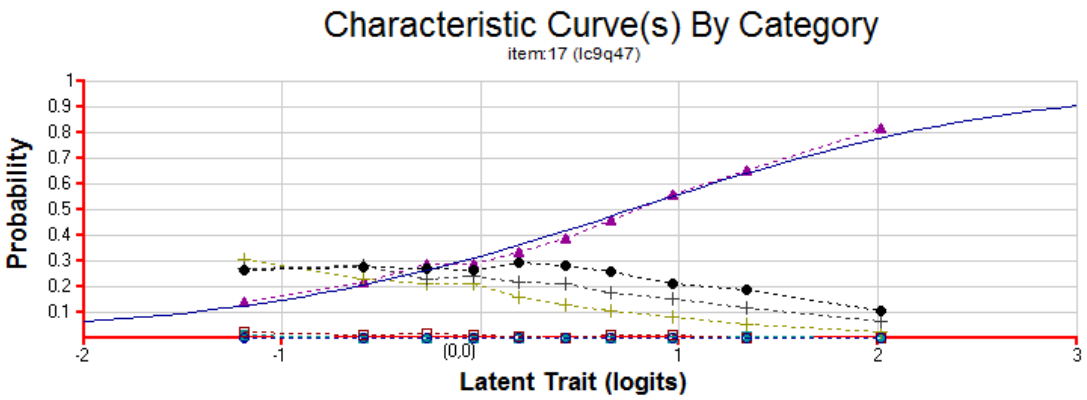

Characteristic Curve(s) By Category
item:12 (lc9q42)
Probability
Latent Trait (logits)
(0,0)

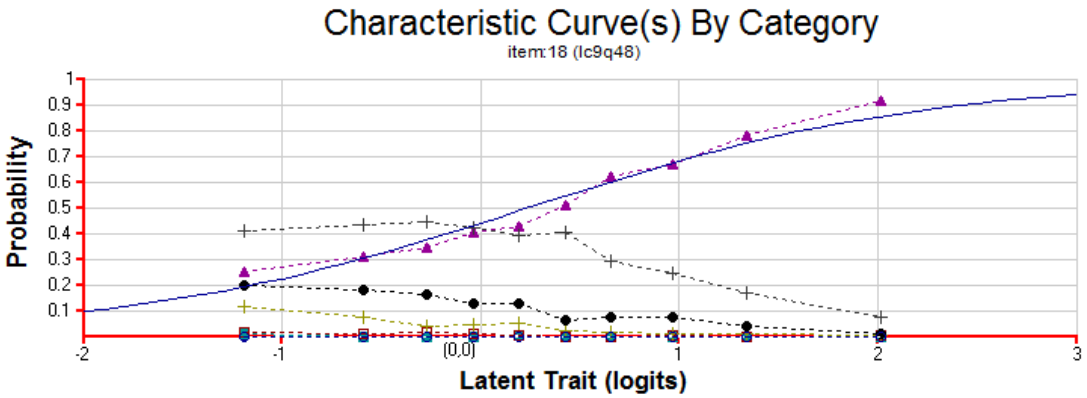

Characteristic Curve(s) By Category
item:13 (lc9q43)
Probability
Latent Trait (logits)
(0,0)

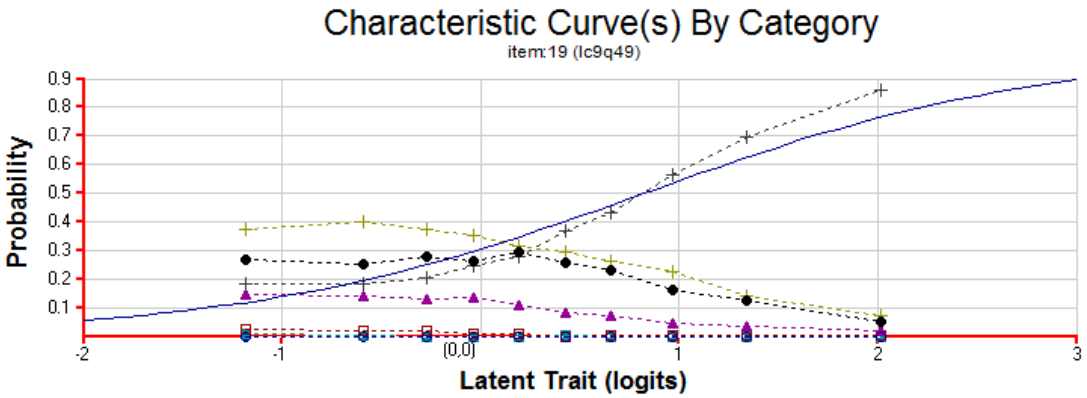

Characteristic Curve(s) By Category
item:14 (lc9q44)
Probability
Latent Trait (logits)
(0,0)

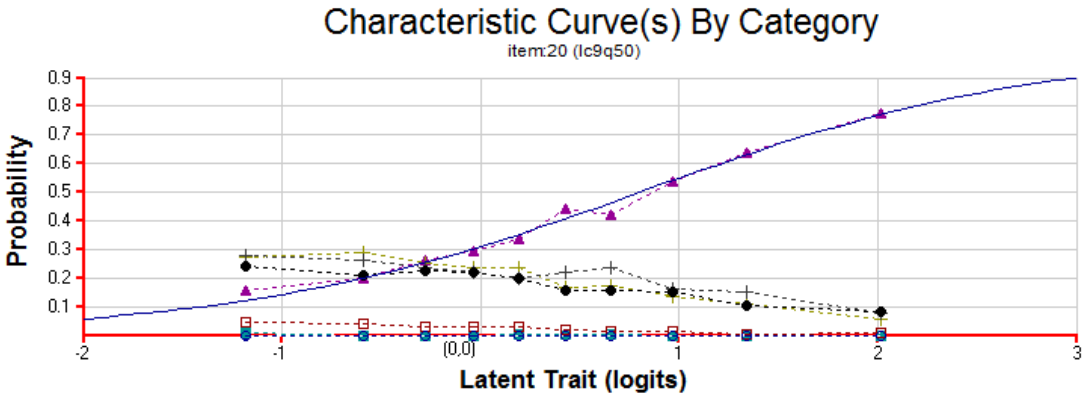

Characteristic Curve(s) By Category
item:15 (lc9q45)
Probability
Latent Trait (logits)
(0,0)

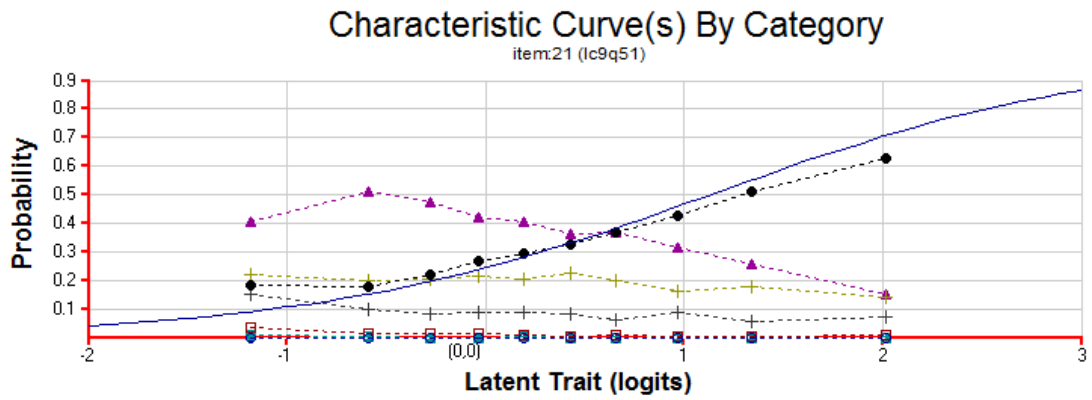

Characteristic Curve(s) By Category
item:16 (lc9q46)
Probability
Latent Trait (logits)
(0,0)

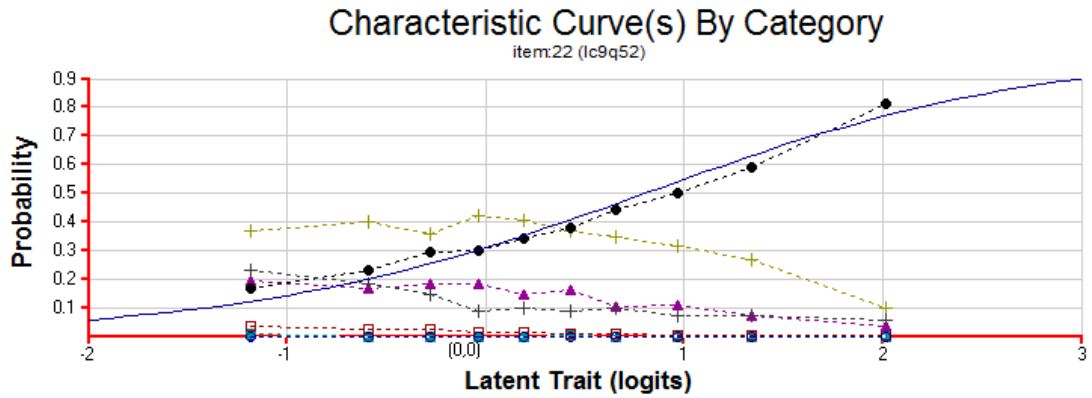

Characteristic Curve(s) By Category
item:17 (Ic9q47)
Probability
Latent Trait (logits)
(0,0)

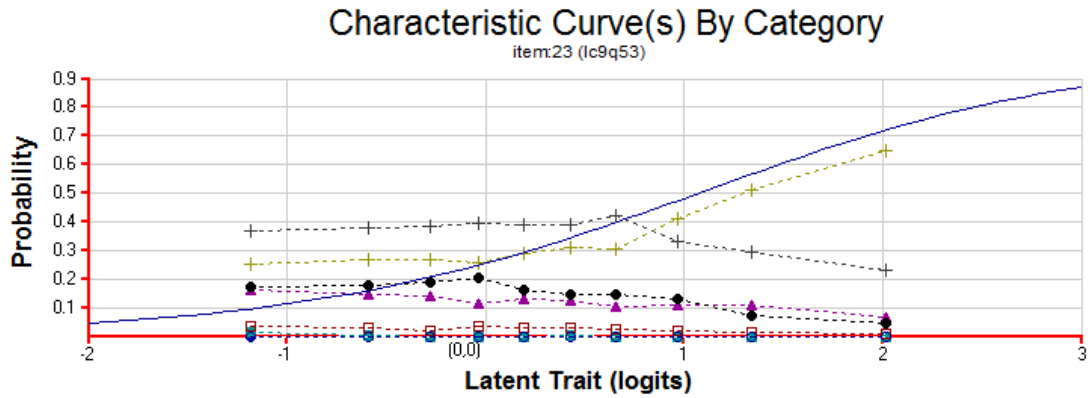

Characteristic Curve(s) By Category
item:18 (Ic9q48)
Probability
Latent Trait (logits)
(0,0)

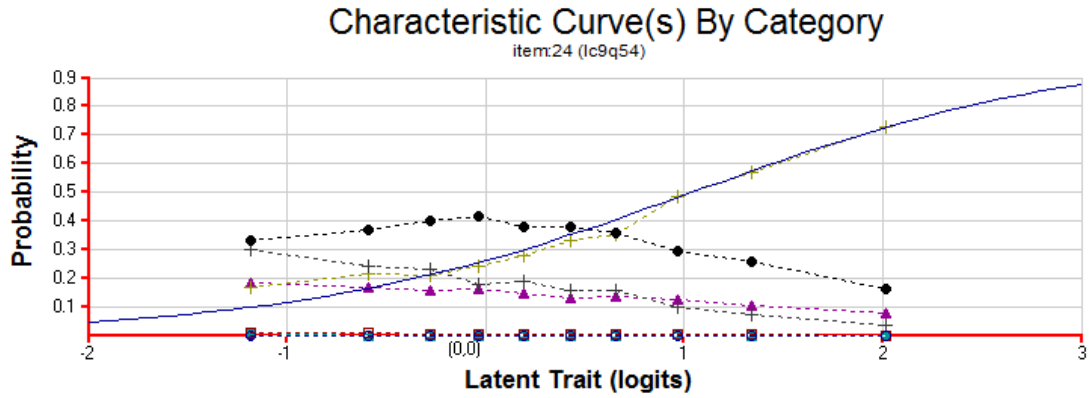

Characteristic Curve(s) By Category
item:19 (Ic9q49)
Probability
Latent Trait (logits)
(0,0)

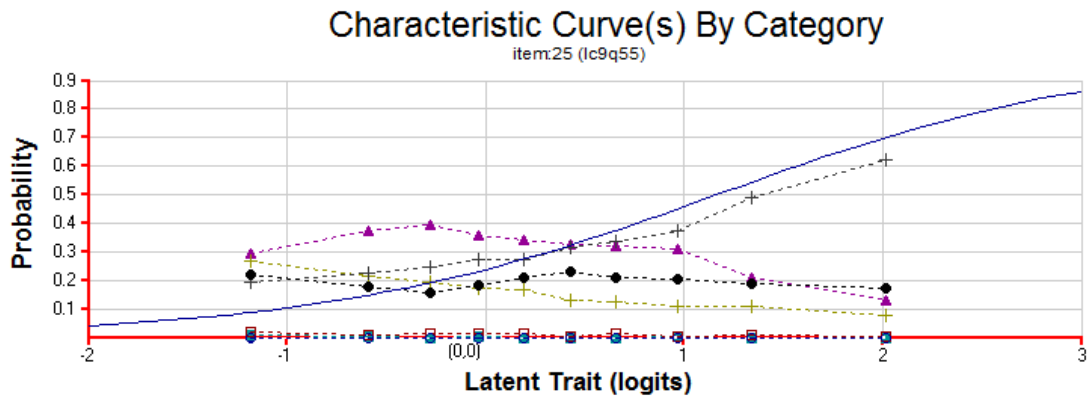

Characteristic Curve(s) By Category
item:20 (Ic9q50)
Probability
Latent Trait (logits)
(0,0)

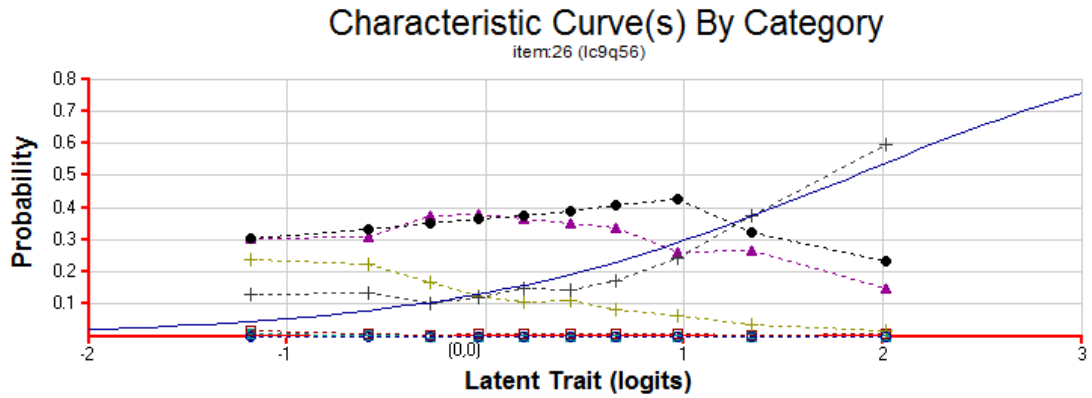

Characteristic Curve(s) By Category
item:21 (Ic9q51)
Probability
Latent Trait (logits)
(0,0)

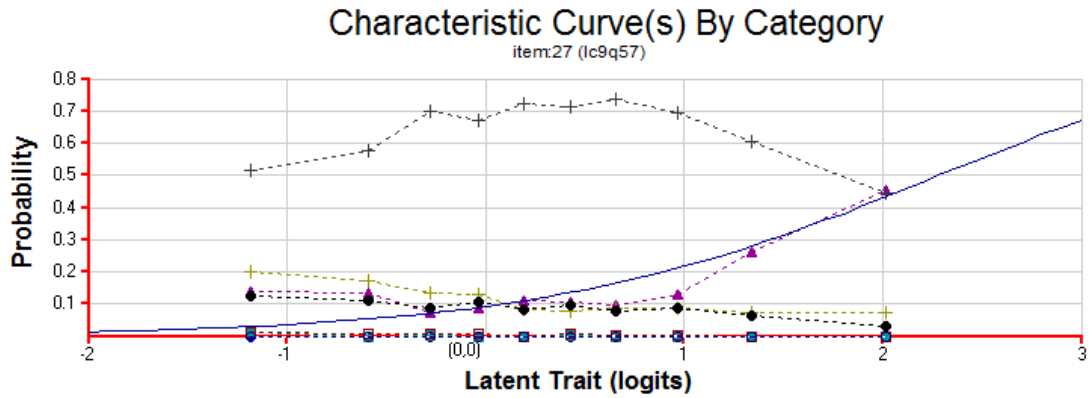

Characteristic Curve(s) By Category
item:22 (Ic9q52)
Probability
Latent Trait (logits)
(0,0)

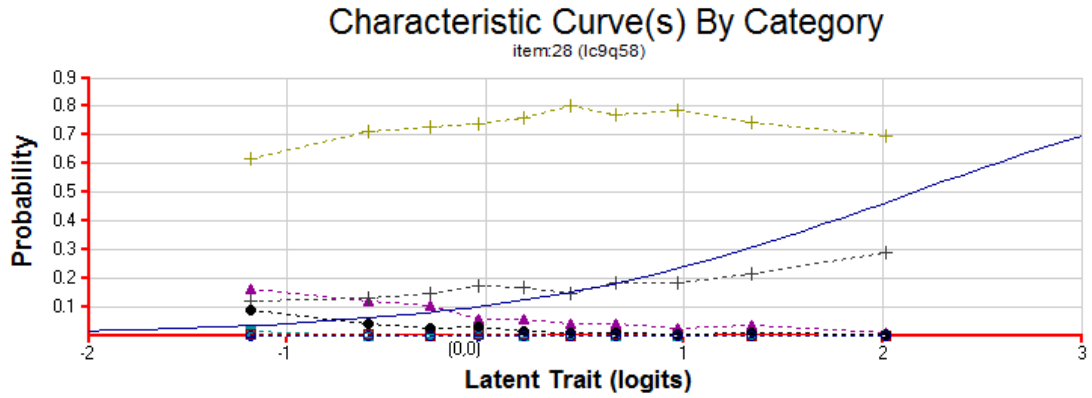

Characteristic Curve(s) By Category
item:23 (Ic9q53)
Probability
Latent Trait (logits)
(0,0)


Characteristic Curve(s) By Category
item:24 (Ic9q54)
Probability
Latent Trait (logits)
(0,0)

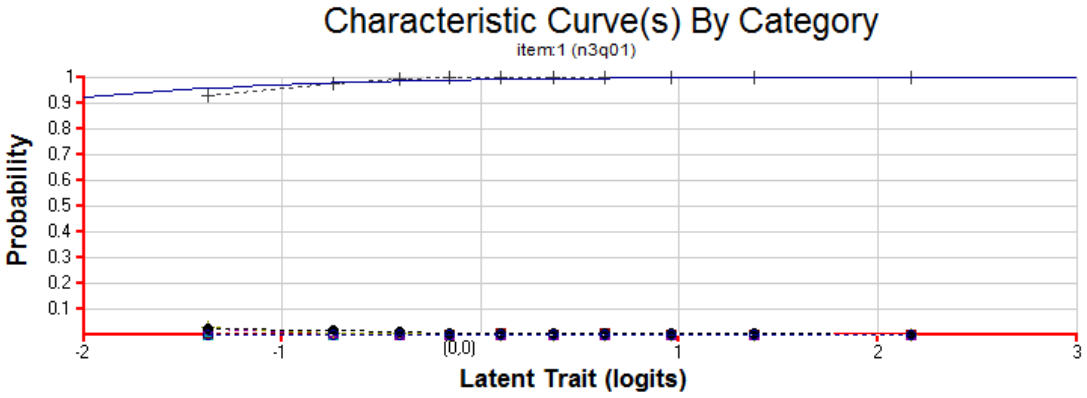

Characteristic Curve(s) By Category
item:25 (lc9q55)
Probability
Latent Trait (logits)
(0,0)

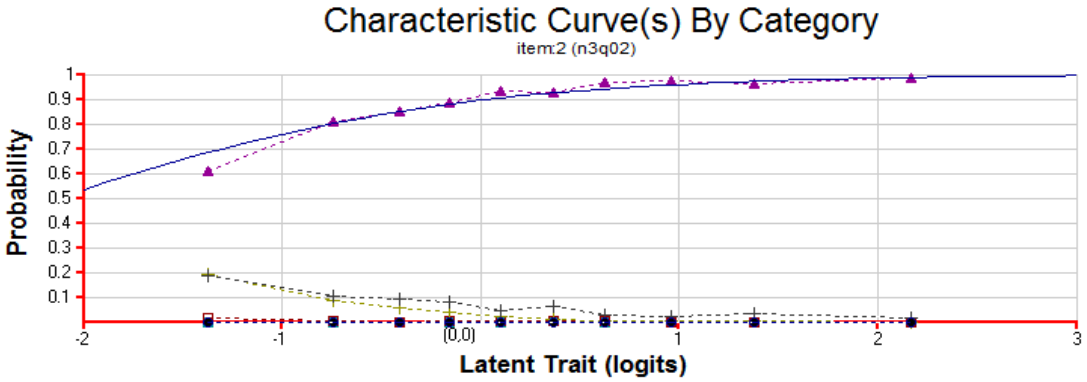

Characteristic Curve(s) By Category
item:26 (lc9q56)
Probability
Latent Trait (logits)
(0,0)

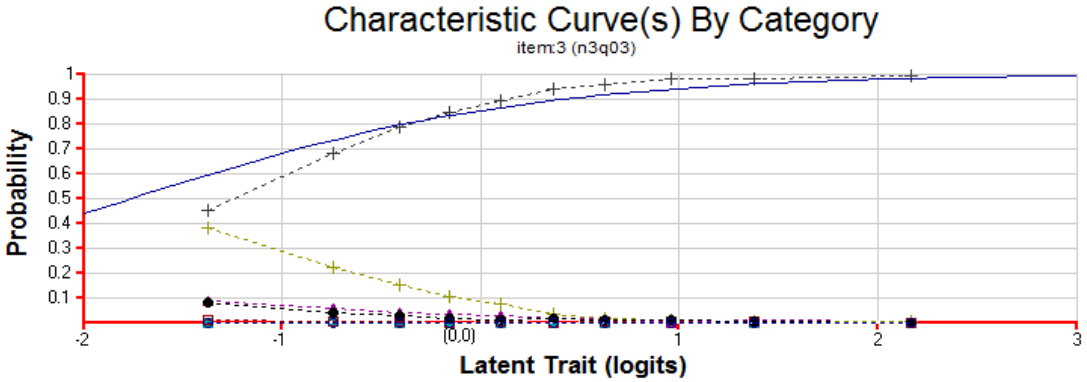

Characteristic Curve(s) By Category
item:27 (lc9q57)
Probability
Latent Trait (logits)
(0,0)

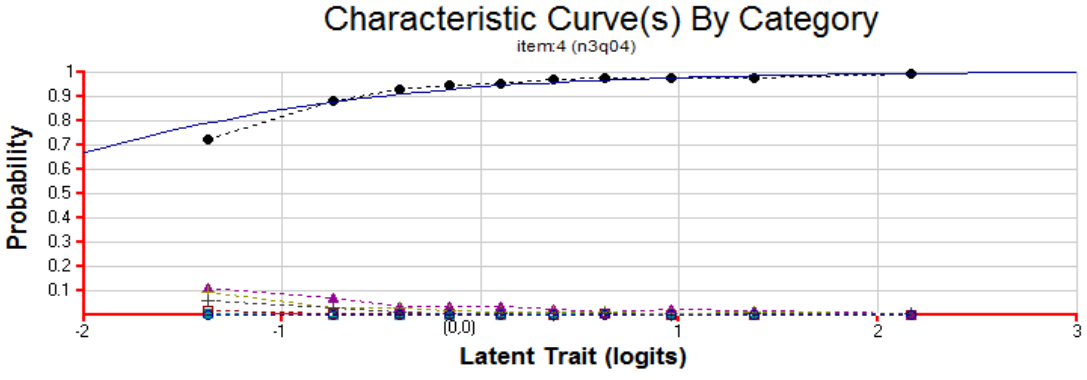

Characteristic Curve(s) By Category
item:28 (lc9q58)
Probability
Latent Trait (logits)
(0,0)

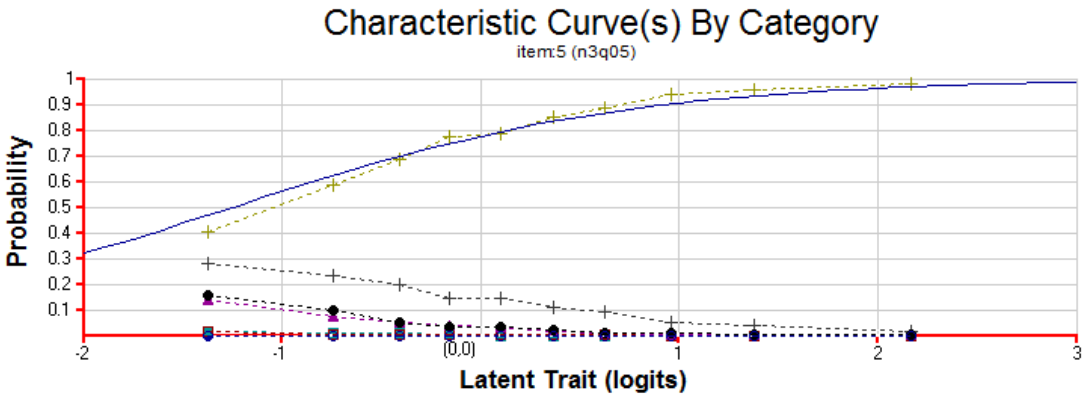
Year 3 Numeracy

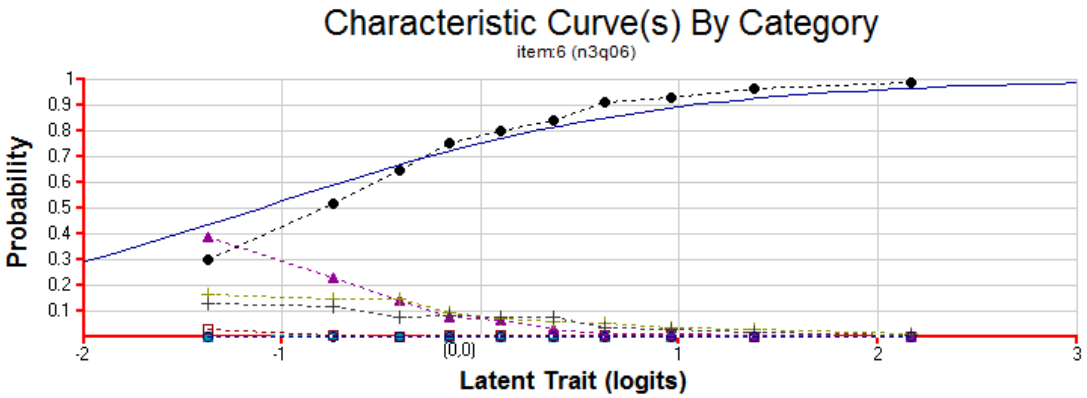


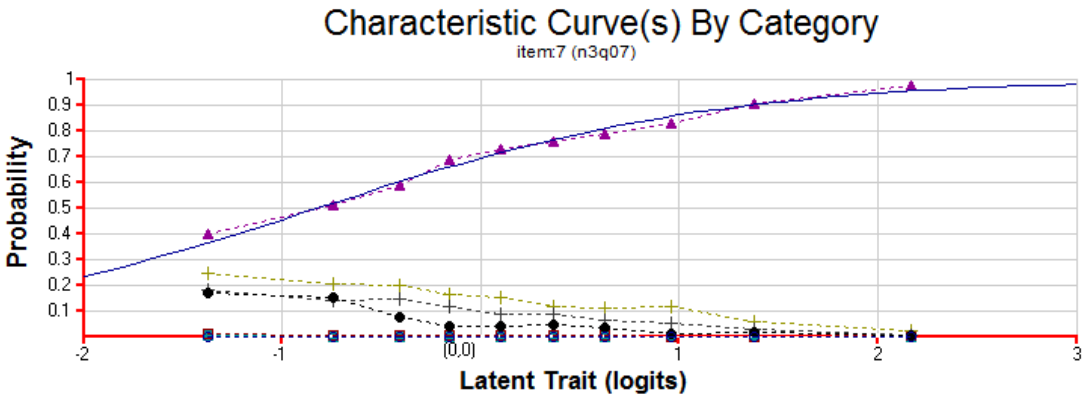


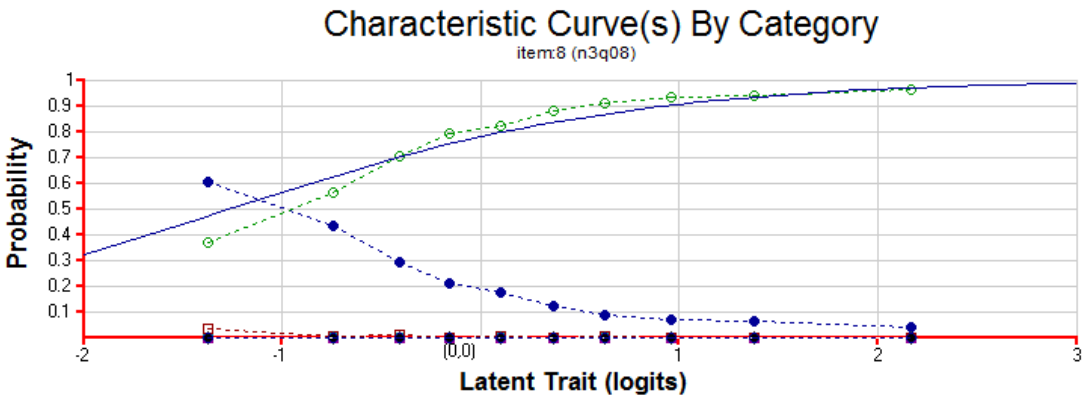


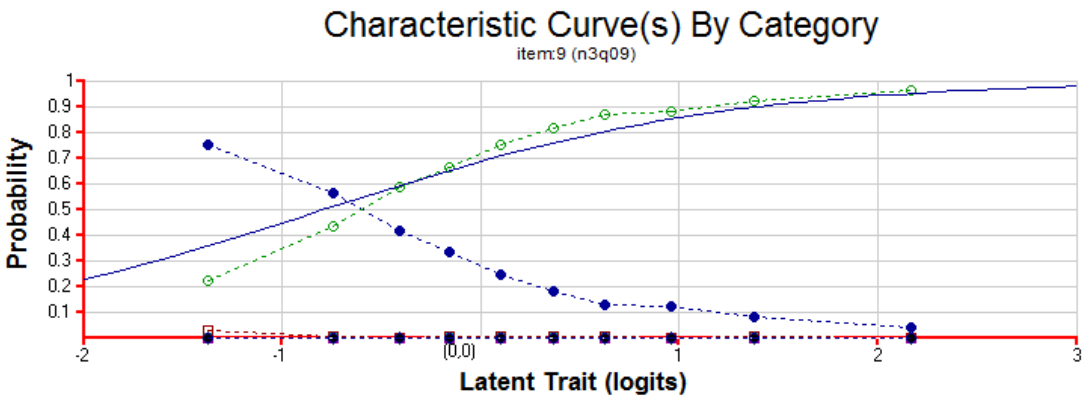


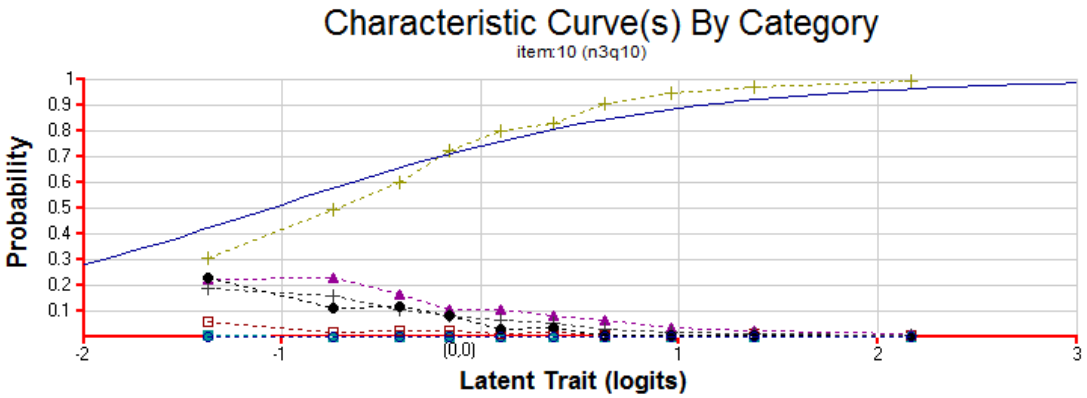

Characteristic Curve(s) By Category
item:5 (n3q05)
Probability
Latent Trait (logits)
(0,0)

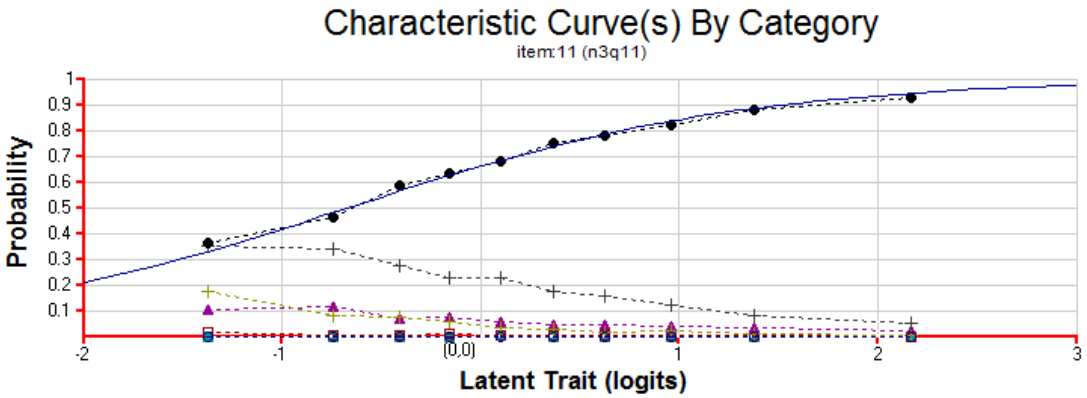

Characteristic Curve(s) By Category
item:6 (n3q06)
Probability
Latent Trait (logits)
(0,0)

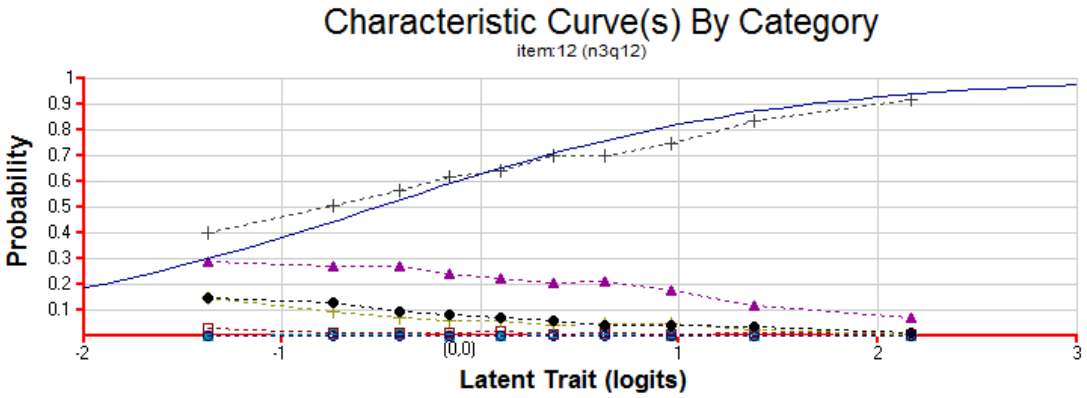

Characteristic Curve(s) By Category
item:7 (n3q07)
Probability
Latent Trait (logits)
(0,0)

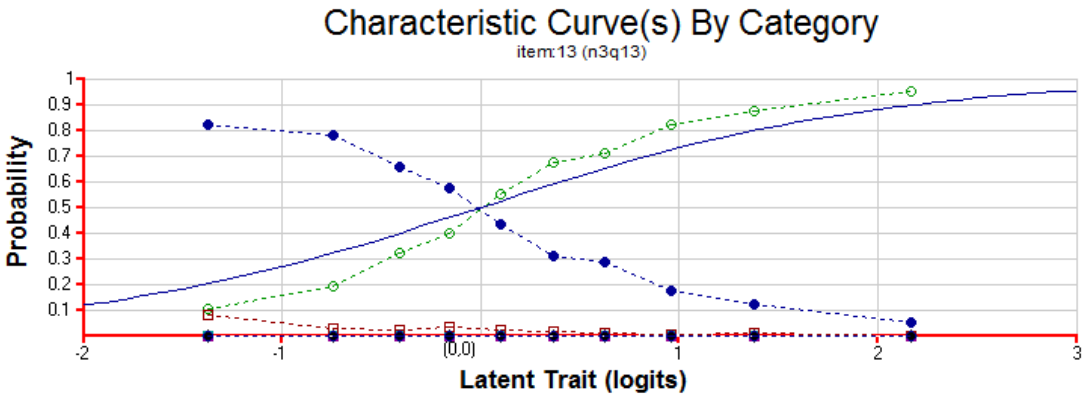

Characteristic Curve(s) By Category
item:8 (n3q08)
Probability
Latent Trait (logits)
(0,0)

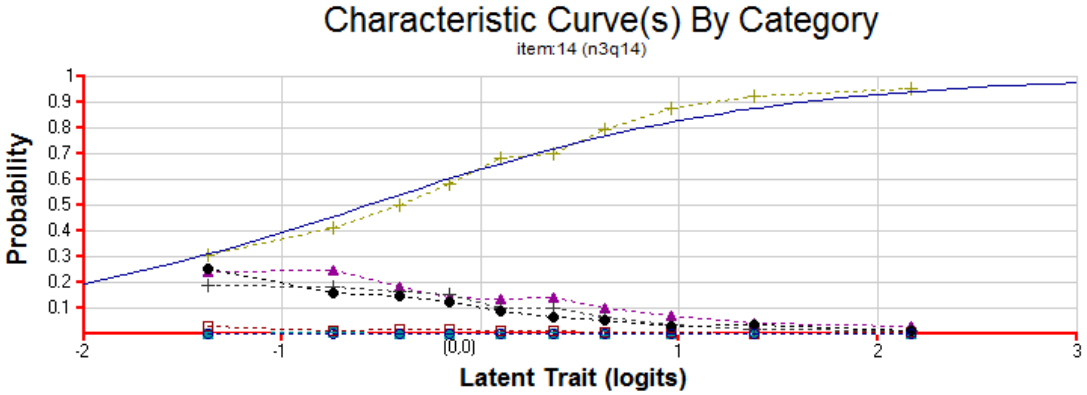

Characteristic Curve(s) By Category
item:9 (n3q09)
Probability
Latent Trait (logits)
(0,0)

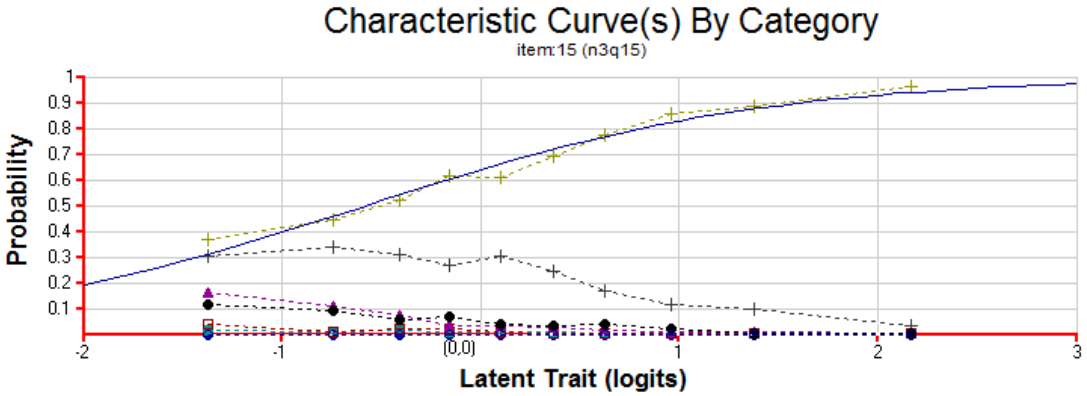

Characteristic Curve(s) By Category
item:10 (n3q10)
Probability
Latent Trait (logits)
(0,0)

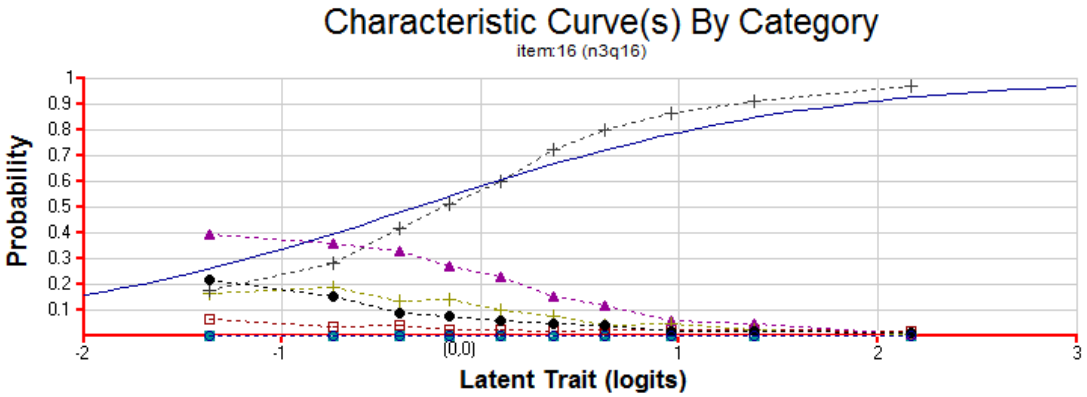

Characteristic Curve(s) By Category
item:11 (n3q11)
Probability
Latent Trait (logits)
(0,0)

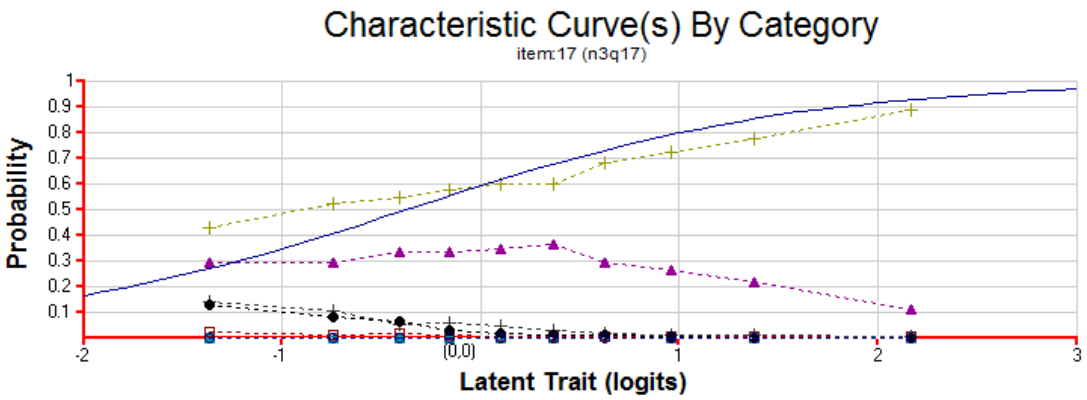

Characteristic Curve(s) By Category
item:12 (n3q12)
Probability
Latent Trait (logits)
(0,0)

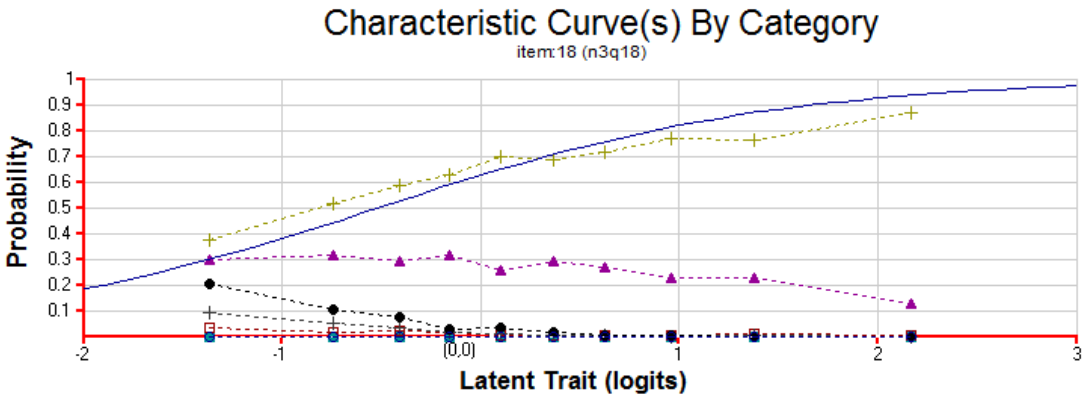

Characteristic Curve(s) By Category
item:13 (n3q13)
Probability
Latent Trait (logits)
(0,0)

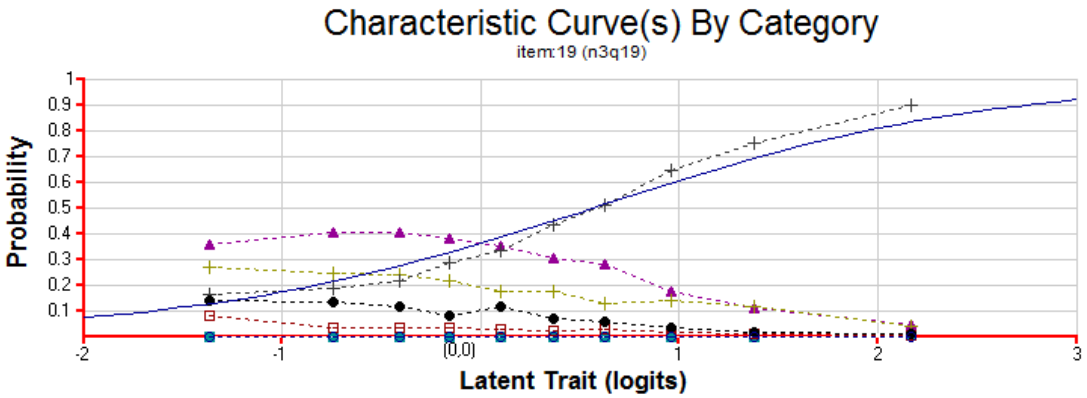

Characteristic Curve(s) By Category
item:14 (n3q14)
Probability
Latent Trait (logits)
(0,0)

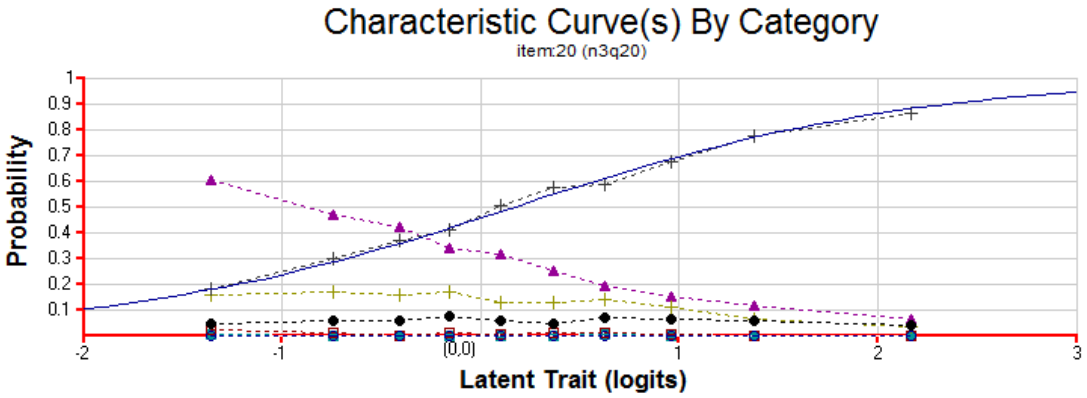

Characteristic Curve(s) By Category
item:15 (n3q15)
Probability
Latent Trait (logits)
(0,0)

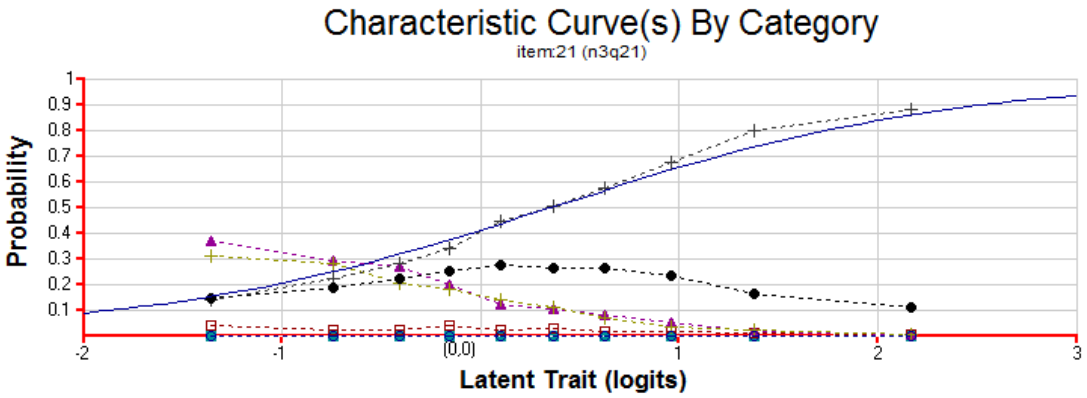

Characteristic Curve(s) By Category
item:16 (n3q16)
Probability
Latent Trait (logits)
(0,0)

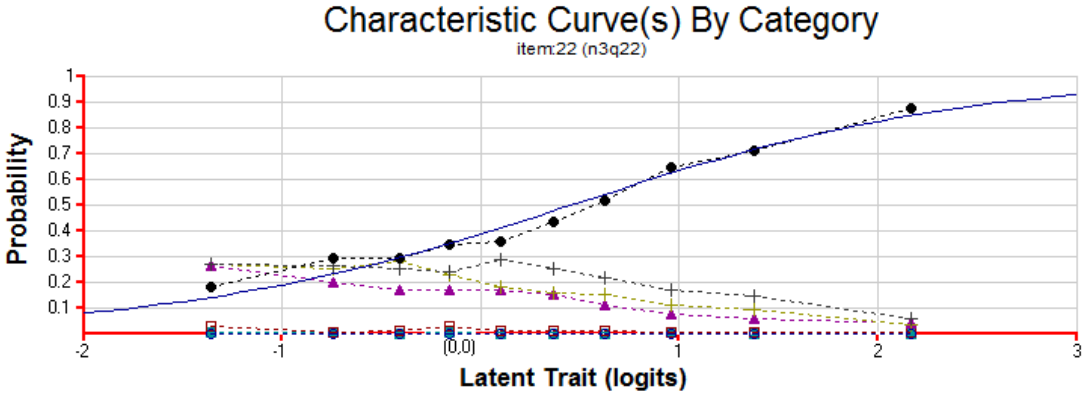

Characteristic Curve(s) By Category
item:17 (n3q17)
Probability
Latent Trait (logits)
(0,0)

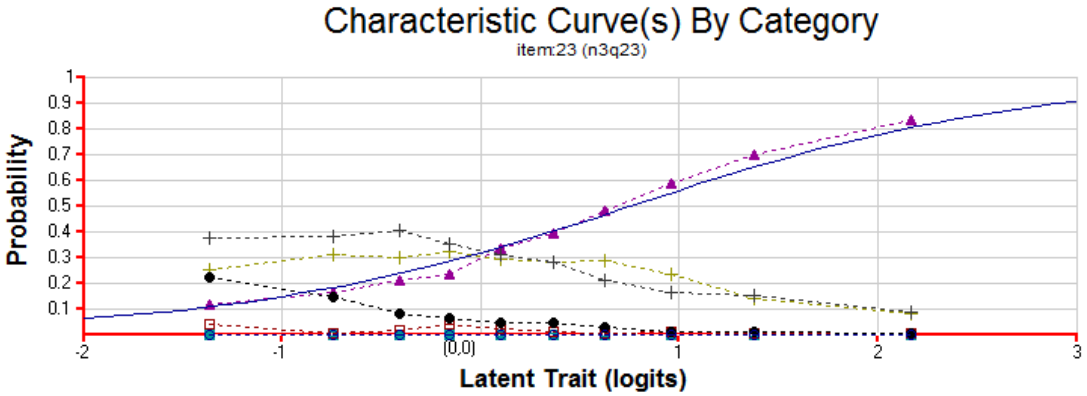

Characteristic Curve(s) By Category
item:18 (n3q18)
Probability
Latent Trait (logits)
(0,0)

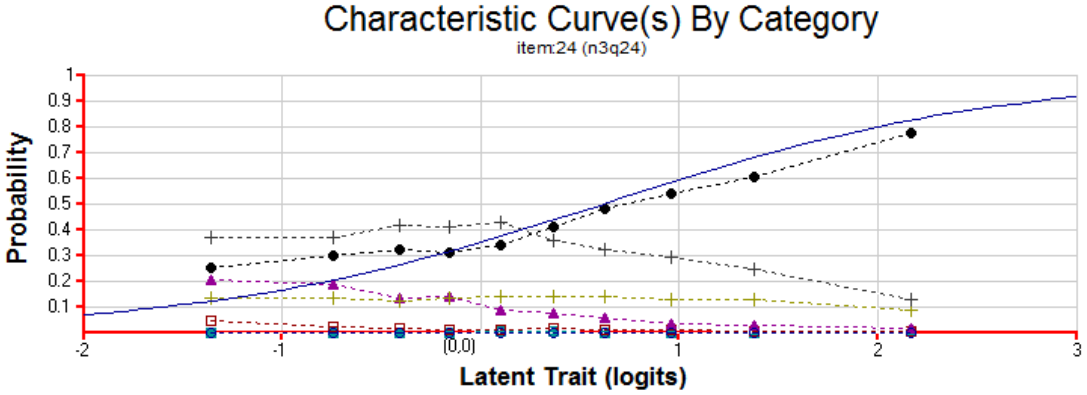

Characteristic Curve(s) By Category
item:19 (n3q19)
Probability
Latent Trait (logits)
(0,0)

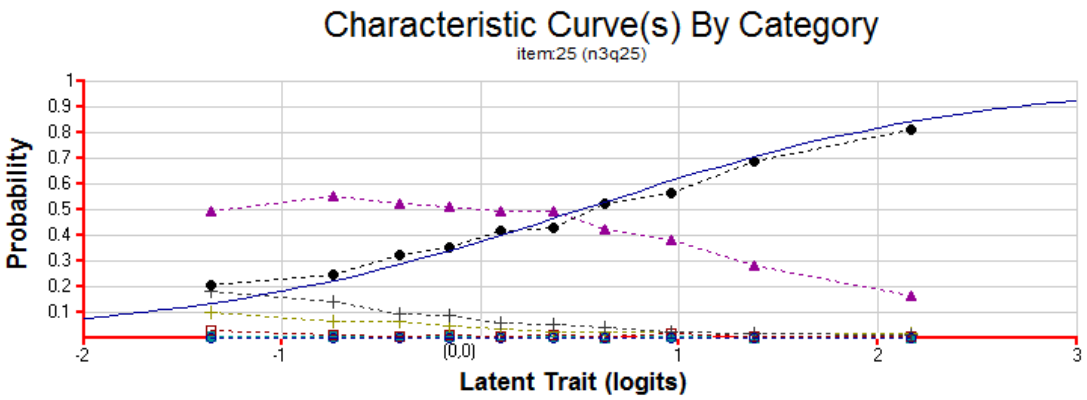

Characteristic Curve(s) By Category
item:20 (n3q20)
Probability
Latent Trait (logits)
(0,0)

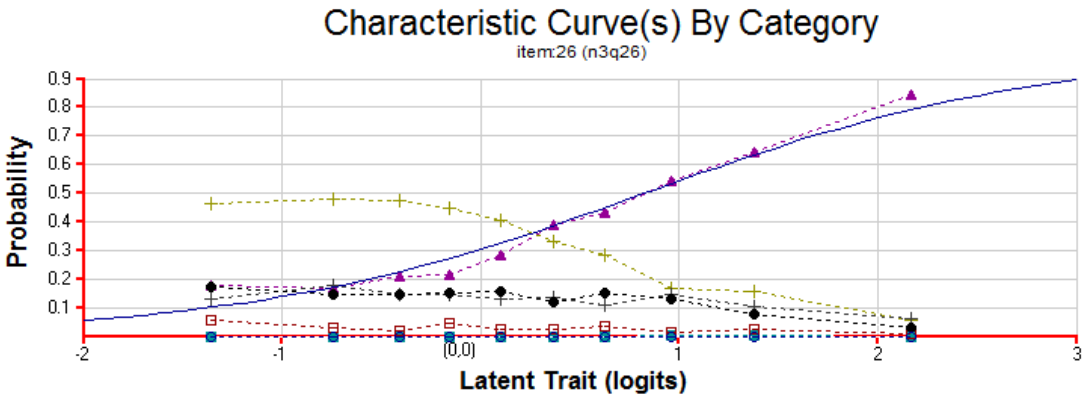

Characteristic Curve(s) By Category
item:21 (n3q21)
Probability
Latent Trait (logits)
(0,0)

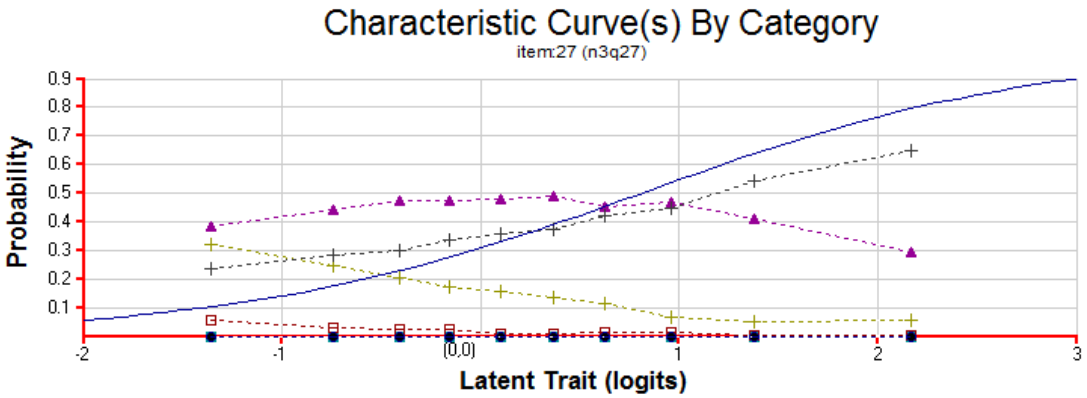

Characteristic Curve(s) By Category
item:22 (n3q22)
Probability
Latent Trait (logits)
(0,0)

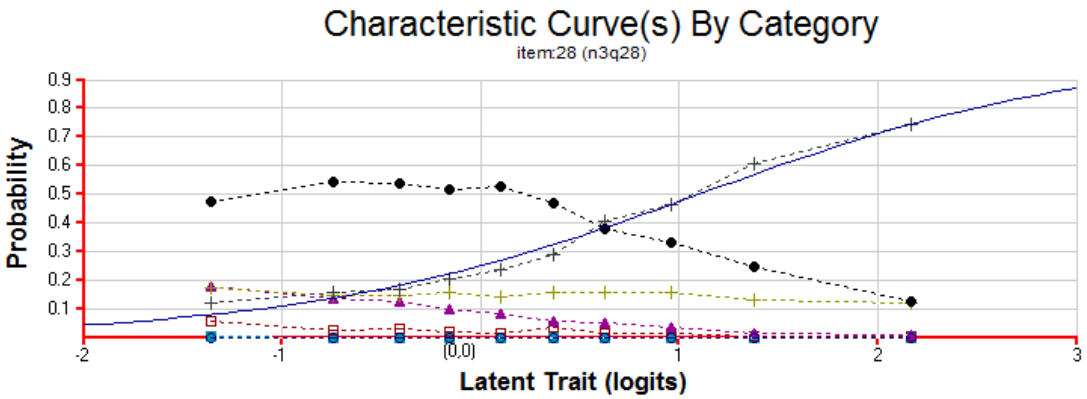

Characteristic Curve(s) By Category
item:23 (n3q23)
Probability
Latent Trait (logits)
(0,0)

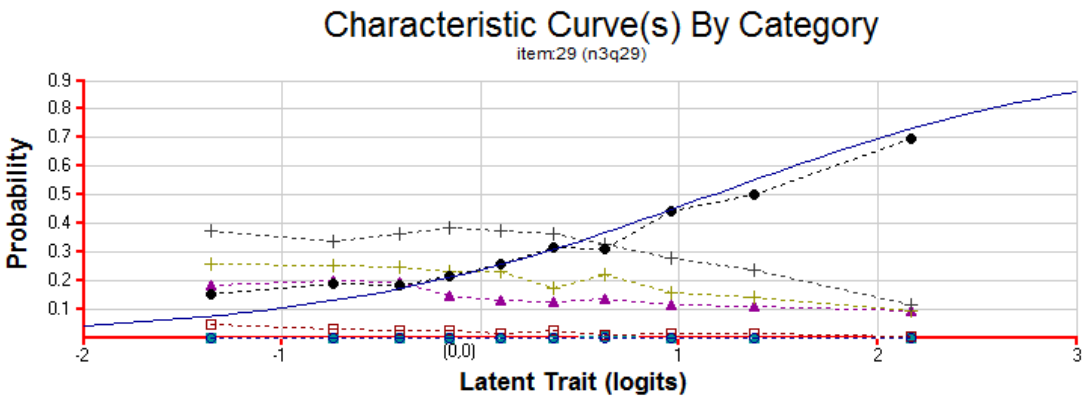

Characteristic Curve(s) By Category
item:24 (n3q24)
Probability
Latent Trait (logits)
(0,0)

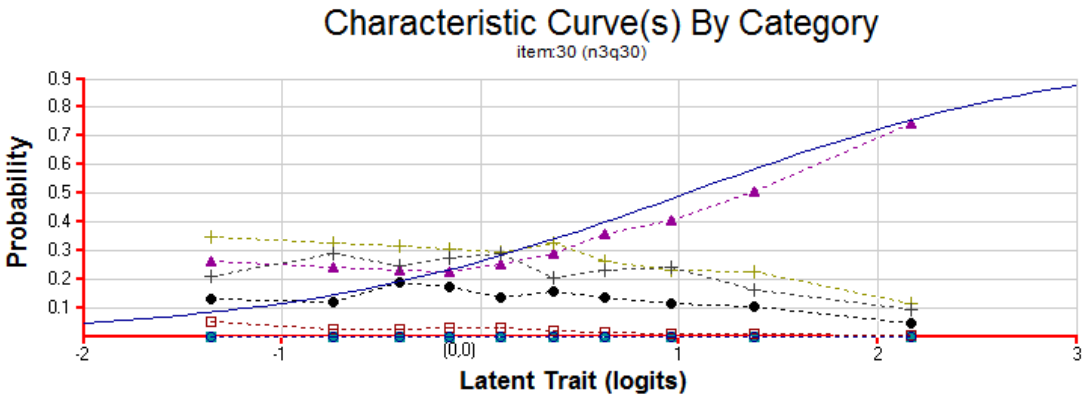

Characteristic Curve(s) By Category
item:25 (n3q25)
Probability
Latent Trait (logits)
(0,0)

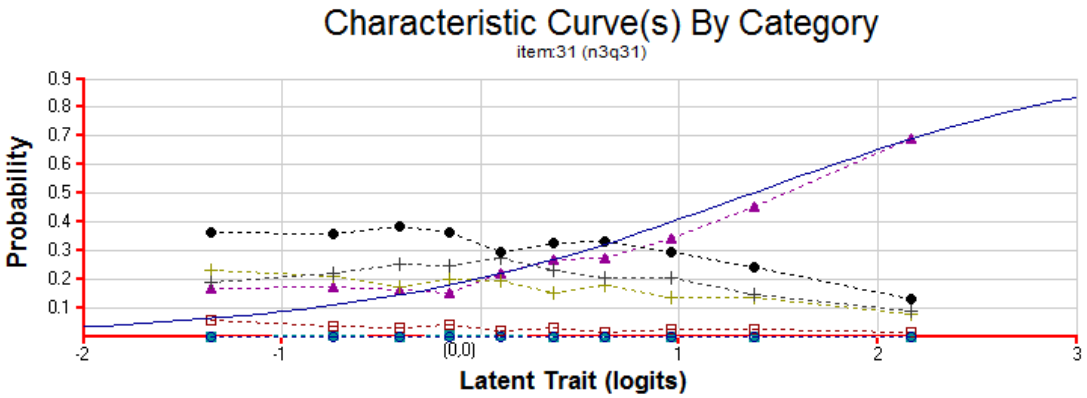

Characteristic Curve(s) By Category
item:26 (n3q26)
Probability
Latent Trait (logits)
(0,0)

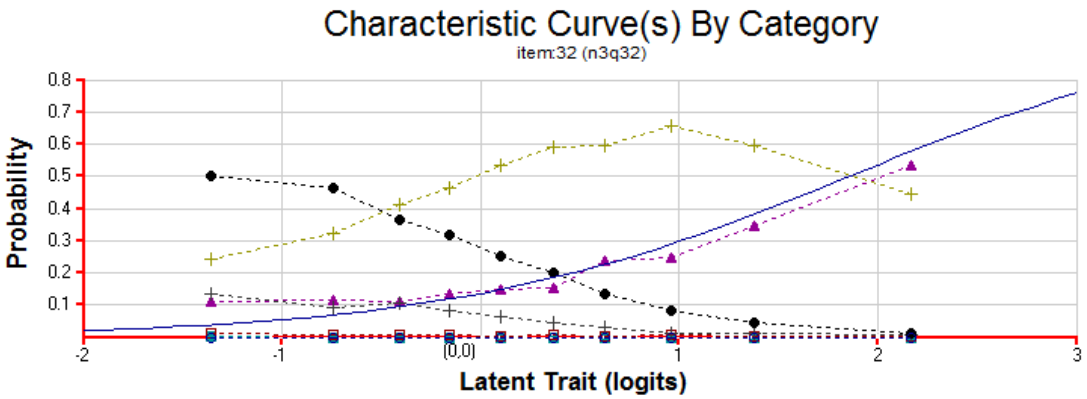

Characteristic Curve(s) By Category
item:27 (n3q27)
Probability
Latent Trait (logits)
(0,0)

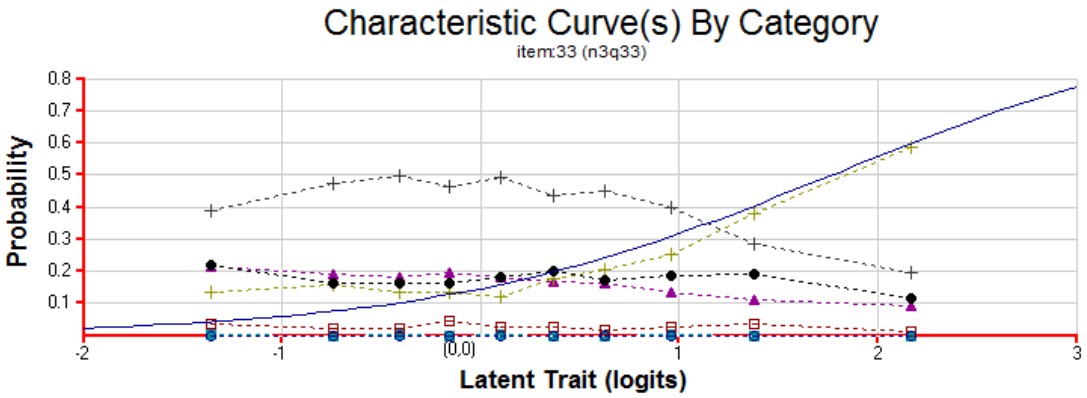

Characteristic Curve(s) By Category
item:28 (n3q28)
Probability
Latent Trait (logits)
(0,0)

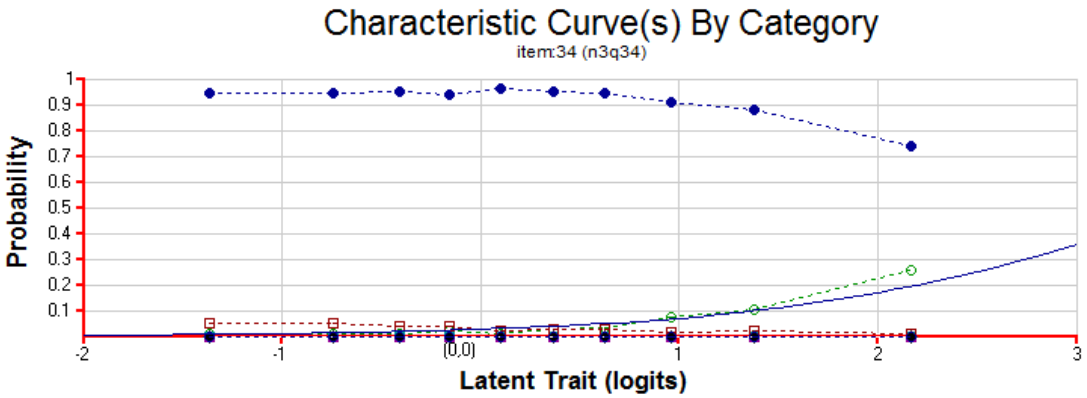

Characteristic Curve(s) By Category
item:29 (n3q29)
Probability
Latent Trait (logits)
(0,0)

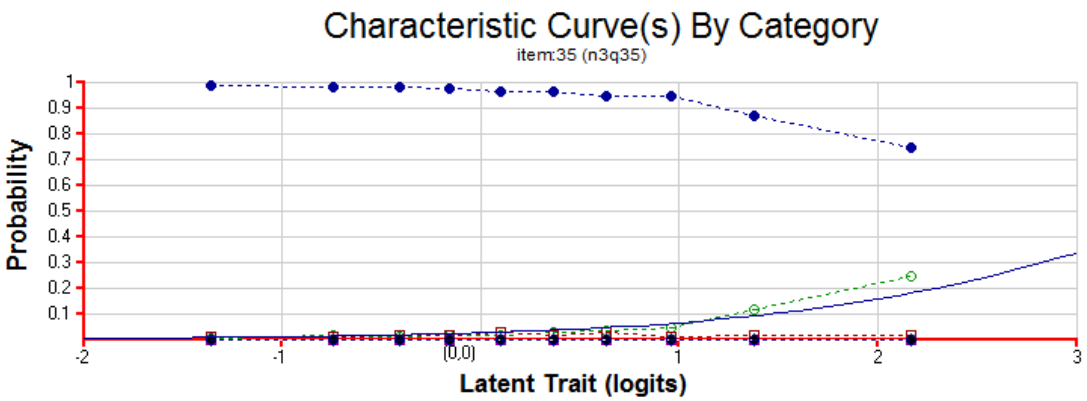

Characteristic Curve(s) By Category
item:30 (n3q30)
Probability
Latent Trait (logits)
(0,0)


Characteristic Curve(s) By Category
item:31 (n3q31)
Probability
Latent Trait (logits)
(0,0)

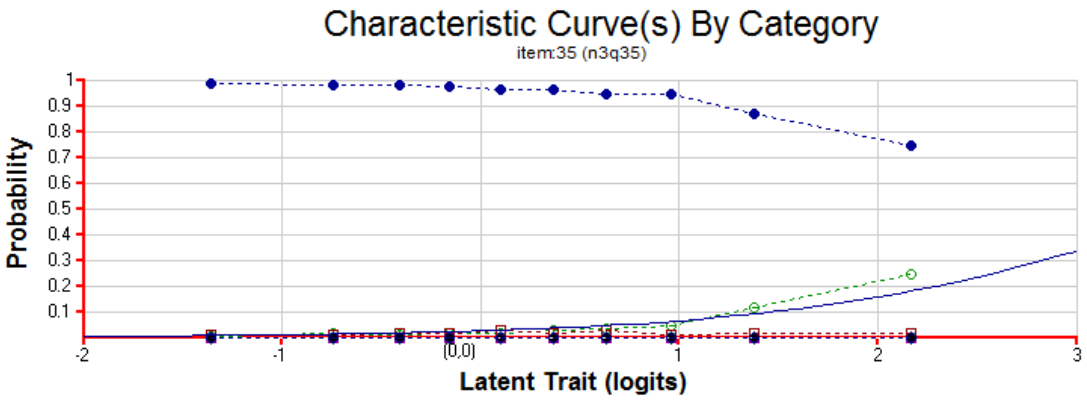

Characteristic Curve(s) By Category
item:32 (n3q32)
Probability
Latent Trait (logits)
(0,0)

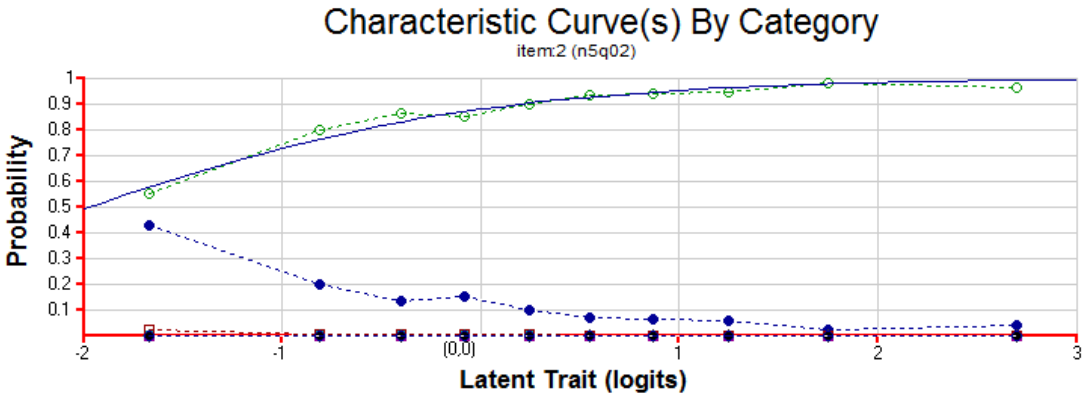

Characteristic Curve(s) By Category
item:33 (n3q33)
Probability
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
3
Latent Trait (logits)

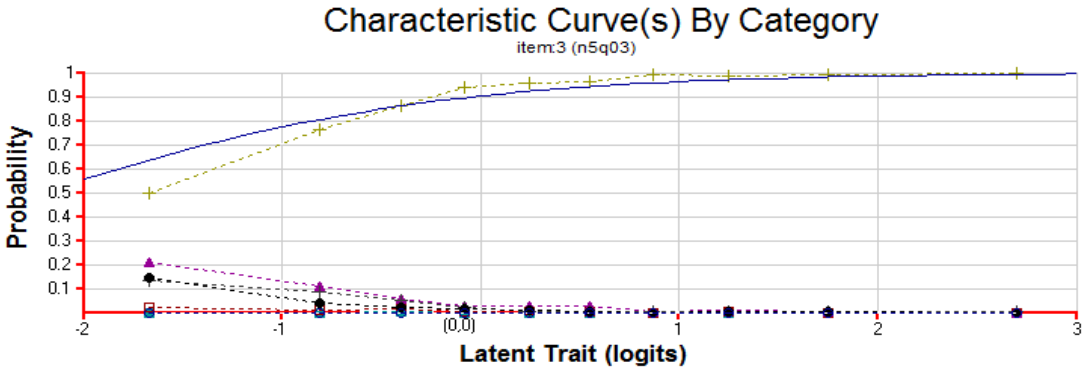

Characteristic Curve(s) By Category
item:34 (n3q34)
Probability
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
3
Latent Trait (logits)

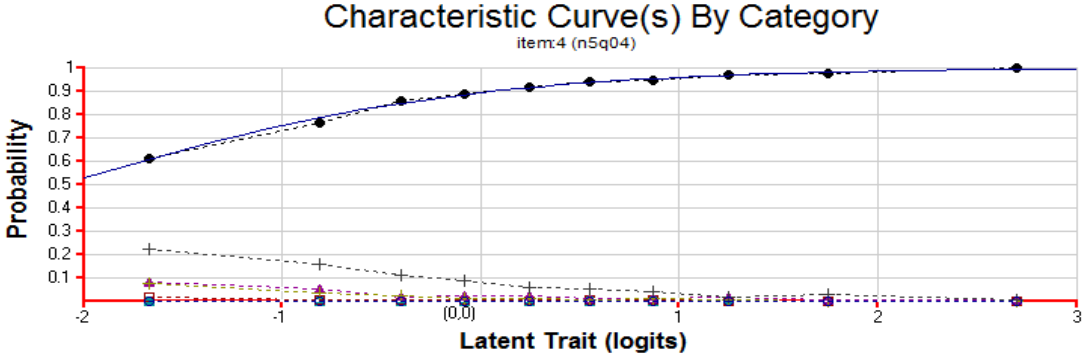

Characteristic Curve(s) By Category
item:35 (n3q35)
Probability
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
3
Latent Trait (logits)

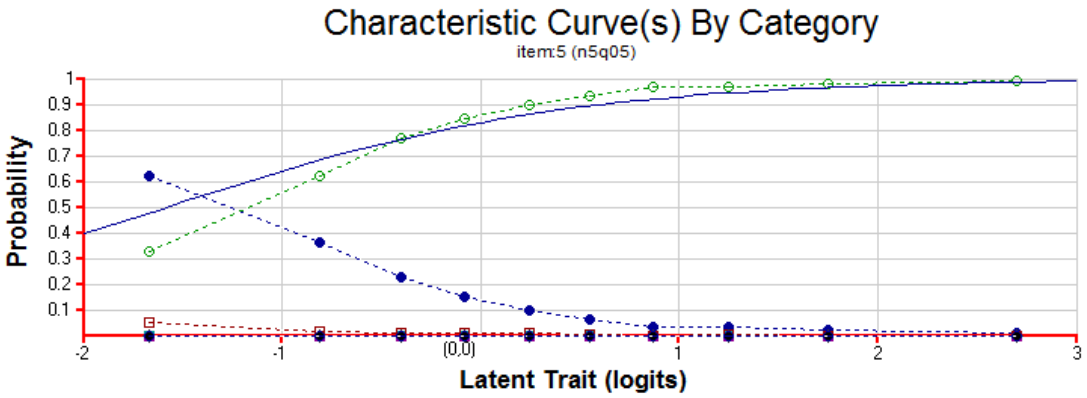
Year 5 Numeracy

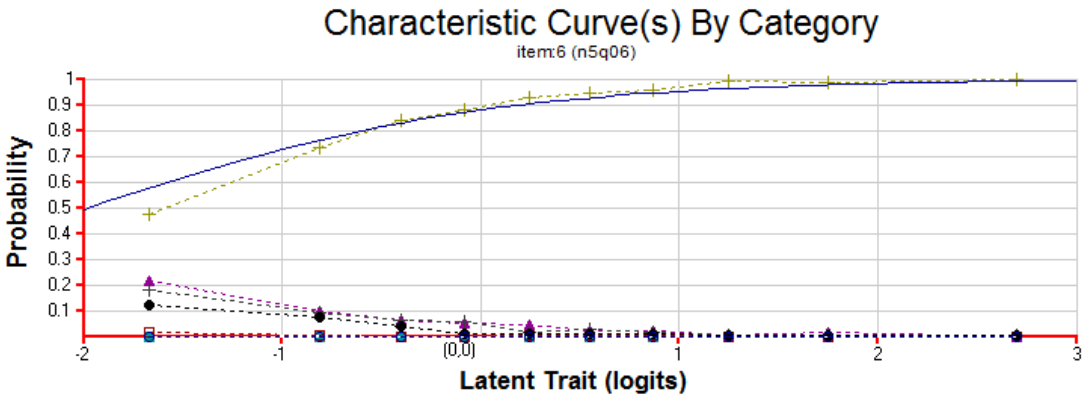


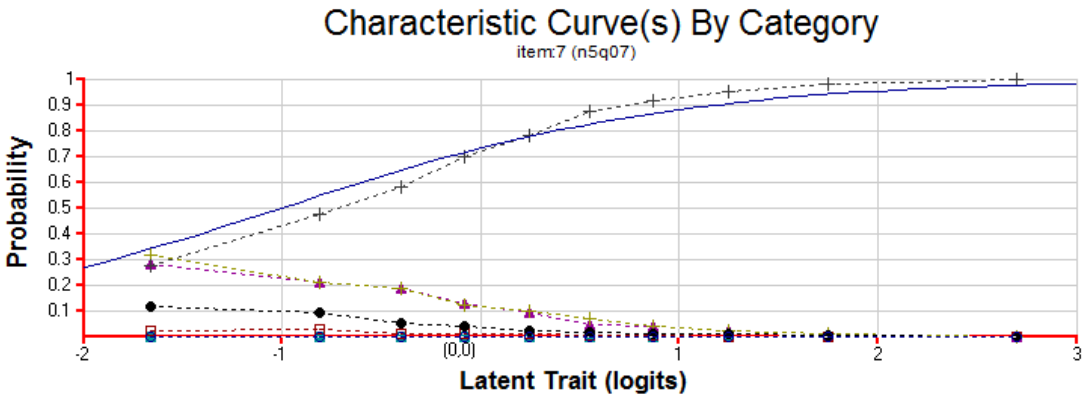


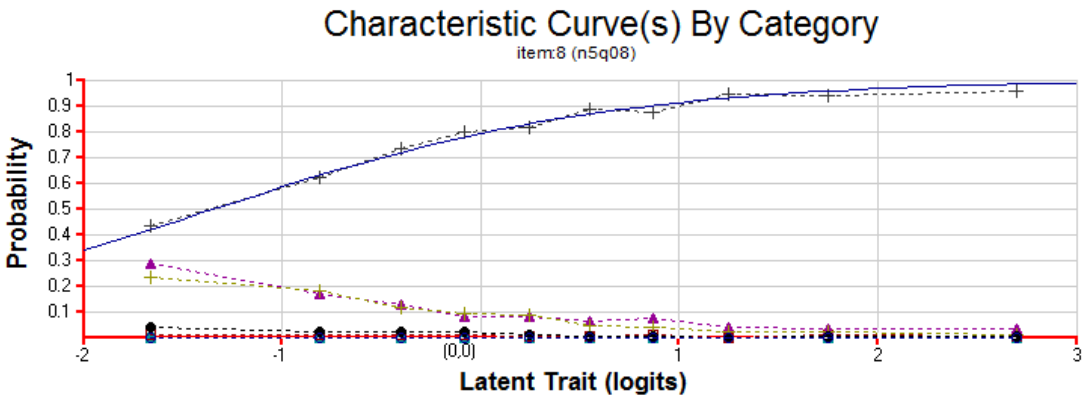


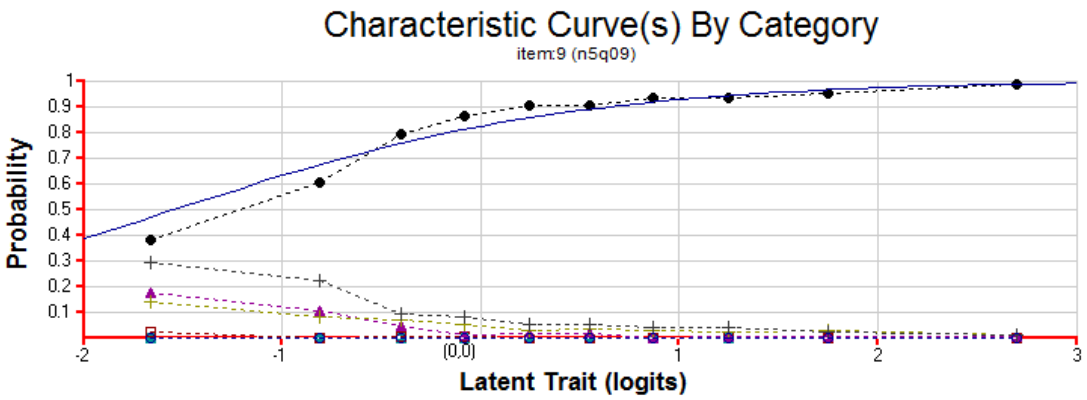


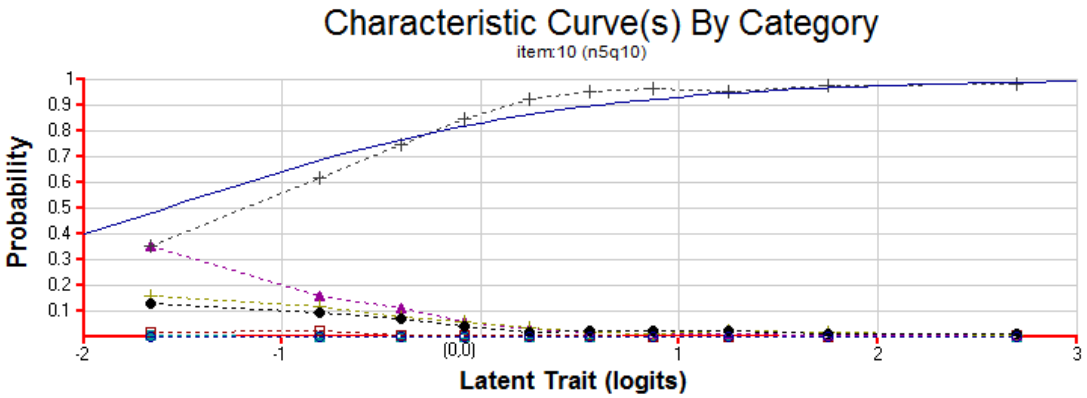

Characteristic Curve(s) By Category
item:5 (n5q05)
Probability
Latent Trait (logits)
(0,0)

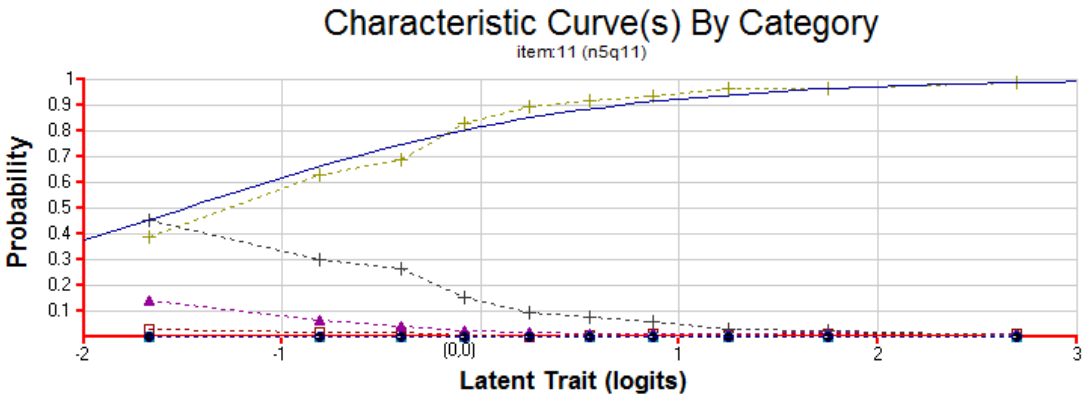

Characteristic Curve(s) By Category
item:6 (n5q06)
Probability
Latent Trait (logits)
(0,0)

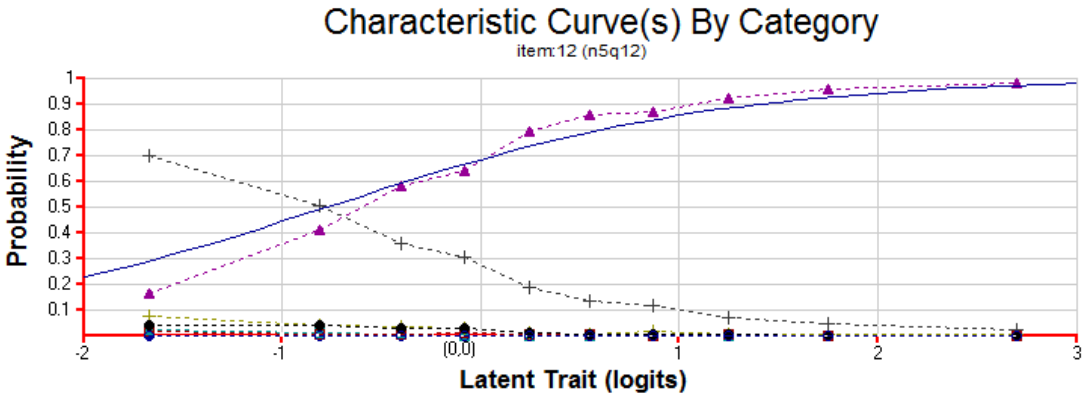

Characteristic Curve(s) By Category
item:7 (n5q07)
Probability
Latent Trait (logits)
(0,0)

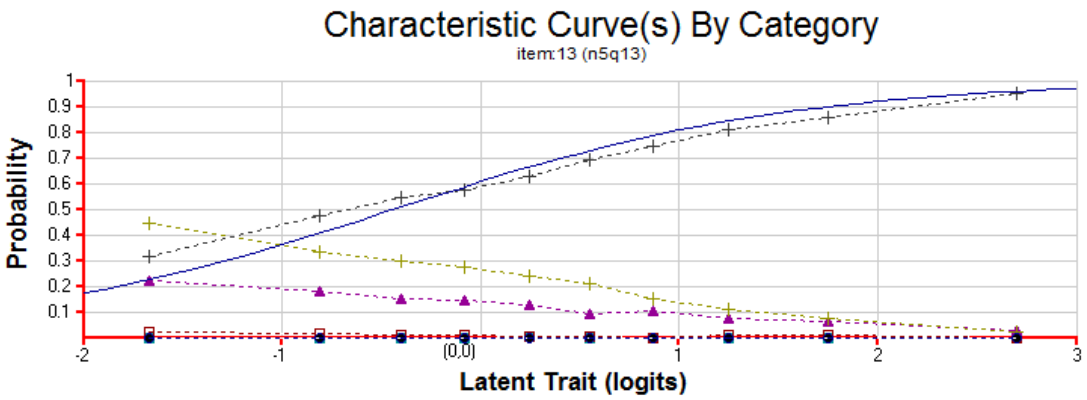

Characteristic Curve(s) By Category
item:8 (n5q08)
Probability
Latent Trait (logits)
(0,0)

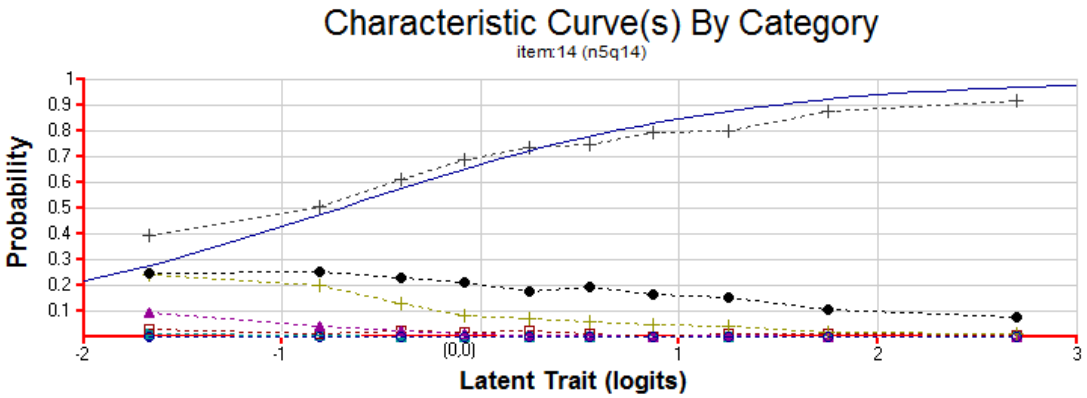

Characteristic Curve(s) By Category
item:9 (n5q09)
Probability
Latent Trait (logits)
(0,0)

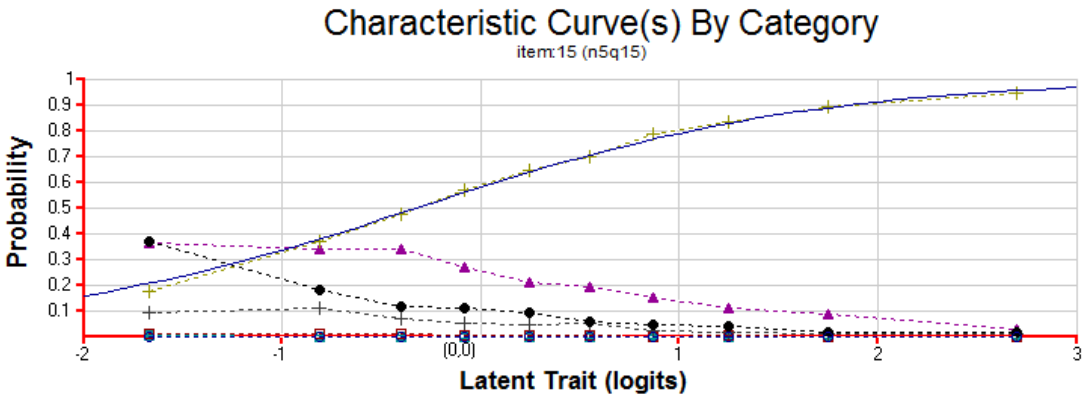

Characteristic Curve(s) By Category
item:10 (n5q10)
Probability
Latent Trait (logits)
(0,0)

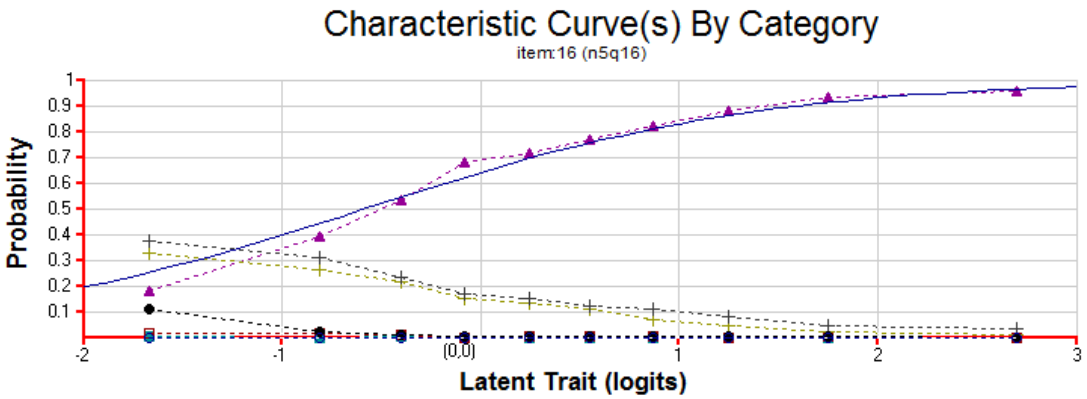

Characteristic Curve(s) By Category
item:11 (n5q11)
Probability
Latent Trait (logits)
(0,0)

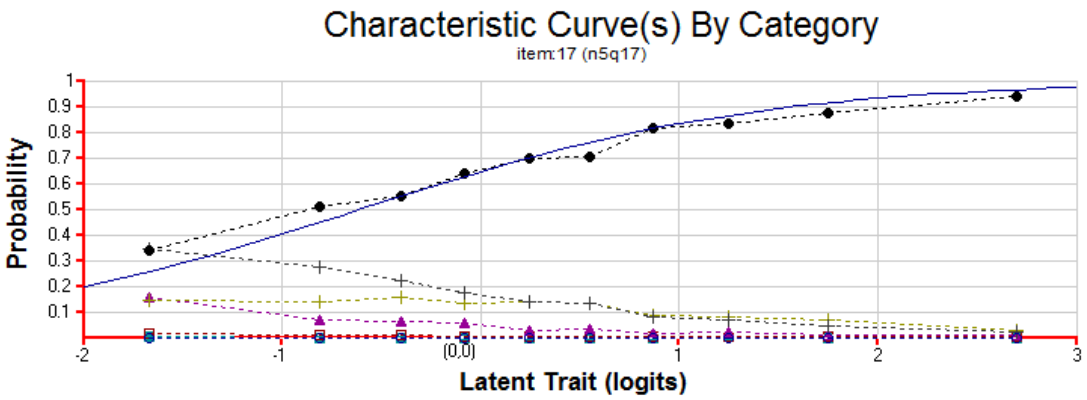

Characteristic Curve(s) By Category
item:12 (n5q12)
Probability
Latent Trait (logits)
(0,0)

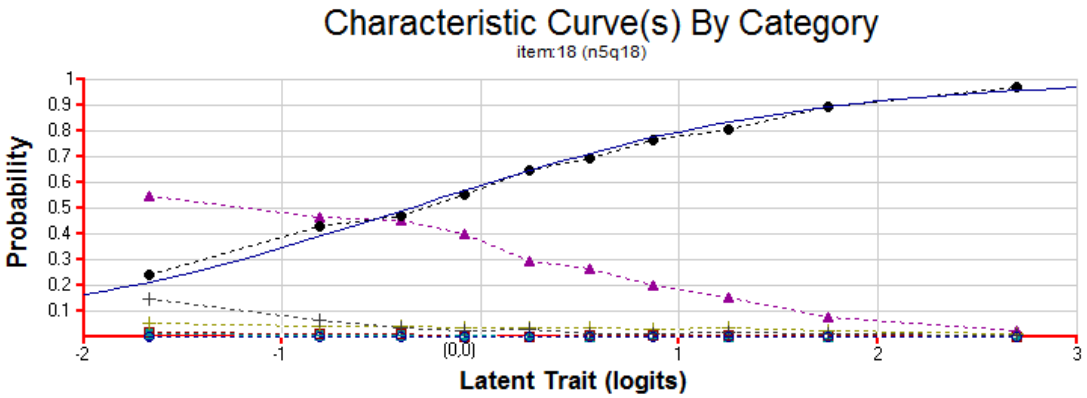

Characteristic Curve(s) By Category
item:13 (n5q13)
Probability
Latent Trait (logits)
(0,0)

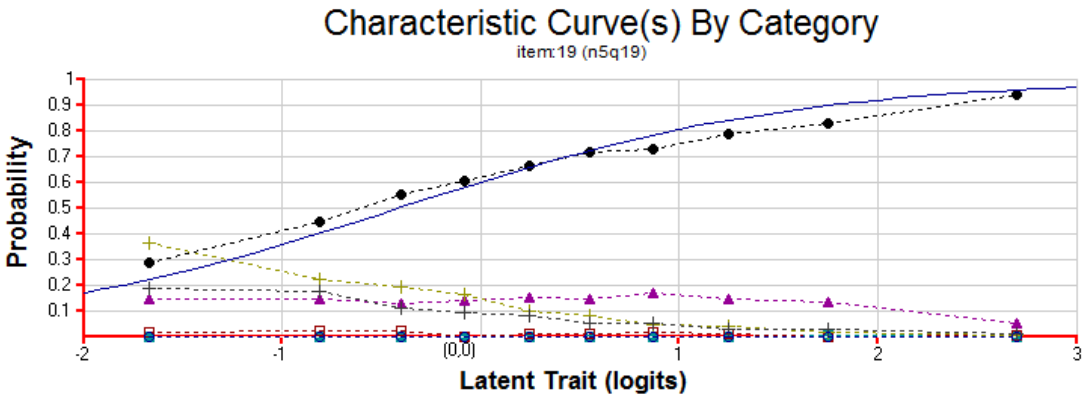

Characteristic Curve(s) By Category
item:14 (n5q14)
Probability
Latent Trait (logits)
(0,0)

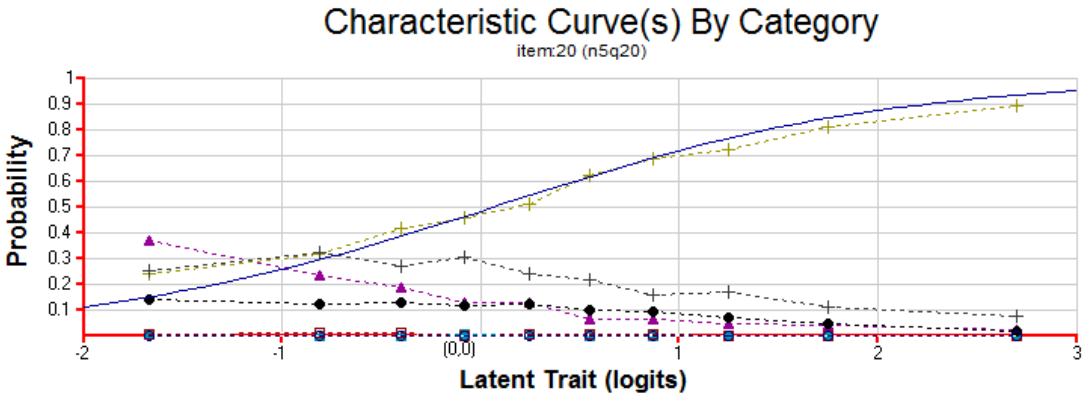

Characteristic Curve(s) By Category
item:15 (n5q15)
Probability
Latent Trait (logits)
(0,0)

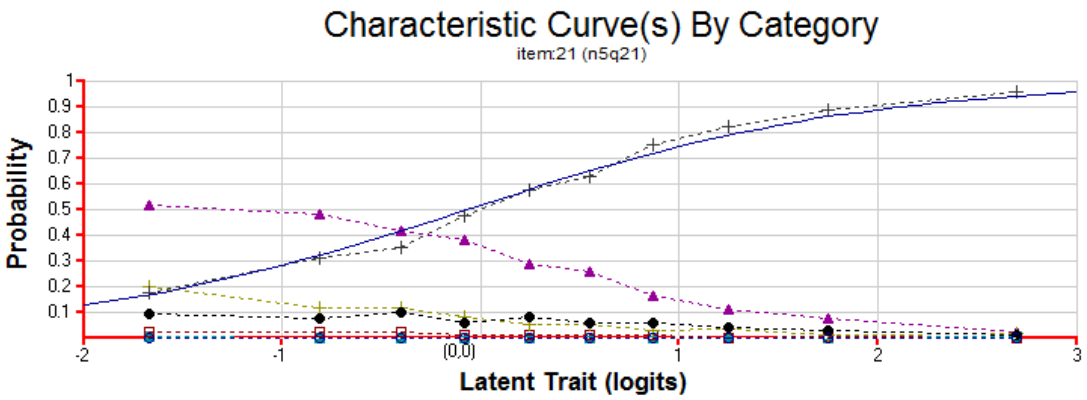

Characteristic Curve(s) By Category
item:16 (n5q16)
Probability
Latent Trait (logits)
(0,0)

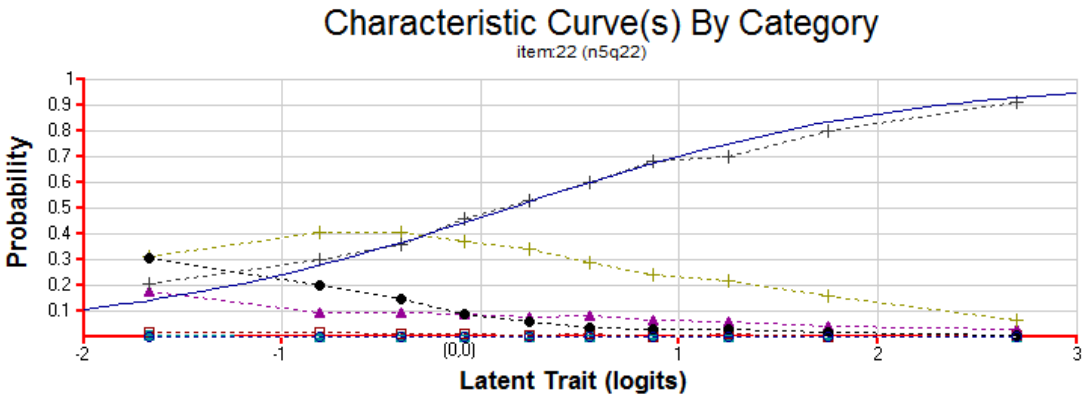

Characteristic Curve(s) By Category
item:17 (n5q17)
Probability
Latent Trait (logits)
(0,0)

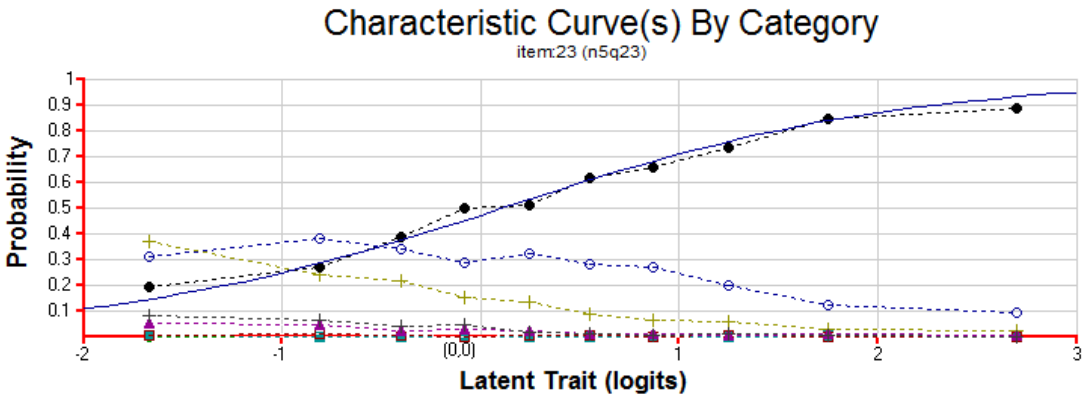

Characteristic Curve(s) By Category
item:18 (n5q18)
Probability
Latent Trait (logits)
(0,0)

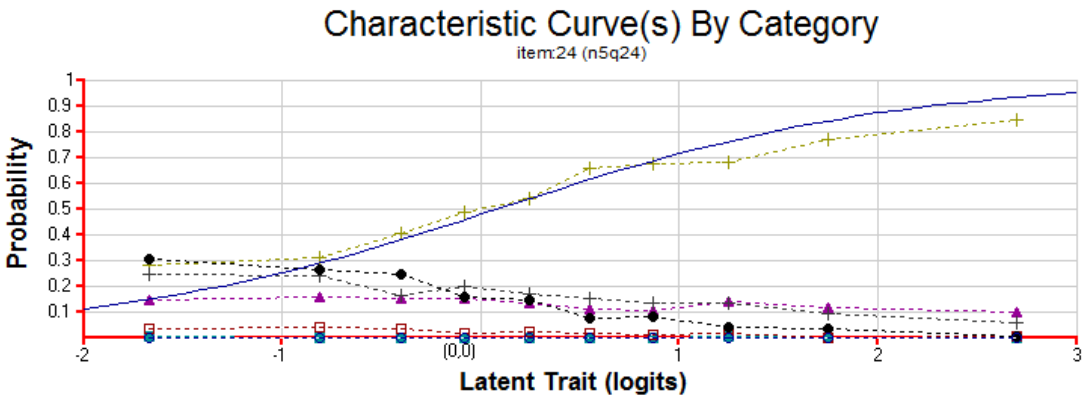

Characteristic Curve(s) By Category
item:19 (n5q19)
Probability
Latent Trait (logits)
(0,0)

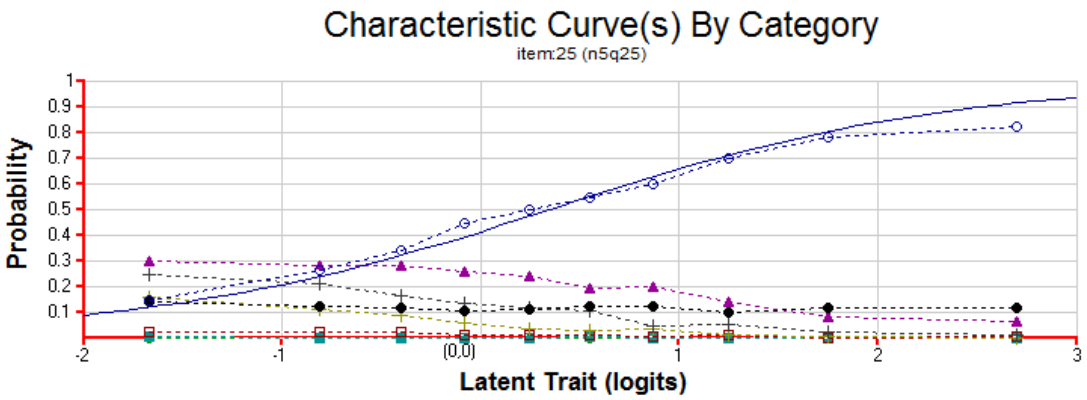

Characteristic Curve(s) By Category
item:20 (n5q20)
Probability
Latent Trait (logits)
(0,0)

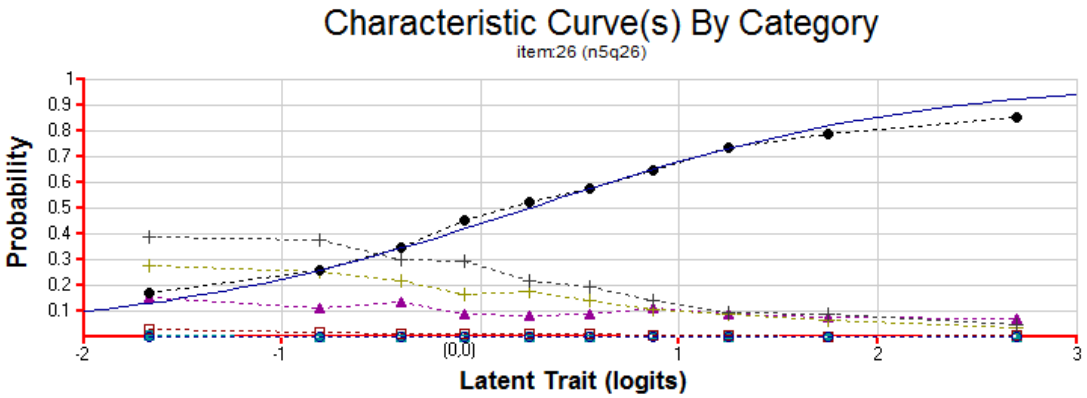

Characteristic Curve(s) By Category
item:21 (n5q21)
Probability
Latent Trait (logits)
(0,0)

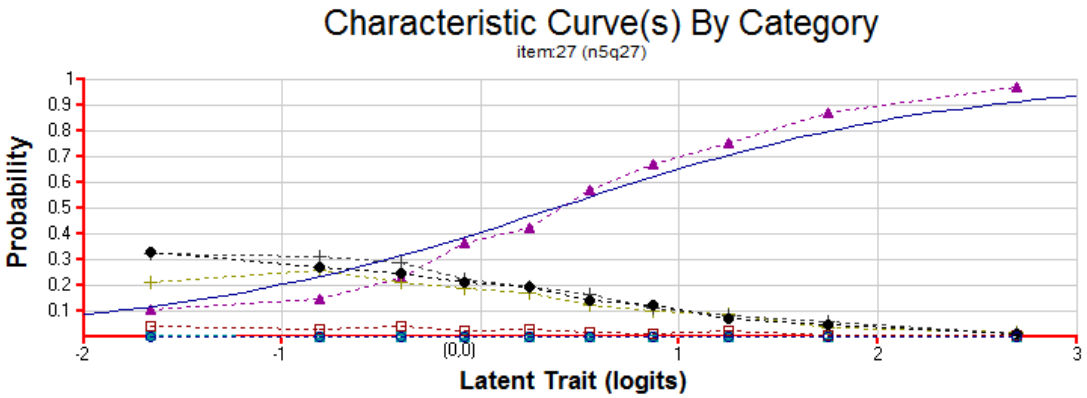

Characteristic Curve(s) By Category
item:22 (n5q22)
Probability
Latent Trait (logits)
(0,0)

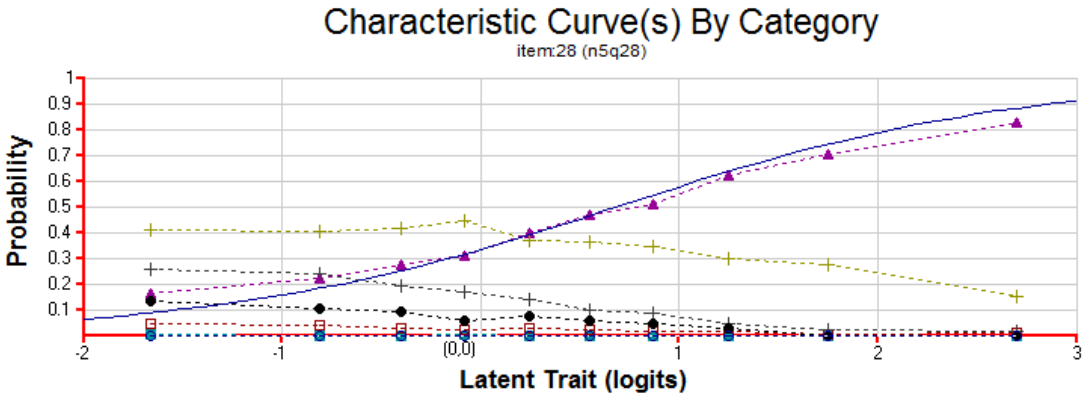

Characteristic Curve(s) By Category
item:23 (n5q23)
Probability
Latent Trait (logits)
(0,0)

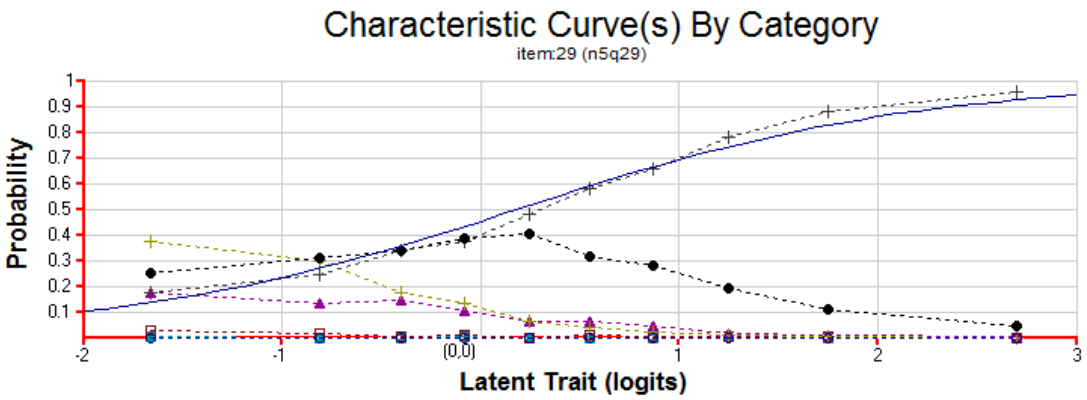

Characteristic Curve(s) By Category
item:24 (n5q24)
Probability
Latent Trait (logits)
(0,0)

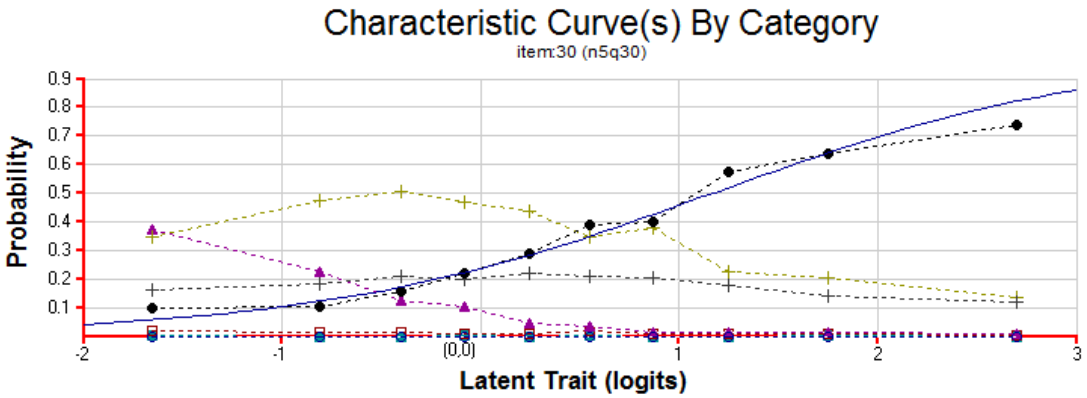

Characteristic Curve(s) By Category
item:25 (n5q25)
Probability
Latent Trait (logits)
(0,0)

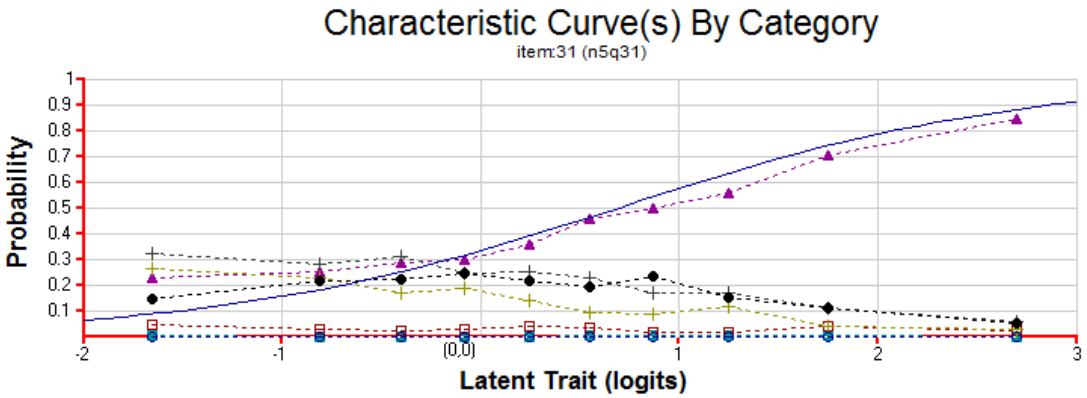

Characteristic Curve(s) By Category
item:26 (n5q26)
Probability
Latent Trait (logits)
(0,0)

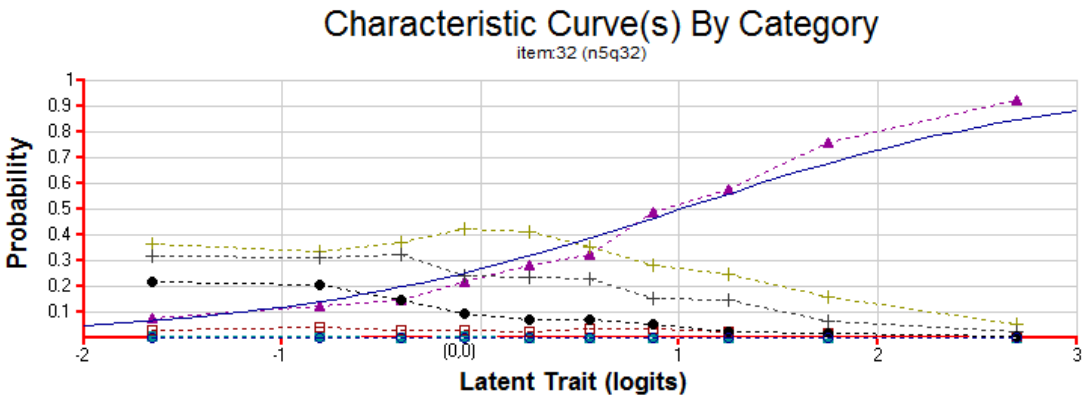

Characteristic Curve(s) By Category
item:27 (n5q27)
Probability
Latent Trait (logits)
(0,0)

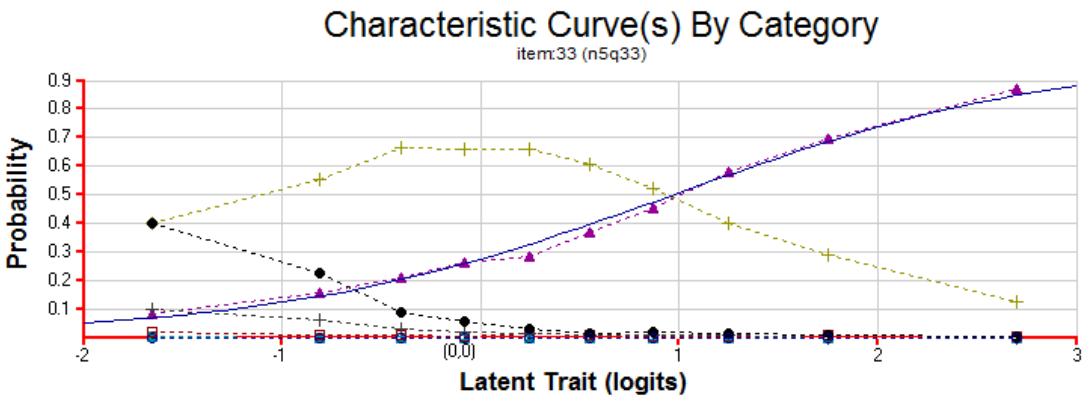

Characteristic Curve(s) By Category
item:28 (n5q28)
Probability
Latent Trait (logits)
(0,0)

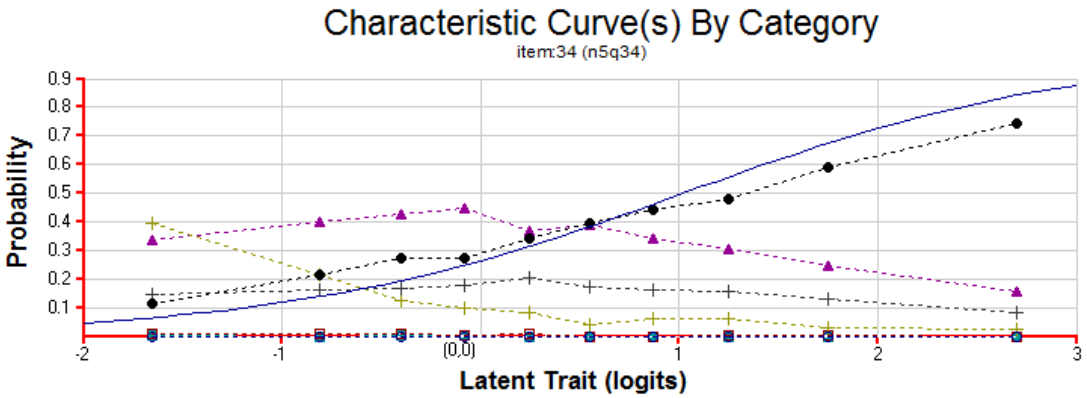

Characteristic Curve(s) By Category
item:29 (n5q29)
Probability
Latent Trait (logits)
(0,0)

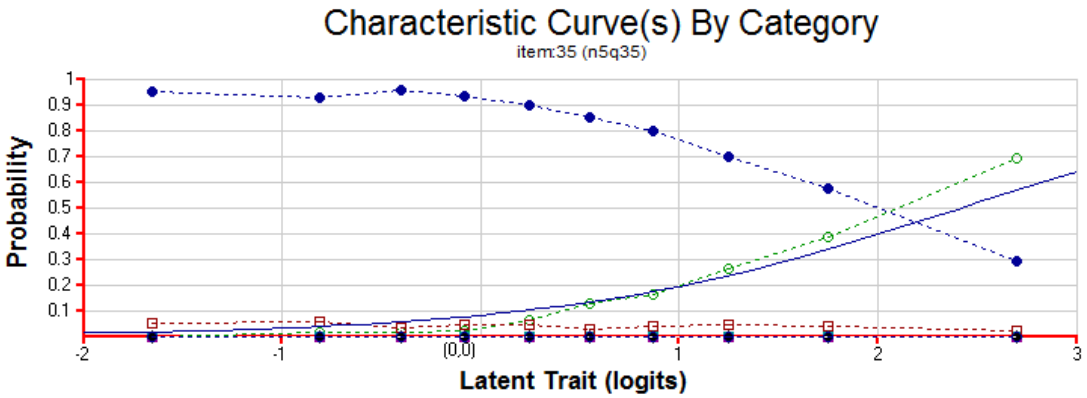

Characteristic Curve(s) By Category
item:30 (n5q30)
Probability
Latent Trait (logits)
(0,0)

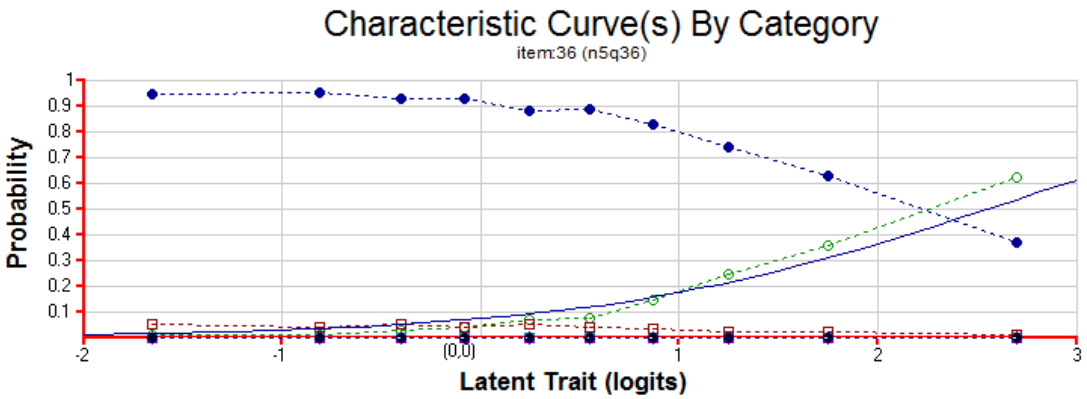

Characteristic Curve(s) By Category
item:31 (n5q31)
Probability
Latent Trait (logits)
(0,0)

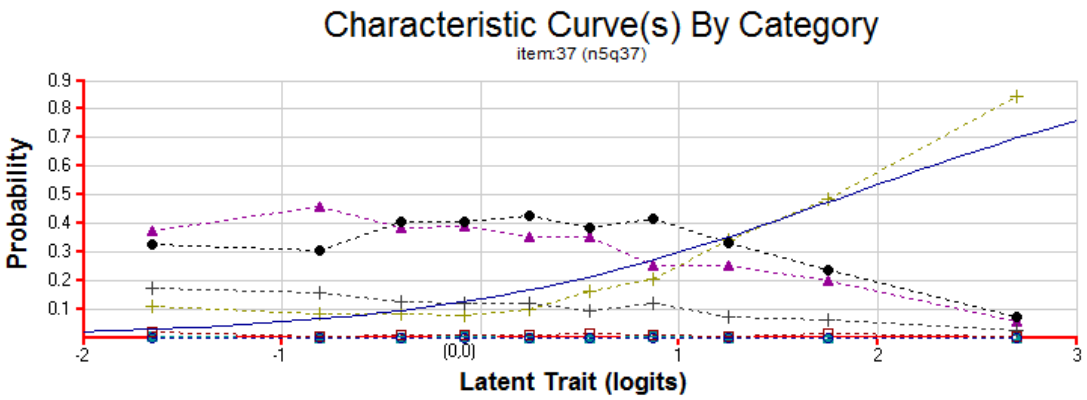

Characteristic Curve(s) By Category
item:32 (n5q32)
Probability
Latent Trait (logits)
(0,0)

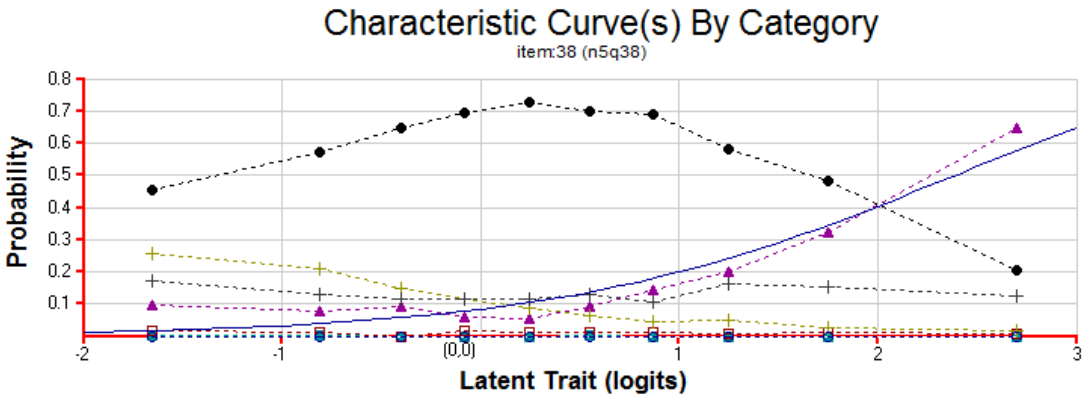

Characteristic Curve(s) By Category
item:33 (n5q33)
Probability
Latent Trait (logits)
(0,0)

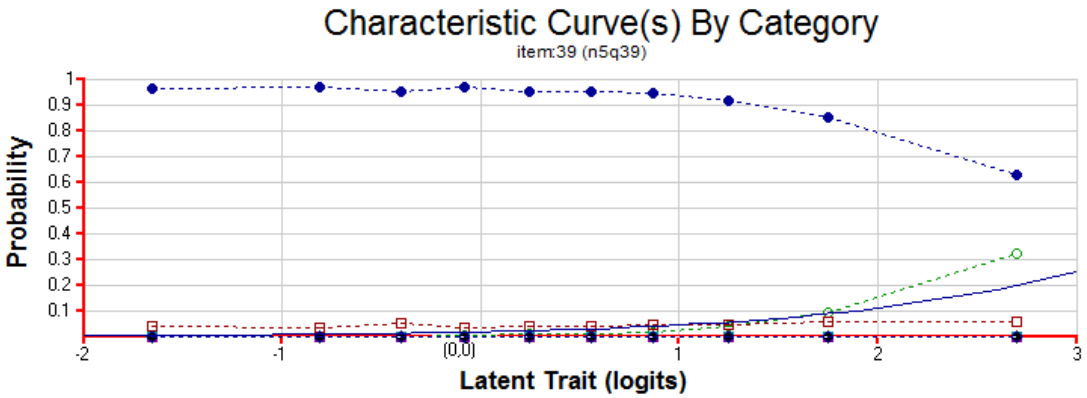

Characteristic Curve(s) By Category
item:34 (n5q34)
Probability
Latent Trait (logits)
(0,0)

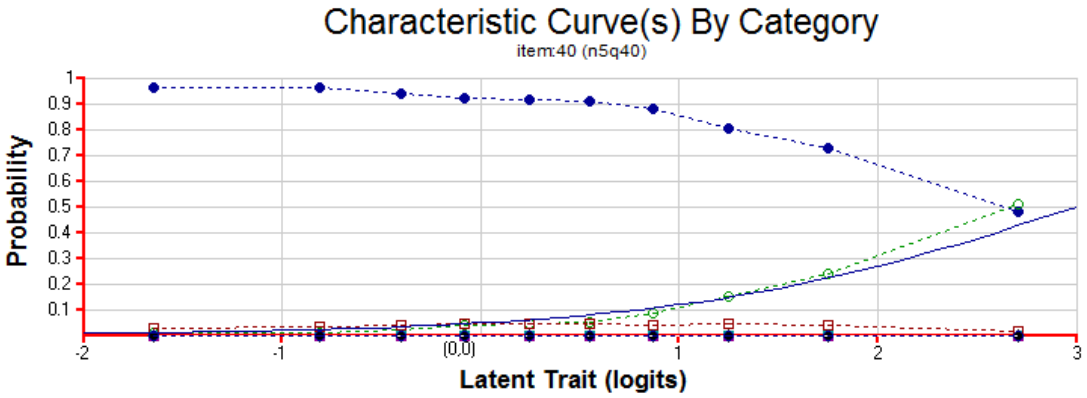

Characteristic Curve(s) By Category
item:35 (n5q35)
Probability
Latent Trait (logits)
(0,0)


Characteristic Curve(s) By Category
item:36 (n5q36)
Probability
Latent Trait (logits)
(0,0)

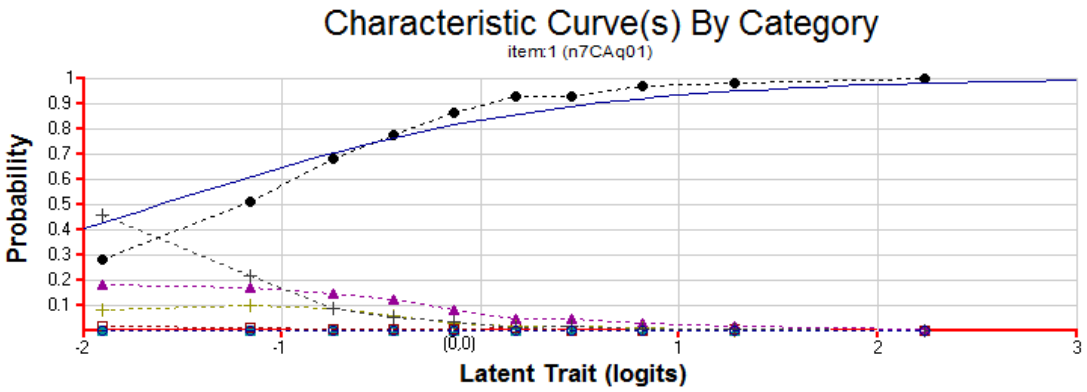

Characteristic Curve(s) By Category
item:37 (n5q37)
Probability
Latent Trait (logits)
(0,0)

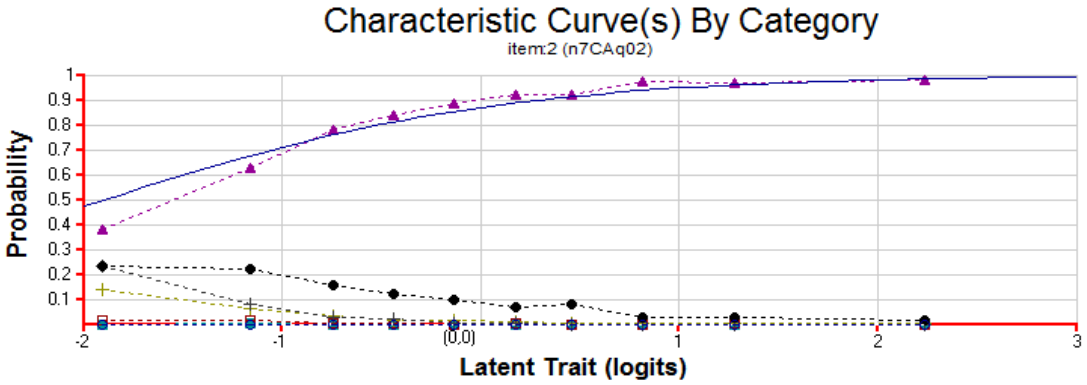

Characteristic Curve(s) By Category
item:38 (n5q38)
Probability
Latent Trait (logits)
(0,0)

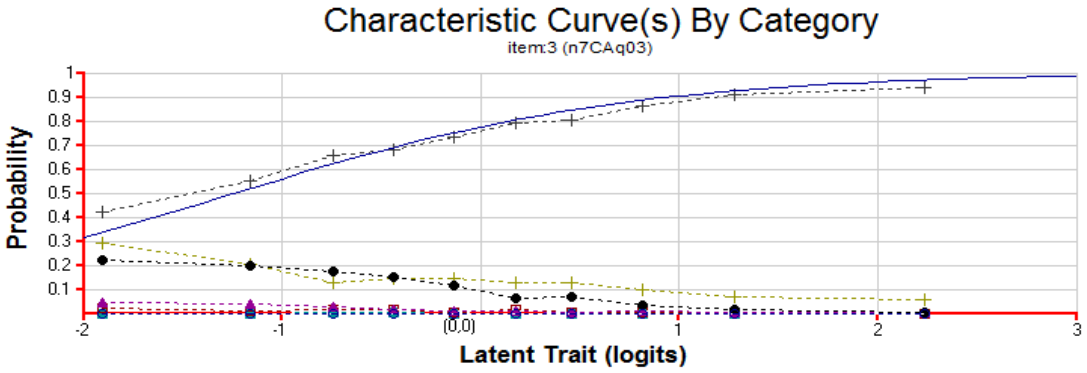

Characteristic Curve(s) By Category
item:39 (n5q39)
Probability
Latent Trait (logits)
(0,0)

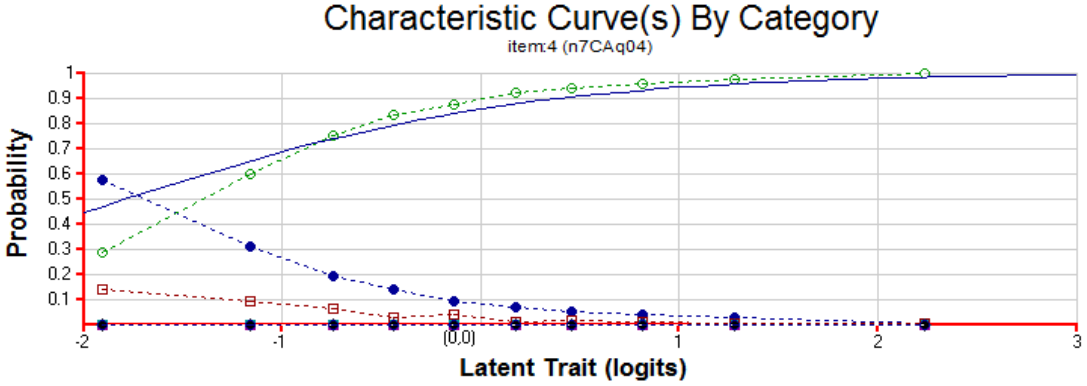

Characteristic Curve(s) By Category
item:40 (n5q40)
Probability
Latent Trait (logits)
(0,0)

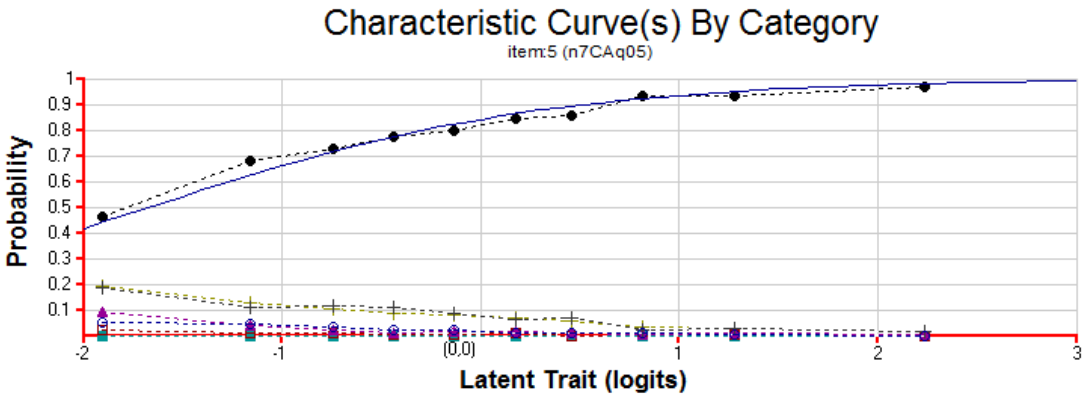
Year 7 Numeracy

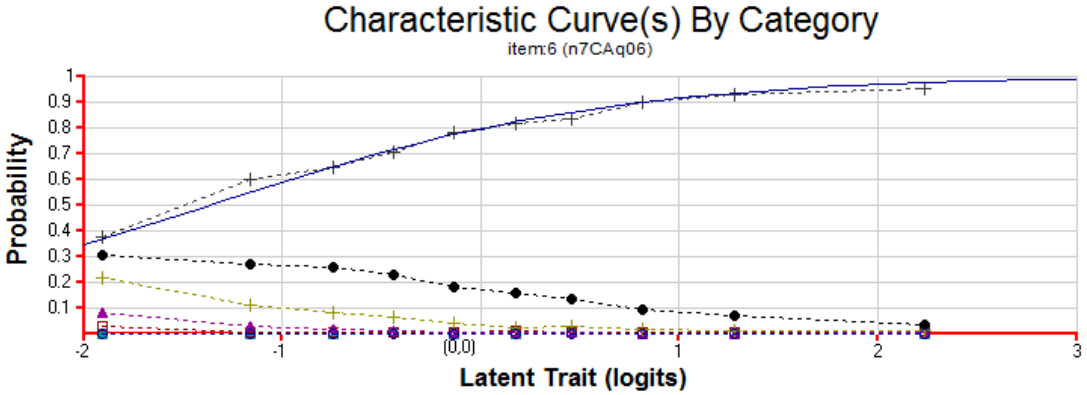


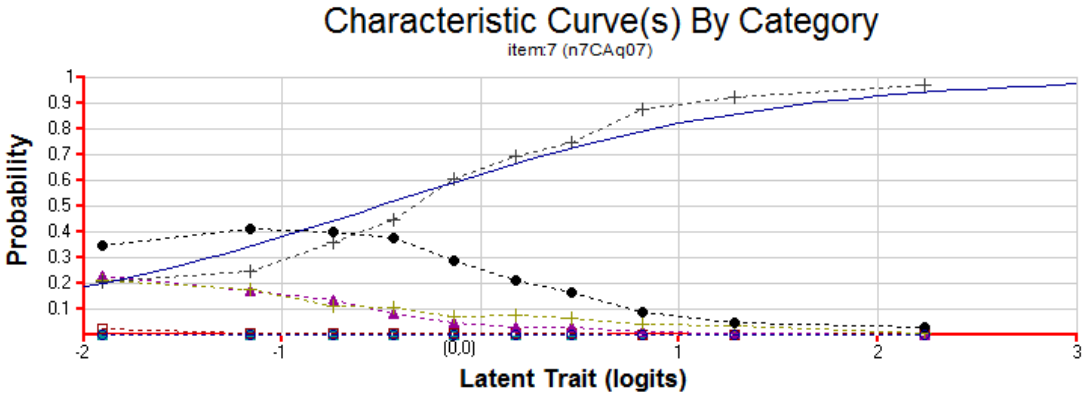


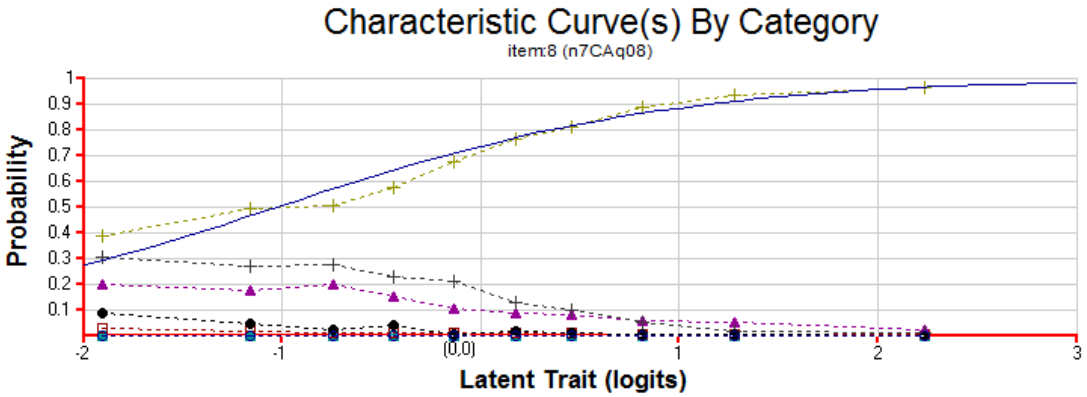


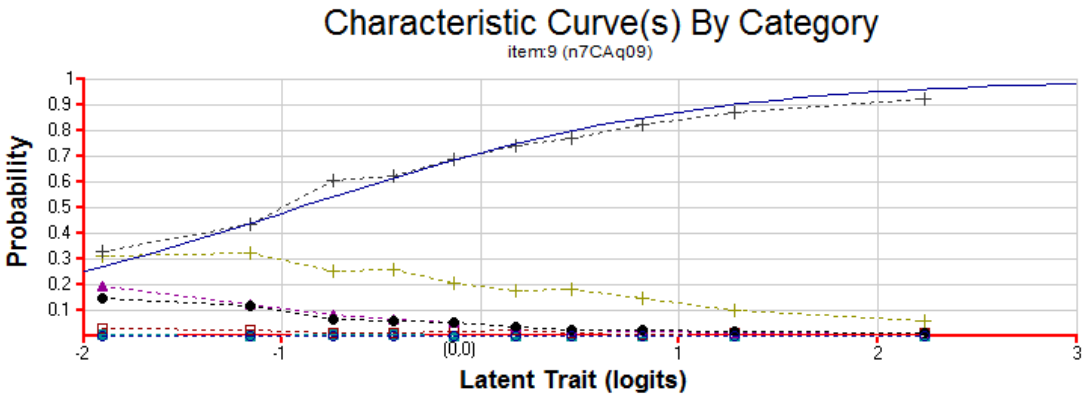


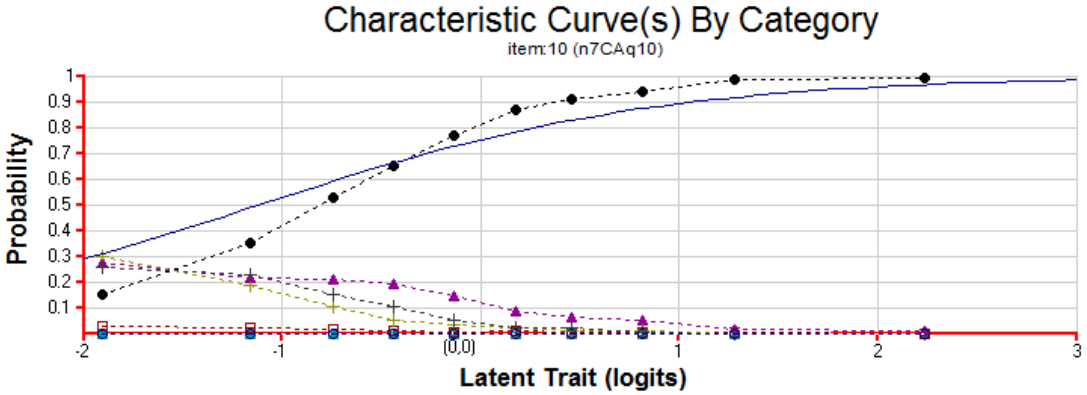

Characteristic Curve(s) By Category
item:5 (n7CAq05)
Probability
Latent Trait (logits)
(0,0)

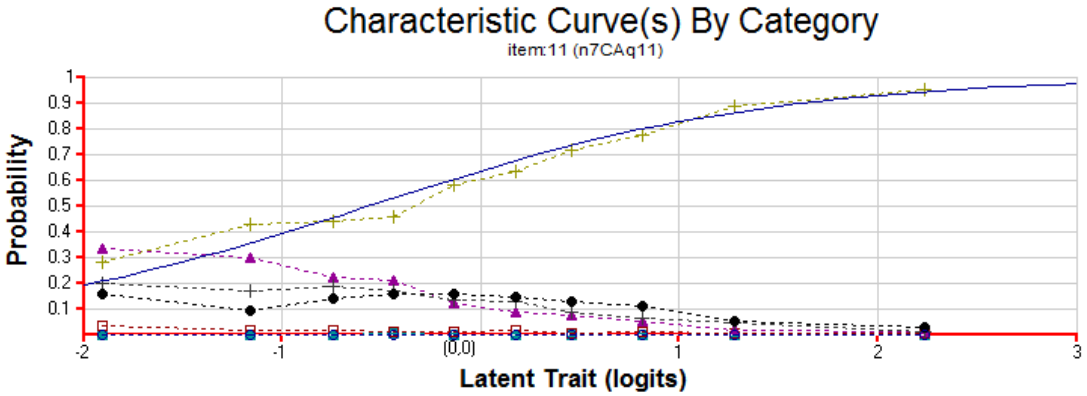

Characteristic Curve(s) By Category
item:6 (n7CAq06)
Probability
Latent Trait (logits)
(0,0)

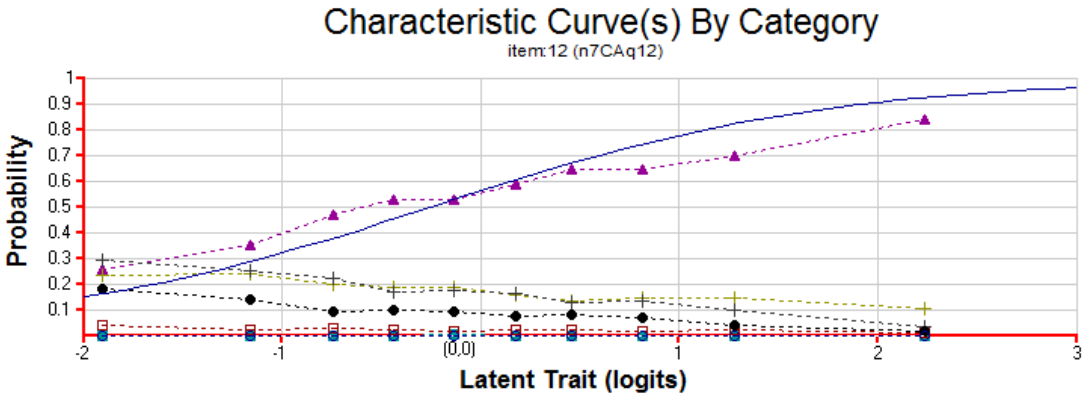

Characteristic Curve(s) By Category
item:7 (n7CAq07)
Probability
Latent Trait (logits)
(0,0)

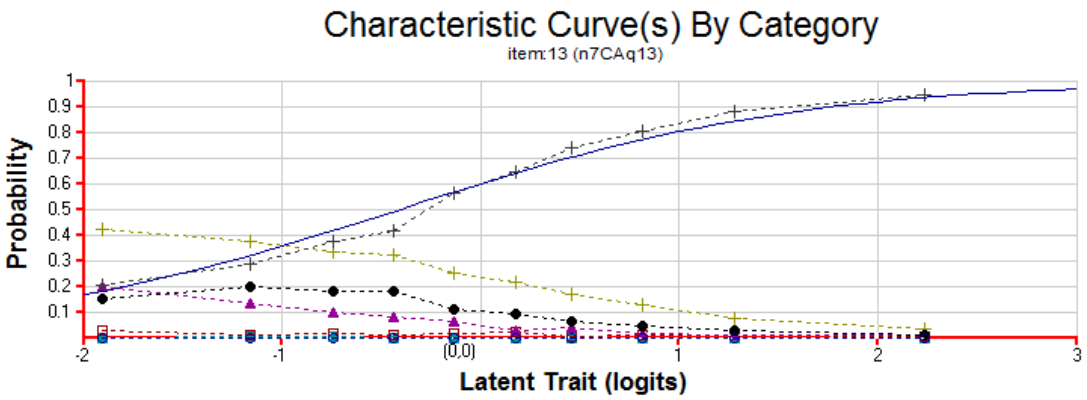

Characteristic Curve(s) By Category
item:8 (n7CAq08)
Probability
Latent Trait (logits)
(0,0)

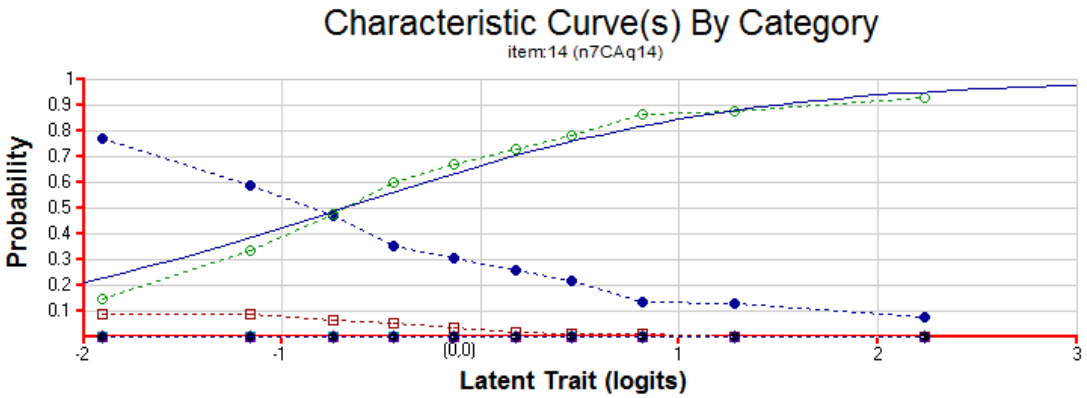

Characteristic Curve(s) By Category
item:9 (n7CAq09)
Probability
Latent Trait (logits)
(0,0)

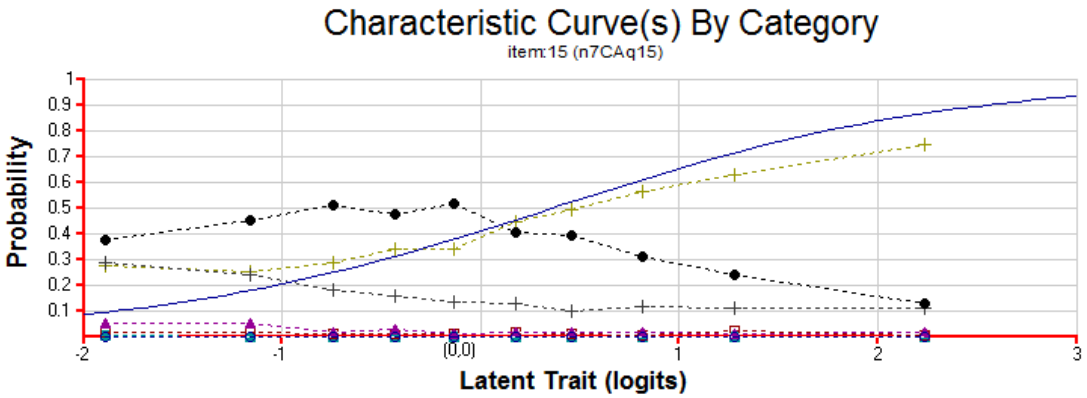

Characteristic Curve(s) By Category
item:10 (n7CAq10)
Probability
Latent Trait (logits)
(0,0)

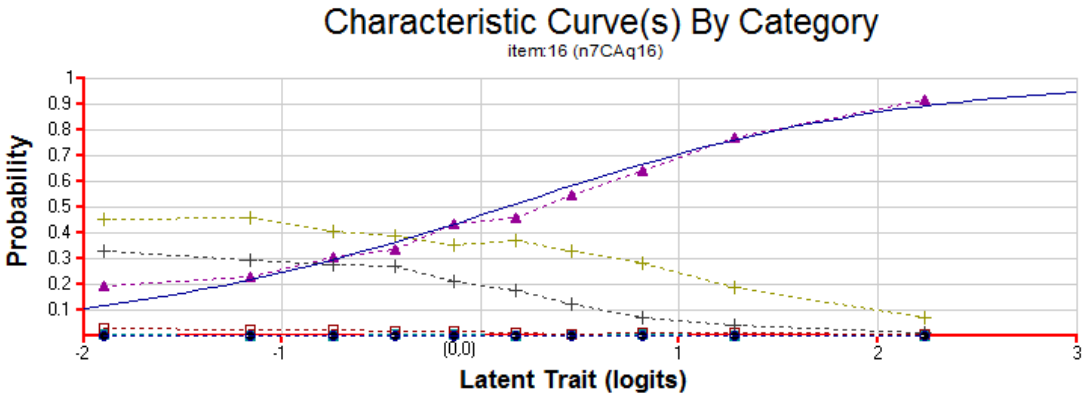

Characteristic Curve(s) By Category
item:11 (n7CAq11)
Probability
Latent Trait (logits)
(0,0)

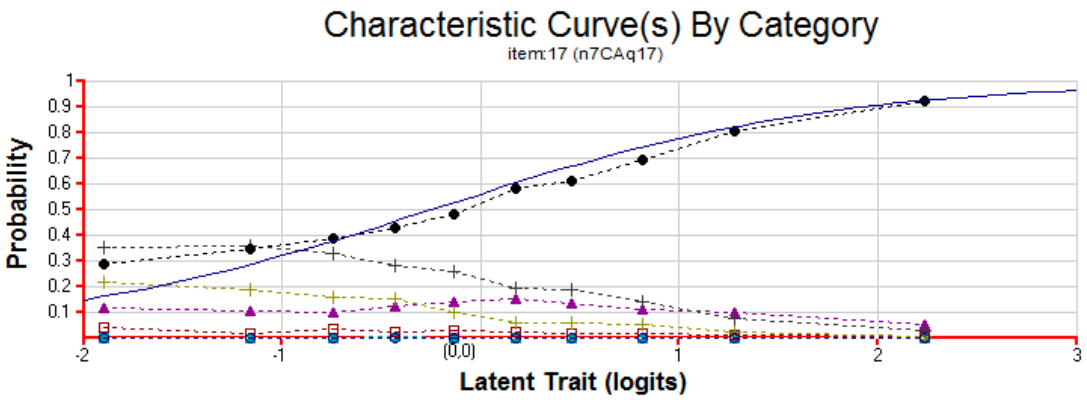

Characteristic Curve(s) By Category
item:12 (n7CAq12)
Probability
Latent Trait (logits)
(0,0)

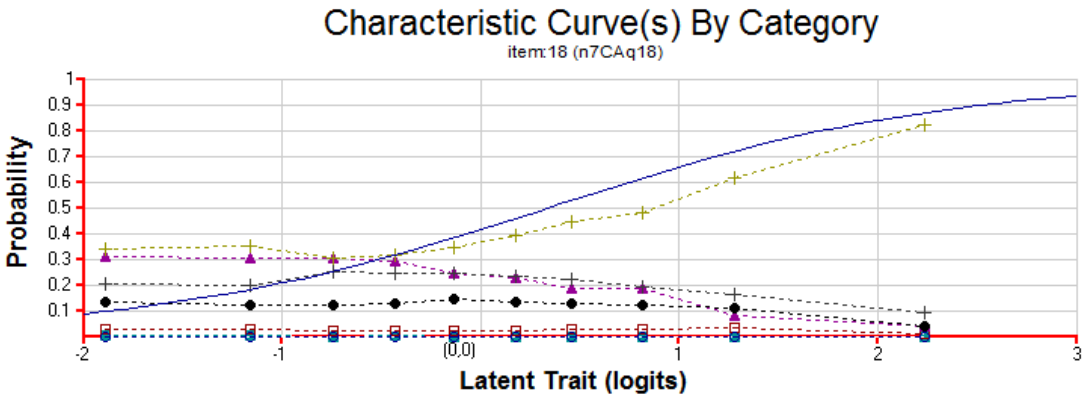

Characteristic Curve(s) By Category
item:13 (n7CAq13)
Probability
Latent Trait (logits)
(0,0)

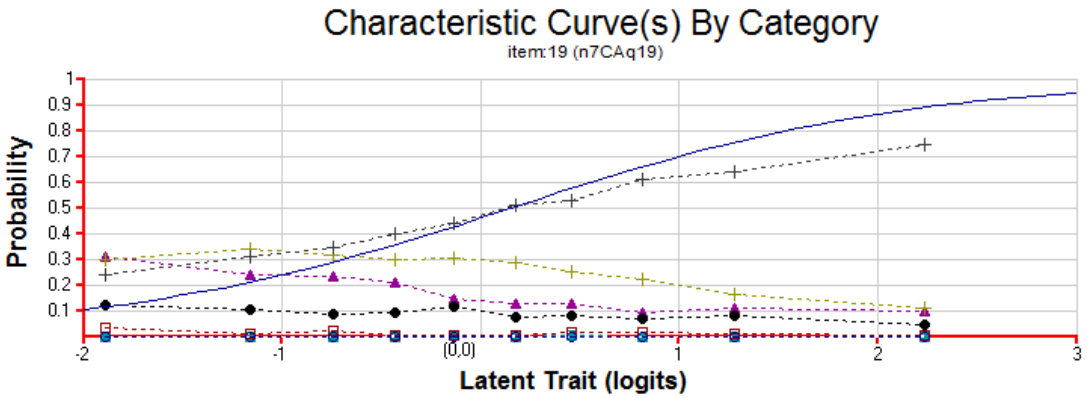

Characteristic Curve(s) By Category
item:14 (n7CAq14)
Probability
Latent Trait (logits)
(0,0)

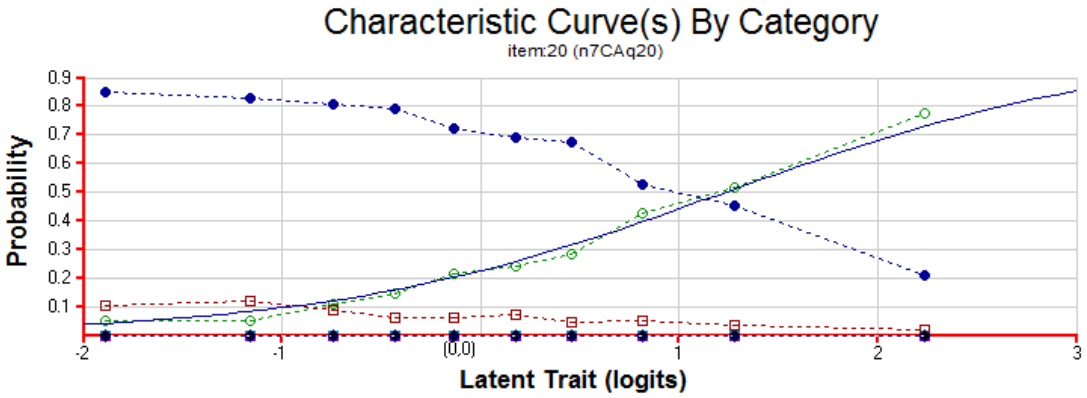

Characteristic Curve(s) By Category
item:15 (n7CAq15)
Probability
Latent Trait (logits)
(0,0)

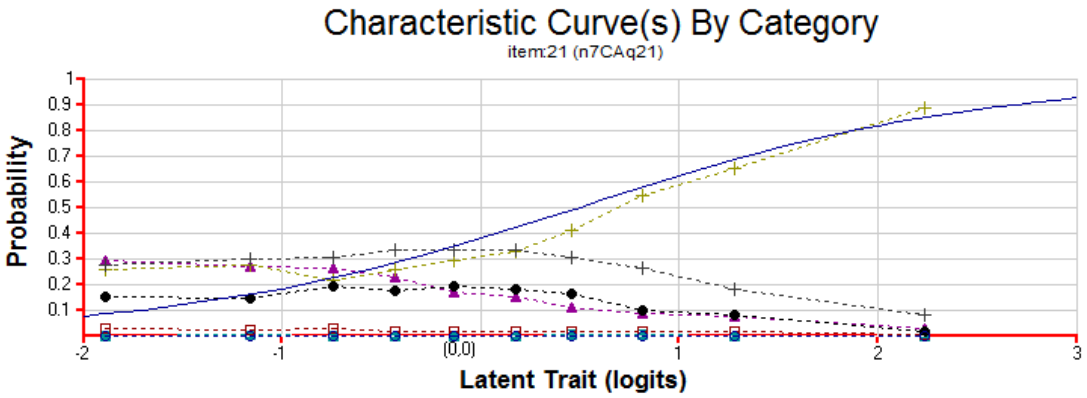

Characteristic Curve(s) By Category
item:16 (n7CAq16)
Probability
Latent Trait (logits)
(0,0)

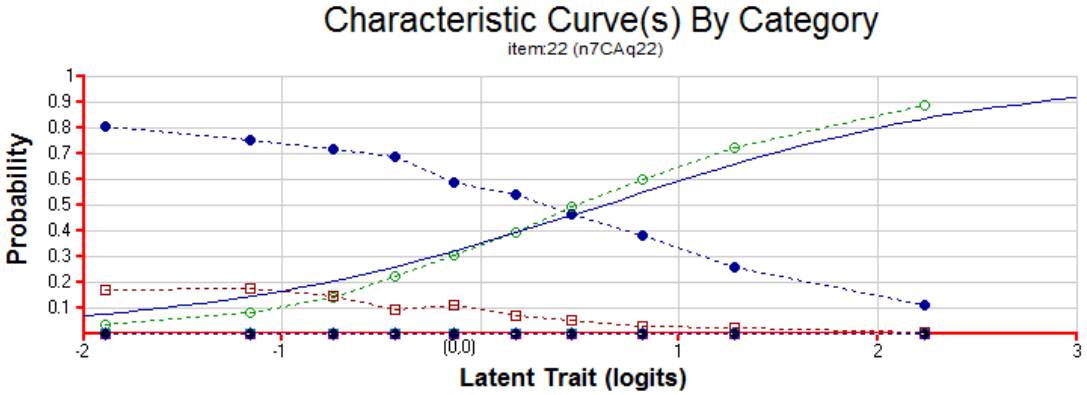

Characteristic Curve(s) By Category
item:17 (n7CAq17)
Probability
Latent Trait (logits)
(0,0)

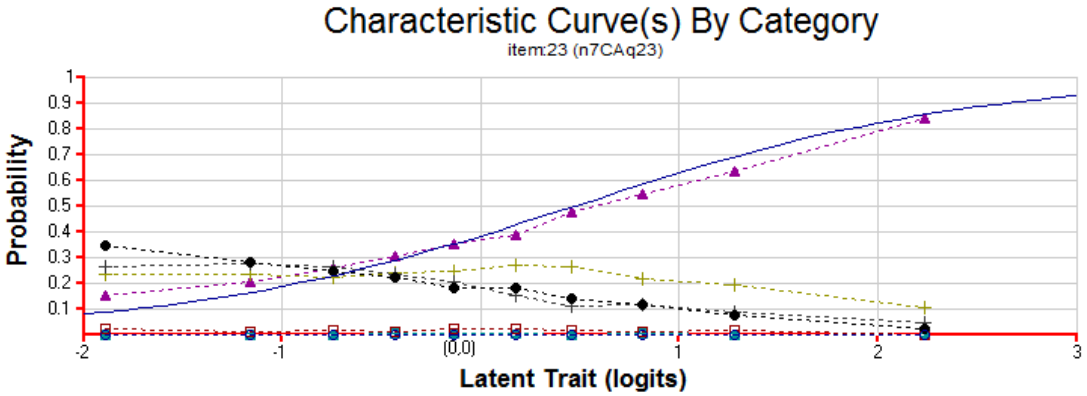

Characteristic Curve(s) By Category
item:18 (n7CAq18)
Probability
Latent Trait (logits)
(0,0)

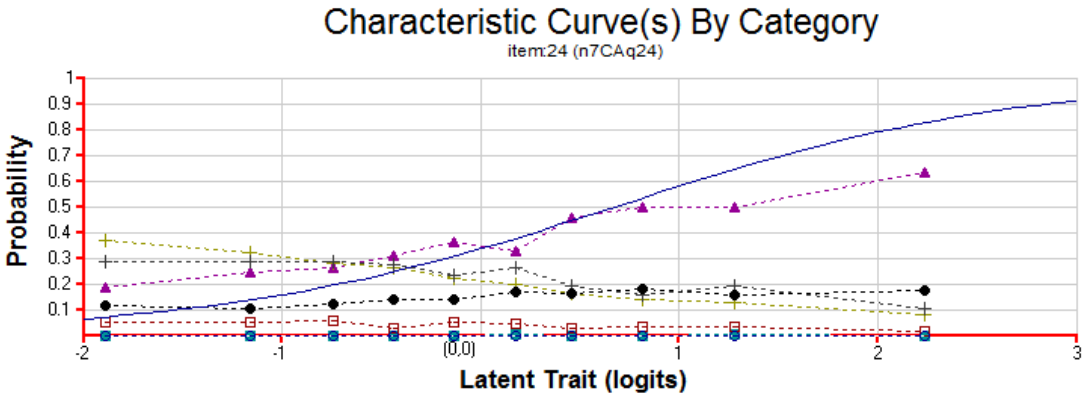

Characteristic Curve(s) By Category
item:19 (n7CAq19)
Probability
Latent Trait (logits)
(0,0)

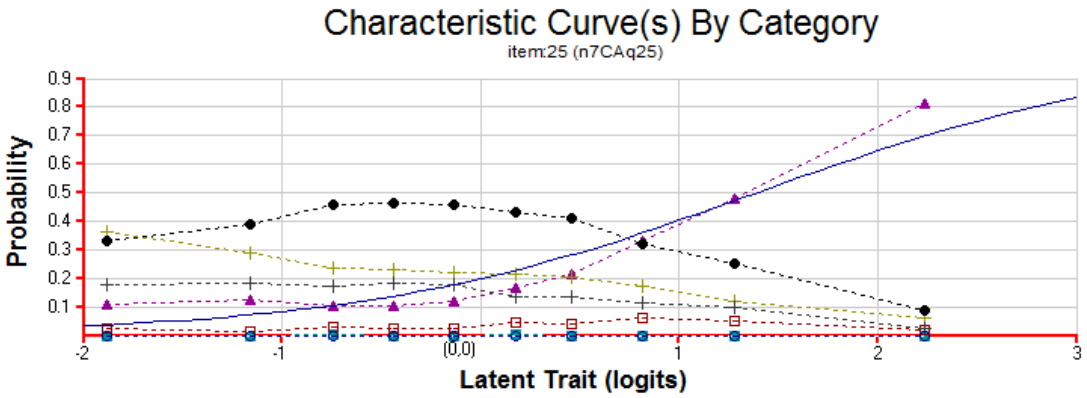

Characteristic Curve(s) By Category
item:20 (n7CAq20)
Probability
Latent Trait (logits)
(0,0)

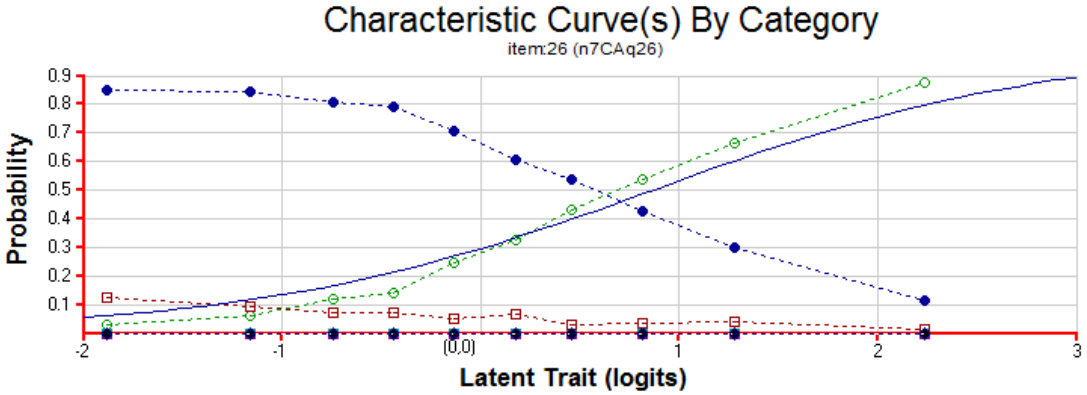

Characteristic Curve(s) By Category
item:21 (n7CAq21)
Probability
Latent Trait (logits)
(0,0)

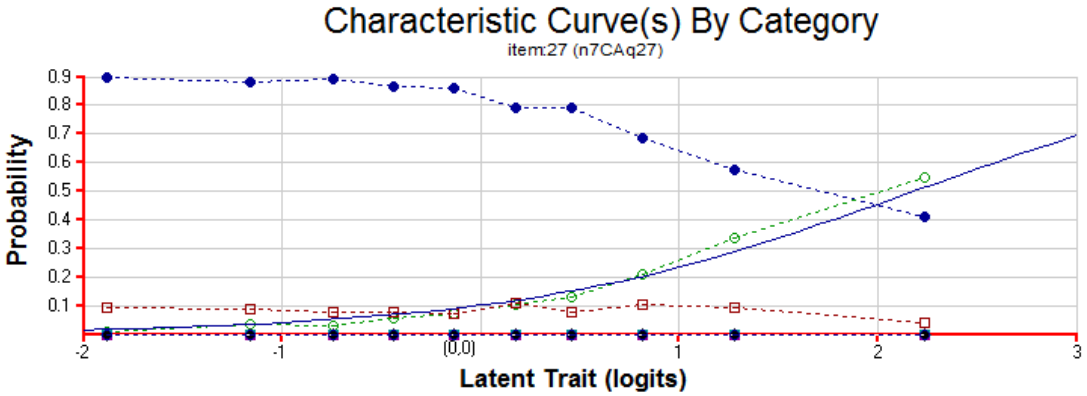

Characteristic Curve(s) By Category
item:22 (n7CAq22)
Probability
Latent Trait (logits)
(0,0)

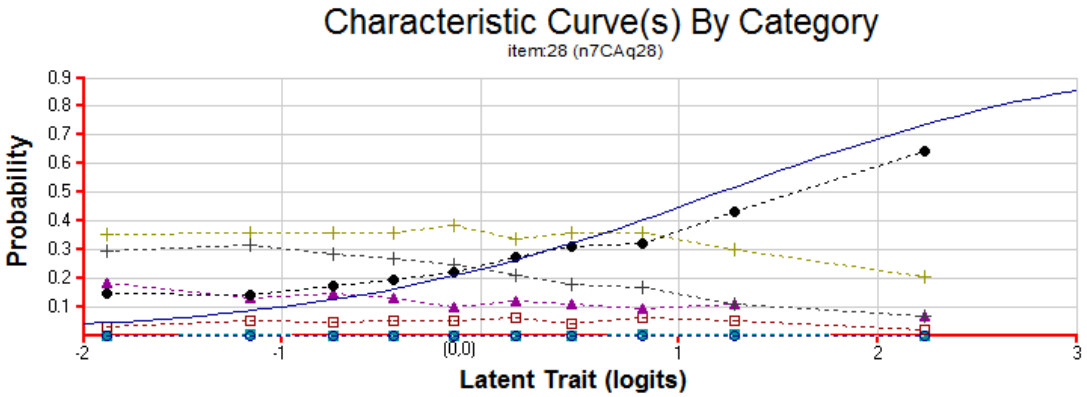

Characteristic Curve(s) By Category
item:23 (n7CAq23)
Probability
Latent Trait (logits)
(0,0)

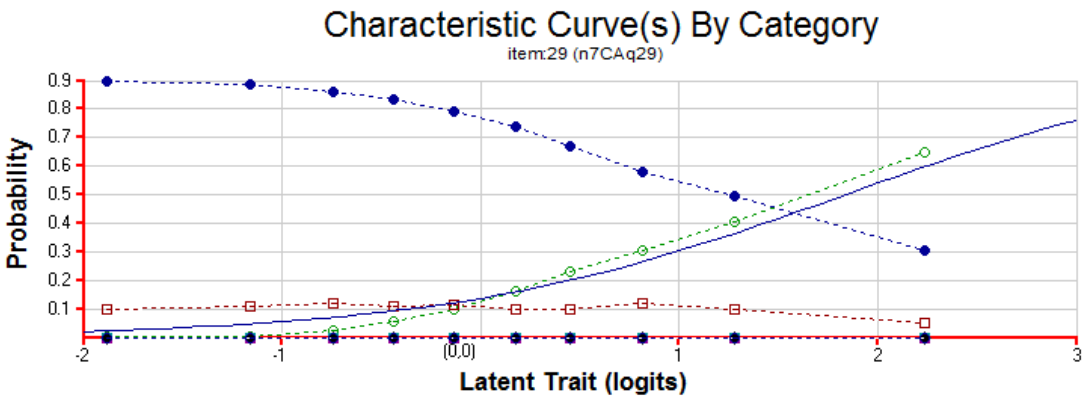

Characteristic Curve(s) By Category
item:24 (n7CAq24)
Probability
Latent Trait (logits)
(0,0)

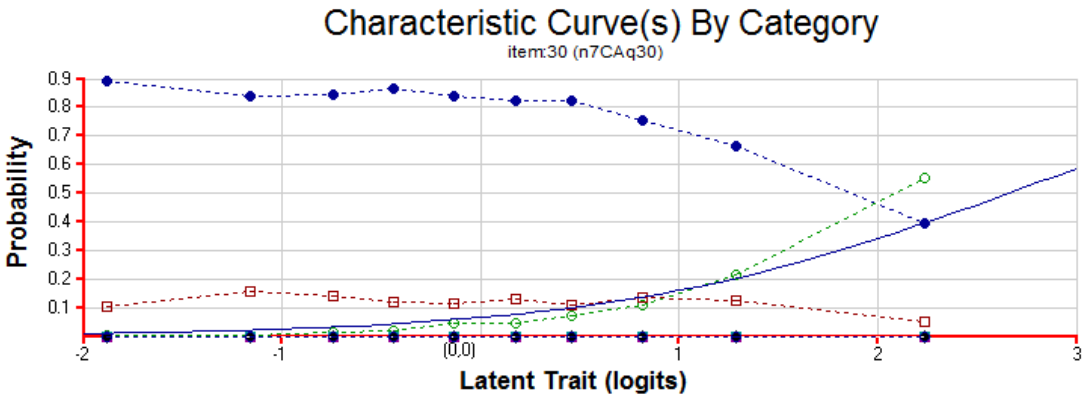

Characteristic Curve(s) By Category
item:25 (n7CAq25)
Probability
Latent Trait (logits)
(0,0)

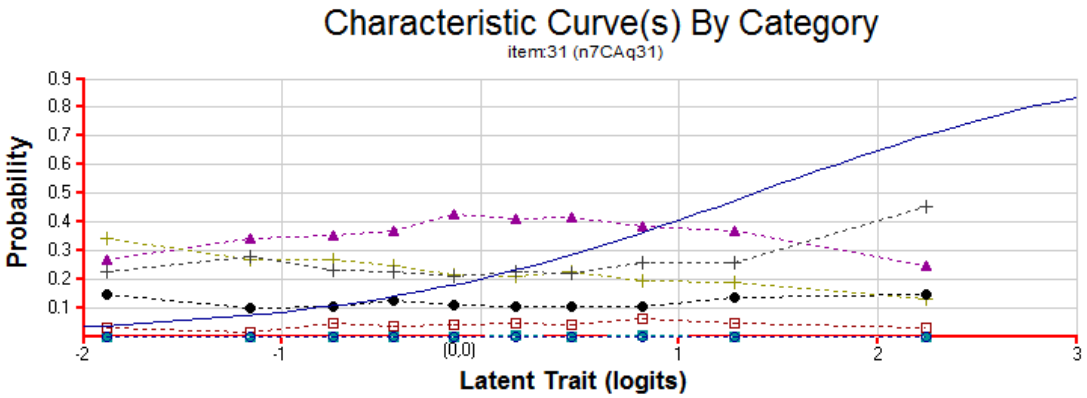

Characteristic Curve(s) By Category
item:26 (n7CAq26)
Probability
Latent Trait (logits)
(0,0)

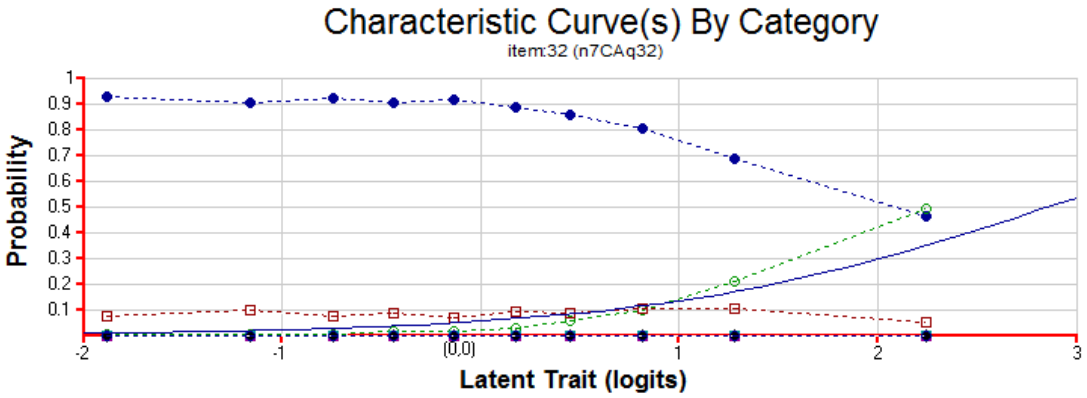

Characteristic Curve(s) By Category
item:27 (n7CAq27)
Probability
Latent Trait (logits)
(0,0)

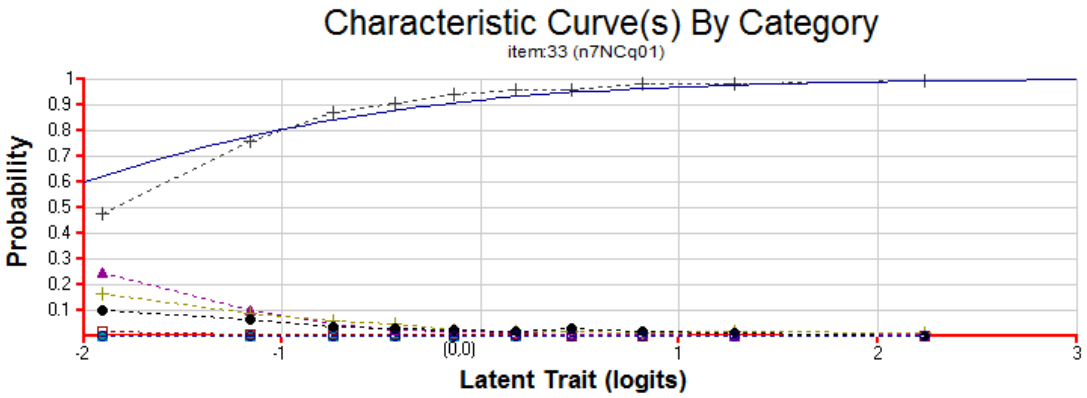

Characteristic Curve(s) By Category
item:28 (n7CAq28)
Probability
Latent Trait (logits)
(0,0)

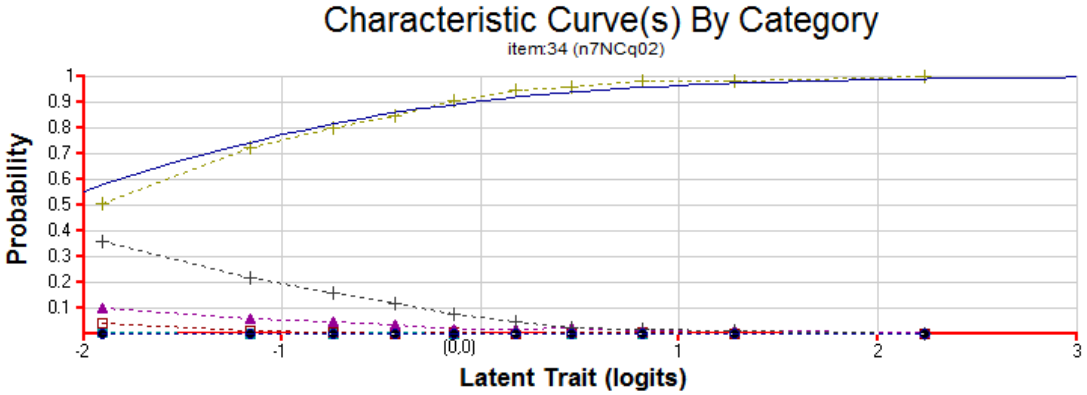

Characteristic Curve(s) By Category
item:29 (n7CAq29)
Probability
Latent Trait (logits)
(0,0)

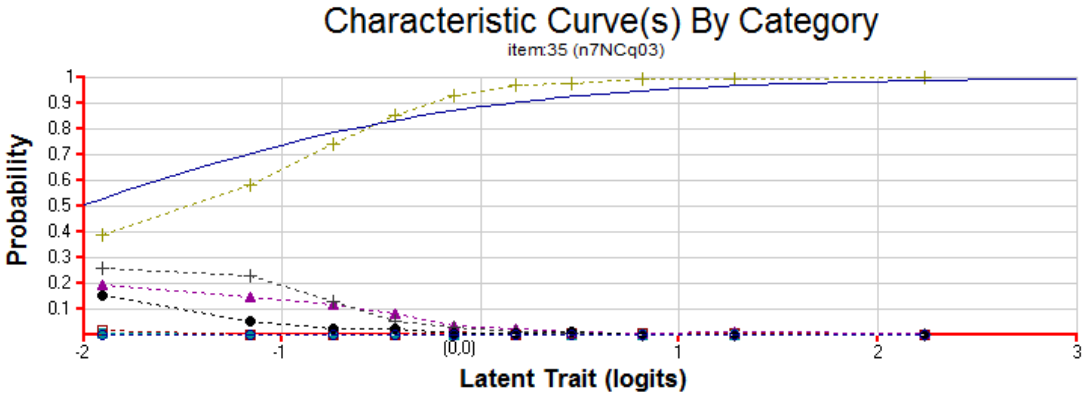

Characteristic Curve(s) By Category
item:30 (n7CAq30)
Probability
Latent Trait (logits)
(0,0)

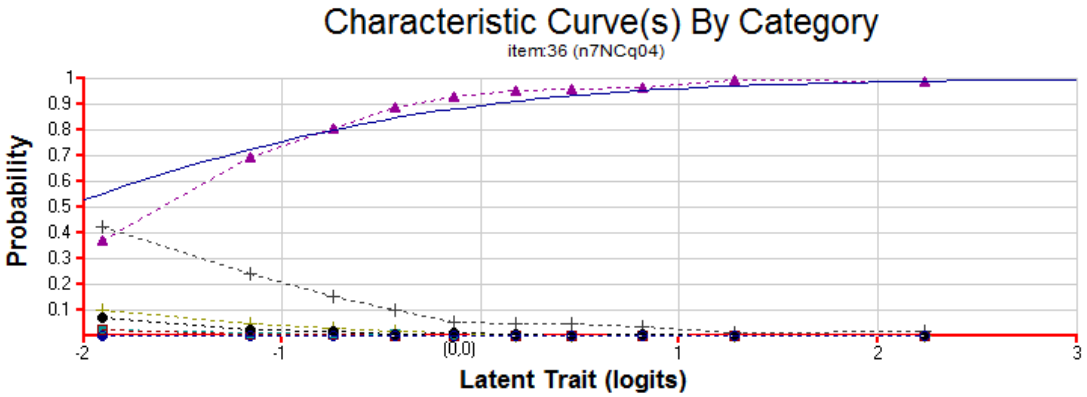

Characteristic Curve(s) By Category
item:31 (n7CAq31)
Probability
Latent Trait (logits)
(0,0)

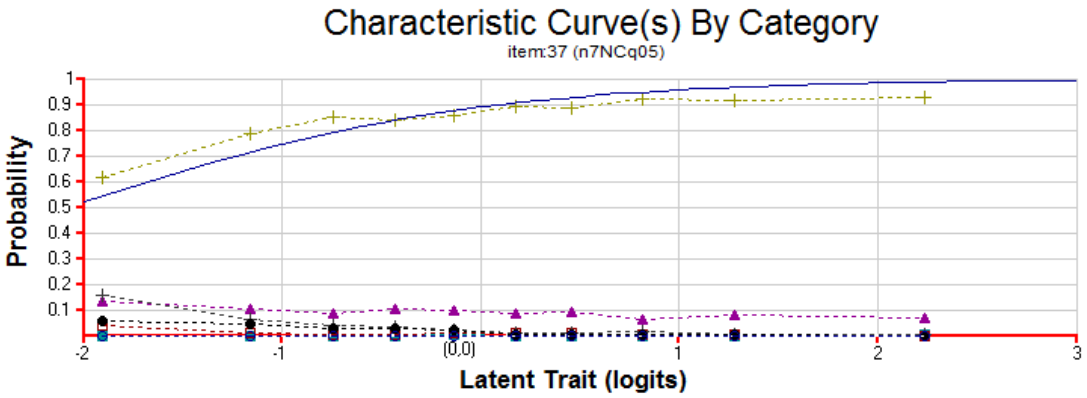

Characteristic Curve(s) By Category
item:32 (n7CAq32)
Probability
Latent Trait (logits)
(0,0)

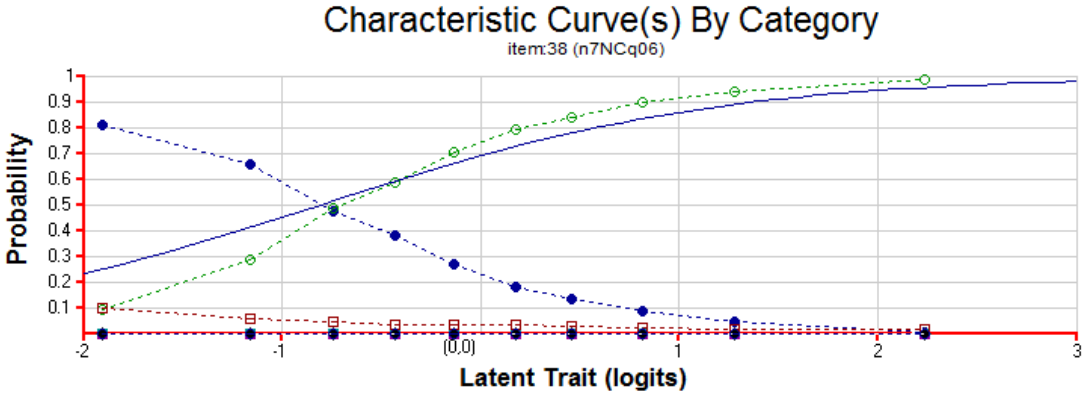

Characteristic Curve(s) By Category
item:33 (n7NCq01)
Probability
Latent Trait (logits)
(0,0)

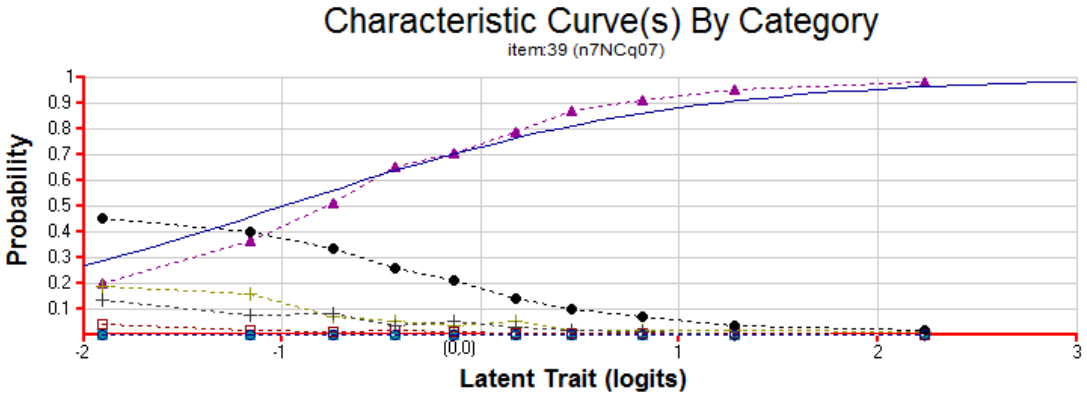

Characteristic Curve(s) By Category
item:34 (n7NCq02)
Probability
Latent Trait (logits)
(0,0)

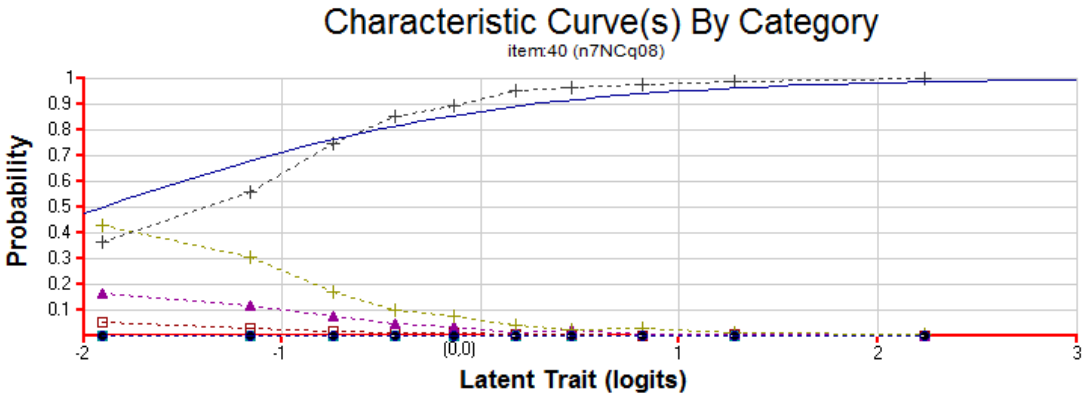

Characteristic Curve(s) By Category
item:35 (n7NCq03)
Probability
Latent Trait (logits)
(0,0)

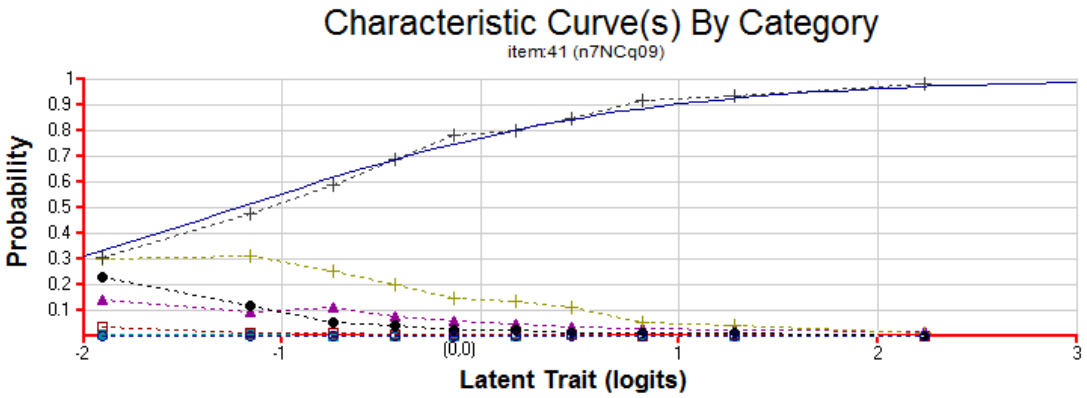

Characteristic Curve(s) By Category
item:36 (n7NCq04)
Probability
Latent Trait (logits)
(0,0)

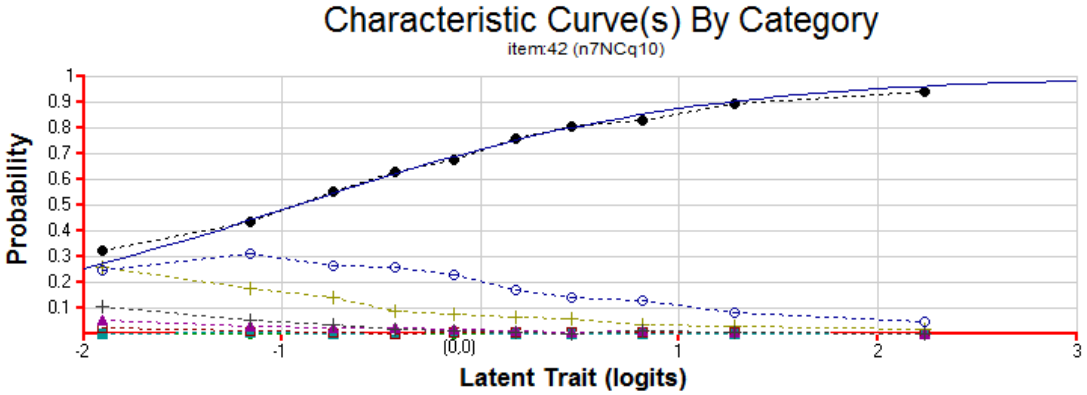

Characteristic Curve(s) By Category
item:37 (n7NCq05)
Probability
Latent Trait (logits)
(0,0)

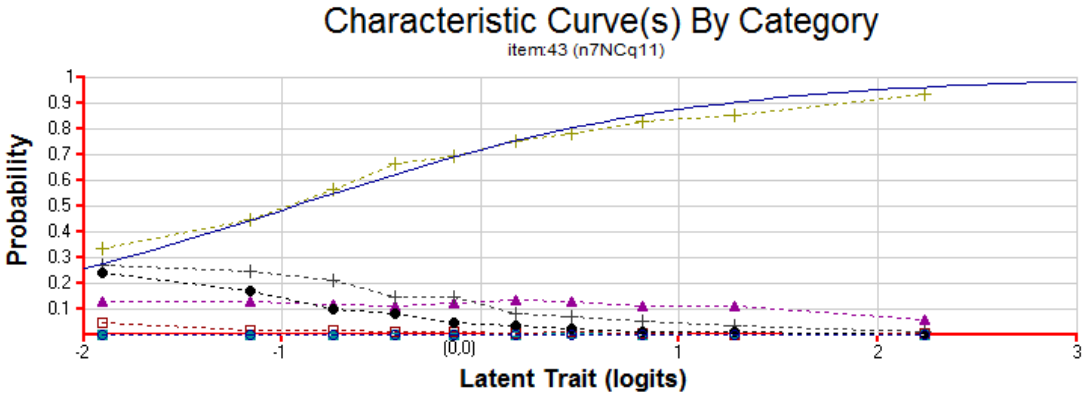

Characteristic Curve(s) By Category
item:38 (n7NCq06)
Probability
Latent Trait (logits)
(0,0)

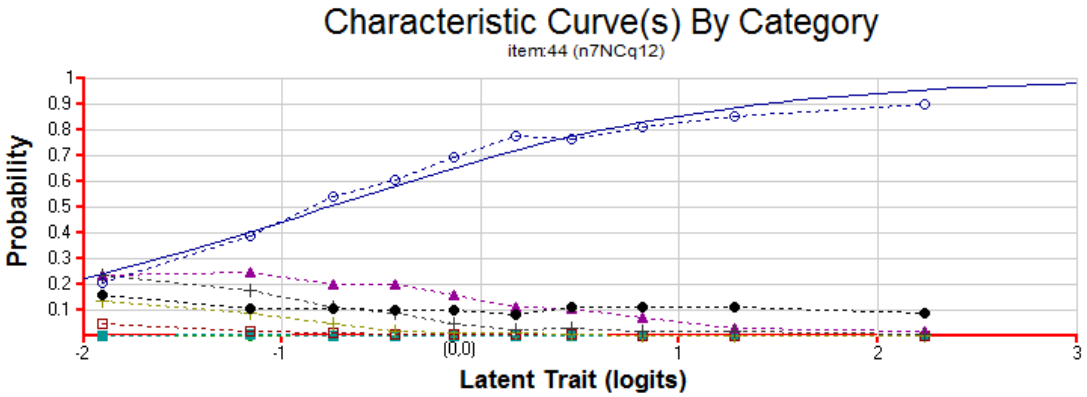

Characteristic Curve(s) By Category
item:39 (n7NCq07)
Probability
Latent Trait (logits)
(0,0)

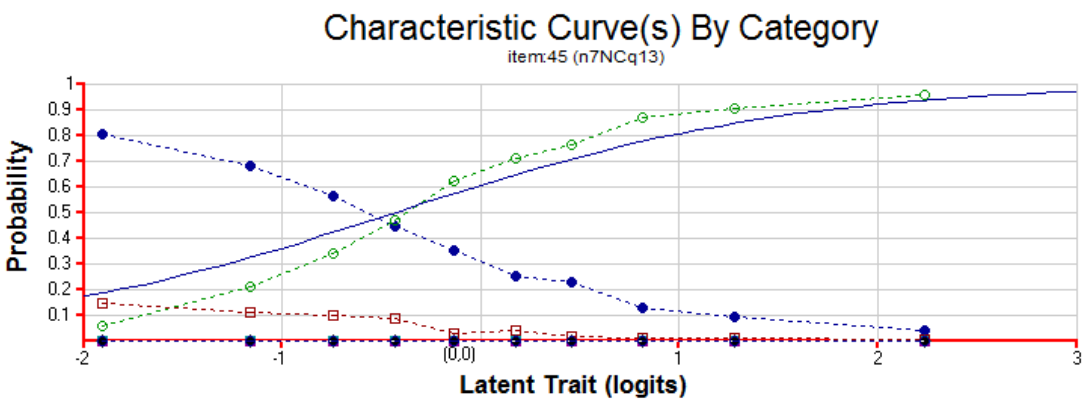

Characteristic Curve(s) By Category
item:40 (n7NCq08)
Probability
Latent Trait (logits)
(0,0)

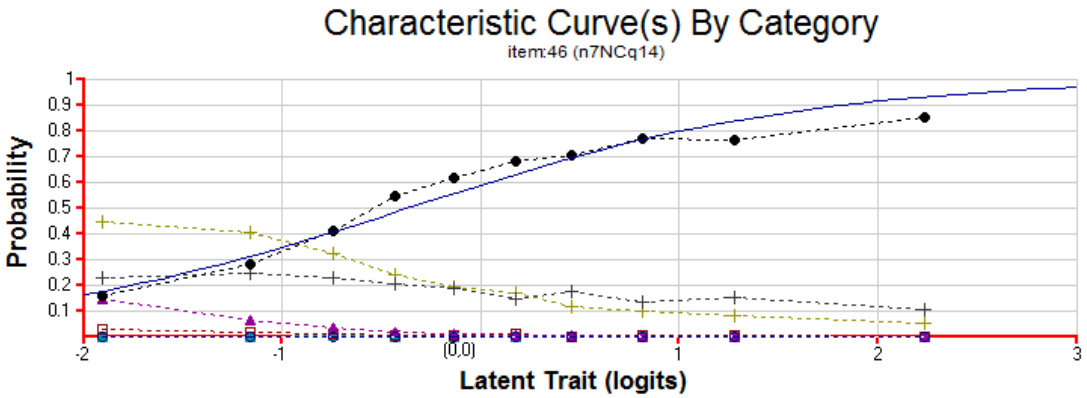

Characteristic Curve(s) By Category
item:41 (n7NCq09)
Probability
Latent Trait (logits)
(0,0)

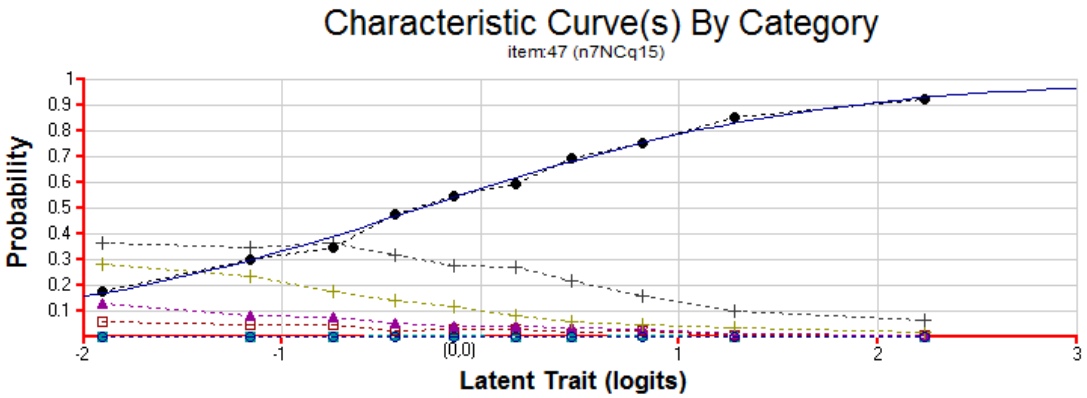

Characteristic Curve(s) By Category
item:42 (n7NCq10)
Probability
Latent Trait (logits)
(0,0)

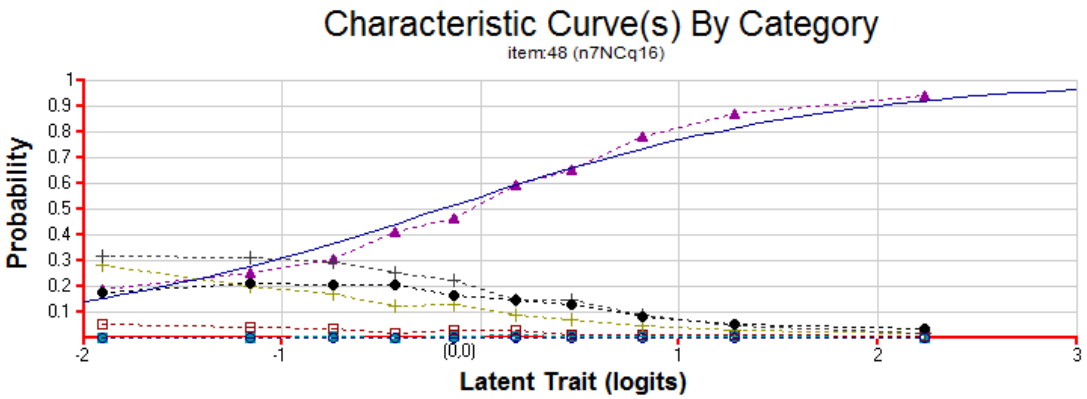

Characteristic Curve(s) By Category
item:43 (n7NCq11)
Probability
Latent Trait (logits)
(0,0)

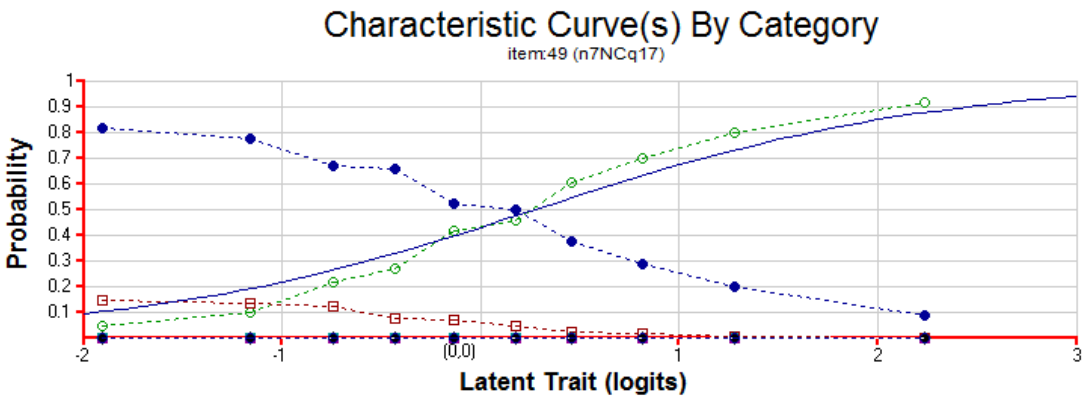

Characteristic Curve(s) By Category
item:44 (n7NCq12)
Probability
Latent Trait (logits)
(0,0)

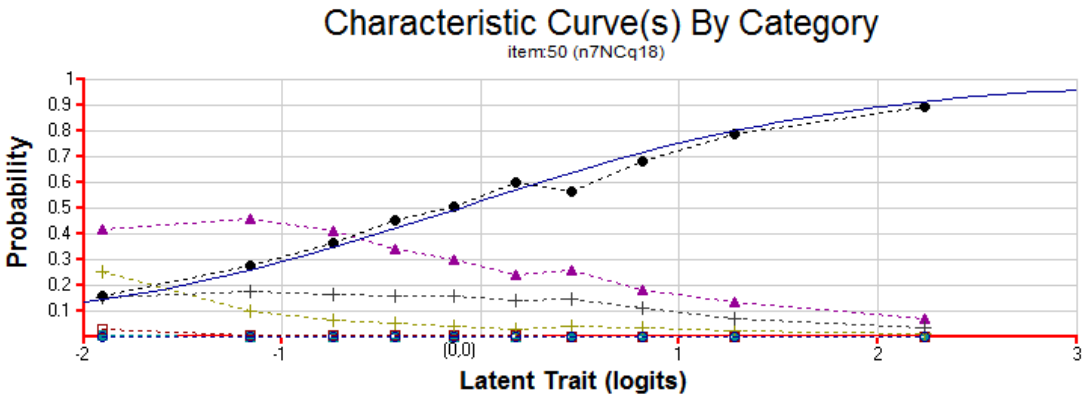

Characteristic Curve(s) By Category
item:45 (n7NCq13)
Probability
Latent Trait (logits)
(0,0)

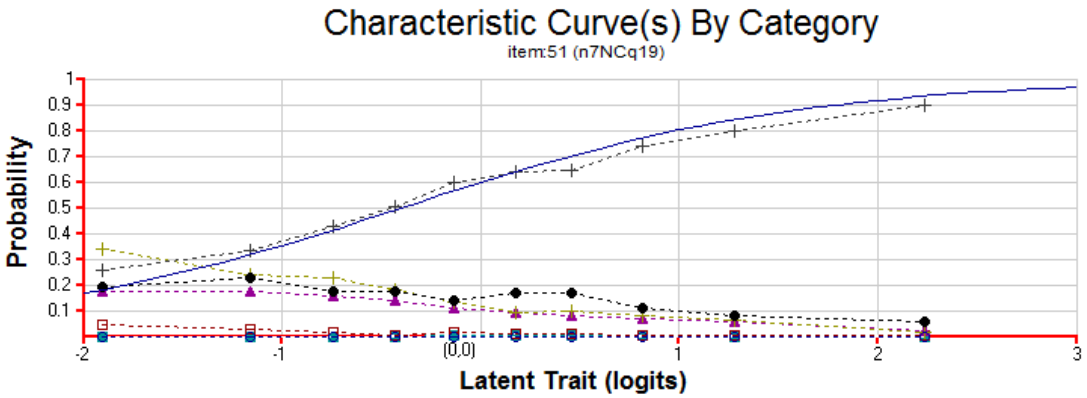

Characteristic Curve(s) By Category
item:46 (n7NCq14)
Probability
Latent Trait (logits)
(0,0)

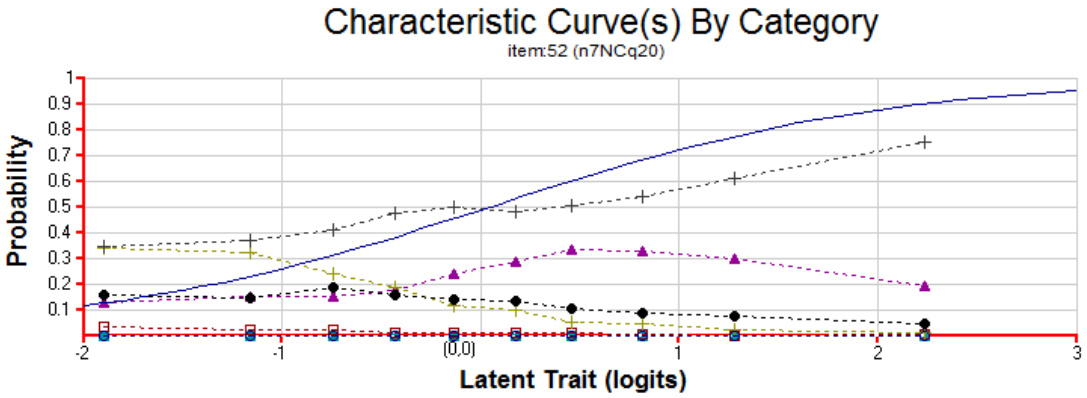

Characteristic Curve(s) By Category
item:47 (n7NCq15)
Probability
Latent Trait (logits)
(0,0)

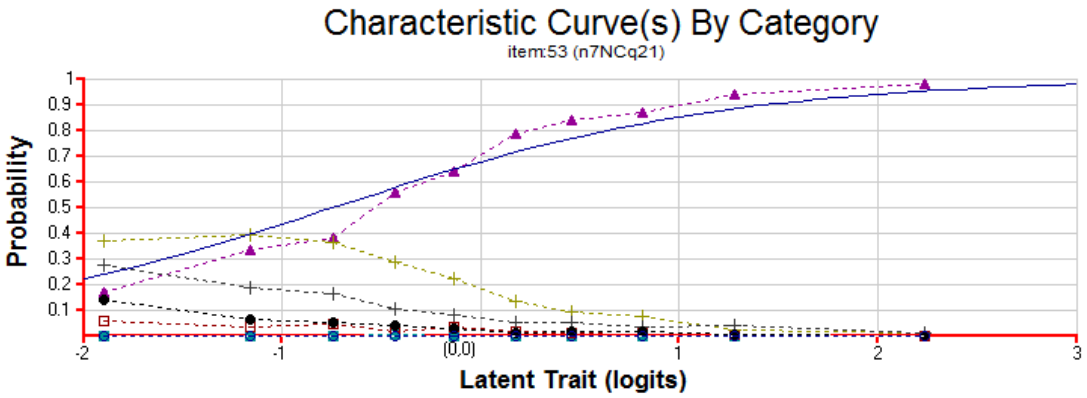

Characteristic Curve(s) By Category
item:48 (n7NCq16)
Probability
Latent Trait (logits)
(0,0)

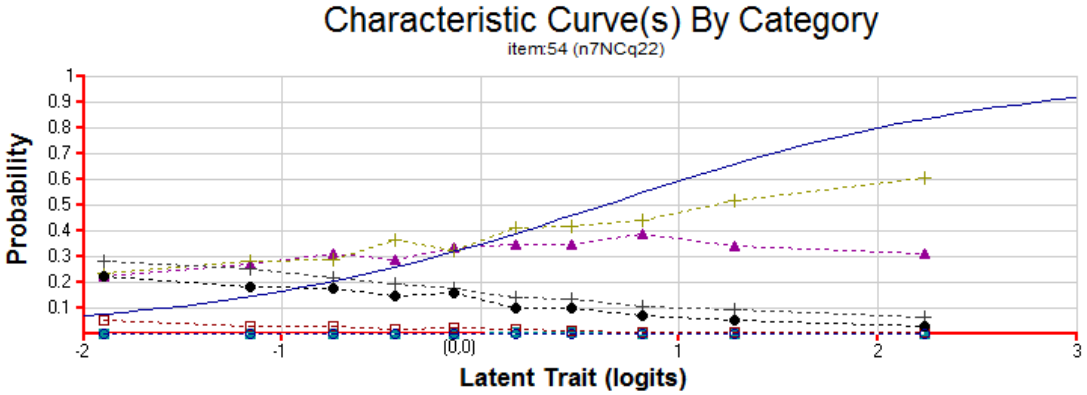

Characteristic Curve(s) By Category
item:49 (n7NCq17)
Probability
Latent Trait (logits)
(0,0)

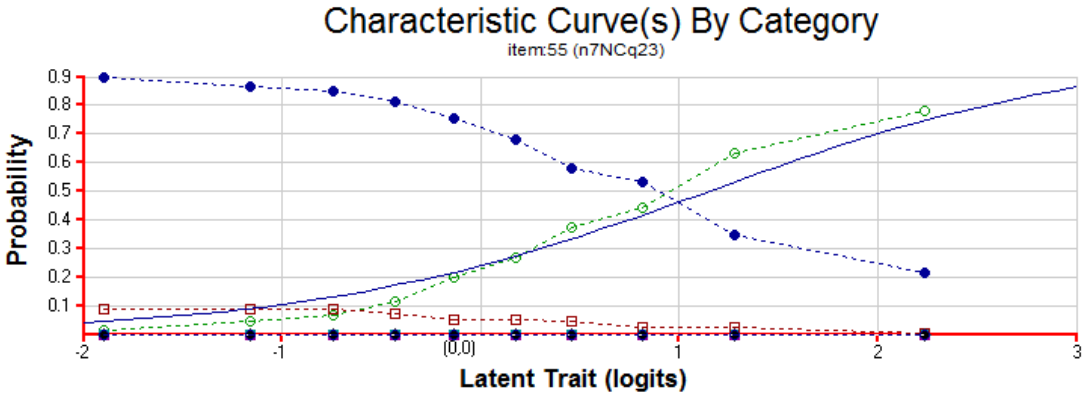

Characteristic Curve(s) By Category
item:50 (n7NCq18)
Probability
Latent Trait (logits)
(0,0)

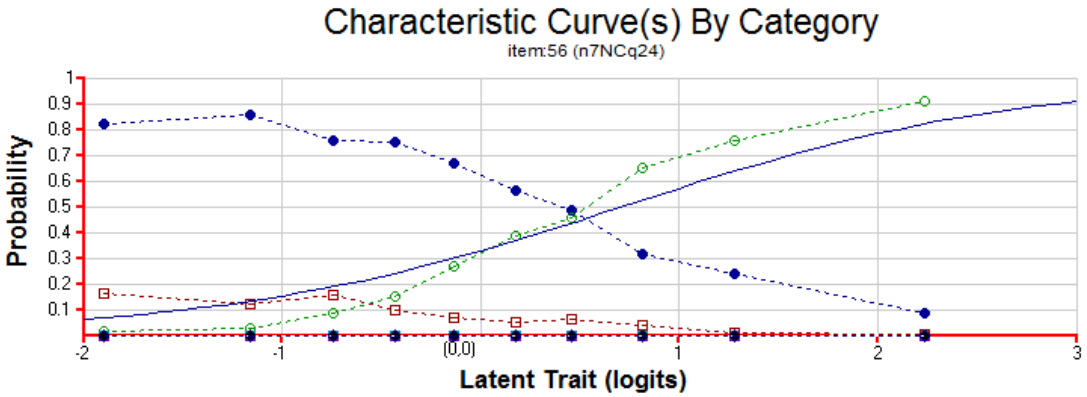

Characteristic Curve(s) By Category
item:51 (n7NCq19)
Probability
Latent Trait (logits)
(0,0)

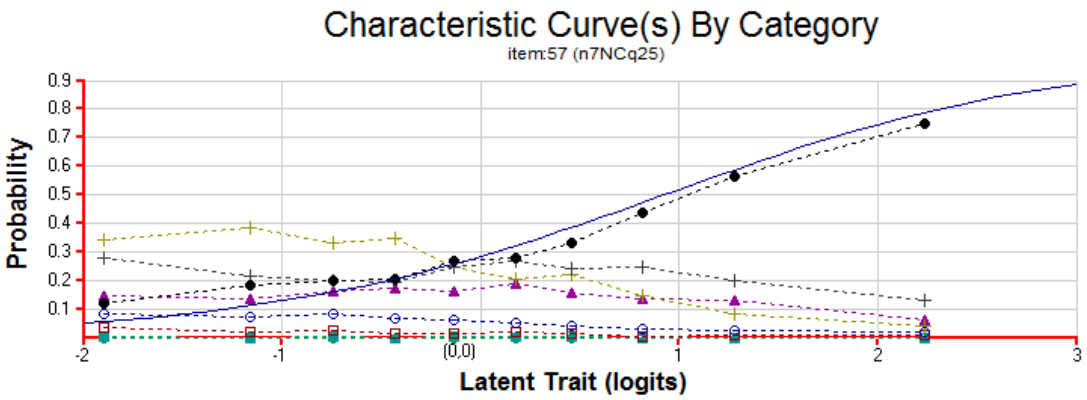

Characteristic Curve(s) By Category
item:52 (n7NCq20)
Probability
Latent Trait (logits)
(0,0)

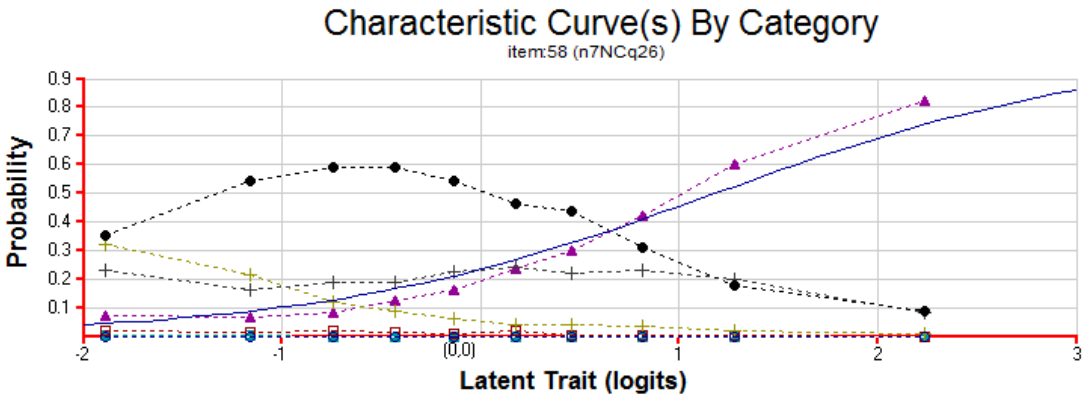

Characteristic Curve(s) By Category
item:53 (n7NCq21)
Probability
Latent Trait (logits)
(0,0)

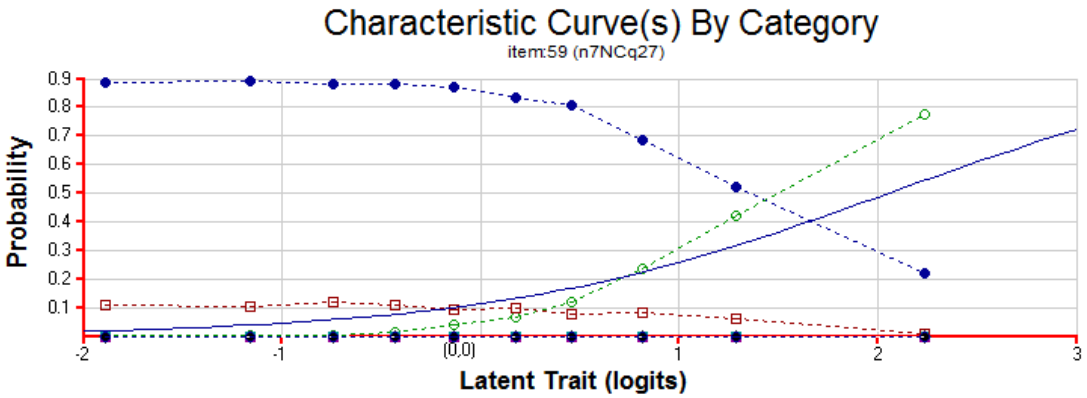

Characteristic Curve(s) By Category
item:54 (n7NCq22)
Probability
Latent Trait (logits)
(0,0)

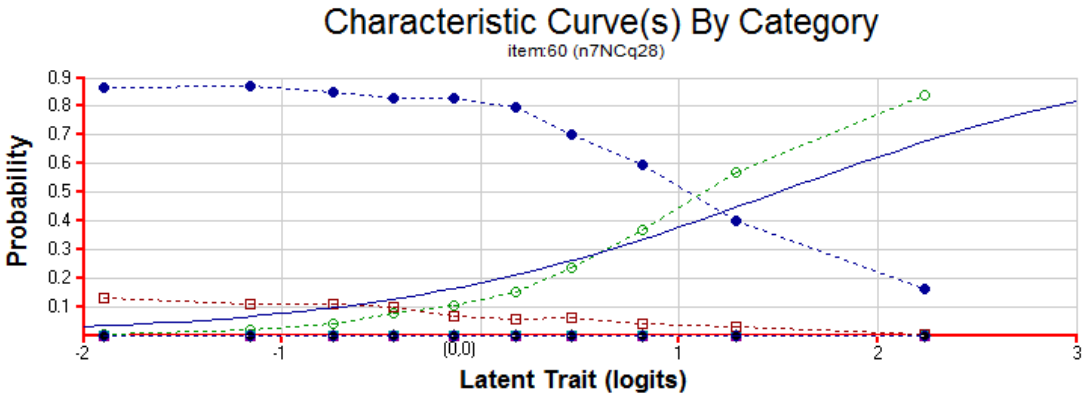

Characteristic Curve(s) By Category
item:55 (n7NCq23)
Probability
Latent Trait (logits)
(0,0)

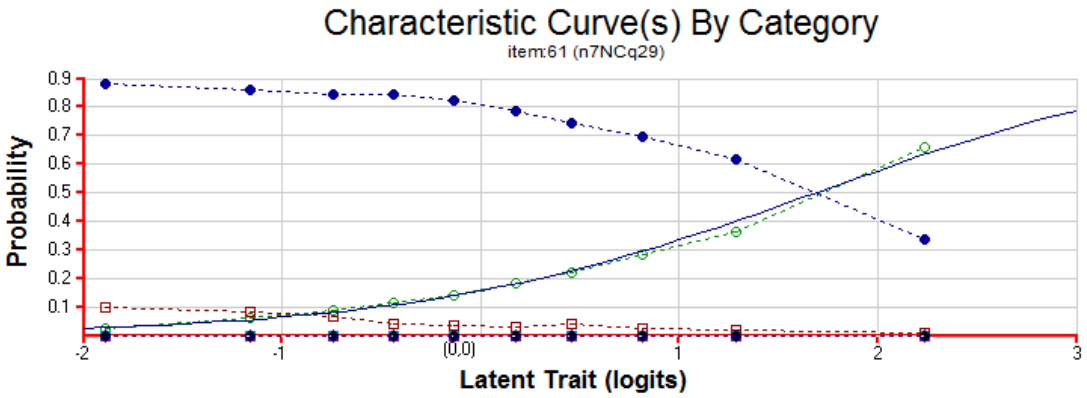

Characteristic Curve(s) By Category
item:56 (n7NCq24)
Probability
Latent Trait (logits)
(0,0)

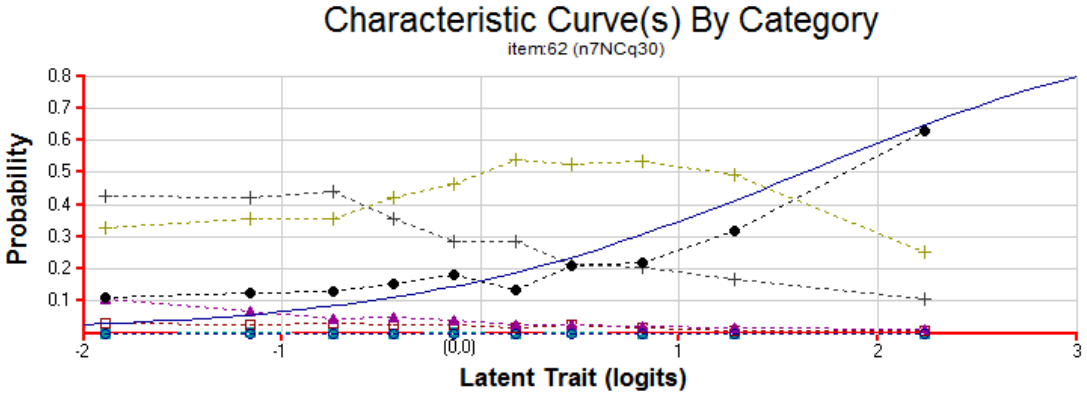

Characteristic Curve(s) By Category
item:57 (n7NCq25)
Probability
Latent Trait (logits)
(0,0)

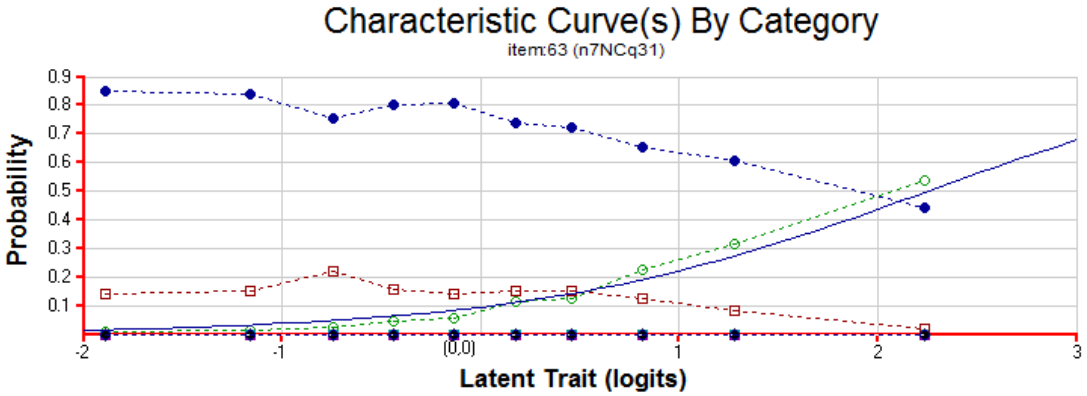

Characteristic Curve(s) By Category
item:58 (n7NCq26)
Probability
Latent Trait (logits)
(0,0)

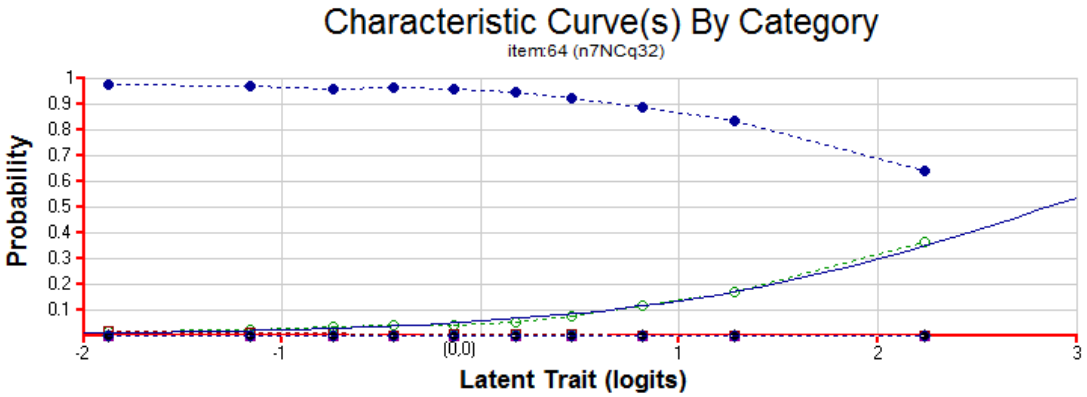

Characteristic Curve(s) By Category
item:59 (n7NCq27)
Probability
Latent Trait (logits)
(0,0)


Characteristic Curve(s) By Category
item:60 (n7NCq28)
Probability
Latent Trait (logits)
(0,0)

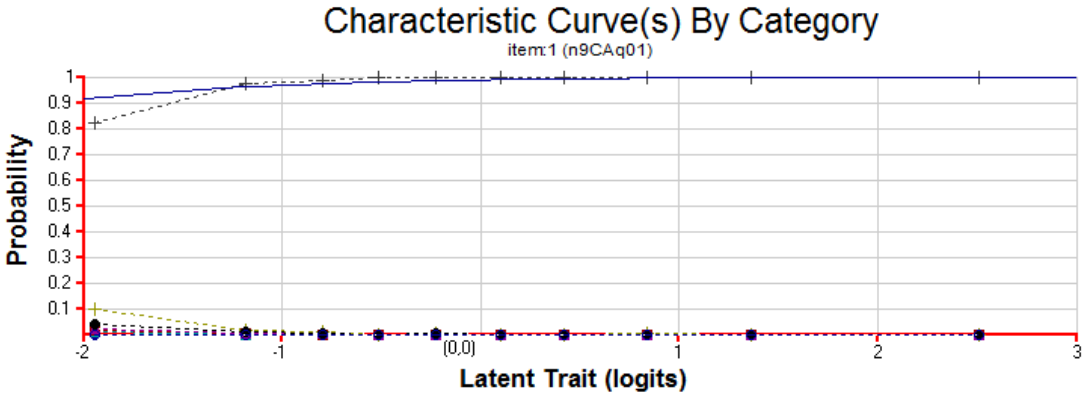

Characteristic Curve(s) By Category
item:61 (n7NCq29)
Probability
Latent Trait (logits)
(0,0)

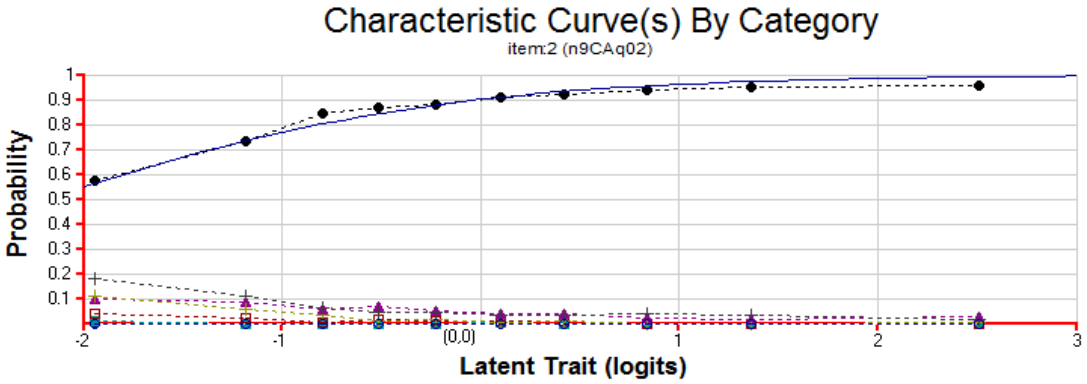

Characteristic Curve(s) By Category
item:62 (n7NCq30)
Probability
Latent Trait (logits)
(0,0)

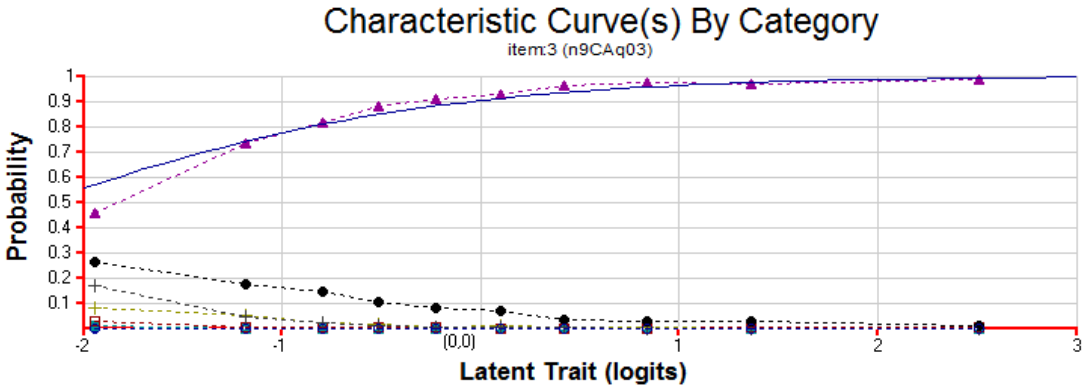

Characteristic Curve(s) By Category
item:63 (n7NCq31)
Probability
Latent Trait (logits)
(0,0)

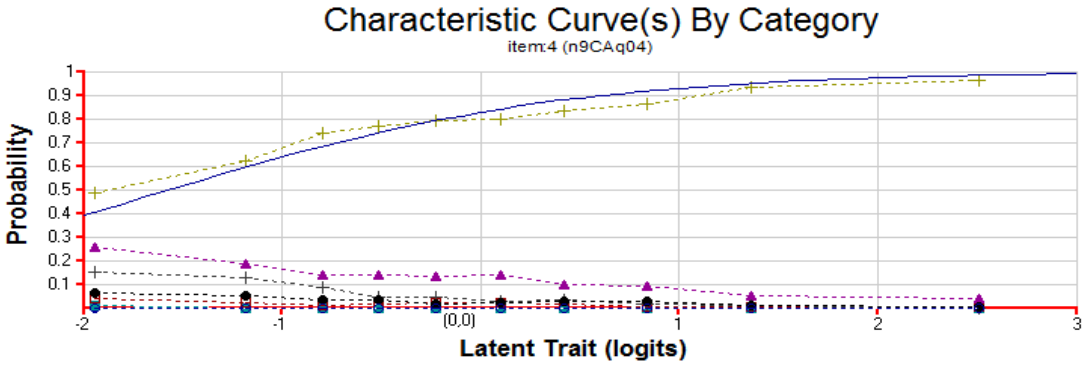

Characteristic Curve(s) By Category
item:64 (n7NCq32)
Probability
Latent Trait (logits)
(0,0)

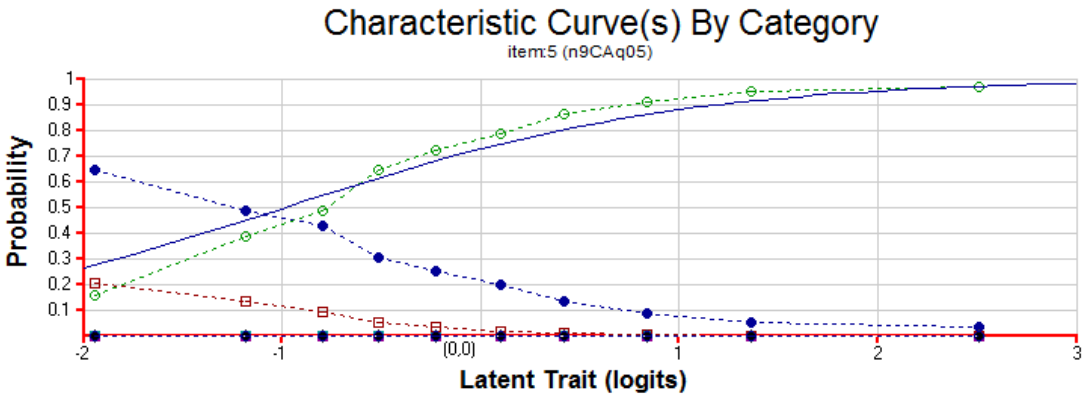
Year 9 Numeracy

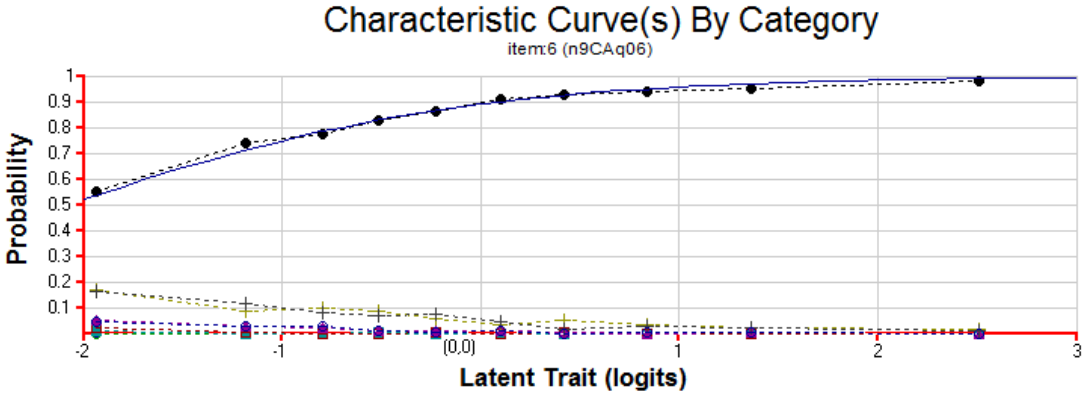


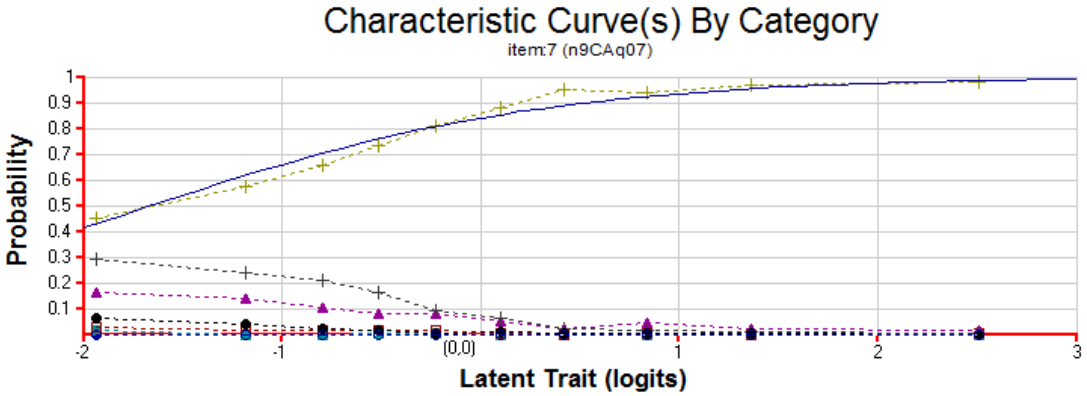


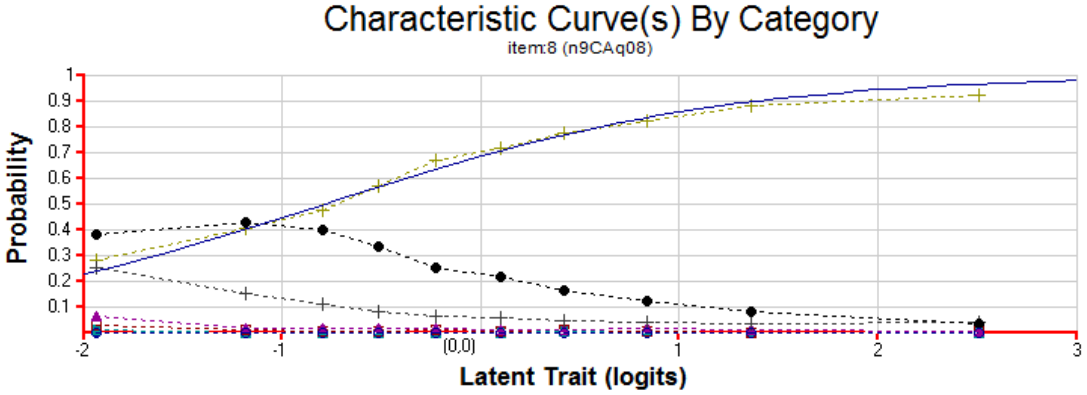


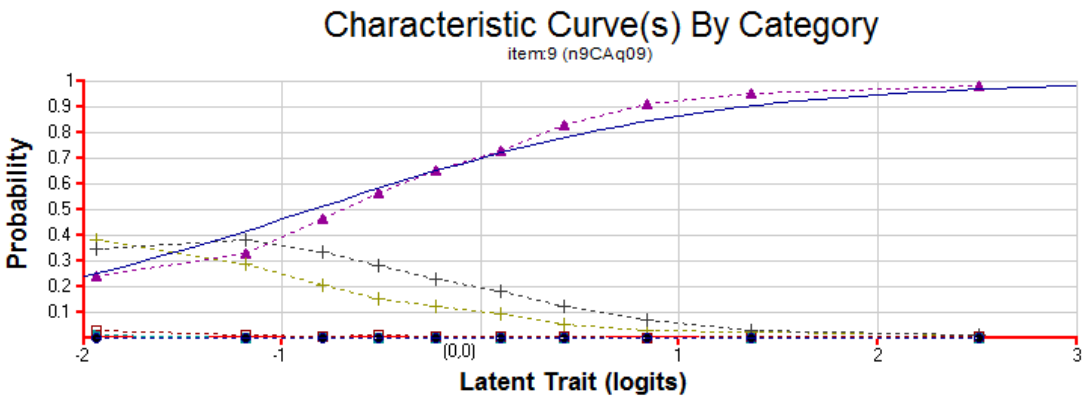


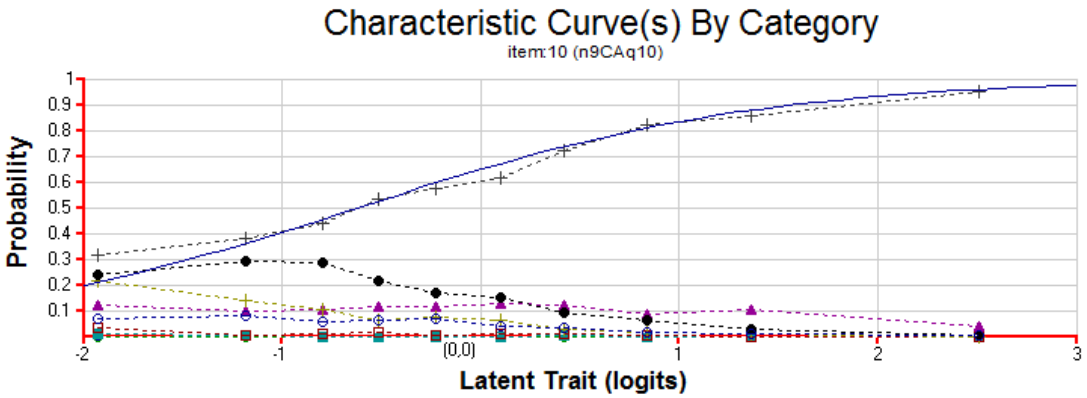

Characteristic Curve(s) By Category
item:5 (n9CAq05)
Probability
Latent Trait (logits)
(0,0)

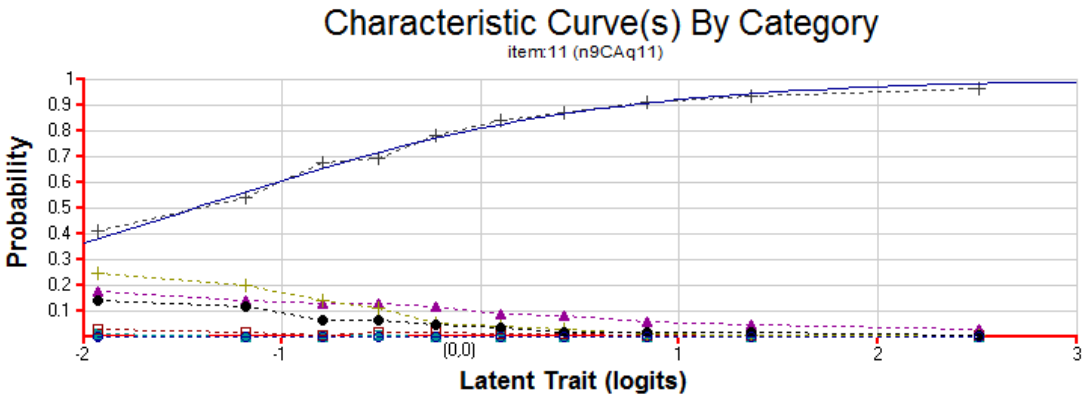

Characteristic Curve(s) By Category
item:6 (n9CAq06)
Probability
Latent Trait (logits)
(0,0)

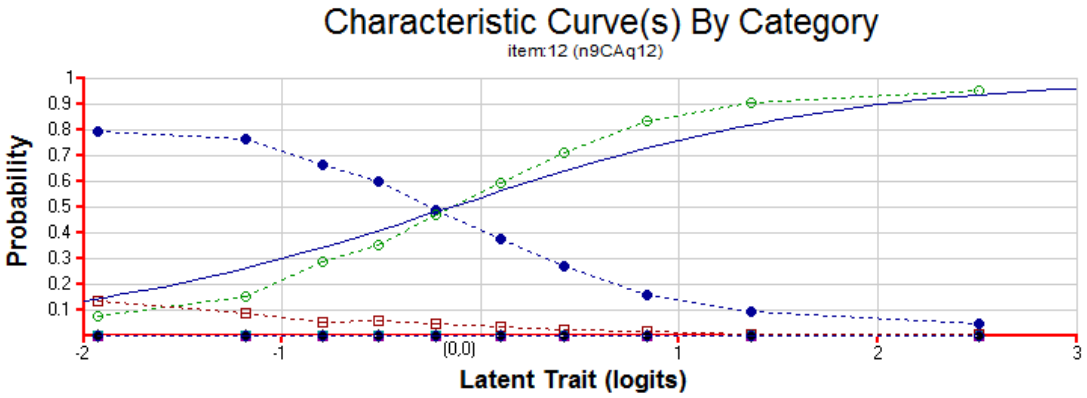

Characteristic Curve(s) By Category
item:7 (n9CAq07)
Probability
Latent Trait (logits)
(0,0)

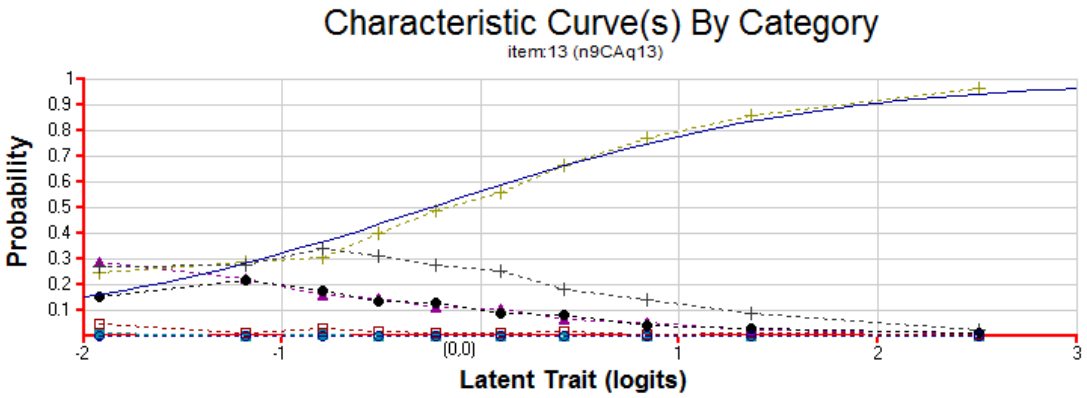

Characteristic Curve(s) By Category
item:8 (n9CAq08)
Probability
Latent Trait (logits)
(0,0)

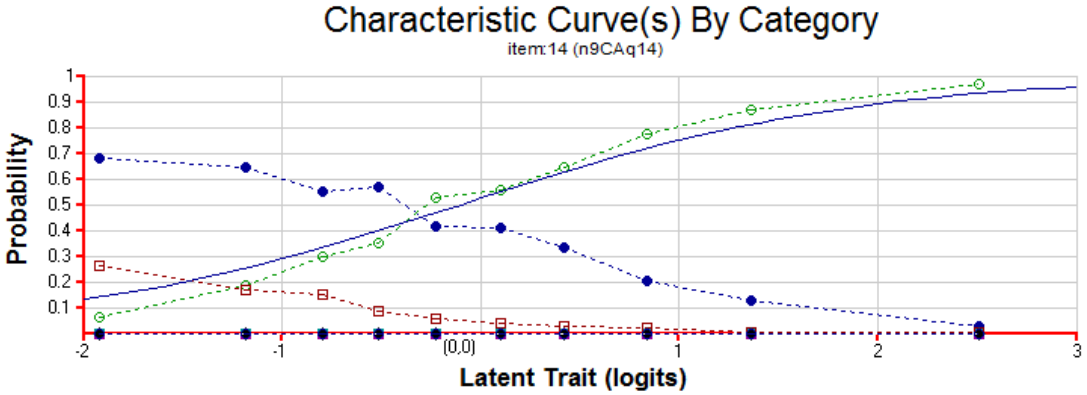

Characteristic Curve(s) By Category
item:9 (n9CAq09)
Probability
Latent Trait (logits)
(0,0)

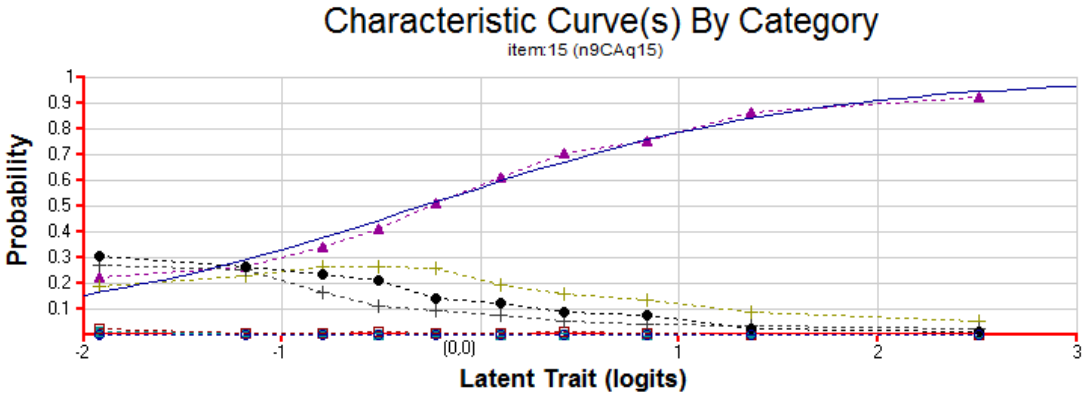

Characteristic Curve(s) By Category
item:10 (n9CAq10)
Probability
Latent Trait (logits)
(0,0)

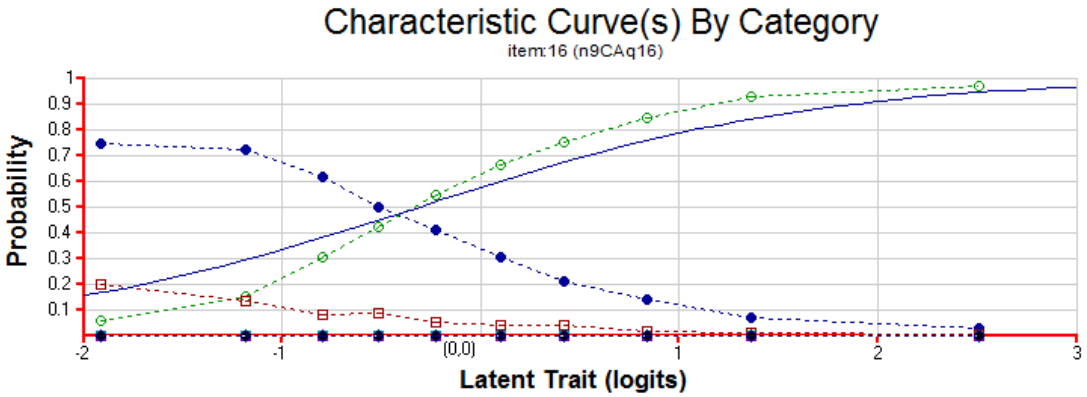

Characteristic Curve(s) By Category
item:11 (n9CAq11)
Probability
Latent Trait (logits)
(0,0)

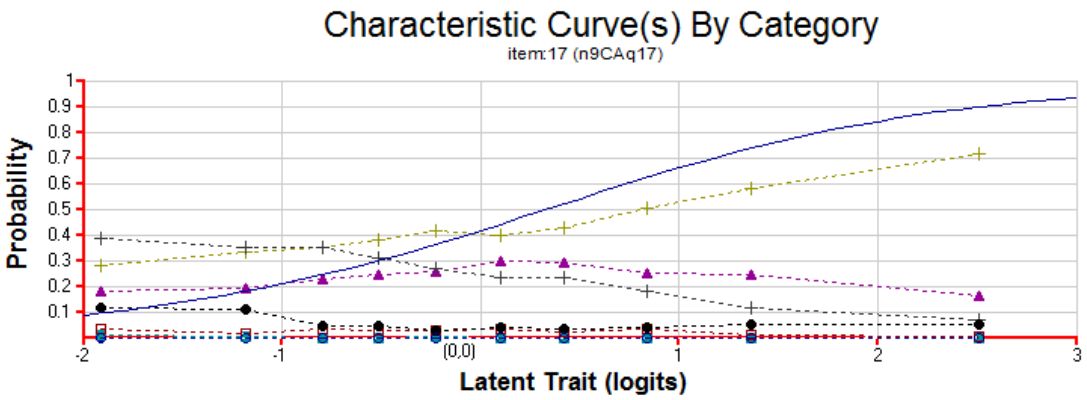

Characteristic Curve(s) By Category
item:12 (n9CAq12)
Probability
Latent Trait (logits)
(0,0)

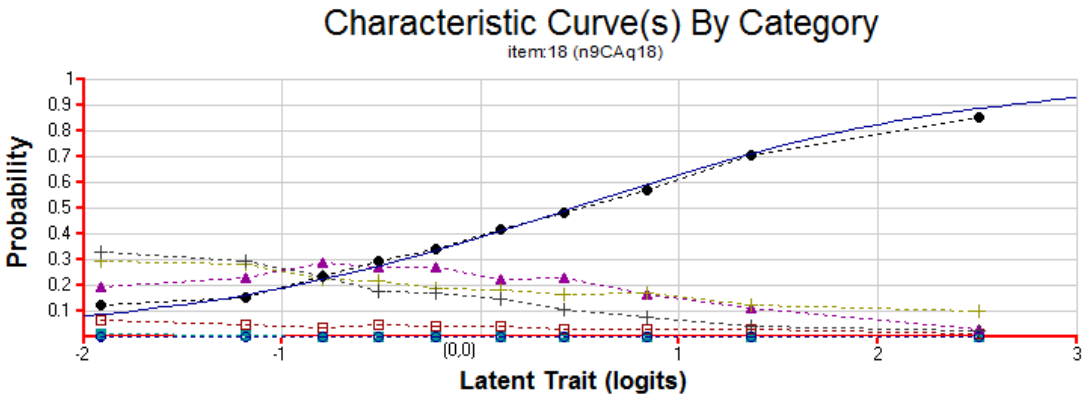

Characteristic Curve(s) By Category
item:13 (n9CAq13)
Probability
Latent Trait (logits)
(0,0)

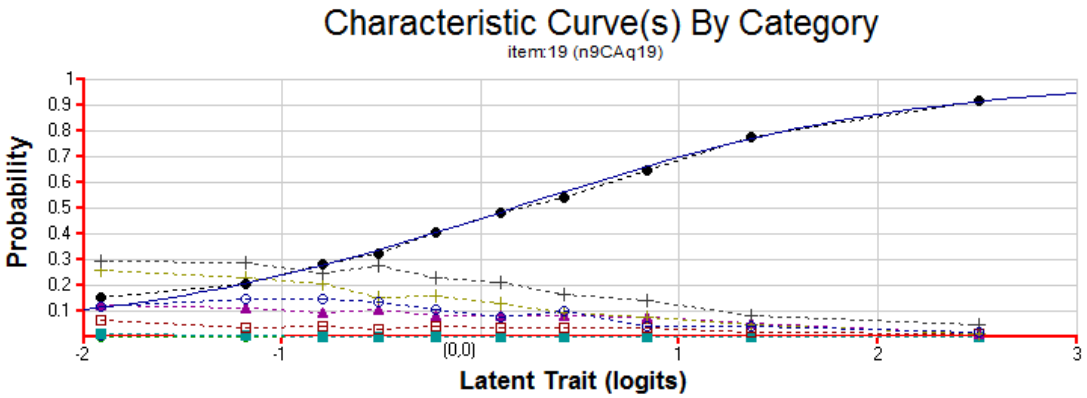

Characteristic Curve(s) By Category
item:14 (n9CAq14)
Probability
Latent Trait (logits)
(0,0)

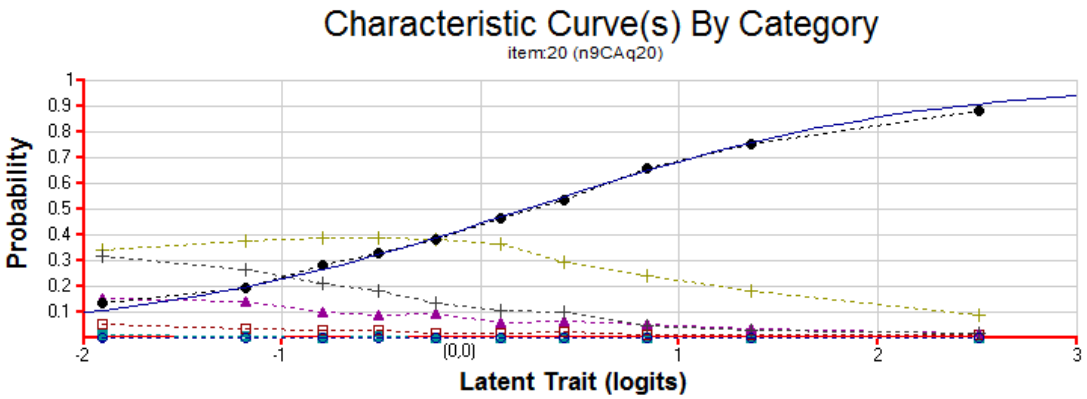

Characteristic Curve(s) By Category
item:15 (n9CAq15)
Probability
Latent Trait (logits)
(0,0)

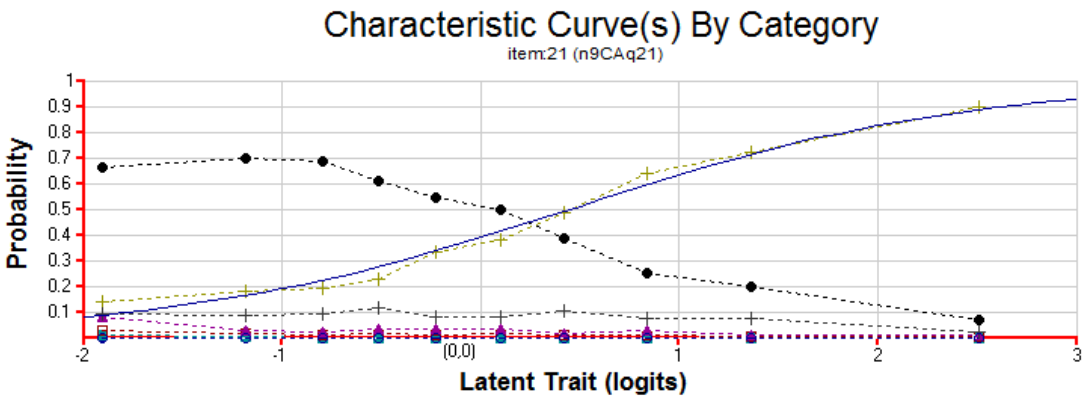

Characteristic Curve(s) By Category
item:16 (n9CAq16)
Probability
Latent Trait (logits)
(0,0)

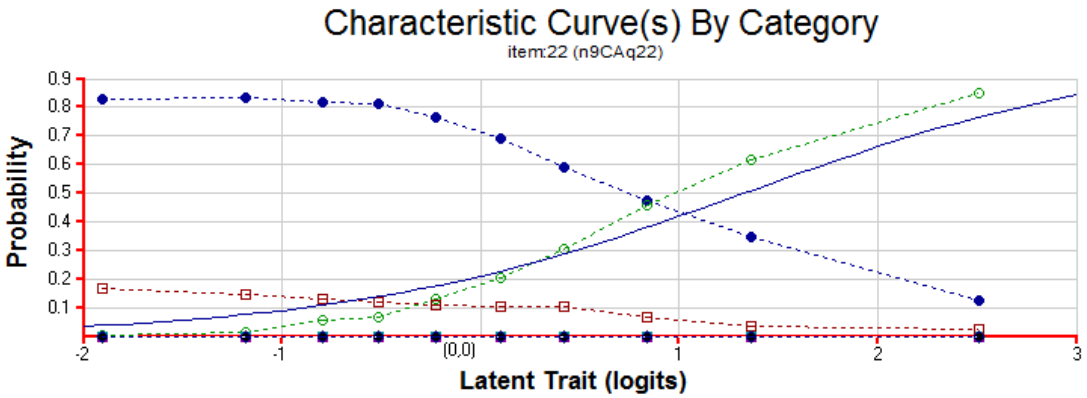

Characteristic Curve(s) By Category
item:17 (n9CAq17)
Probability
Latent Trait (logits)
(0,0)

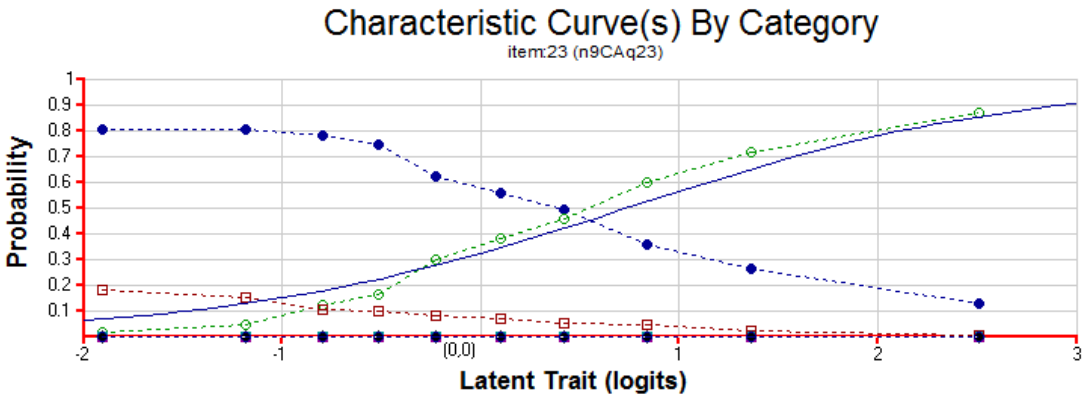

Characteristic Curve(s) By Category
item:18 (n9CAq18)
Probability
Latent Trait (logits)
(0,0)

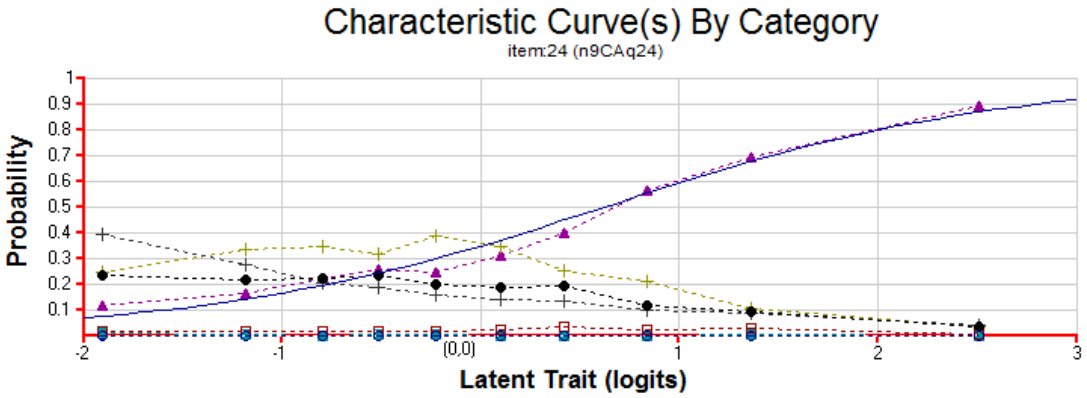

Characteristic Curve(s) By Category
item:19 (n9CAq19)
Probability
Latent Trait (logits)
(0,0)

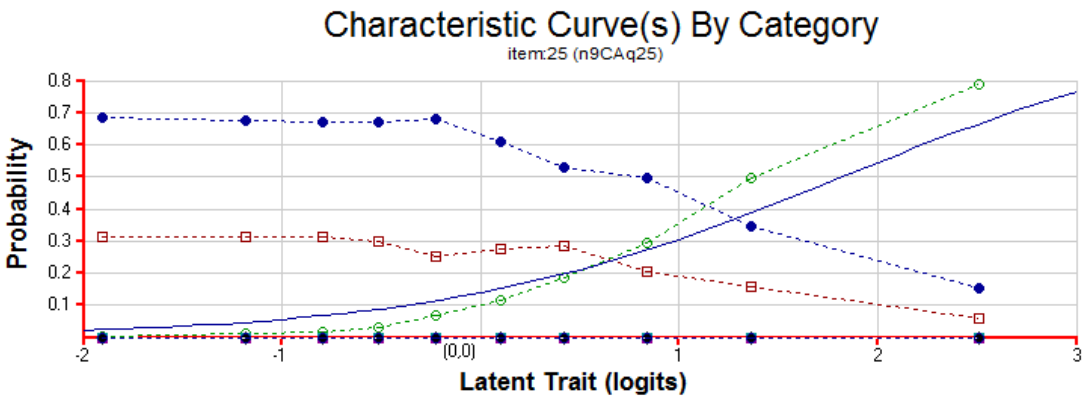

Characteristic Curve(s) By Category
item:20 (n9CAq20)
Probability
Latent Trait (logits)
(0,0)

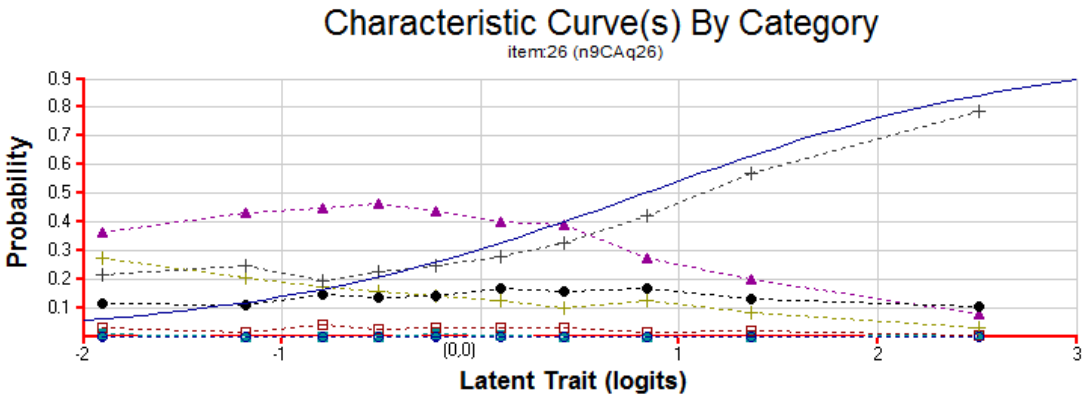

Characteristic Curve(s) By Category
item:21 (n9CAq21)
Probability
Latent Trait (logits)
(0,0)

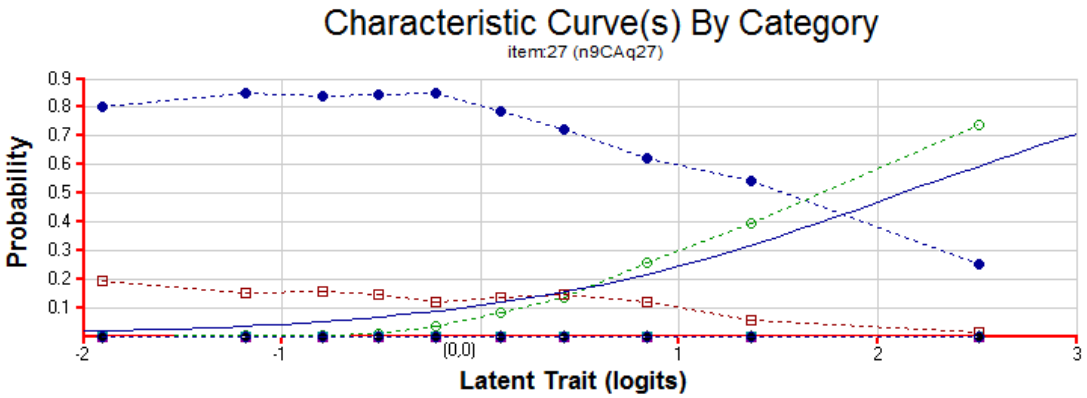

Characteristic Curve(s) By Category
item:22 (n9CAq22)
Probability
Latent Trait (logits)
(0,0)

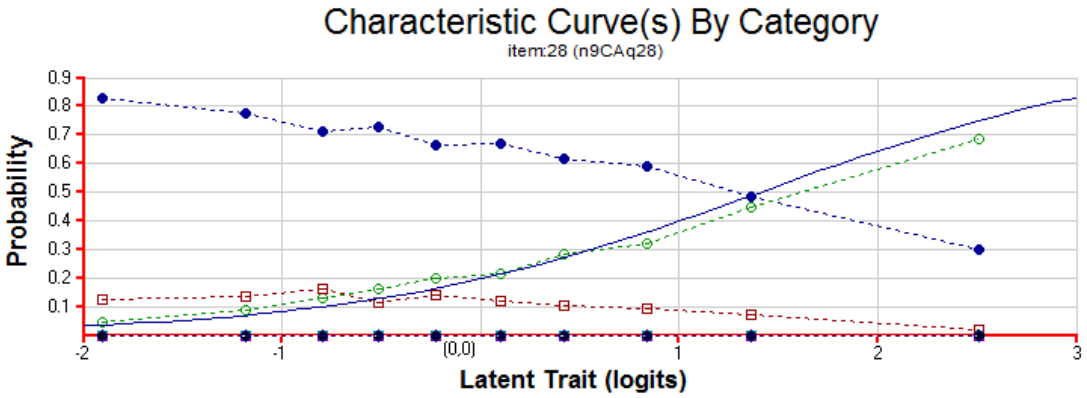

Characteristic Curve(s) By Category
item:23 (n9CAq23)
Probability
Latent Trait (logits)
(0,0)

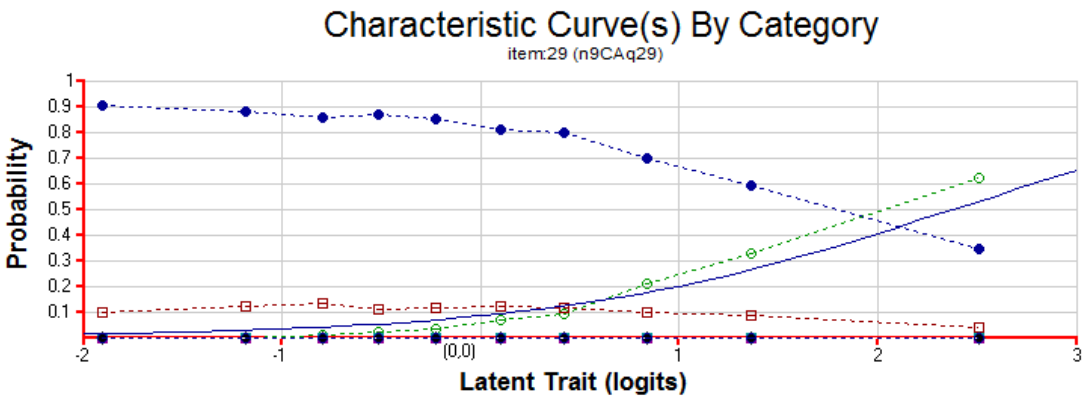

Characteristic Curve(s) By Category
item:24 (n9CAq24)
Probability
Latent Trait (logits)
(0,0)

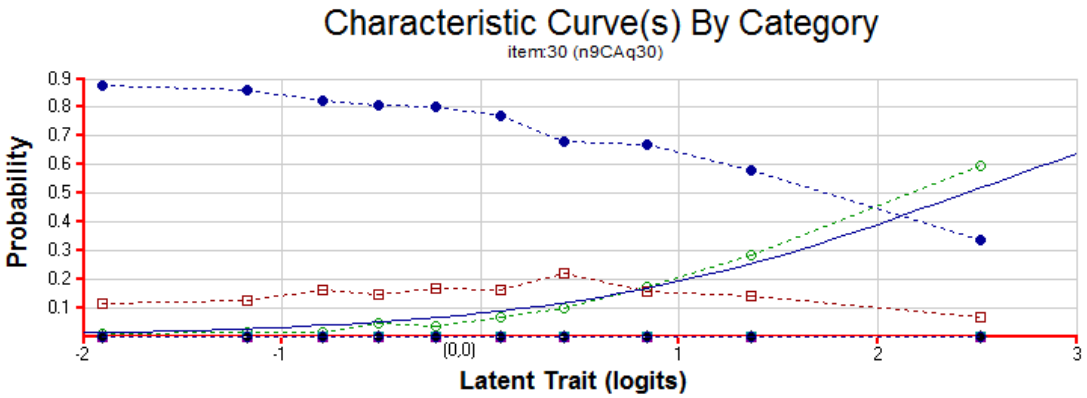

Characteristic Curve(s) By Category
item:25 (n9CAq25)
Probability
Latent Trait (logits)
(0,0)

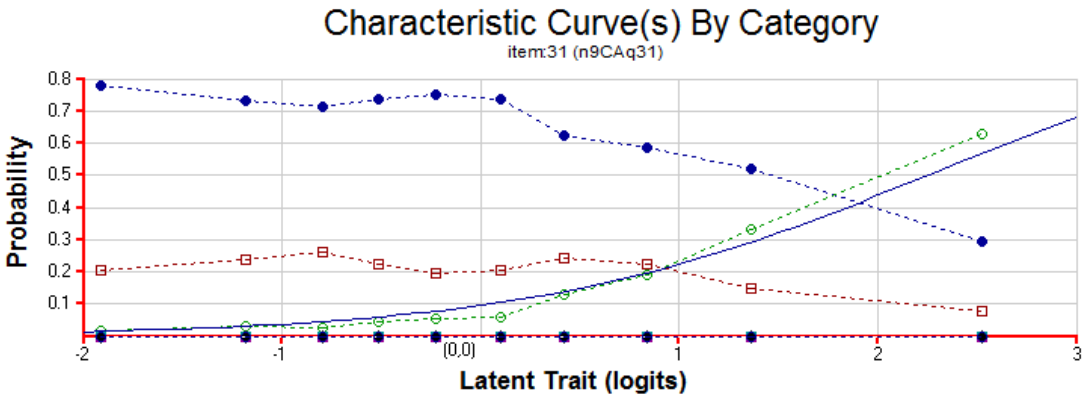

Characteristic Curve(s) By Category
item:26 (n9CAq26)
Probability
Latent Trait (logits)
(0,0)

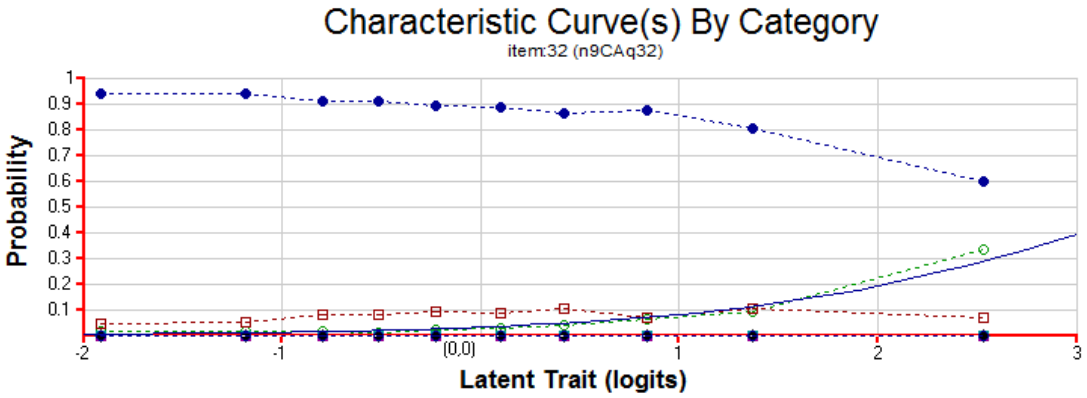

Characteristic Curve(s) By Category
item:27 (n9CAq27)
Probability
Latent Trait (logits)
(0,0)

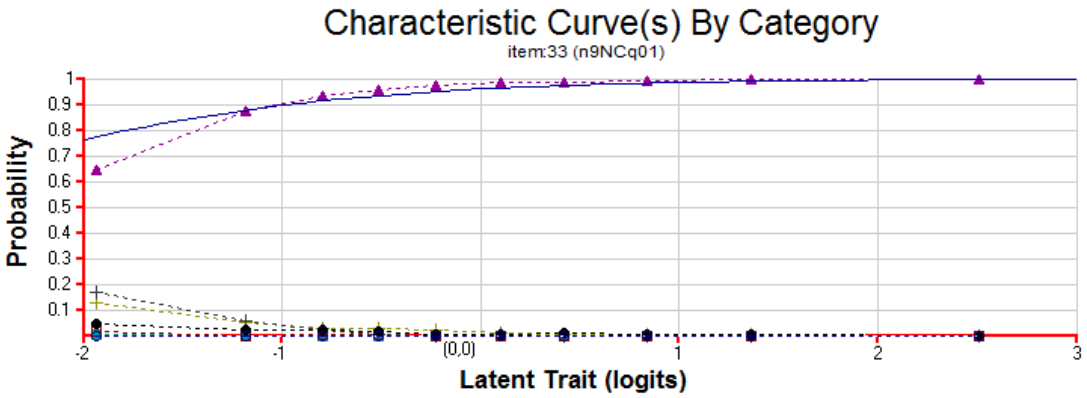

Characteristic Curve(s) By Category
item:28 (n9CAq28)
Probability
Latent Trait (logits)
(0,0)

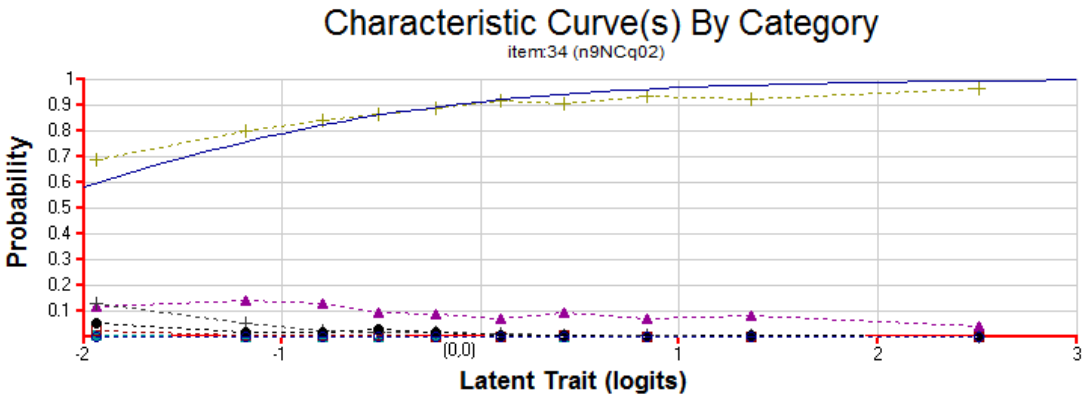

Characteristic Curve(s) By Category
item:29 (n9CAq29)
Probability
Latent Trait (logits)
(0,0)

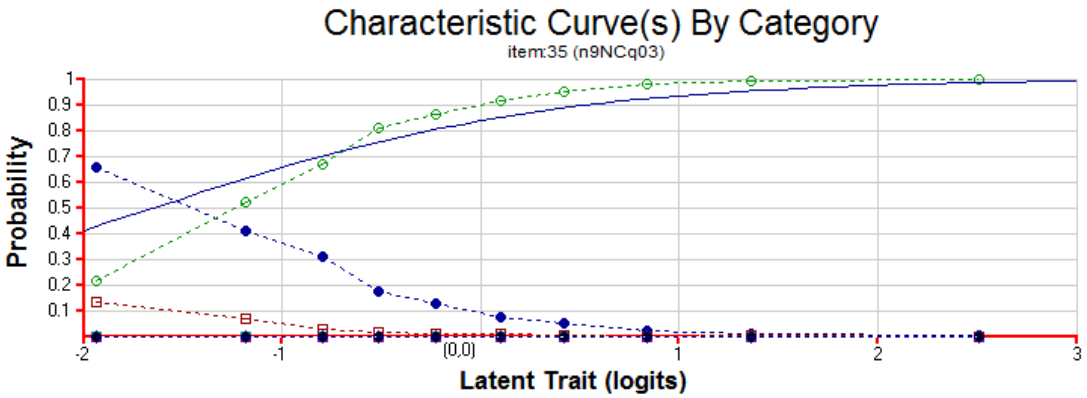

Characteristic Curve(s) By Category
item:30 (n9CAq30)
Probability
Latent Trait (logits)
(0,0)

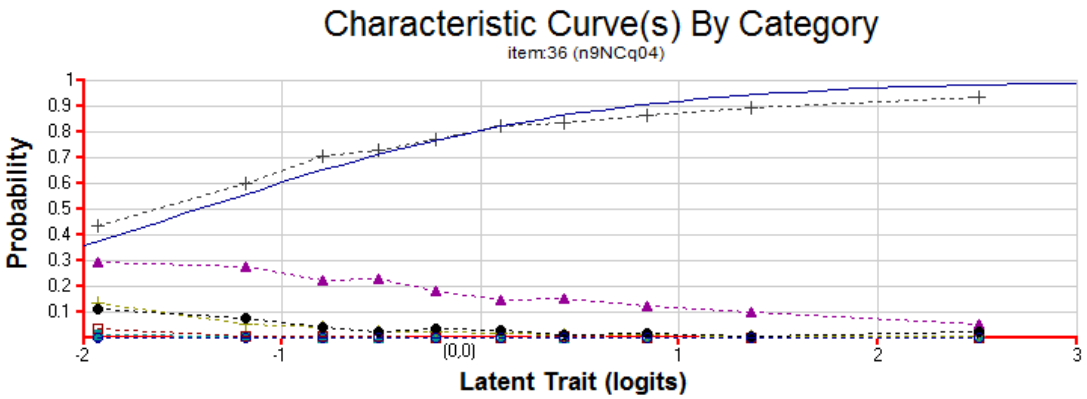

Characteristic Curve(s) By Category
item:31 (n9CAq31)
Probability
Latent Trait (logits)
(0,0)

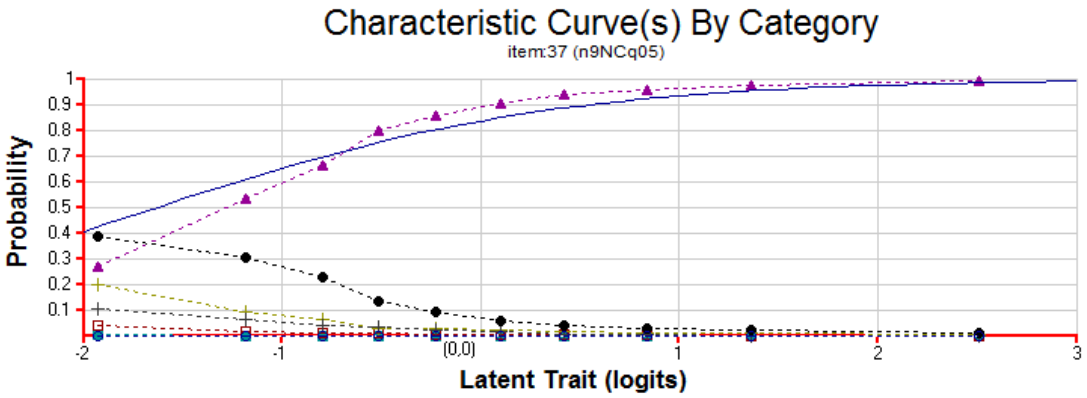

Characteristic Curve(s) By Category
item:32 (n9CAq32)
Probability
Latent Trait (logits)
(0,0)

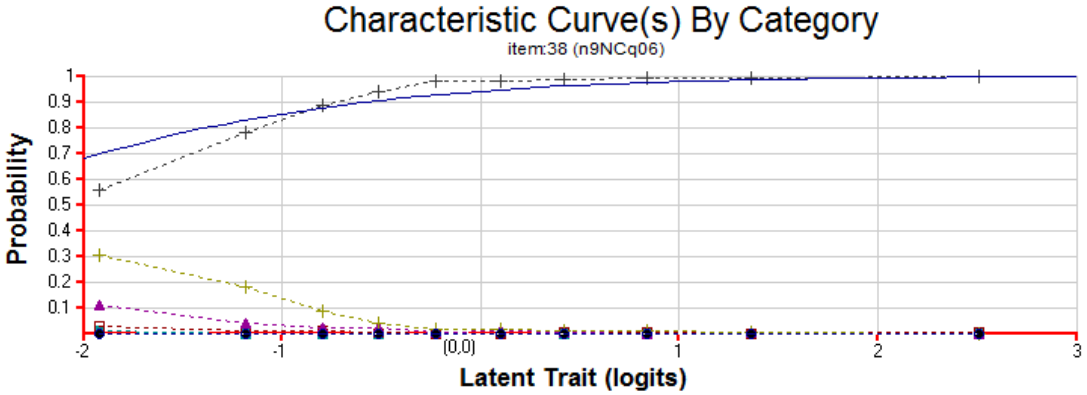

Characteristic Curve(s) By Category
item:33 (n9NCq01)
Probability
Latent Trait (logits)
(0,0)

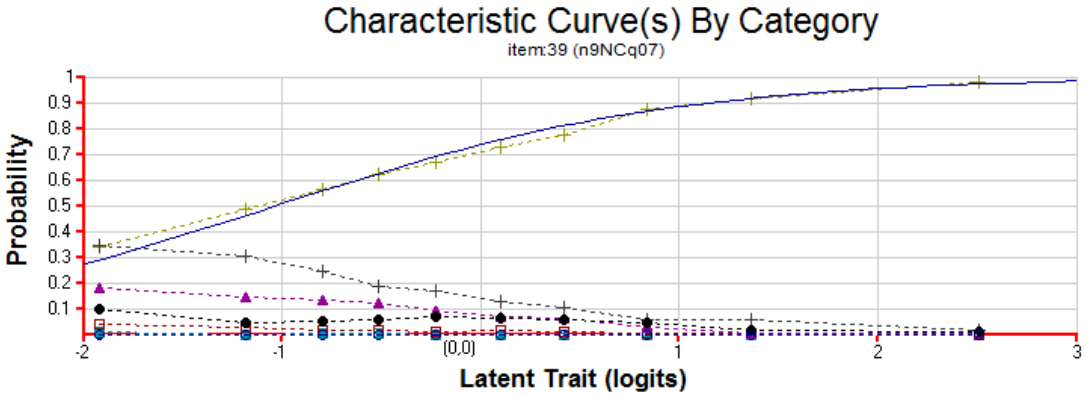

Characteristic Curve(s) By Category
item:34 (n9NCq02)
Probability
Latent Trait (logits)
(0,0)

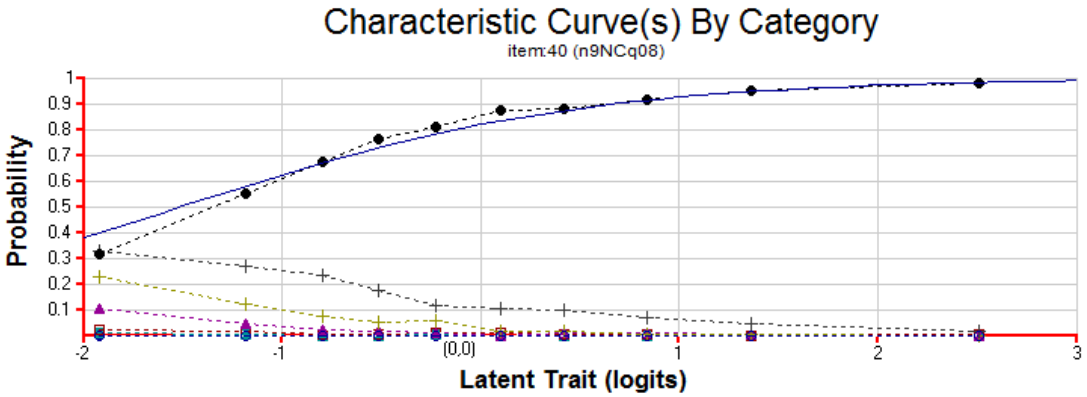

Characteristic Curve(s) By Category
item:35 (n9NCq03)
Probability
Latent Trait (logits)
(0,0)

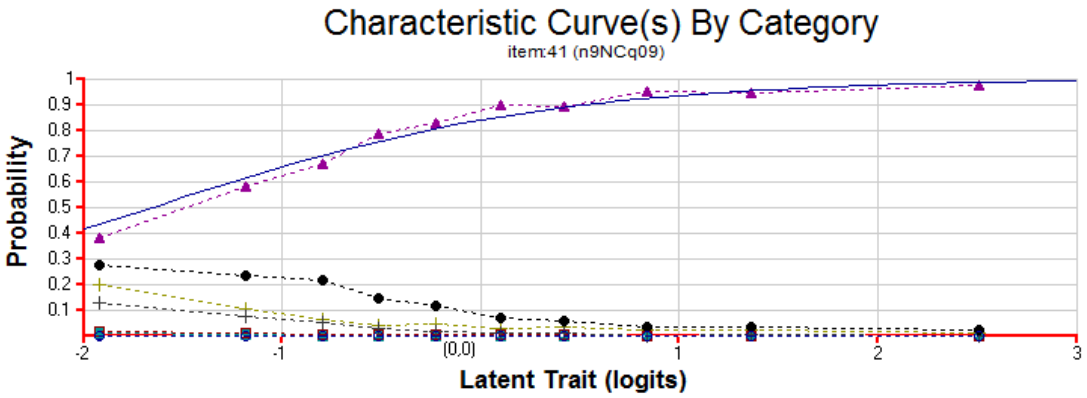

Characteristic Curve(s) By Category
item:36 (n9NCq04)
Probability
Latent Trait (logits)
(0,0)

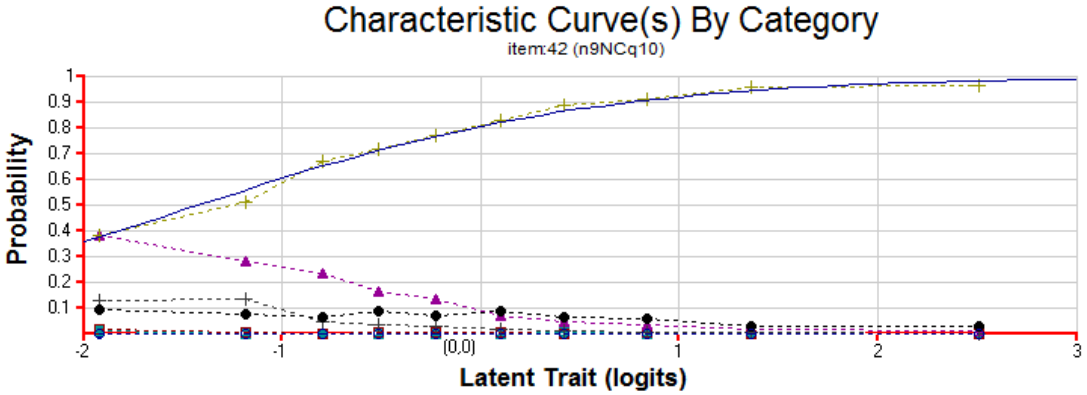

Characteristic Curve(s) By Category
item:37 (n9NCq05)
Probability
Latent Trait (logits)
(0,0)

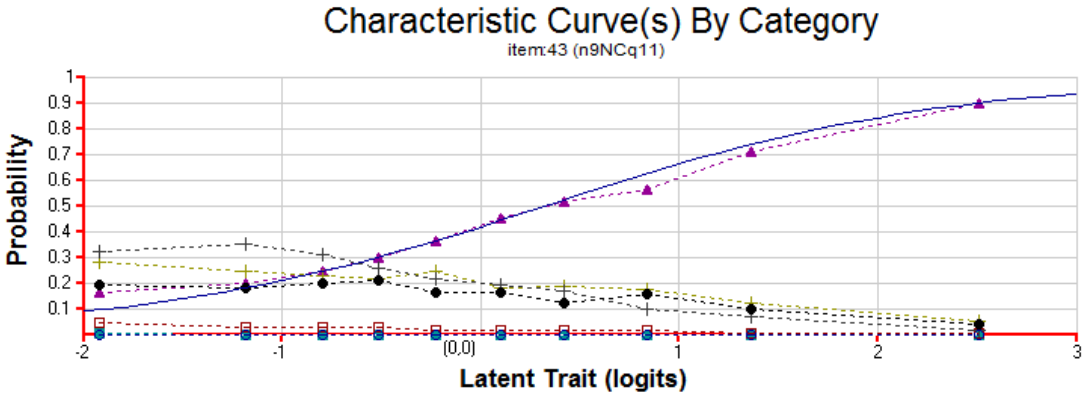

Characteristic Curve(s) By Category
item:38 (n9NCq06)
Probability
Latent Trait (logits)
(0,0)

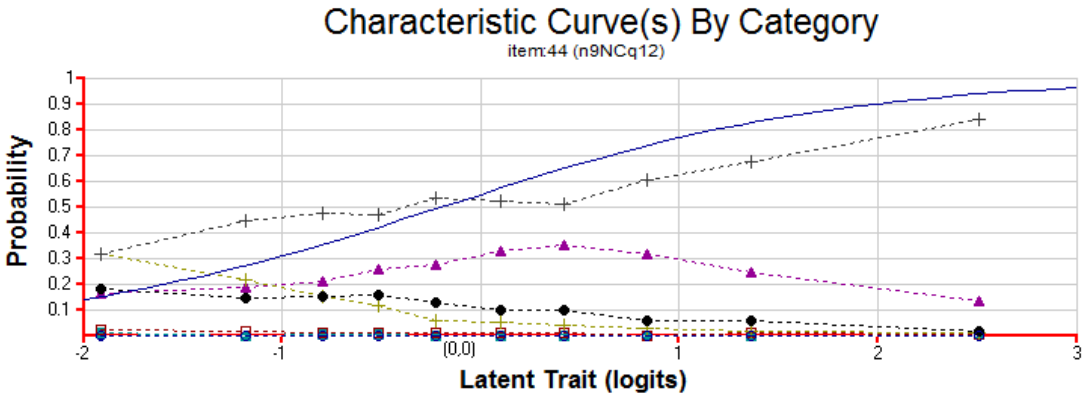

Characteristic Curve(s) By Category
item:39 (n9NCq07)
Probability
Latent Trait (logits)
(0,0)

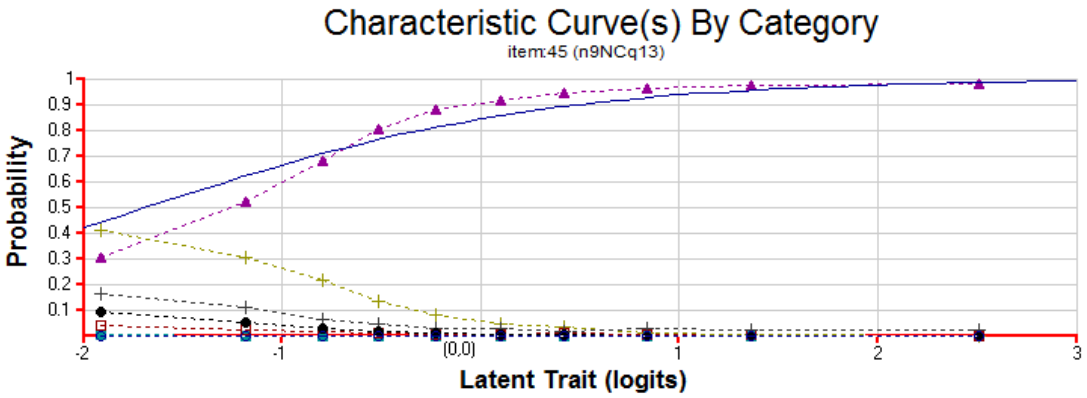

Characteristic Curve(s) By Category
item:40 (n9NCq08)
Probability
Latent Trait (logits)
(0,0)

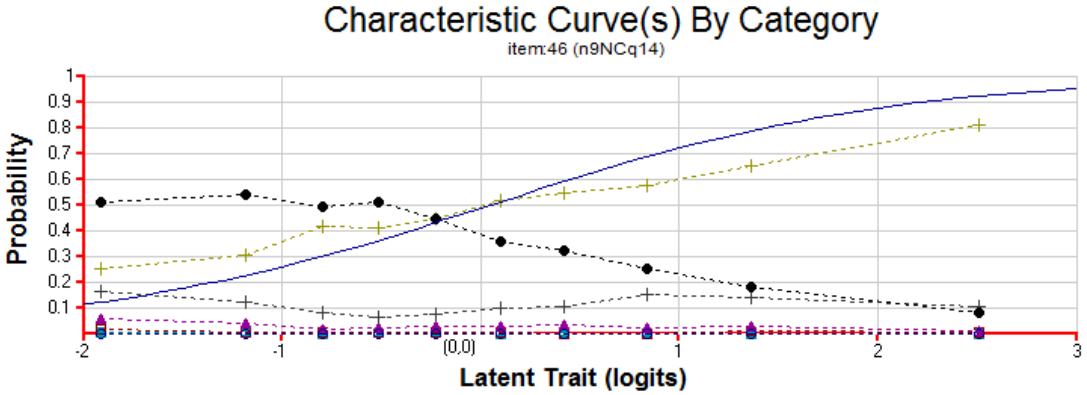

Characteristic Curve(s) By Category
item:41 (n9NCq09)
Probability
Latent Trait (logits)
(0,0)

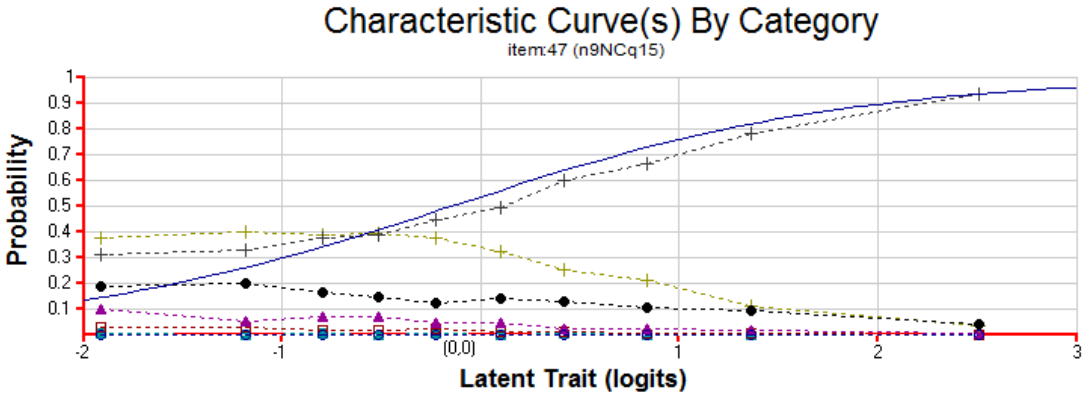

Characteristic Curve(s) By Category
item:42 (n9NCq10)
Probability
Latent Trait (logits)
(0,0)

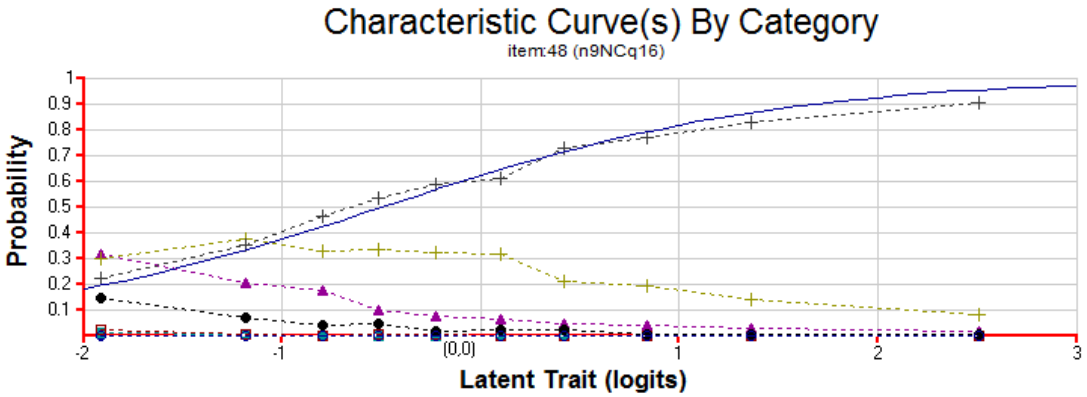

Characteristic Curve(s) By Category
item:43 (n9NCq11)
Probability
Latent Trait (logits)
(0,0)

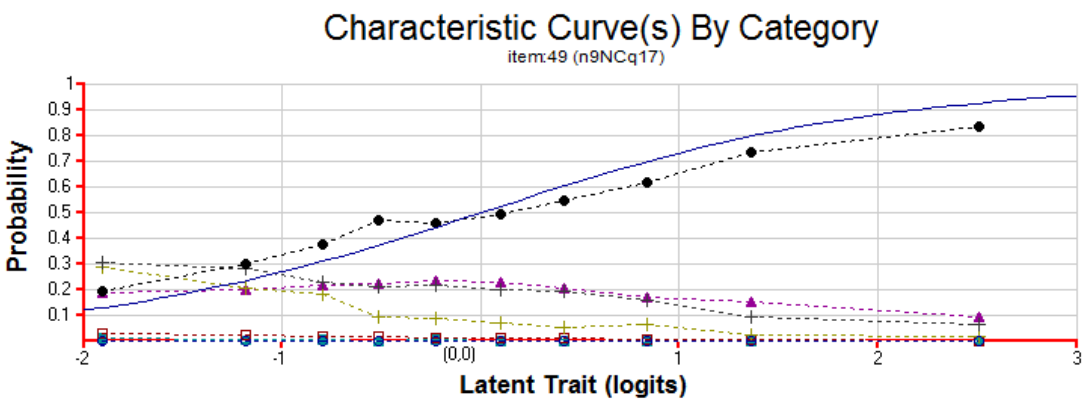

Characteristic Curve(s) By Category
item:44 (n9NCq12)
Probability
Latent Trait (logits)
(0,0)

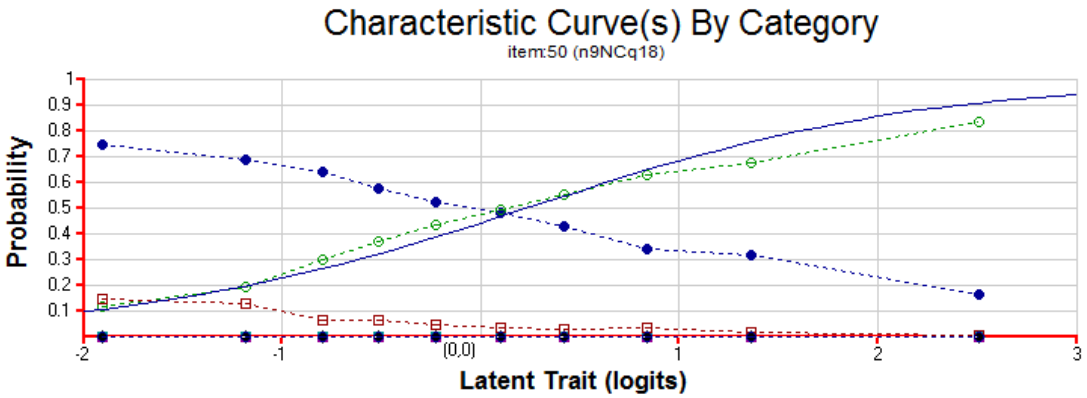

Characteristic Curve(s) By Category
item:45 (n9NCq13)
Probability
Latent Trait (logits)
(0,0)

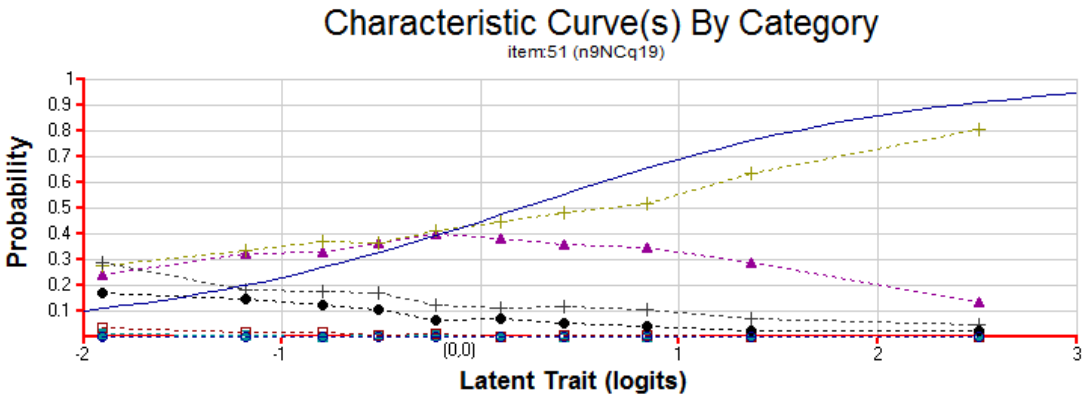

Characteristic Curve(s) By Category
item:46 (n9NCq14)
Probability
Latent Trait (logits)
(0,0)

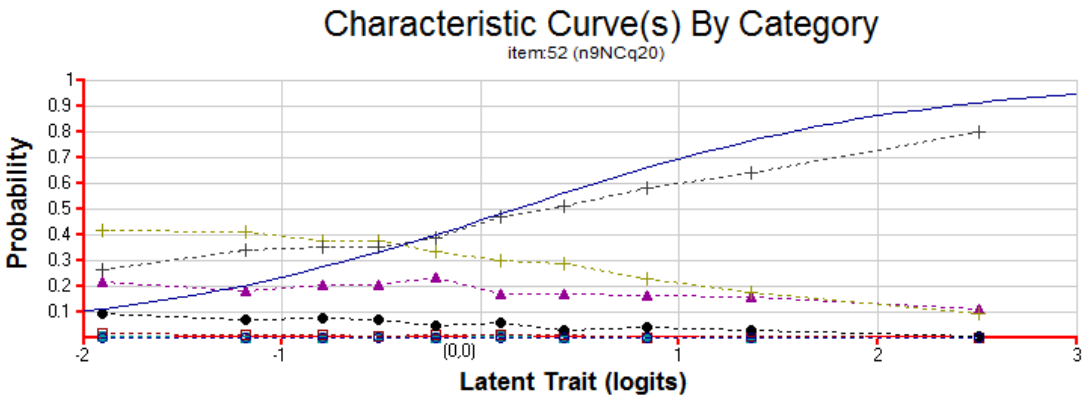

Characteristic Curve(s) By Category
item:47 (n9NCq15)
Probability
Latent Trait (logits)
(0,0)

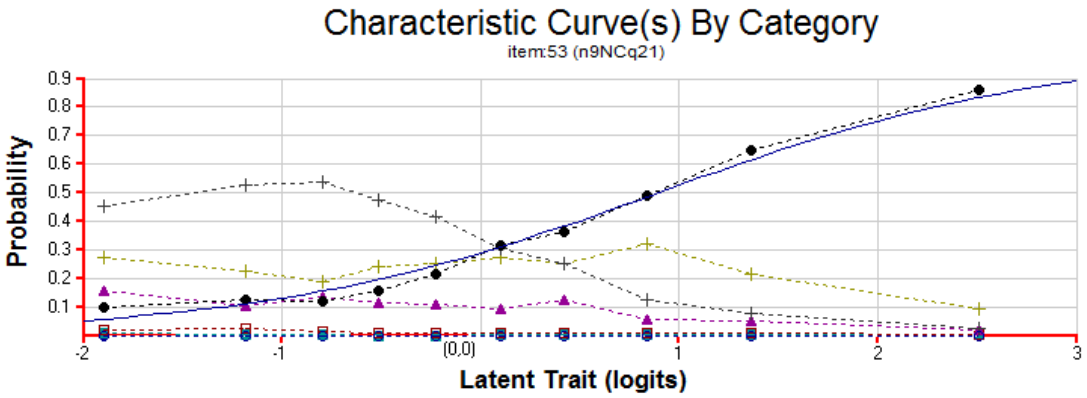

Characteristic Curve(s) By Category
item:48 (n9NCq16)
Probability
Latent Trait (logits)
(0,0)

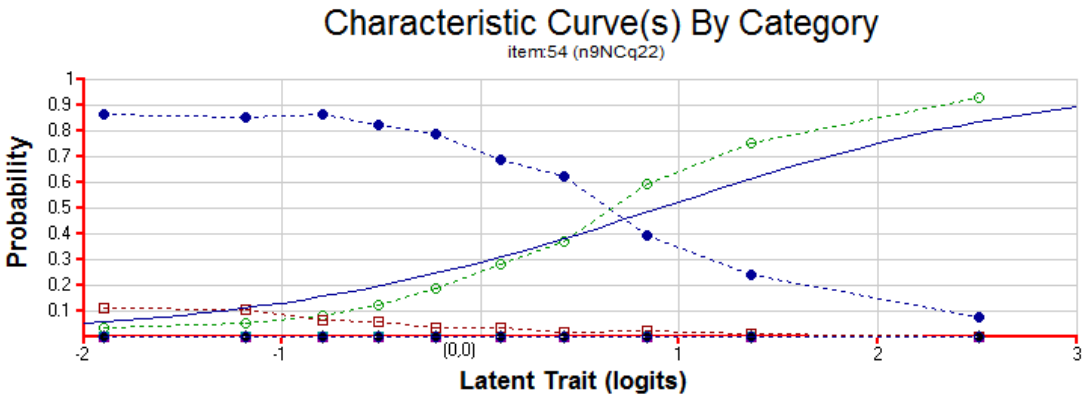

Characteristic Curve(s) By Category
item:49 (n9NCq17)
Probability
Latent Trait (logits)
(0,0)

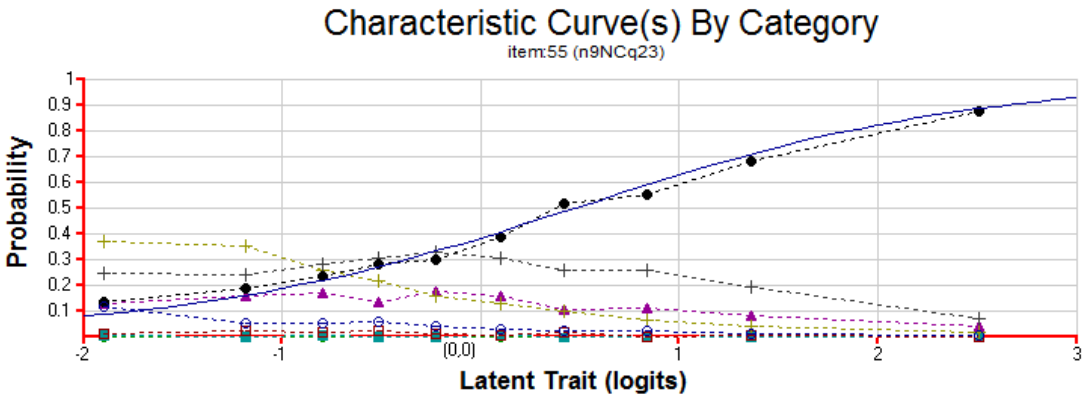

Characteristic Curve(s) By Category
item:50 (n9NCq18)
Probability
Latent Trait (logits)
(0,0)

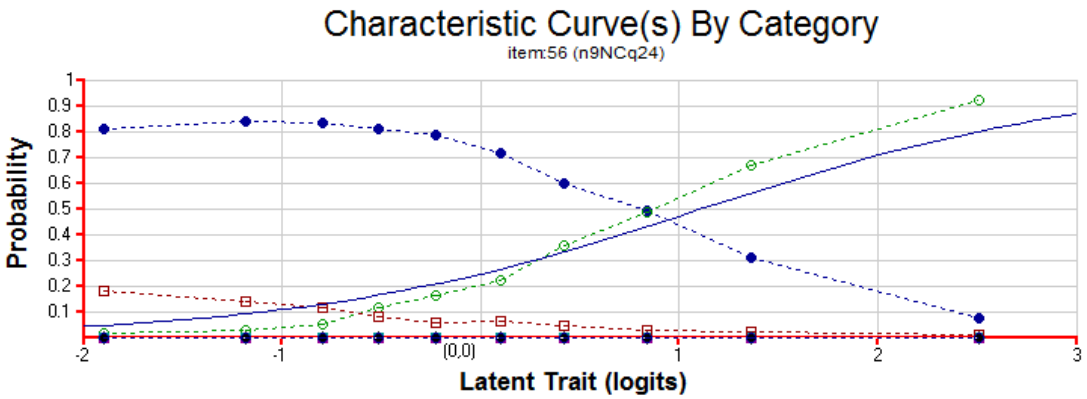

Characteristic Curve(s) By Category
item:51 (n9NCq19)
Probability
Latent Trait (logits)
(0,0)

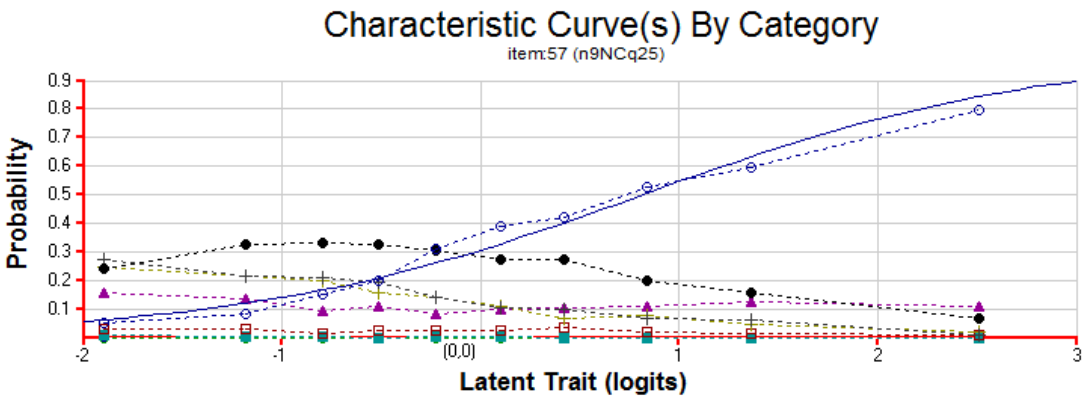

Characteristic Curve(s) By Category
item:52 (n9NCq20)
Probability
Latent Trait (logits)
(0,0)

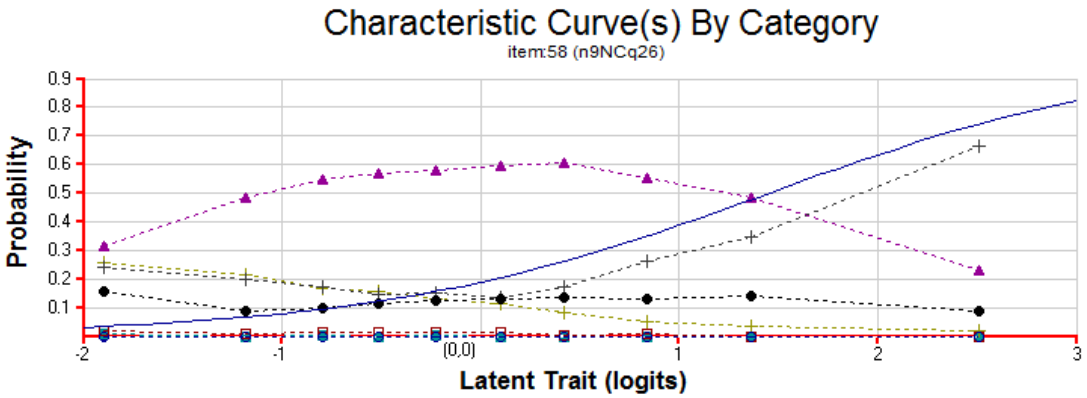

Characteristic Curve(s) By Category
item:53 (n9NCq21)
Probability
Latent Trait (logits)
(0,0)

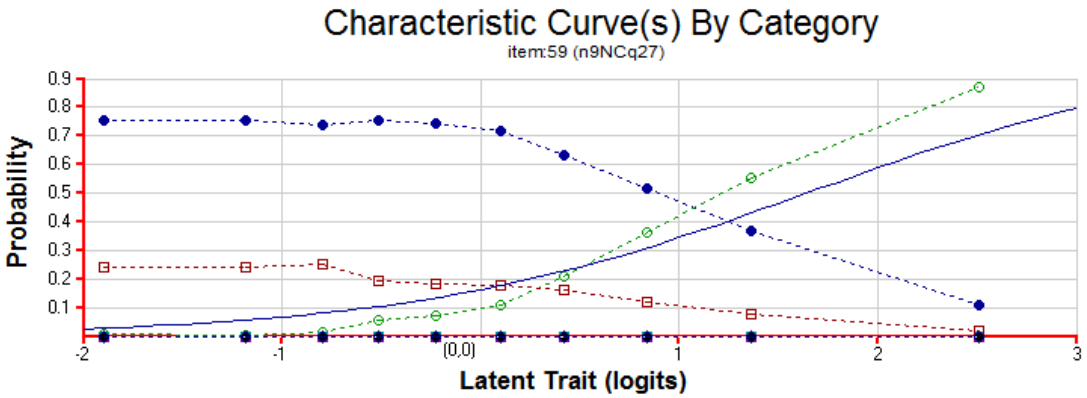

Characteristic Curve(s) By Category
item:54 (n9NCq22)
Probability
Latent Trait (logits)
(0,0)

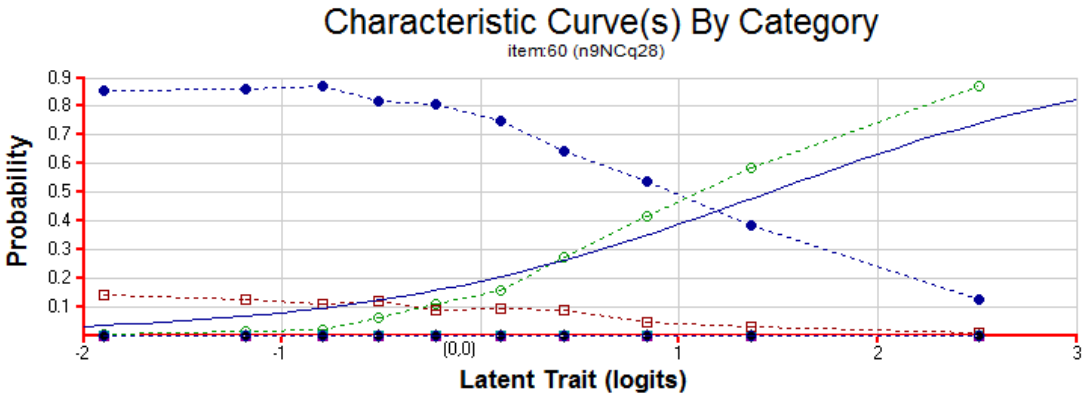

Characteristic Curve(s) By Category
item:55 (n9NCq23)
Probability
Latent Trait (logits)
(0,0)

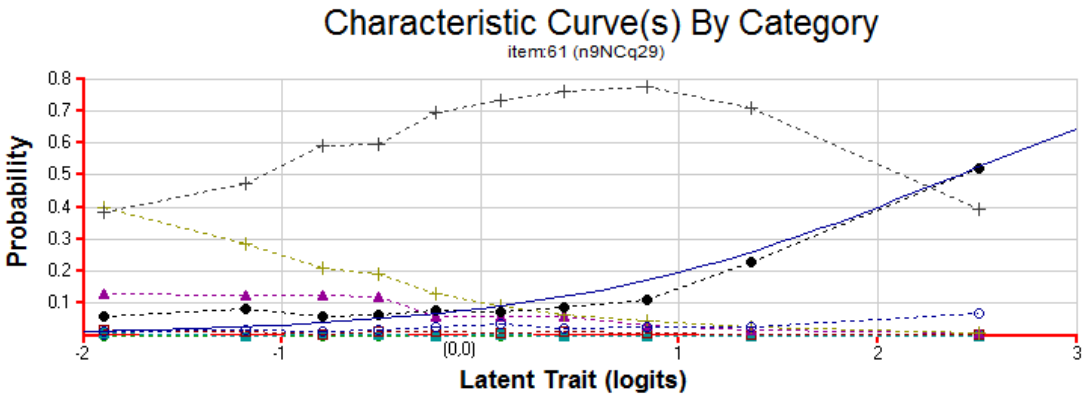

Characteristic Curve(s) By Category
item:56 (n9NCq24)
Probability
Latent Trait (logits)
(0,0)

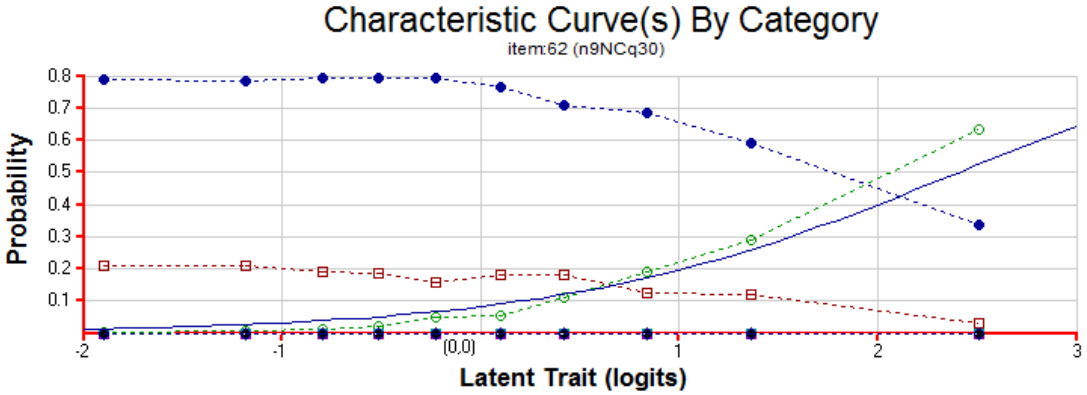

Characteristic Curve(s) By Category
item:57 (n9NCq25)
Probability
Latent Trait (logits)
(0,0)

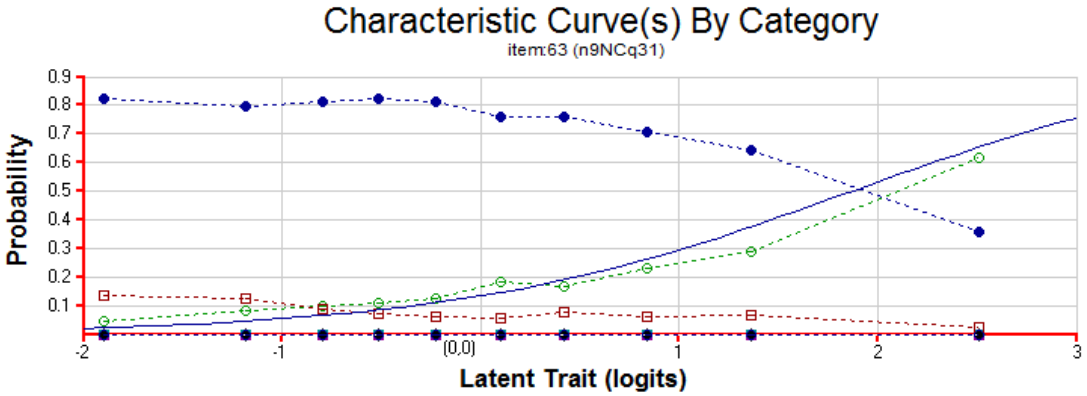

Characteristic Curve(s) By Category
item:58 (n9NCq26)
Probability
Latent Trait (logits)
(0,0)

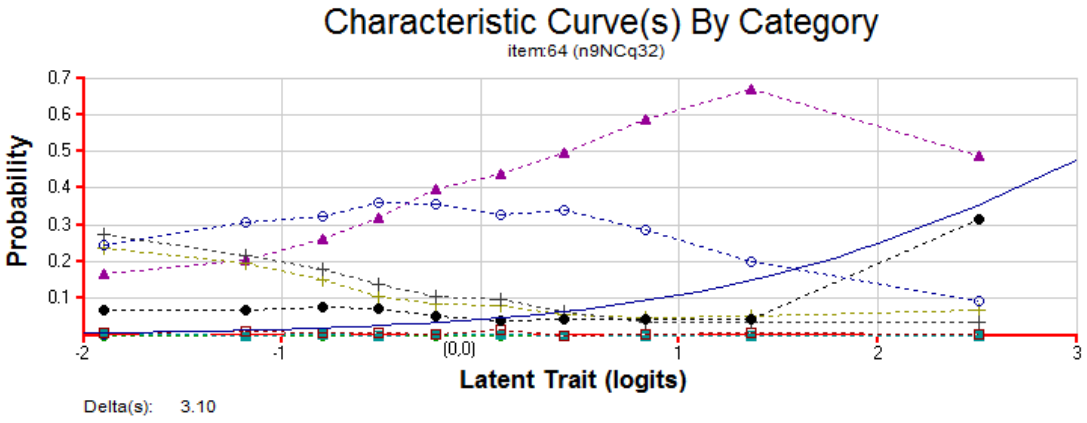

Characteristic Curve(s) By Category
item:59 (n9NCq27)
Probability
Latent Trait (logits)
(0,0)


Characteristic Curve(s) By Category
item:60 (n9NCq28)
Probability
Latent Trait (logits)
(0,0)

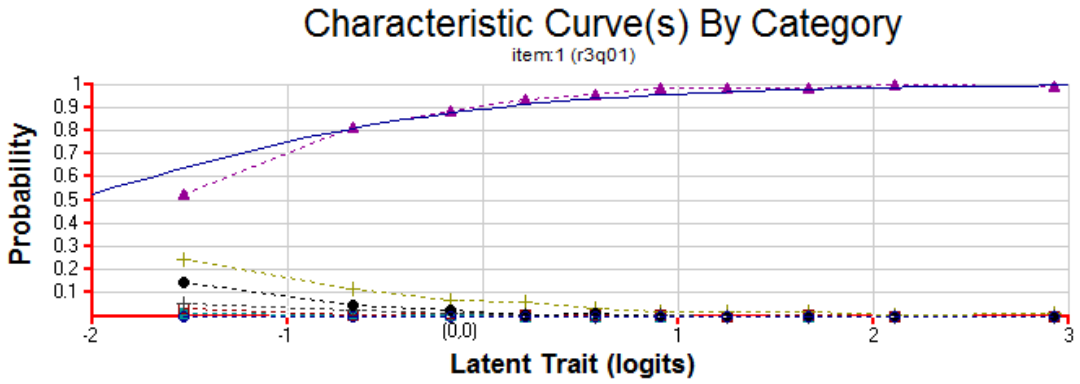

Characteristic Curve(s) By Category
item:61 (n9NCq29)
Probability
Latent Trait (logits)
(0,0)

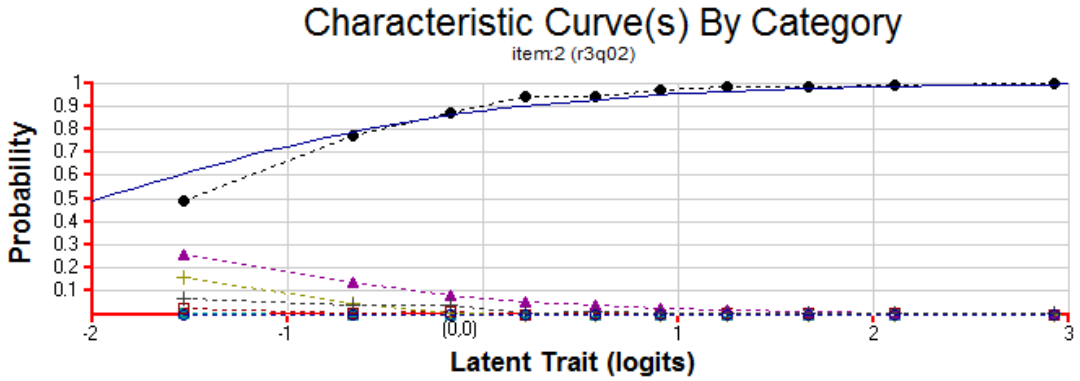

Characteristic Curve(s) By Category
item:62 (n9NCq30)
Probability
Latent Trait (logits)
(0,0)

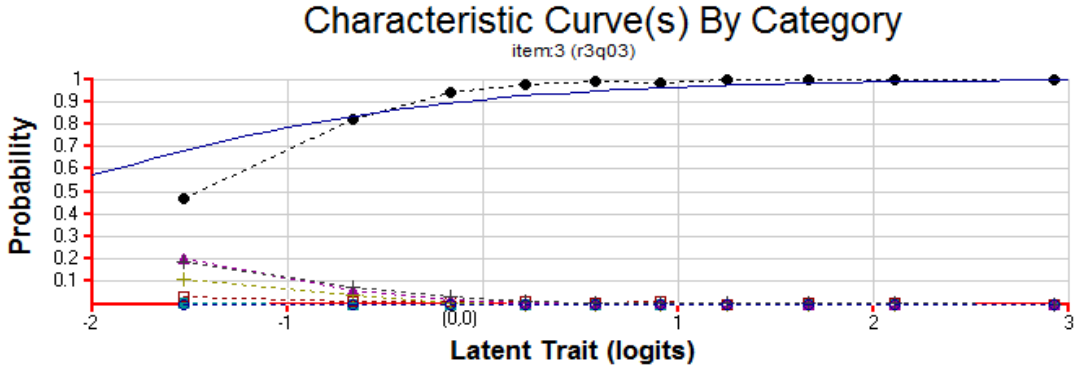

Characteristic Curve(s) By Category
item:63 (n9NCq31)
Probability
Latent Trait (logits)
(0,0)

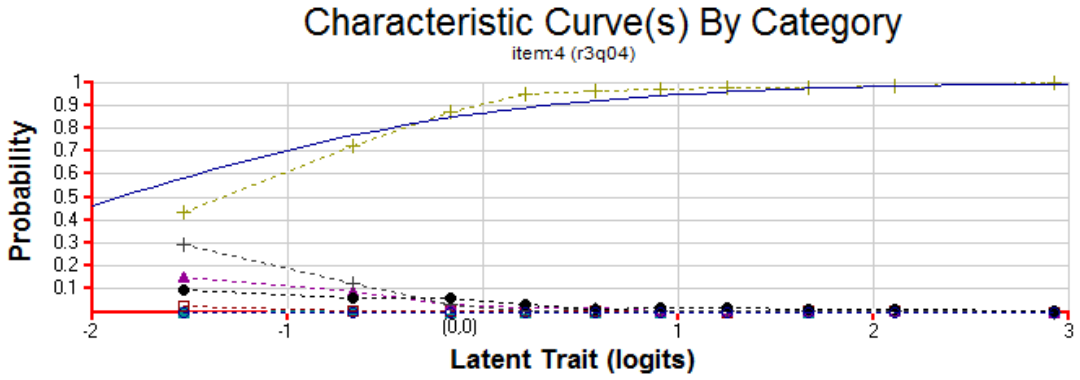

Characteristic Curve(s) By Category
item:64 (n9NCq32)
Probability
Latent Trait (logits)
(0,0)
Delta(s): 3.10

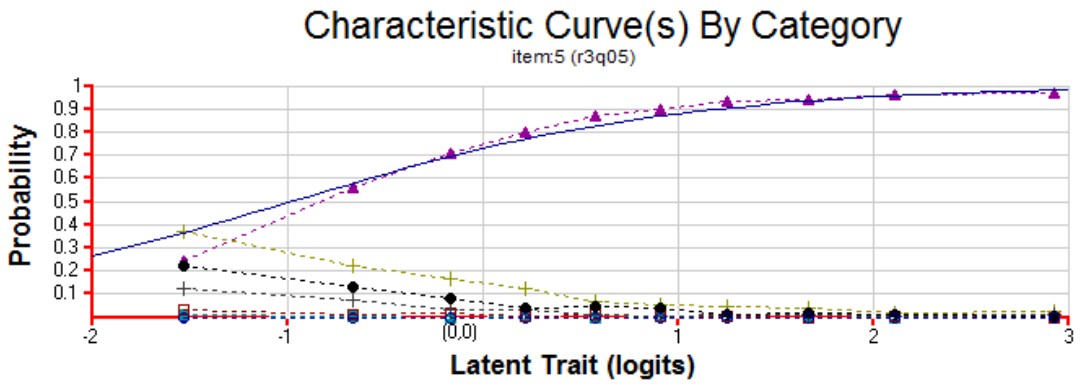
Year 3 Reading

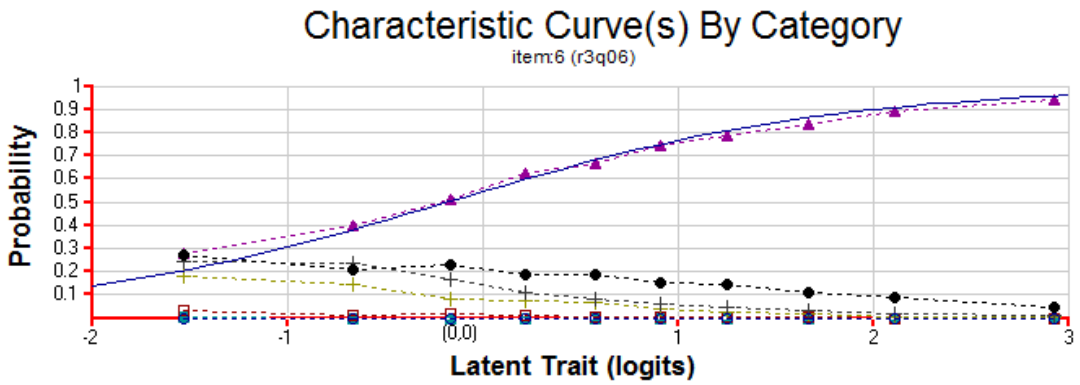


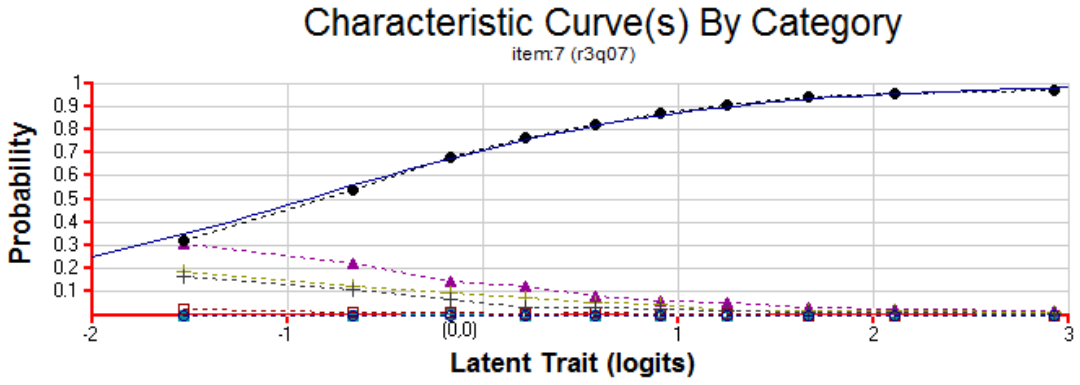


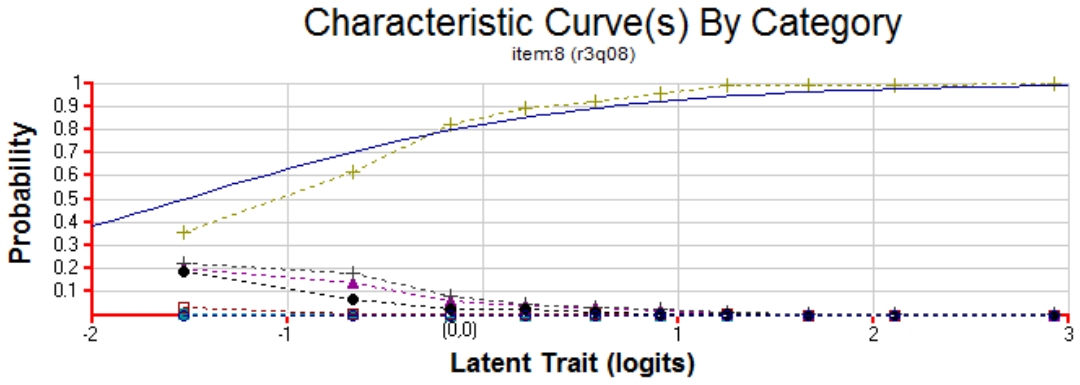


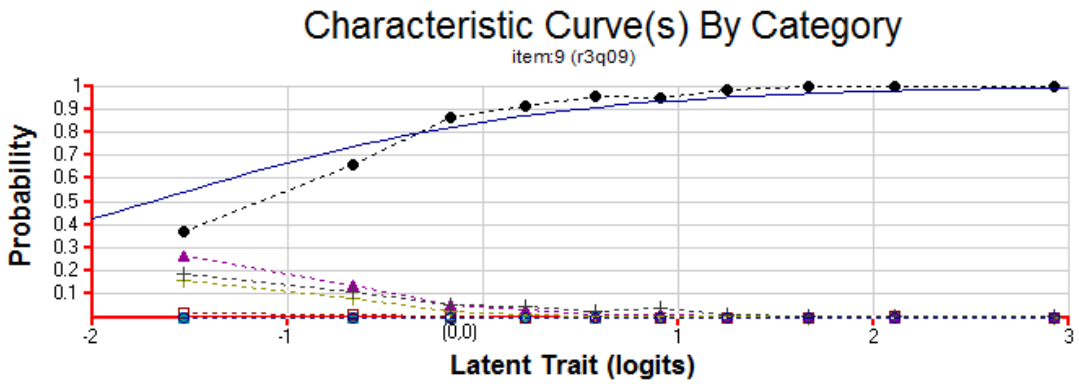


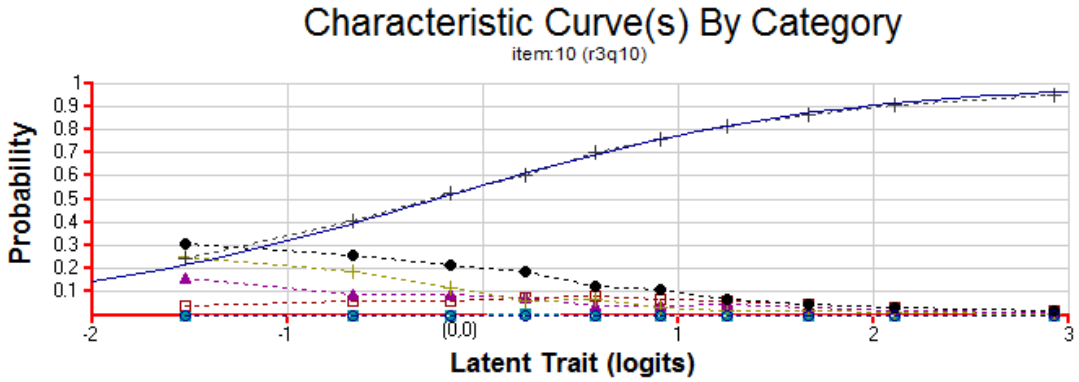

Characteristic Curve(s) By Category
item:5 (r3q05)
Probability
Latent Trait (logits)
(0,0)

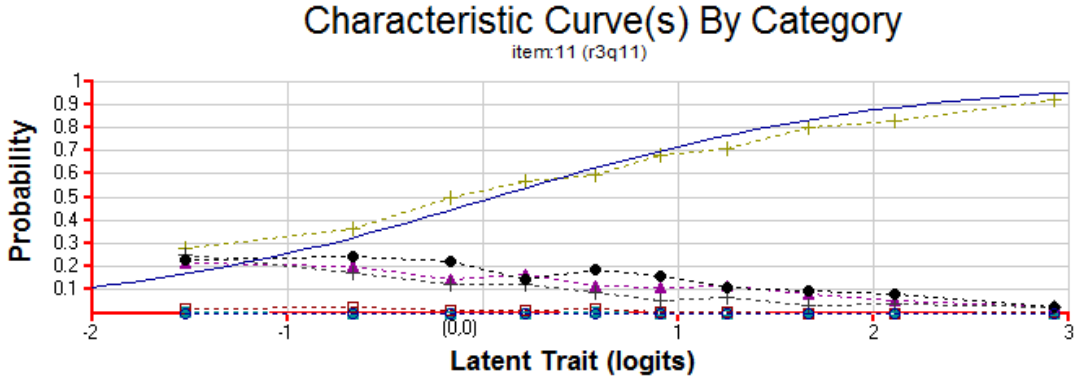

Characteristic Curve(s) By Category
item:6 (r3q06)
Probability
Latent Trait (logits)
(0,0)

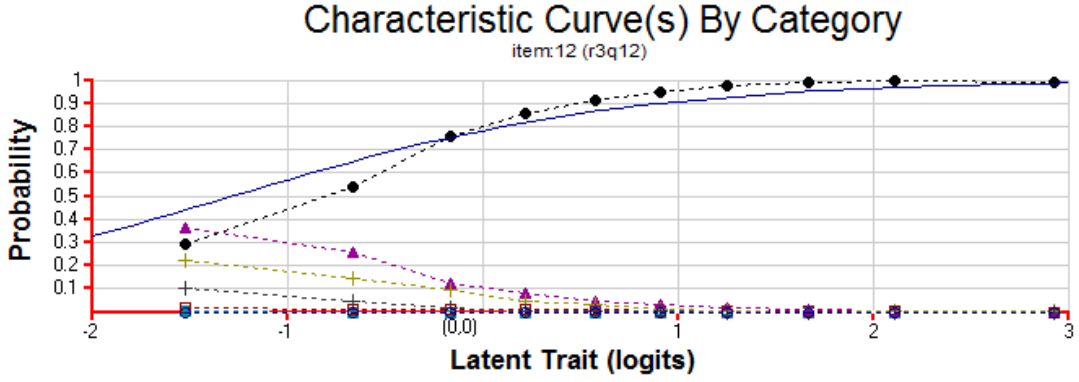

Characteristic Curve(s) By Category
item:7 (r3q07)
Probability
Latent Trait (logits)
(0,0)

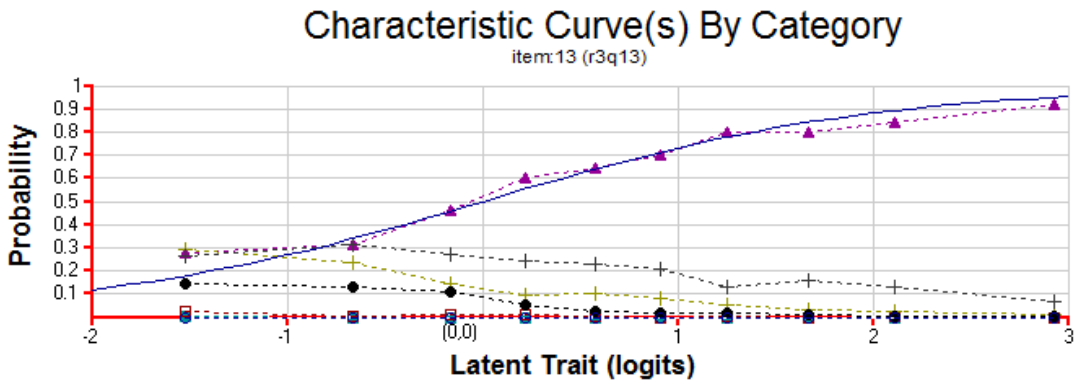

Characteristic Curve(s) By Category
item:8 (r3q08)
Probability
Latent Trait (logits)
(0,0)

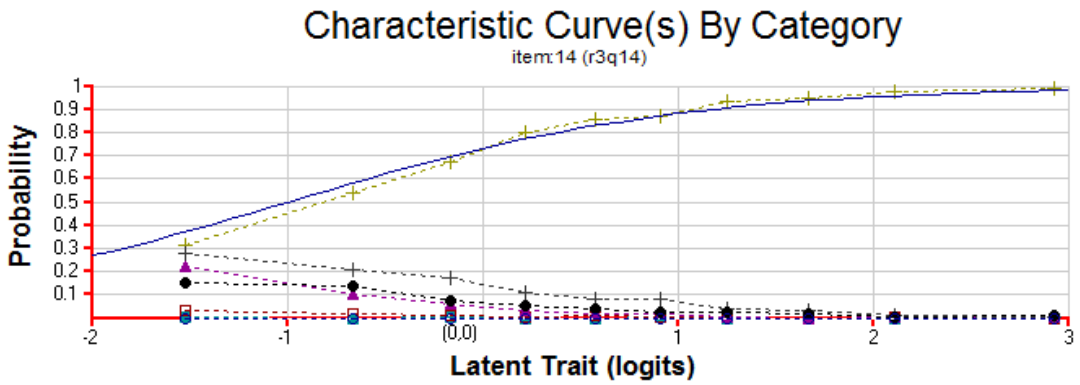

Characteristic Curve(s) By Category
item:9 (r3q09)
Probability
Latent Trait (logits)

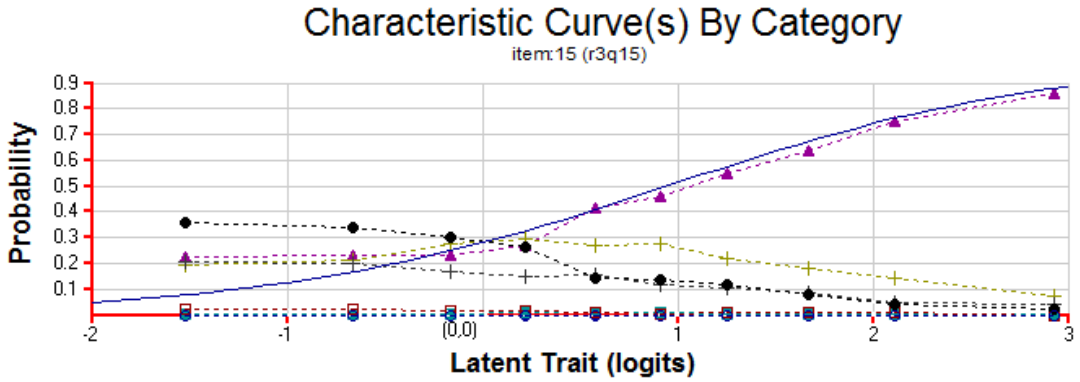

Characteristic Curve(s) By Category
item:10 (r3q10)
Probability
Latent Trait (logits)

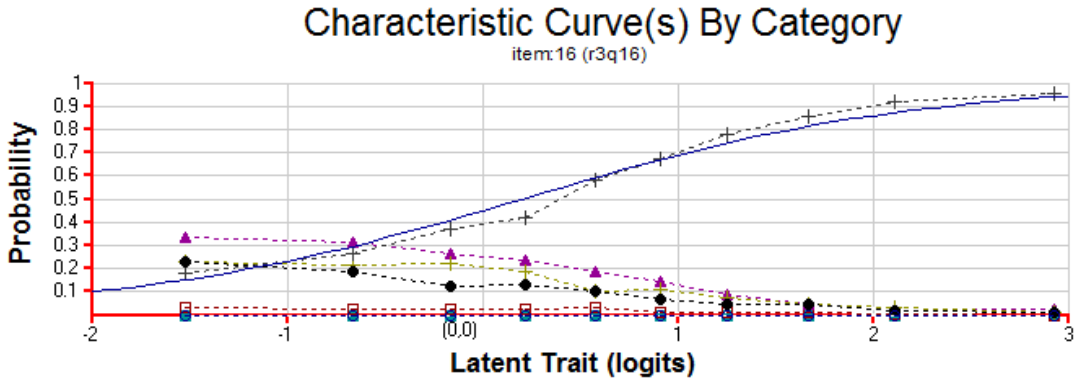

Characteristic Curve(s) By Category
item:11 (r3q11)
Probability
Latent Trait (logits)

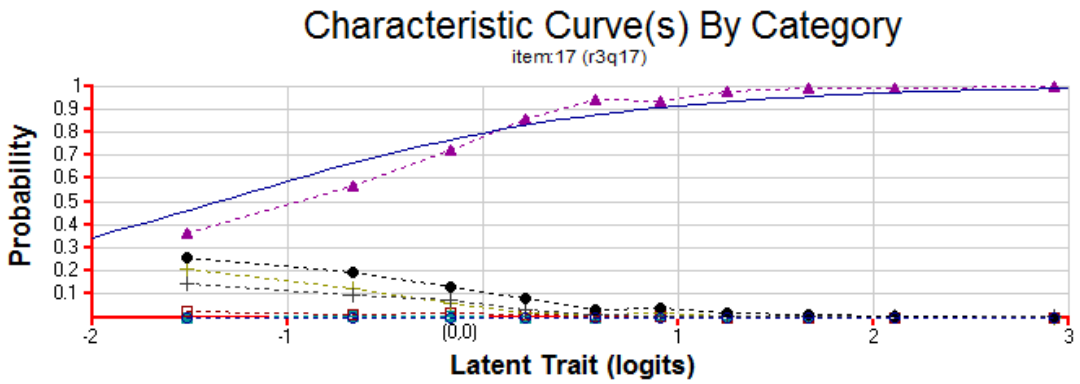

Characteristic Curve(s) By Category
item:12 (r3q12)
Probability
Latent Trait (logits)

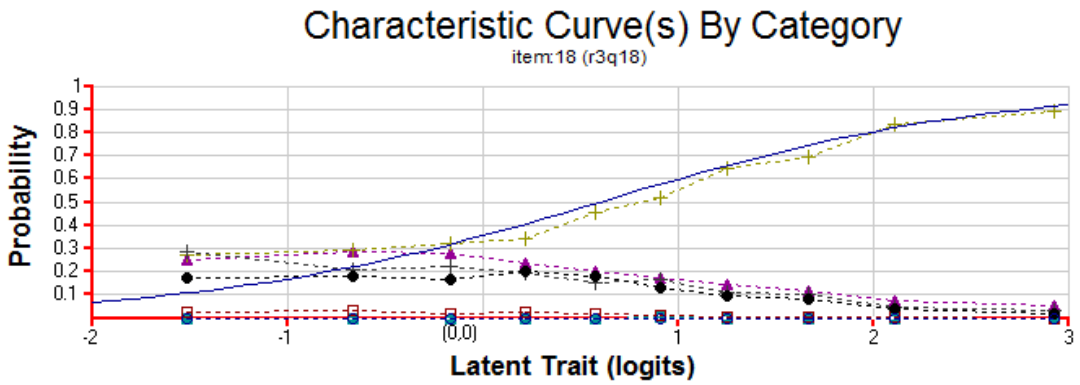

Characteristic Curve(s) By Category
item:13 (r3q13)
Probability
Latent Trait (logits)
(0,0)

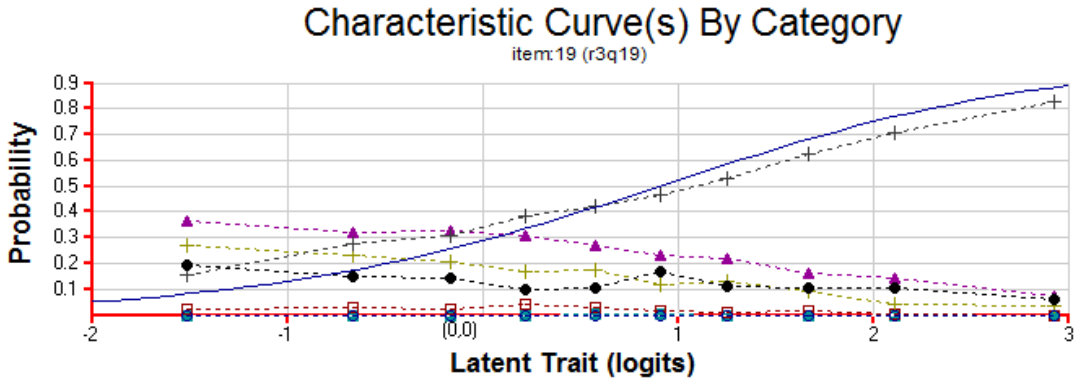

Characteristic Curve(s) By Category
item:14 (r3q14)
Probability
Latent Trait (logits)
(0,0)

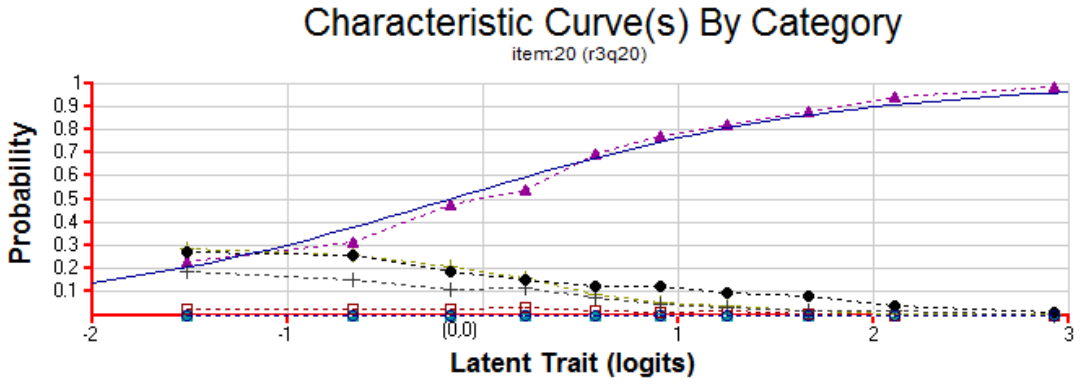

Characteristic Curve(s) By Category
item:15 (r3q15)
Probability
Latent Trait (logits)
(0,0)

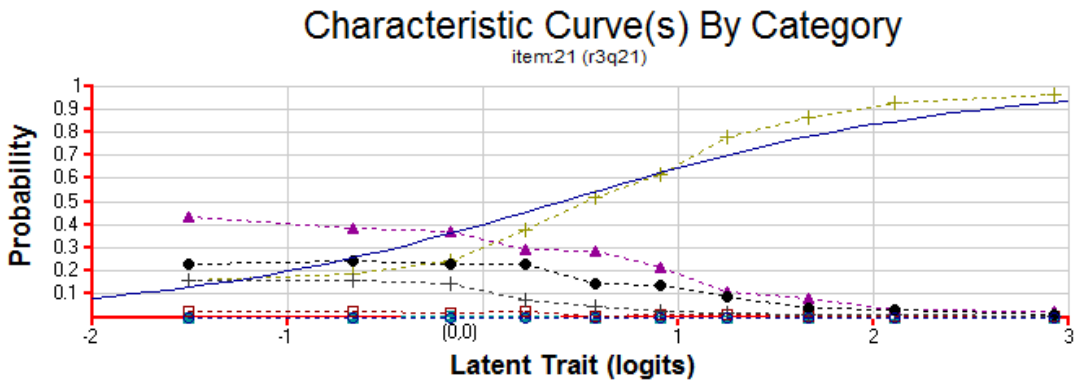

Characteristic Curve(s) By Category
item:16 (r3q16)
Probability
Latent Trait (logits)
(0,0)

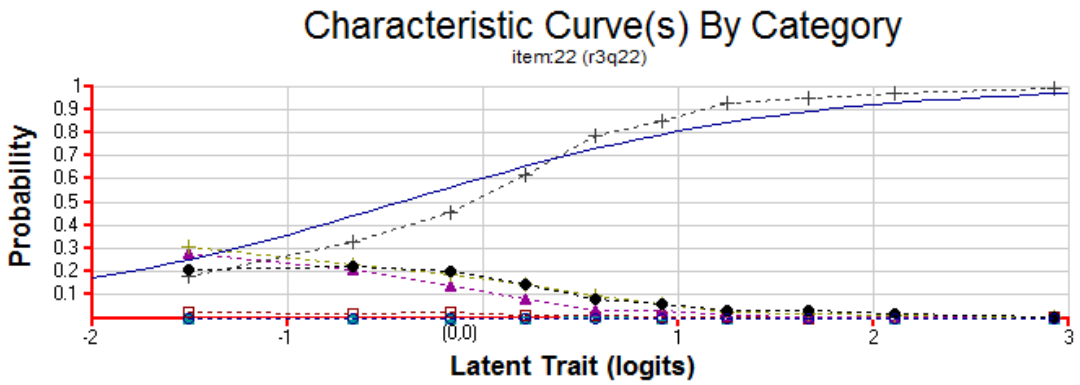

Characteristic Curve(s) By Category
item:17 (r3q17)
Probability
Latent Trait (logits)

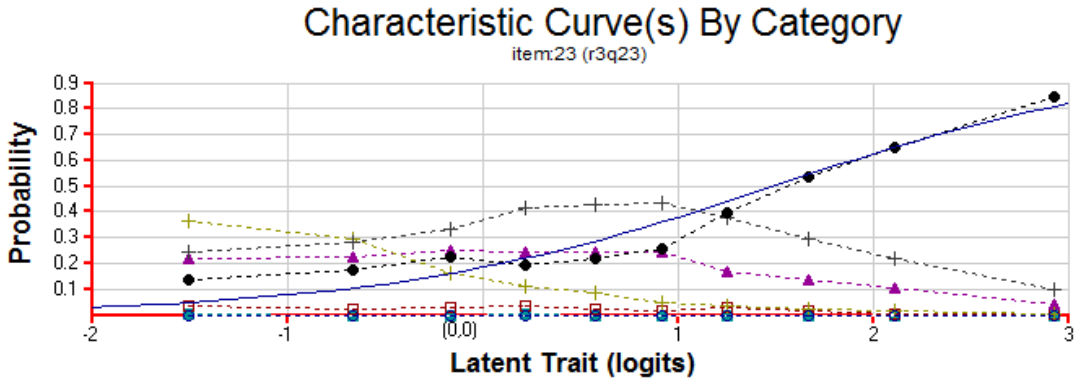

Characteristic Curve(s) By Category
item:18 (r3q18)
Probability
Latent Trait (logits)

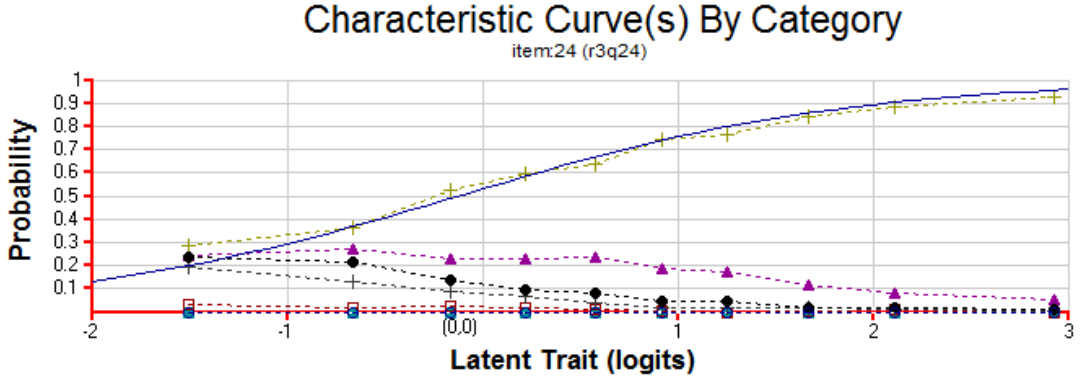

Characteristic Curve(s) By Category
item:19 (r3q19)
Probability
Latent Trait (logits)

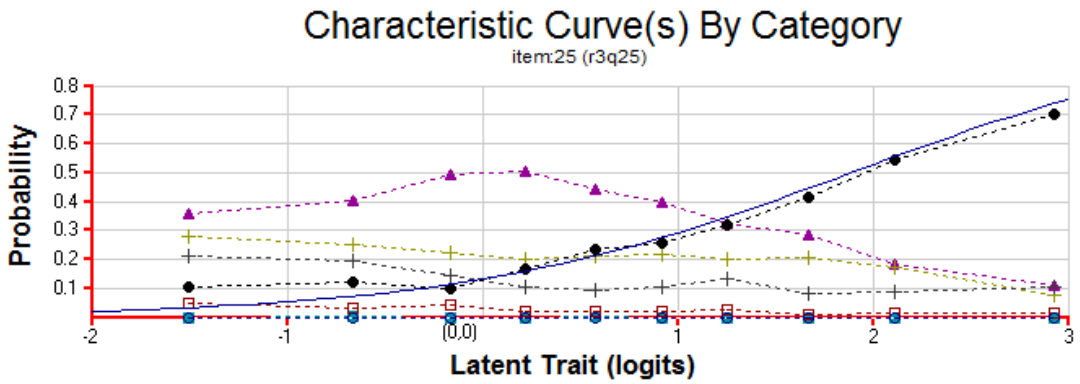

Characteristic Curve(s) By Category
item:20 (r3q20)
Probability
Latent Trait (logits)

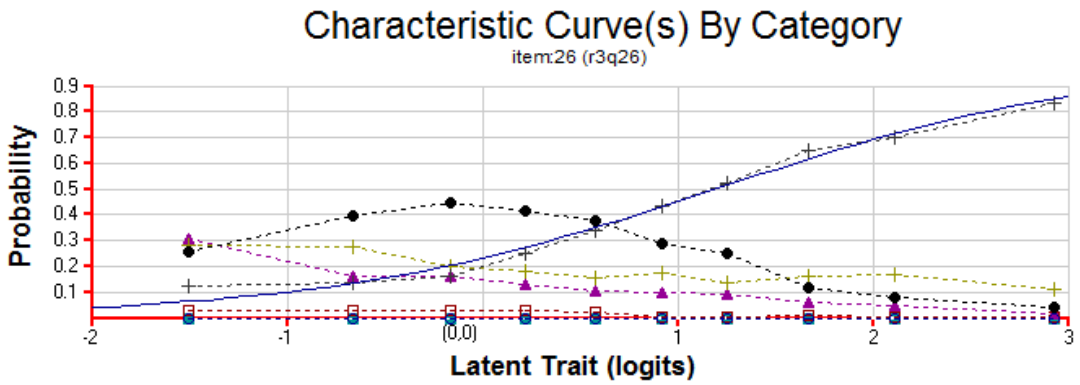

Characteristic Curve(s) By Category
item:21 (r3q21)
Probability
Latent Trait (logits)
(0,0)

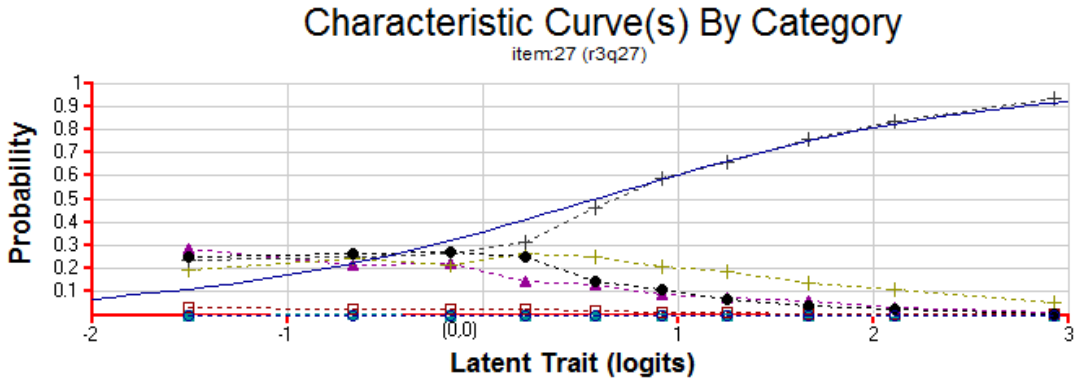

Characteristic Curve(s) By Category
item:22 (r3q22)
Probability
Latent Trait (logits)
(0,0)

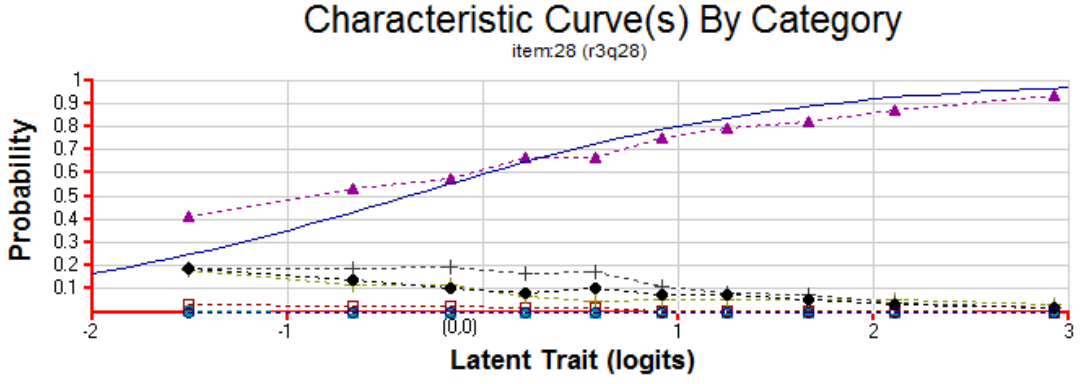

Characteristic Curve(s) By Category
item:23 (r3q23)
Probability
Latent Trait (logits)
(0,0)

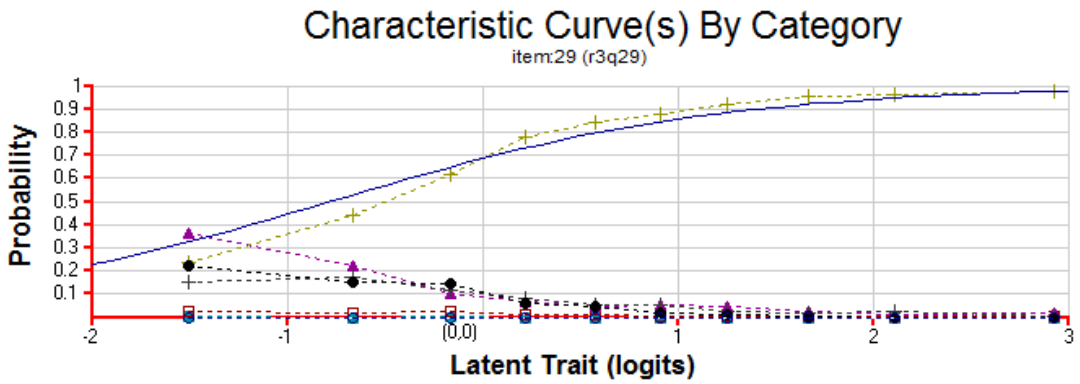

Characteristic Curve(s) By Category
item:24 (r3q24)
Probability
Latent Trait (logits)
(0,0)

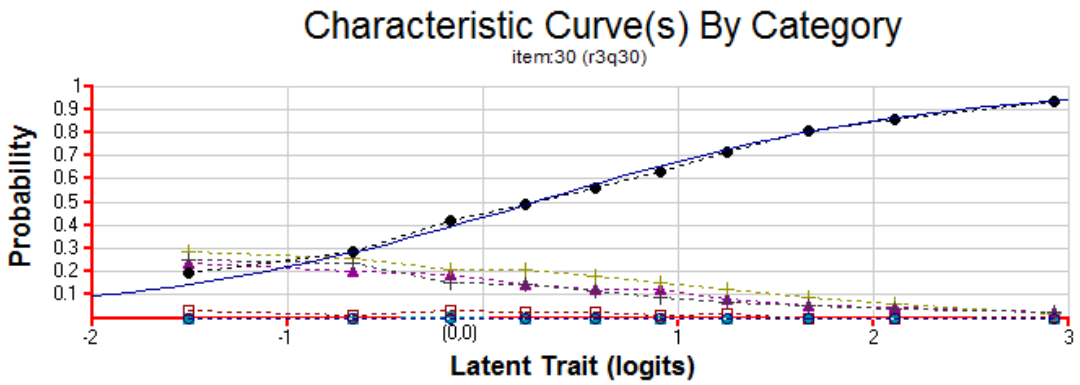

Characteristic Curve(s) By Category
item:25 (r3q25)
Probability
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
3
Latent Trait (logits)

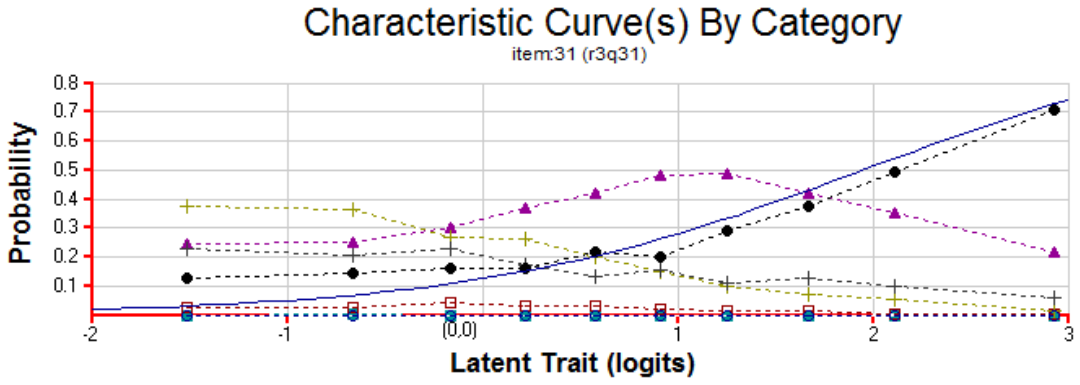

Characteristic Curve(s) By Category
item:26 (r3q26)
Probability
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
3
Latent Trait (logits)

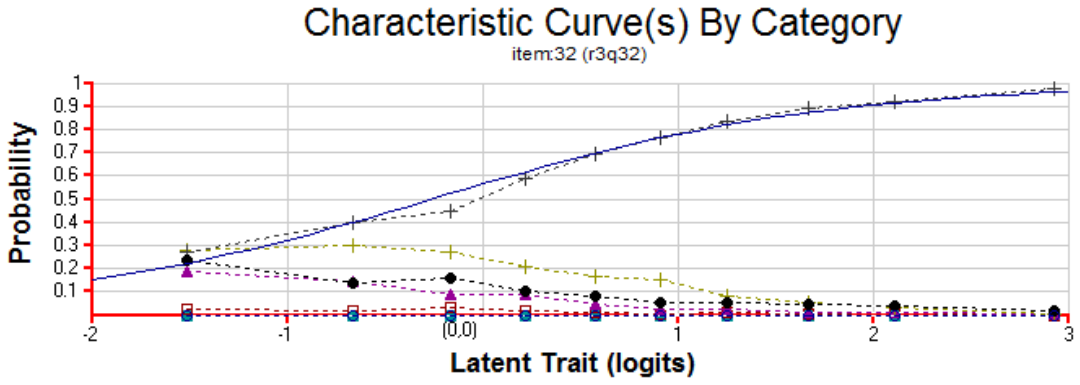

Characteristic Curve(s) By Category
item:27 (r3q27)
Probability
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
3
Latent Trait (logits)

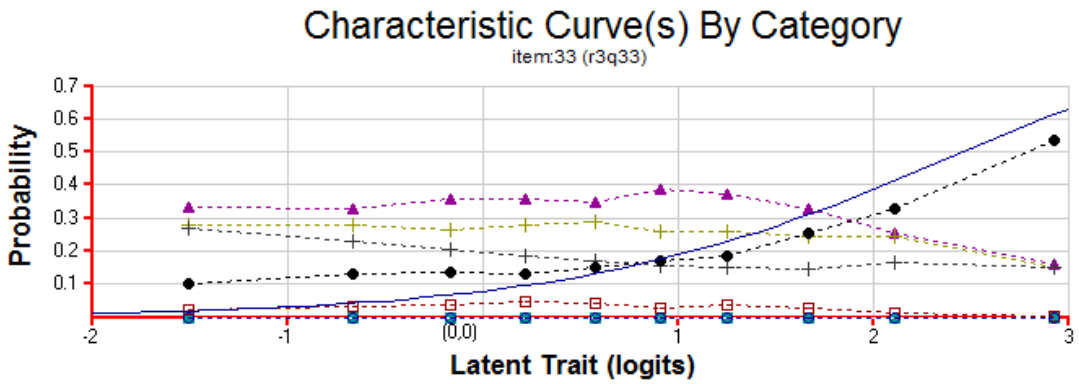

Characteristic Curve(s) By Category
item:28 (r3q28)
Probability
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
3
Latent Trait (logits)

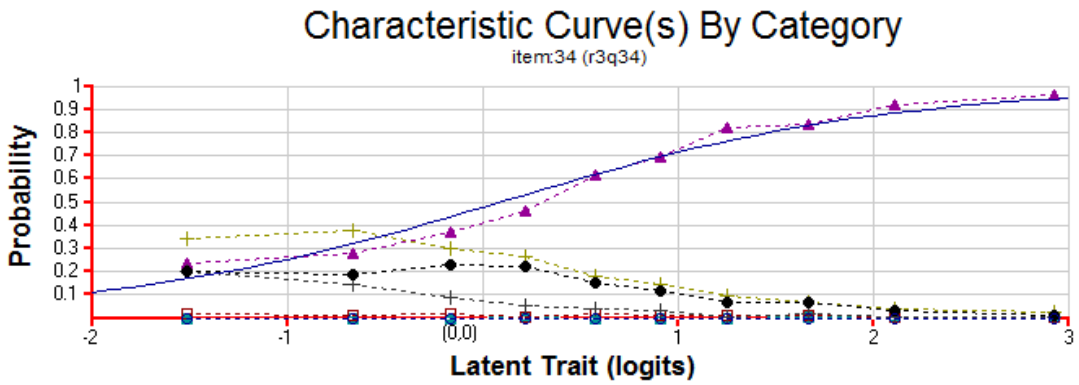

Characteristic Curve(s) By Category
item:29 (r3q29)
Probability
Latent Trait (logits)
(0,0)

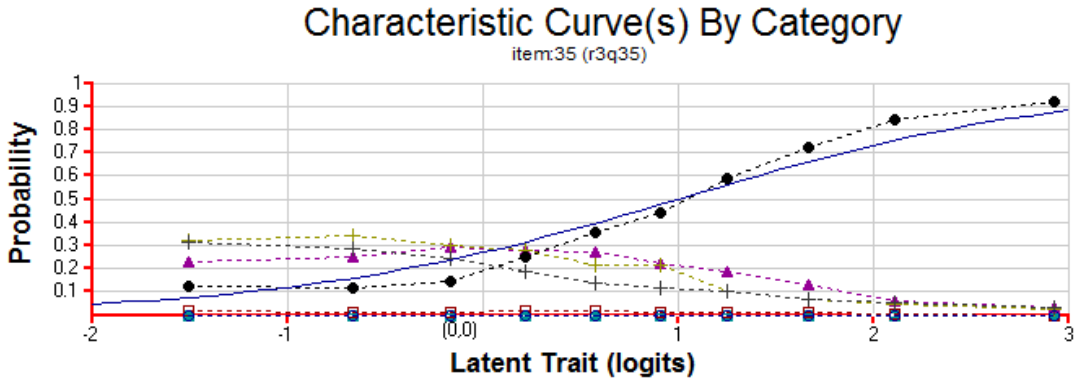

Characteristic Curve(s) By Category
item:30 (r3q30)
Probability
Latent Trait (logits)
(0,0)

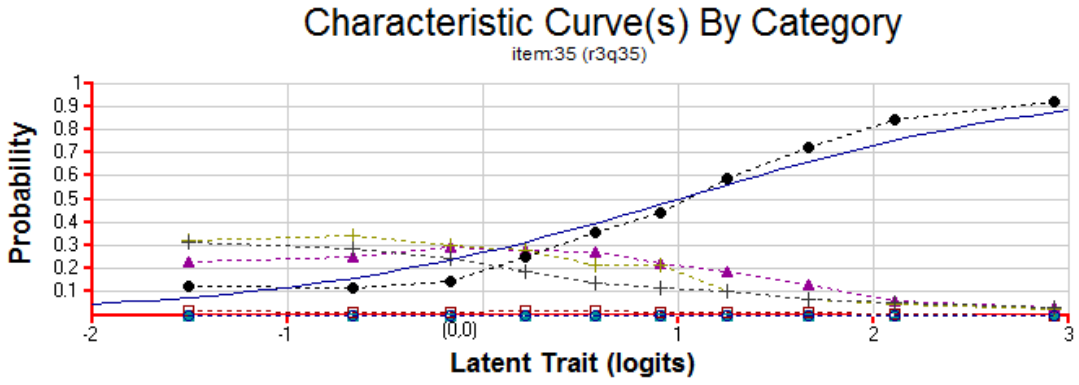

Characteristic Curve(s) By Category
item:31 (r3q31)
Probability
Latent Trait (logits)
(0,0)

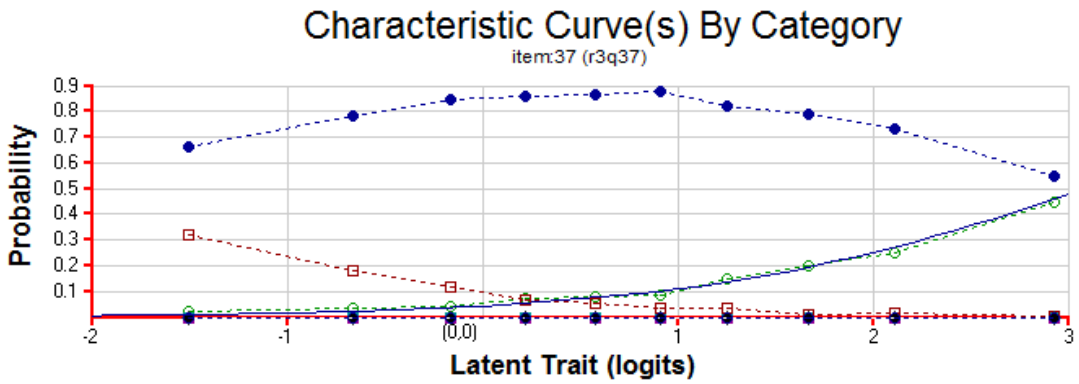

Characteristic Curve(s) By Category
item:32 (r3q32)
Probability
Latent Trait (logits)
(0,0)

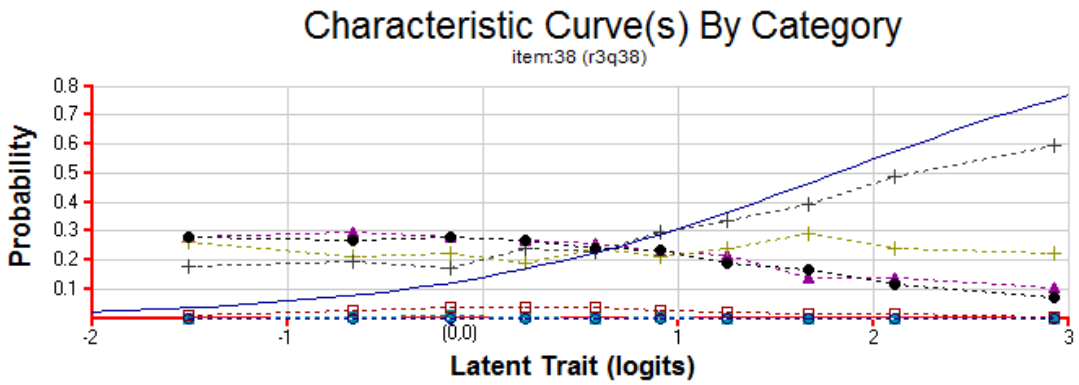

Characteristic Curve(s) By Category
item:33 (r3q33)
Probability
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
3
Latent Trait (logits)


Characteristic Curve(s) By Category
item:34 (r3q34)
Probability
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
3
Latent Trait (logits)

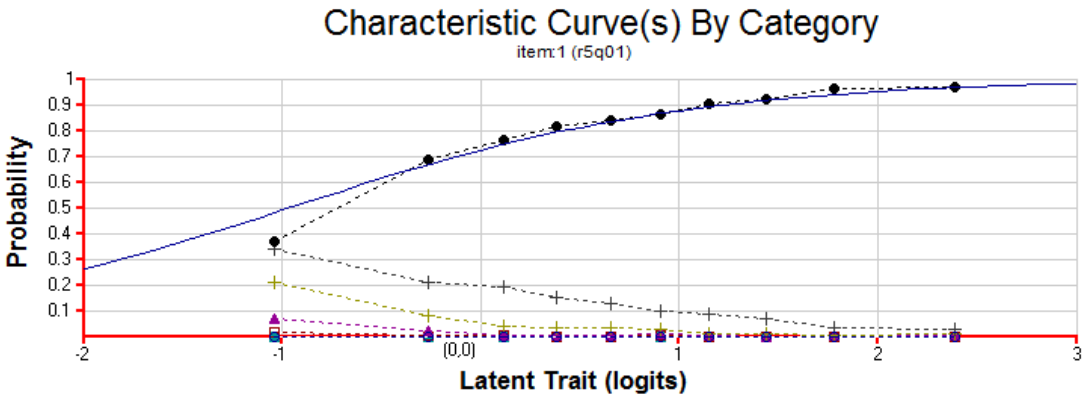

Characteristic Curve(s) By Category
item:35 (r3q35)
Probability
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
3
Latent Trait (logits)

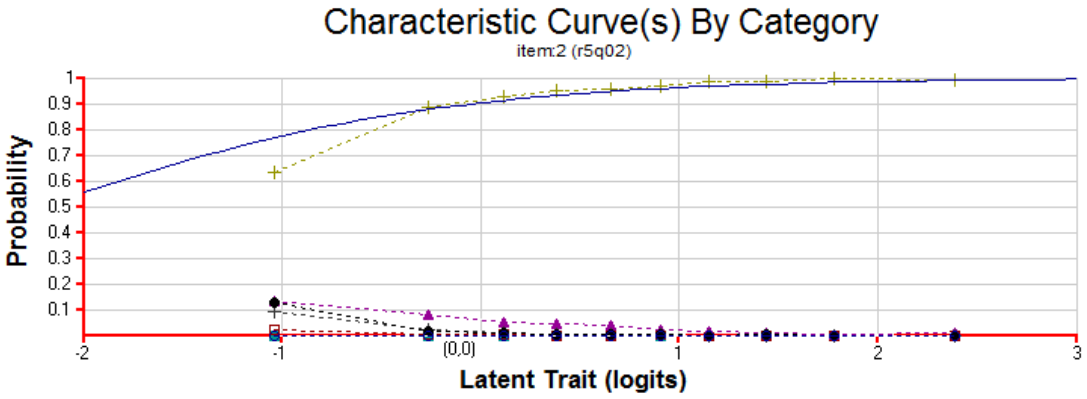

Characteristic Curve(s) By Category
item:35 (r3q35)
Probability
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
3
Latent Trait (logits)

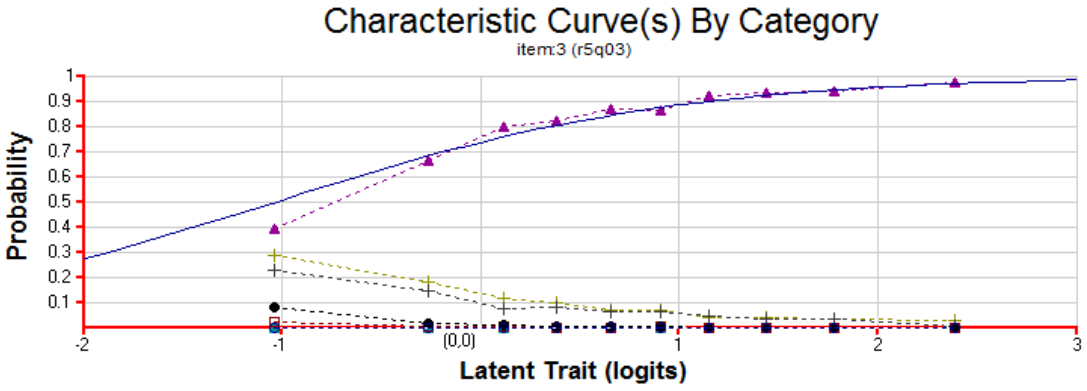

Characteristic Curve(s) By Category
item:37 (r3q37)
Probability
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
3
Latent Trait (logits)

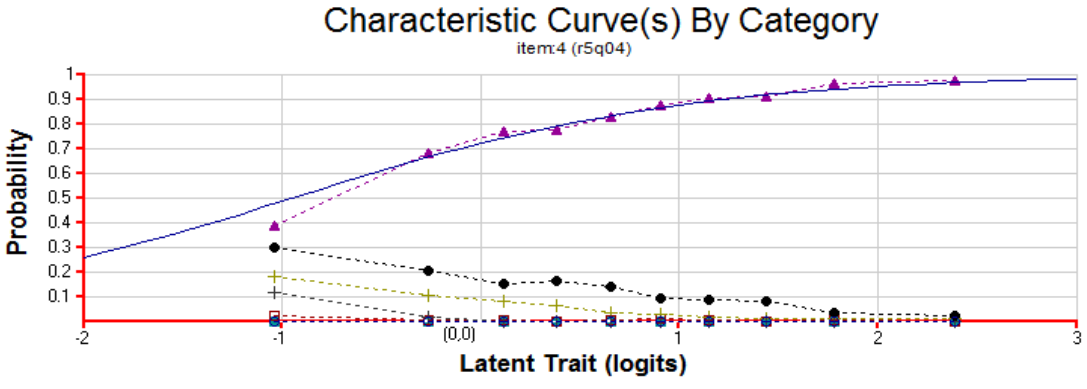

Characteristic Curve(s) By Category
item:38 (r3q38)
Probability
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
3
Latent Trait (logits)

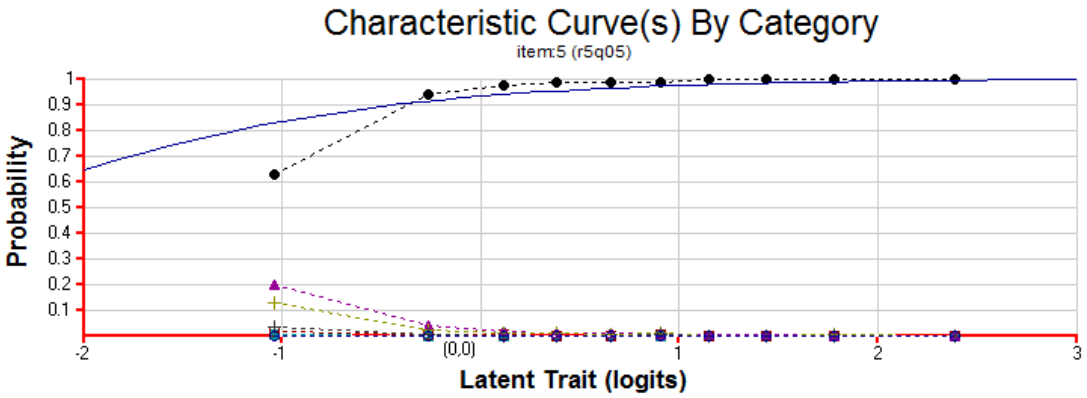
Year 5 Reading

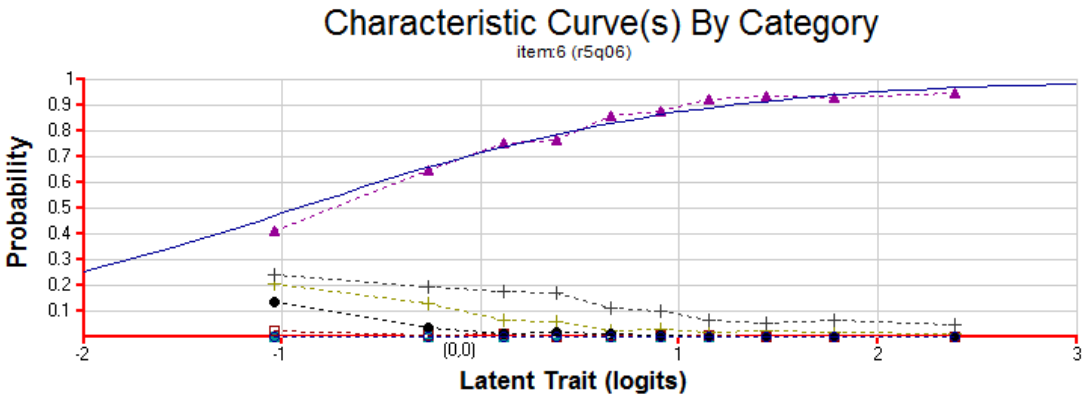


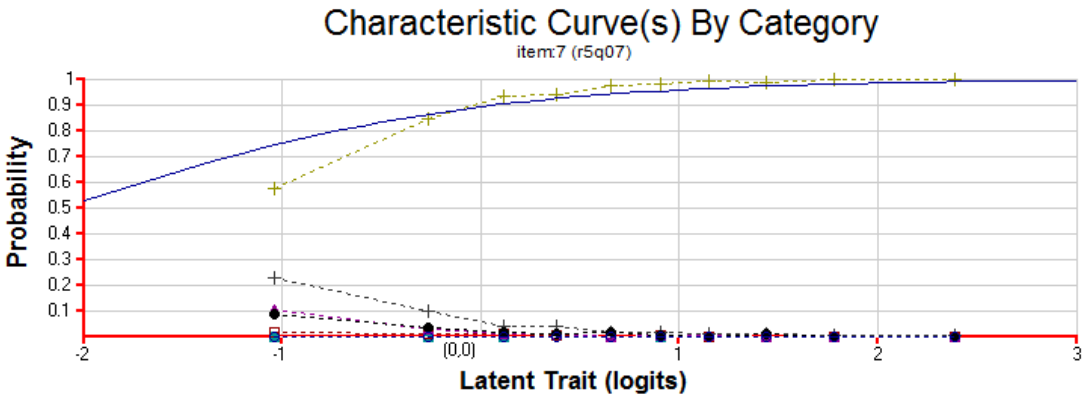


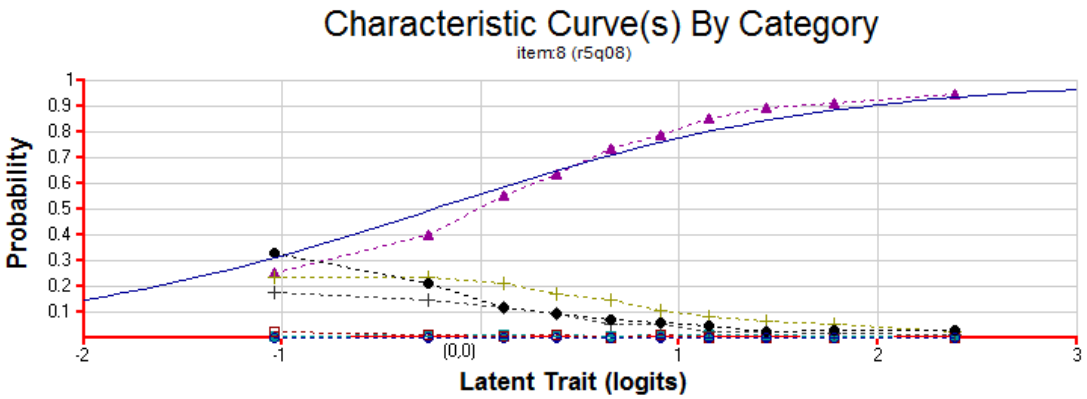


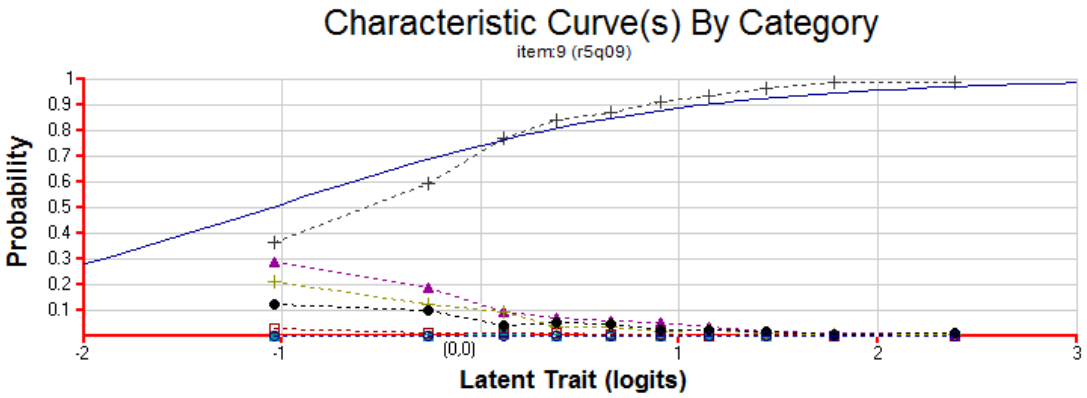


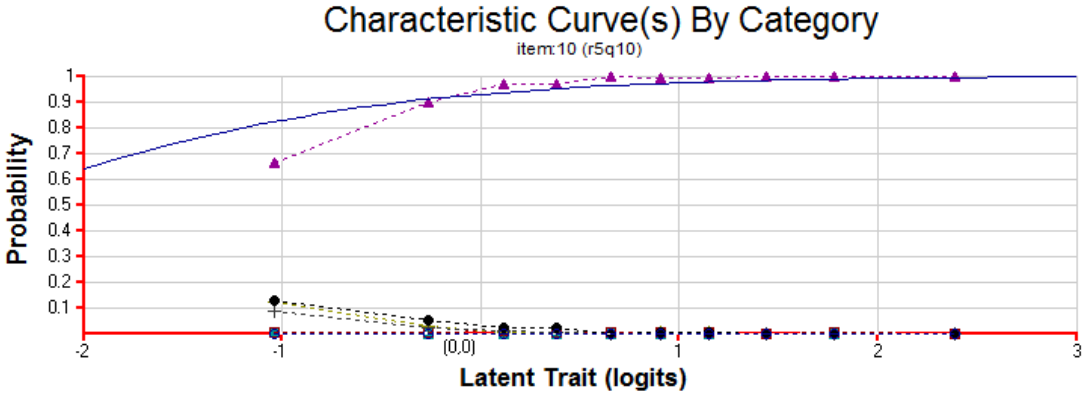

Characteristic Curve(s) By Category
item:5 (r5q05)
Probability
Latent Trait (logits)
(0,0)

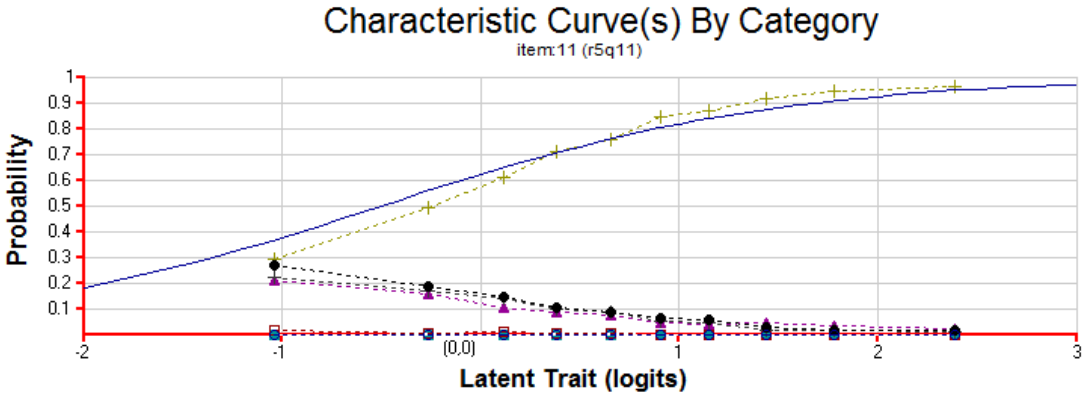

Characteristic Curve(s) By Category
item:6 (r5q06)
Probability
Latent Trait (logits)
(0,0)

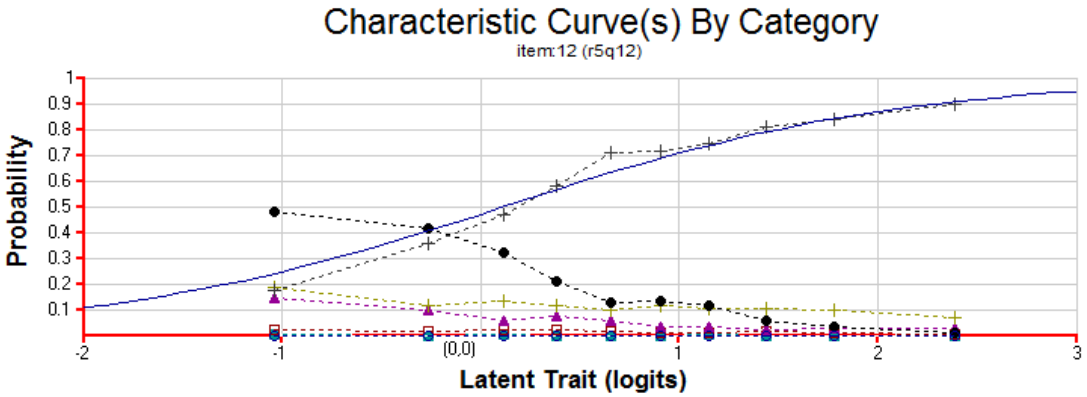

Characteristic Curve(s) By Category
item:7 (r5q07)
Probability
Latent Trait (logits)
(0,0)

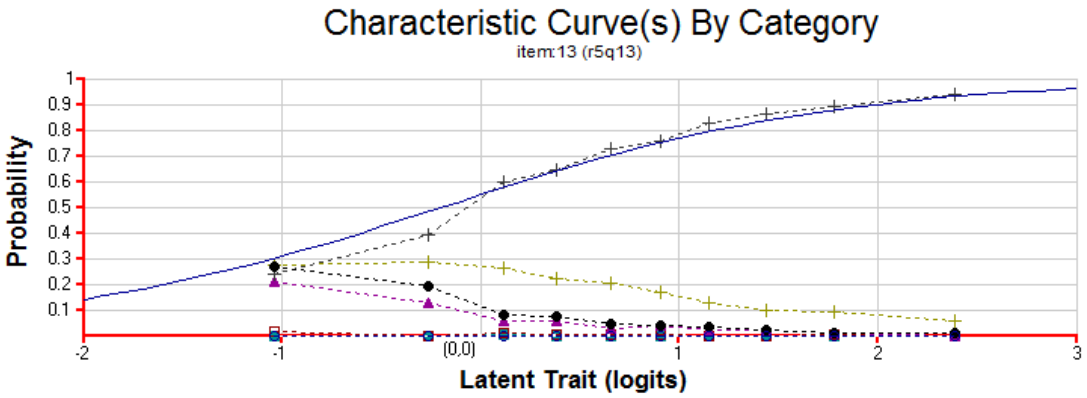

Characteristic Curve(s) By Category
item:8 (r5q08)
Probability
Latent Trait (logits)
(0,0)

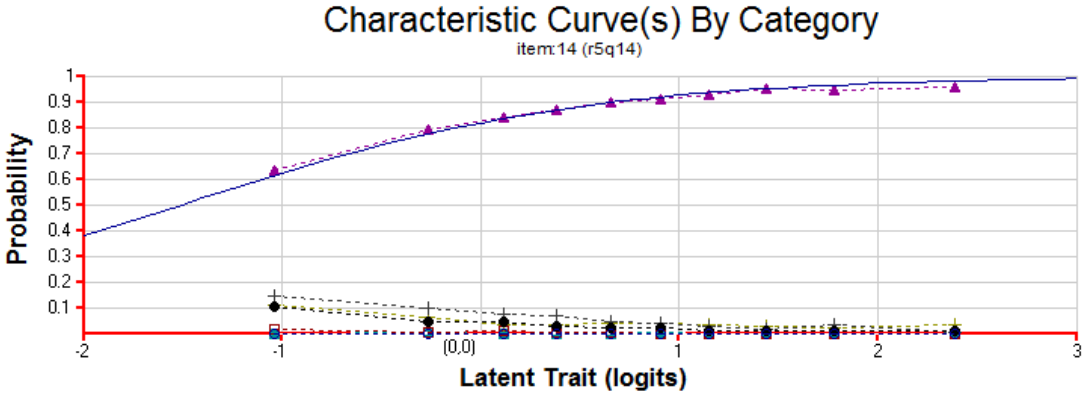

Characteristic Curve(s) By Category
item:9 (r5q09)
Probability
Latent Trait (logits)
(0,0)

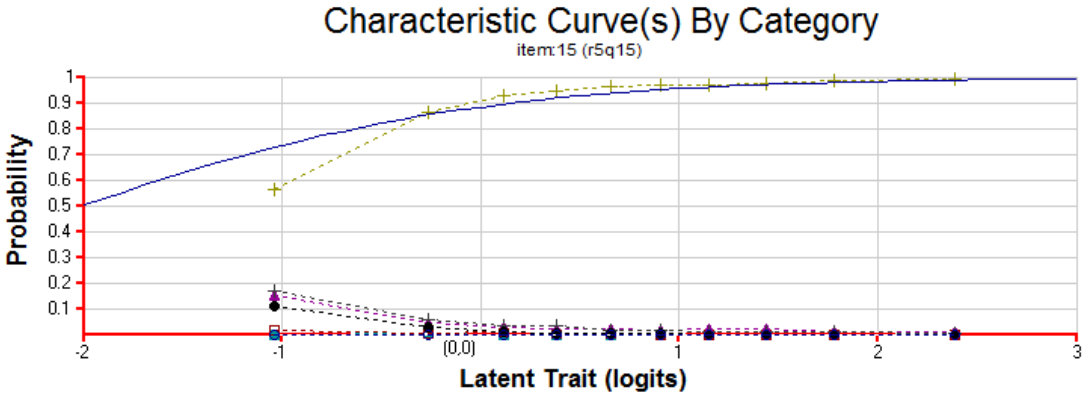

Characteristic Curve(s) By Category
item:10 (r5q10)
Probability
Latent Trait (logits)
(0,0)

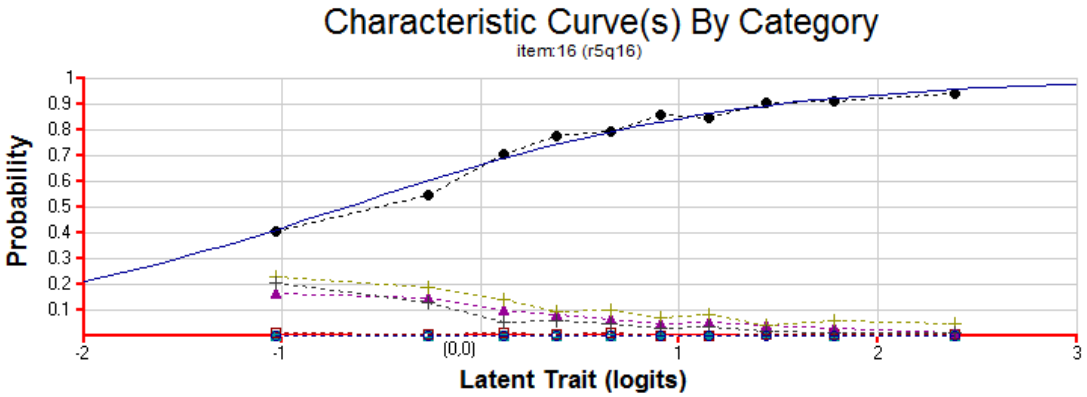

Characteristic Curve(s) By Category
item:11 (r5q11)
Probability
Latent Trait (logits)
(0,0)

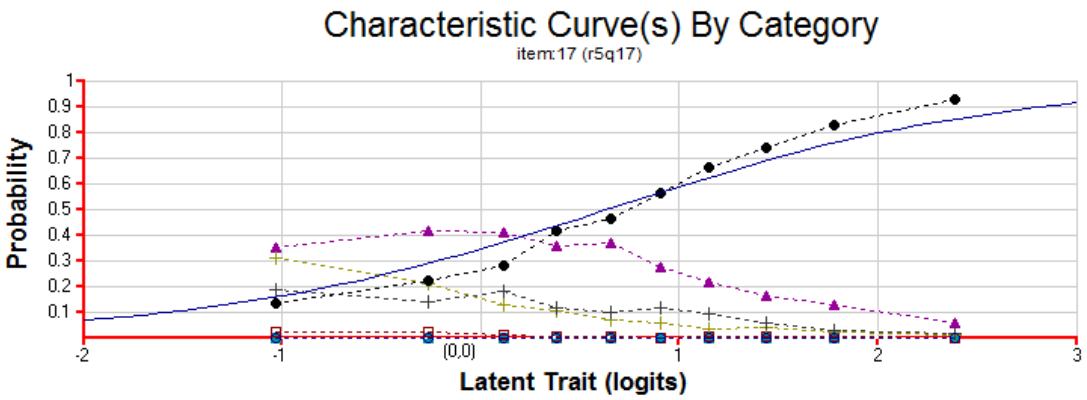

Characteristic Curve(s) By Category
item:12 (r5q12)
Probability
Latent Trait (logits)
(0,0)

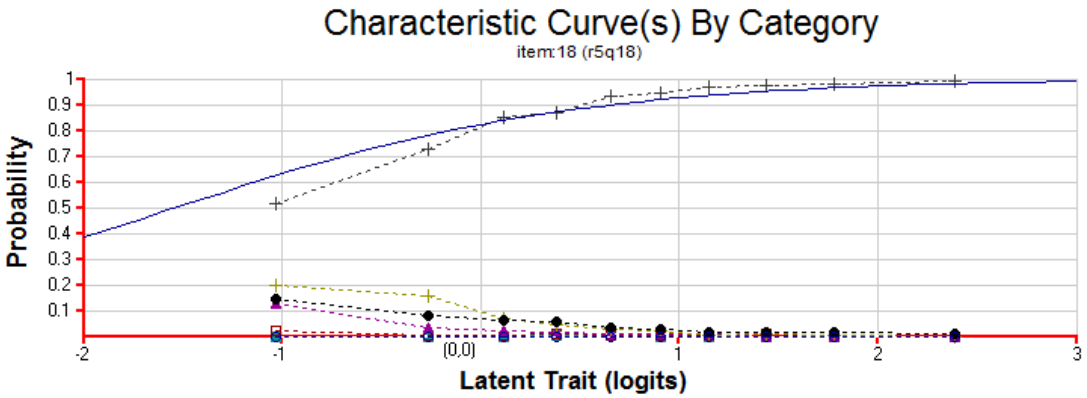

Characteristic Curve(s) By Category
item:13 (r5q13)
Probability
Latent Trait (logits)
(0,0)

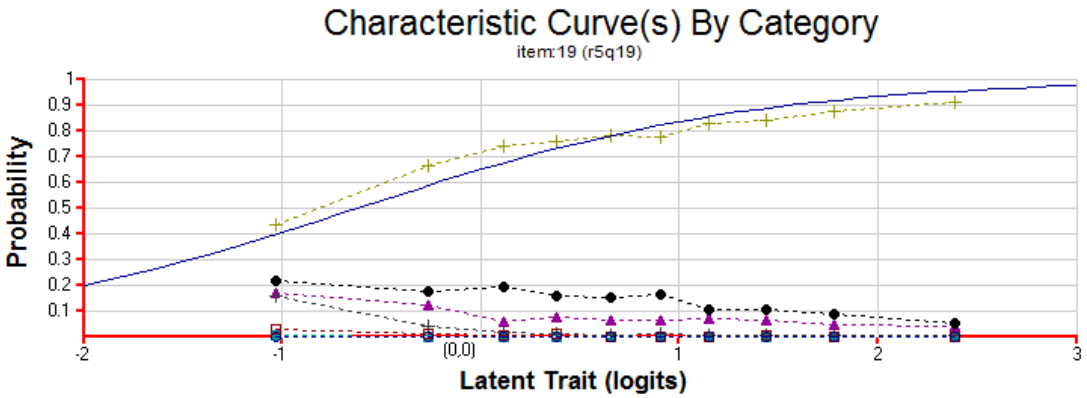

Characteristic Curve(s) By Category
item:14 (r5q14)
Probability
Latent Trait (logits)
(0,0)

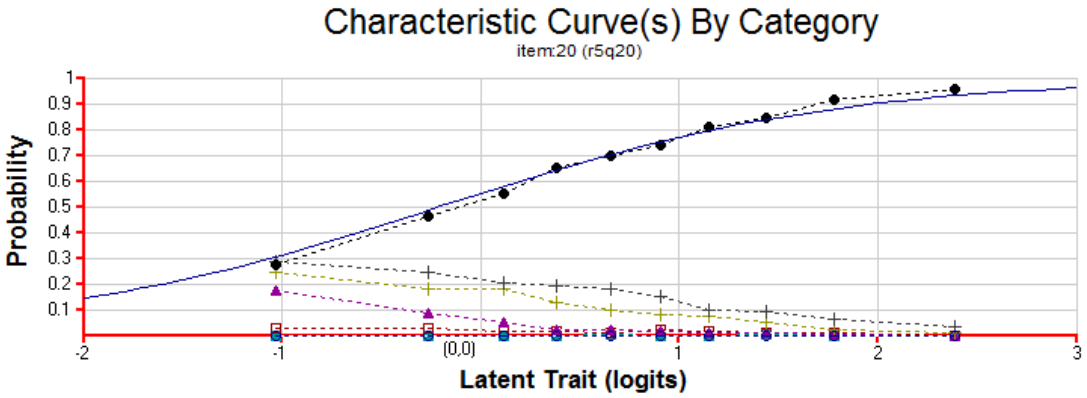

Characteristic Curve(s) By Category
item:15 (r5q15)
Probability
Latent Trait (logits)
(0,0)

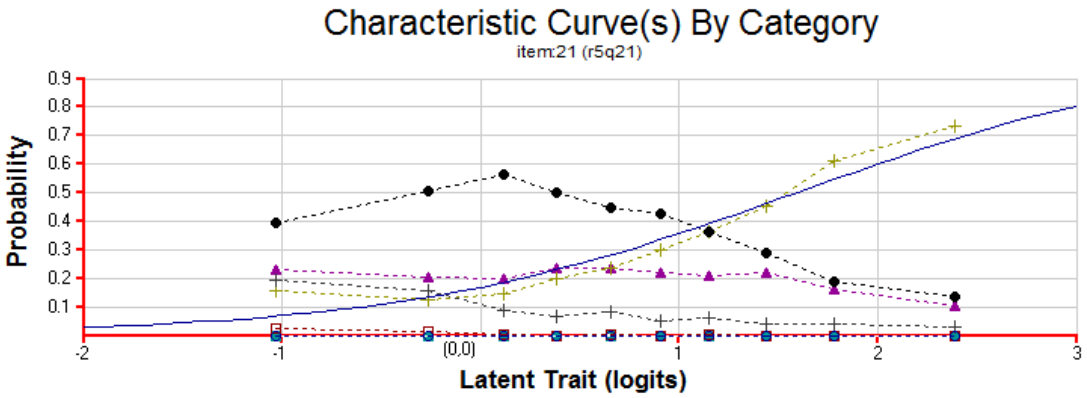

Characteristic Curve(s) By Category
item:16 (r5q16)
Probability
Latent Trait (logits)
(0,0)

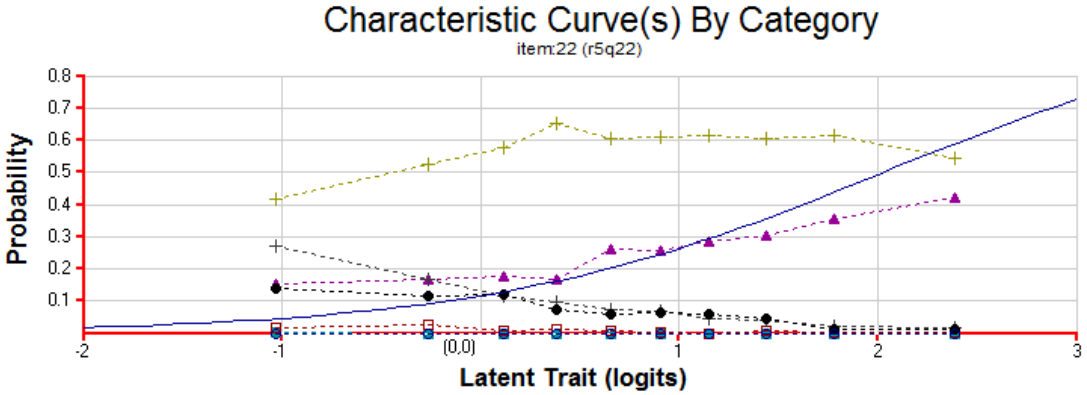

Characteristic Curve(s) By Category
item:17 (r5q17)
Probability
Latent Trait (logits)
(0,0)

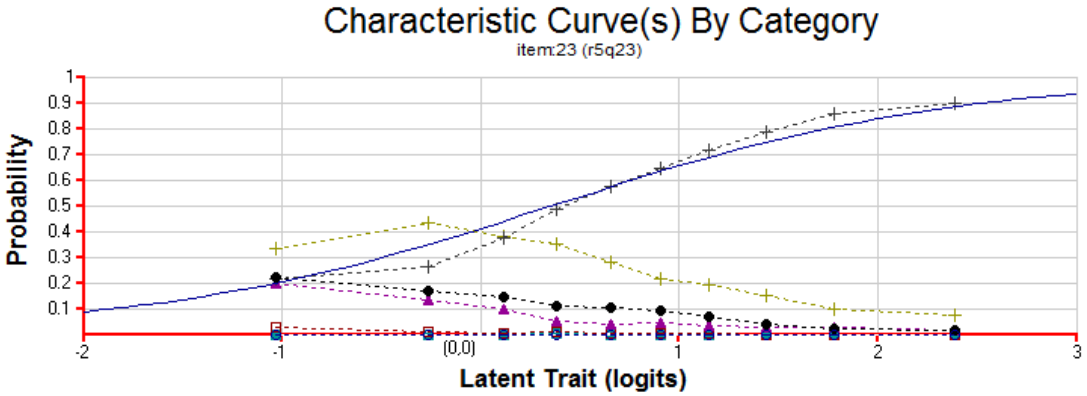

Characteristic Curve(s) By Category
item:18 (r5q18)
Probability
Latent Trait (logits)
(0,0)

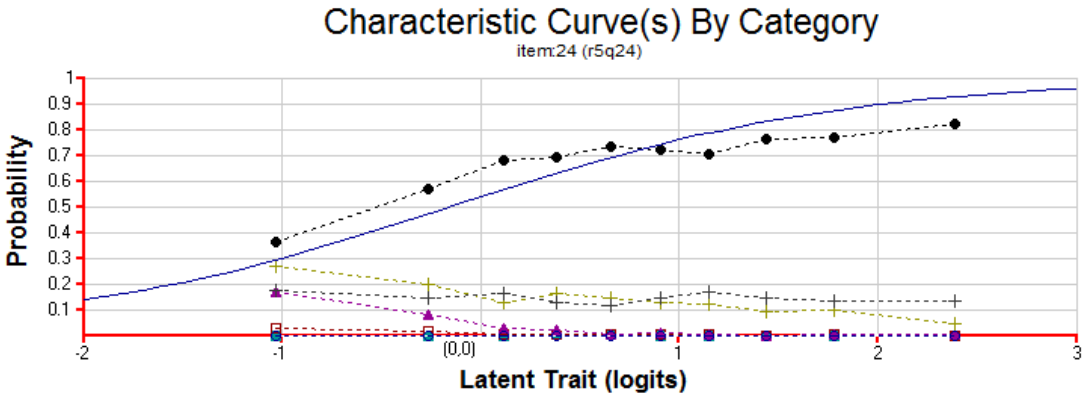

Characteristic Curve(s) By Category
item:19 (r5q19)
Probability
Latent Trait (logits)
(0,0)

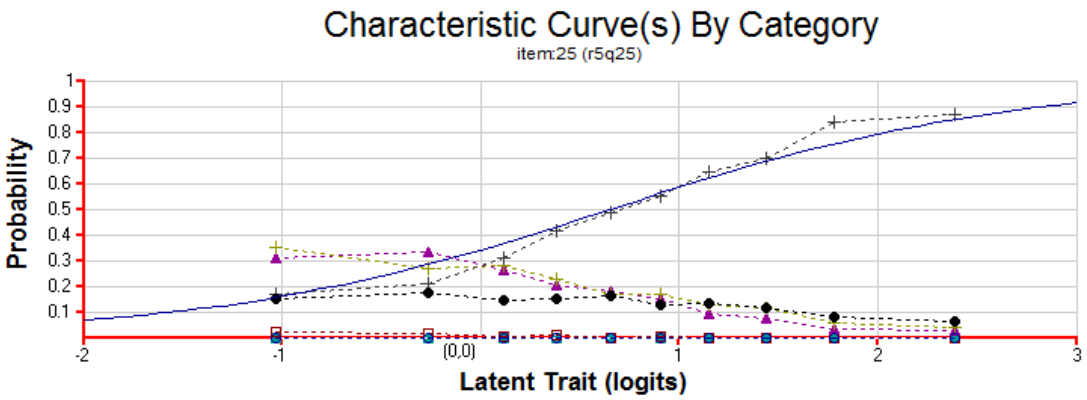

Characteristic Curve(s) By Category
item:20 (r5q20)
Probability
Latent Trait (logits)
(0,0)

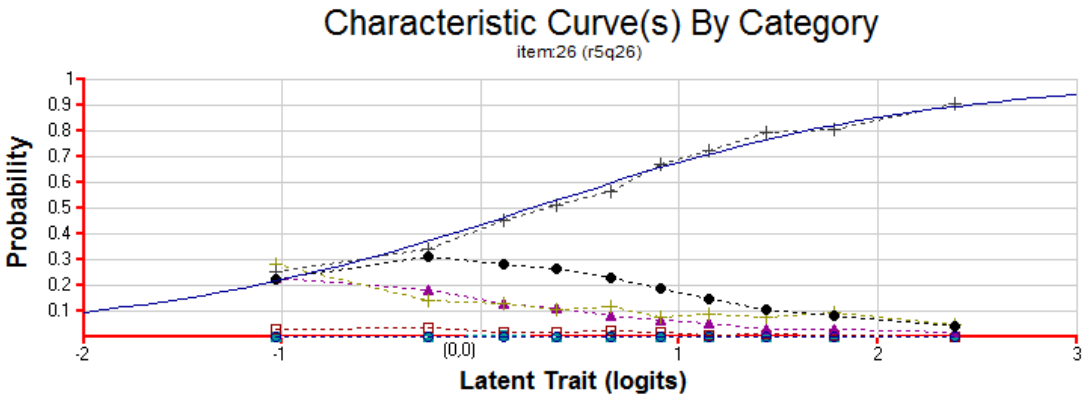

Characteristic Curve(s) By Category
item:21 (r5q21)
Probability
Latent Trait (logits)
(0,0)

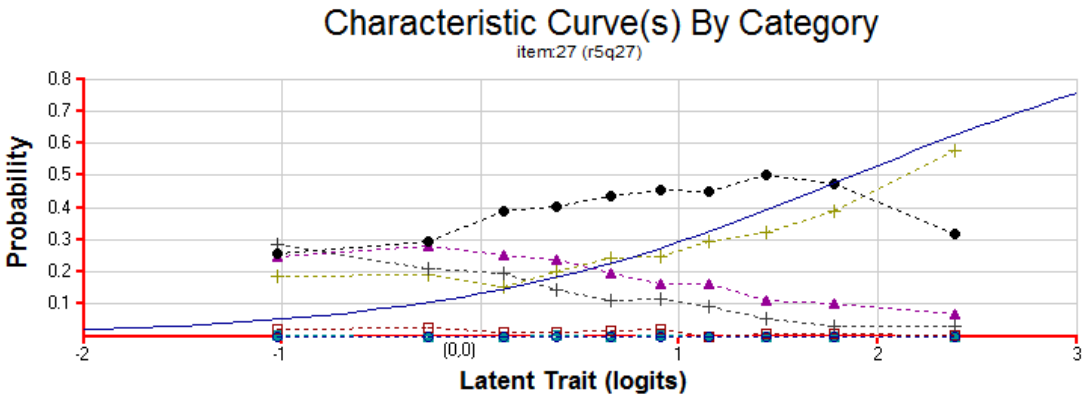

Characteristic Curve(s) By Category
item:22 (r5q22)
Probability
Latent Trait (logits)
(0,0)

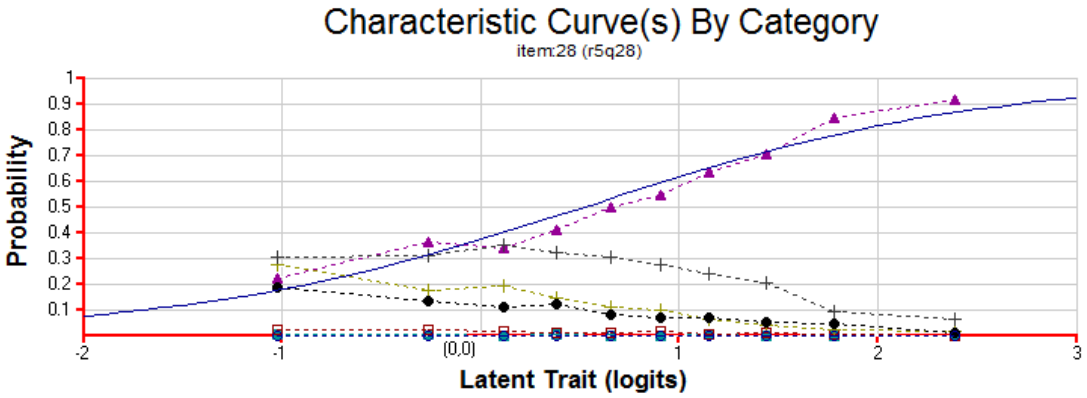

Characteristic Curve(s) By Category
item:23 (r5q23)
Probability
Latent Trait (logits)
(0,0)

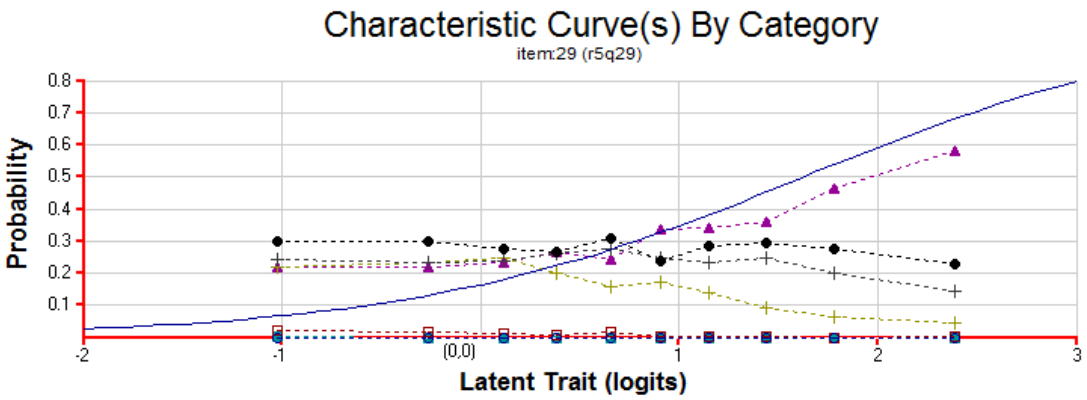

Characteristic Curve(s) By Category
item:24 (r5q24)
Probability
Latent Trait (logits)
(0,0)

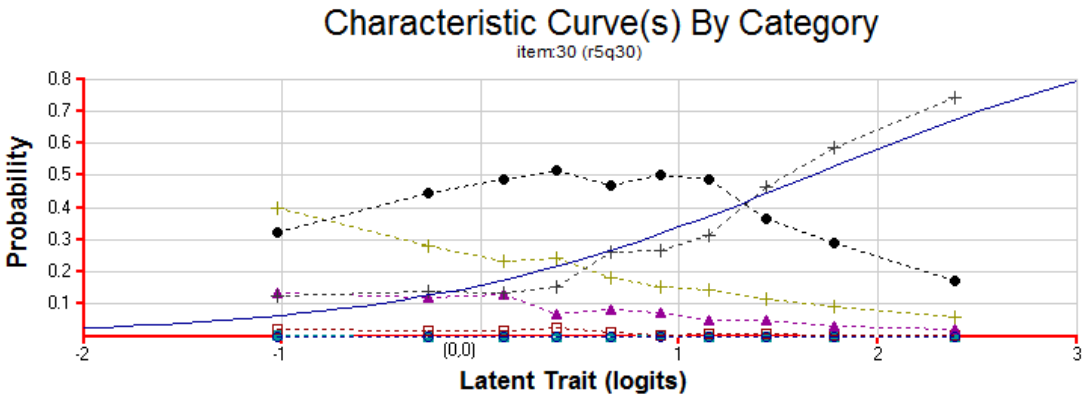

Characteristic Curve(s) By Category
item:25 (r5q25)
Probability
Latent Trait (logits)
(0,0)

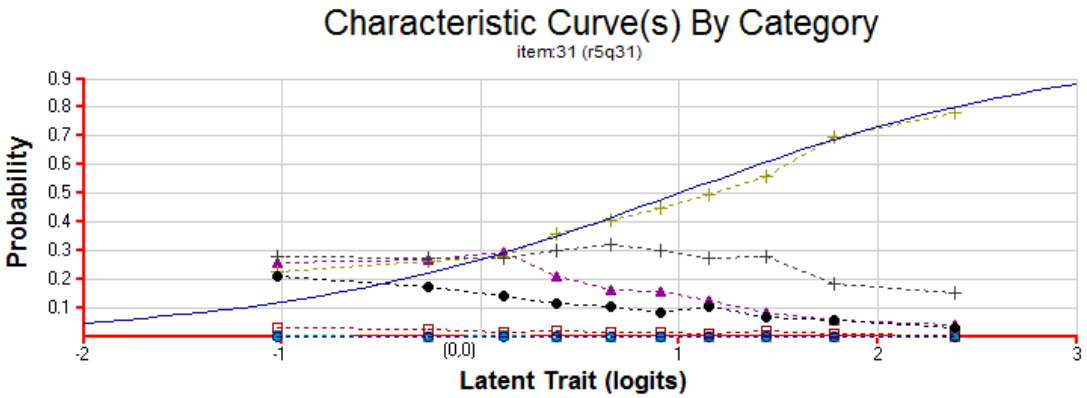

Characteristic Curve(s) By Category
item:26 (r5q26)
Probability
Latent Trait (logits)
(0,0)

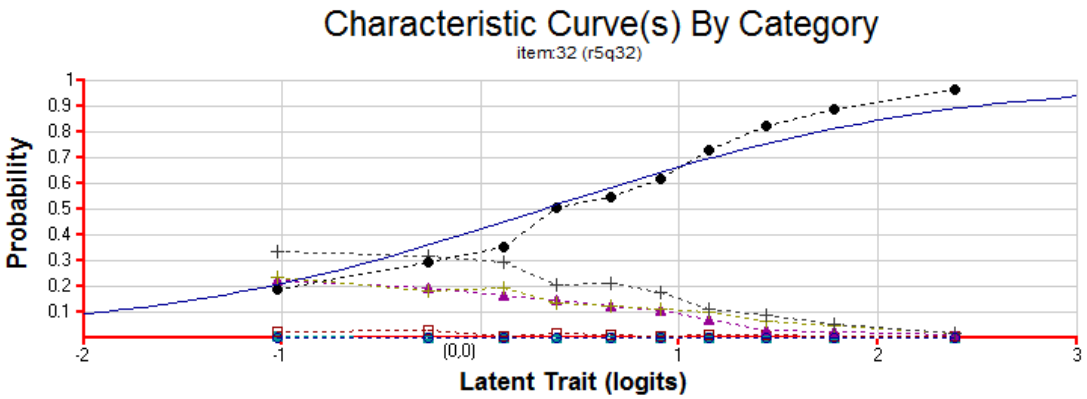

Characteristic Curve(s) By Category
item:27 (r5q27)
Probability
Latent Trait (logits)
(0,0)

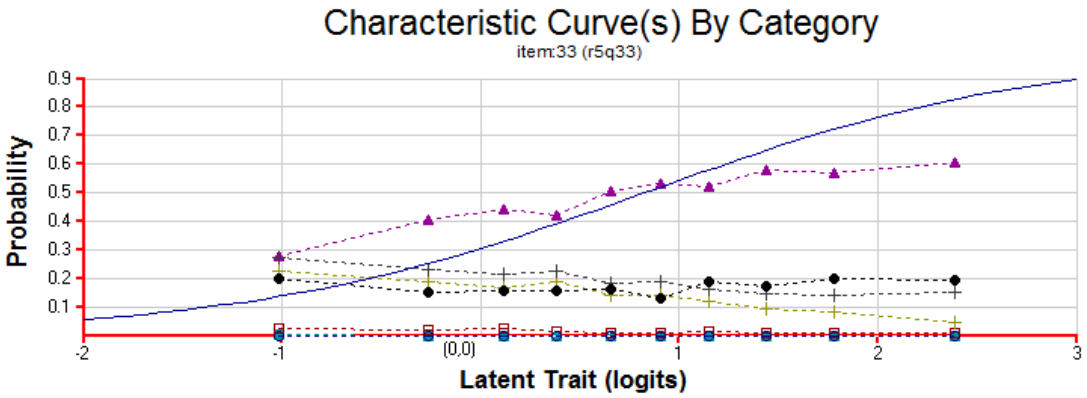

Characteristic Curve(s) By Category
item:28 (r5q28)
Probability
Latent Trait (logits)
(0,0)

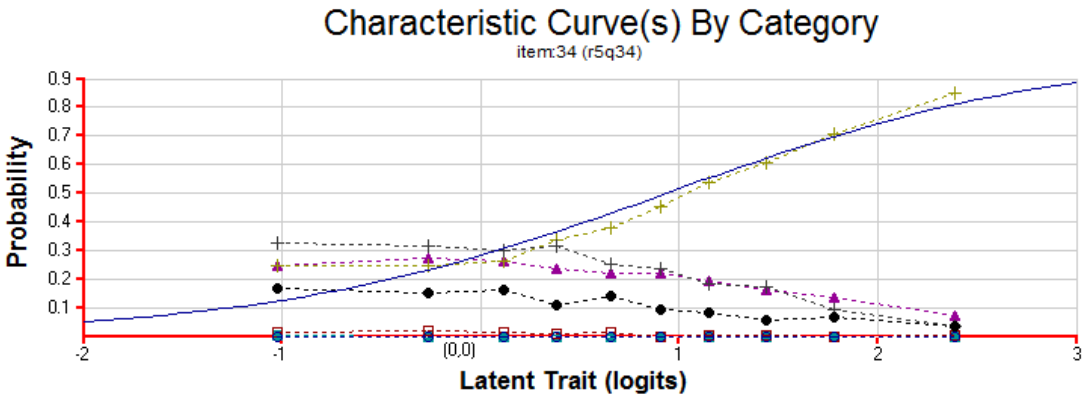

Characteristic Curve(s) By Category
item:29 (r5q29)
Probability
Latent Trait (logits)
(0,0)

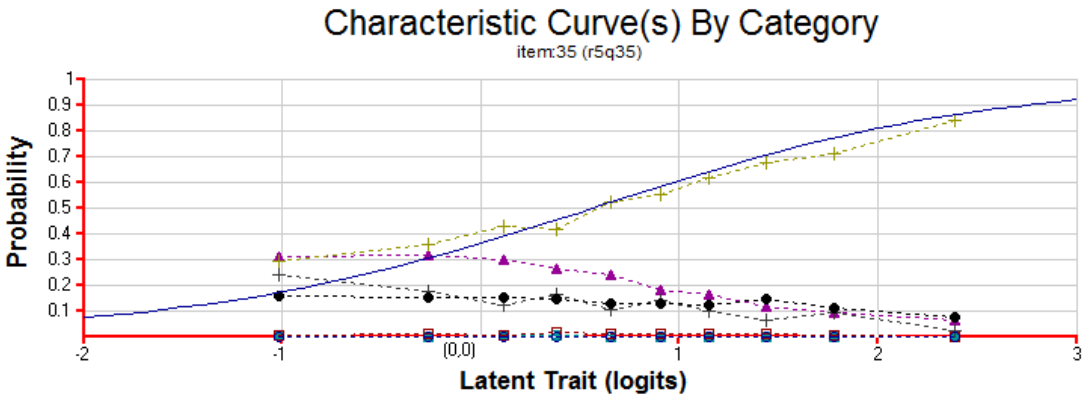

Characteristic Curve(s) By Category
item:30 (r5q30)
Probability
Latent Trait (logits)
(0,0)

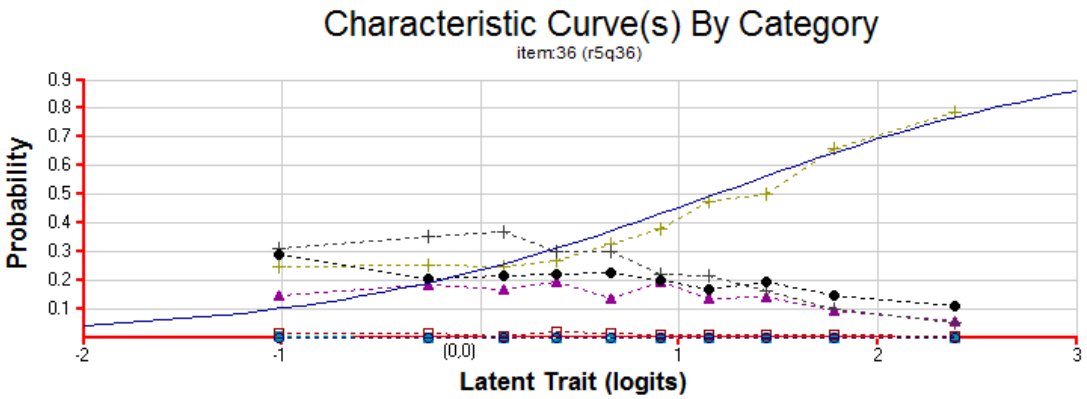

Characteristic Curve(s) By Category
item:31 (r5q31)
Probability
Latent Trait (logits)
(0,0)

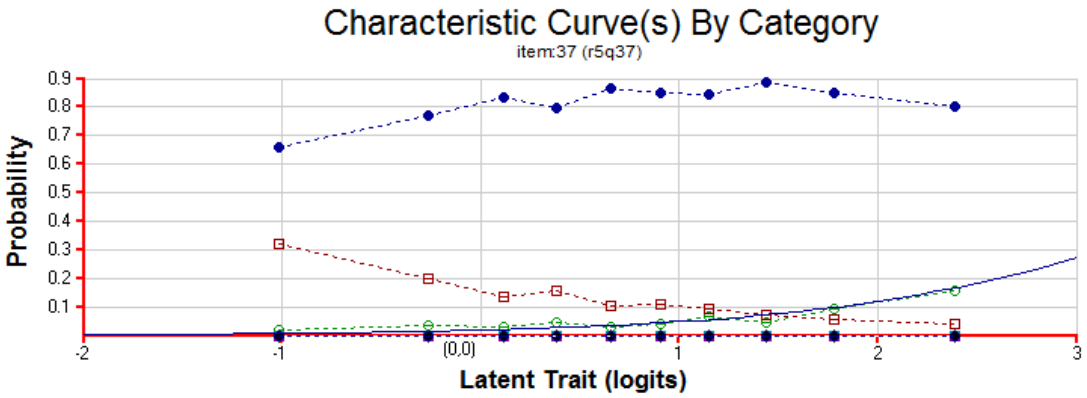

Characteristic Curve(s) By Category
item:32 (r5q32)
Probability
Latent Trait (logits)
(0,0)

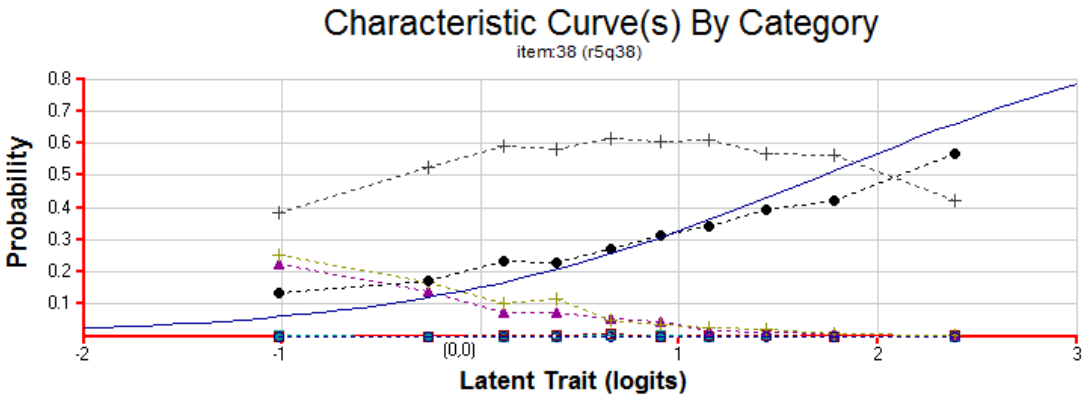

Characteristic Curve(s) By Category
item:33 (r5q33)
Probability
Latent Trait (logits)
(0,0)


Characteristic Curve(s) By Category
item:34 (r5q34)
Probability
Latent Trait (logits)
(0,0)

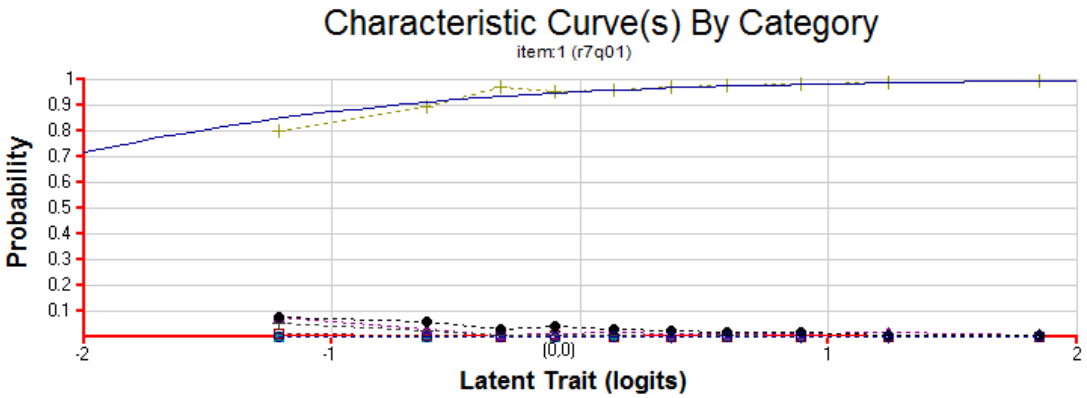

Characteristic Curve(s) By Category
item:35 (r5q35)
Probability
Latent Trait (logits)
(0,0)

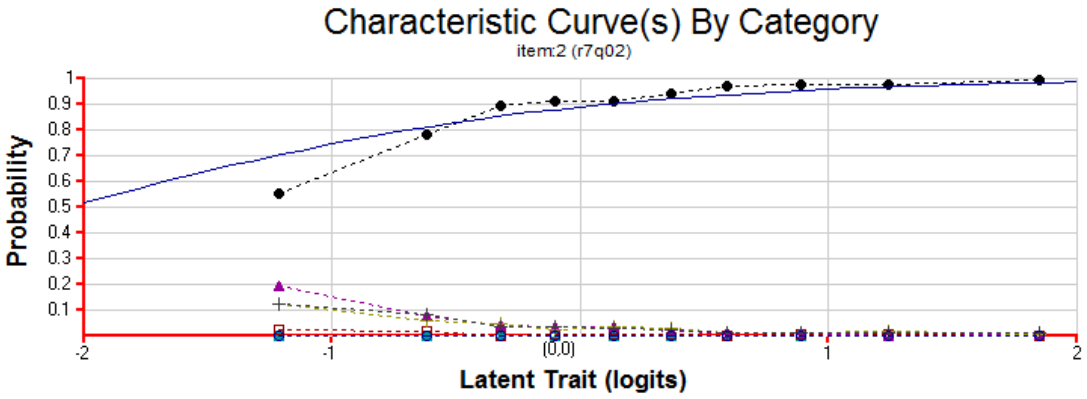

Characteristic Curve(s) By Category
item:36 (r5q36)
Probability
Latent Trait (logits)
(0,0)

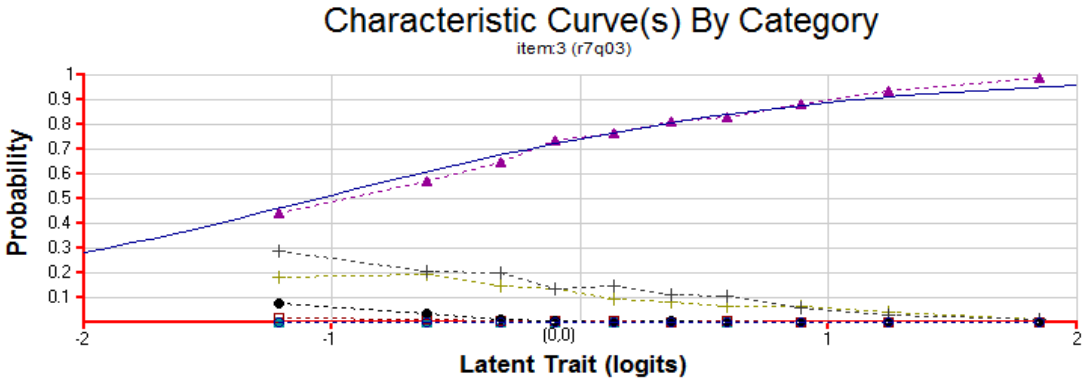

Characteristic Curve(s) By Category
item:37 (r5q37)
Probability
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
3
Latent Trait (logits)

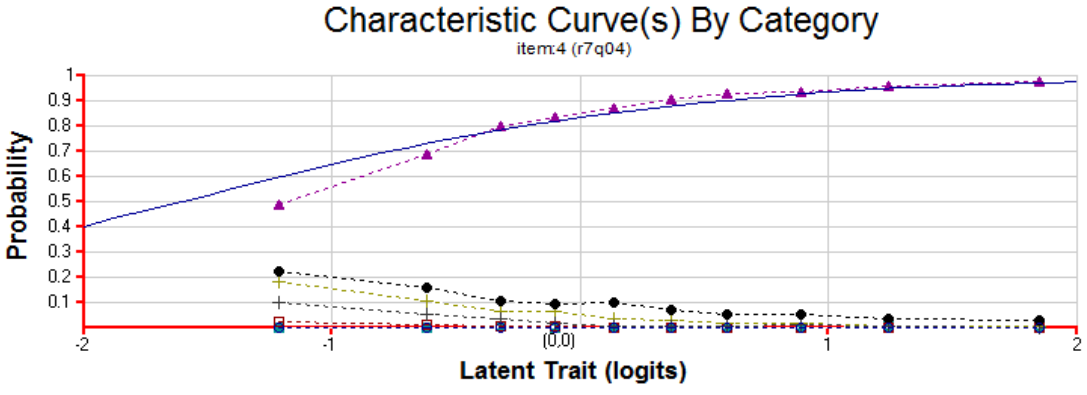

Characteristic Curve(s) By Category
item:38 (r5q38)
Probability
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
3
Latent Trait (logits)

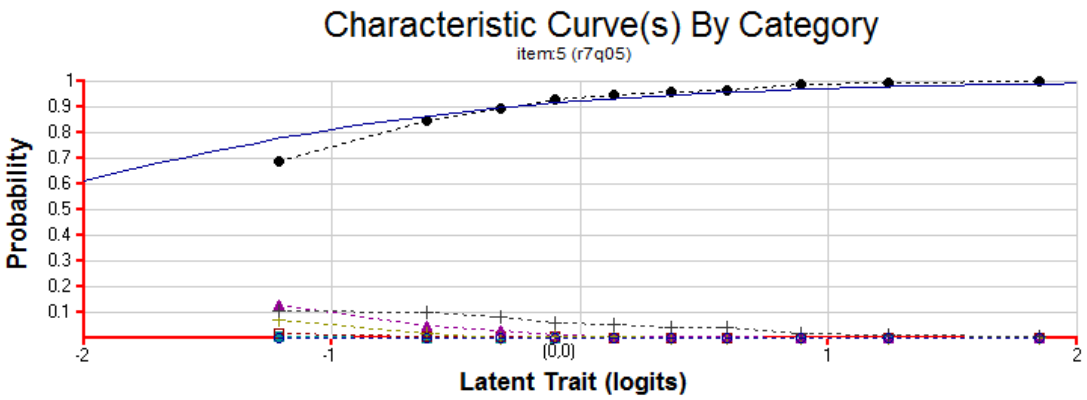
Year 7 Reading

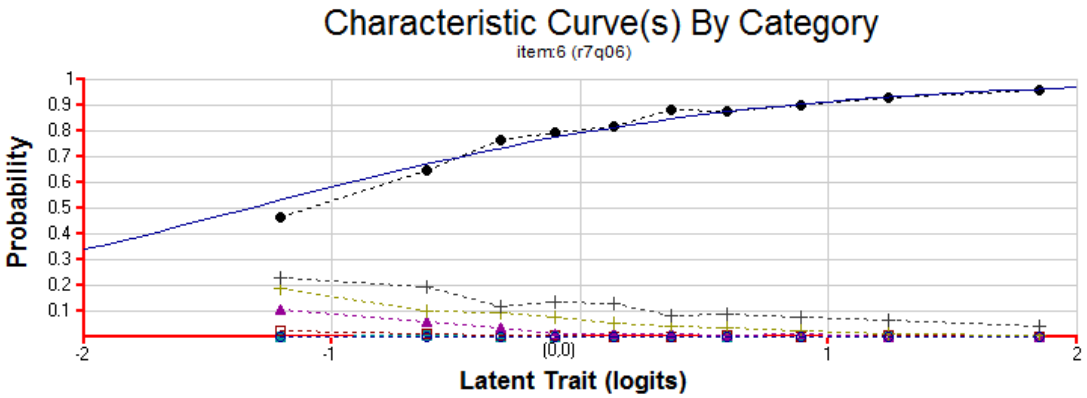


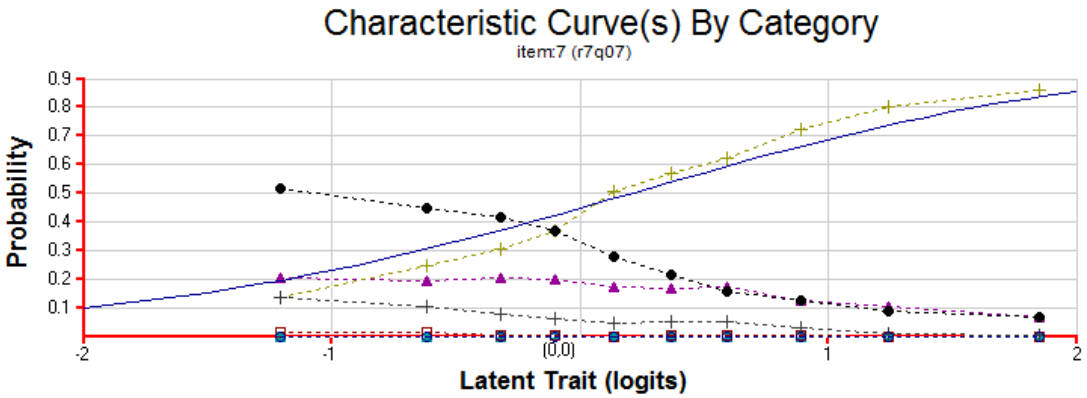


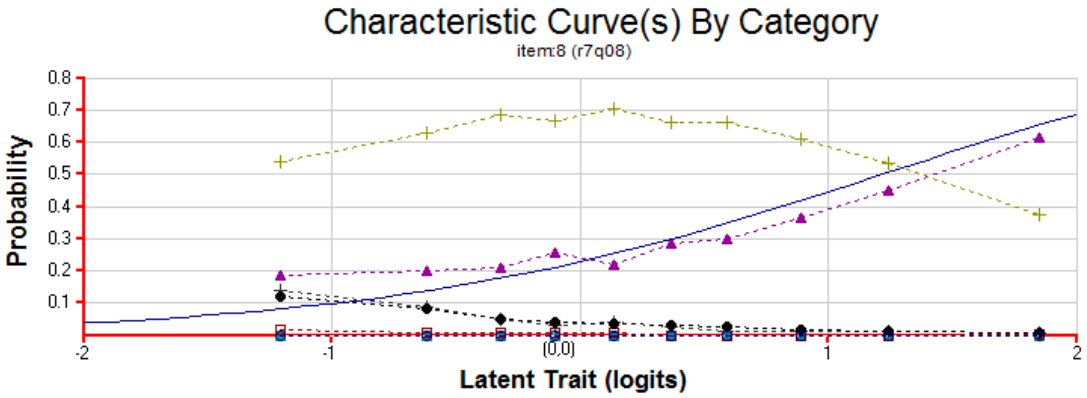


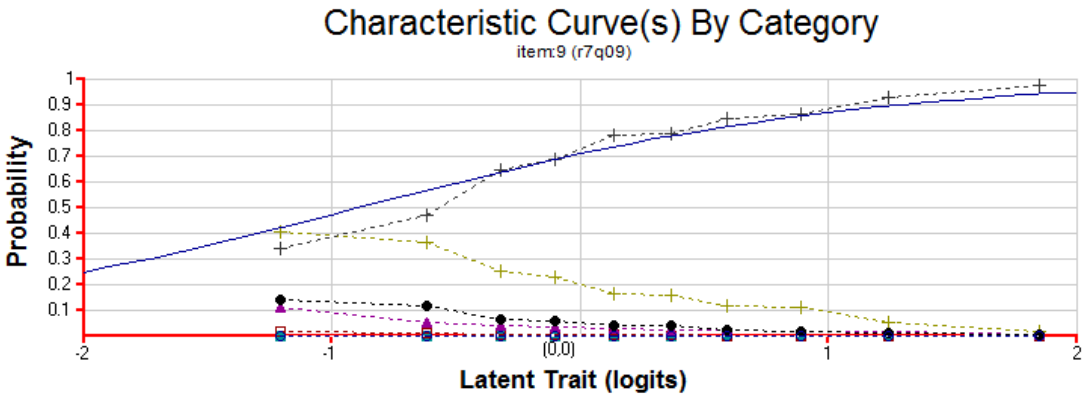


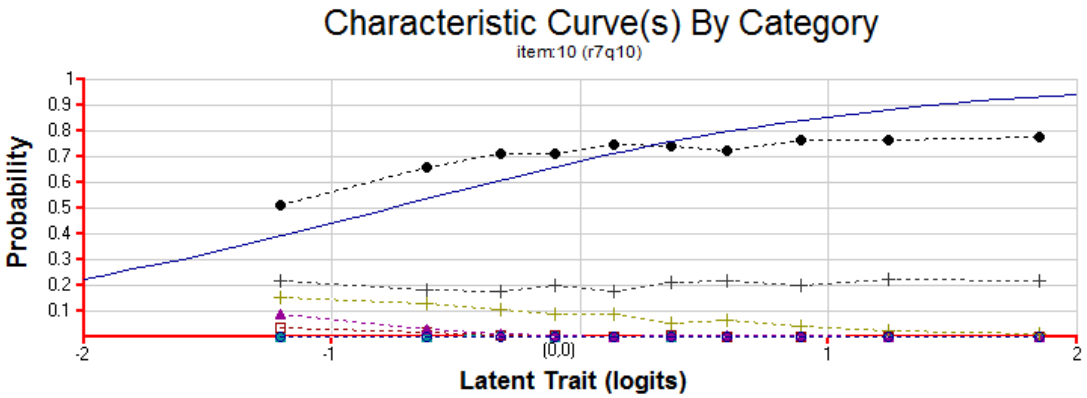

Characteristic Curve(s) By Category
item:5 (r7q05)
Probability
Latent Trait (logits)
(0,0)

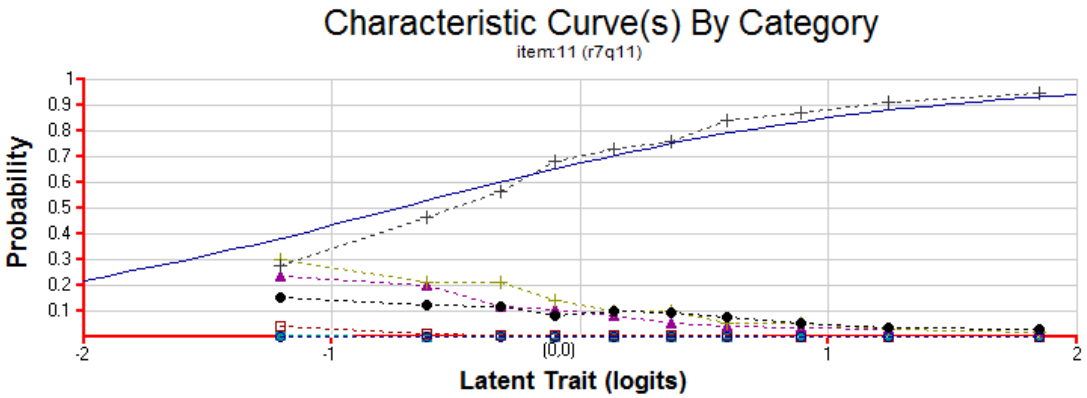

Characteristic Curve(s) By Category
item:6 (r7q06)
Probability
Latent Trait (logits)
(0,0)

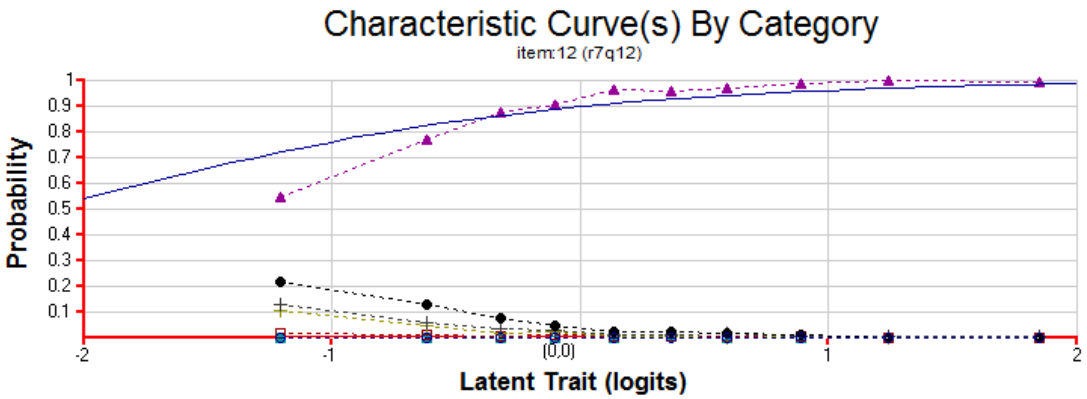

Characteristic Curve(s) By Category
item:7 (r7q07)
Probability
Latent Trait (logits)
(0,0)

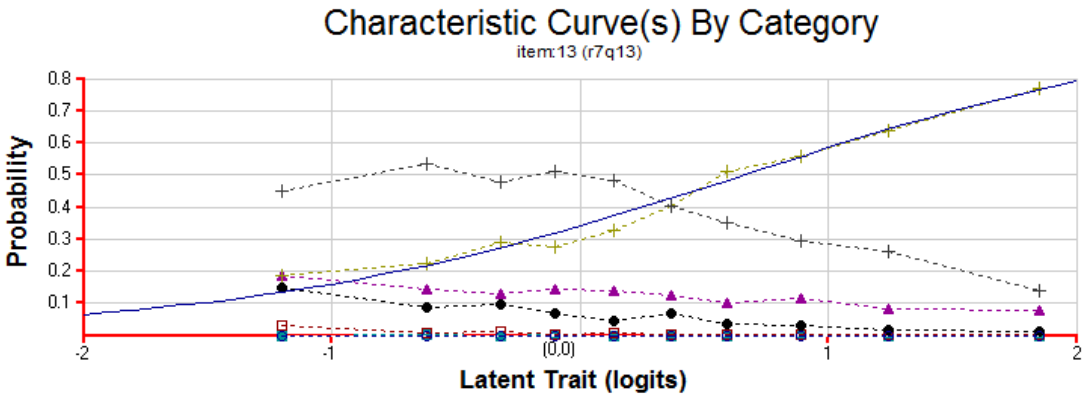

Characteristic Curve(s) By Category
item:8 (r7q08)
Probability
Latent Trait (logits)
(0,0)

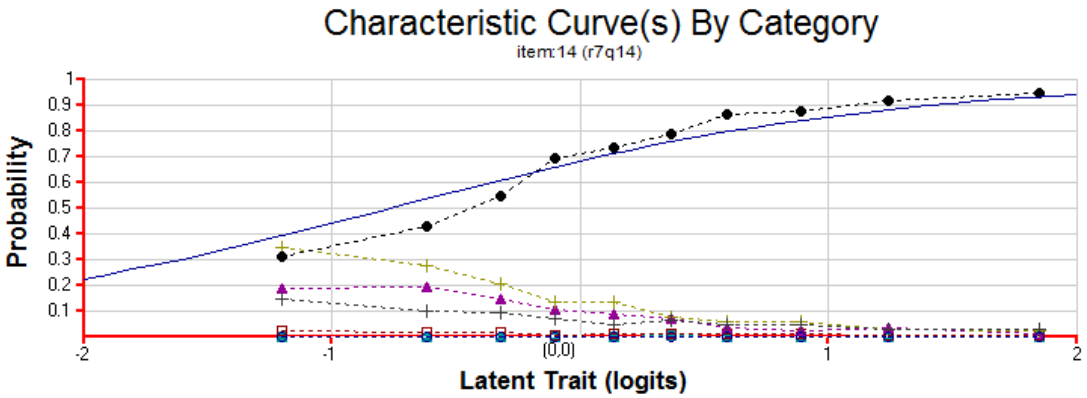

Characteristic Curve(s) By Category
item:9 (r7q09)
Probability
Latent Trait (logits)
(0,0)

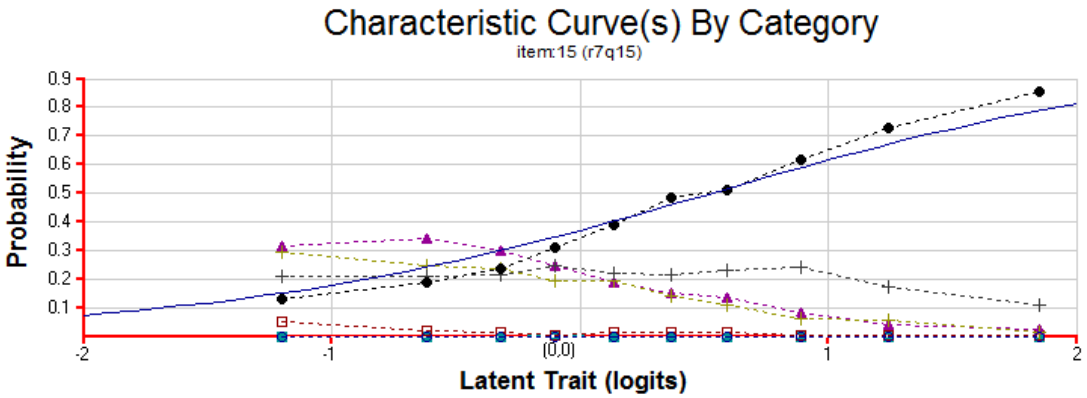

Characteristic Curve(s) By Category
item:10 (r7q10)
Probability
Latent Trait (logits)
(0,0)

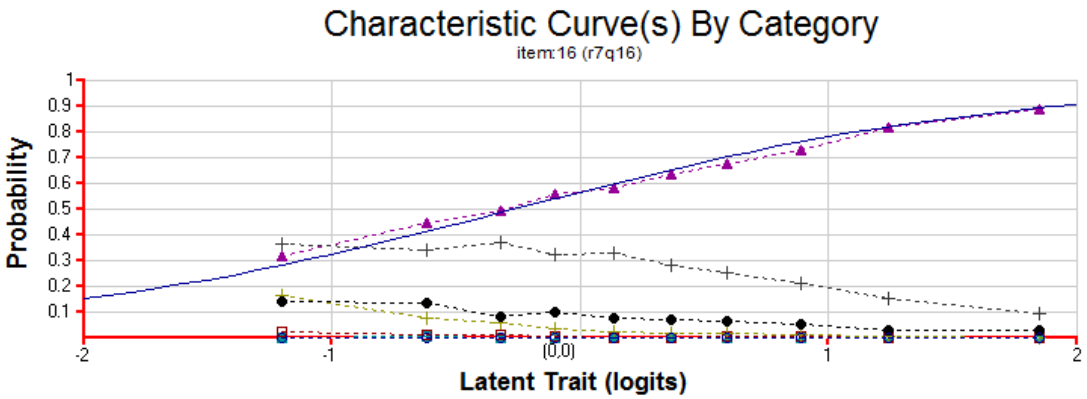

Characteristic Curve(s) By Category
item:11 (r7q11)
Probability
Latent Trait (logits)
(0,0)

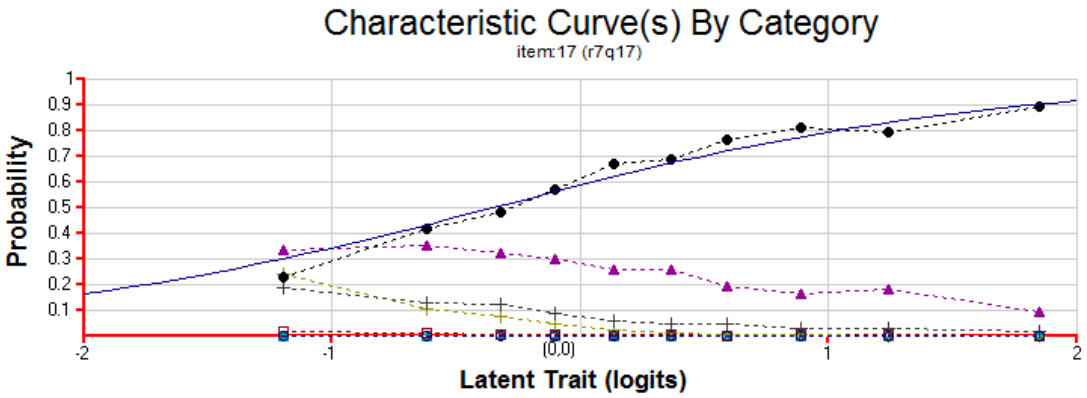

Characteristic Curve(s) By Category
item:12 (r7q12)
Probability
Latent Trait (logits)
(0,0)

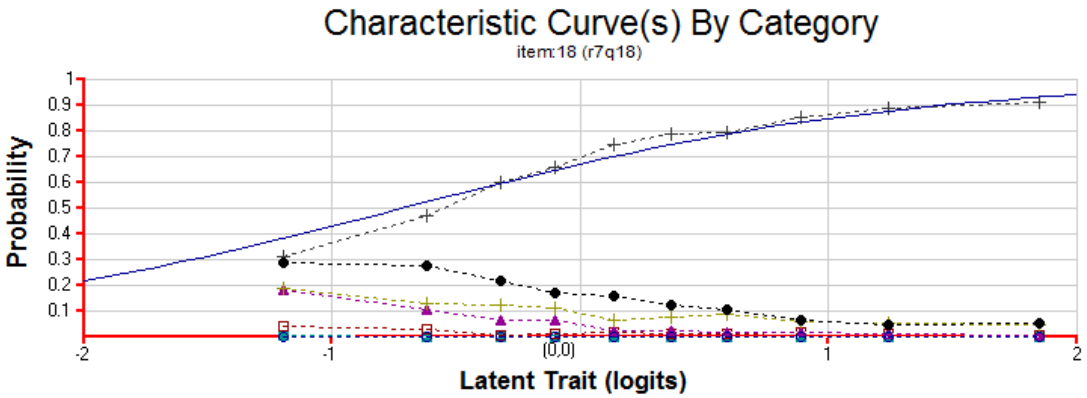

Characteristic Curve(s) By Category
item:13 (r7q13)
Probability
Latent Trait (logits)
(0,0)

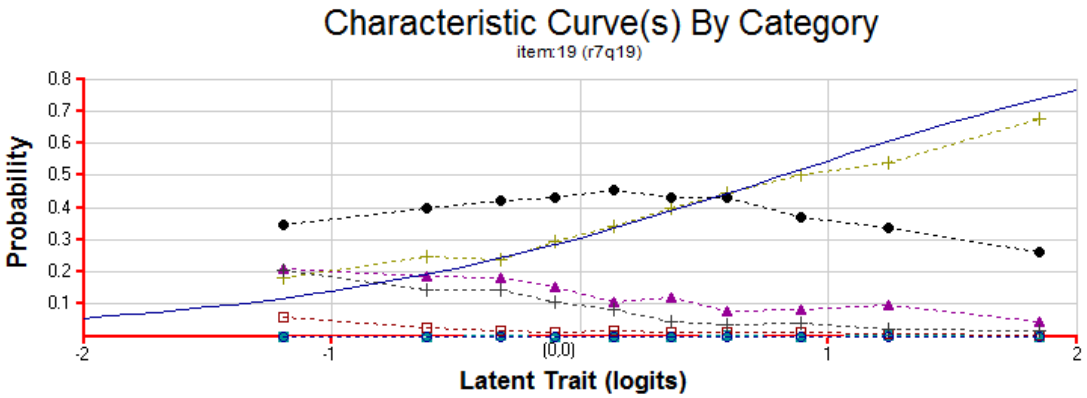

Characteristic Curve(s) By Category
item:14 (r7q14)
Probability
Latent Trait (logits)
(0,0)

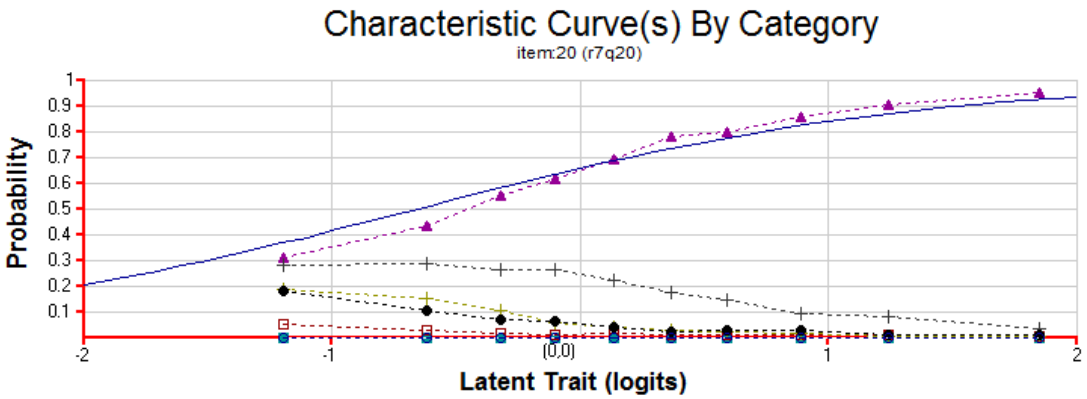

Characteristic Curve(s) By Category
item:15 (r7q15)
Probability
Latent Trait (logits)
(0,0)

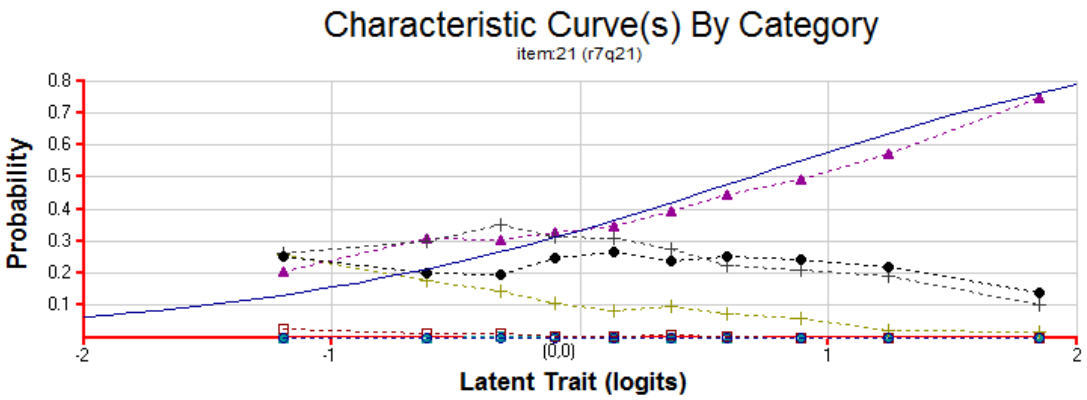

Characteristic Curve(s) By Category
item:16 (r7q16)
Probability
Latent Trait (logits)
(0,0)

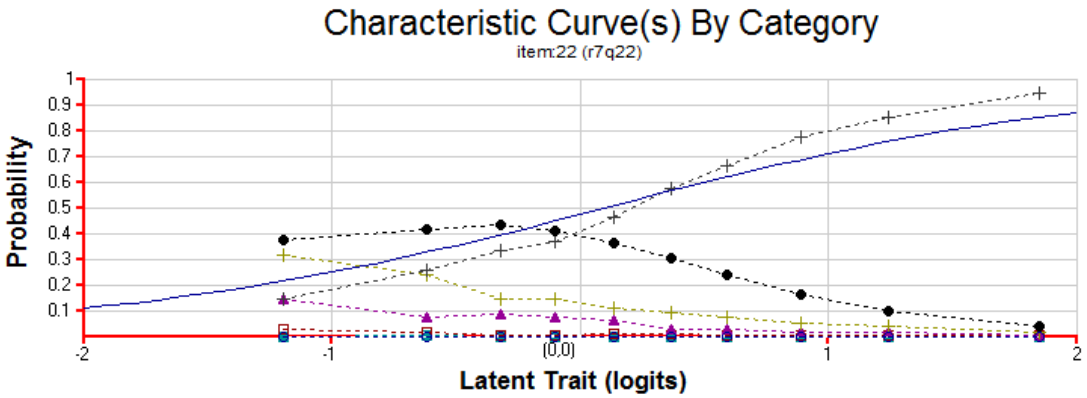

Characteristic Curve(s) By Category
item:17 (r7q17)
Probability
Latent Trait (logits)
(0,0)

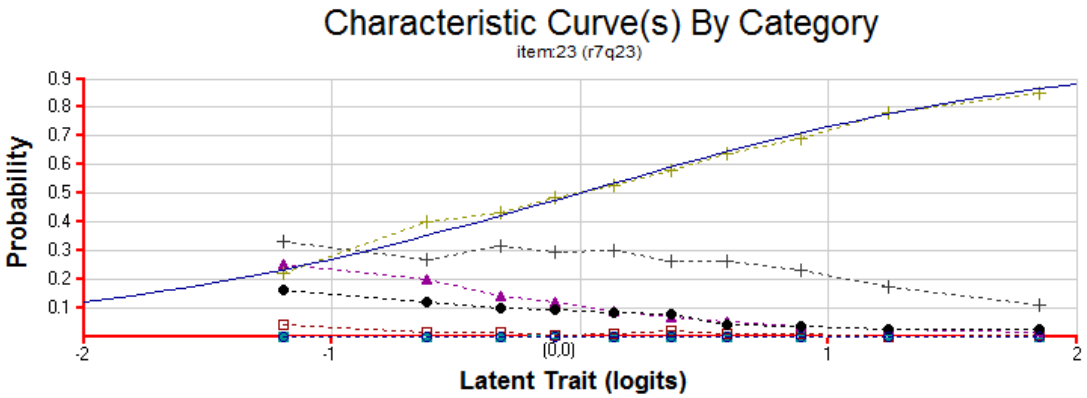

Characteristic Curve(s) By Category
item:18 (r7q18)
Probability
Latent Trait (logits)
(0,0)

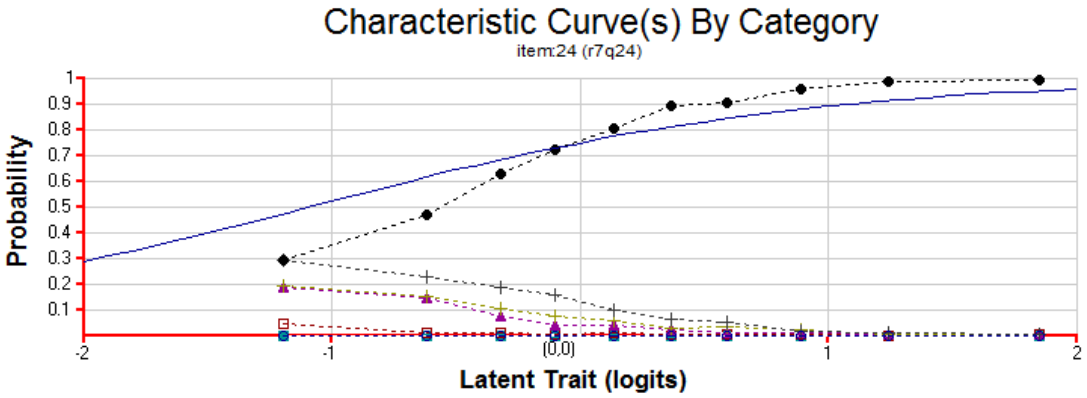

Characteristic Curve(s) By Category
item:19 (r7q19)
Probability
Latent Trait (logits)
(0,0)

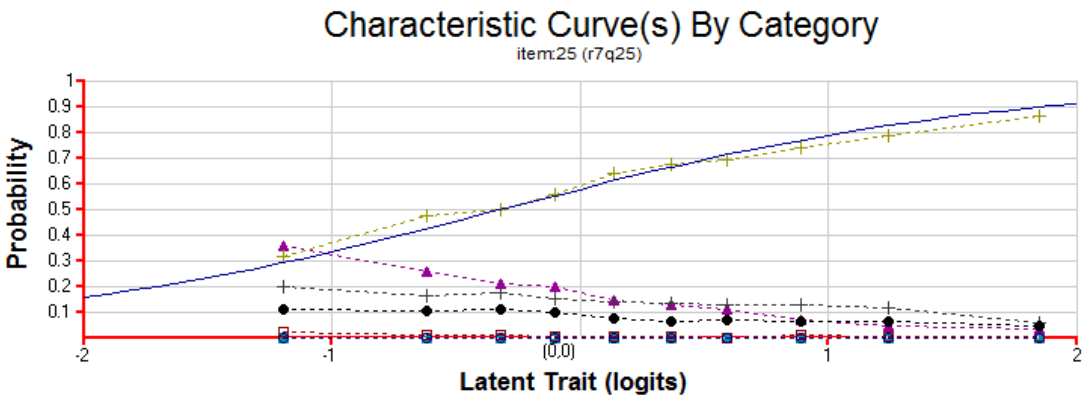

Characteristic Curve(s) By Category
item:20 (r7q20)
Probability
Latent Trait (logits)
(0,0)

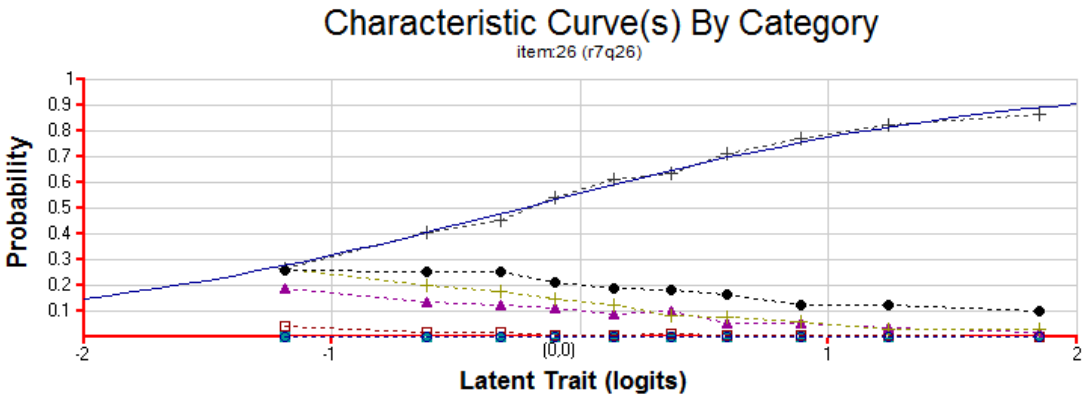

Characteristic Curve(s) By Category
item:21 (r7q21)
Probability
Latent Trait (logits)
(0,0)

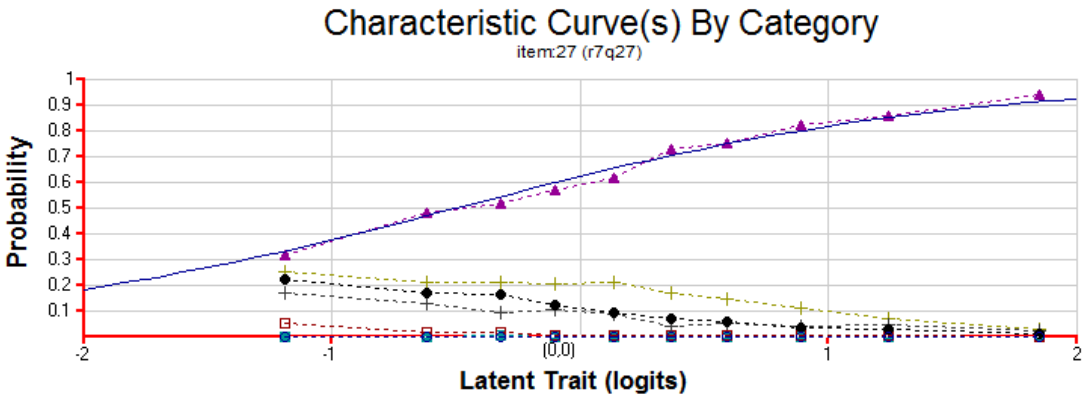

Characteristic Curve(s) By Category
item:22 (r7q22)
Probability
Latent Trait (logits)
(0,0)

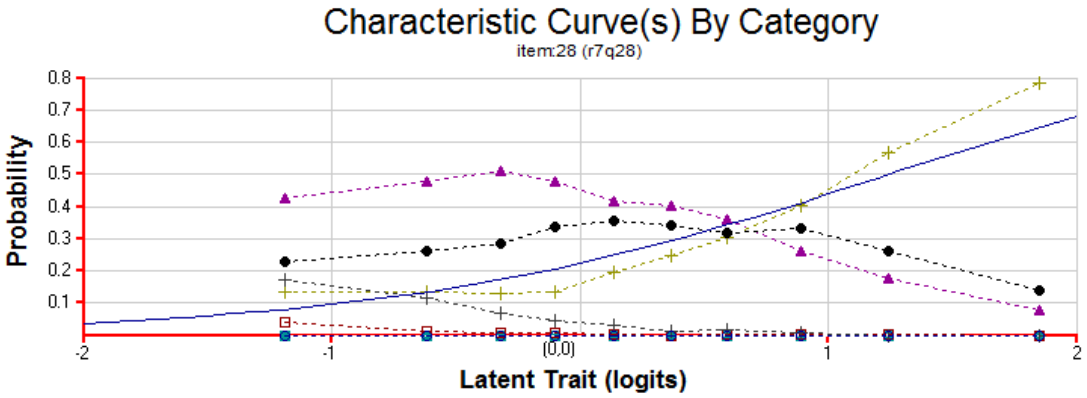

Characteristic Curve(s) By Category
item:23 (r7q23)
Probability
Latent Trait (logits)
(0,0)

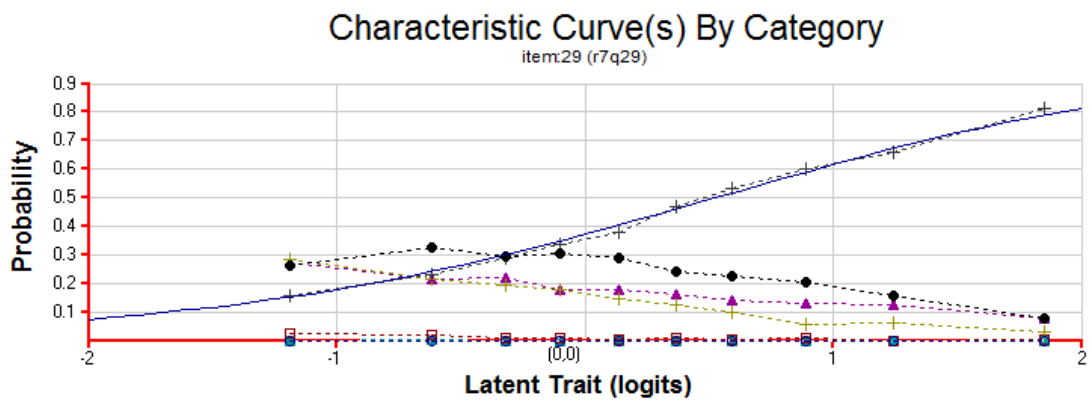

Characteristic Curve(s) By Category
item:24 (r7q24)
Probability
Latent Trait (logits)
(0,0)

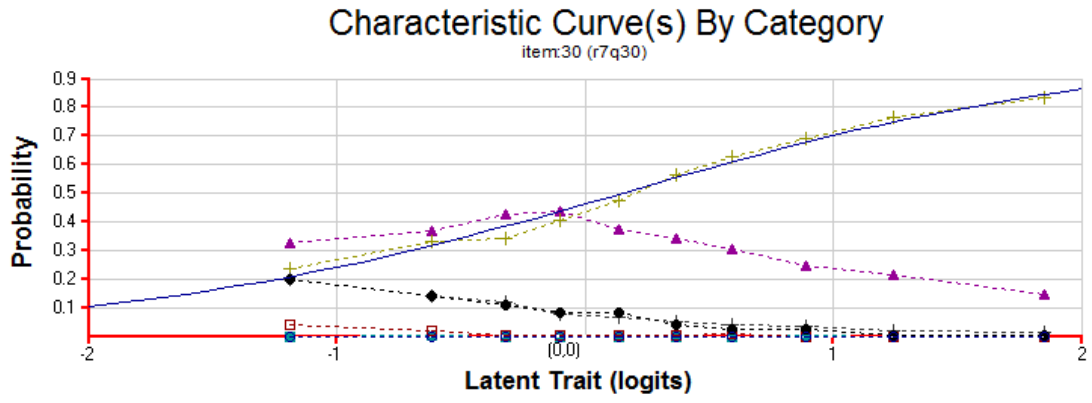

Characteristic Curve(s) By Category
item:25 (r7q25)
Probability
Latent Trait (logits)
(0,0)

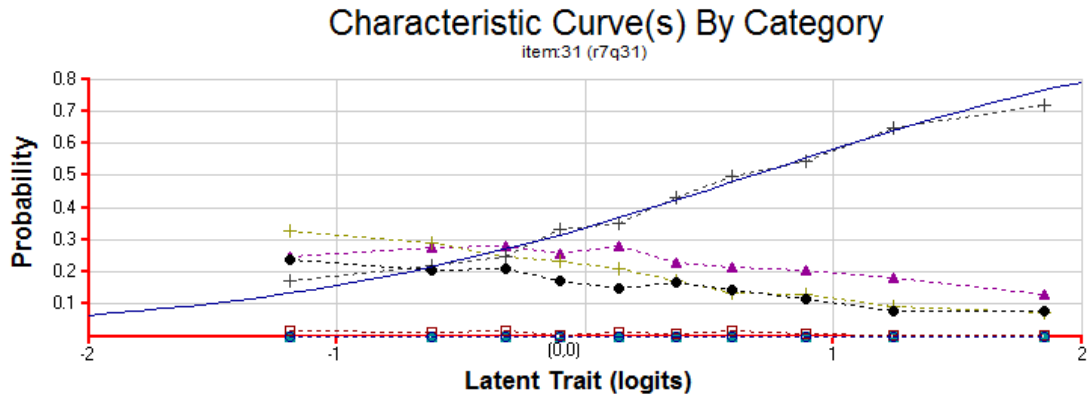

Characteristic Curve(s) By Category
item:26 (r7q26)
Probability
Latent Trait (logits)
(0,0)

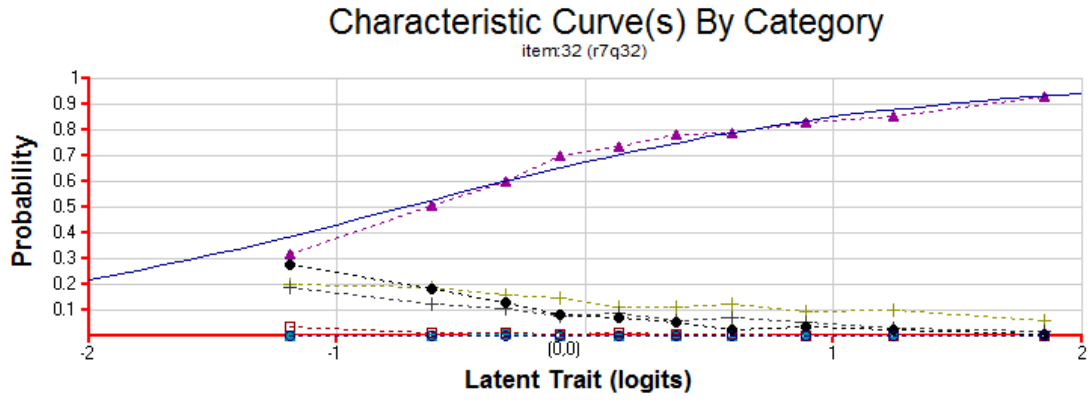

Characteristic Curve(s) By Category
item:27 (r7q27)
Probability
Latent Trait (logits)
(0,0)

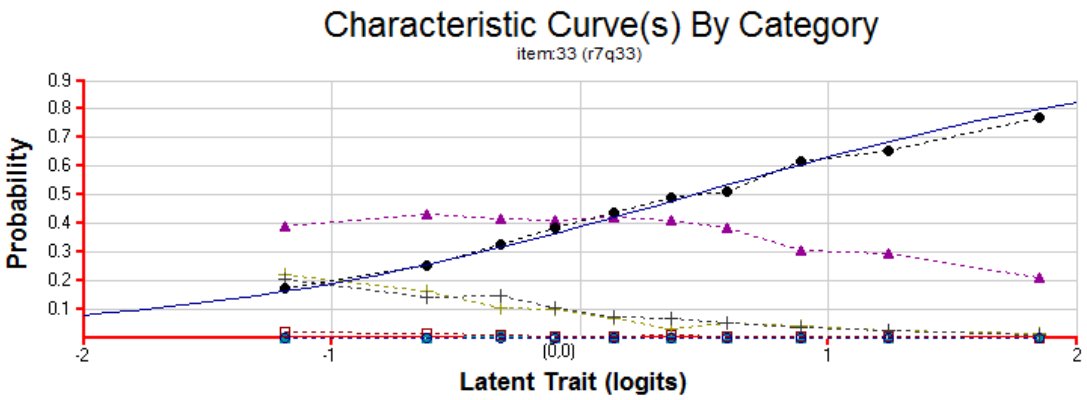

Characteristic Curve(s) By Category
item:28 (r7q28)
Probability
Latent Trait (logits)
(0,0)

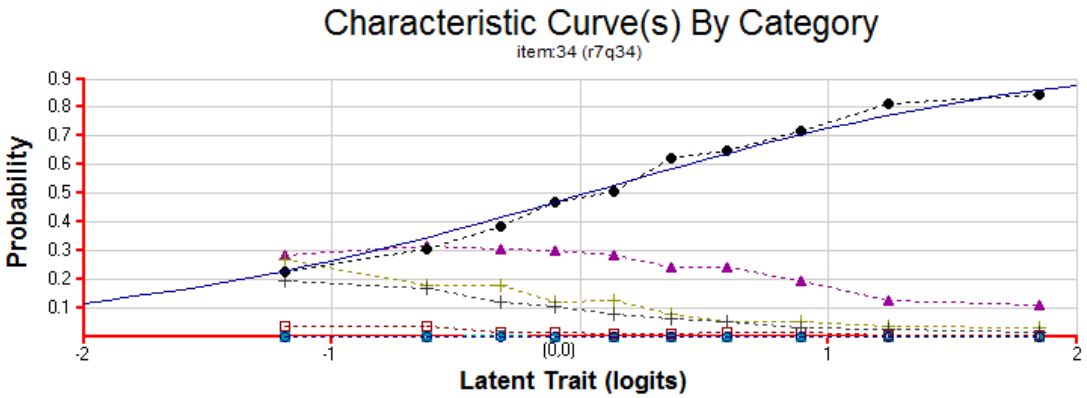

Characteristic Curve(s) By Category
item:29 (r7q29)
Probability
Latent Trait (logits)
(0,0)

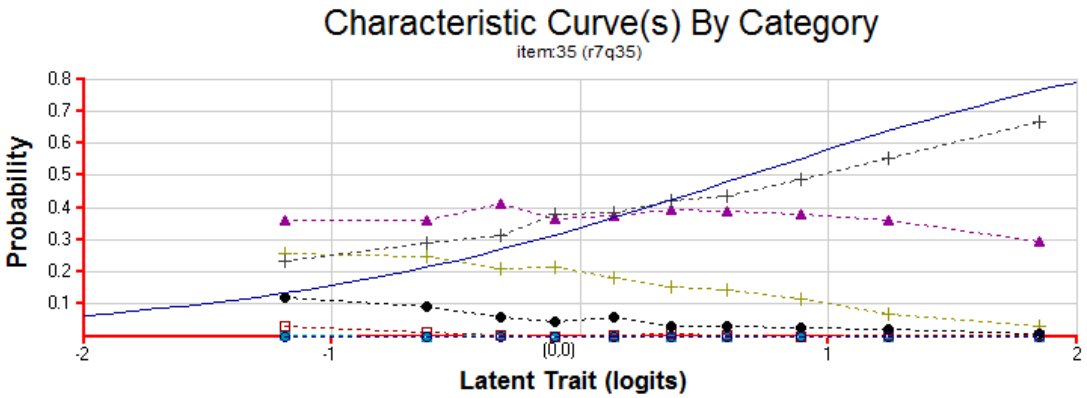

Characteristic Curve(s) By Category
item:30 (r7q30)
Probability
Latent Trait (logits)
(0,0)

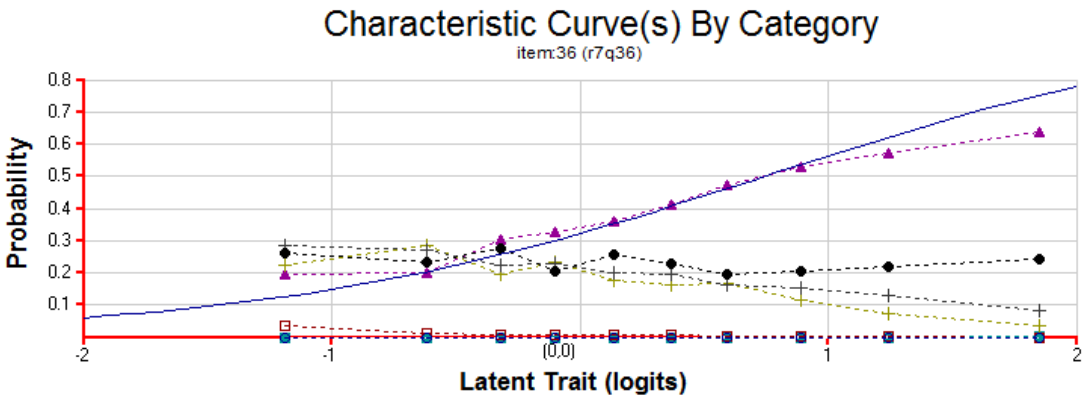

Characteristic Curve(s) By Category
item:31 (r7q31)
Probability
Latent Trait (logits)
(0,0)

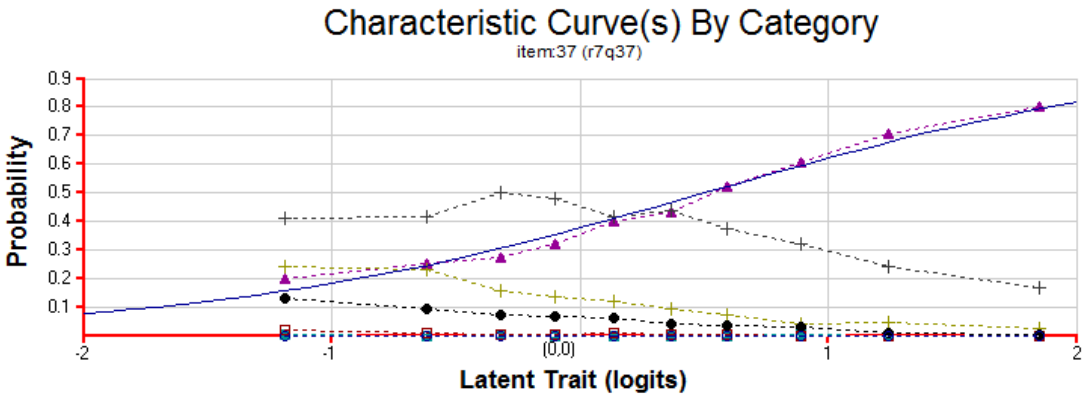

Characteristic Curve(s) By Category
item:32 (r7q32)
Probability
Latent Trait (logits)
(0,0)

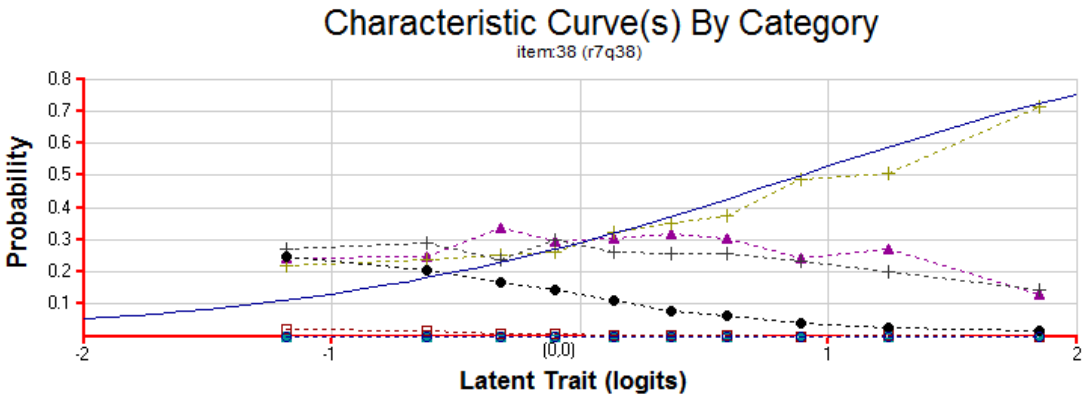

Characteristic Curve(s) By Category
item:33 (r7q33)
Probability
Latent Trait (logits)
(0,0)

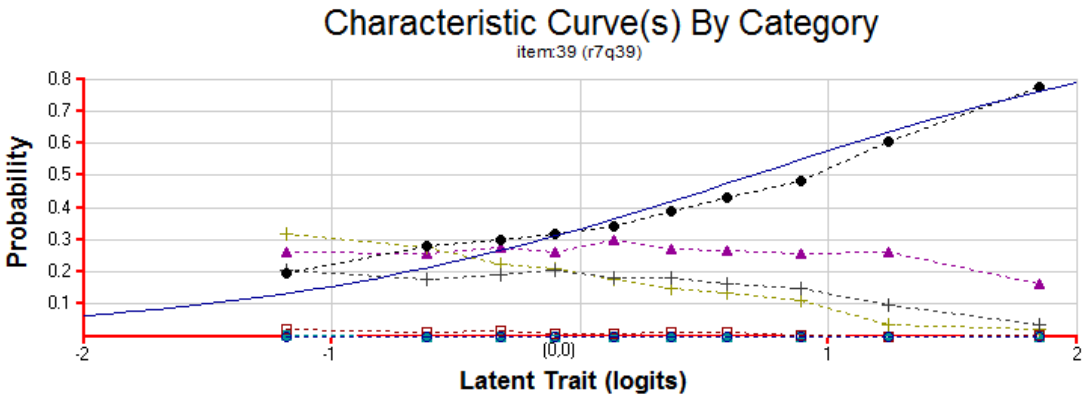

Characteristic Curve(s) By Category
item:34 (r7q34)
Probability
Latent Trait (logits)
(0,0)

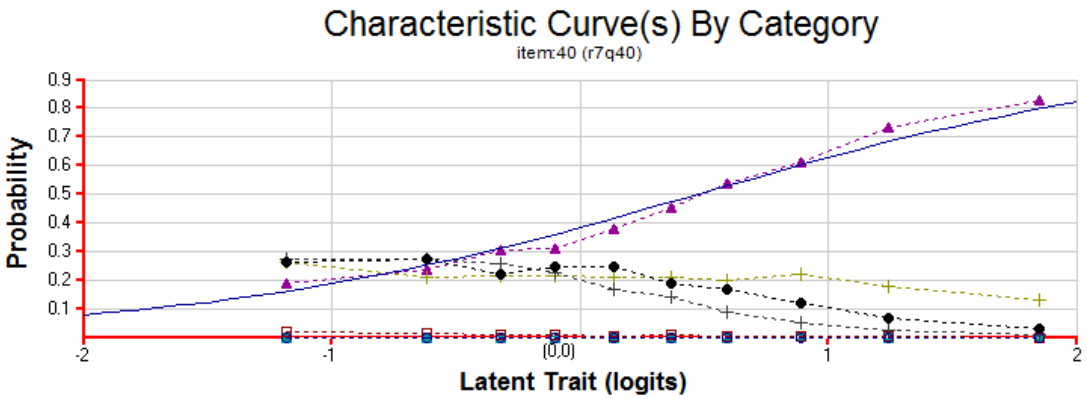

Characteristic Curve(s) By Category
item:35 (r7q35)
Probability
Latent Trait (logits)
(0,0)

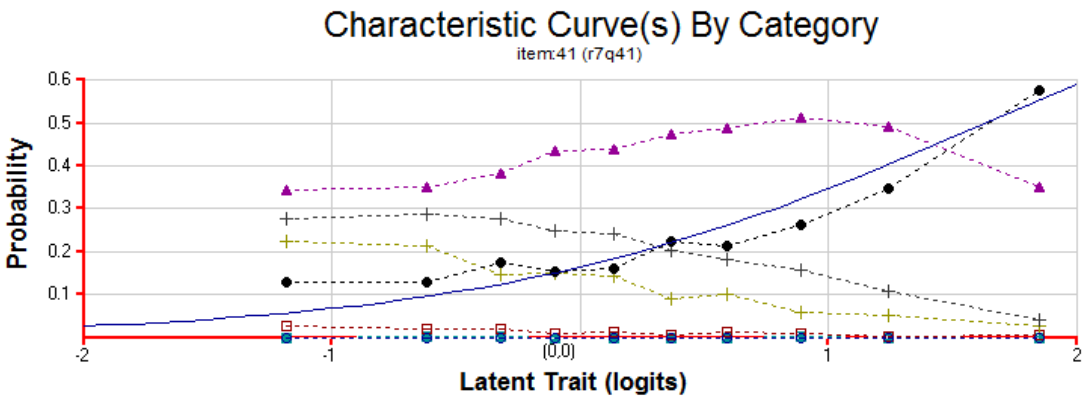

Characteristic Curve(s) By Category
item:36 (r7q36)
Probability
Latent Trait (logits)
(0,0)

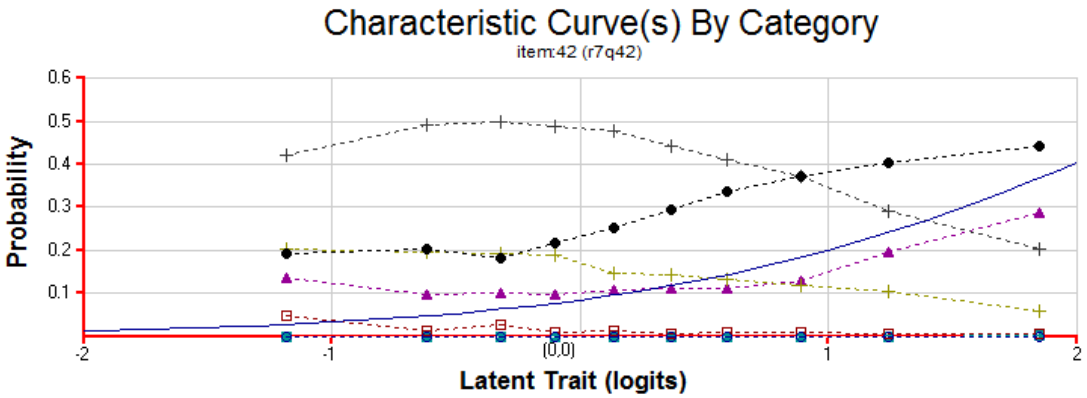

Characteristic Curve(s) By Category
item:37 (r7q37)
Probability
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)

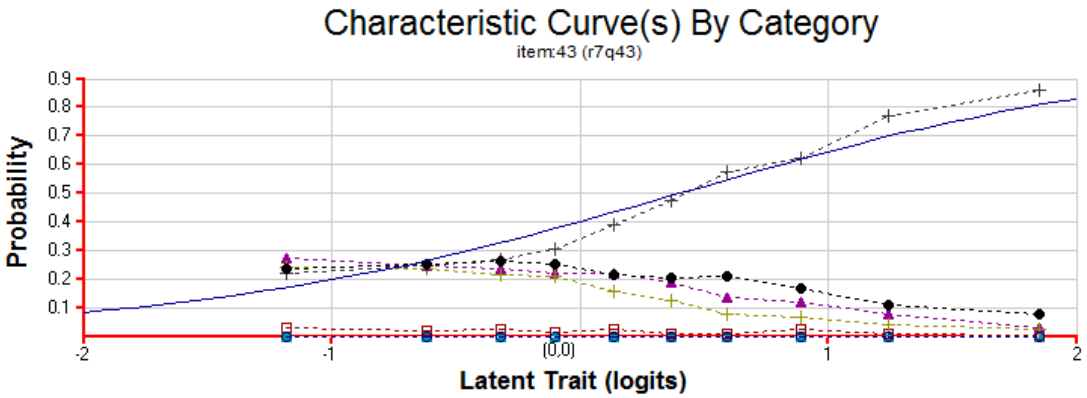

Characteristic Curve(s) By Category
item:38 (r7q38)
Probability
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)

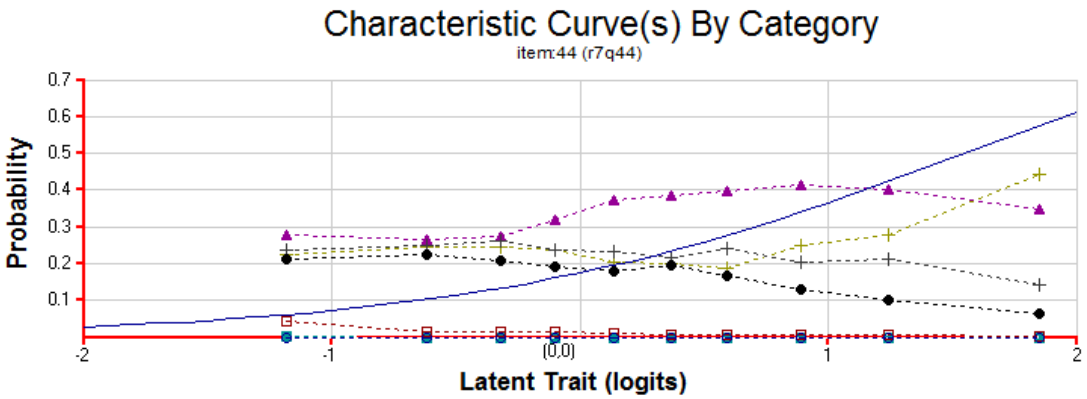

Characteristic Curve(s) By Category
item:39 (r7q39)
Probability
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)

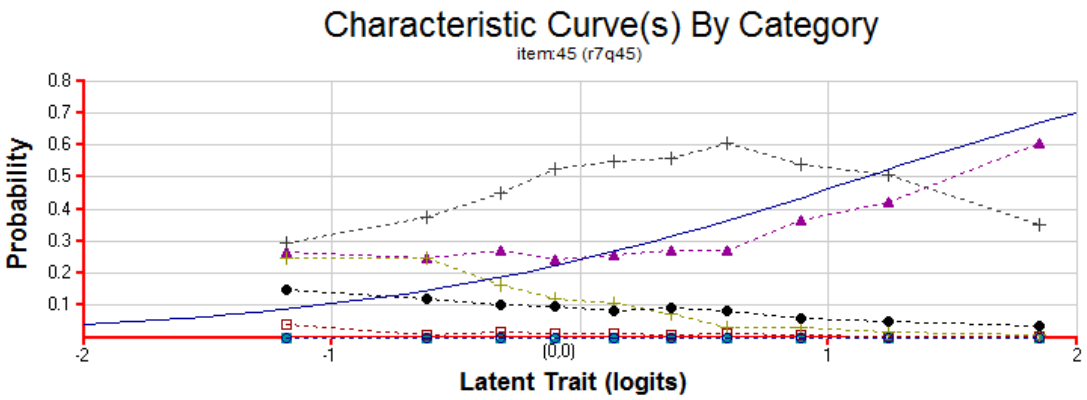

Characteristic Curve(s) By Category
item:40 (r7q40)
Probability
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)

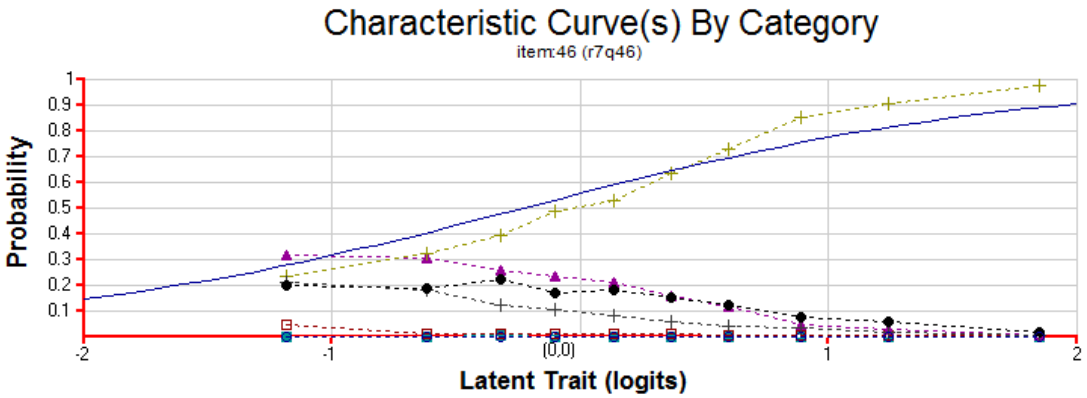

Characteristic Curve(s) By Category
item:41 (r7q41)
Probability
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)

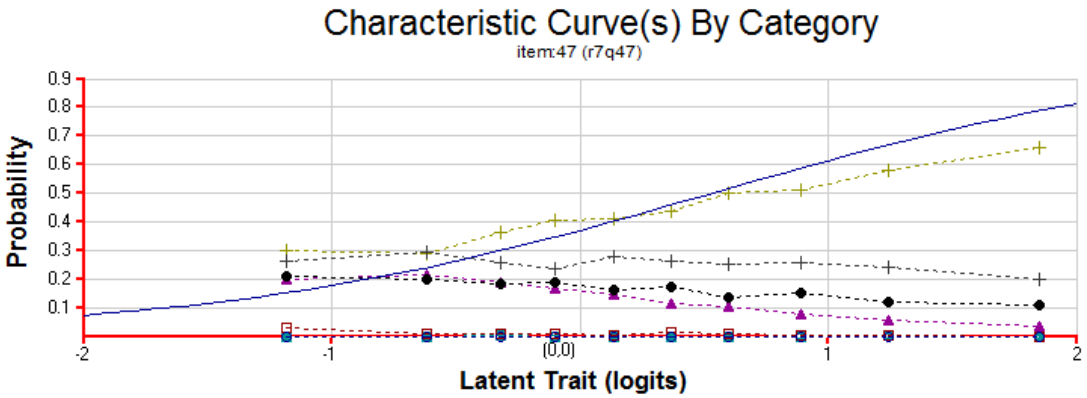

Characteristic Curve(s) By Category
item:42 (r7q42)
Probability
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)

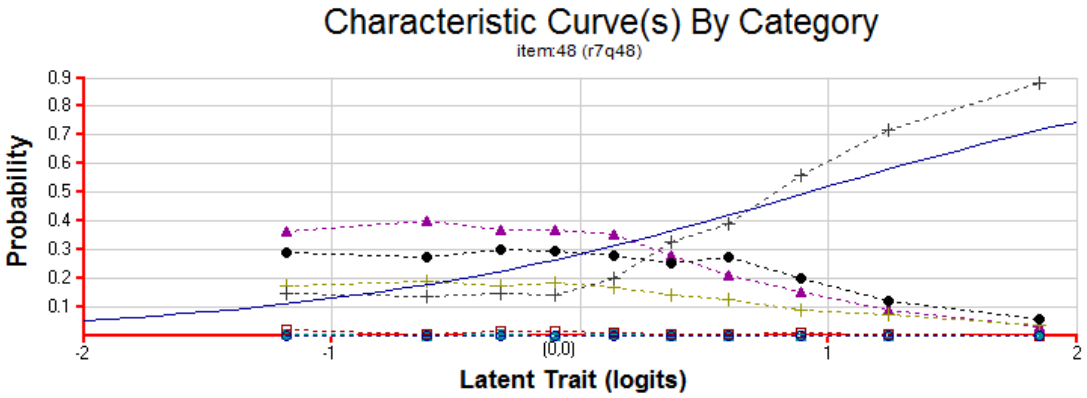

Characteristic Curve(s) By Category
item:43 (r7q43)
Probability
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)

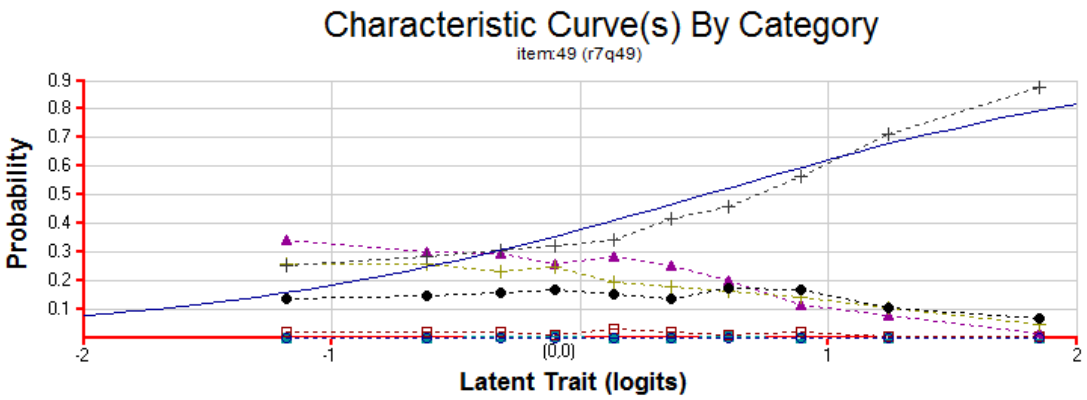

Characteristic Curve(s) By Category
item:44 (r7q44)
Probability
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)

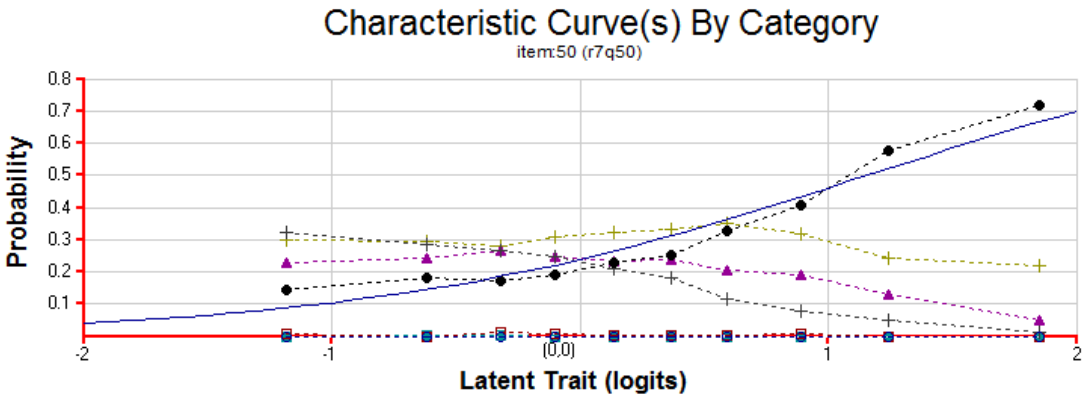

Characteristic Curve(s) By Category
item:45 (r7q45)
Probability
Latent Trait (logits)
(0,0)


Characteristic Curve(s) By Category
item:46 (r7q46)
Probability
Latent Trait (logits)
(0,0)

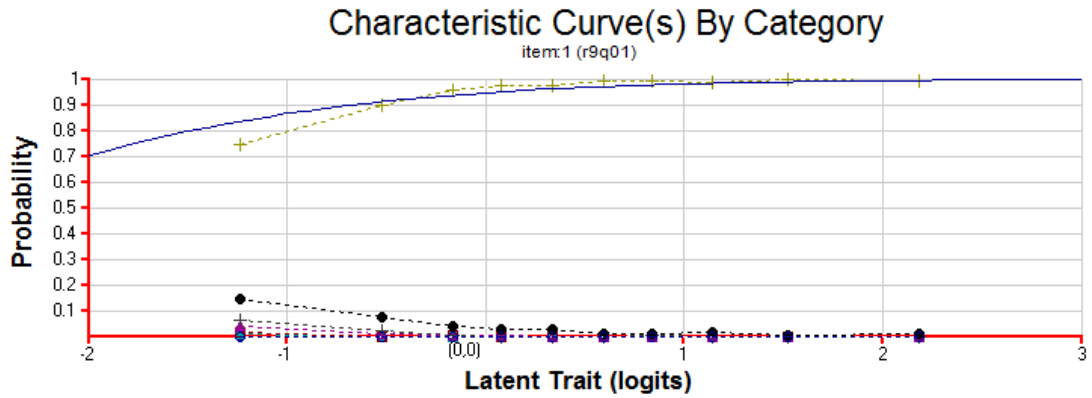

Characteristic Curve(s) By Category
item:47 (r7q47)
Probability
Latent Trait (logits)
(0,0)

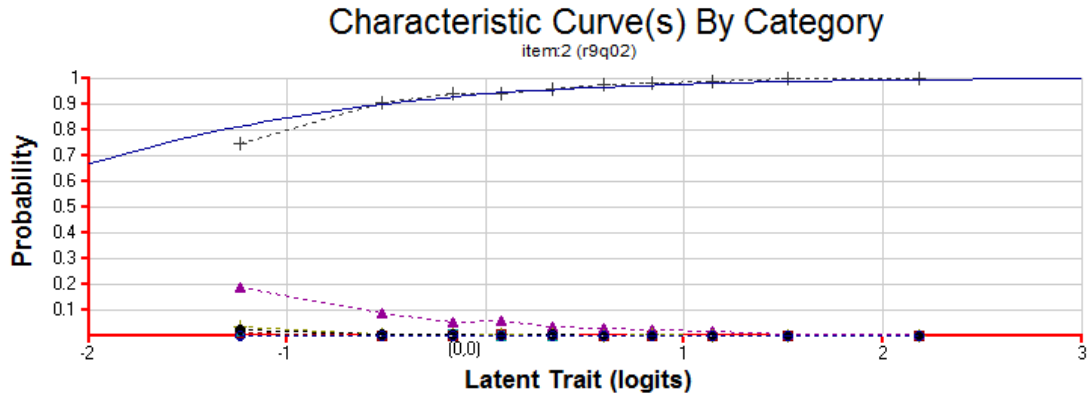

Characteristic Curve(s) By Category
item:48 (r7q48)
Probability
Latent Trait (logits)
(0,0)

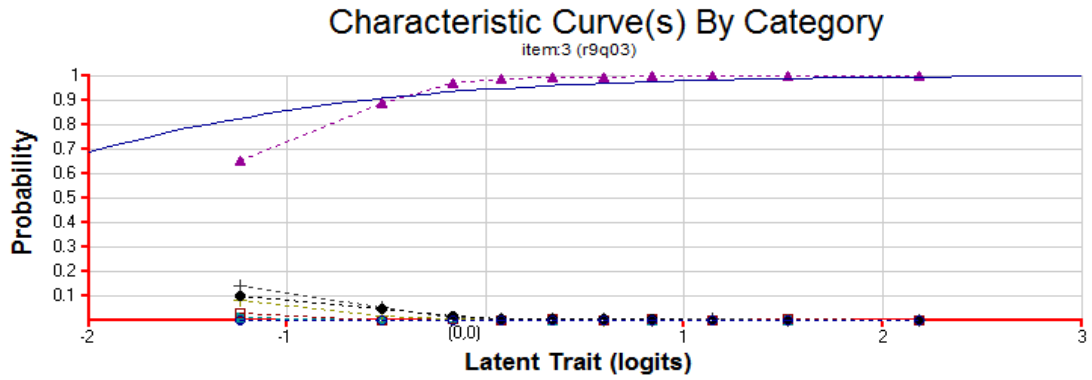

Characteristic Curve(s) By Category
item:49 (r7q49)
Probability
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)

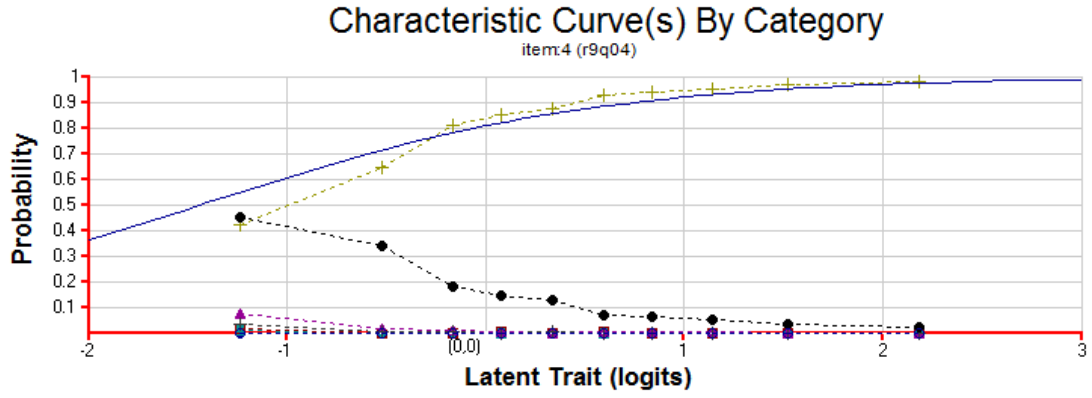

Characteristic Curve(s) By Category
item:50 (r7q50)
Probability
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)

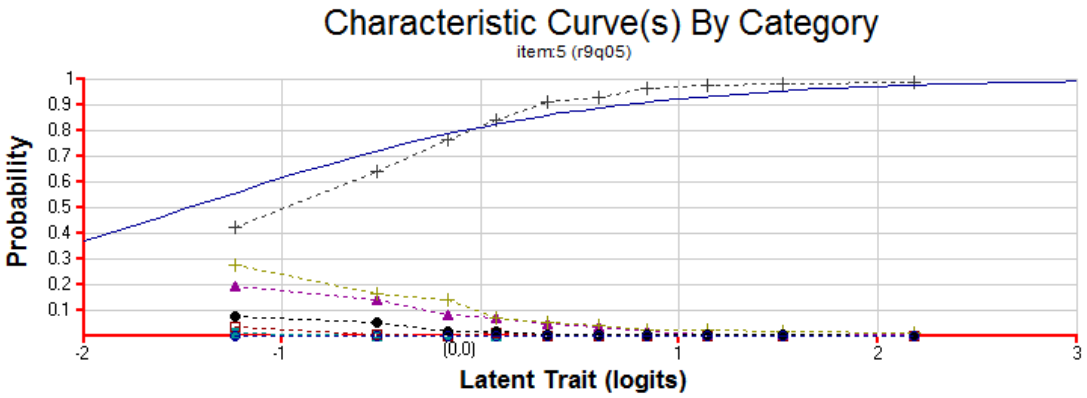
Year 9 Reading

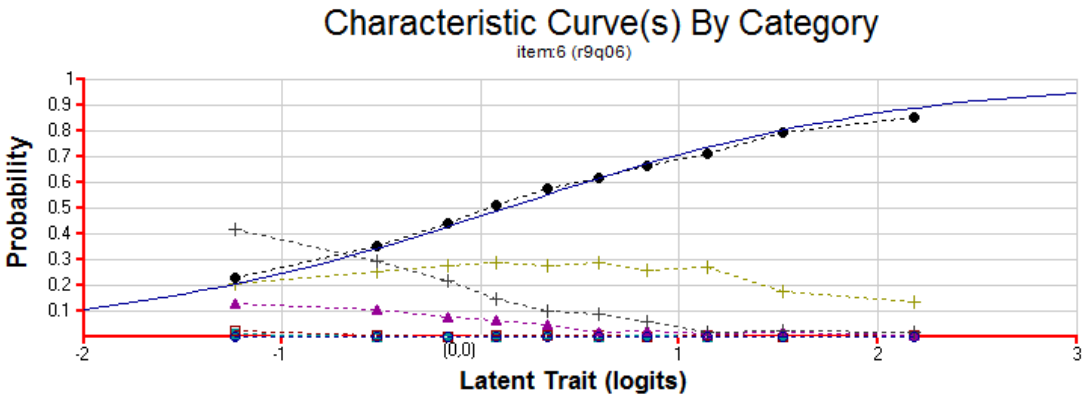


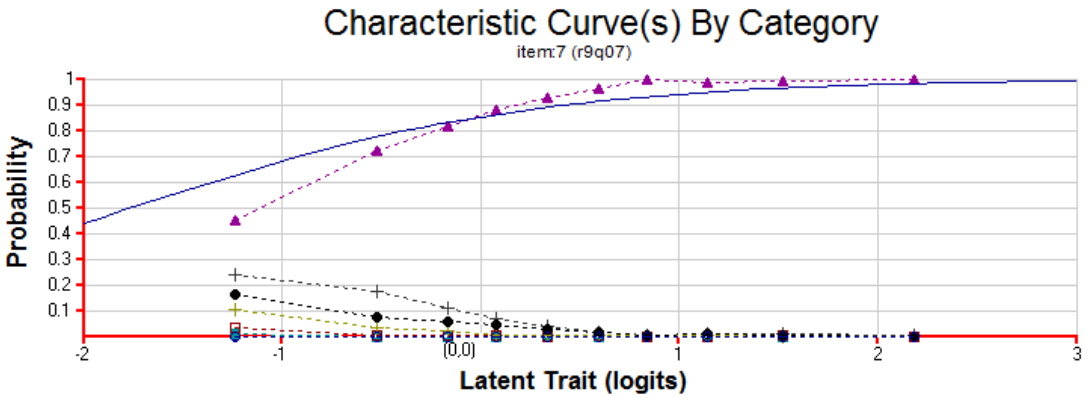


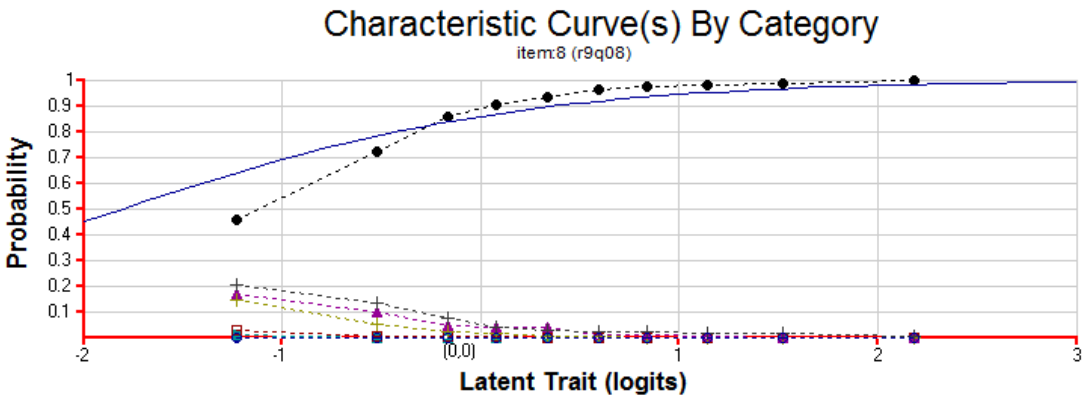


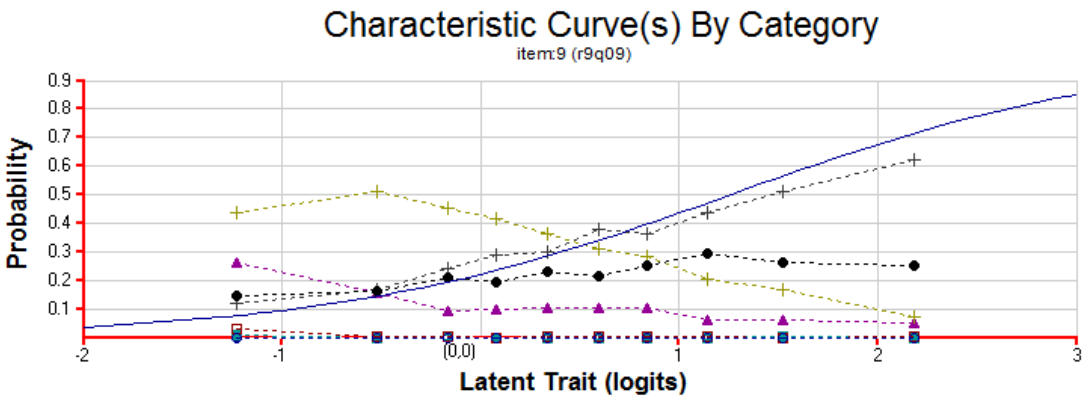


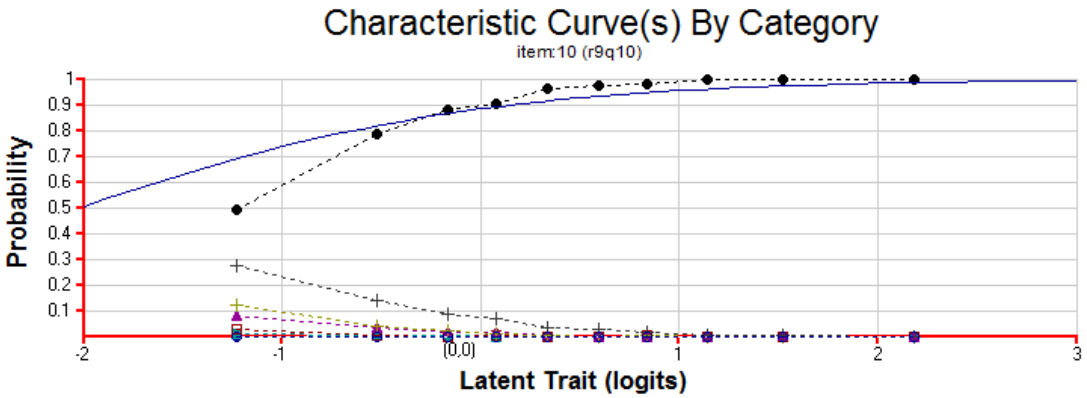

Characteristic Curve(s) By Category
item:5 (r9q05)
Probability
Latent Trait (logits)
(0,0)

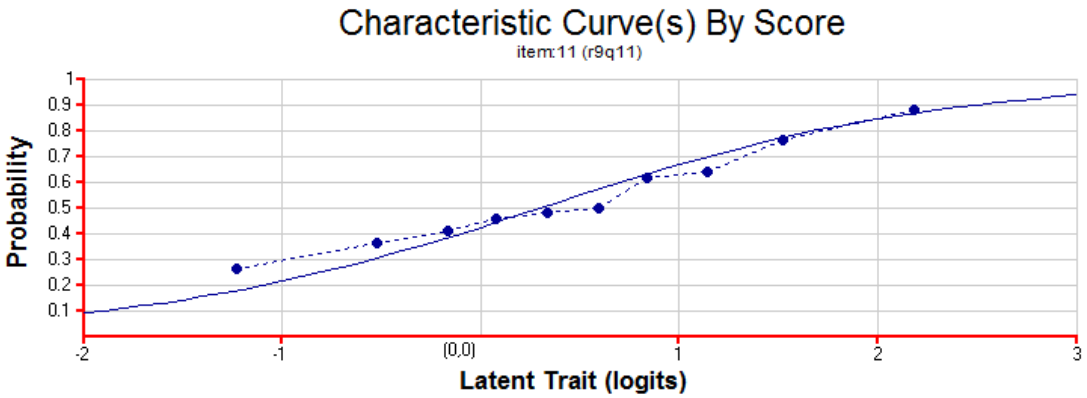

Characteristic Curve(s) By Category
item:6 (r9q06)
Probability
Latent Trait (logits)
(0,0)

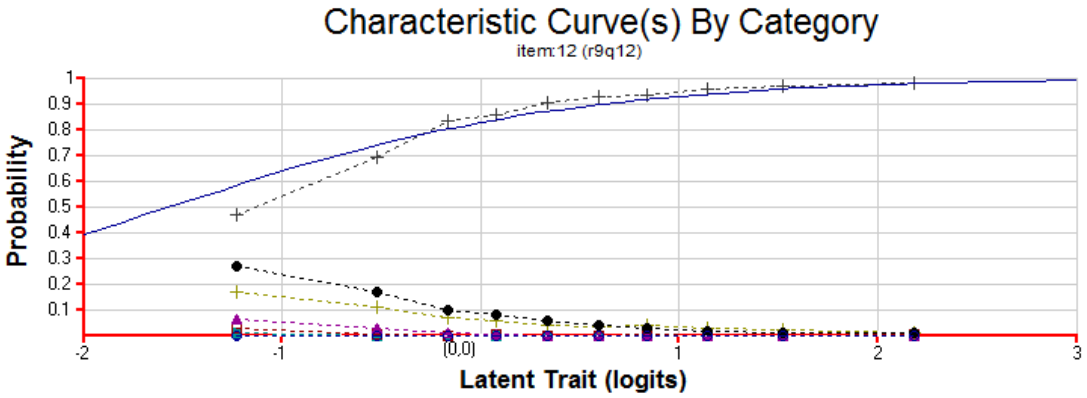

Characteristic Curve(s) By Category
item:7 (r9q07)
Probability
Latent Trait (logits)
(0,0)

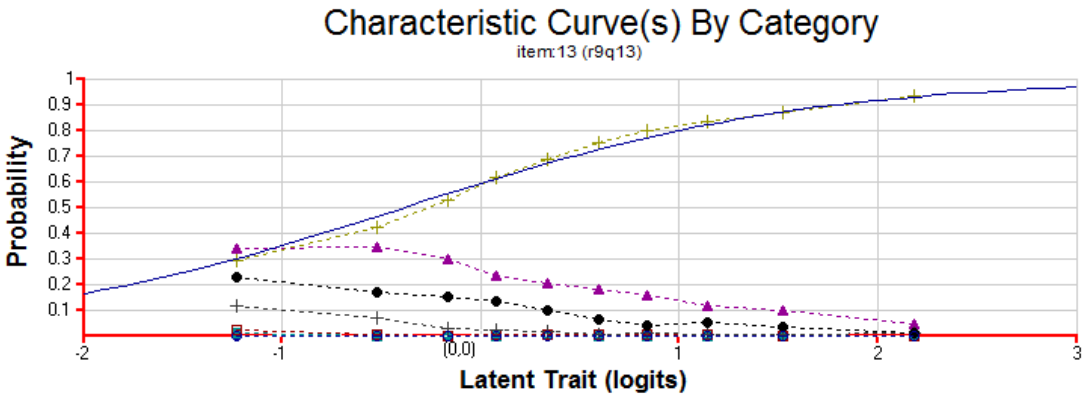

Characteristic Curve(s) By Category
item:8 (r9q08)
Probability
Latent Trait (logits)
(0,0)

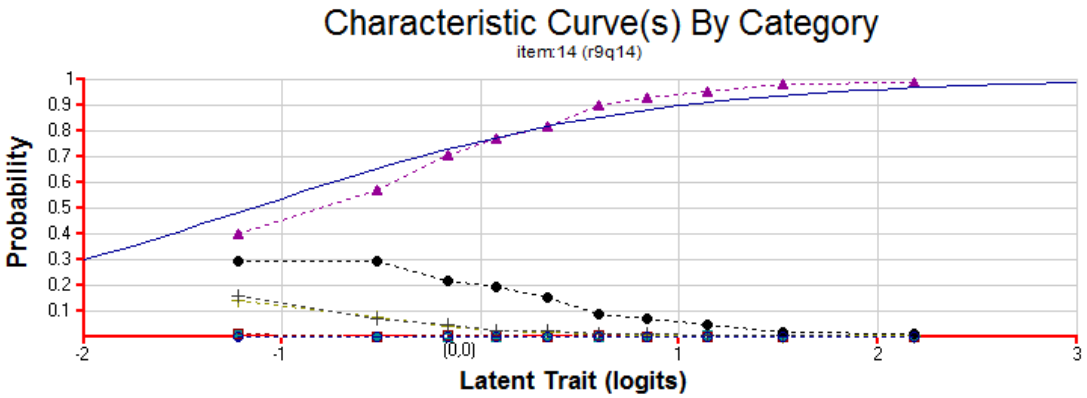

Characteristic Curve(s) By Category
item:9 (r9q09)
Probability
Latent Trait (logits)
(0,0)

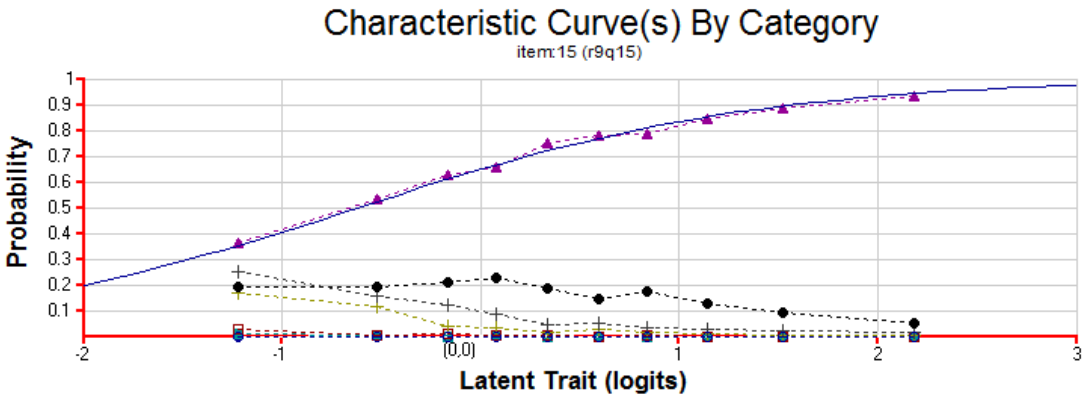

Characteristic Curve(s) By Category
item:10 (r9q10)
Probability
Latent Trait (logits)
(0,0)

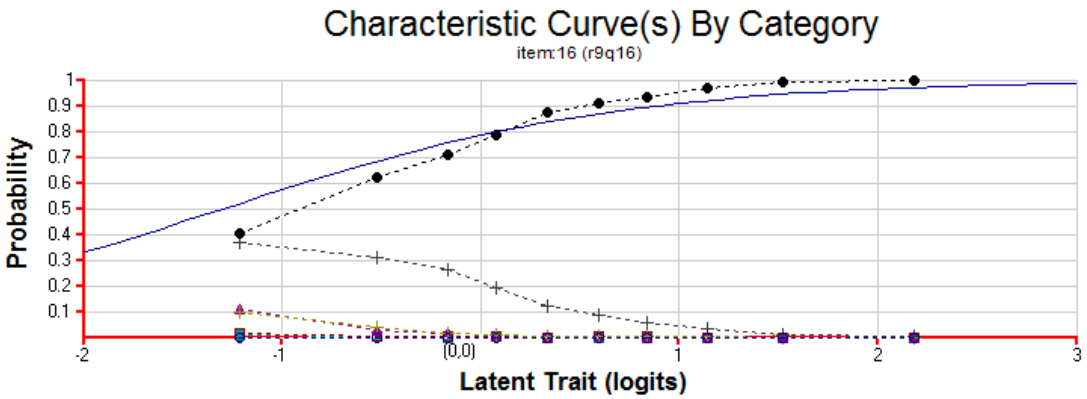

Characteristic Curve(s) By Score
item:11 (r9q11)
Probability
Latent Trait (logits)
(0,0)

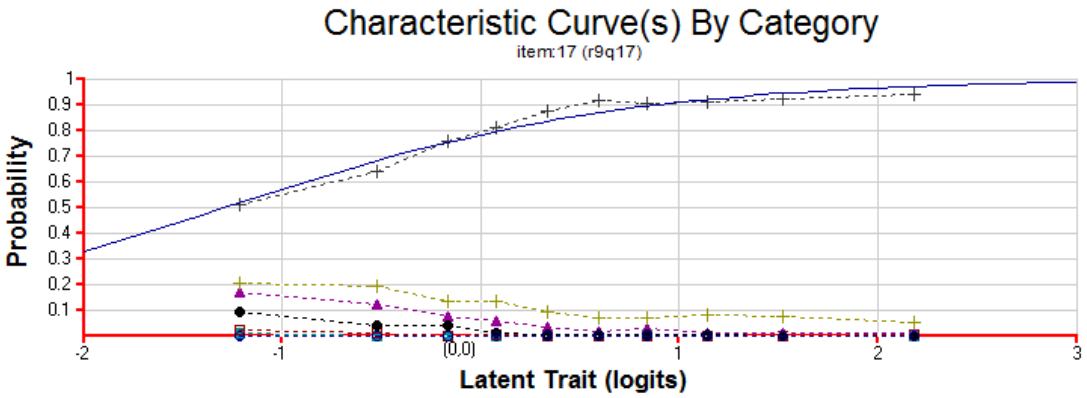

Characteristic Curve(s) By Category
item:12 (r9q12)
Probability
Latent Trait (logits)
(0,0)

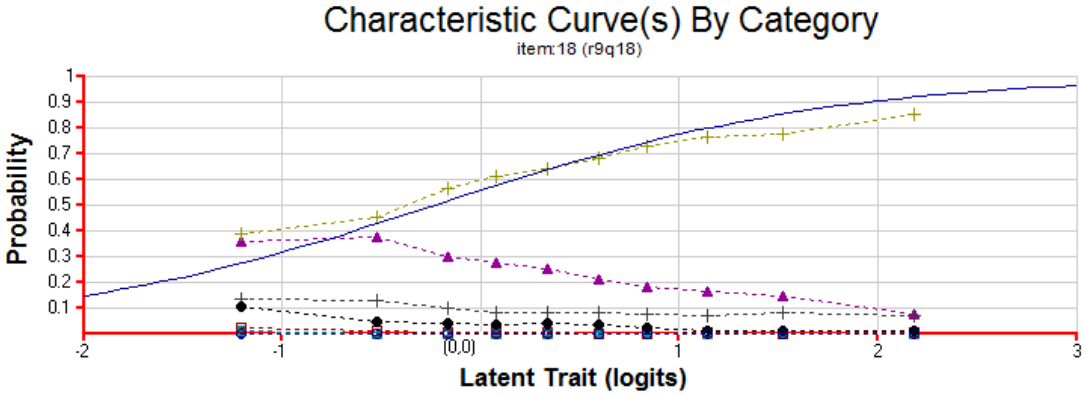

Characteristic Curve(s) By Category
item:13 (r9q13)
Probability
Latent Trait (logits)
(0,0)

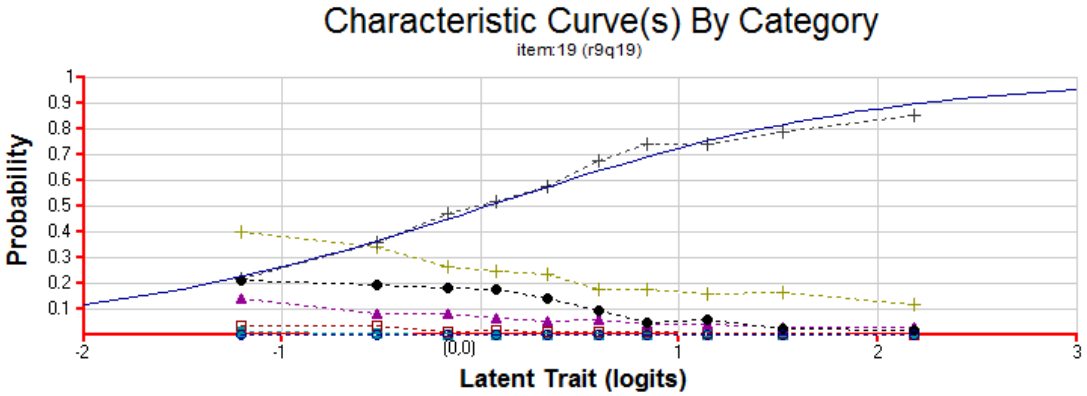

Characteristic Curve(s) By Category
item:14 (r9q14)
Probability
Latent Trait (logits)
(0,0)

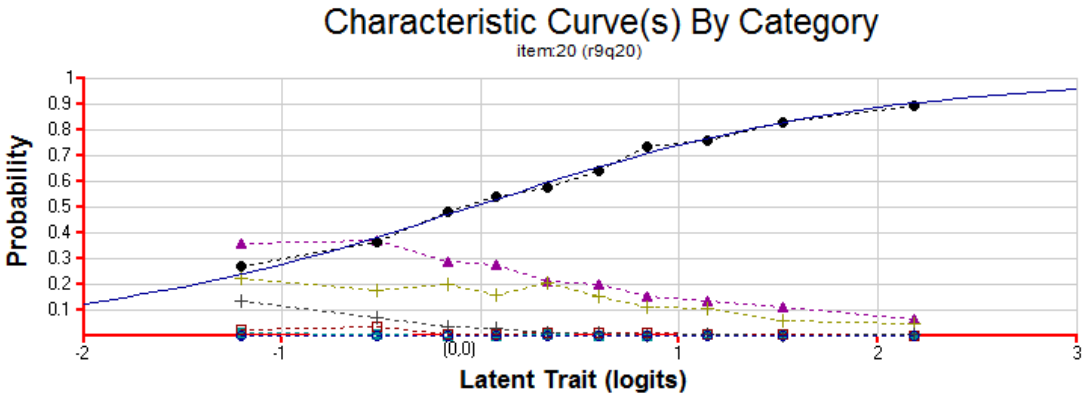

Characteristic Curve(s) By Category
item:15 (r9q15)
Probability
Latent Trait (logits)
(0,0)

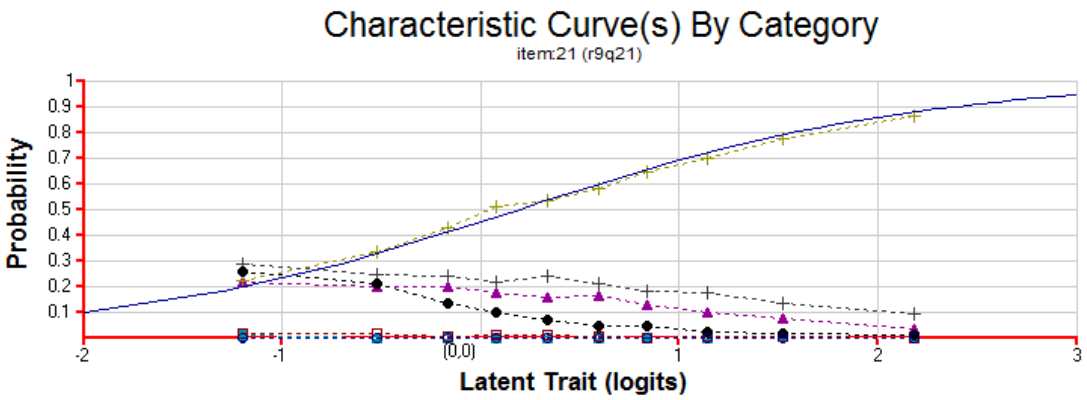

Characteristic Curve(s) By Category
item:16 (r9q16)
Probability
Latent Trait (logits)
(0,0)

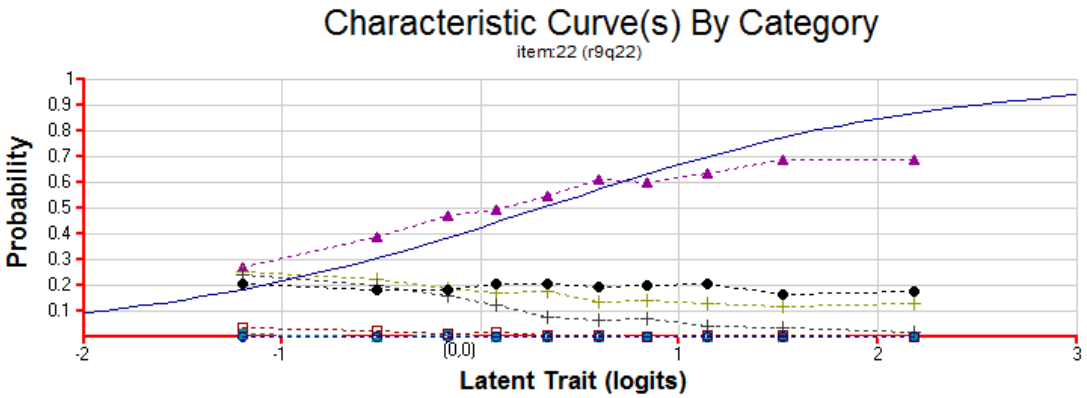

Characteristic Curve(s) By Category
item:17 (r9q17)
Probability
Latent Trait (logits)
(0,0)

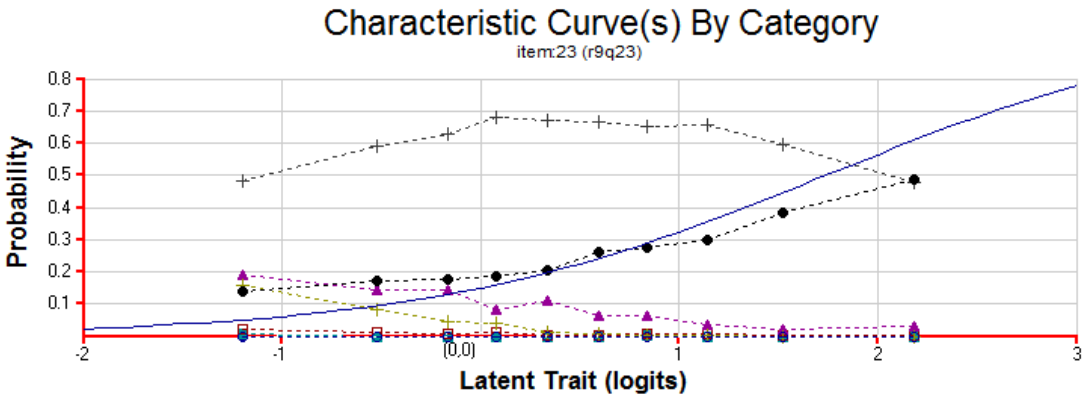

Characteristic Curve(s) By Category
item:18 (r9q18)
Probability
Latent Trait (logits)
(0,0)

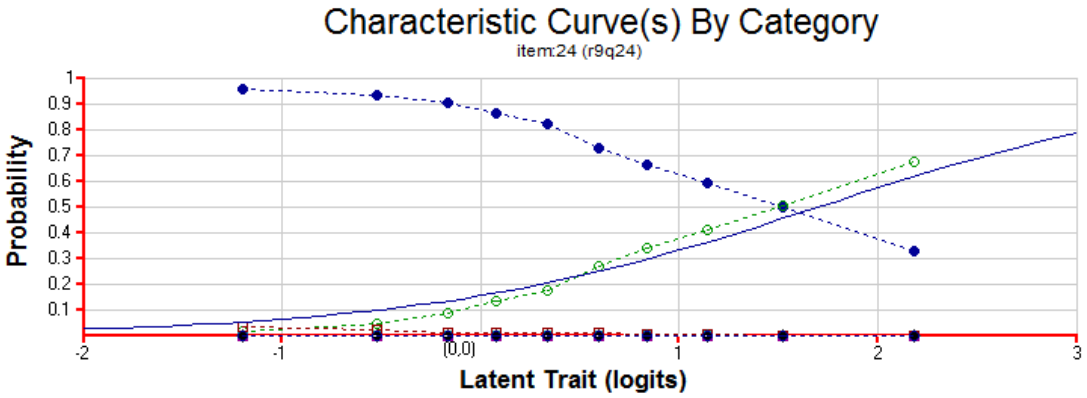

Characteristic Curve(s) By Category
item:19 (r9q19)
Probability
Latent Trait (logits)
(0,0)

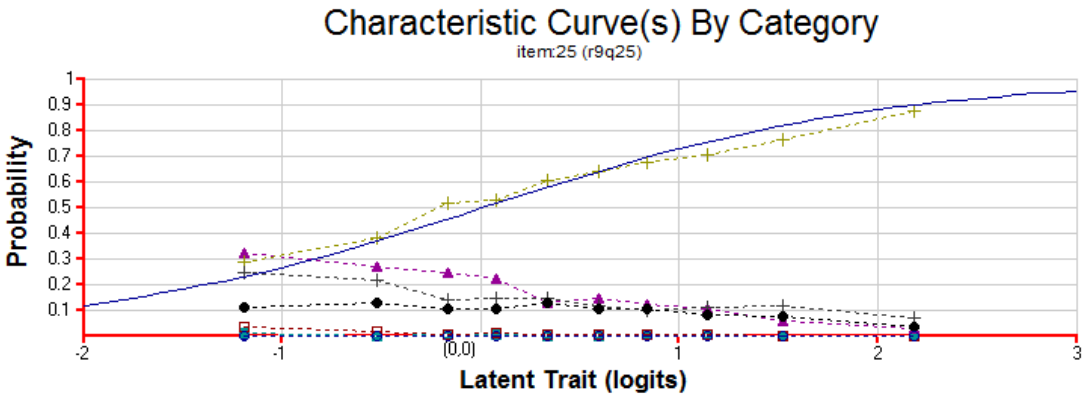

Characteristic Curve(s) By Category
item:20 (r9q20)
Probability
Latent Trait (logits)
(0,0)

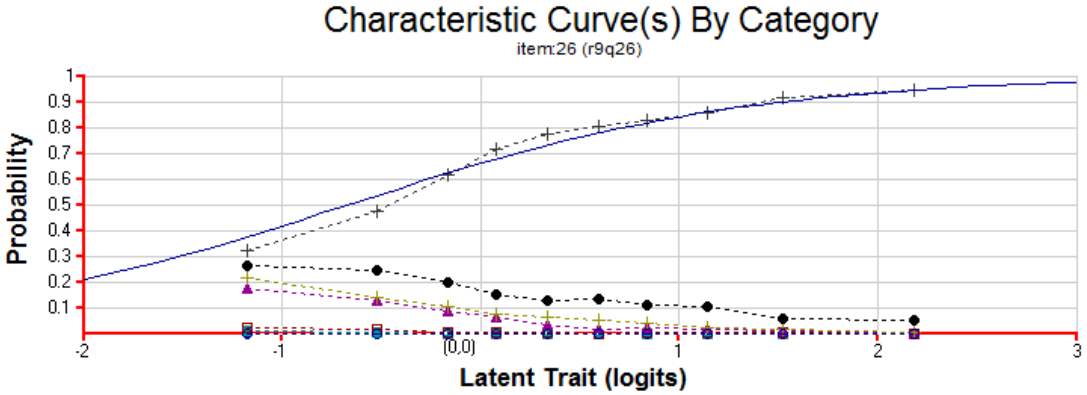

Characteristic Curve(s) By Category
item:21 (r9q21)
Probability
Latent Trait (logits)
(0,0)

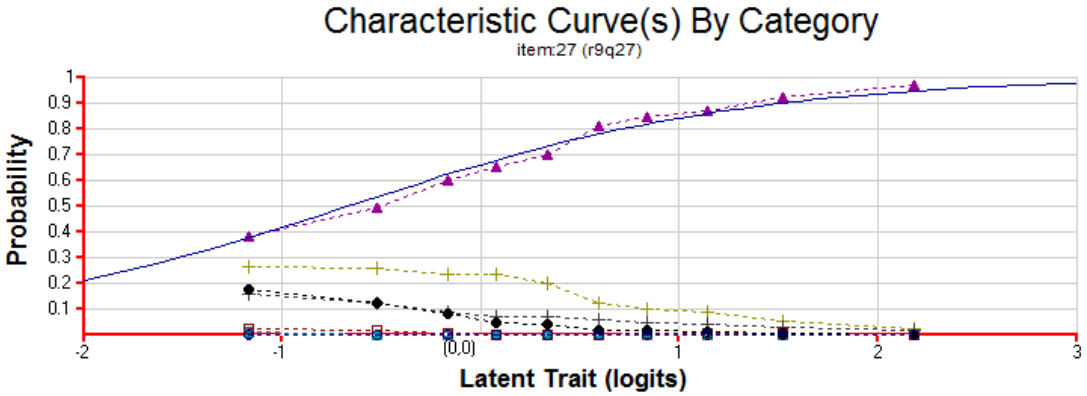

Characteristic Curve(s) By Category
item:22 (r9q22)
Probability
Latent Trait (logits)
(0,0)

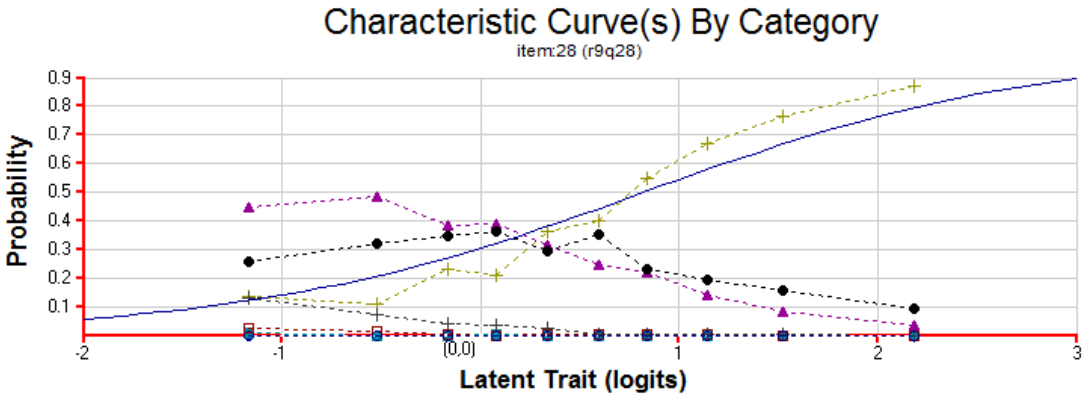

Characteristic Curve(s) By Category
item:23 (r9q23)
Probability
Latent Trait (logits)
(0,0)

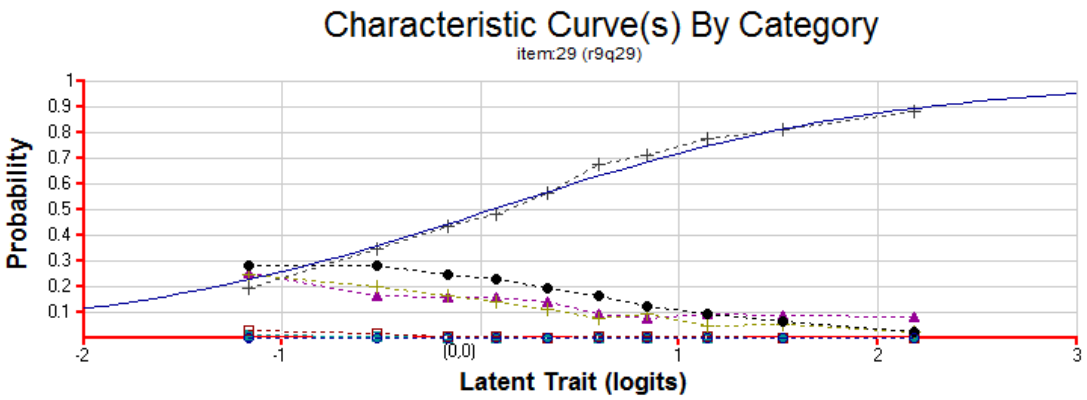

Characteristic Curve(s) By Category
item:24 (r9q24)
Probability
Latent Trait (logits)
(0,0)

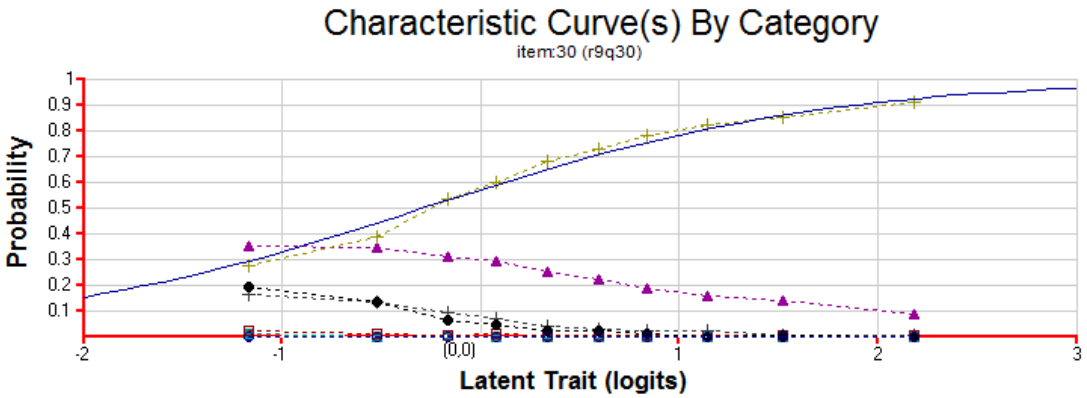

Characteristic Curve(s) By Category
item:25 (r9q25)
Probability
Latent Trait (logits)
(0,0)

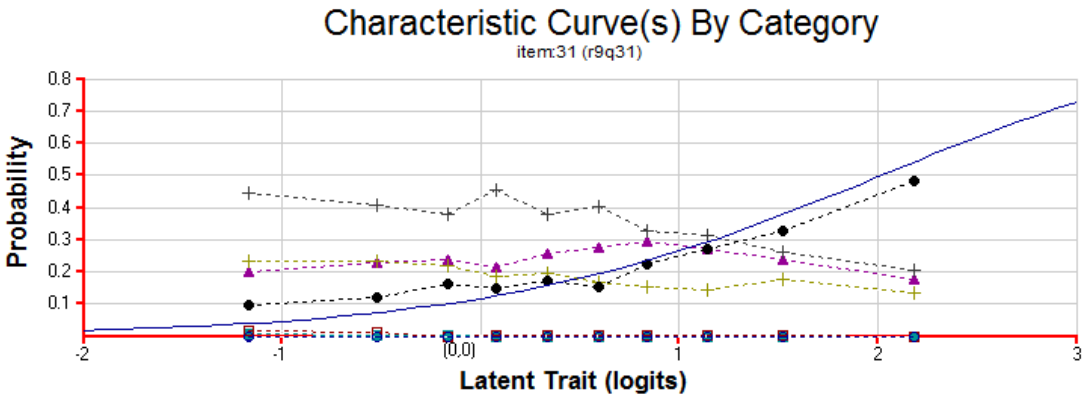

Characteristic Curve(s) By Category
item:26 (r9q26)
Probability
Latent Trait (logits)
(0,0)

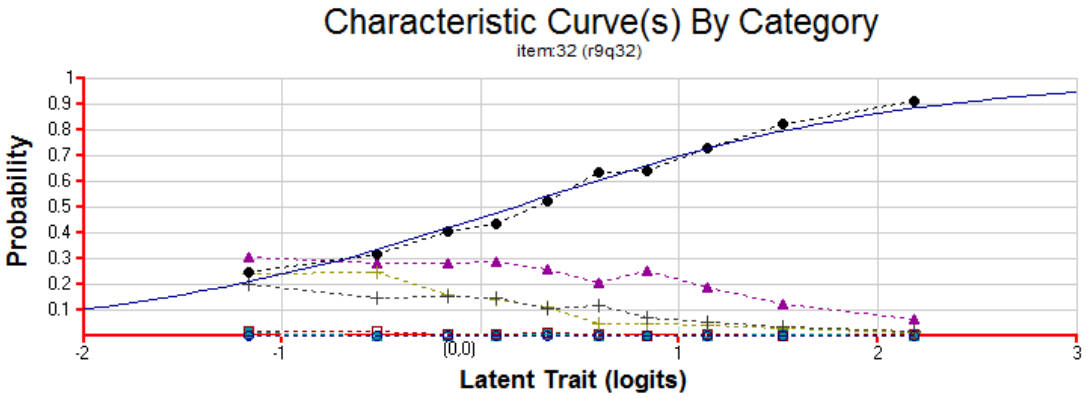

Characteristic Curve(s) By Category
item:27 (r9q27)
Probability
Latent Trait (logits)
(0,0)

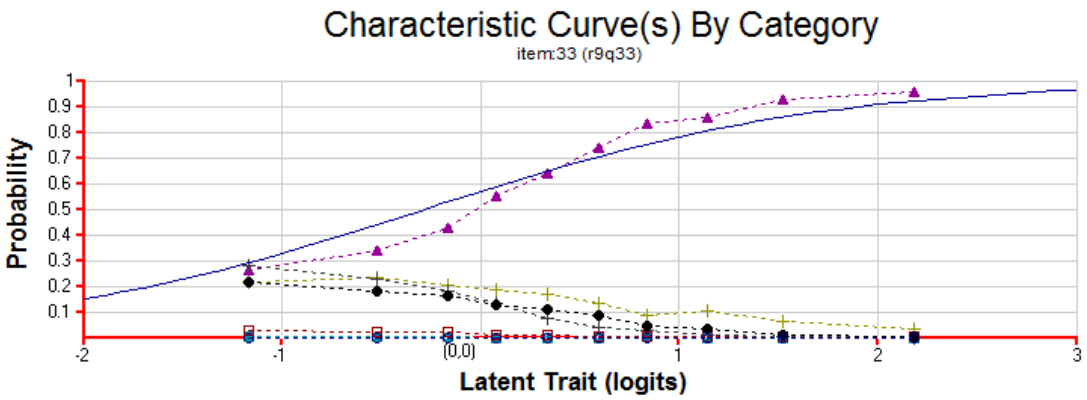

Characteristic Curve(s) By Category
item:28 (r9q28)
Probability
Latent Trait (logits)
(0,0)

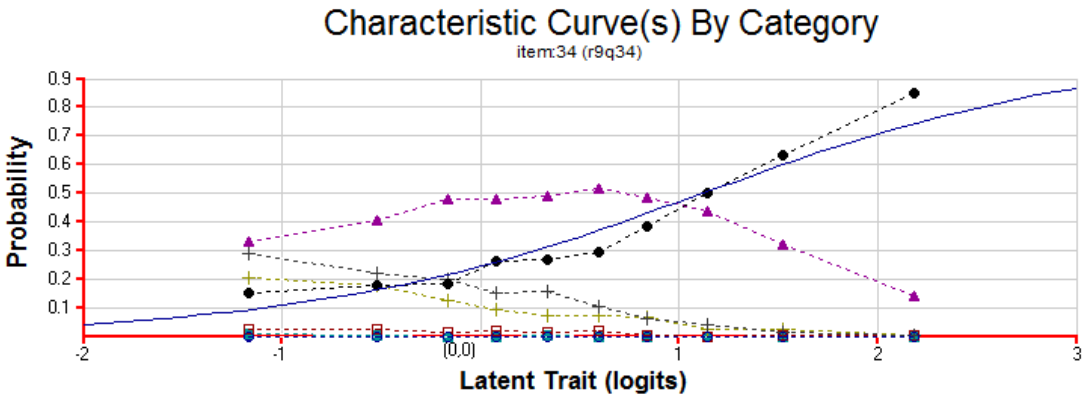

Characteristic Curve(s) By Category
item:29 (r9q29)
Probability
Latent Trait (logits)
(0,0)

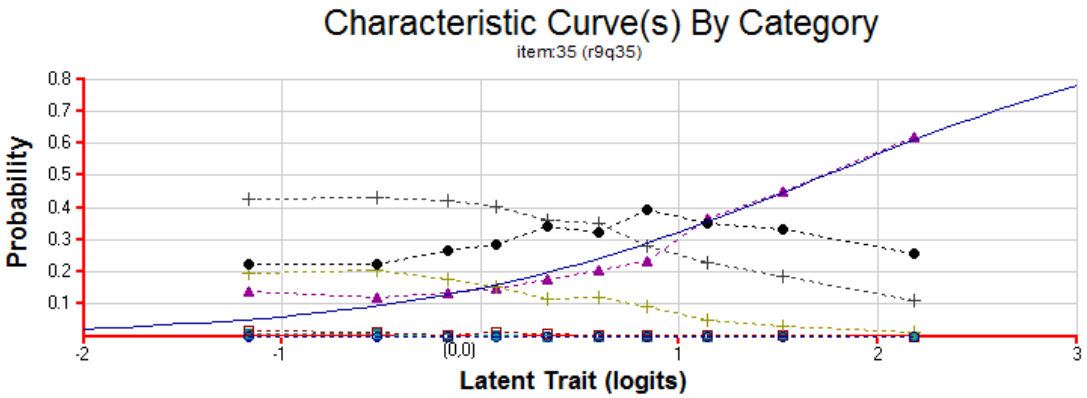

Characteristic Curve(s) By Category
item:30 (r9q30)
Probability
Latent Trait (logits)
(0,0)

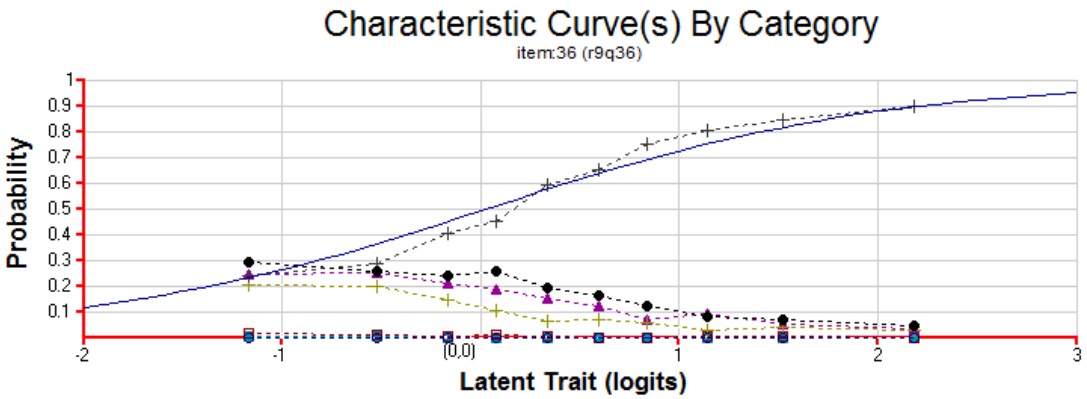

Characteristic Curve(s) By Category
item:31 (r9q31)
Probability
Latent Trait (logits)
(0,0)

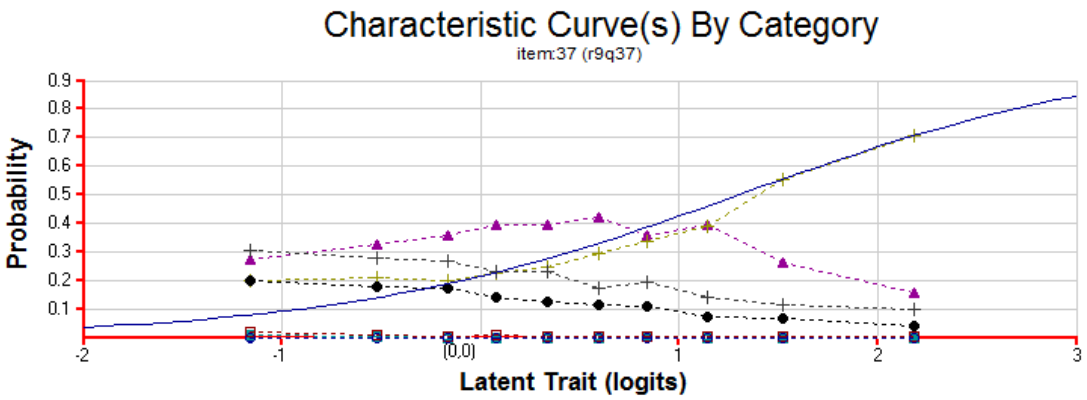

Characteristic Curve(s) By Category
item:32 (r9q32)
Probability
Latent Trait (logits)
(0,0)

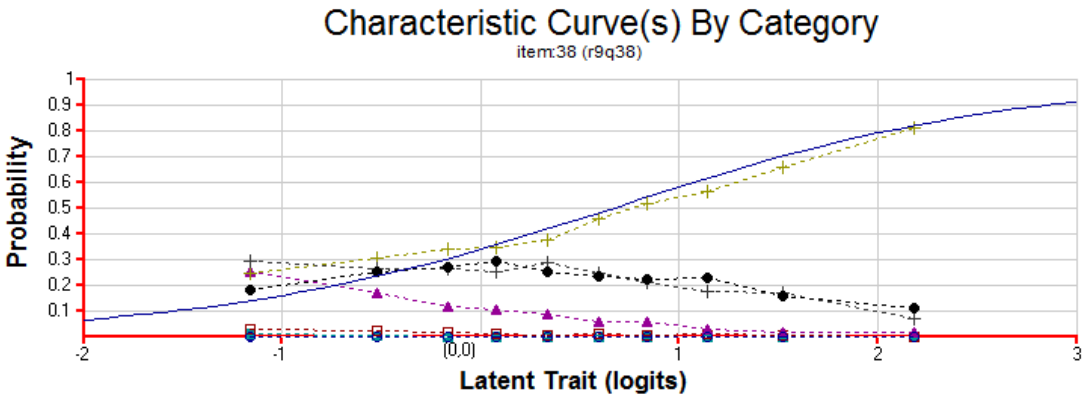

Characteristic Curve(s) By Category
item:33 (r9q33)
Probability
Latent Trait (logits)
(0,0)

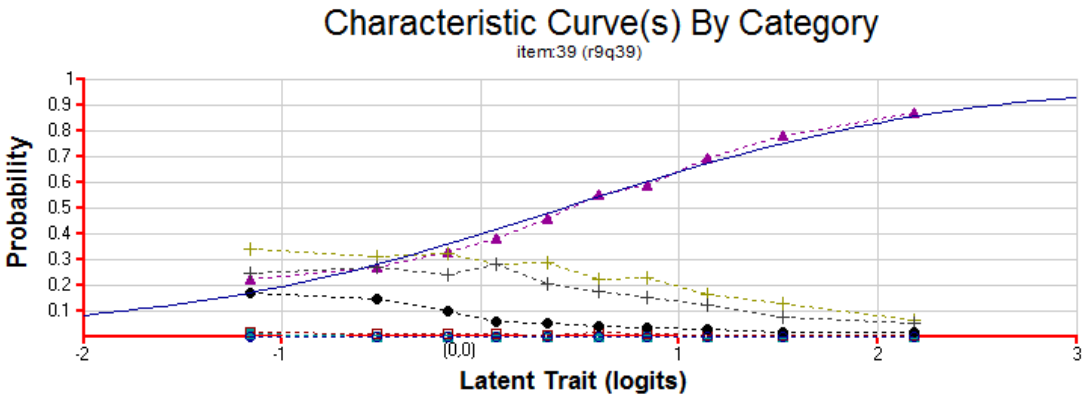

Characteristic Curve(s) By Category
item:34 (r9q34)
Probability
Latent Trait (logits)
(0,0)

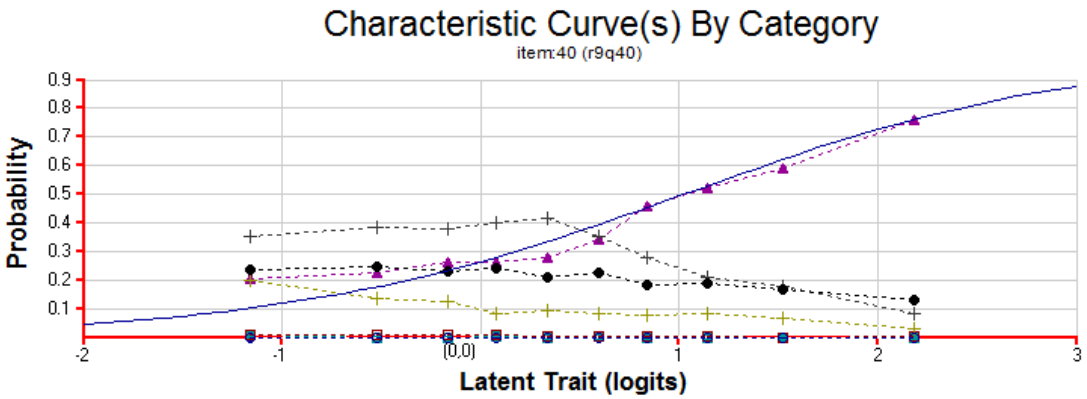

Characteristic Curve(s) By Category
item:35 (r9q35)
Probability
Latent Trait (logits)
(0,0)

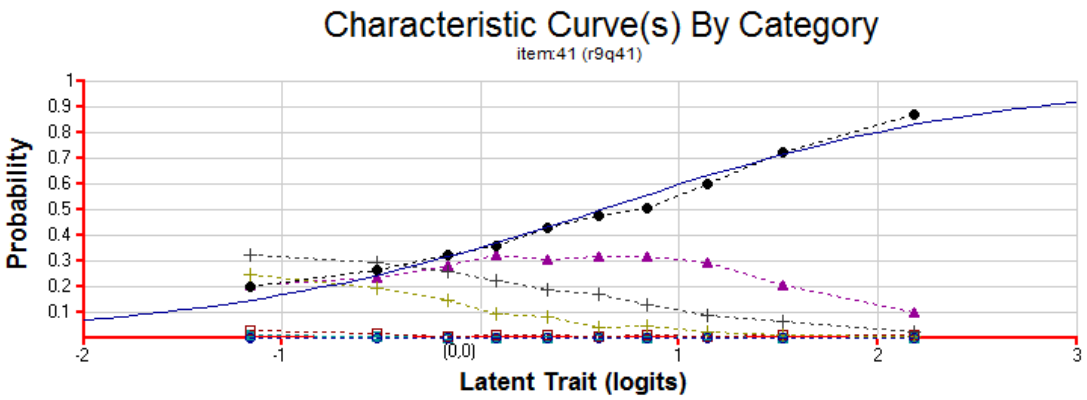

Characteristic Curve(s) By Category
item:36 (r9q36)
Probability
Latent Trait (logits)
(0,0)

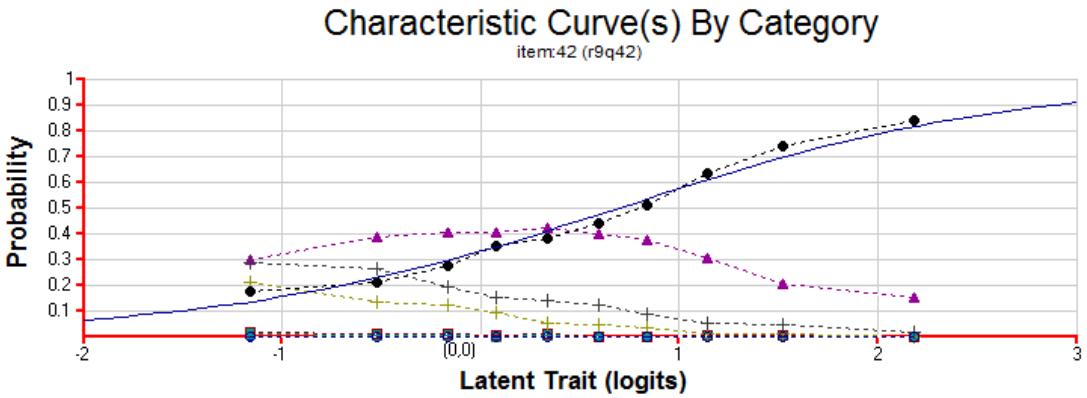

Characteristic Curve(s) By Category
item:37 (r9q37)
Probability
Latent Trait (logits)
(0,0)

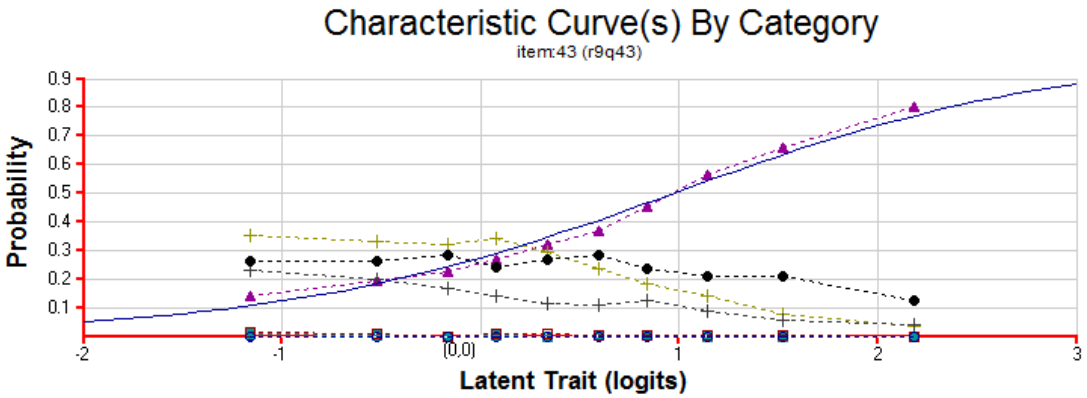

Characteristic Curve(s) By Category
item:38 (r9q38)
Probability
Latent Trait (logits)
(0,0)

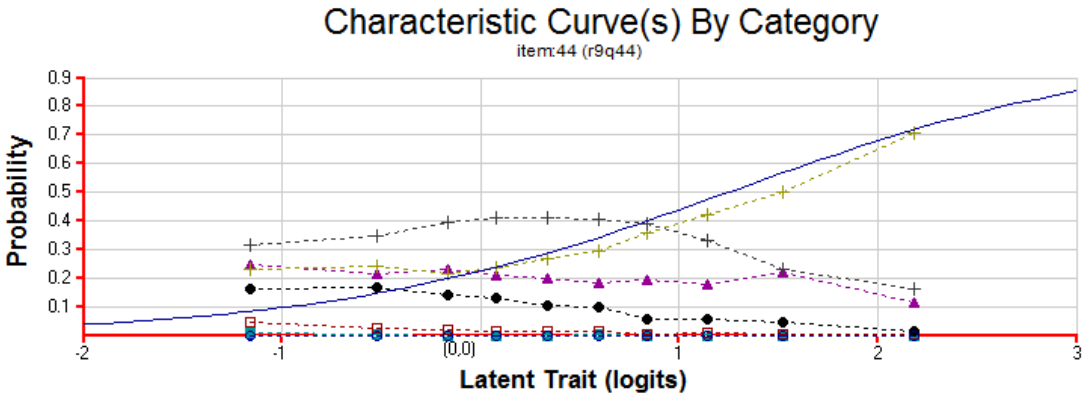

Characteristic Curve(s) By Category
item:39 (r9q39)
Probability
Latent Trait (logits)
(0,0)

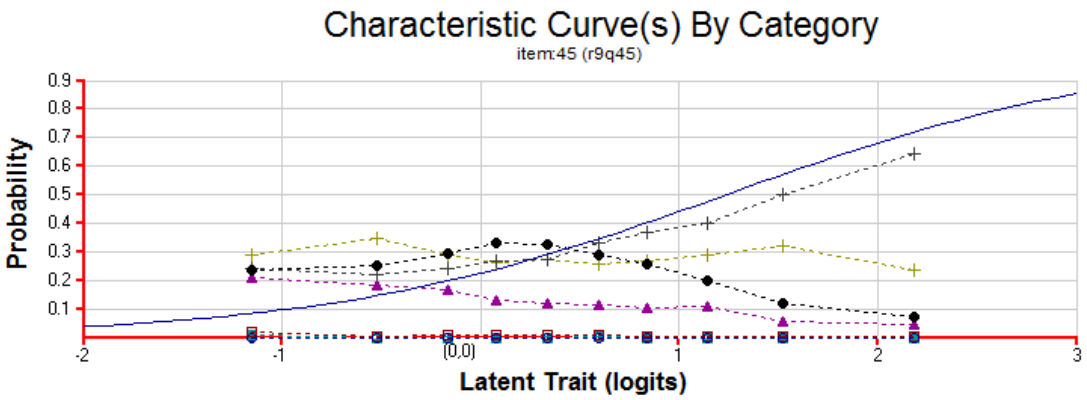

Characteristic Curve(s) By Category
item:40 (r9q40)
Probability
Latent Trait (logits)
(0,0)

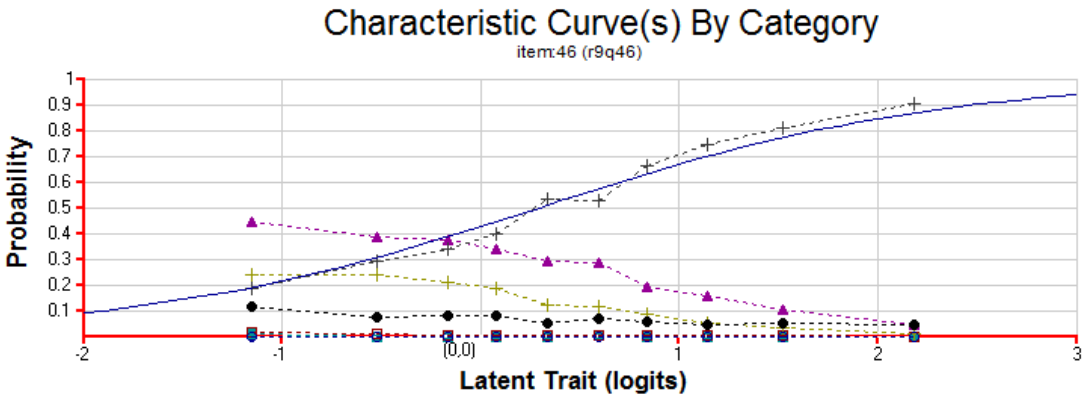

Characteristic Curve(s) By Category
item:41 (r9q41)
Probability
Latent Trait (logits)
(0,0)

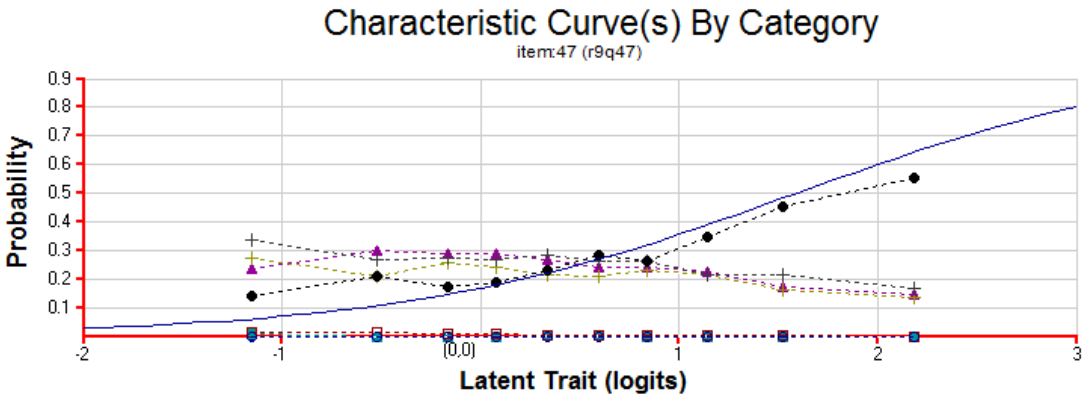

Characteristic Curve(s) By Category
item:42 (r9q42)
Probability
Latent Trait (logits)
(0,0)

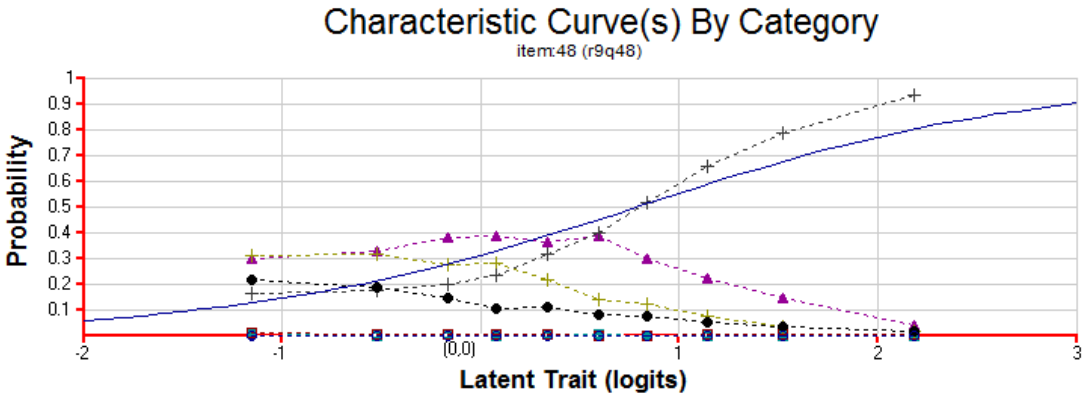

Characteristic Curve(s) By Category
item:43 (r9q43)
Probability
Latent Trait (logits)
(0,0)

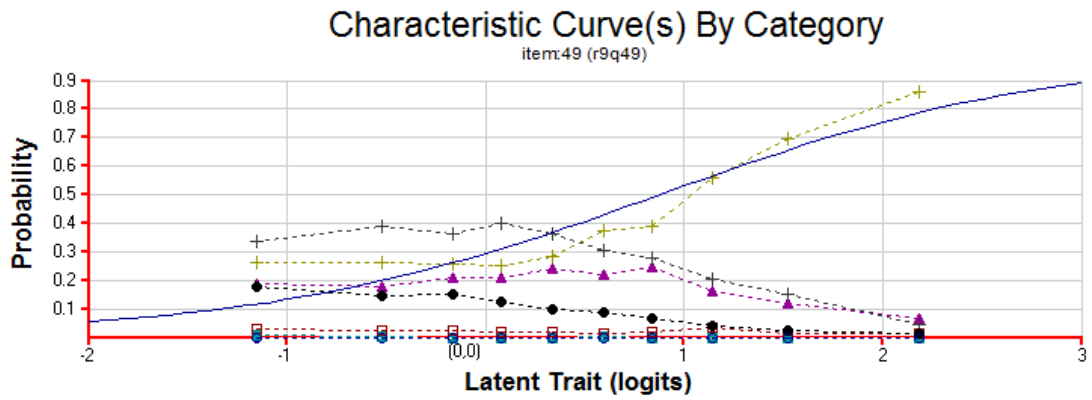

Characteristic Curve(s) By Category
item:44 (r9q44)
Probability
Latent Trait (logits)
(0,0)

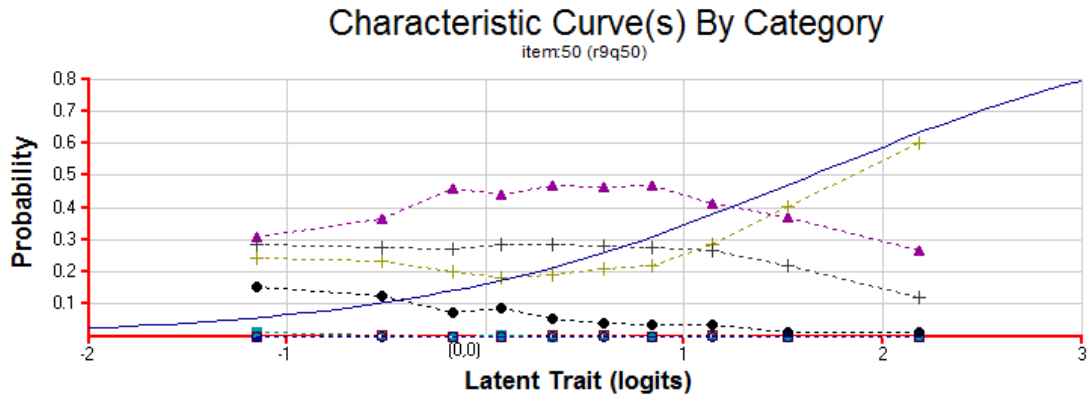

Characteristic Curve(s) By Category
item:45 (r9q45)
Probability
Latent Trait (logits)
(0,0)


Characteristic Curve(s) By Category
item:46 (r9q46)
Probability
Latent Trait (logits)
(0,0)

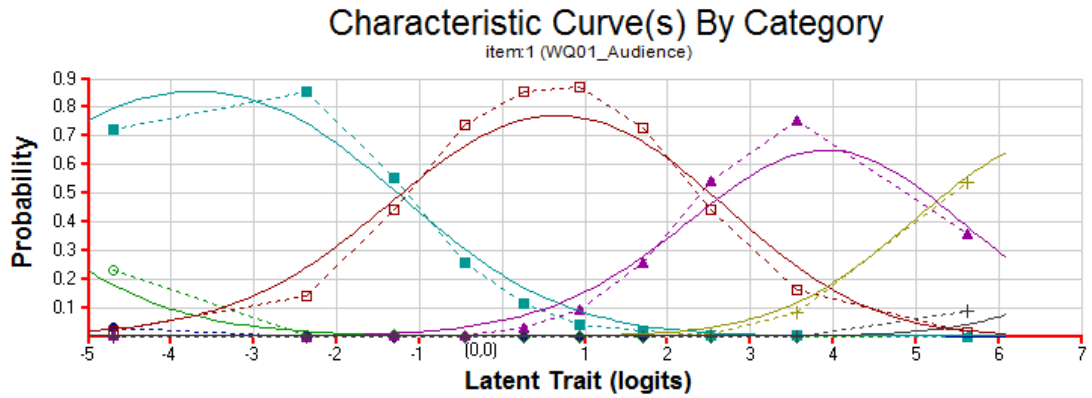

Characteristic Curve(s) By Category
item:47 (r9q47)
Probability
Latent Trait (logits)
(0,0)

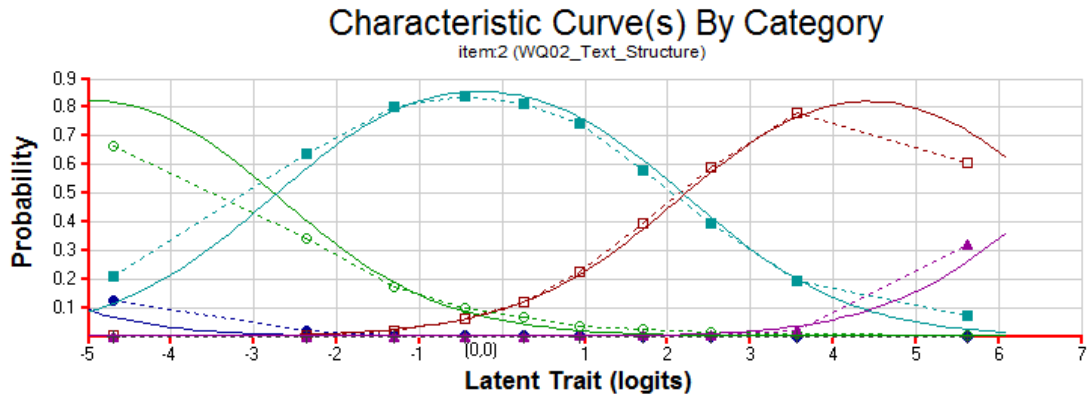

Characteristic Curve(s) By Category
item:48 (r9q48)
Probability
Latent Trait (logits)
(0,0)

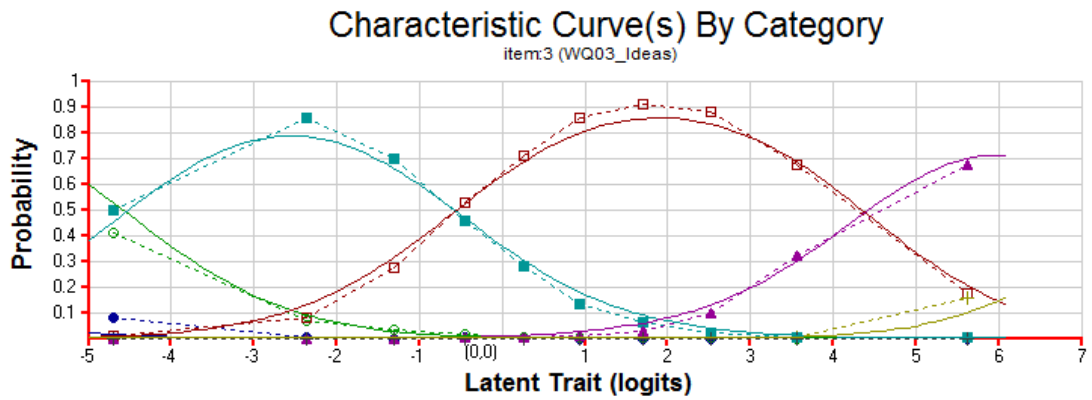

Characteristic Curve(s) By Category
item:49 (r9q49)
Probability
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
3
Latent Trait (logits)

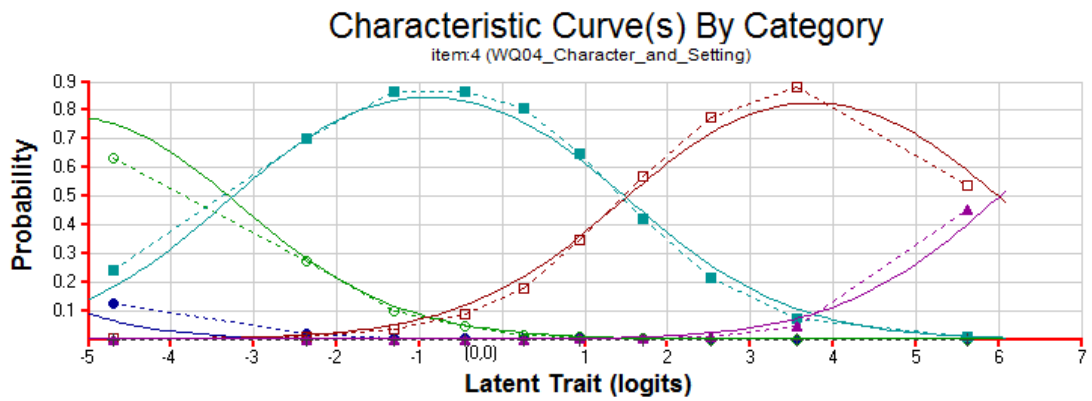

Characteristic Curve(s) By Category
item:50 (r9q50)
Probability
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
3
Latent Trait (logits)

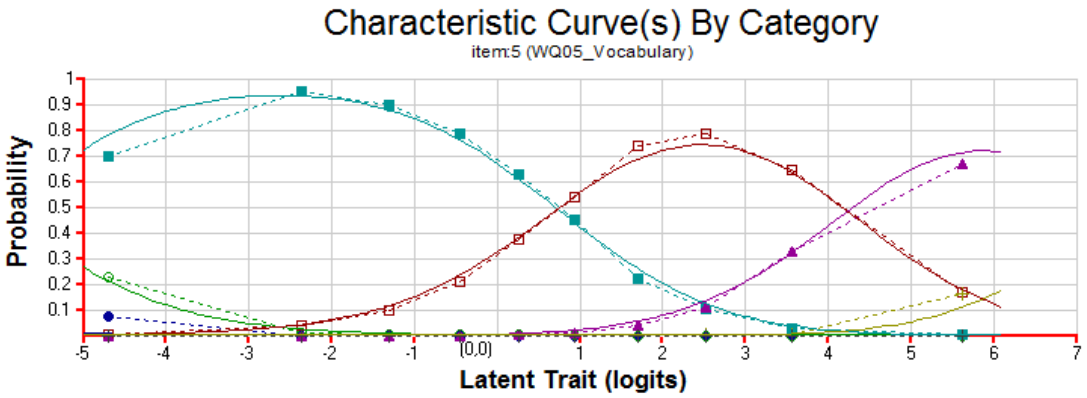
Writing

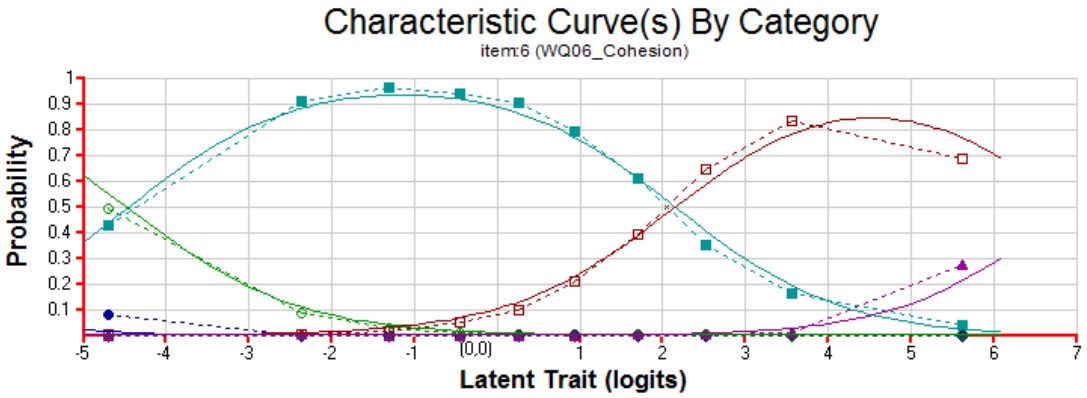

Characteristic Curve(s) By Category
item:1 (WQ01_Audience)
Probability
Latent Trait (logits)
(0,0)

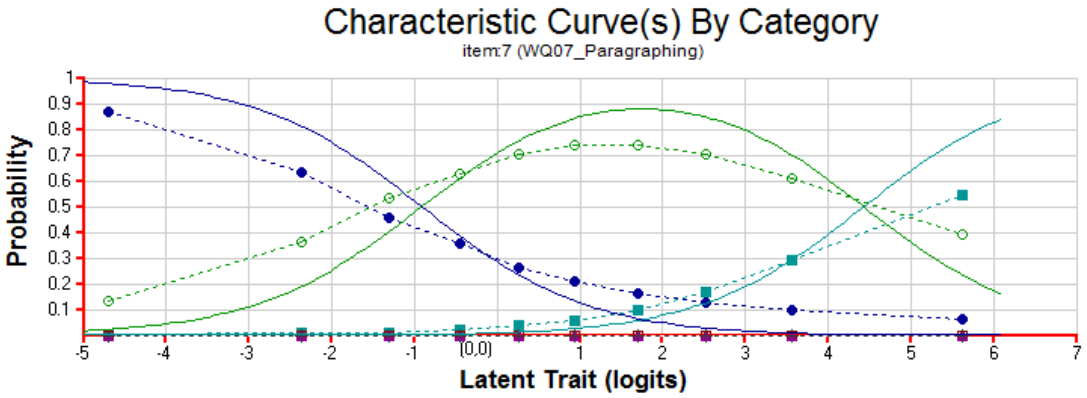

Characteristic Curve(s) By Category
item:2 (WQ02_Text_Structure)
Probability
Latent Trait (logits)
(0,0)

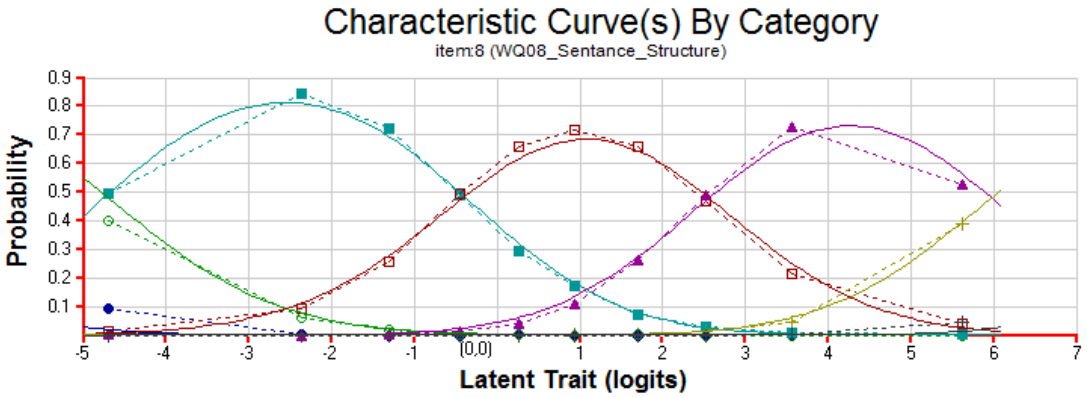

Characteristic Curve(s) By Category
item:3 (WQ03_Ideas)
Probability
Latent Trait (logits)
(0,0)

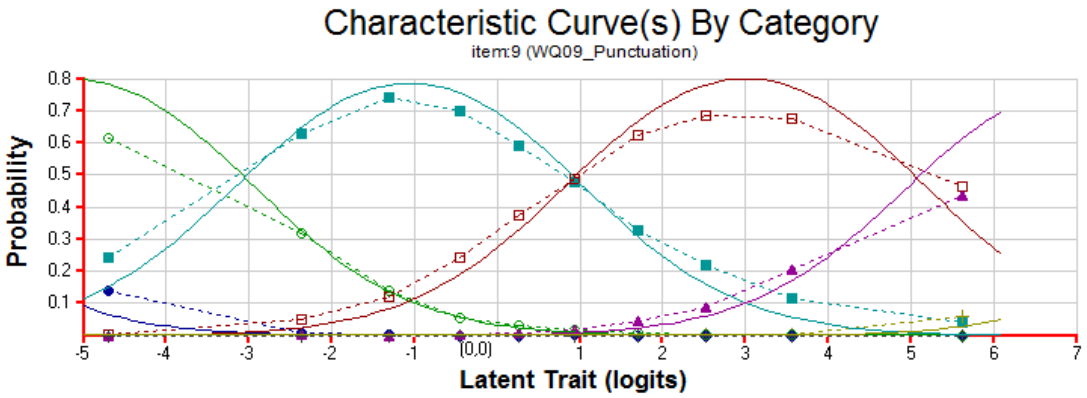

Characteristic Curve(s) By Category
item:4 (WQ04_Character_and_Setting)
Probability
Latent Trait (logits)
(0,0)

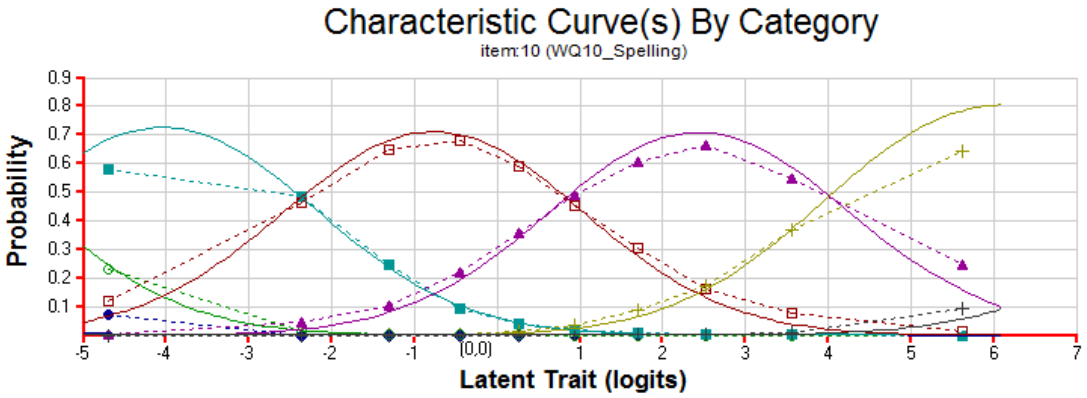

Characteristic Curve(s) By Category
item:5 (WQ05_Vocabulary)
Probability
Latent Trait (logits)
(0,0)


Characteristic Curve(s) By Category
item:6 (WQ06_Cohesion)
Probability
Latent Trait (logits)
(0,0)


Characteristic Curve(s) By Category
item:7 (WQ07_Paragraphing)
Probability
Latent Trait (logits)
(0,0)


Characteristic Curve(s) By Category
item:8 (WQ08_Sentance_Structure)
Probability
Latent Trait (logits)
(0,0)


Characteristic Curve(s) By Category
item:9 (WQ09_Punctuation)
Probability
Latent Trait (logits)
(0,0)


Characteristic Curve(s) By Category
item:10 (WQ10_Spelling)
Probability
Latent Trait (logits)
(0,0)

APPENDIX E. VARIABLE MAPS

Figure E.1 Year 3 Reading Variable Map

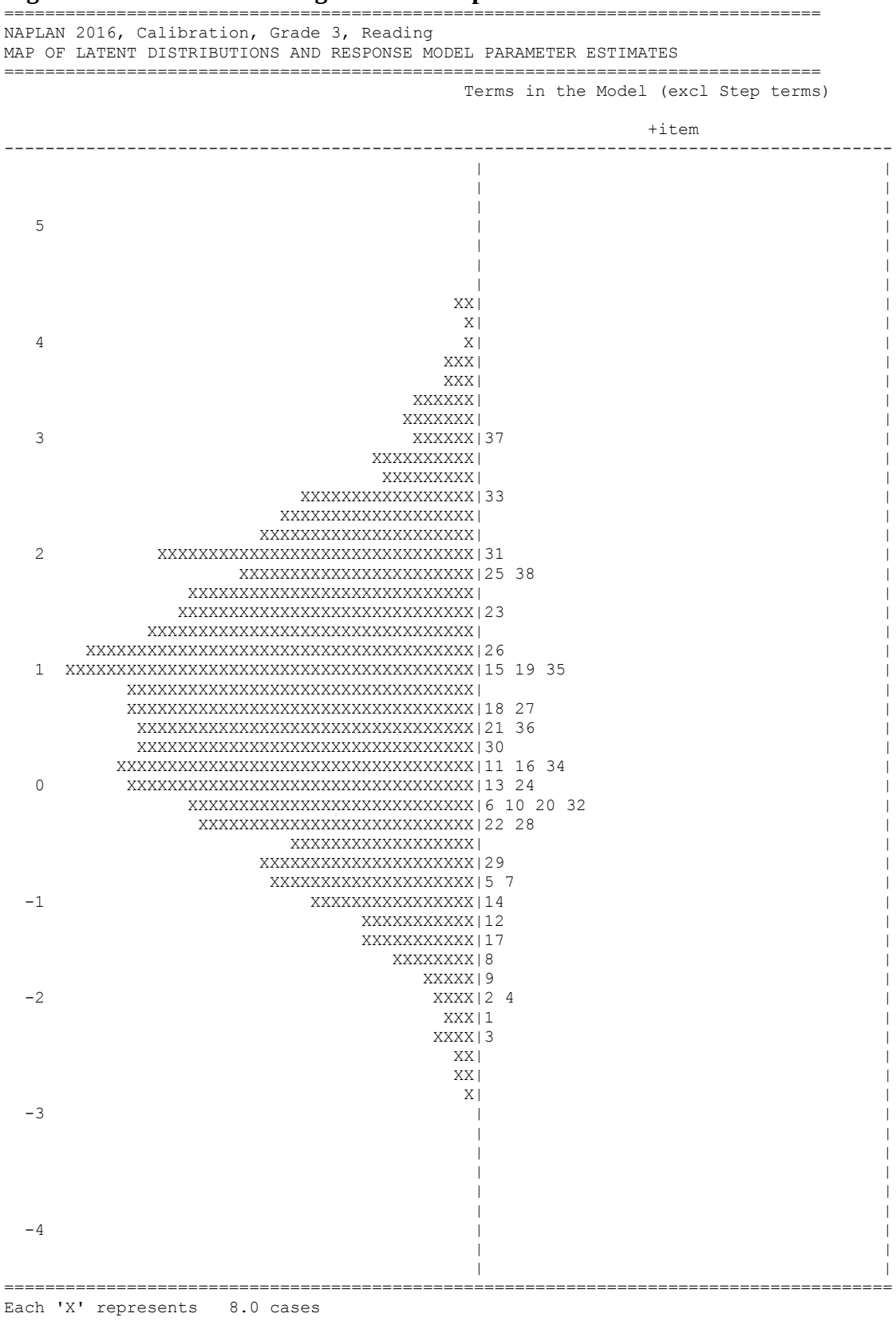


Figure E.2 Year 5 Reading Variable Map

Figure E.3 Year 7 Reading Variable Map

Figure E.4 Year 9 Reading Variable Map

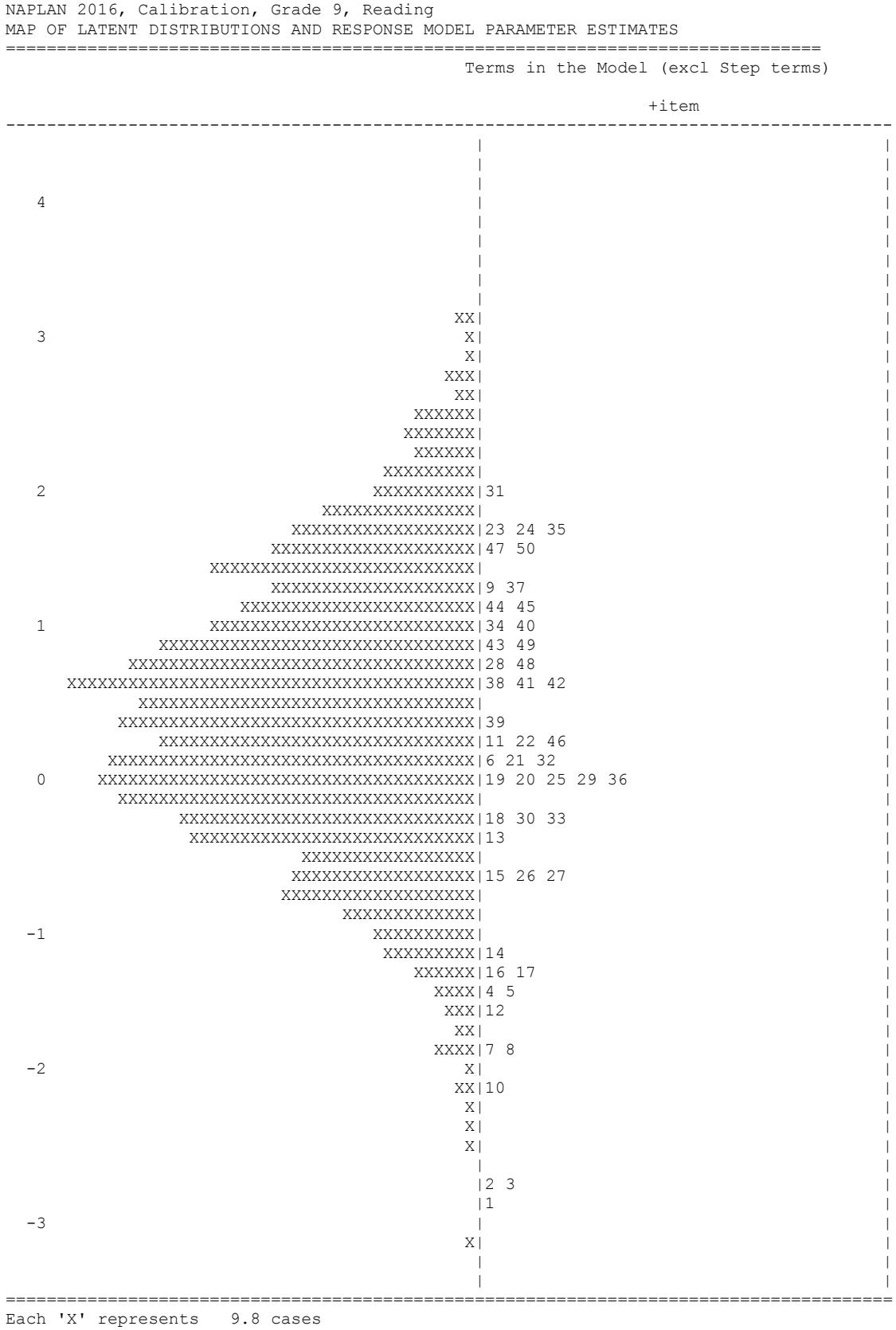


Figure E.5 Years 3, 5, 7 and 9 Writing Variable Map

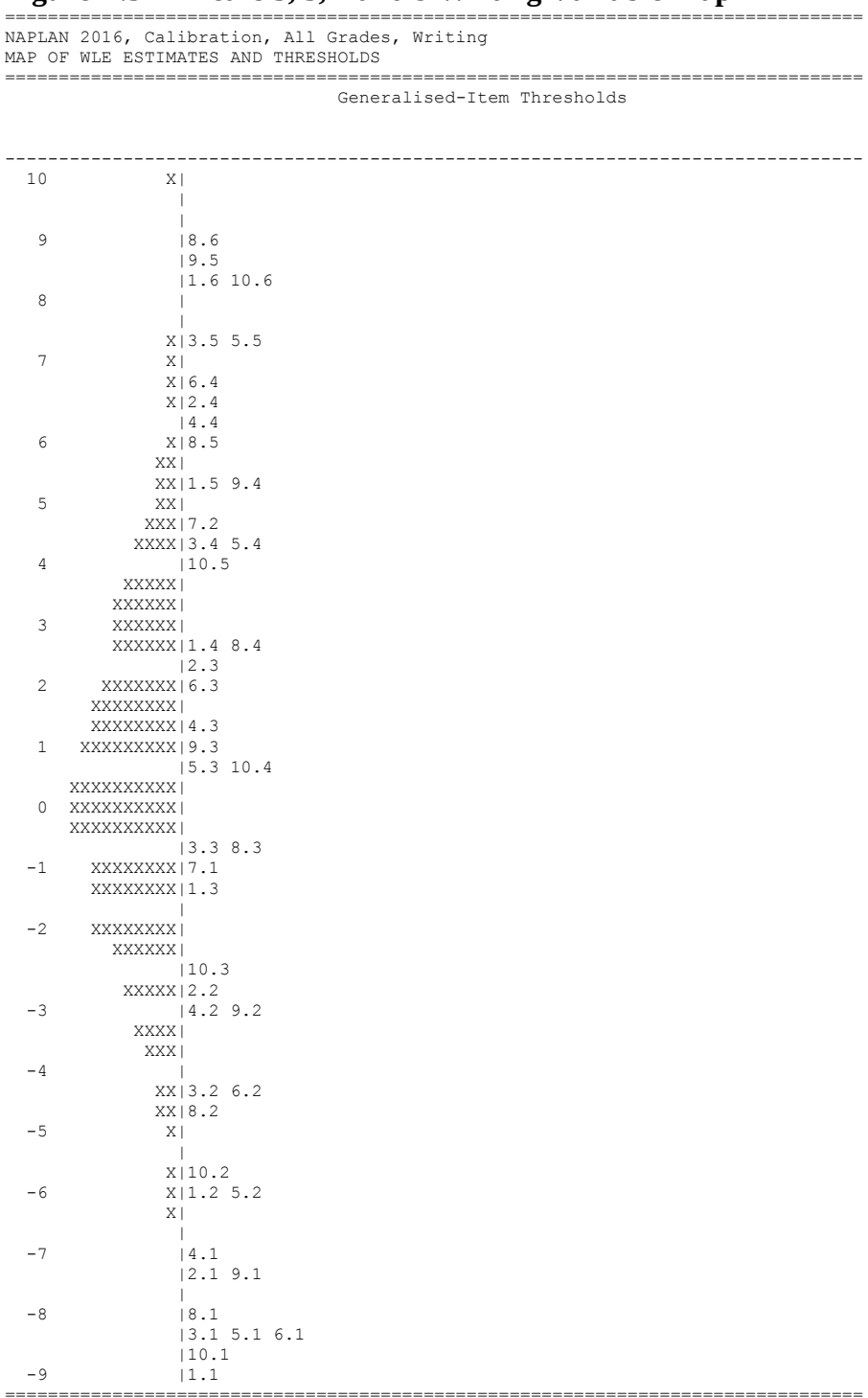


Figure E.6 Year 3 Spelling Variable Map

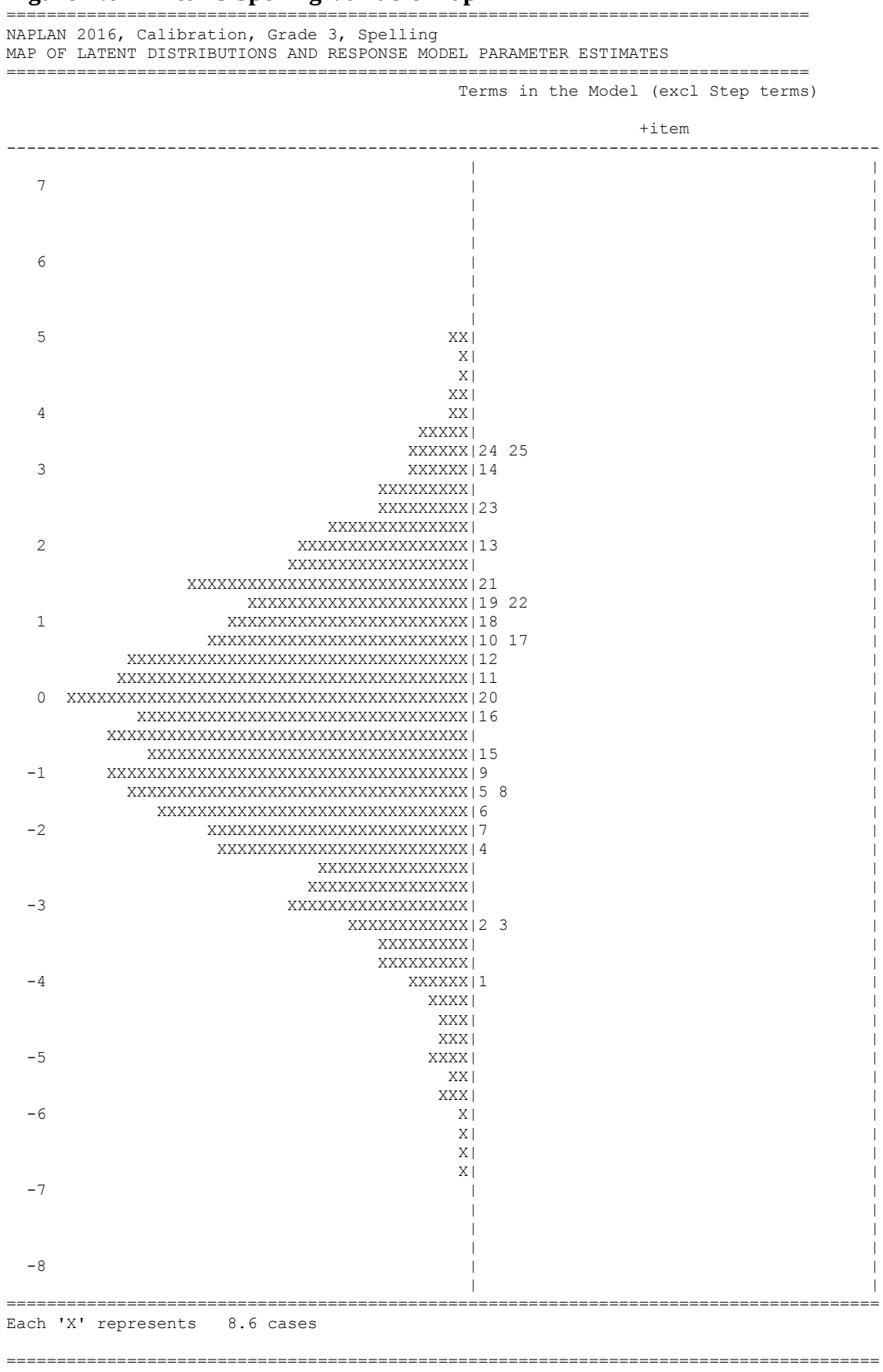


Figure E.7 Year 5 Spelling Variable Map

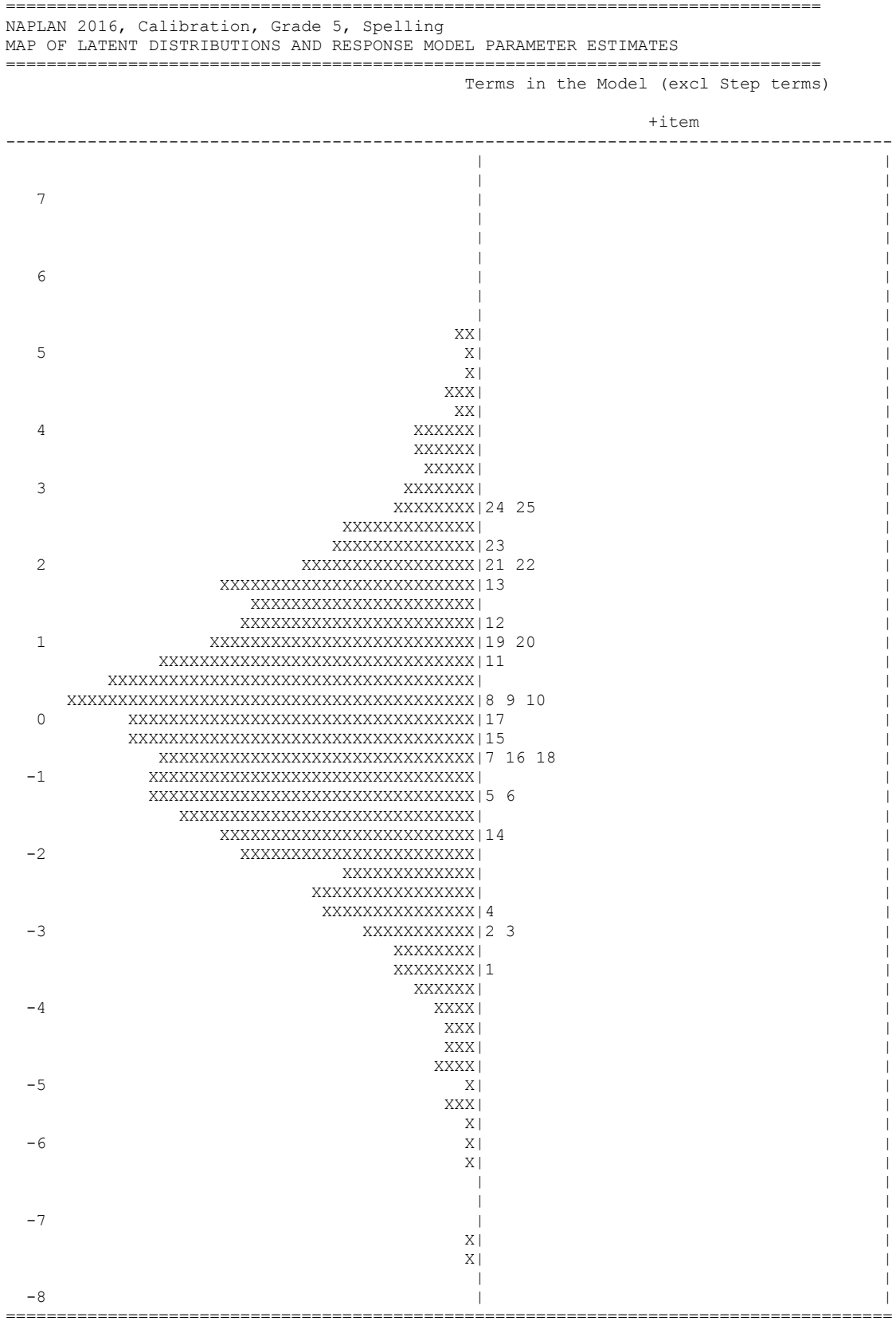


Figure E.8 Year 7 Spelling Variable Map

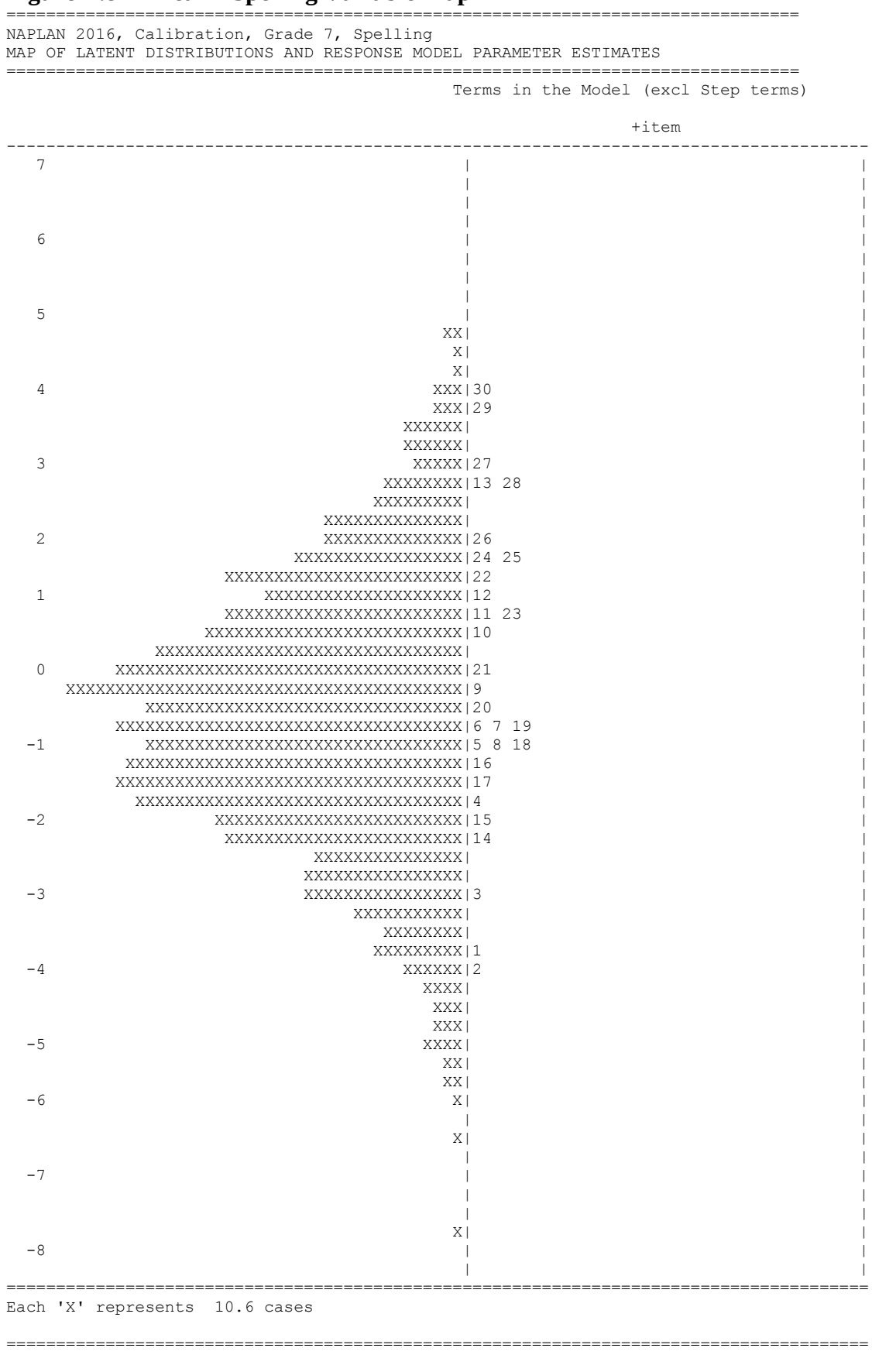


Figure E.9 Year 9 Spelling Variable Map

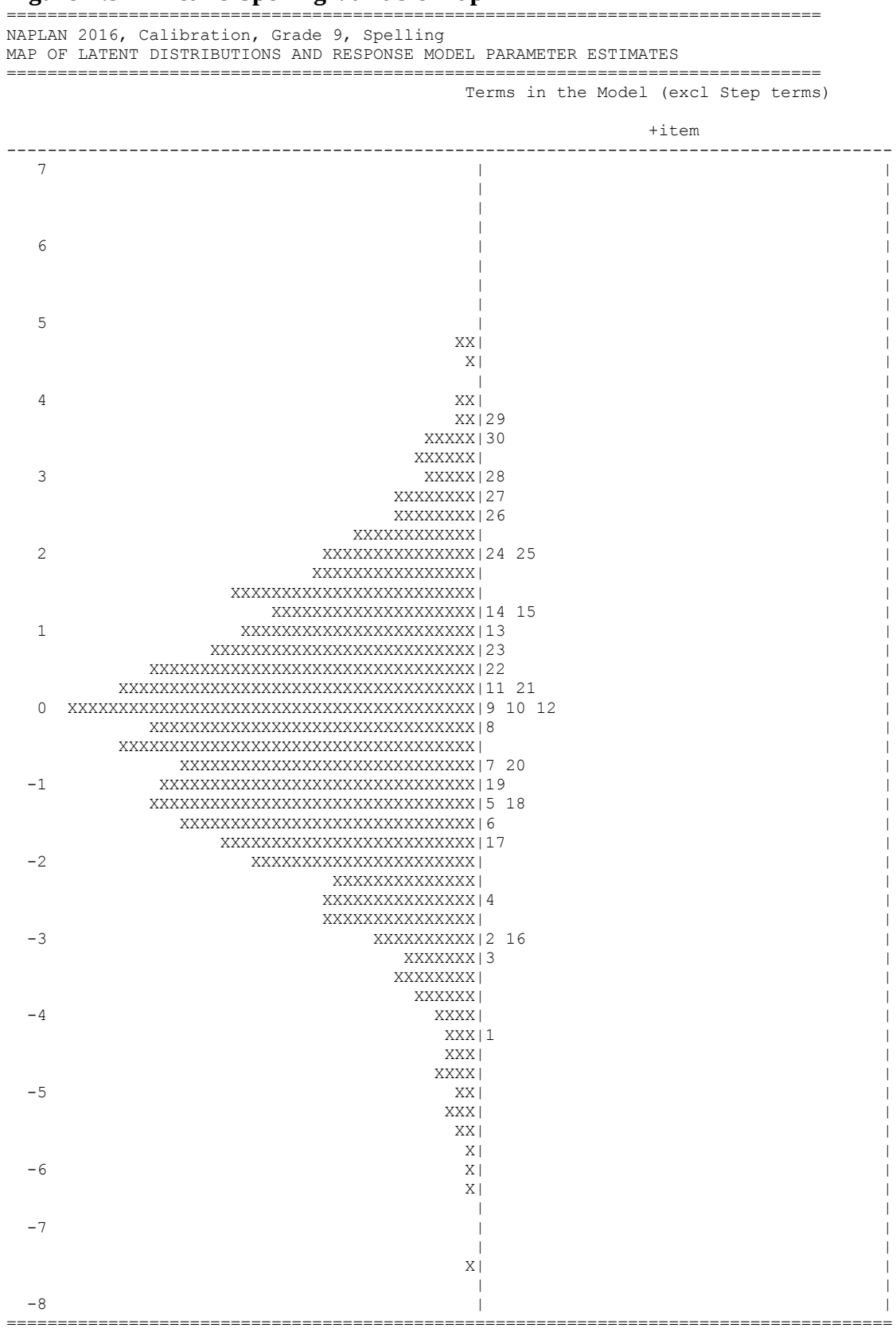


Figure E.10 Year 3 Grammar and Punctuation Variable Map

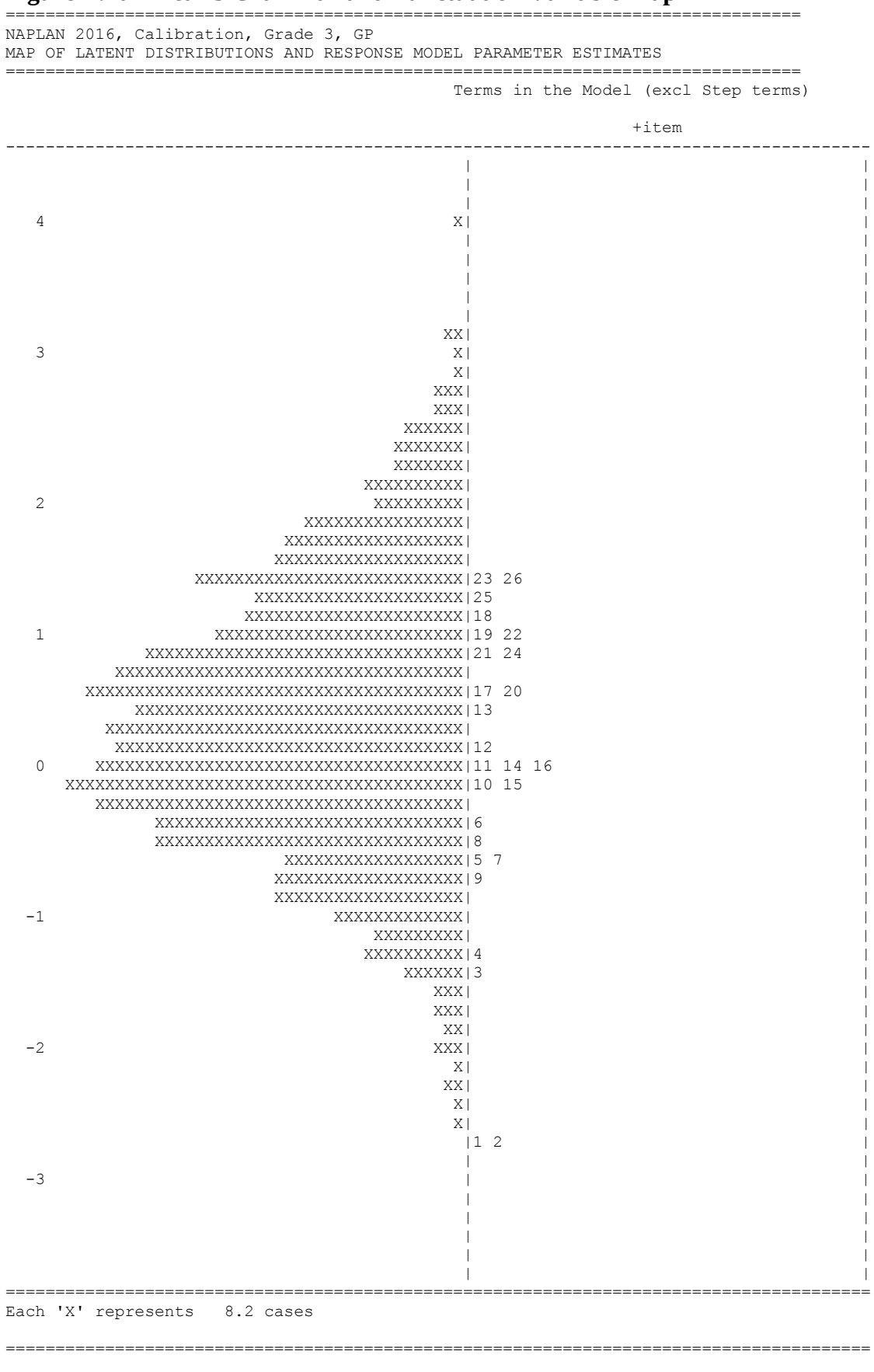


Figure E.11 Year 5 Grammar and Punctuation Variable Map

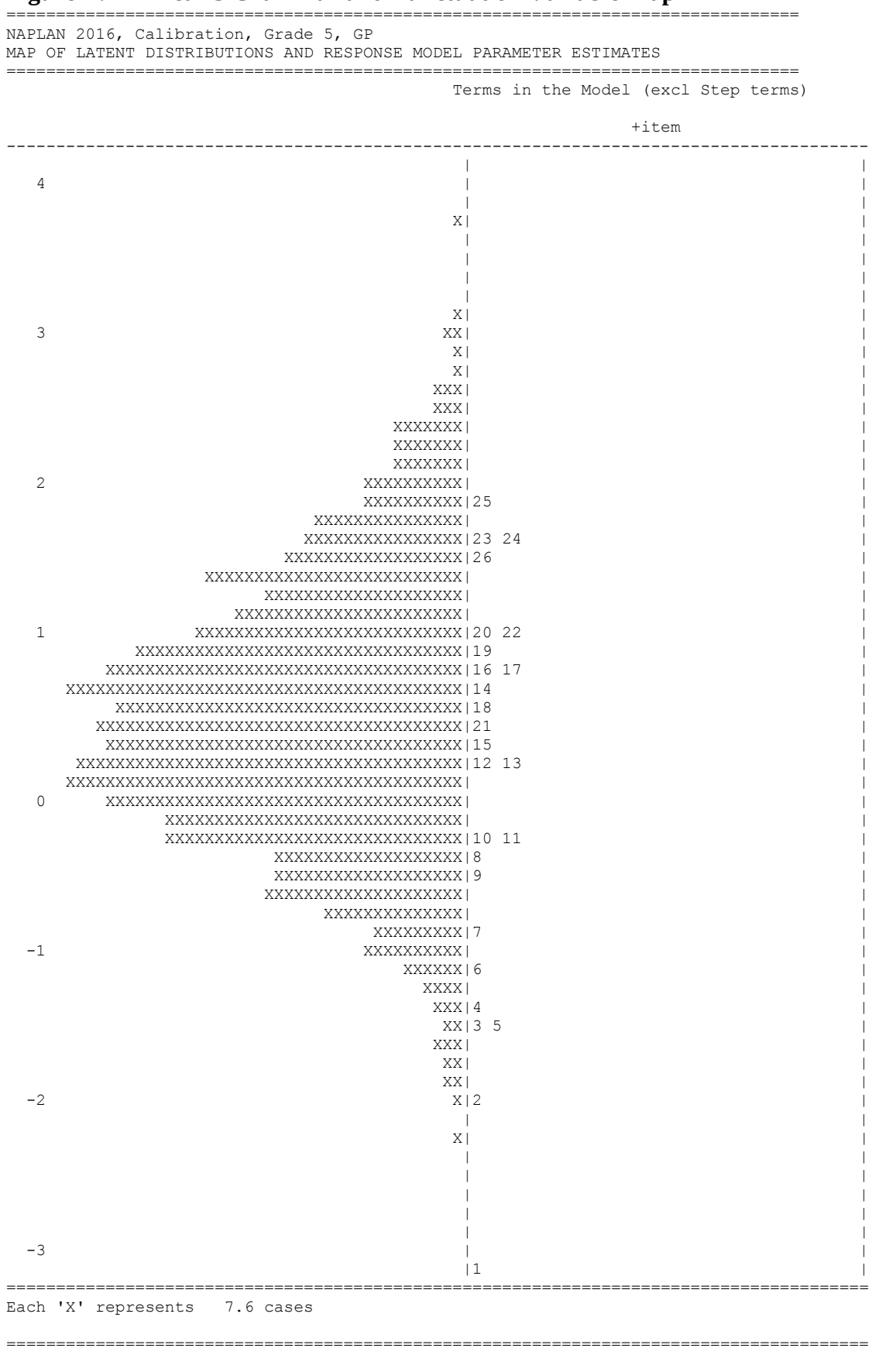


Figure E.12 Year 7 Grammar and Punctuation Variable Map

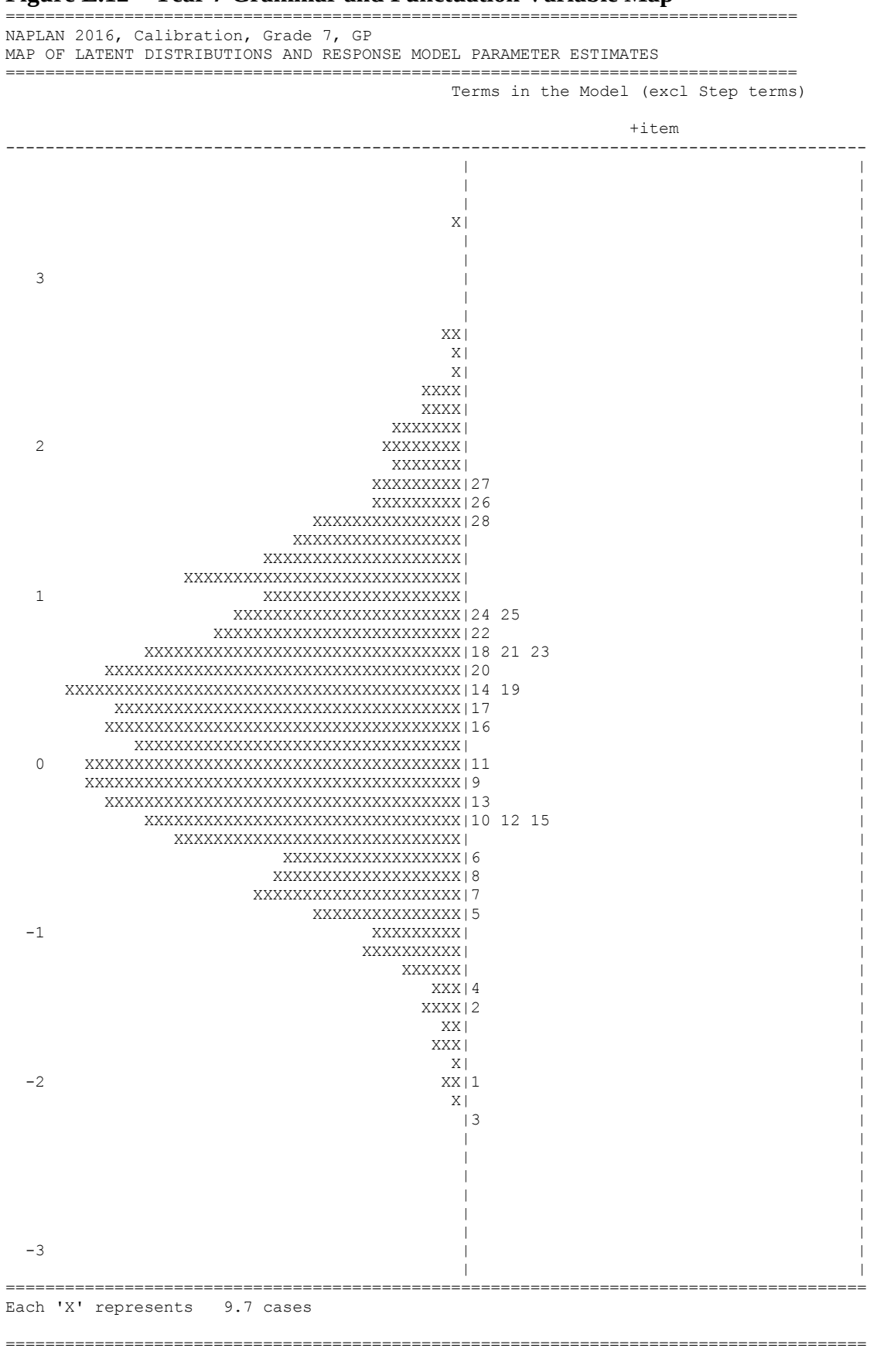


Figure E.13 Year 9 Grammar and Punctuation Variable Map

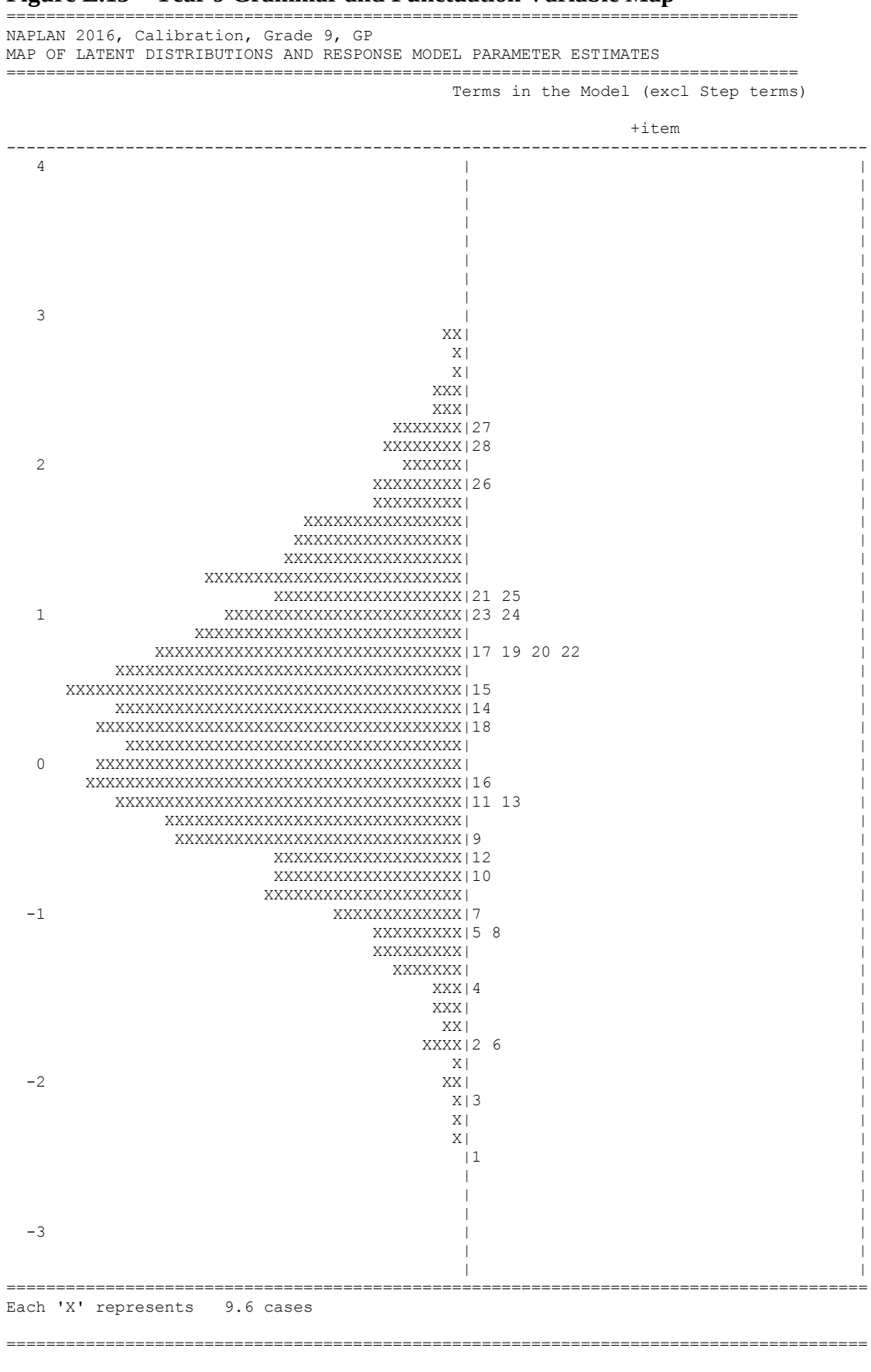


Figure E.14 Year 3 Numeracy Variable Map

Figure E.15 Year 5 Numeracy Variable Map

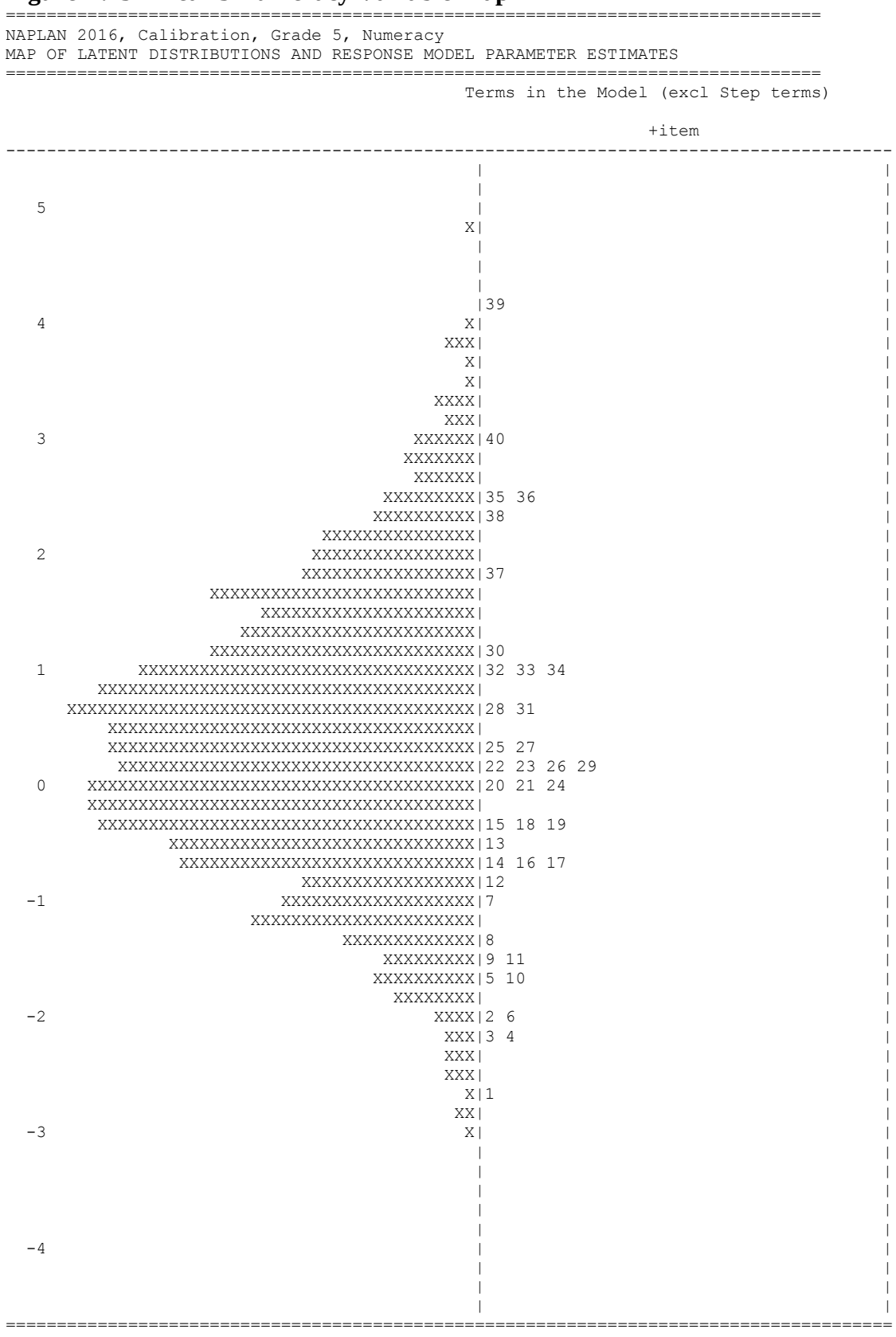


Figure E.16 Year 7 Numeracy Variable Map

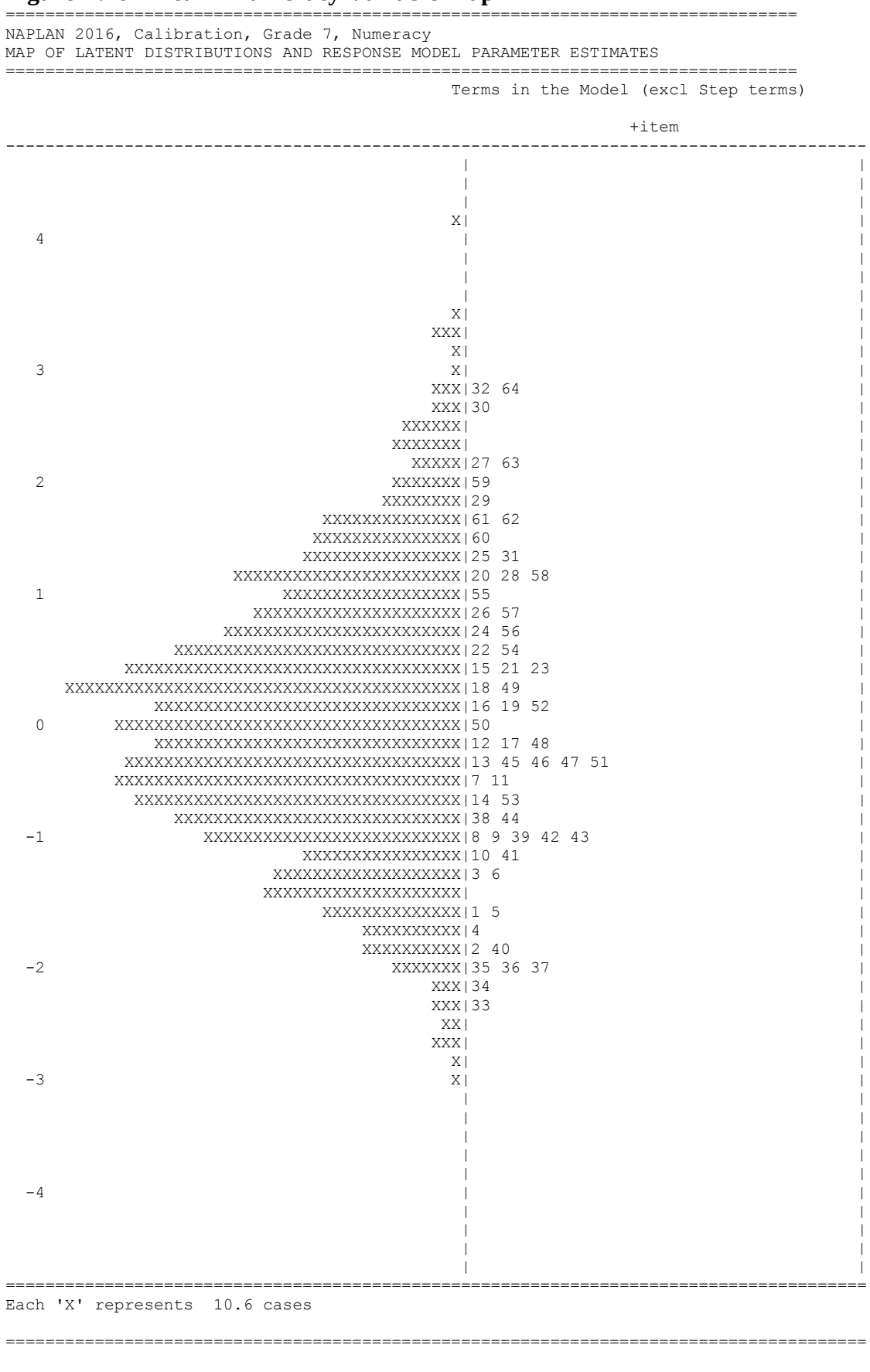
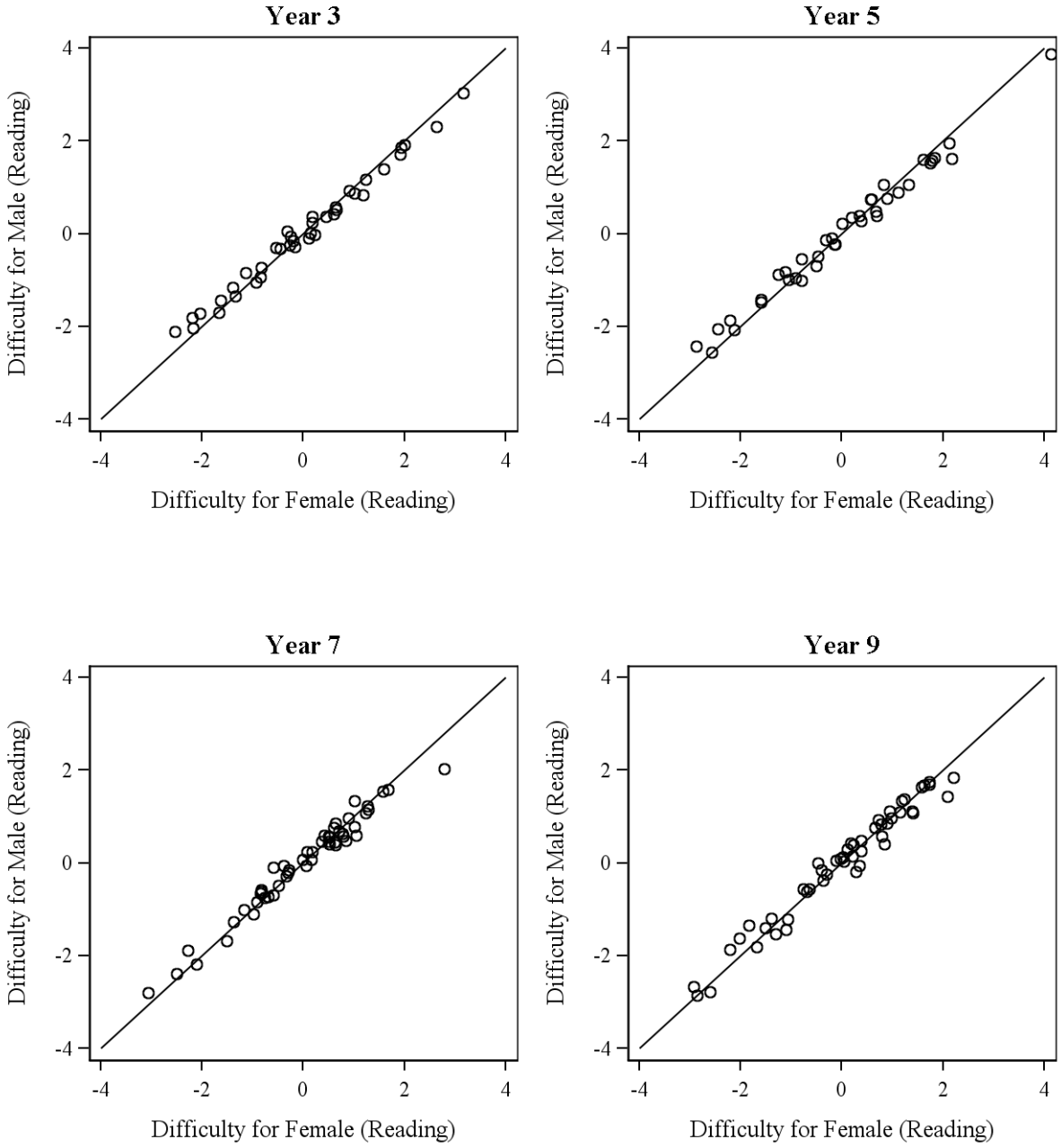


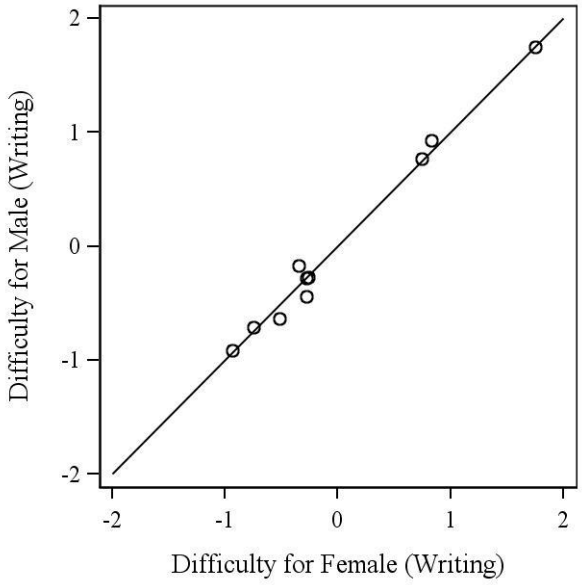
Figure E.17 Year 9 Numeracy Variable Map

APPENDIX F. GENDER DIF ANALYSIS

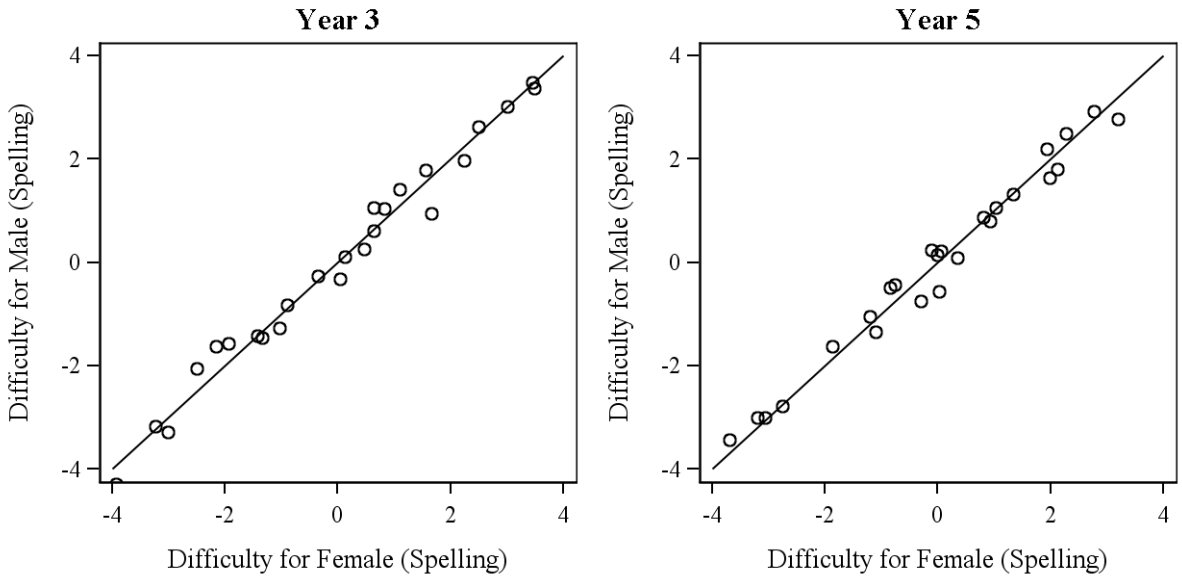
F.1 Centred Item Locations of Male and Female Students in Reading (2016)

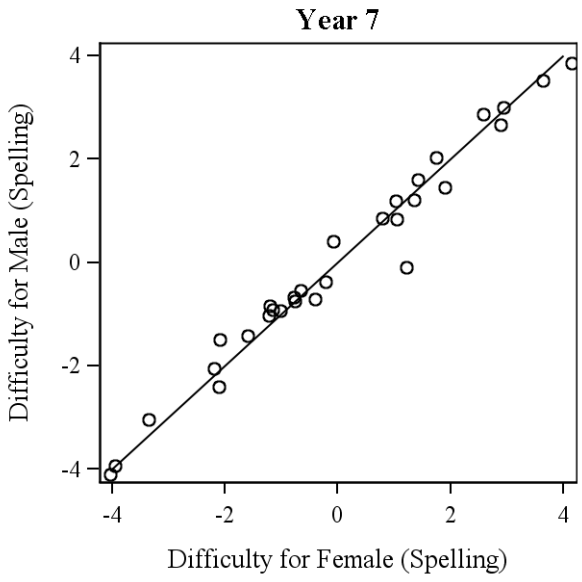


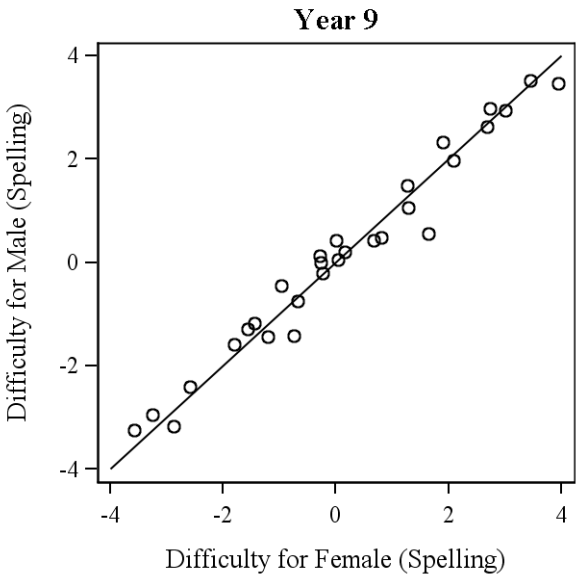
F.2 Centred Item Locations of Male and Female Students Years 3, 5, 7, and 9 Writing (2016)



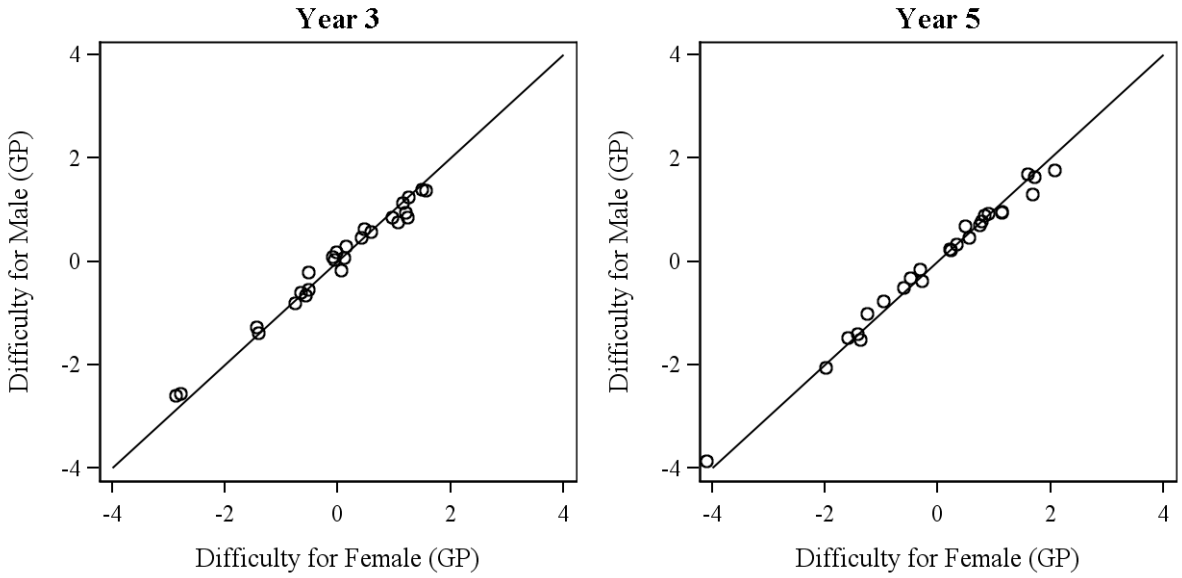
F.3 Centred Item Locations of Male and Female Students in Spelling (2016)

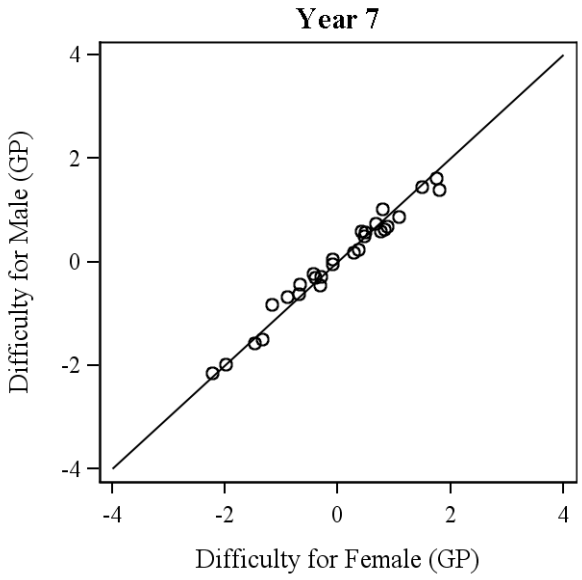


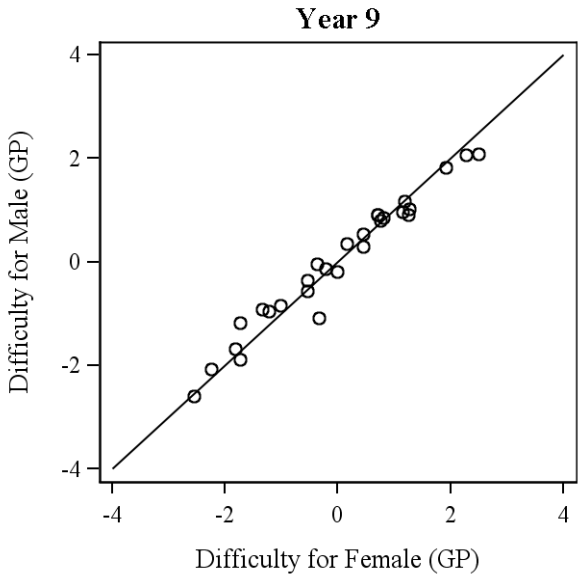




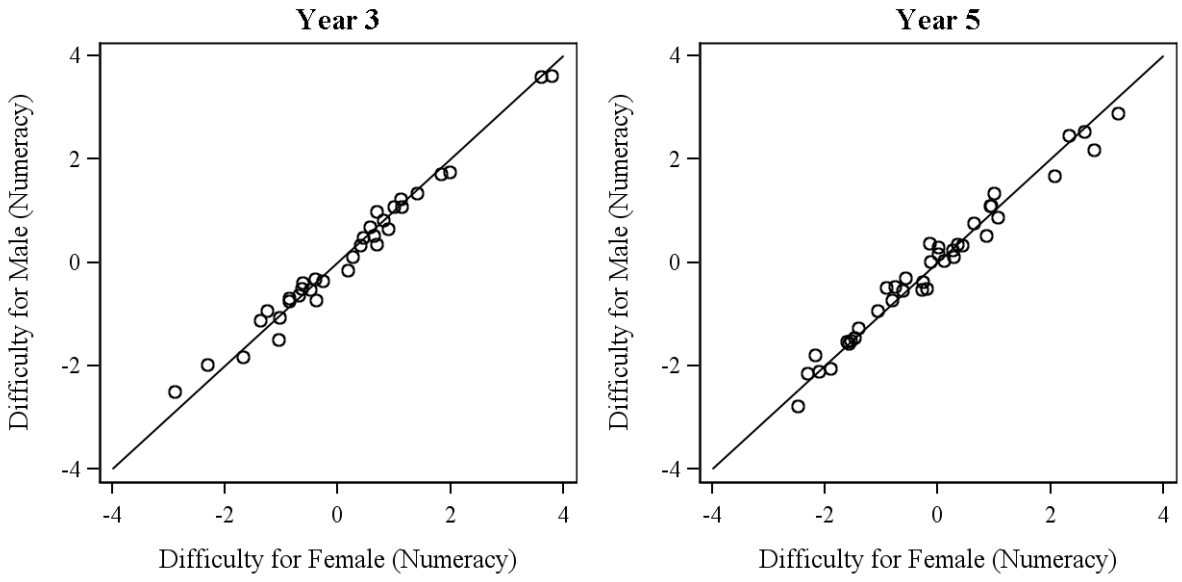
F.4 Centred Item Locations of Male and Female Students in Grammar and Punctuation (2016)

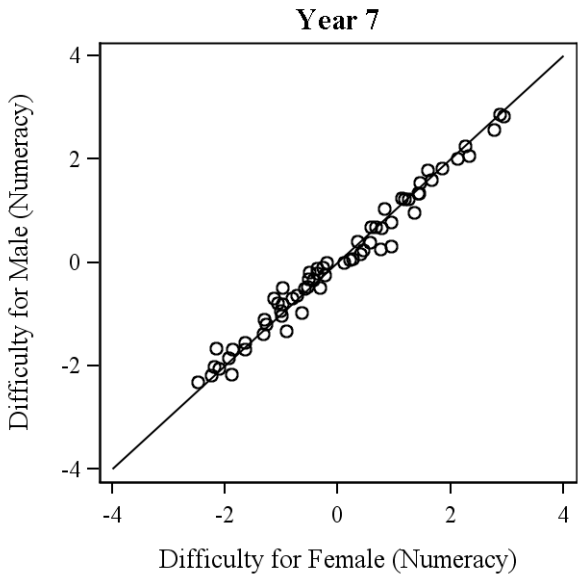


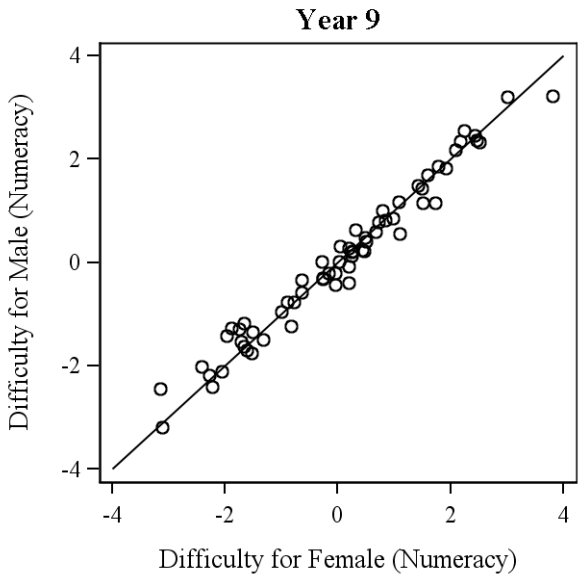




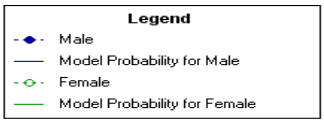
F.5 Centred Item Locations of Male and Female Students in Numeracy (2016)



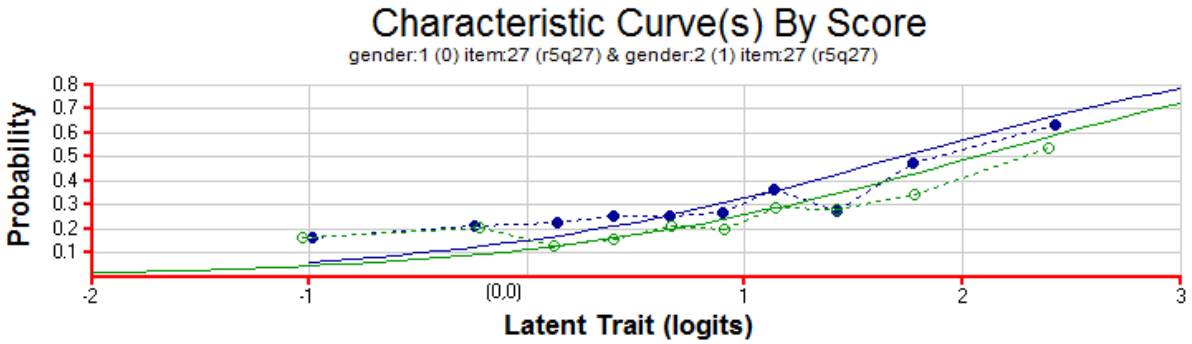


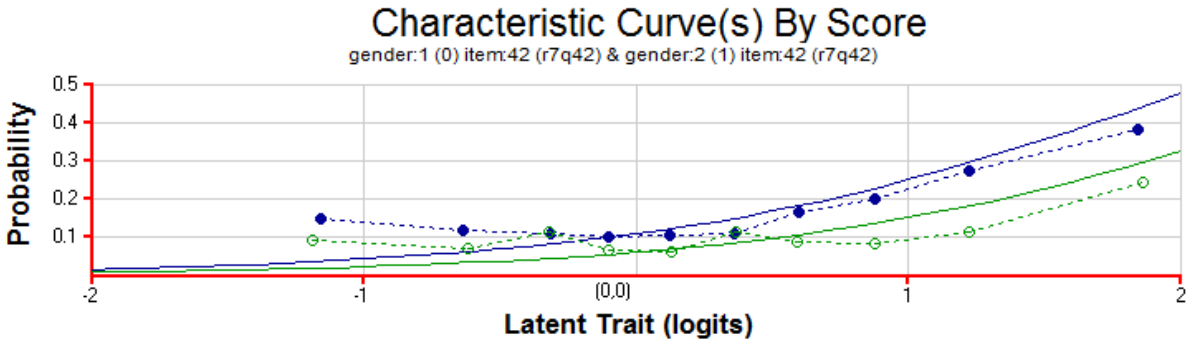


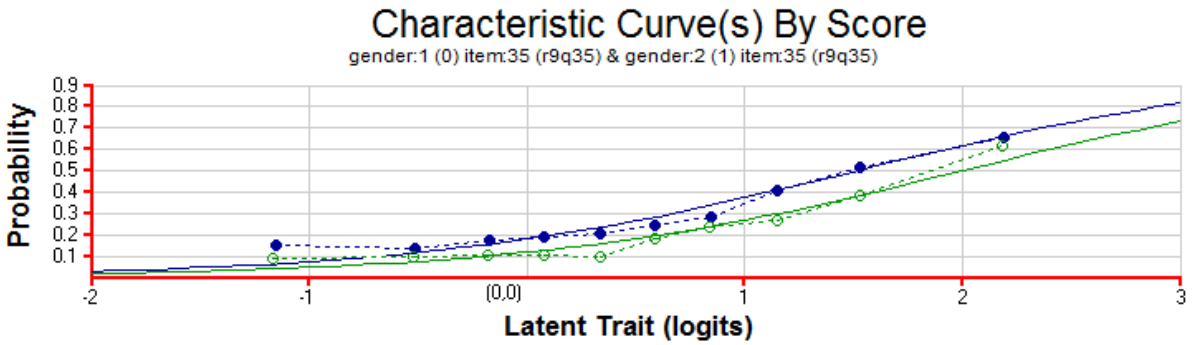
F.6 Item DIF Plots for Items Showing Gender DIF



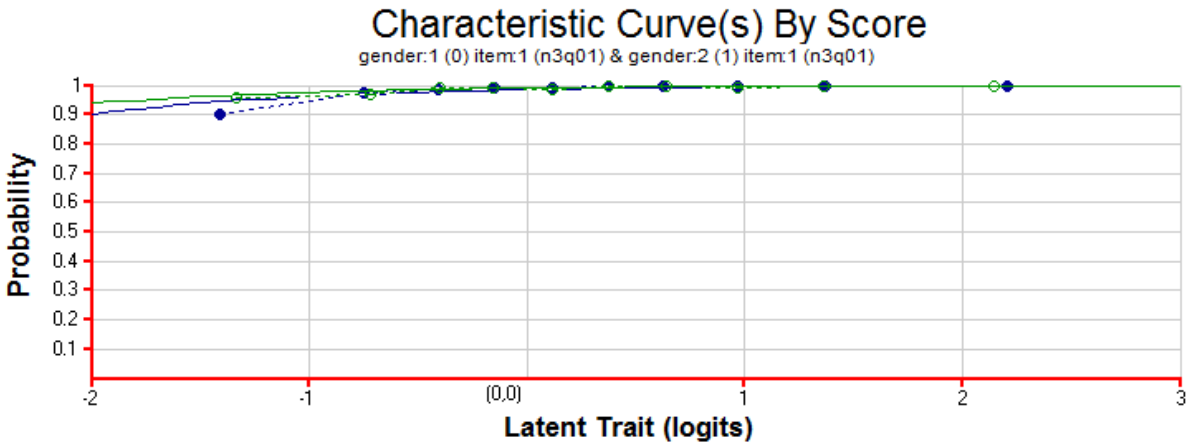
Reading

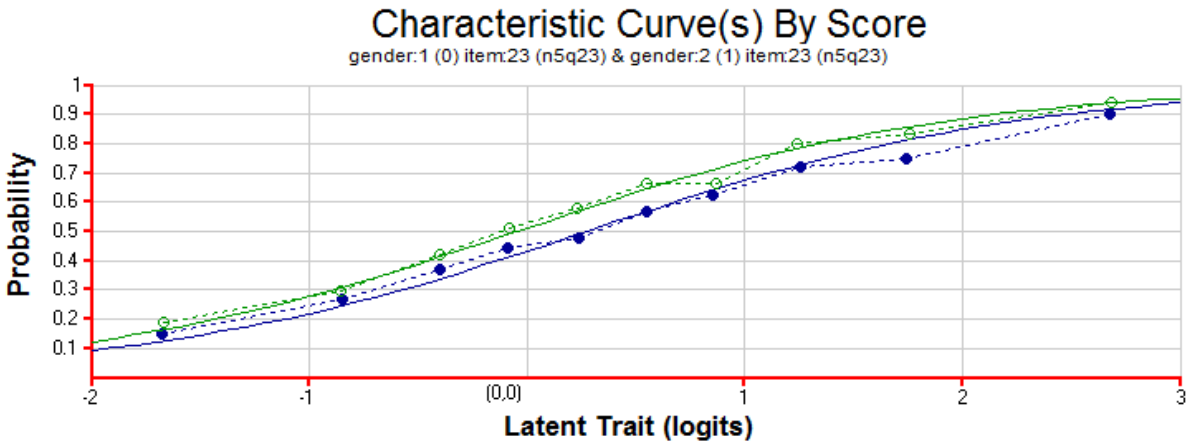


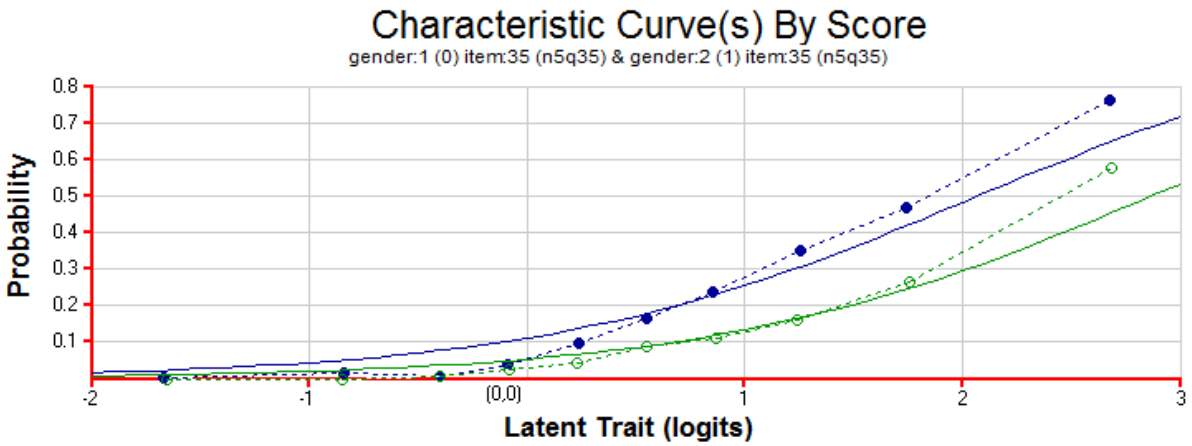


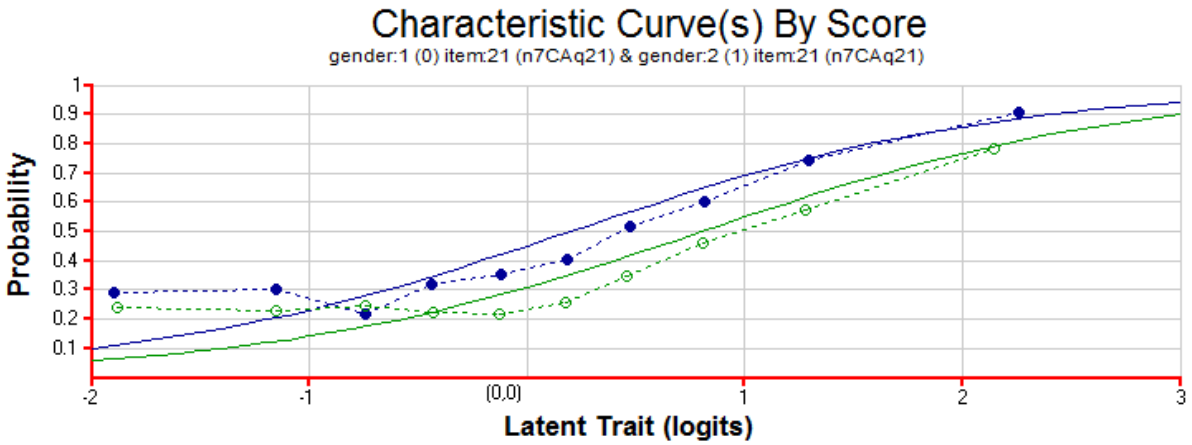


Numeracy


Characteristic Curve(s) By Score
gender:1 (0) item:1 (n3q01) & gender:2 (1) item:1 (n3q01)
Probability
Latent Trait (logits)
(0,0)


Characteristic Curve(s) By Score
gender:1 (0) item:23 (n5q23) & gender:2 (1) item:23 (n5q23)
Probability
Latent Trait (logits)
(0,0)


Characteristic Curve(s) By Score
gender:1 (0) item:35 (n5q35) & gender:2 (1) item:35 (n5q35)
Probability
Latent Trait (logits)
(0,0)


Characteristic Curve(s) By Score
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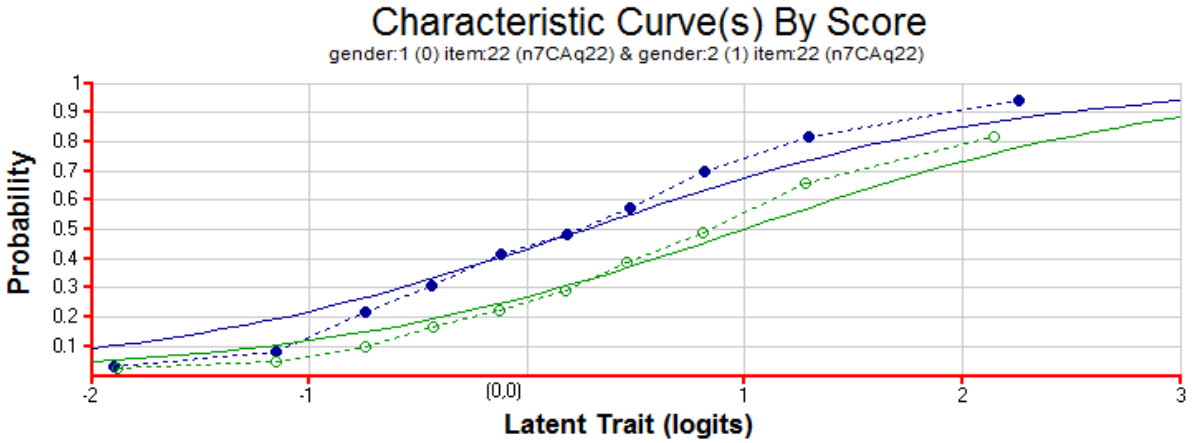
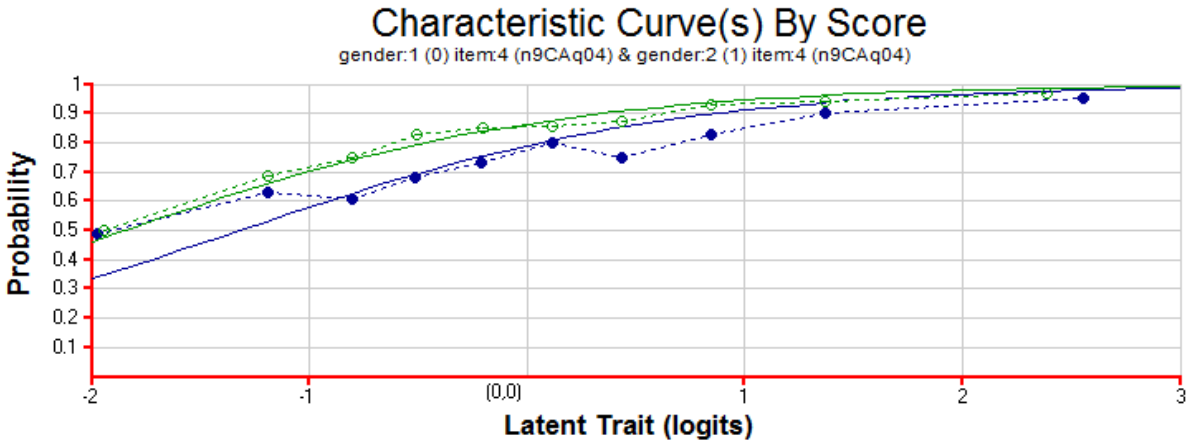
Probability
Latent Trait (logits)
(0,0)


Characteristic Curve(s) By Score
gender:1 (0) item:22 (n7CAq22) & gender:2 (1) item:22 (n7CAq22)
Probability
Latent Trait (logits)
(0,0)


Characteristic Curve(s) By Score
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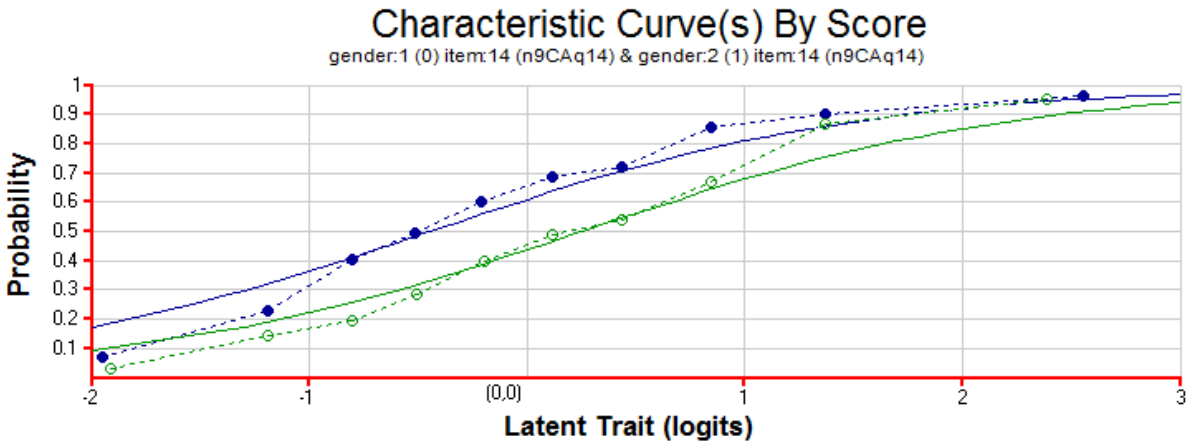
Probability
Latent Trait (logits)
(0,0)


Characteristic Curve(s) By Score
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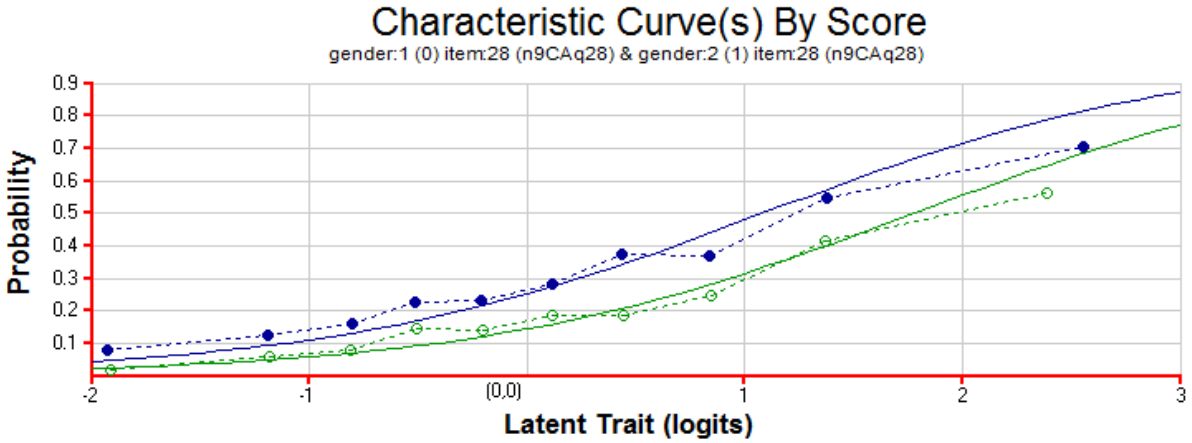
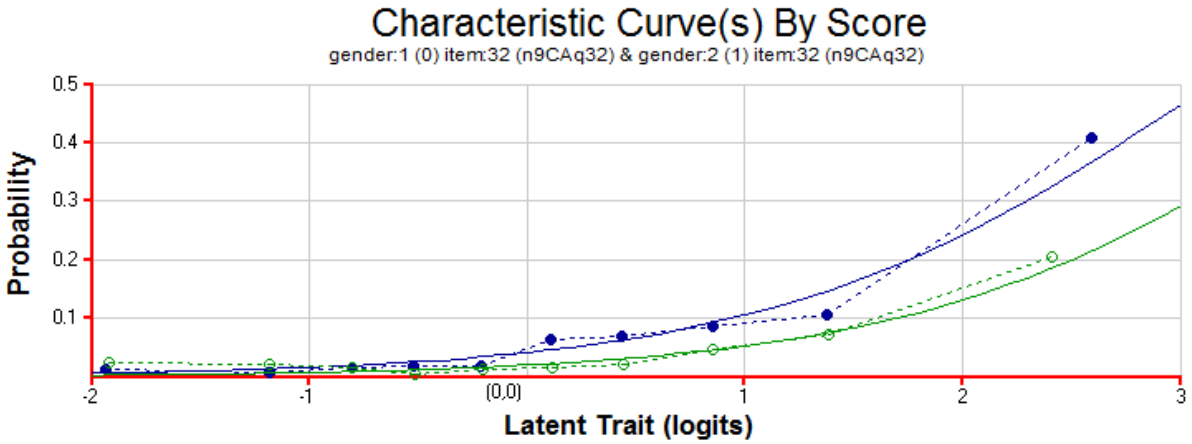
Probability
Latent Trait (logits)
(0,0)


Characteristic Curve(s) By Score
gender:1 (0) item:28 (n9CAq28) & gender:2 (1) item:28 (n9CAq28)
Probability
Latent Trait (logits)
(0,0)


Characteristic Curve(s) By Score
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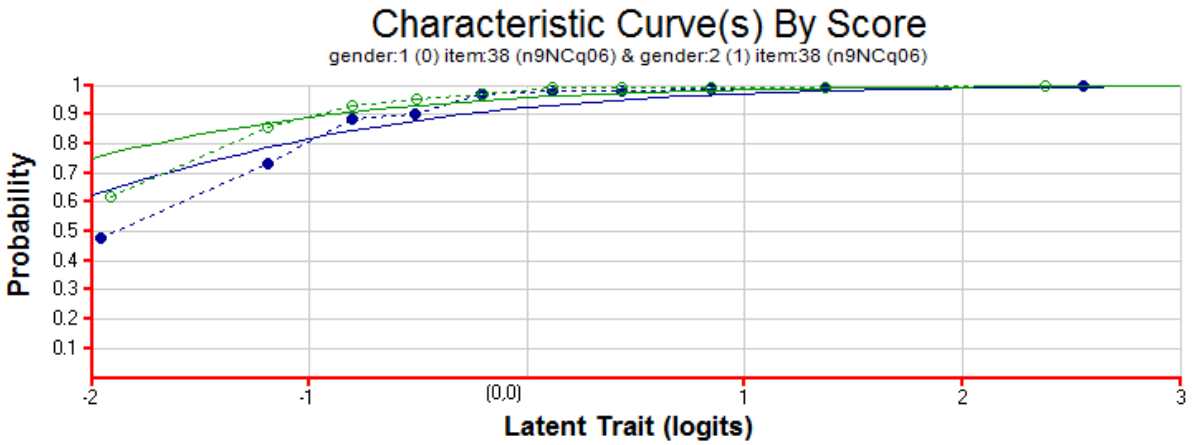
Probability
Latent Trait (logits)
(0,0)


Characteristic Curve(s) By Score
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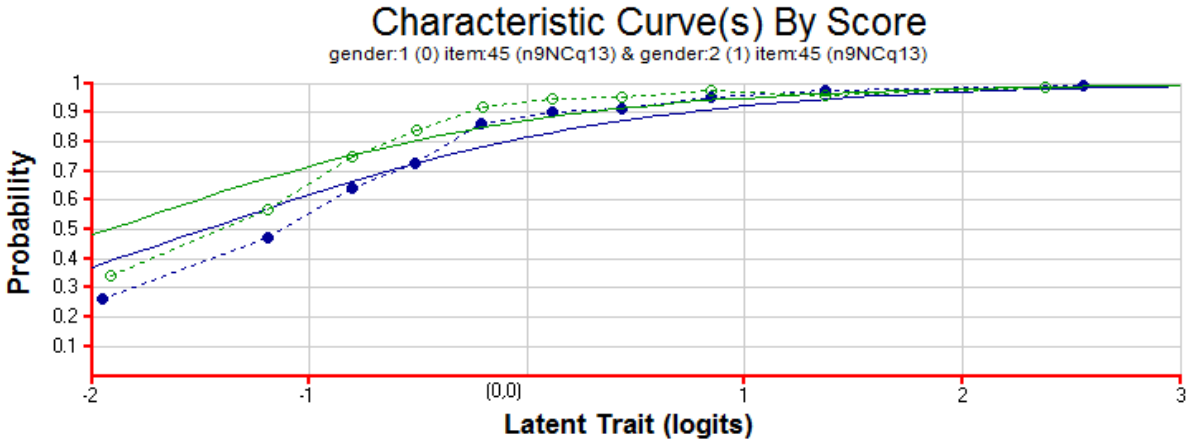
Probability
Latent Trait (logits)
(0,0)


Characteristic Curve(s) By Score
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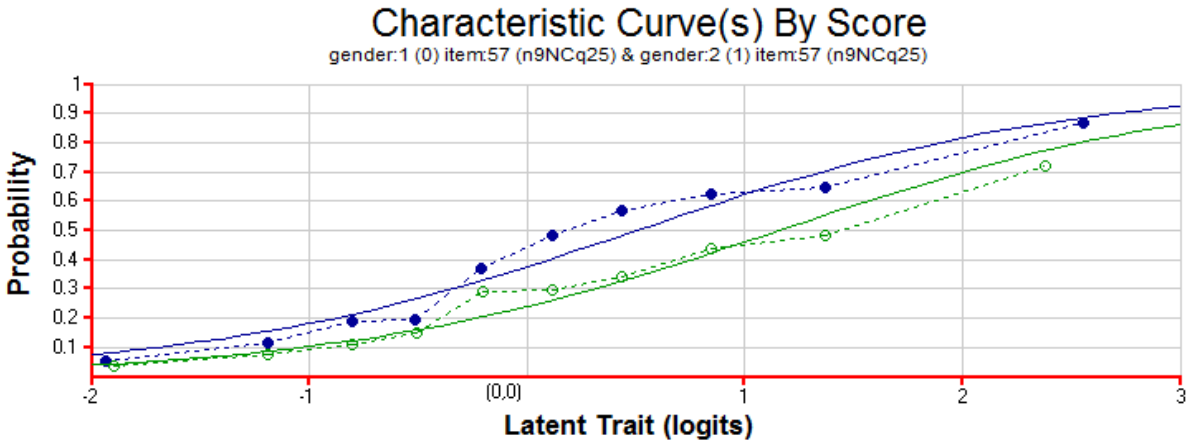
Probability
Latent Trait (logits)
(0,0)


Characteristic Curve(s) By Score
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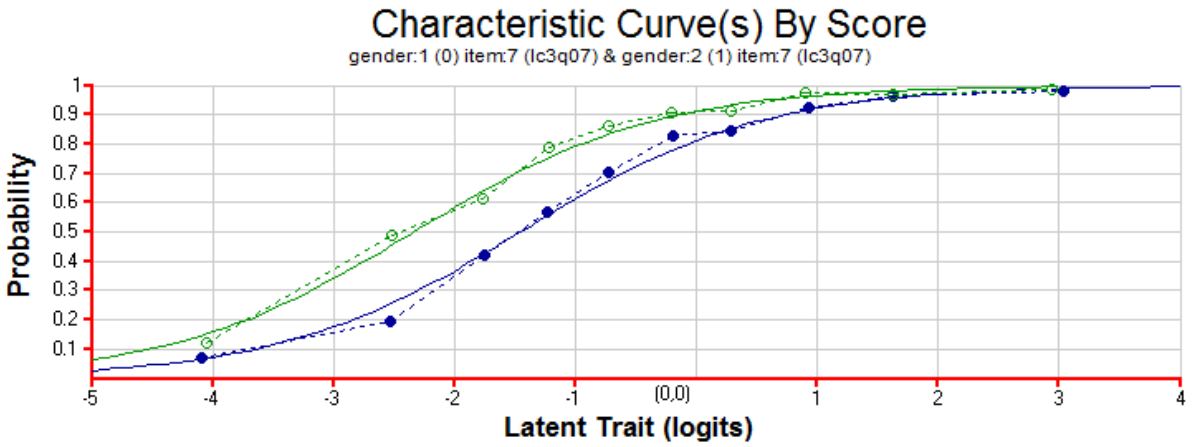
Probability
Latent Trait (logits)
(0,0)

Spelling


Characteristic Curve(s) By Score
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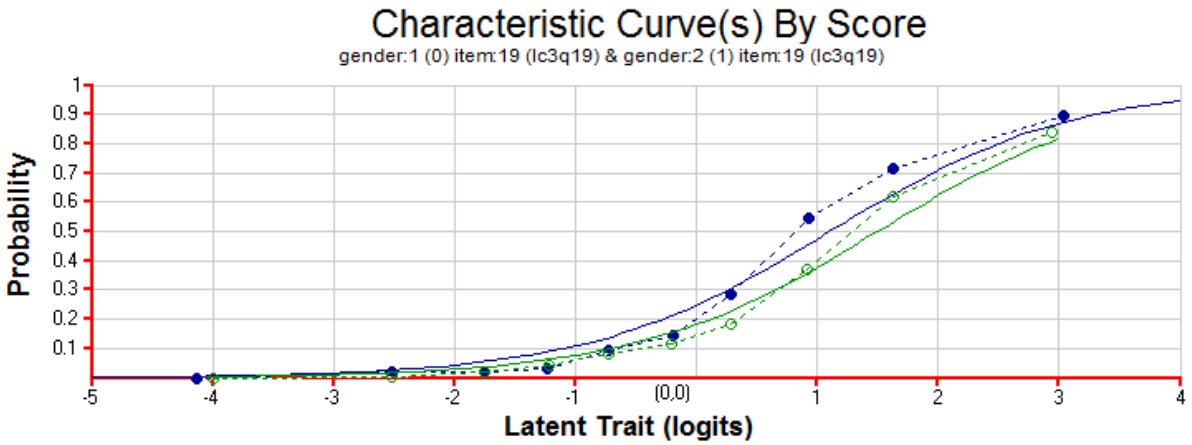
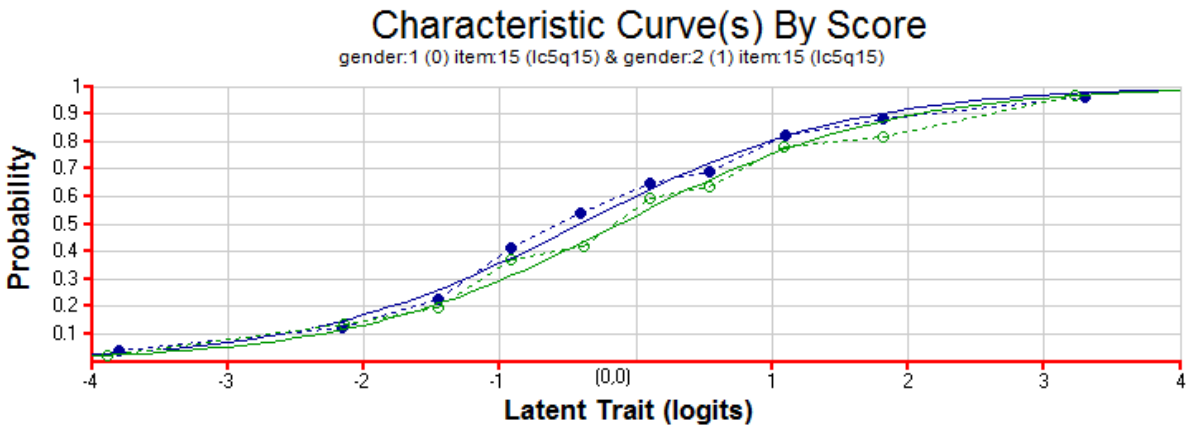
Probability
Latent Trait (logits)
(0,0)


Characteristic Curve(s) By Score
gender:1 (0) item:19 (lc3q19) & gender:2 (1) item:19 (lc3q19)
Probability
Latent Trait (logits)
(0,0)


Characteristic Curve(s) By Score
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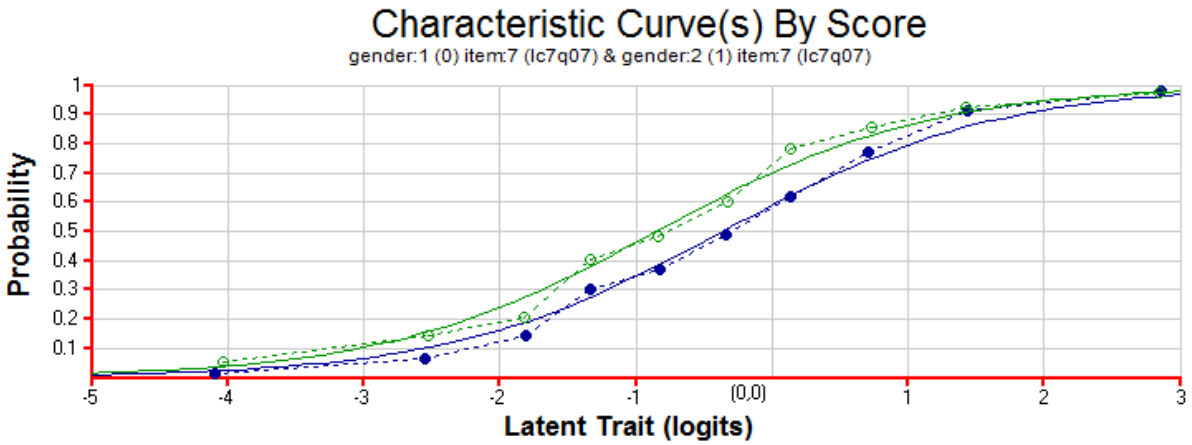
Probability
Latent Trait (logits)
(0,0)


Characteristic Curve(s) By Score
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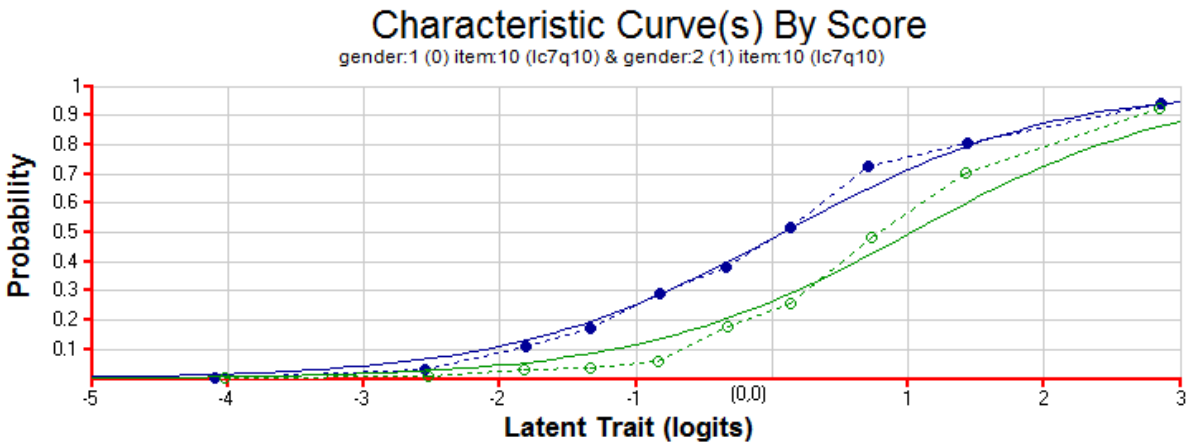
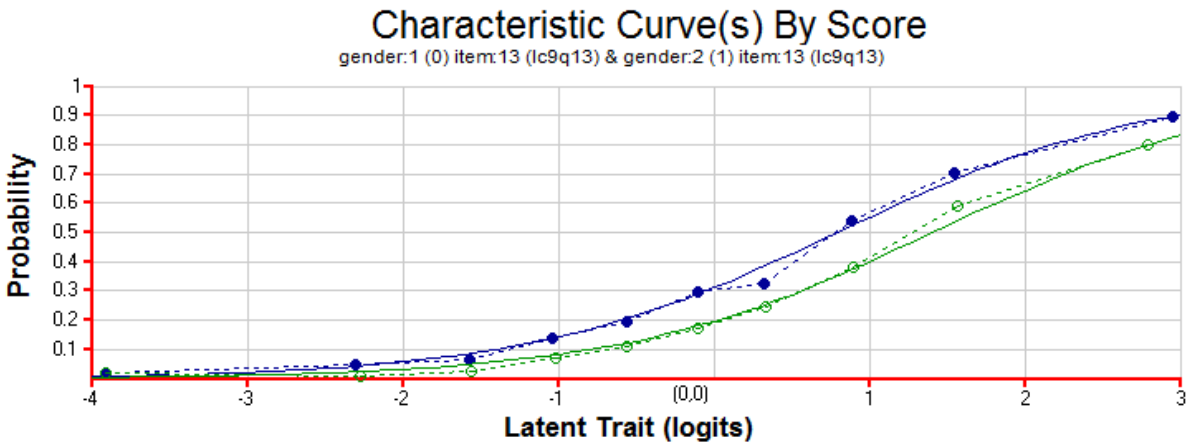
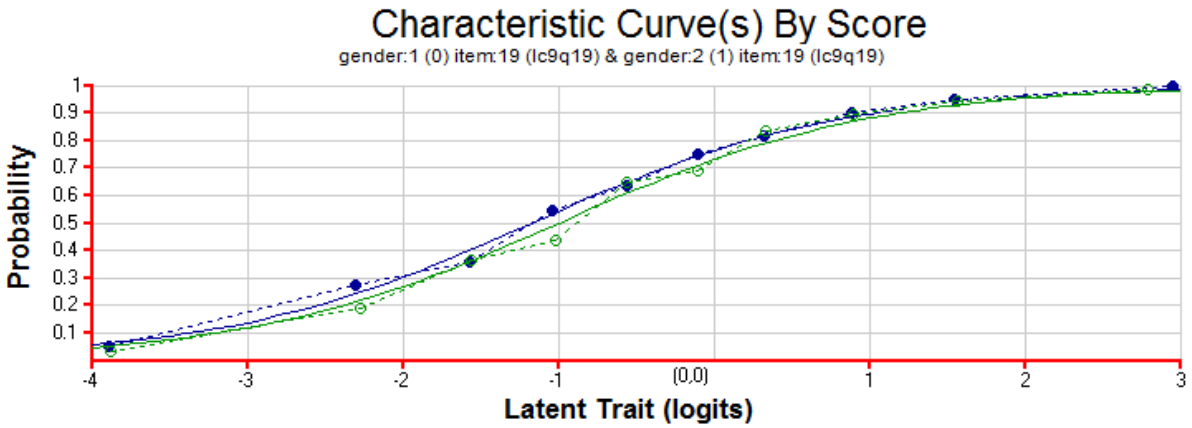
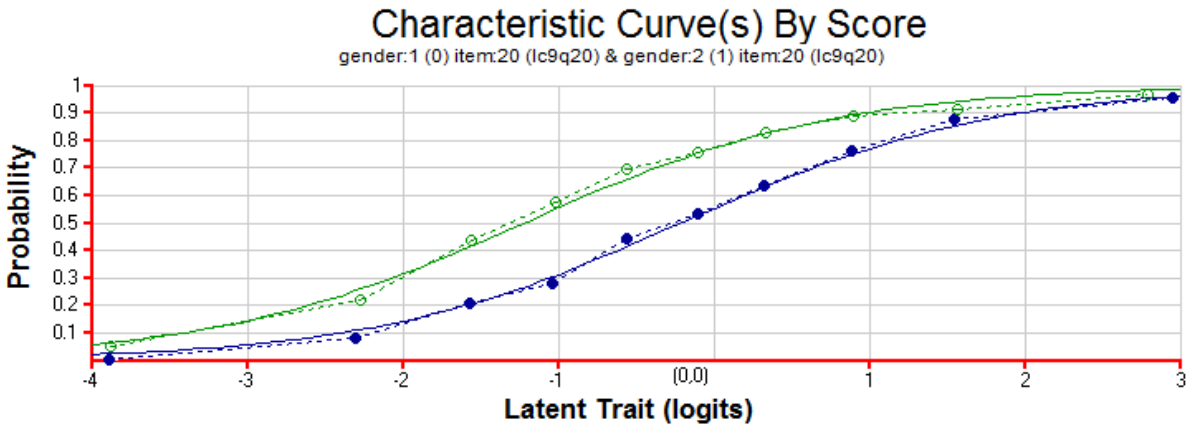
Probability
Latent Trait (logits)
(0,0)

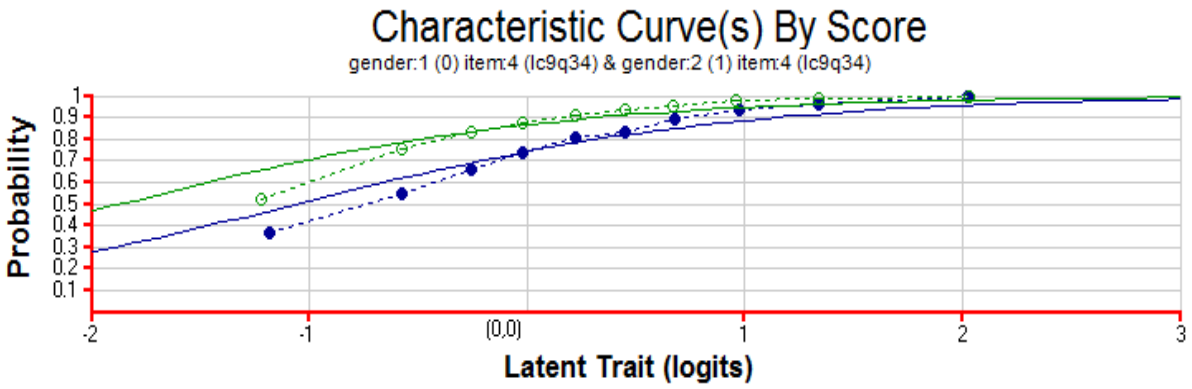

Characteristic Curve(s) By Score
gender:1 (0) item:10 (lc7q10) & gender:2 (1) item:10 (lc7q10)
Probability
Latent Trait (logits)
(0,0)

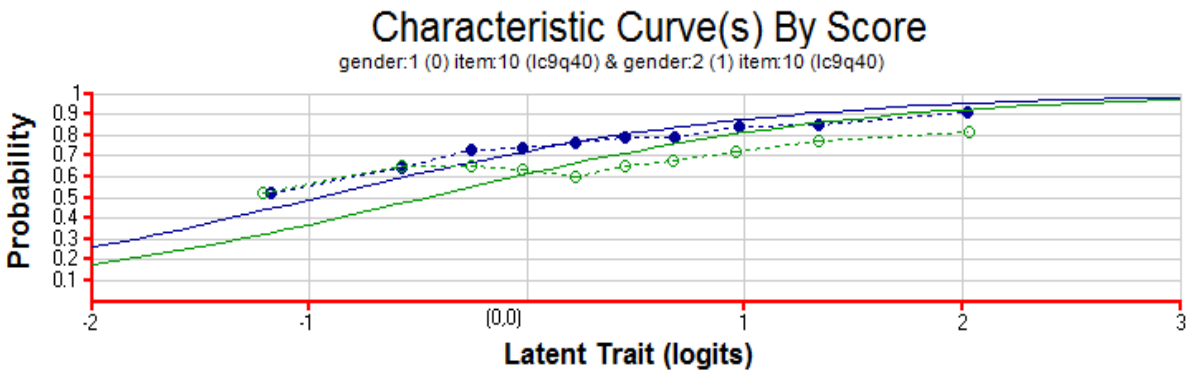

Characteristic Curve(s) By Score
gender:1 (0) item:13 (lc9q13) & gender:2 (1) item:13 (lc9q13)
Probability
Latent Trait (logits)
(0,0)


Characteristic Curve(s) By Score
gender:1 (0) item:19 (lc9q19) & gender:2 (1) item:19 (lc9q19)
Probability
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-4
-3
-2
-1
(0,0)
1
2
3
Latent Trait (logits)


Characteristic Curve(s) By Score
gender:1 (0) item:20 (lc9q20) & gender:2 (1) item:20 (lc9q20)
Probability
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-4
-3
-2
-1
(0,0)
1
2
3
Latent Trait (logits)

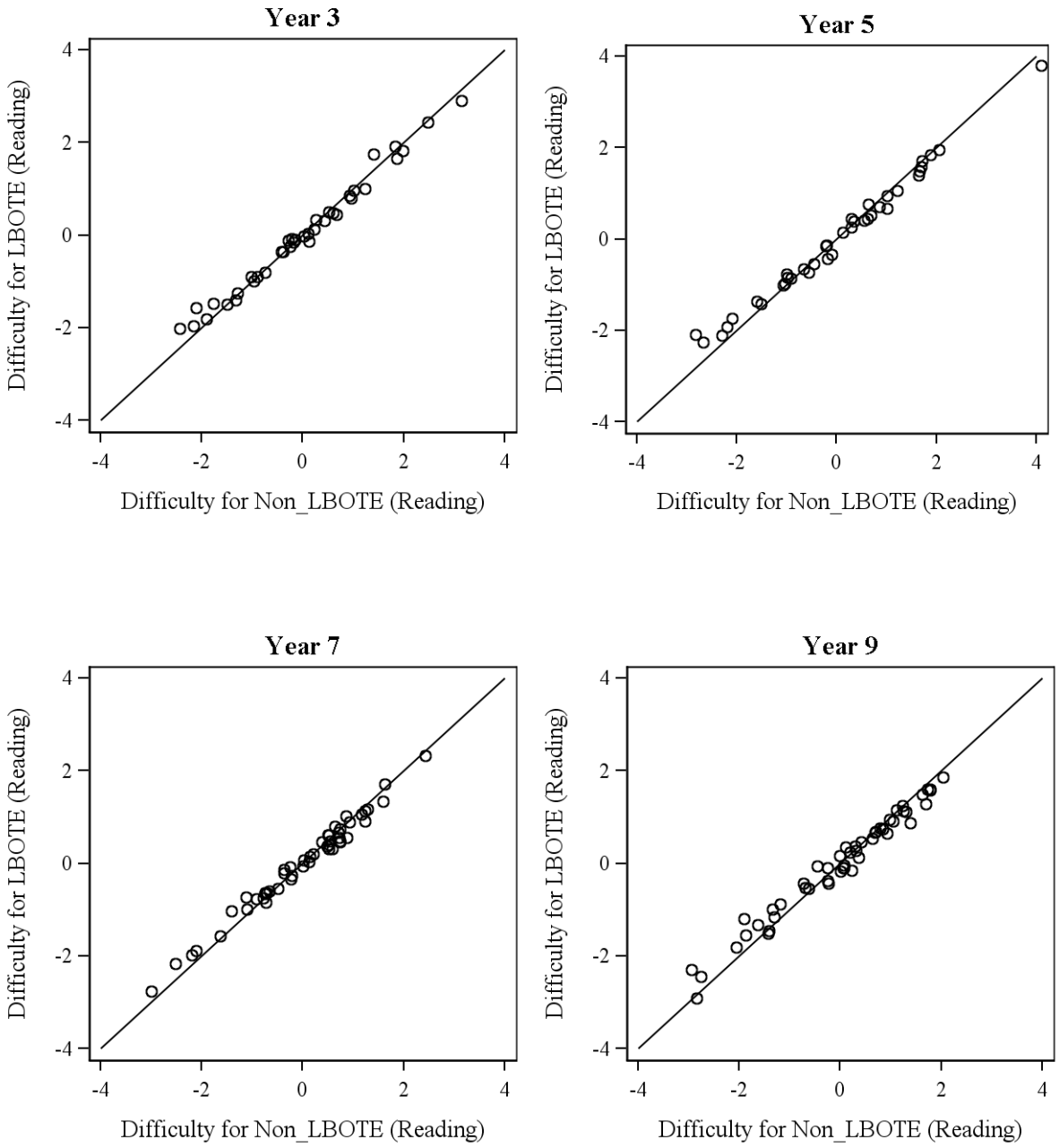
Grammar and Punctutation



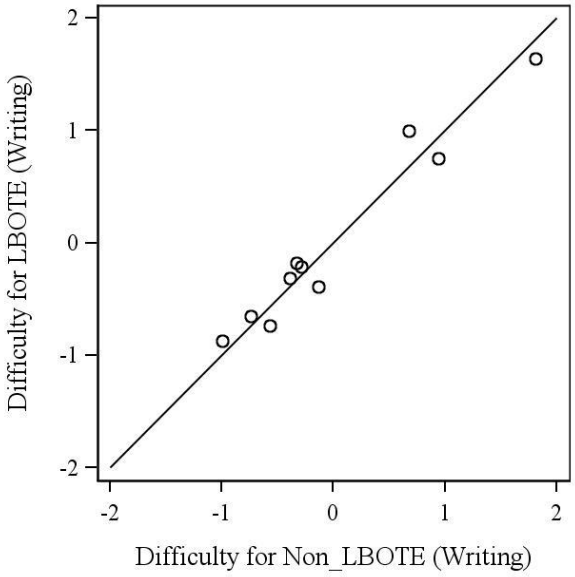


APPENDIX G. LBOTE DIF ANALYSIS

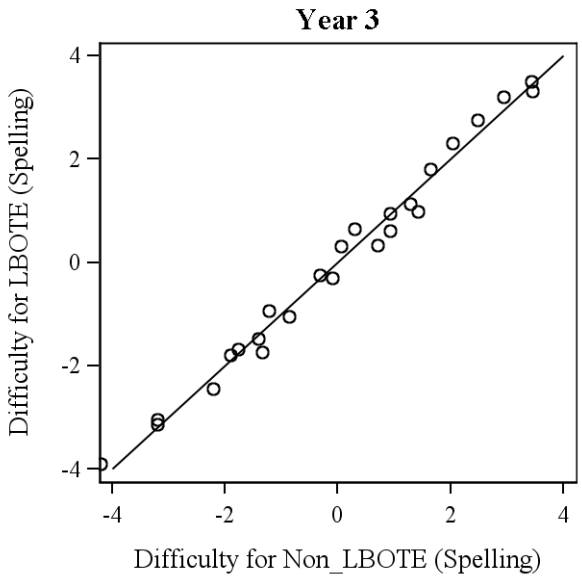
G.1 Centred Item Locations of LBOTE and Non-LBOTE Students in Reading (2016)

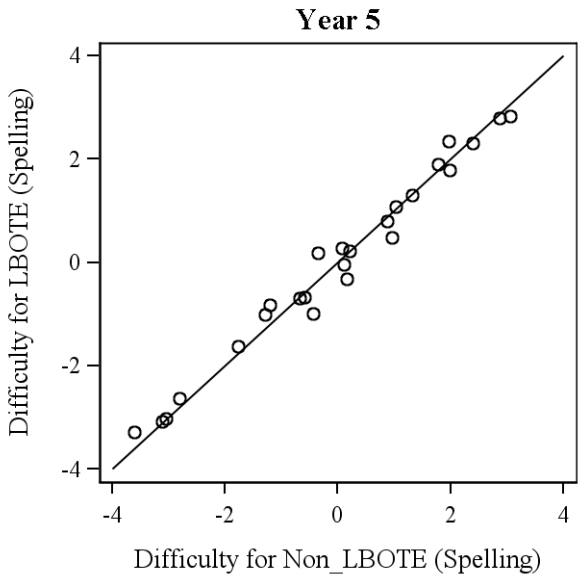


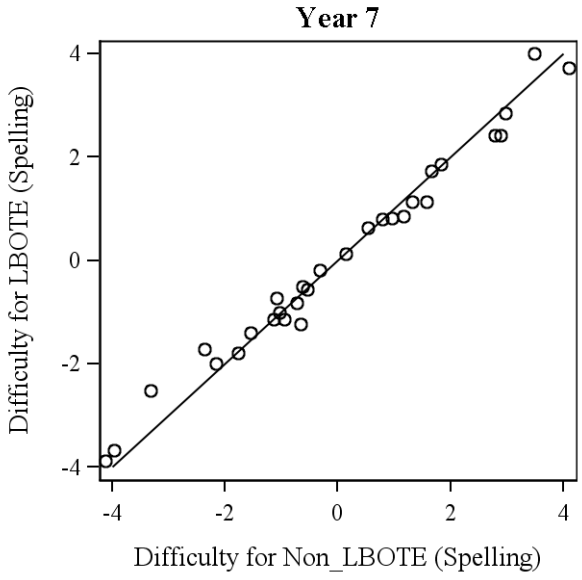
G.2 Centred Item Locations of LBOTE and Non-LBOTE Students Years 3, 5, 7, and 9 Writing (2016)

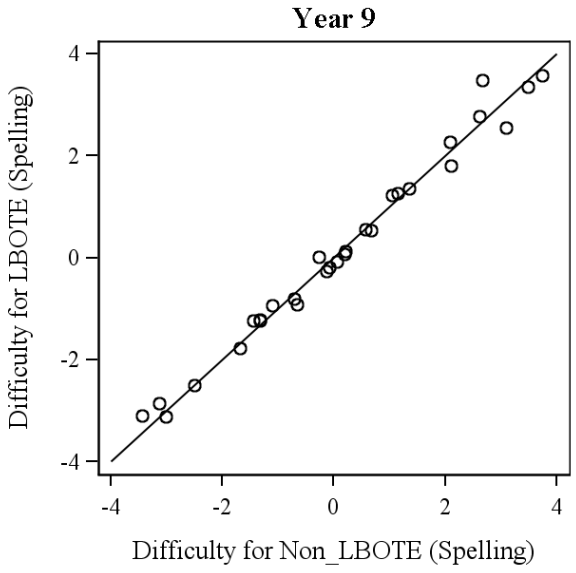


G.3 Centred Item Locations of LBOTE and Non-LBOTE Students in Spelling (2016)

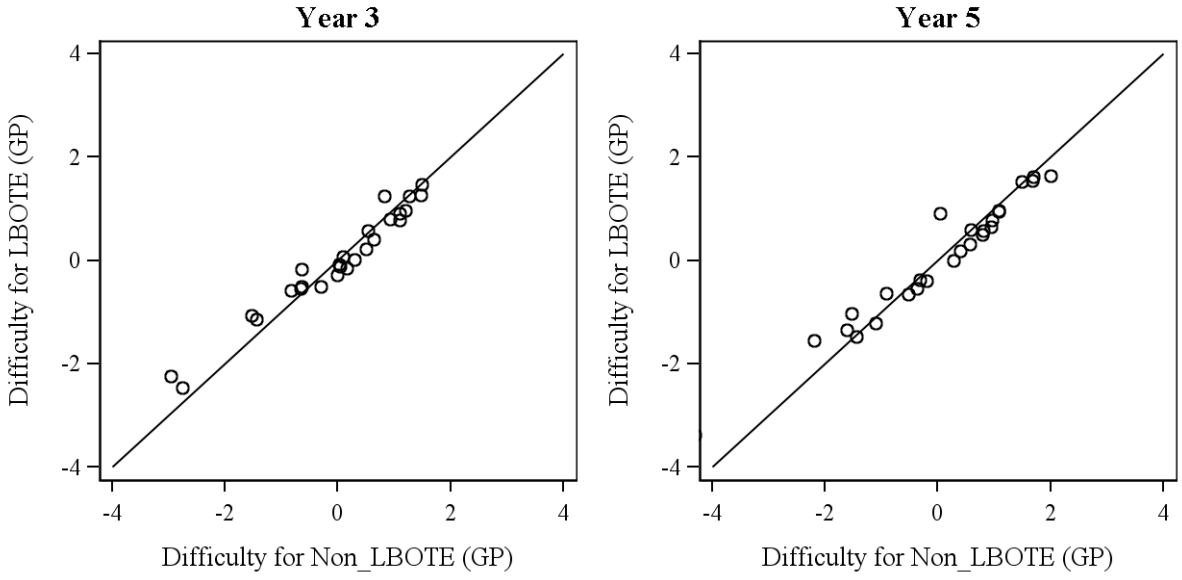


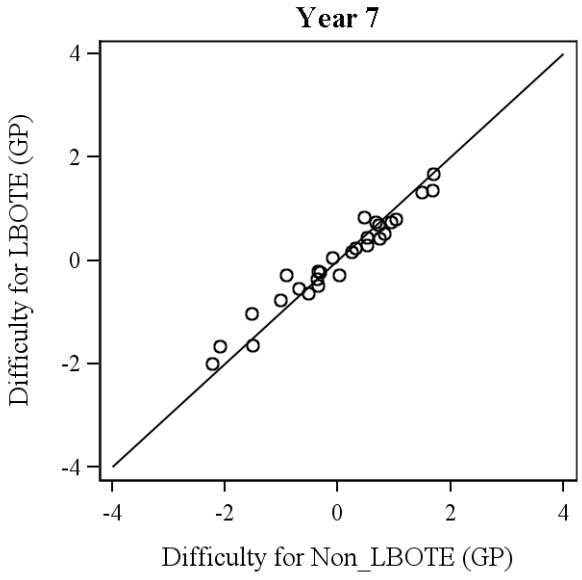


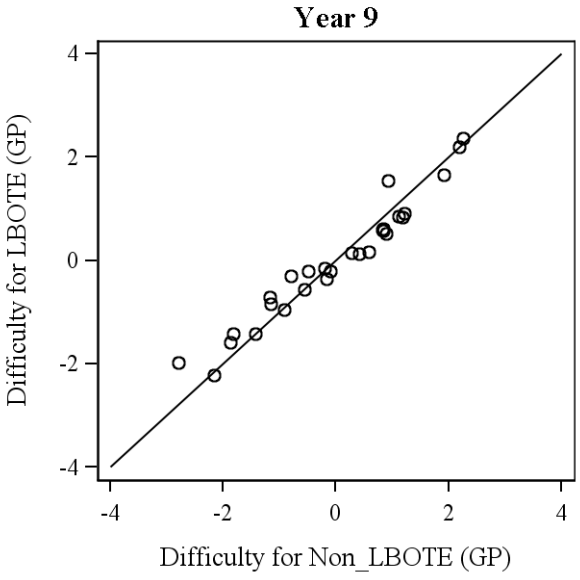




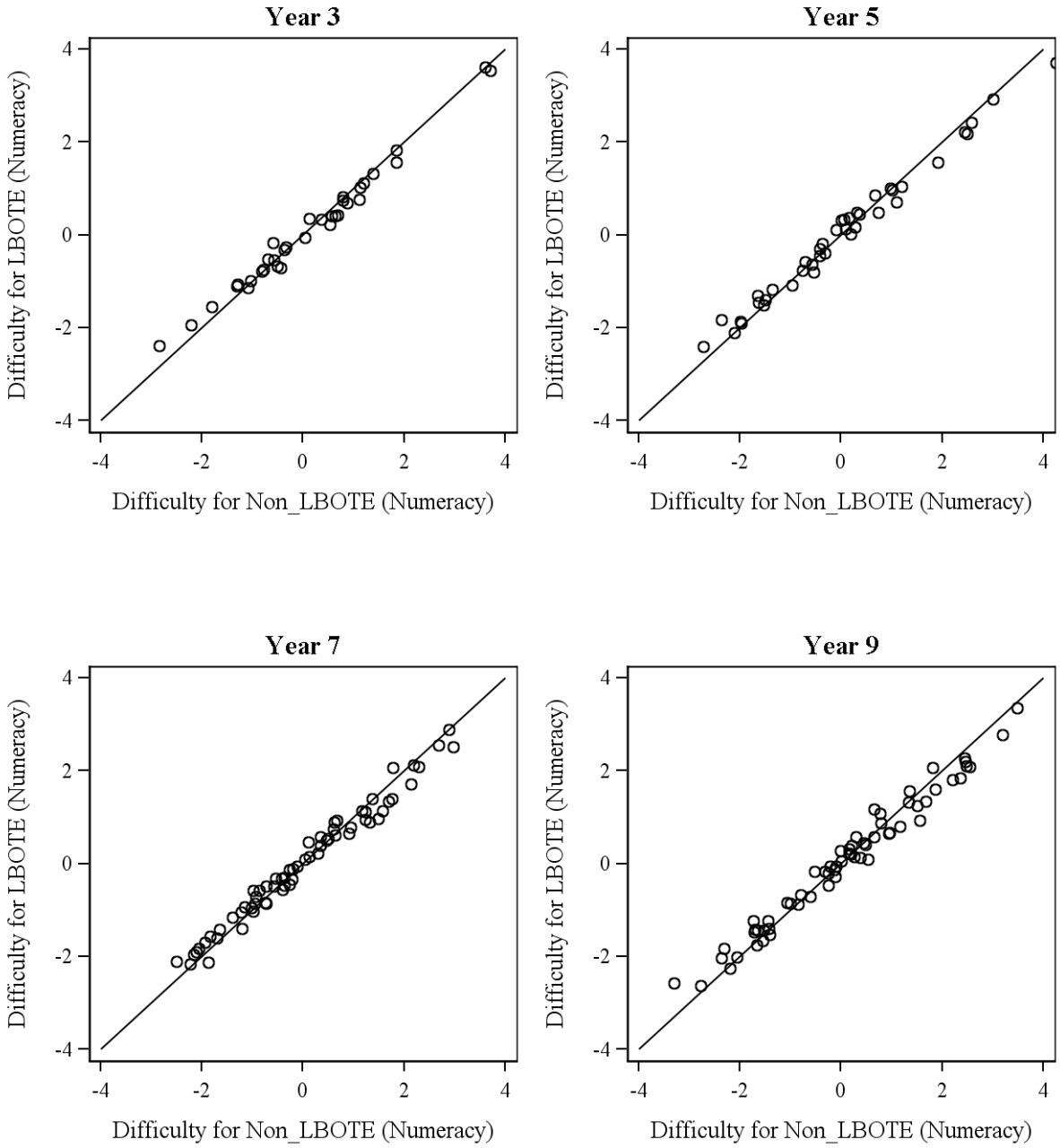
G.4 Centred Item Locations of LBOTE and Non-LBOTE Students in Grammar and Punctuation (2016)



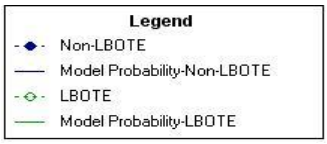




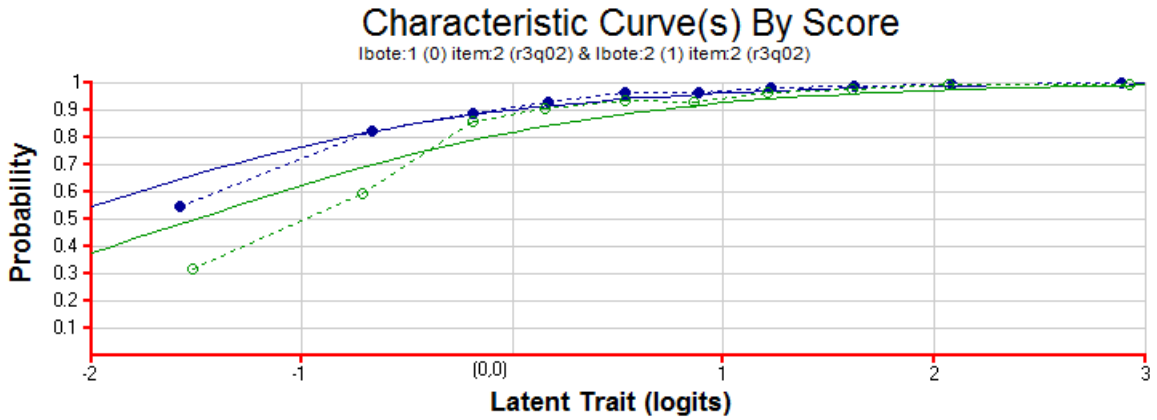
G.5 Centred Item Locations of LBOTE and Non-LBOTE Students in Numeracy (2016)

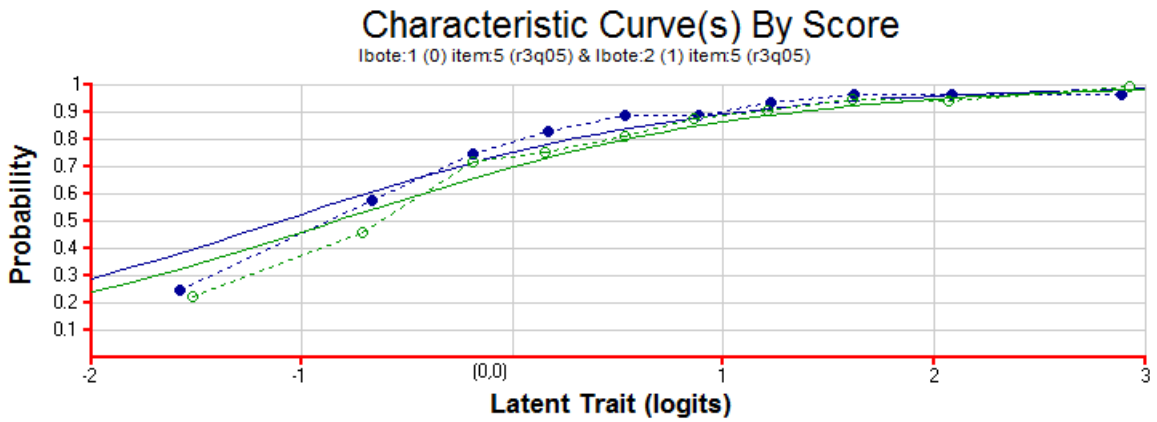


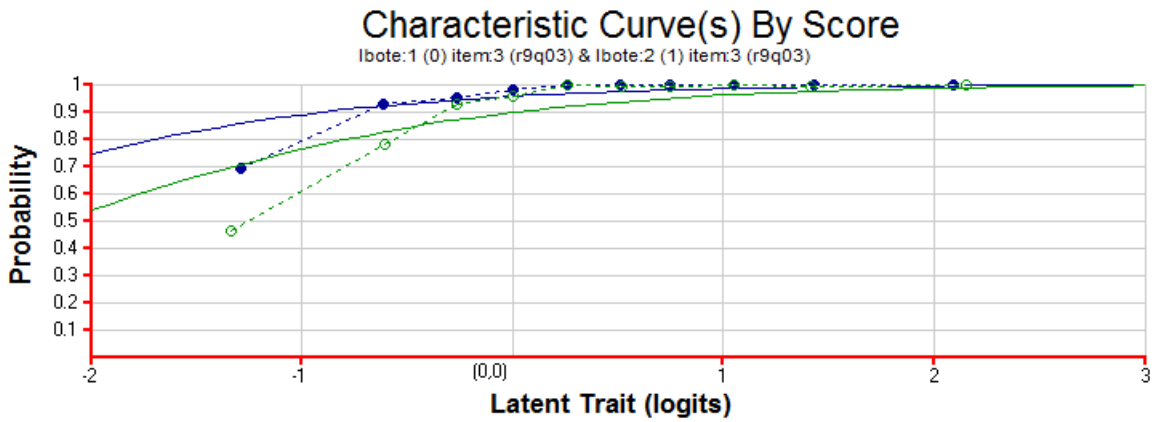
G.6 Item DIF Plots for Items Showing LBOTE DIF

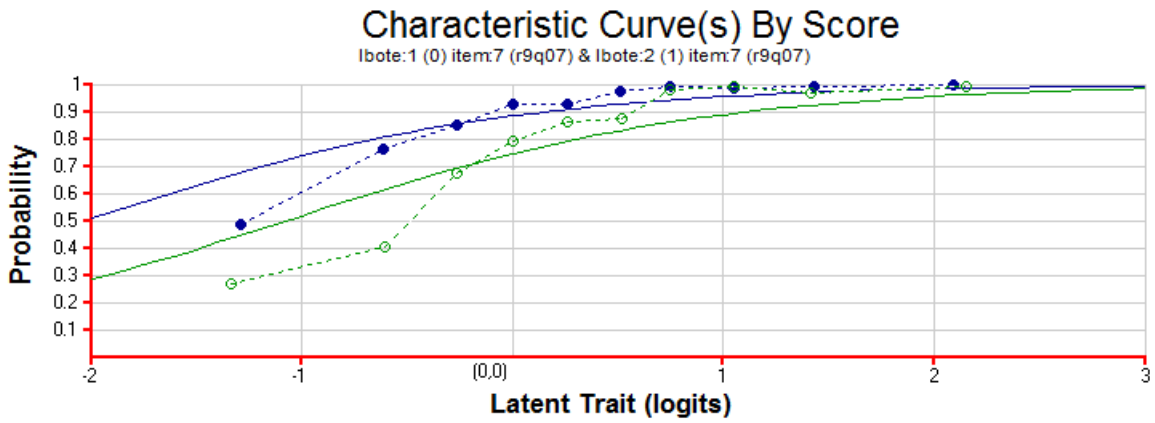


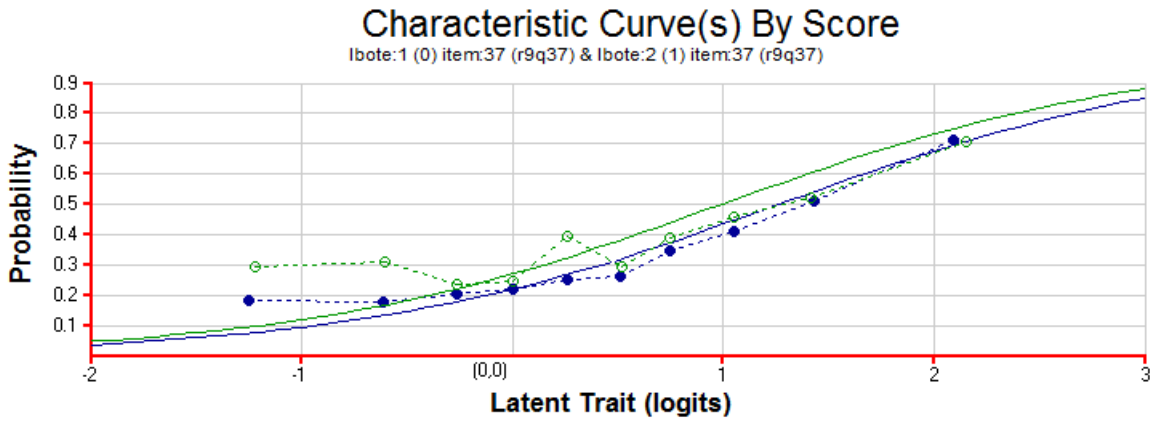
Reading



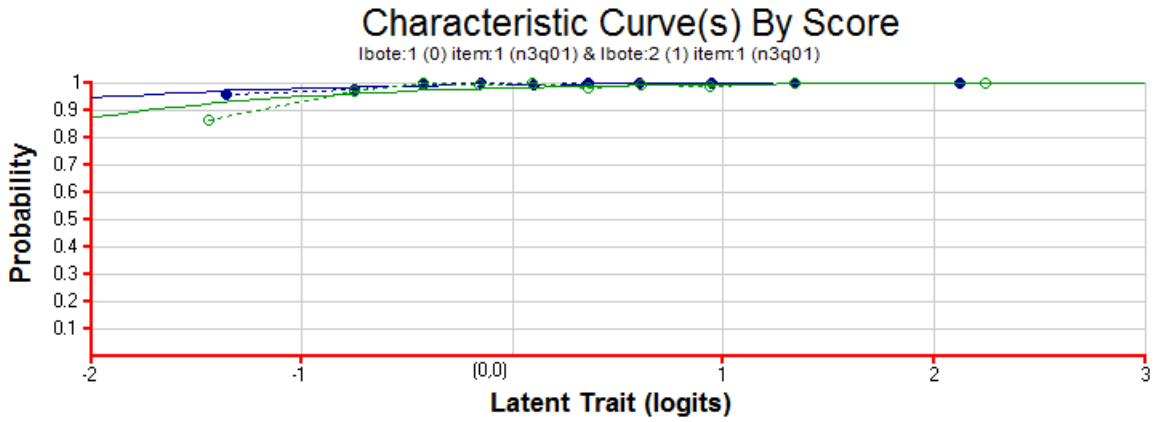


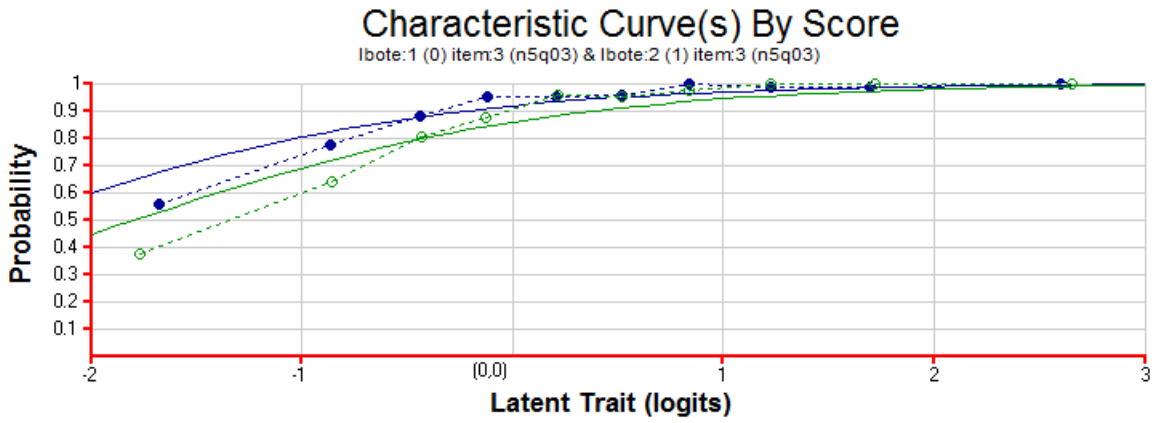


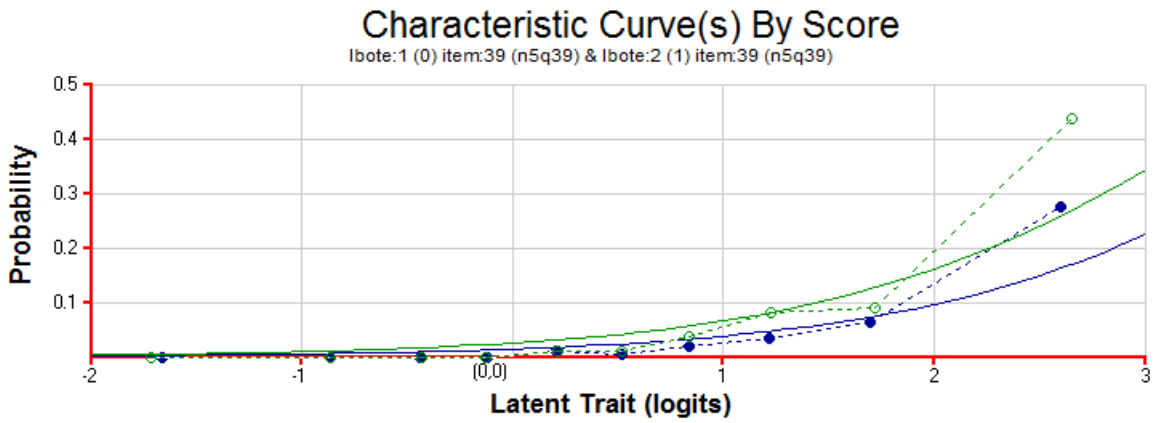

Characteristic Curve(s) By Score
lbote:1 (0) item:7 (r9q07) & lbote:2 (1) item:7 (r9q07)
Probability
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
3
Latent Trait (logits)

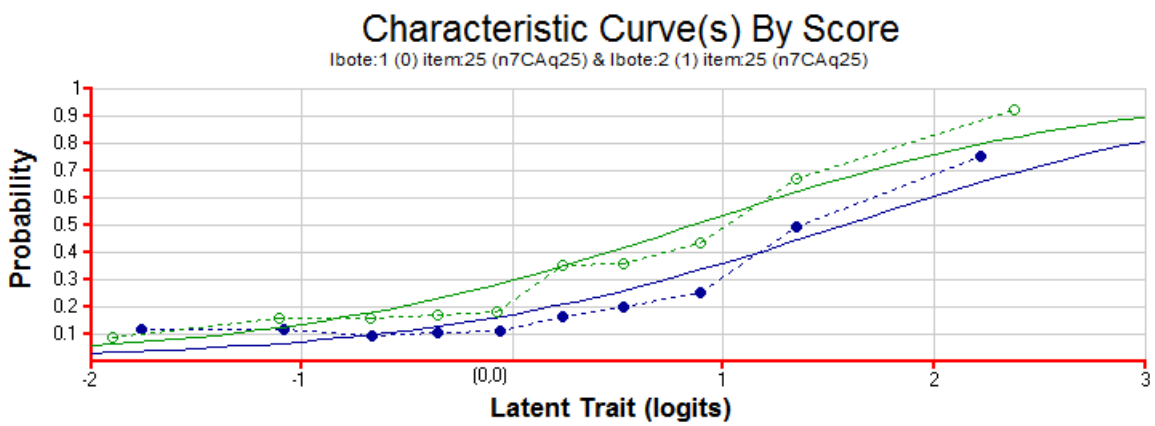

Characteristic Curve(s) By Score
lbote:1 (0) item:37 (r9q37) & lbote:2 (1) item:37 (r9q37)
Probability
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
3
Latent Trait (logits)

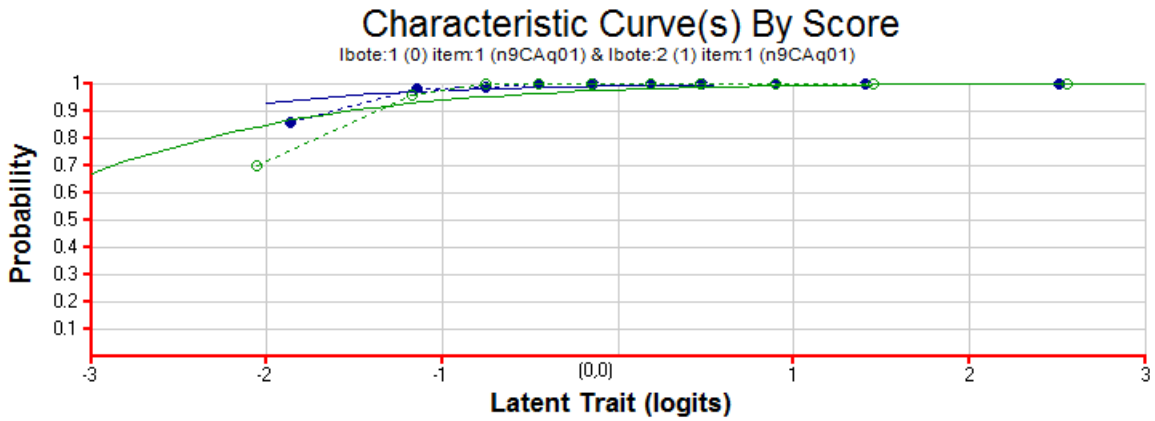
Numeracy

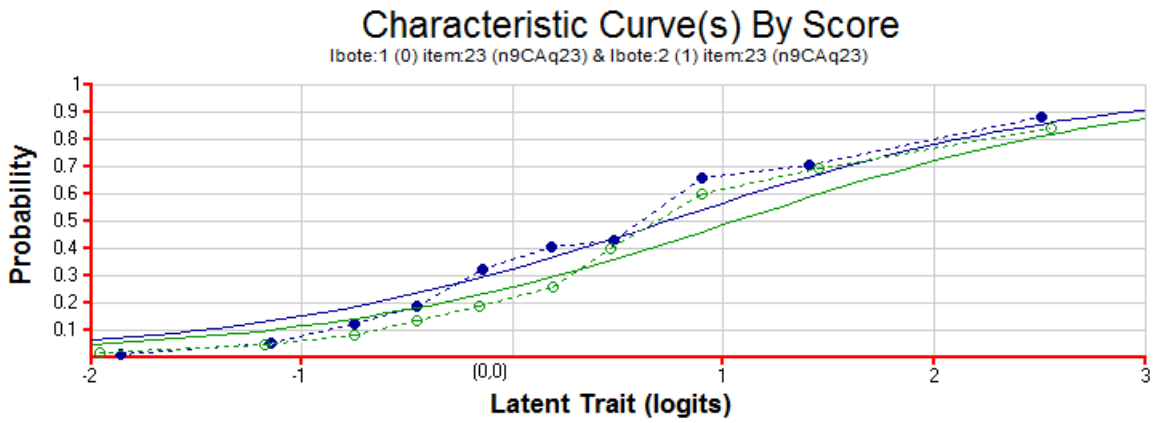

Characteristic Curve(s) By Score
lbote:1 (0) item:1 (n3q01) & lbote:2 (1) item:1 (n3q01)
Probability
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
3
Latent Trait (logits)

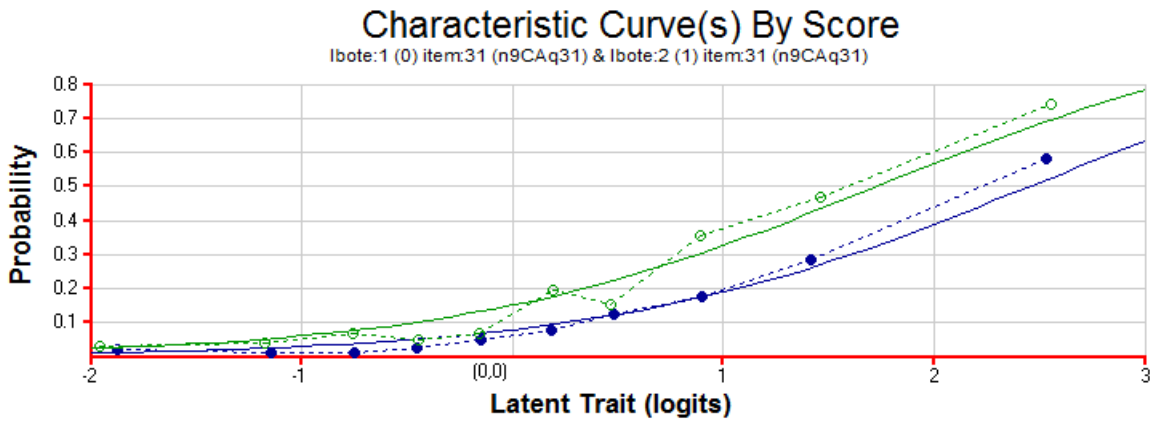

Characteristic Curve(s) By Score
lbote:1 (0) item:3 (n5q03) & lbote:2 (1) item:3 (n5q03)
Probability
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
3
Latent Trait (logits)

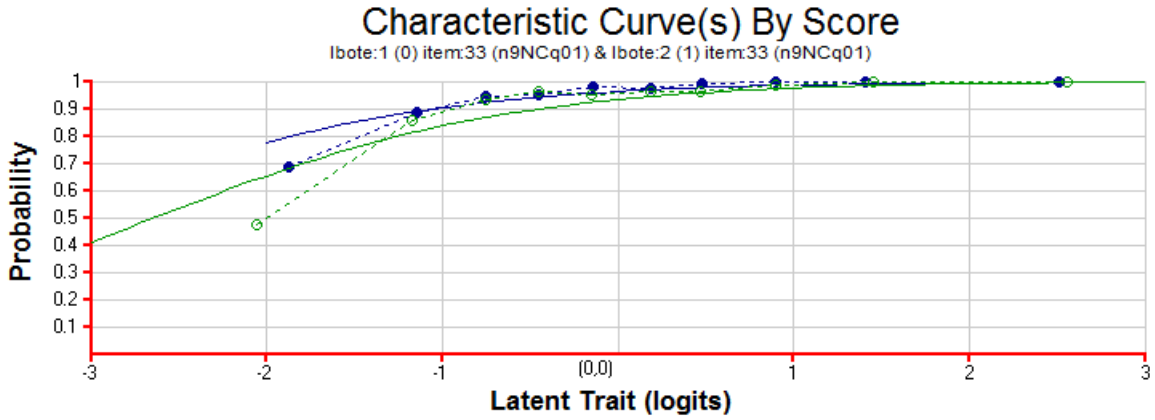

Characteristic Curve(s) By Score
lbote:1 (0) item:39 (n5q39) & lbote:2 (1) item:39 (n5q39)
Probability
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
3
Latent Trait (logits)

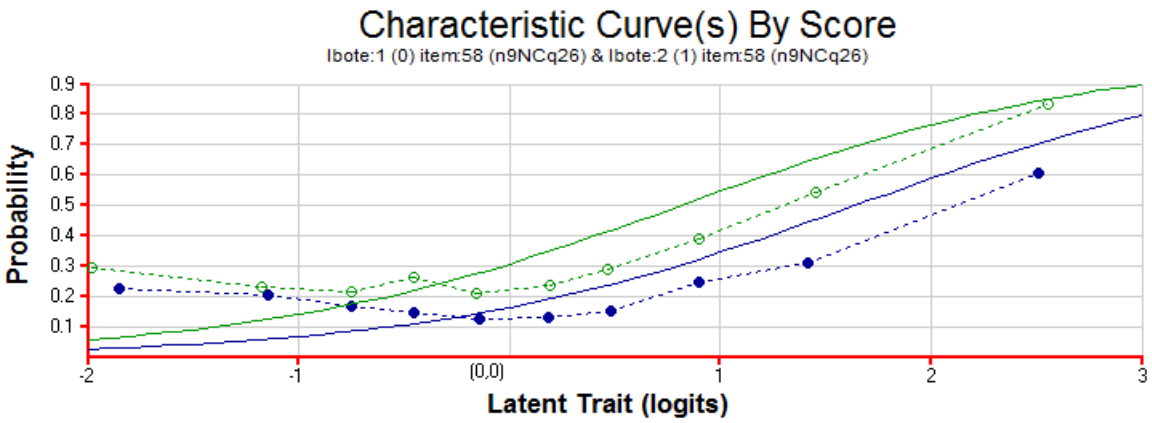

Characteristic Curve(s) By Score
lbote:1 (0) item:25 (n7CAq25) & lbote:2 (1) item:25 (n7CAq25)
Probability
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
3
Latent Trait (logits)


Characteristic Curve(s) By Score
lbote:1 (0) item:1 (n9CAq01) & lbote:2 (1) item:1 (n9CAq01)
Probability
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-3
-2
-1
(0,0)
1
2
3
Latent Trait (logits)

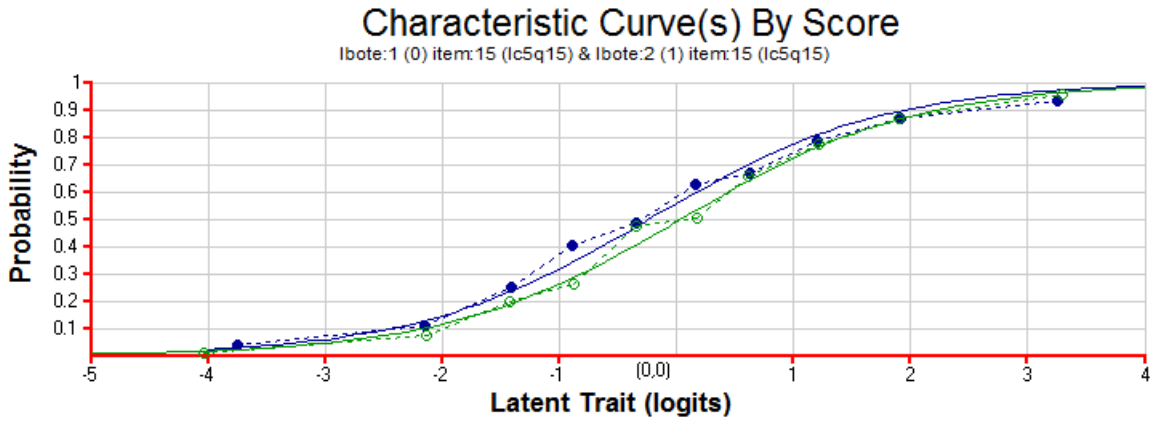

Characteristic Curve(s) By Score
lbote:1 (0) item:23 (n9CAq23) & lbote:2 (1) item:23 (n9CAq23)
Probability
Latent Trait (logits)
(0,0)

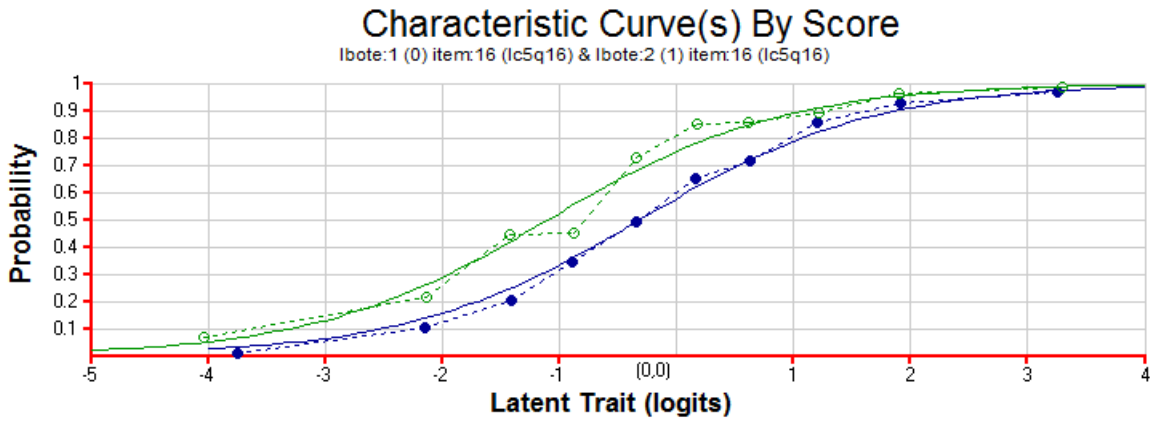

Characteristic Curve(s) By Score
lbote:1 (0) item:31 (n9CAq31) & lbote:2 (1) item:31 (n9CAq31)
Probability
Latent Trait (logits)
(0,0)

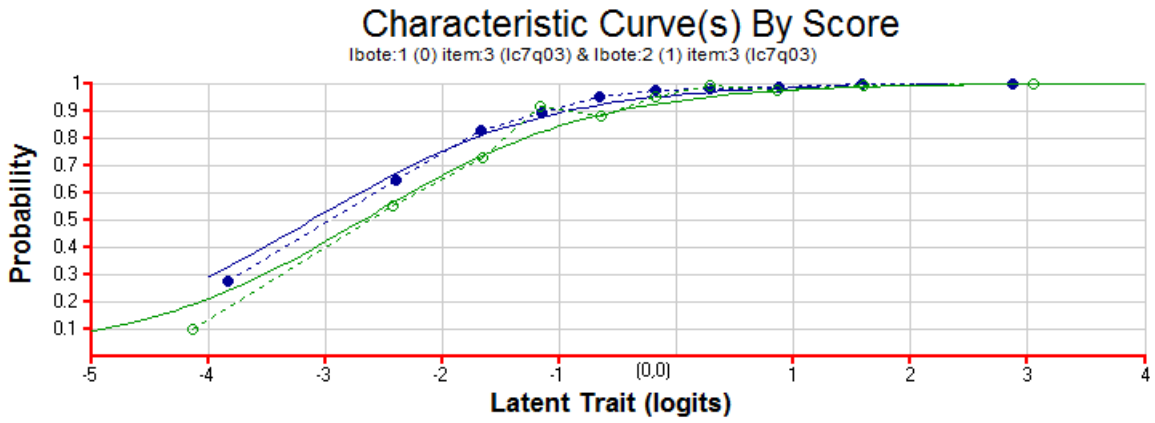

Characteristic Curve(s) By Score
lbote:1 (0) item:33 (n9NCq01) & lbote:2 (1) item:33 (n9NCq01)
Probability
Latent Trait (logits)
(0,0)

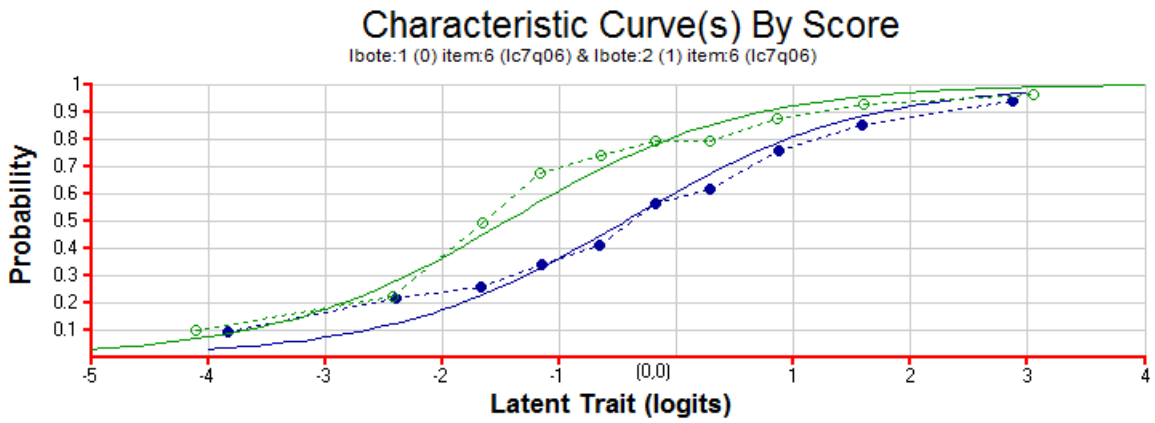

Characteristic Curve(s) By Score
lbote:1 (0) item:58 (n9NCq26) & lbote:2 (1) item:58 (n9NCq26)
Probability
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
3
Latent Trait (logits)

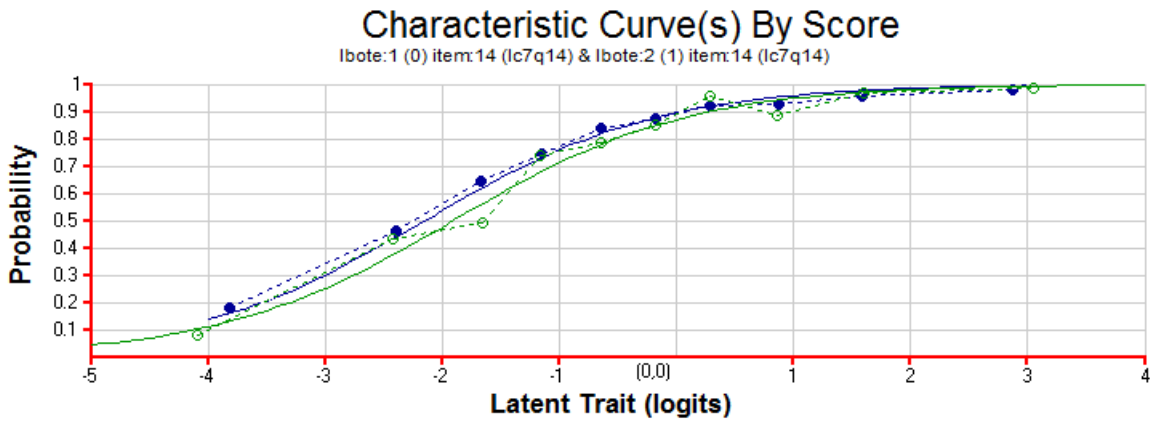
Spelling

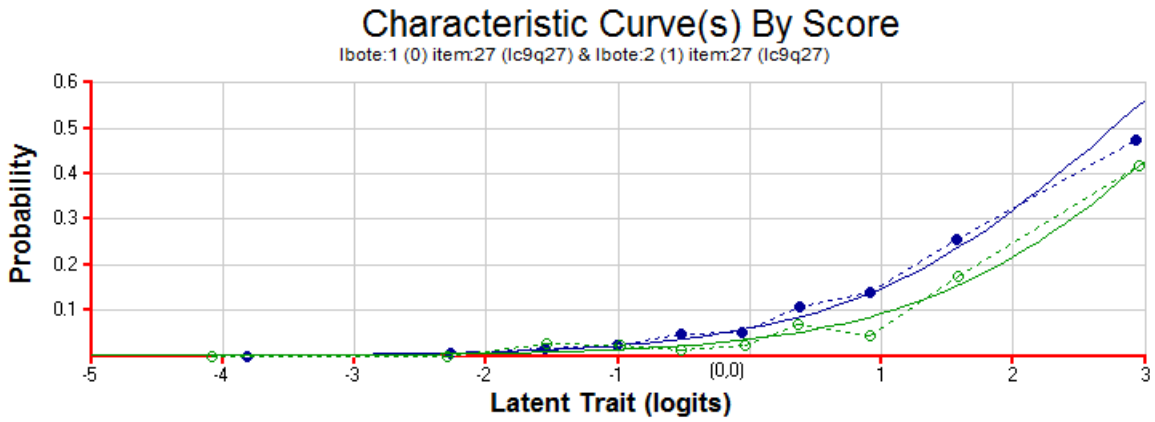

Characteristic Curve(s) By Score
lbote:1 (0) item:15 (lc5q15) & lbote:2 (1) item:15 (lc5q15)
Probability
Latent Trait (logits)
(0,0)

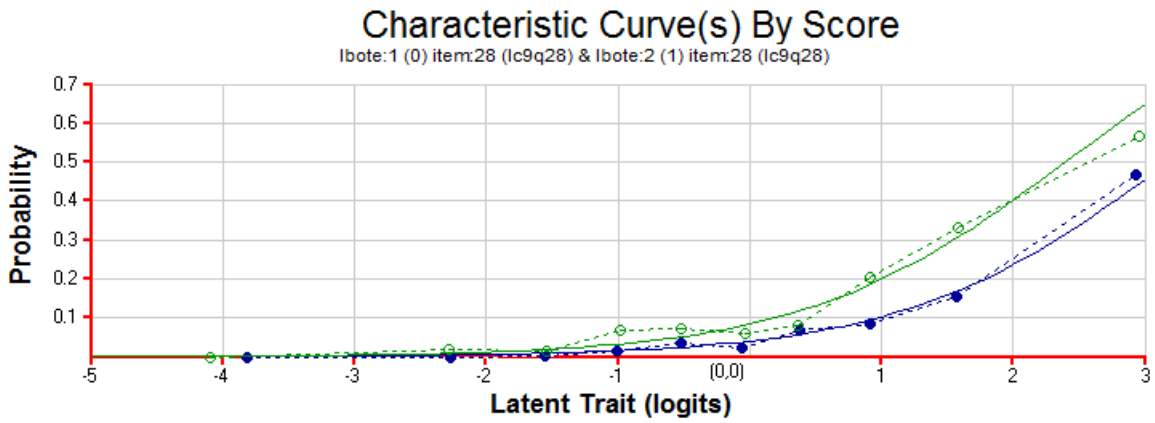

Characteristic Curve(s) By Score
lbote:1 (0) item:16 (lc5q16) & lbote:2 (1) item:16 (lc5q16)
Probability
Latent Trait (logits)
(0,0)

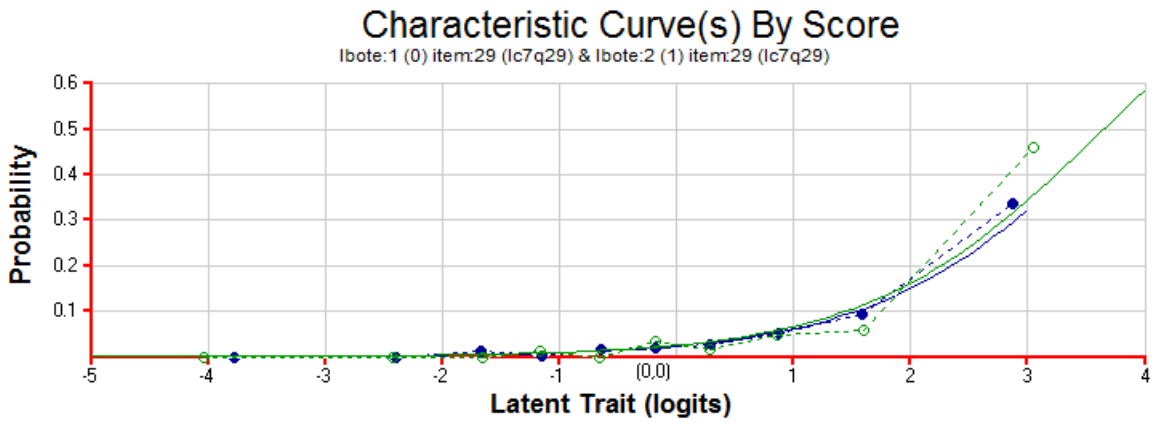

Characteristic Curve(s) By Score
lbote:1 (0) item:3 (lc7q03) & lbote:2 (1) item:3 (lc7q03)
Probability
Latent Trait (logits)
(0,0)


Characteristic Curve(s) By Score
lbote:1 (0) item:6 (lc7q06) & lbote:2 (1) item:6 (lc7q06)
Probability
Latent Trait (logits)
(0,0)

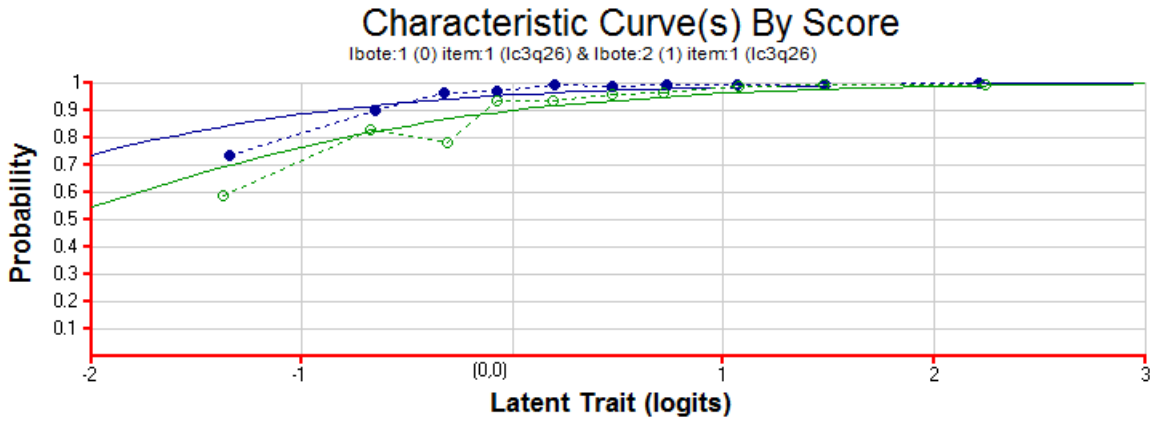

Characteristic Curve(s) By Score
lbote:1 (0) item:14 (lc7q14) & lbote:2 (1) item:14 (lc7q14)
Probability
Latent Trait (logits)
(0,0)

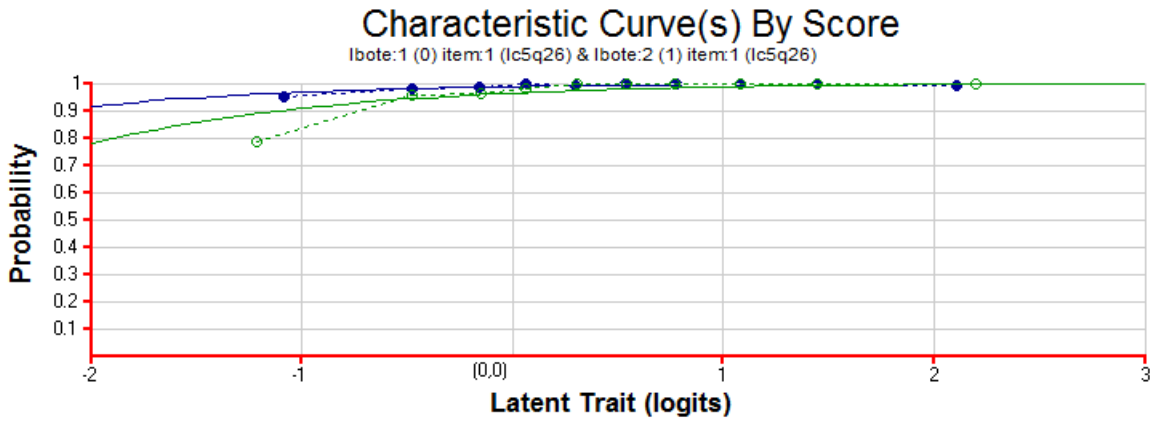

Characteristic Curve(s) By Score
lbote:1 (0) item:27 (lc9q27) & lbote:2 (1) item:27 (lc9q27)
Probability
Latent Trait (logits)
(0,0)

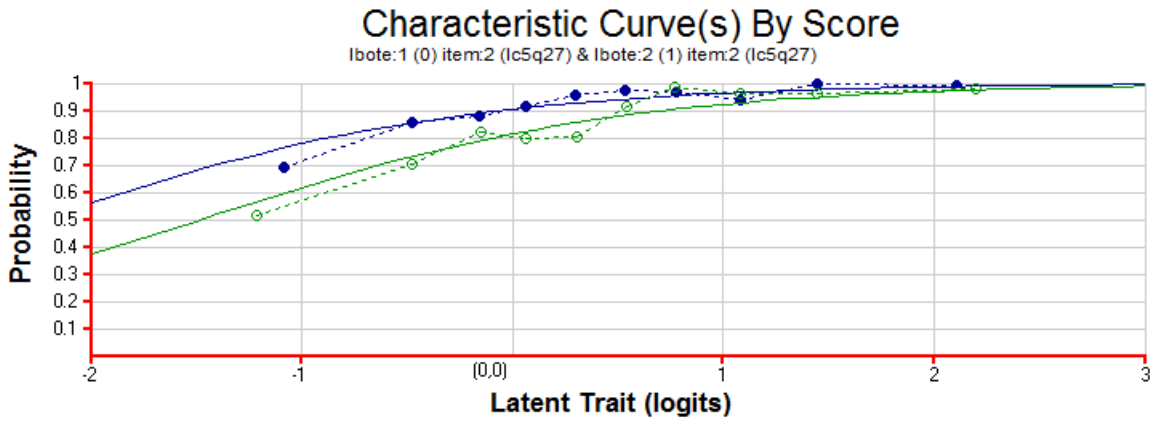

Characteristic Curve(s) By Score
lbote:1 (0) item:28 (lc9q28) & lbote:2 (1) item:28 (lc9q28)
Probability
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-5
-4
-3
-2
-1
(0,0)
1
2
3
Latent Trait (logits)

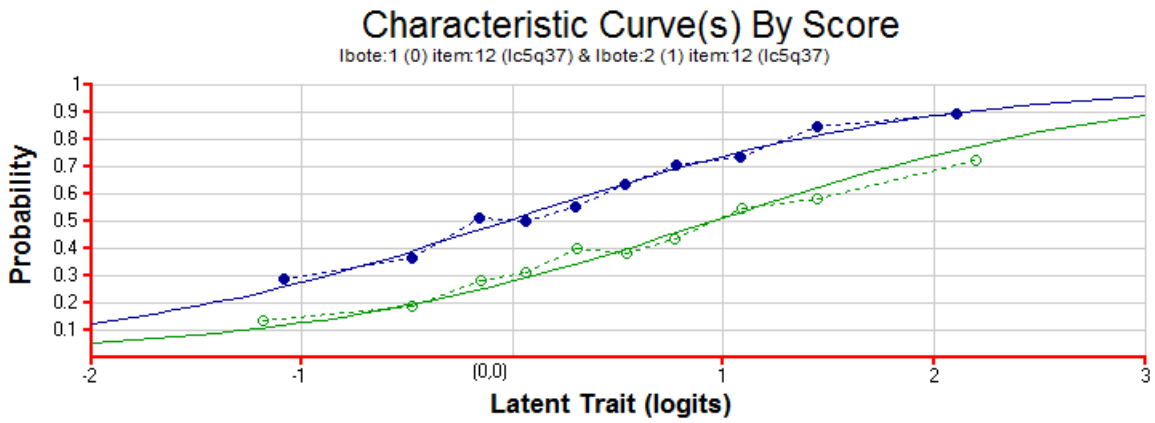

Characteristic Curve(s) By Score
lbote:1 (0) item:29 (lc7q29) & lbote:2 (1) item:29 (lc7q29)
Probability
0.6
0.5
0.4
0.3
0.2
0.1
-5
-4
-3
-2
-1
(0,0)
1
2
3
4
Latent Trait (logits)

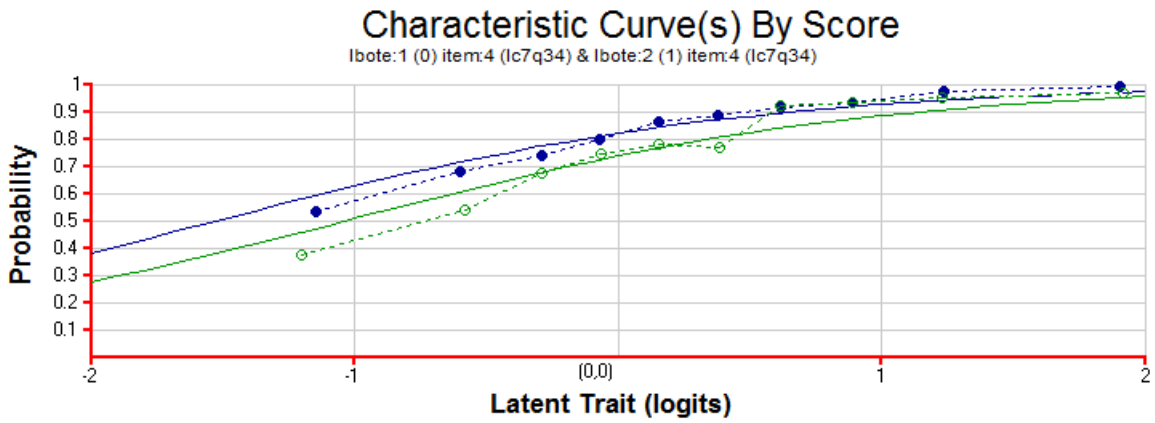
Grammar and Punctuation

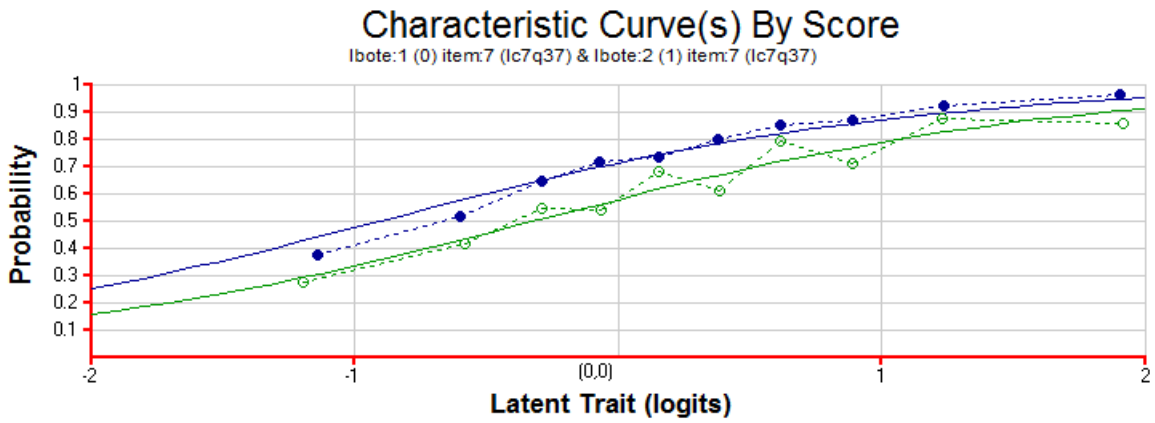


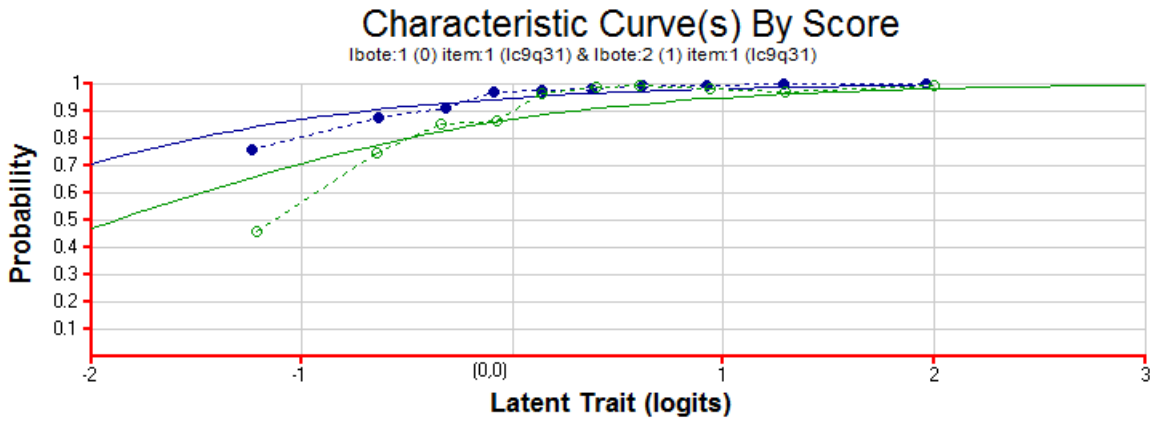


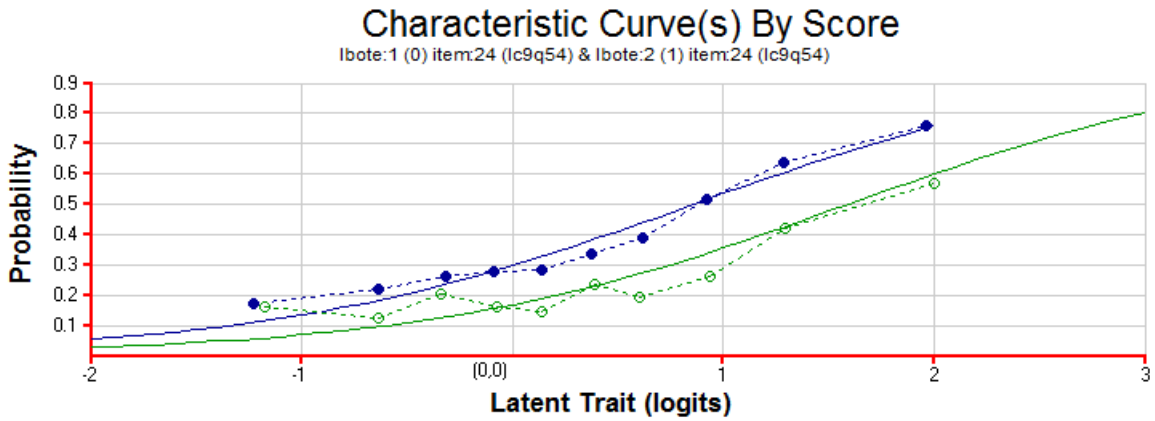



Characteristic Curve(s) By Score
lbote:1 (0) item:12 (lc5q37) & lbote:2 (1) item:12 (lc5q37)
Probability
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
3
Latent Trait (logits)


Characteristic Curve(s) By Score
lbote:1 (0) item:4 (lc7q34) & lbote:2 (1) item:4 (lc7q34)
Probability
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)

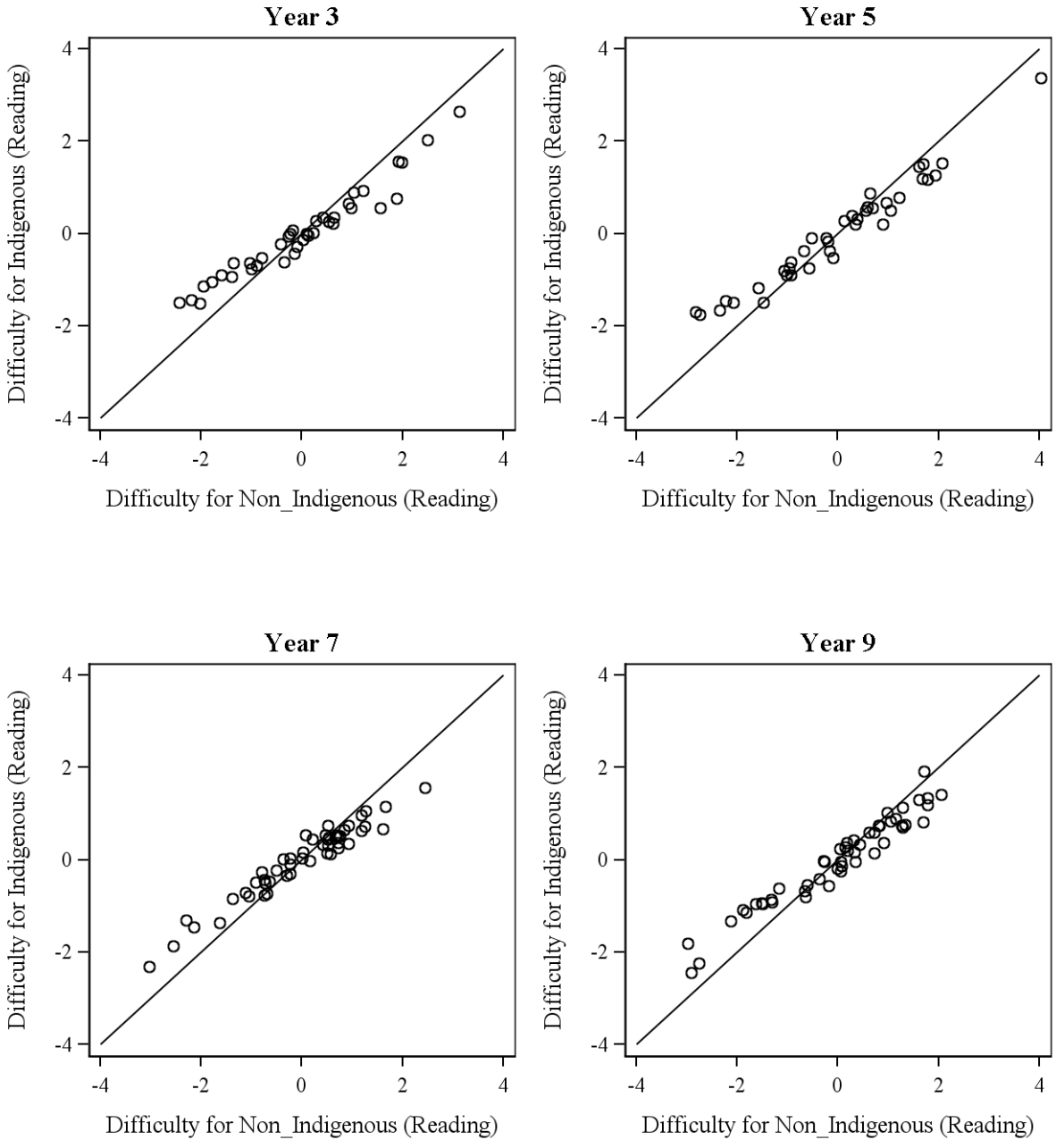

Characteristic Curve(s) By Score
lbote:1 (0) item:7 (lc7q37) & lbote:2 (1) item:7 (lc7q37)
Probability
Latent Trait (logits)
(0,0)


Characteristic Curve(s) By Score
lbote:1 (0) item:1 (lc9q31) & lbote:2 (1) item:1 (lc9q31)
Probability
Latent Trait (logits)
(0,0)

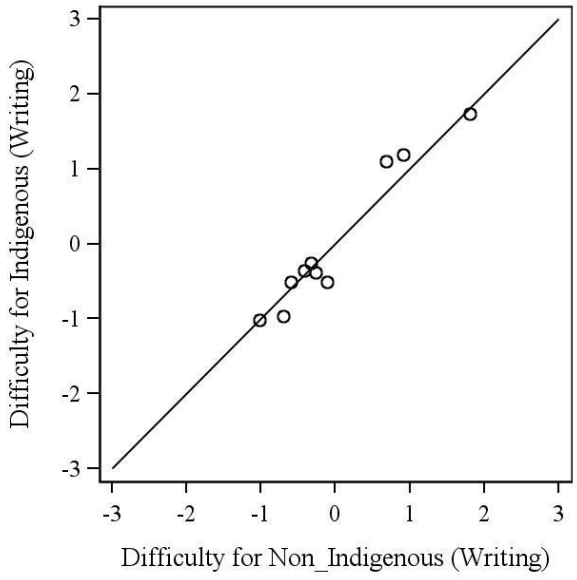

Characteristic Curve(s) By Score
lbote:1 (0) item:24 (lc9q54) & lbote:2 (1) item:24 (lc9q54)
Probability
Latent Trait (logits)
(0,0)

APPENDIX H. INDIGENOUS STATUS DIF ANALYSIS

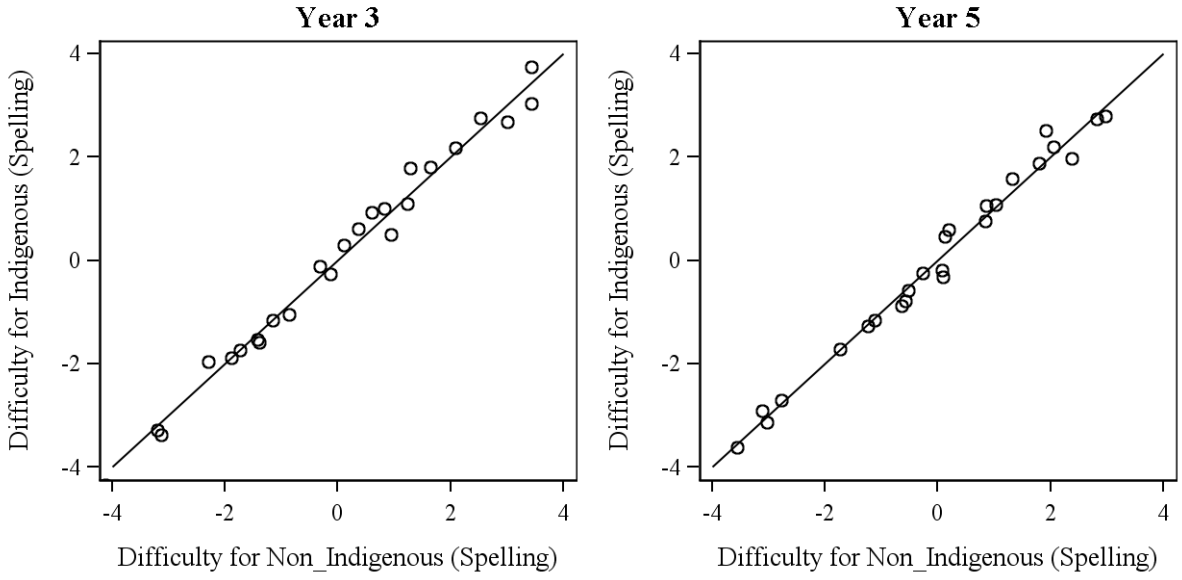
H.1 Centred Item Locations of Indigenous and Non-Indigenous Students in Reading (2016)

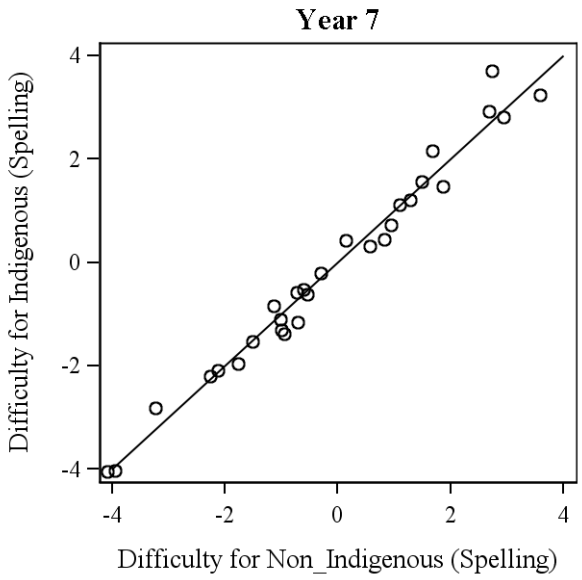


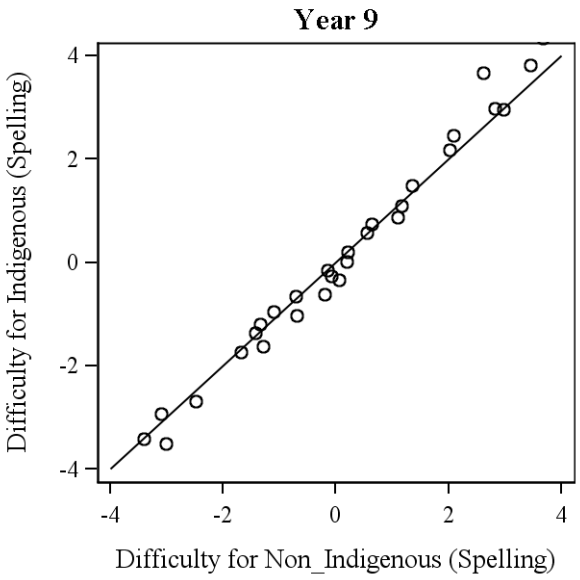
H.2 Centred Item Locations of Indigenous and Non-Indigenous Students Years 3, 5, 7, and 9 Writing (2016)



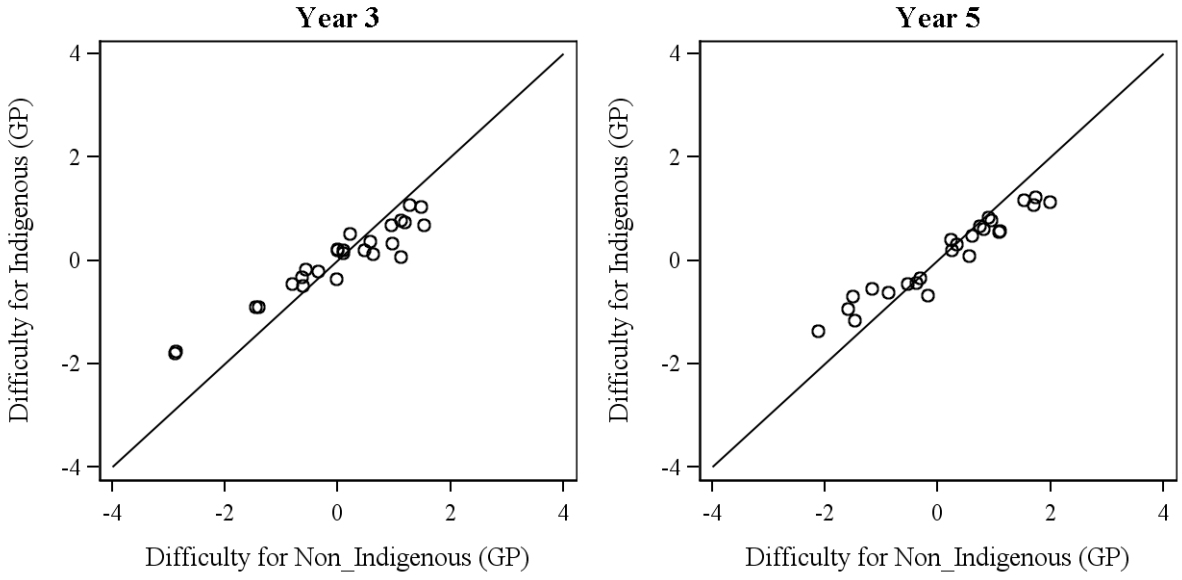
H.3 Centred Item Locations of Indigenous and Non-Indigenous Students in Spelling (2016)

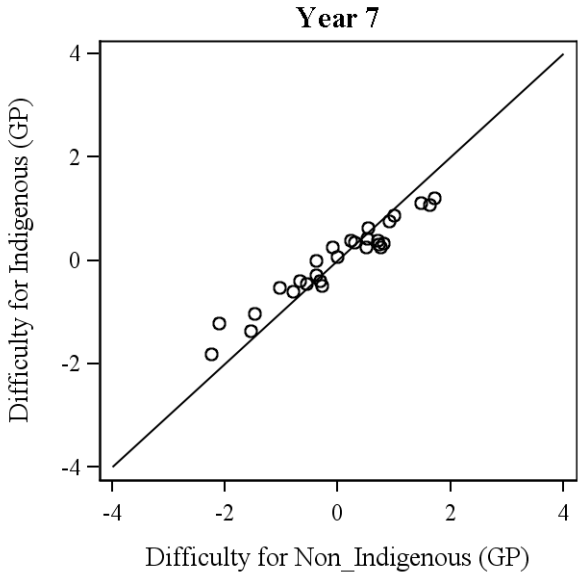


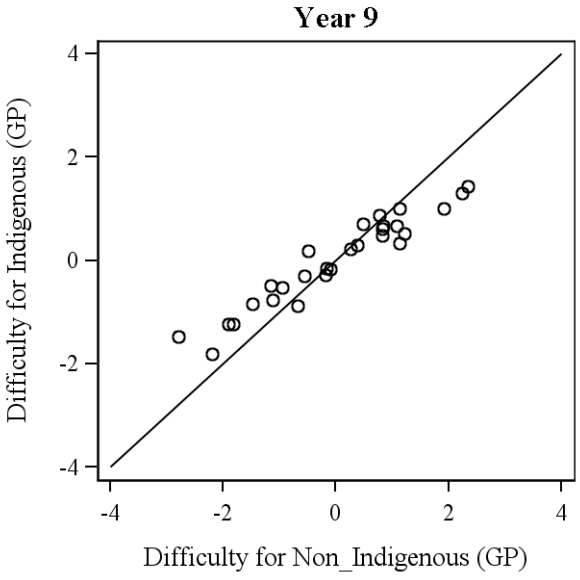




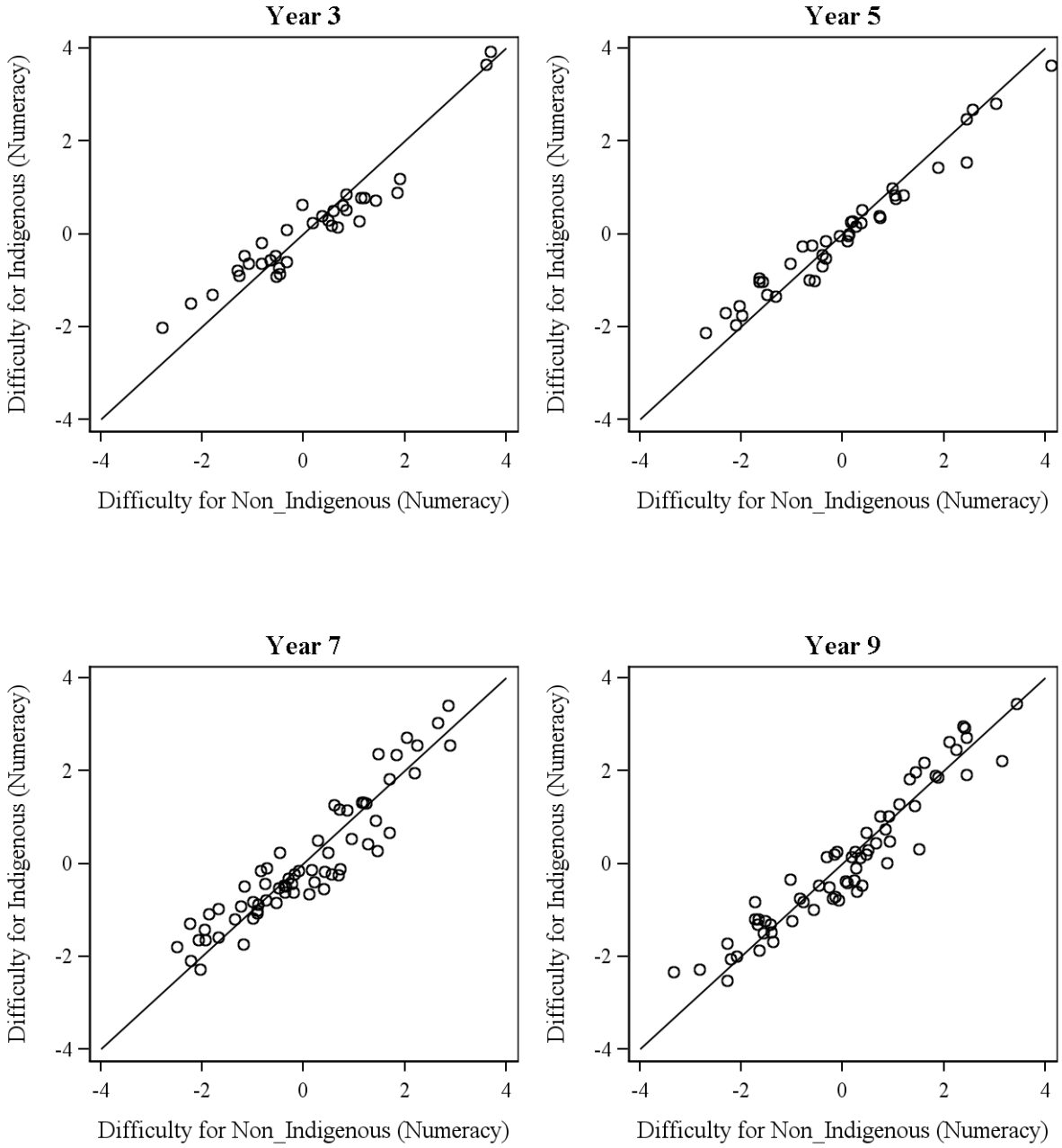
H.4 Centred Item Locations of Indigenous and Non-Indigenous Students in Grammar and Punctuation (2016)





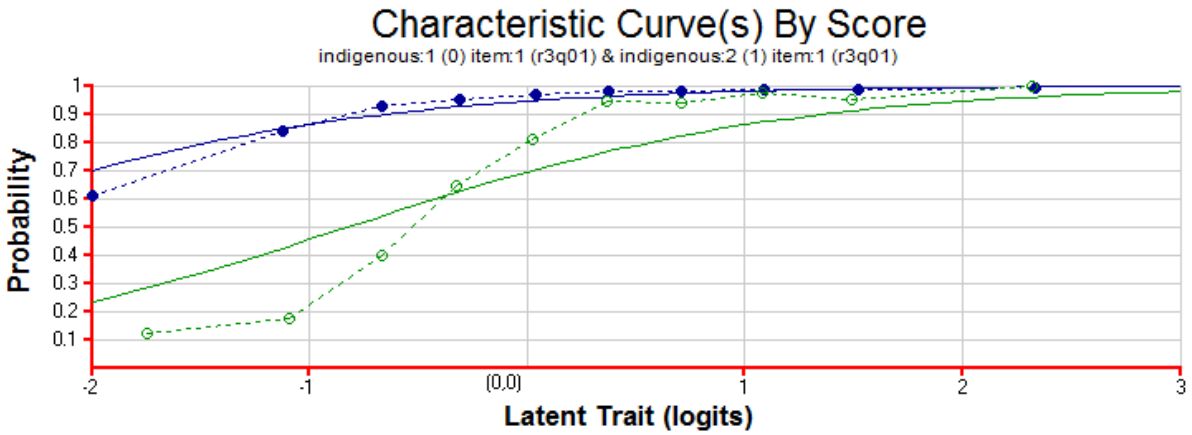


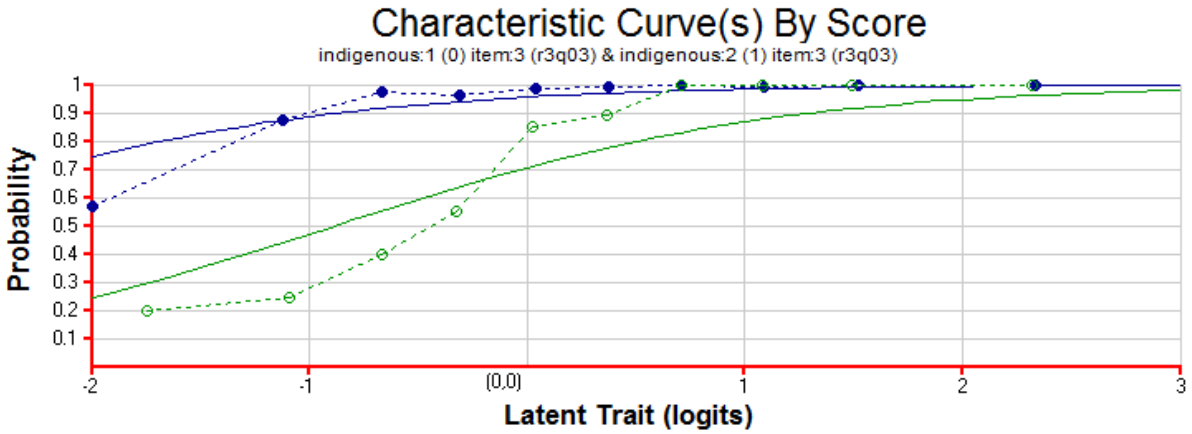
H.5 Centred Item Locations of Indigenous and Non-Indigenous Students in Numeracy (2016)

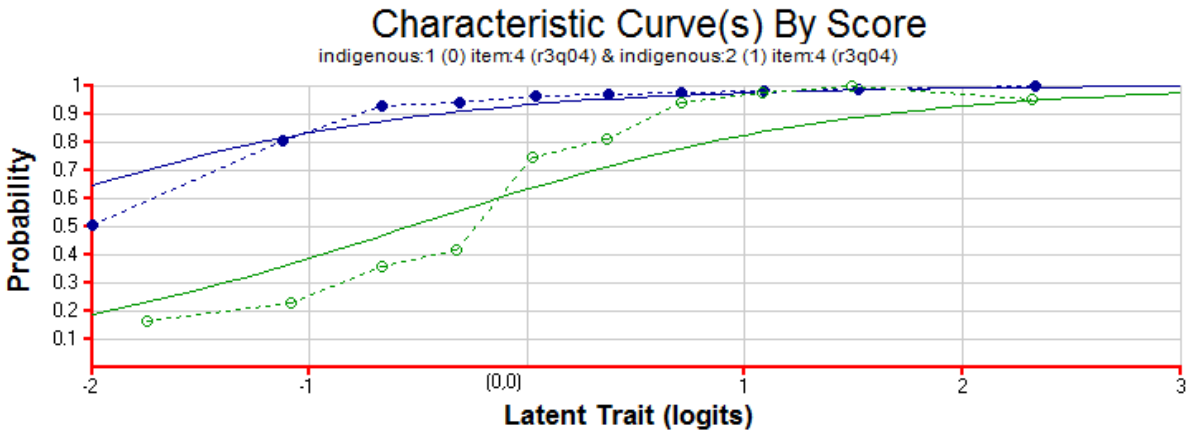


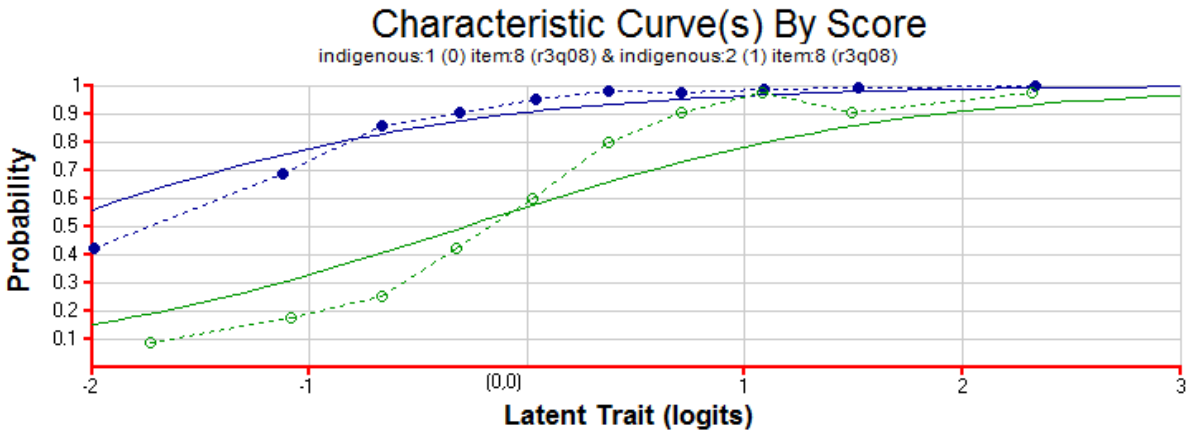
H.6 Item DIF Plots for Items Showing Indigenous Status DIF

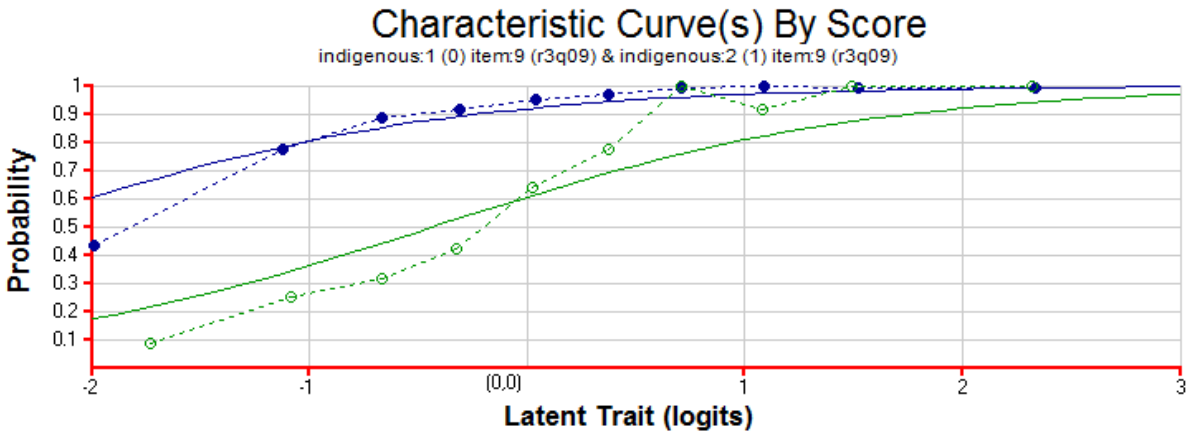
Readaing

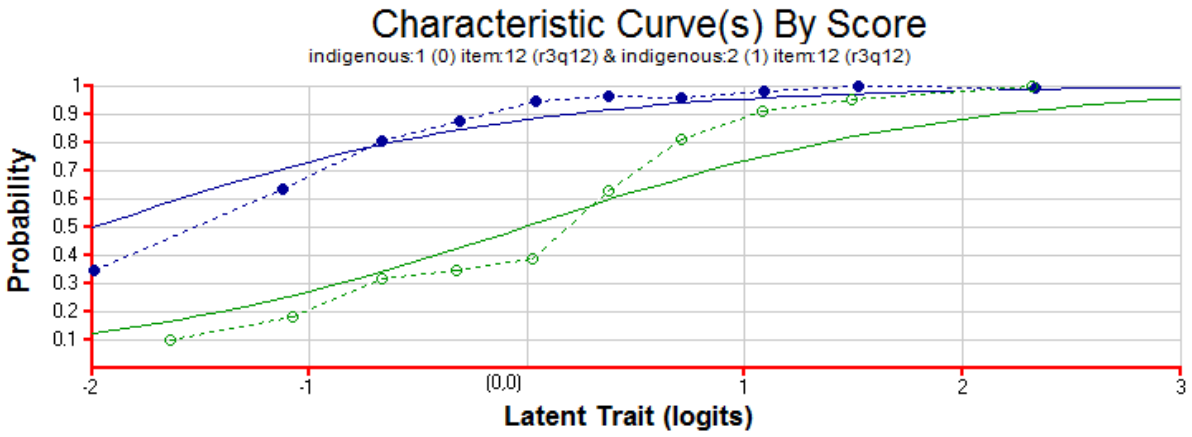


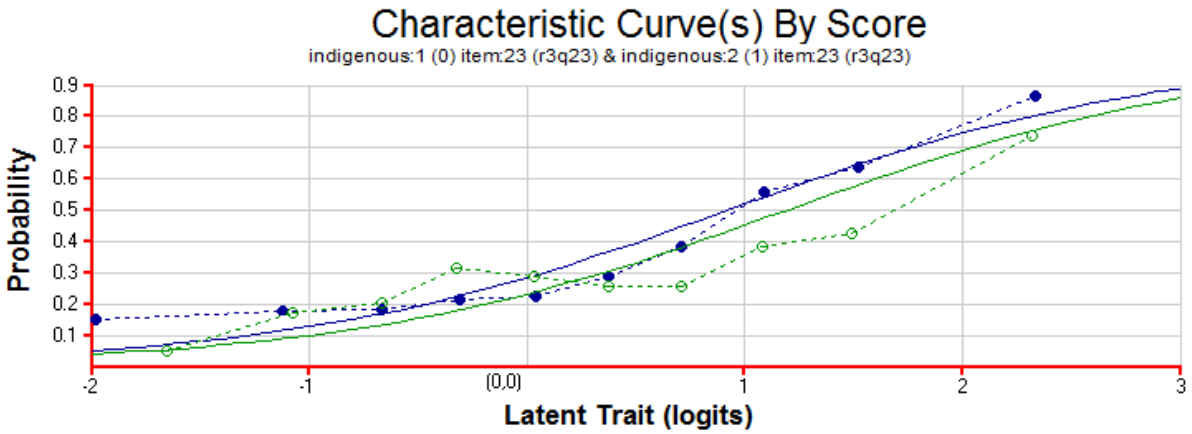


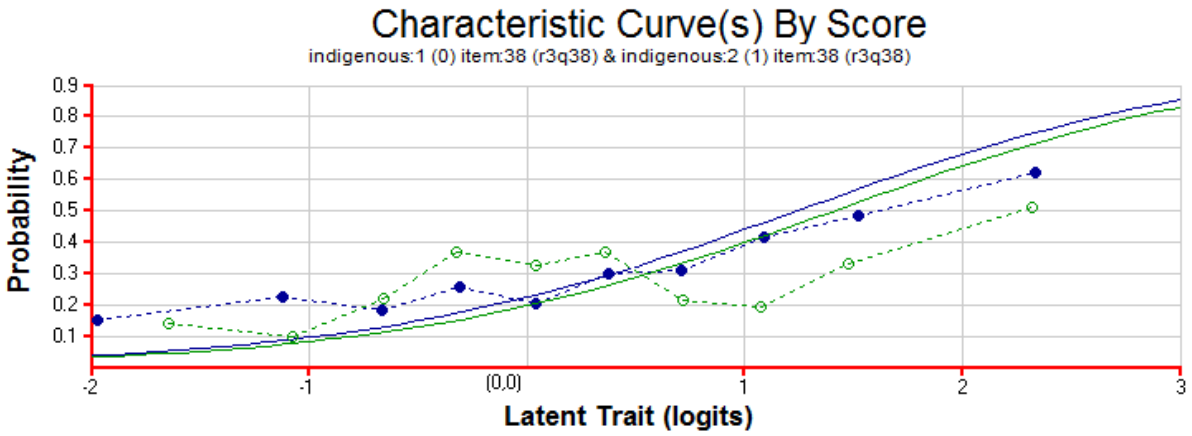


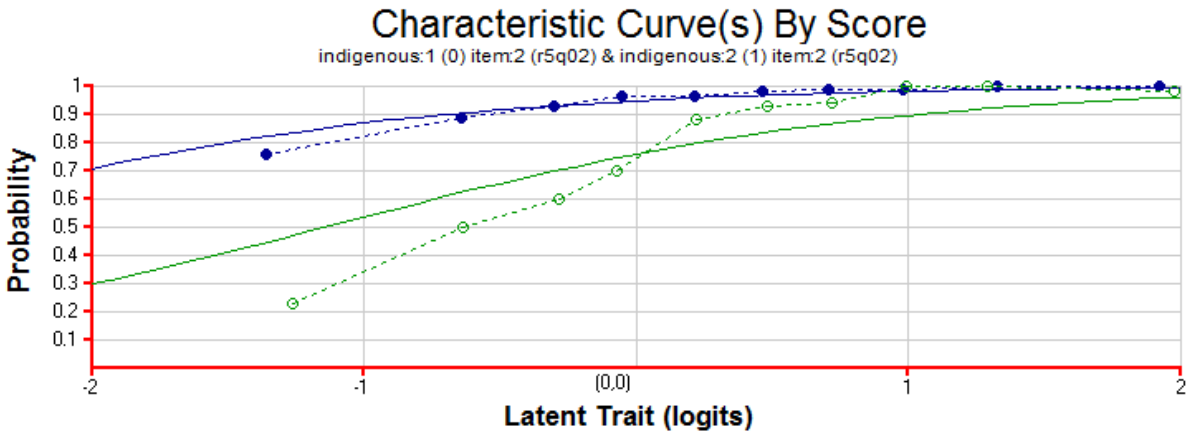

Characteristic Curve(s) By Score
indigenous:1 (0) item:8 (r3q08) & indigenous:2 (1) item:8 (r3q08)
Probability
Latent Trait (logits)
(0,0)

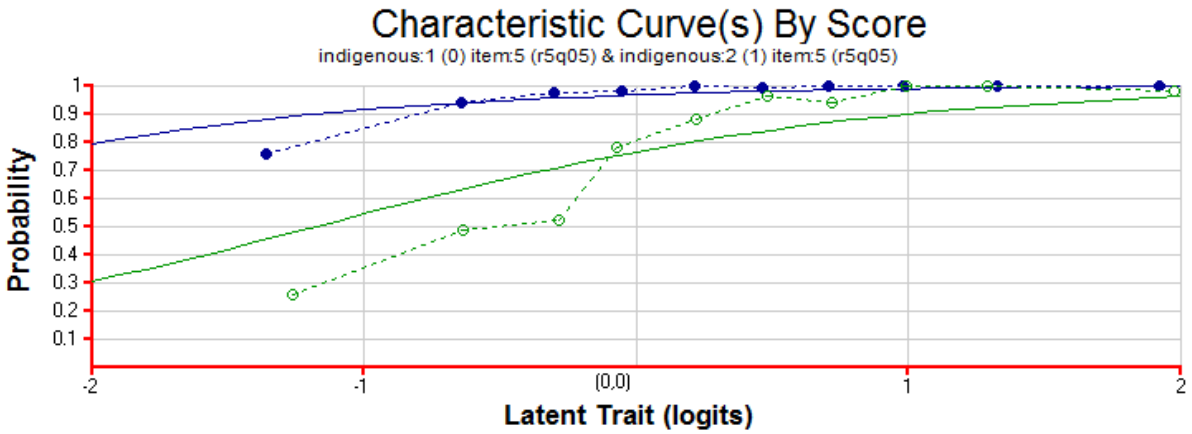

Characteristic Curve(s) By Score
indigenous:1 (0) item:9 (r3q09) & indigenous:2 (1) item:9 (r3q09)
Probability
Latent Trait (logits)
(0,0)

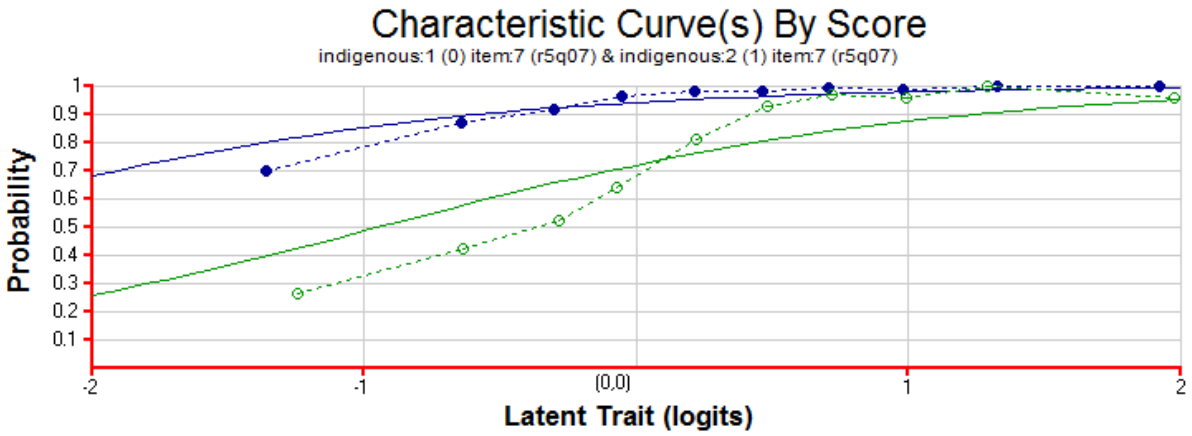

Characteristic Curve(s) By Score
indigenous:1 (0) item:12 (r3q12) & indigenous:2 (1) item:12 (r3q12)
Probability
Latent Trait (logits)
(0,0)

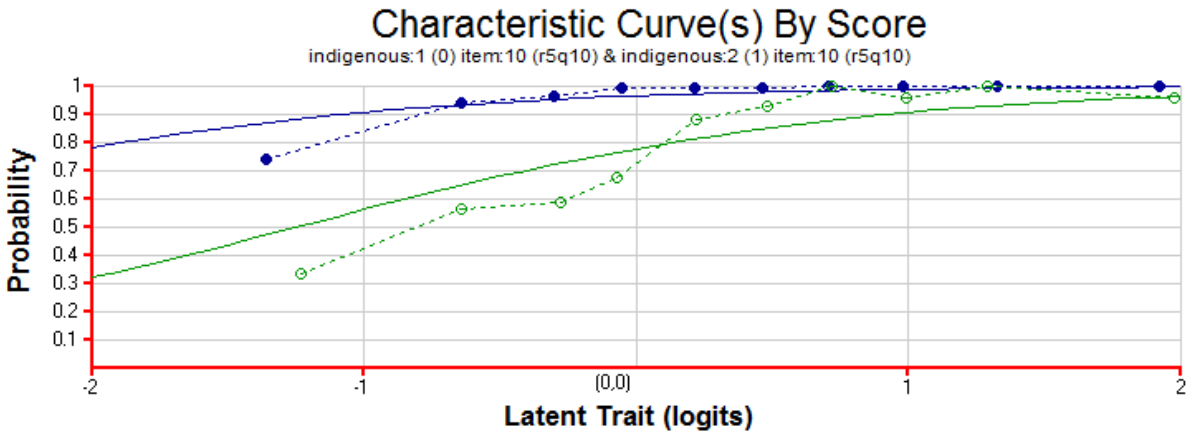

Characteristic Curve(s) By Score
indigenous:1 (0) item:23 (r3q23) & indigenous:2 (1) item:23 (r3q23)
Probability
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
3
Latent Trait (logits)

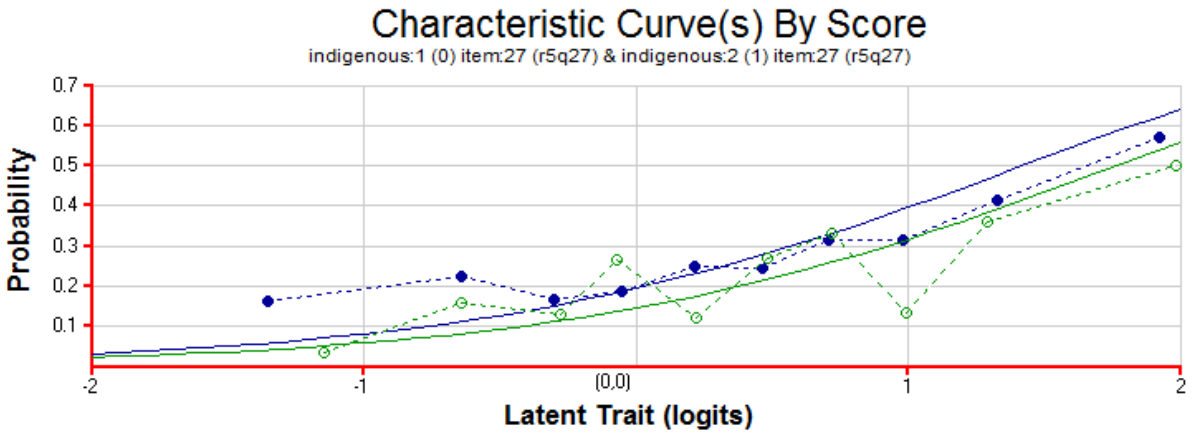

Characteristic Curve(s) By Score
indigenous:1 (0) item:38 (r3q38) & indigenous:2 (1) item:38 (r3q38)
Probability
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
3
Latent Trait (logits)

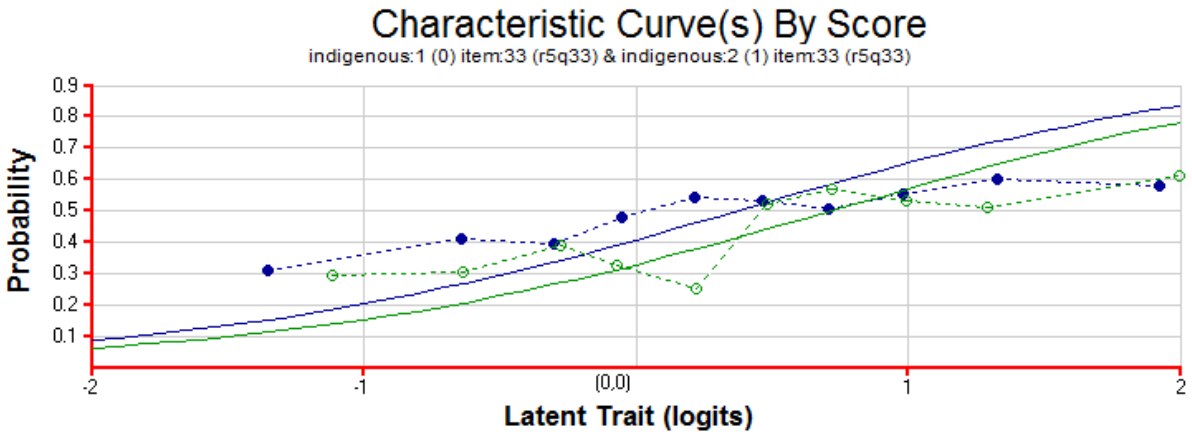

Characteristic Curve(s) By Score
indigenous:1 (0) item:2 (r5q02) & indigenous:2 (1) item:2 (r5q02)
Probability
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)

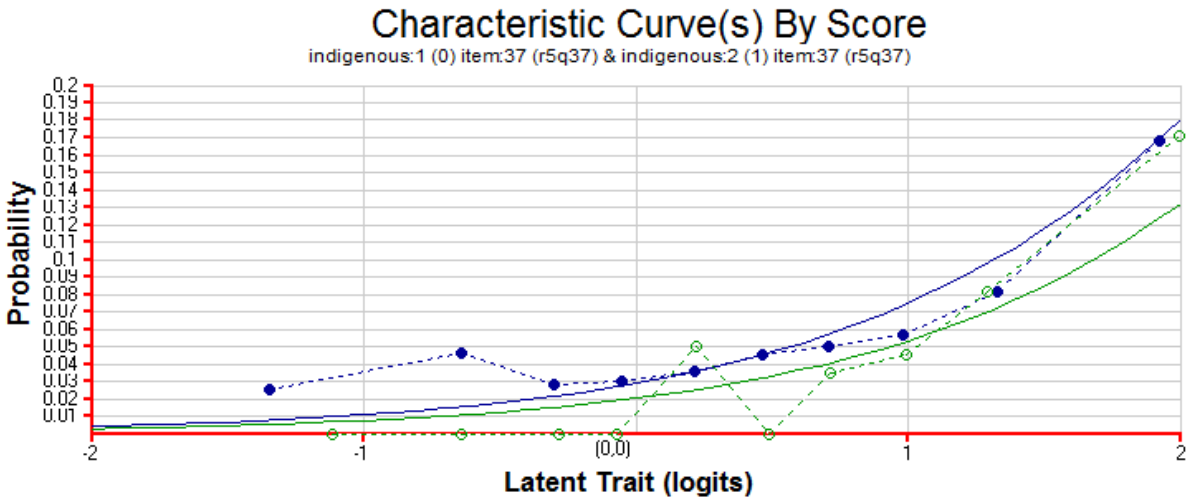

Characteristic Curve(s) By Score
indigenous:1 (0) item:5 (r5q05) & indigenous:2 (1) item:5 (r5q05)
Probability
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)

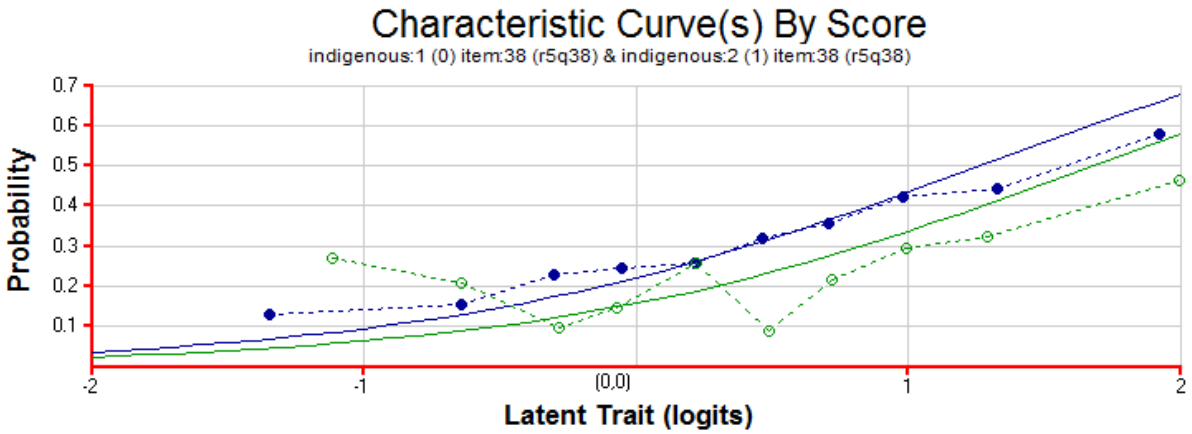

Characteristic Curve(s) By Score
indigenous:1 (0) item:7 (r5q07) & indigenous:2 (1) item:7 (r5q07)
Probability
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)

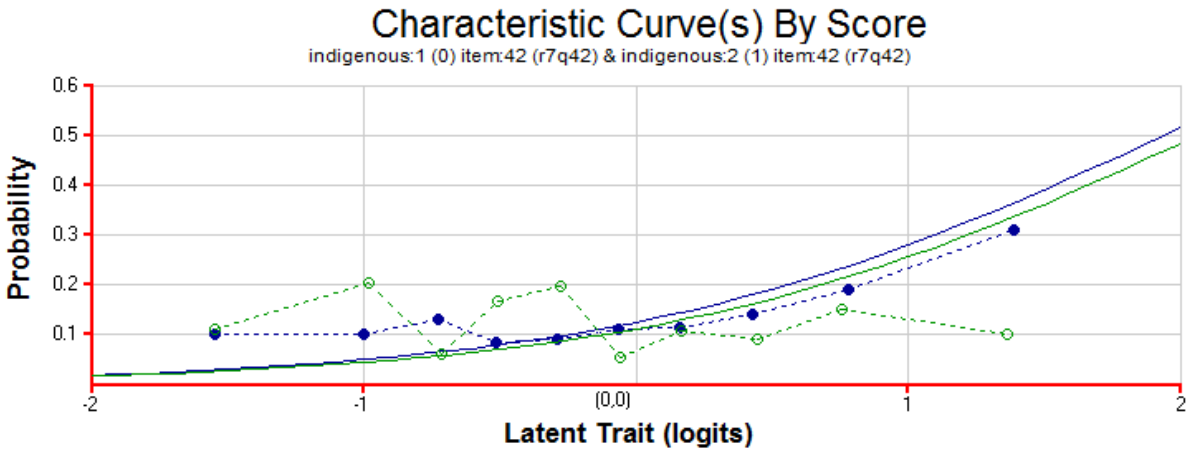

Characteristic Curve(s) By Score
indigenous:1 (0) item:10 (r5q10) & indigenous:2 (1) item:10 (r5q10)
Probability
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)

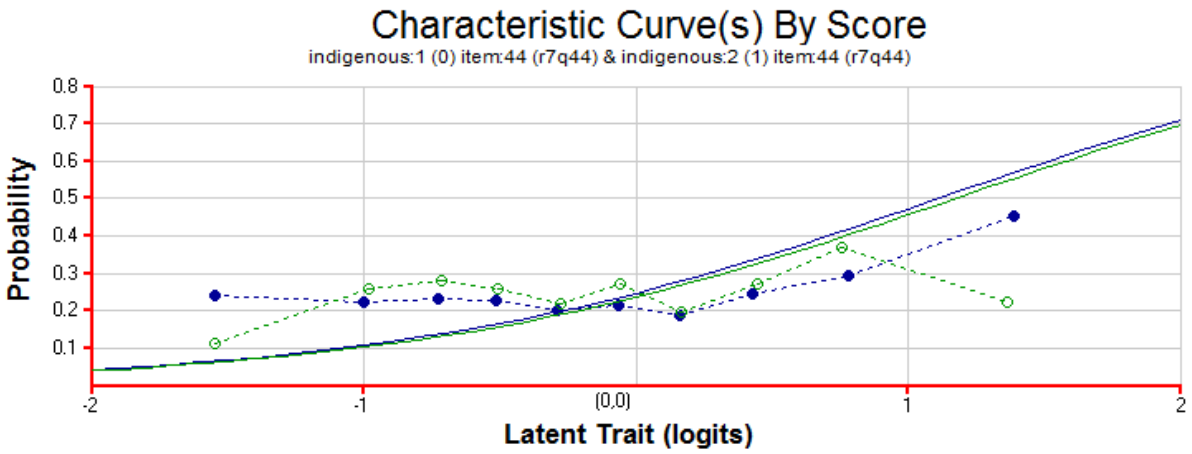

Characteristic Curve(s) By Score
indigenous:1 (0) item:27 (r5q27) & indigenous:2 (1) item:27 (r5q27)
Probability
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)

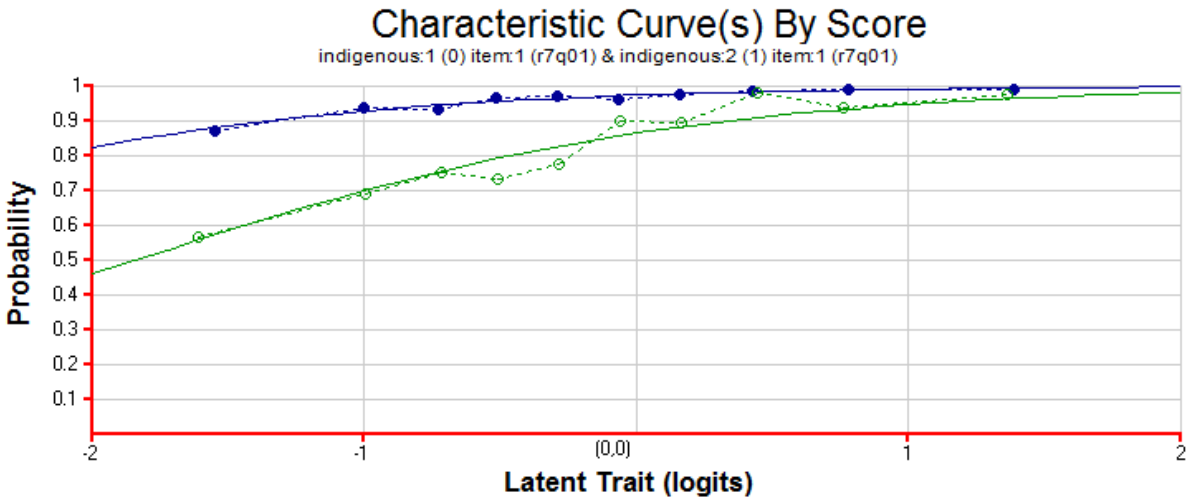

Characteristic Curve(s) By Score
indigenous:1 (0) item:33 (r5q33) & indigenous:2 (1) item:33 (r5q33)
Probability
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)

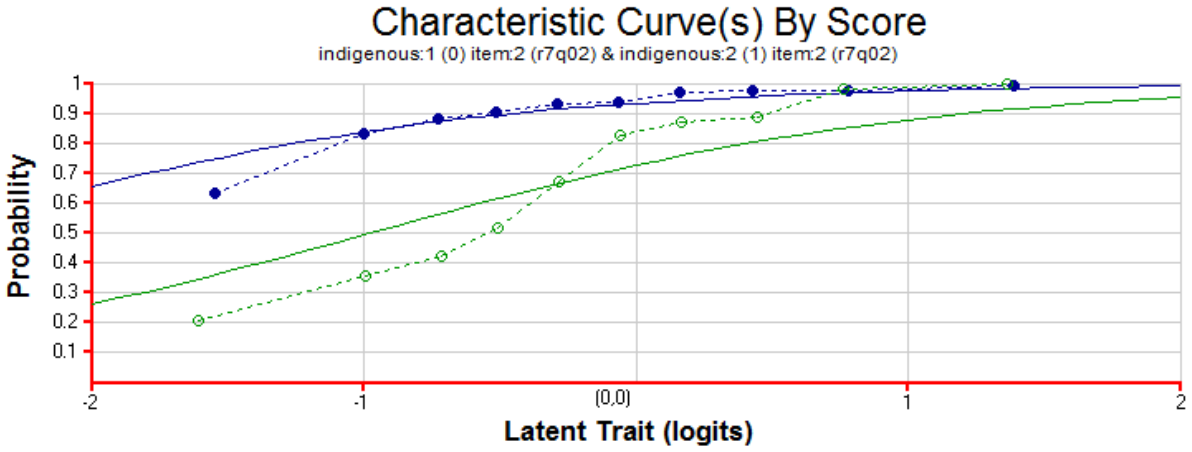

Characteristic Curve(s) By Score
indigenous:1 (0) item:37 (r5q37) & indigenous:2 (1) item:37 (r5q37)
Probability
0.2
0.19
0.18
0.17
0.16
0.15
0.14
0.13
0.12
0.11
0.1
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
-2
-1
(0,0)
1
2
Latent Trait (logits)

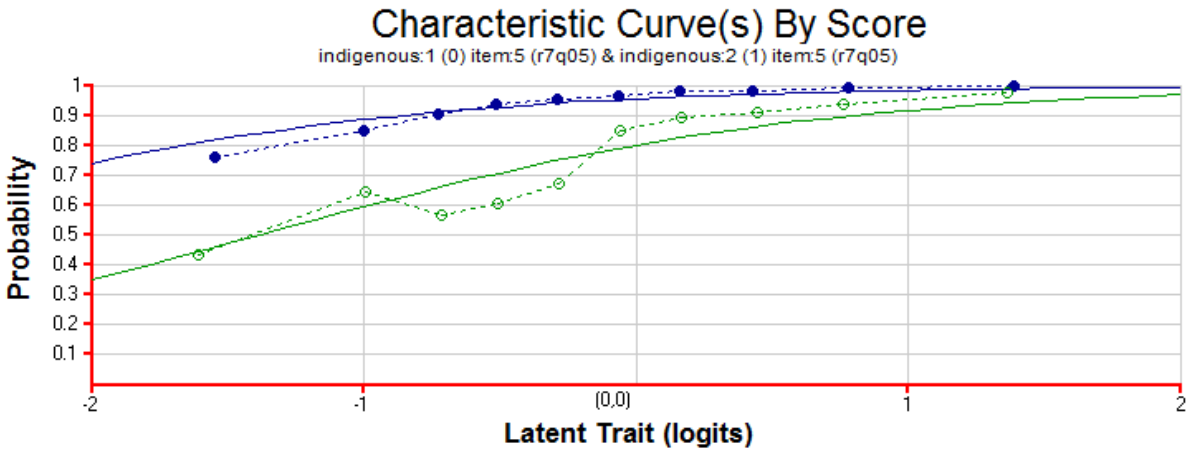

Characteristic Curve(s) By Score
indigenous:1 (0) item:38 (r5q38) & indigenous:2 (1) item:38 (r5q38)
Probability
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)

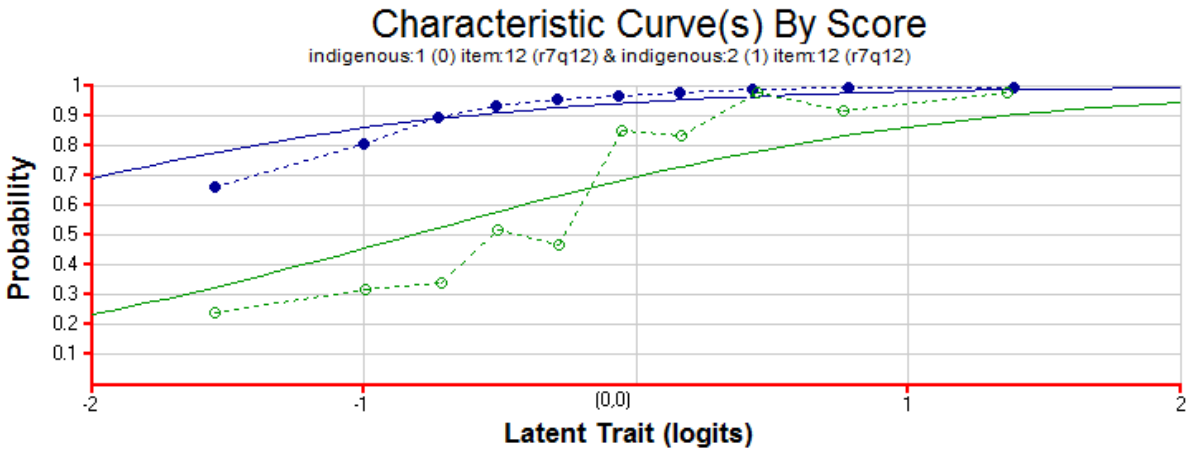

Characteristic Curve(s) By Score
indigenous:1 (0) item:42 (r7q42) & indigenous:2 (1) item:42 (r7q42)
Probability
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)

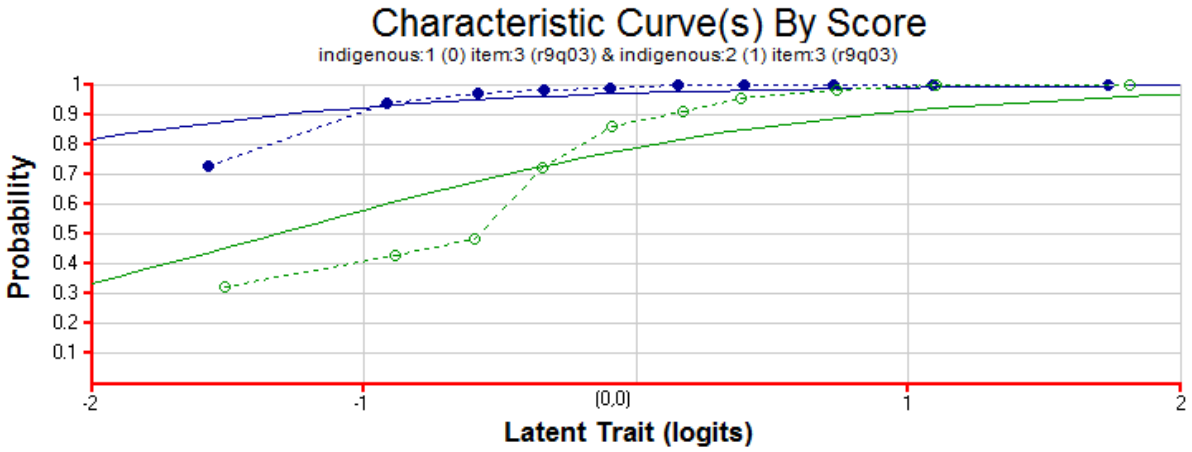

Characteristic Curve(s) By Score
indigenous:1 (0) item:44 (r7q44) & indigenous:2 (1) item:44 (r7q44)
Probability
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)

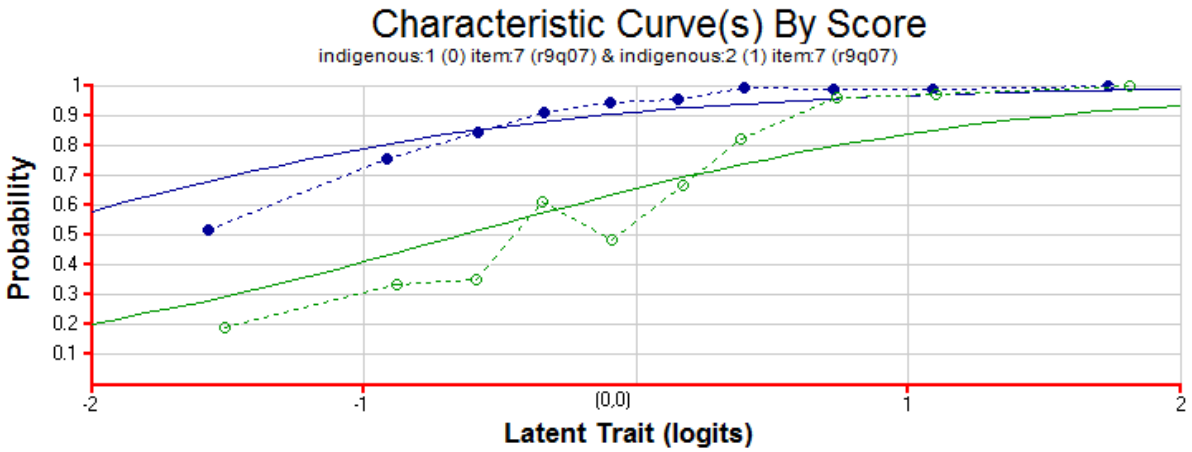

Characteristic Curve(s) By Score
indigenous:1 (0) item:1 (r7q01) & indigenous:2 (1) item:1 (r7q01)
Probability
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)

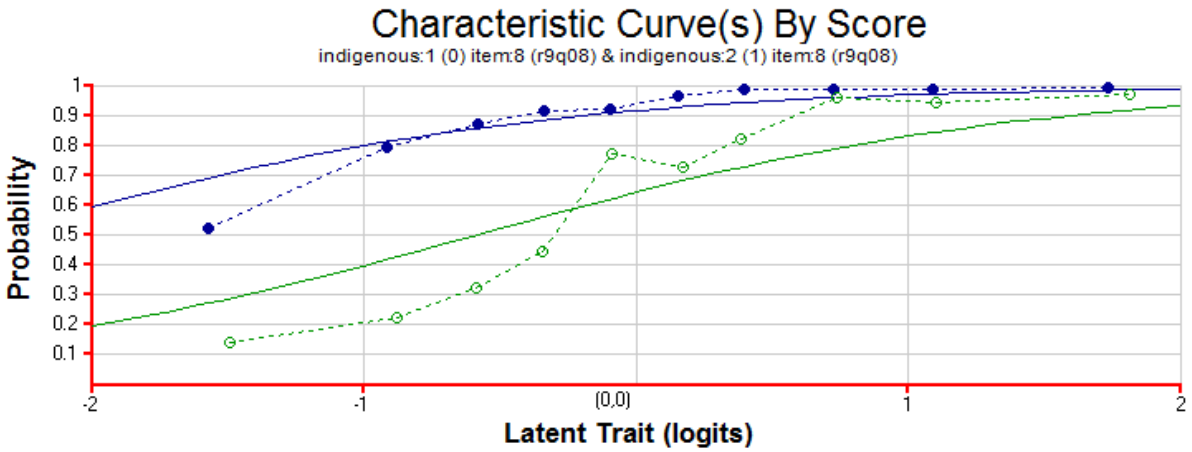

Characteristic Curve(s) By Score
indigenous:1 (0) item:2 (r7q02) & indigenous:2 (1) item:2 (r7q02)
Probability
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)

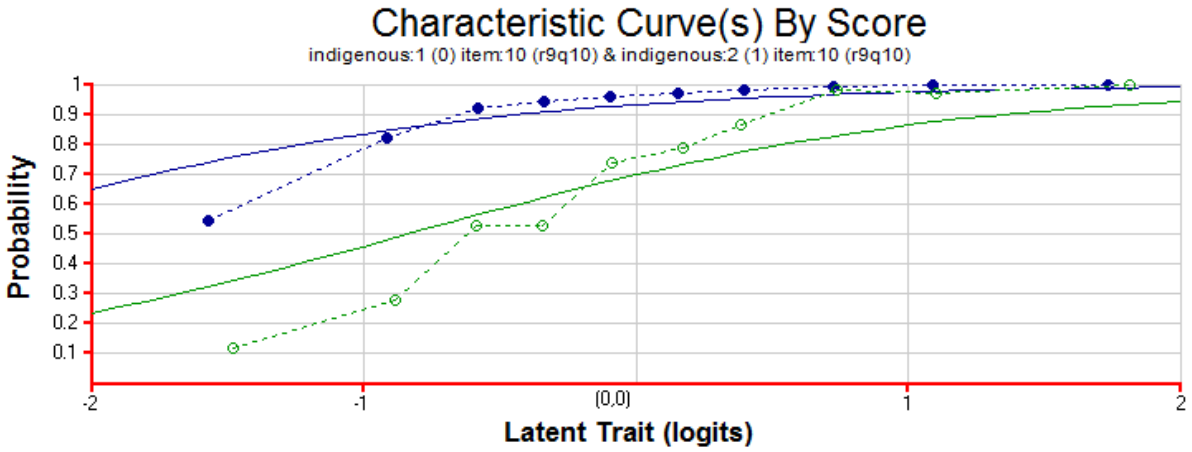

Characteristic Curve(s) By Score
indigenous:1 (0) item:5 (r7q05) & indigenous:2 (1) item:5 (r7q05)
Probability
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)

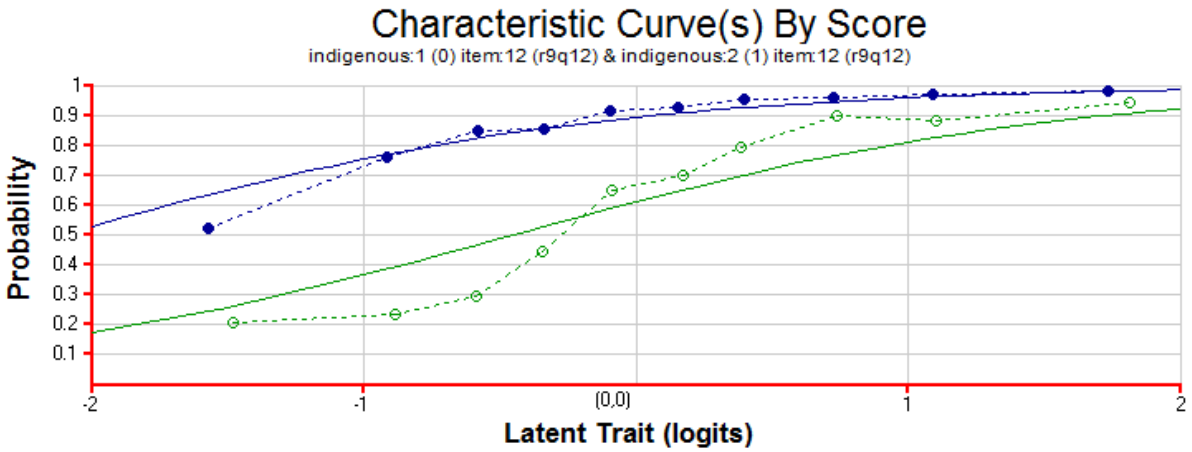

Characteristic Curve(s) By Score
indigenous:1 (0) item:12 (r7q12) & indigenous:2 (1) item:12 (r7q12)
Probability
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)

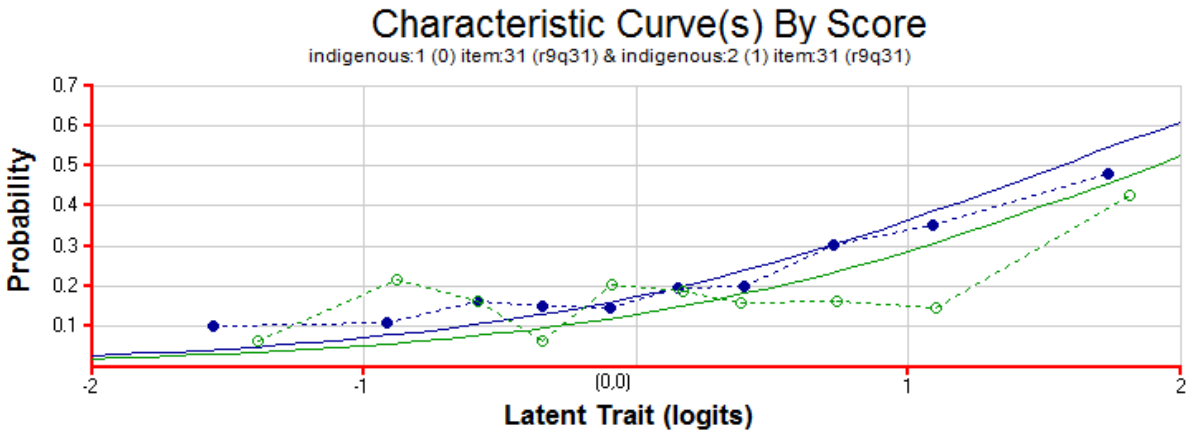

Characteristic Curve(s) By Score
indigenous:1 (0) item:3 (r9q03) & indigenous:2 (1) item:3 (r9q03)
Probability
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)

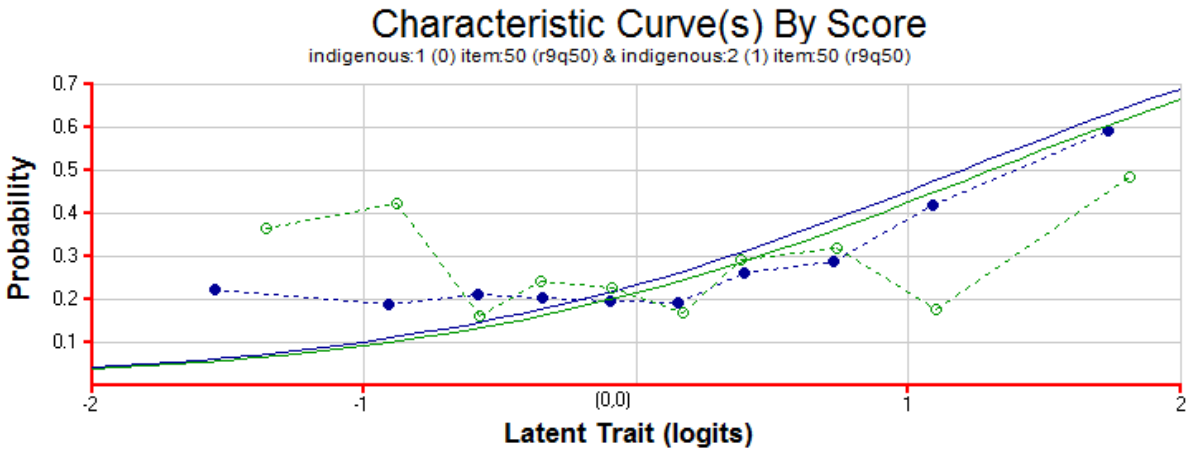

Characteristic Curve(s) By Score
indigenous:1 (0) item:7 (r9q07) & indigenous:2 (1) item:7 (r9q07)
Probability
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)


Characteristic Curve(s) By Score
indigenous:1 (0) item:8 (r9q08) & indigenous:2 (1) item:8 (r9q08)
Probability
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)

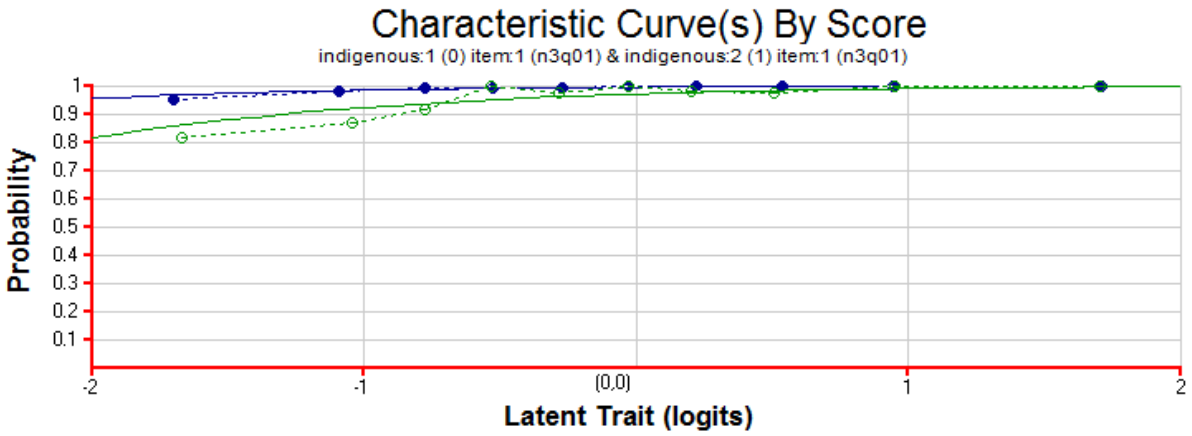

Characteristic Curve(s) By Score
indigenous:1 (0) item:10 (r9q10) & indigenous:2 (1) item:10 (r9q10)
Probability
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)

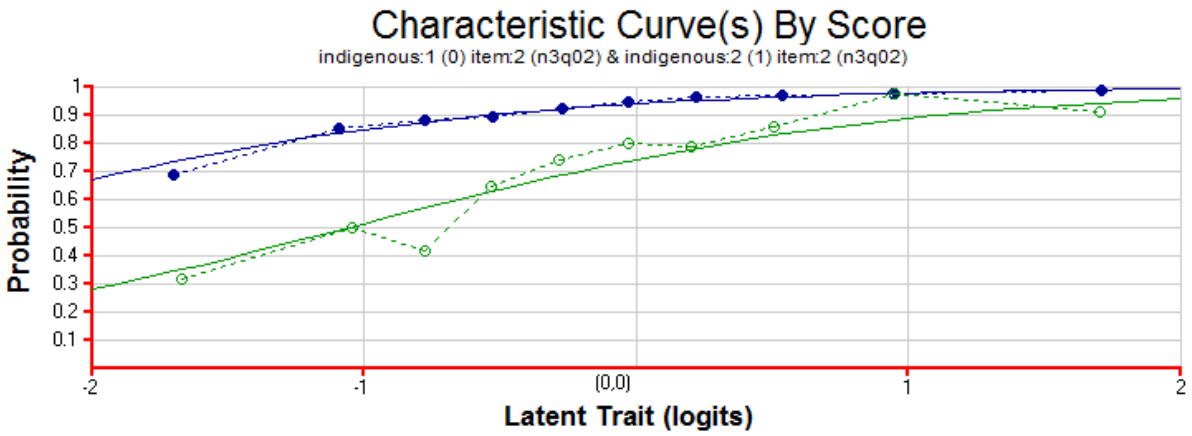

Characteristic Curve(s) By Score
indigenous:1 (0) item:12 (r9q12) & indigenous:2 (1) item:12 (r9q12)
Probability
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)

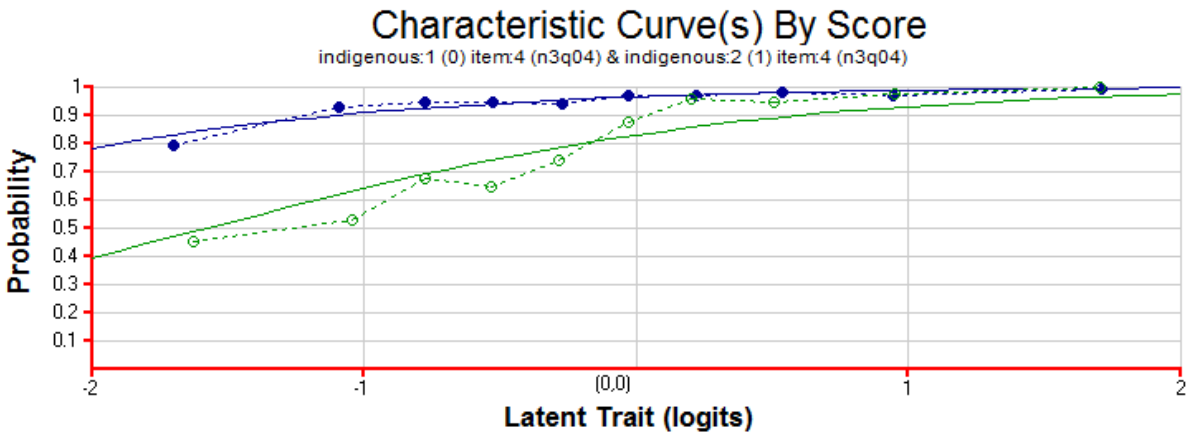

Characteristic Curve(s) By Score
indigenous:1 (0) item:31 (r9q31) & indigenous:2 (1) item:31 (r9q31)
Probability
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)

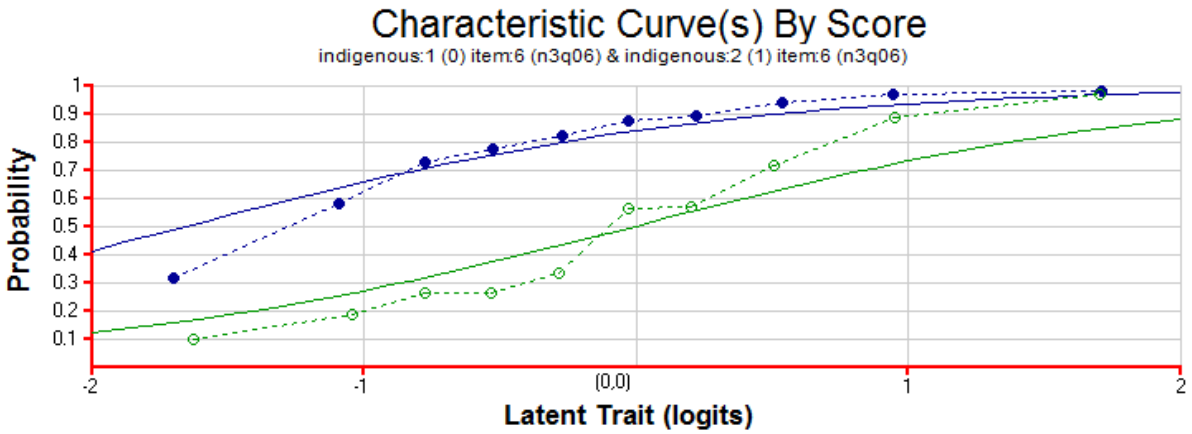

Characteristic Curve(s) By Score
indigenous:1 (0) item:50 (r9q50) & indigenous:2 (1) item:50 (r9q50)
Probability
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)

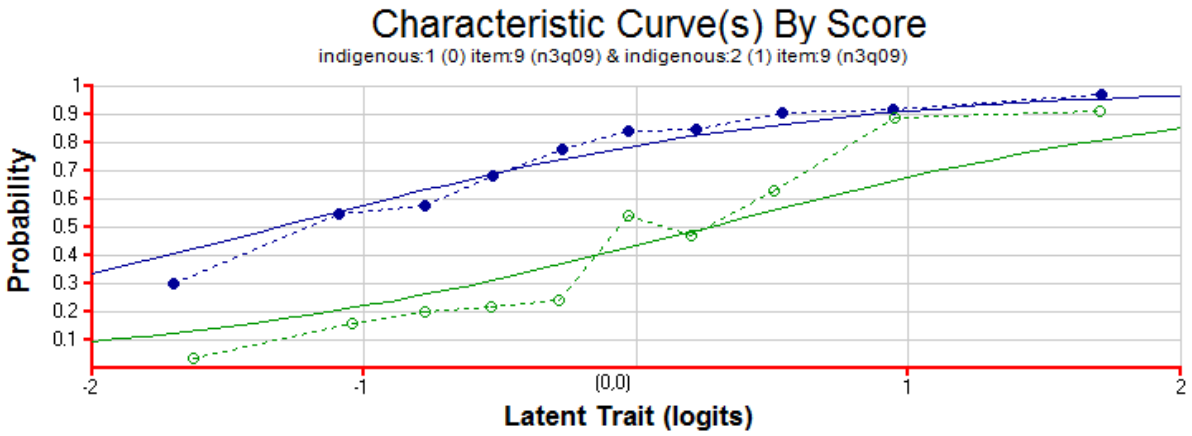
Numeracy

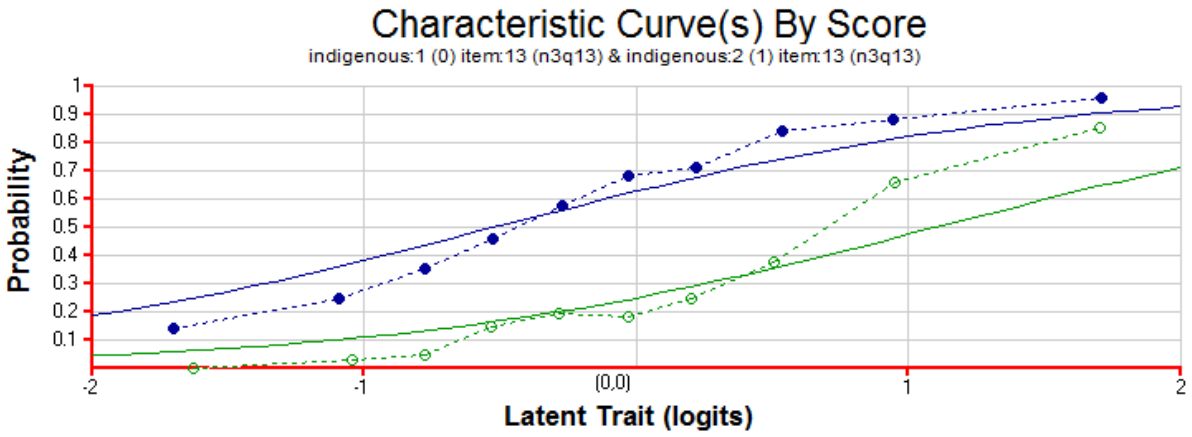

Characteristic Curve(s) By Score
indigenous:1 (0) item:1 (n3q01) & indigenous:2 (1) item:1 (n3q01)
Probability
Latent Trait (logits)
(0,0)

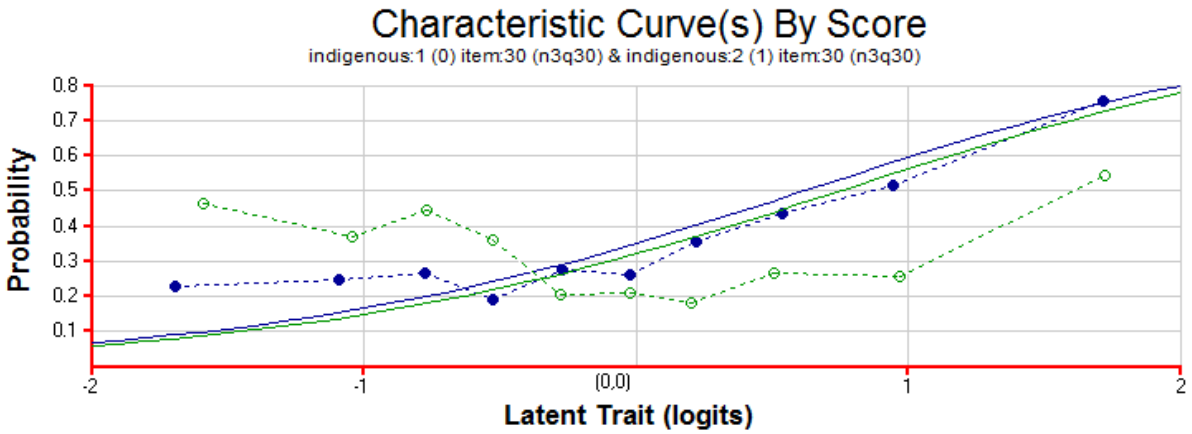

Characteristic Curve(s) By Score
indigenous:1 (0) item:2 (n3q02) & indigenous:2 (1) item:2 (n3q02)
Probability
Latent Trait (logits)
(0,0)

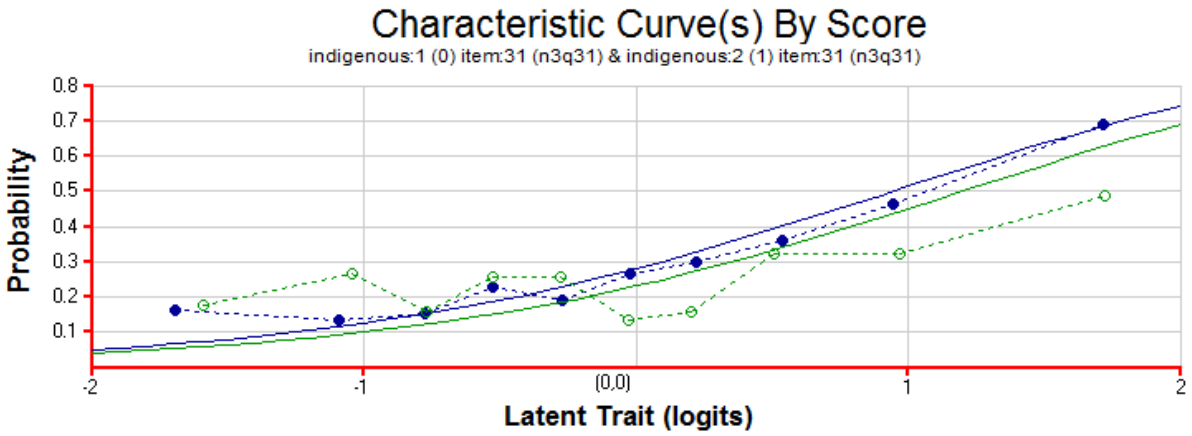

Characteristic Curve(s) By Score
indigenous:1 (0) item:4 (n3q04) & indigenous:2 (1) item:4 (n3q04)
Probability
Latent Trait (logits)
(0,0)

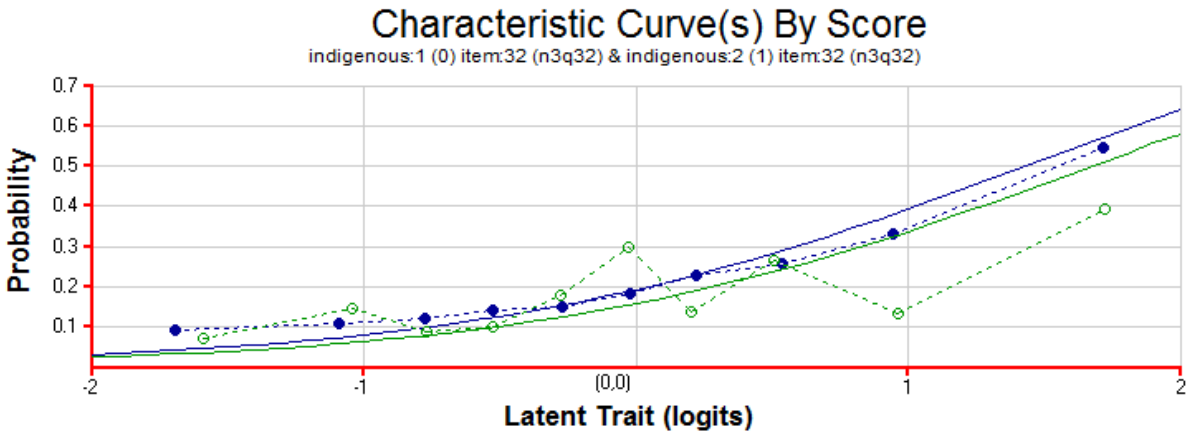

Characteristic Curve(s) By Score
indigenous:1 (0) item:6 (n3q06) & indigenous:2 (1) item:6 (n3q06)
Probability
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)

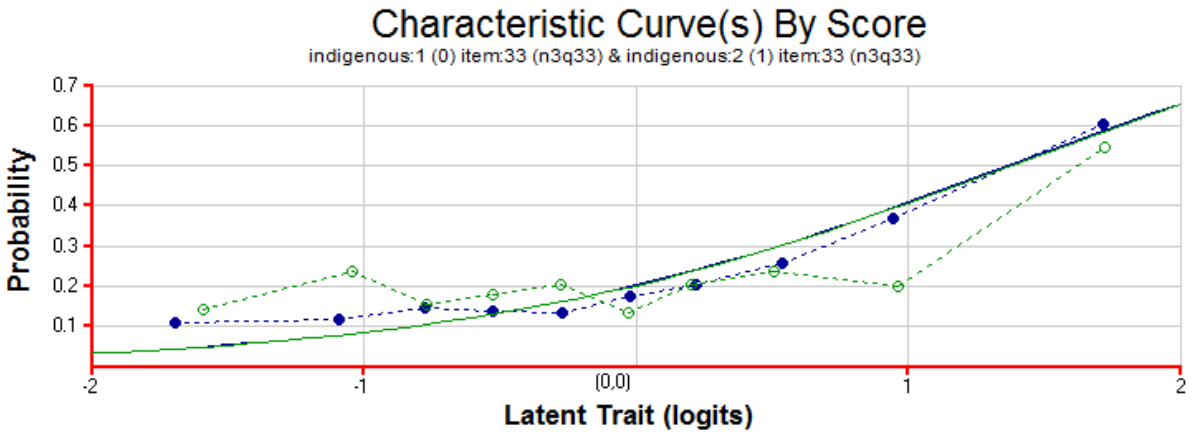

Characteristic Curve(s) By Score
indigenous:1 (0) item:9 (n3q09) & indigenous:2 (1) item:9 (n3q09)
Probability
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)

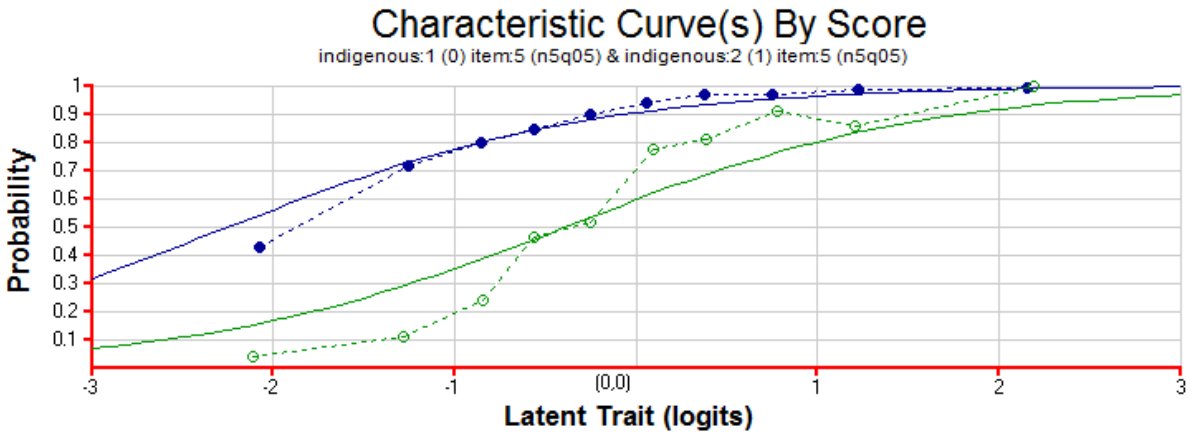

Characteristic Curve(s) By Score
indigenous:1 (0) item:13 (n3q13) & indigenous:2 (1) item:13 (n3q13)
Probability
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)

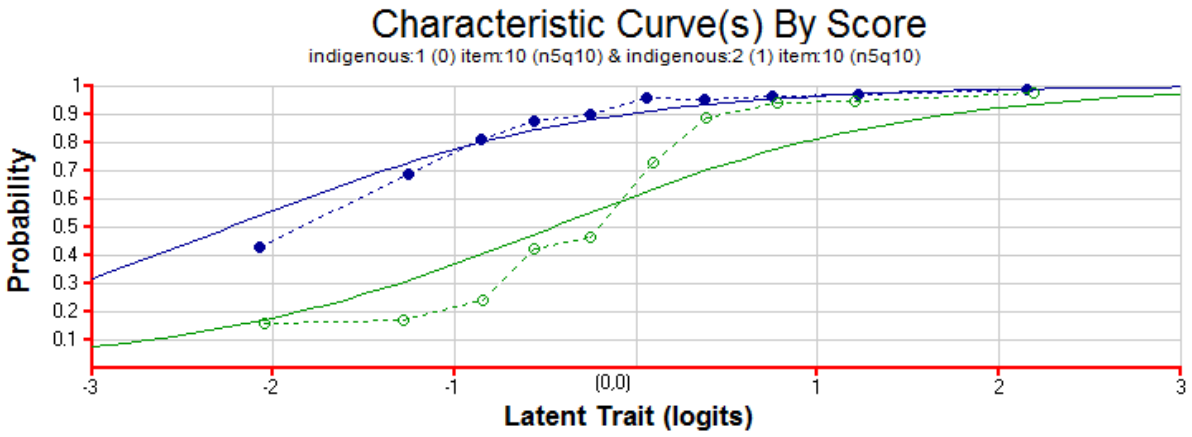

Characteristic Curve(s) By Score
indigenous:1 (0) item:30 (n3q30) & indigenous:2 (1) item:30 (n3q30)
Probability
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)

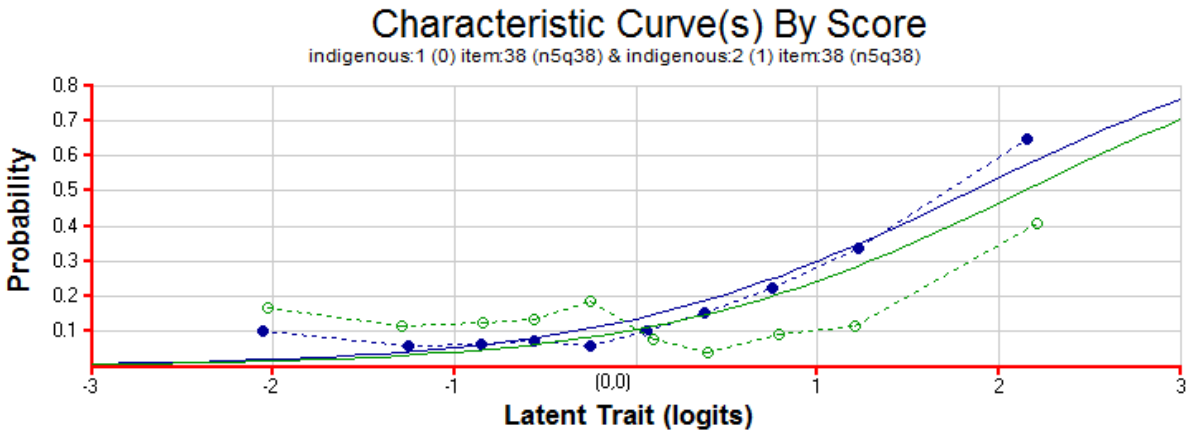

Characteristic Curve(s) By Score
indigenous:1 (0) item:31 (n3q31) & indigenous:2 (1) item:31 (n3q31)
Probability
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)

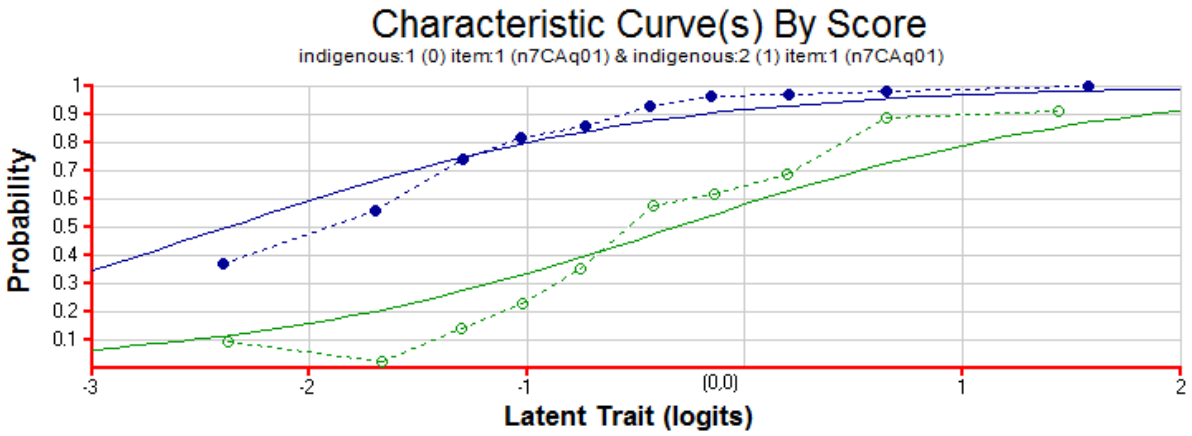

Characteristic Curve(s) By Score
indigenous:1 (0) item:32 (n3q32) & indigenous:2 (1) item:32 (n3q32)
Probability
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)

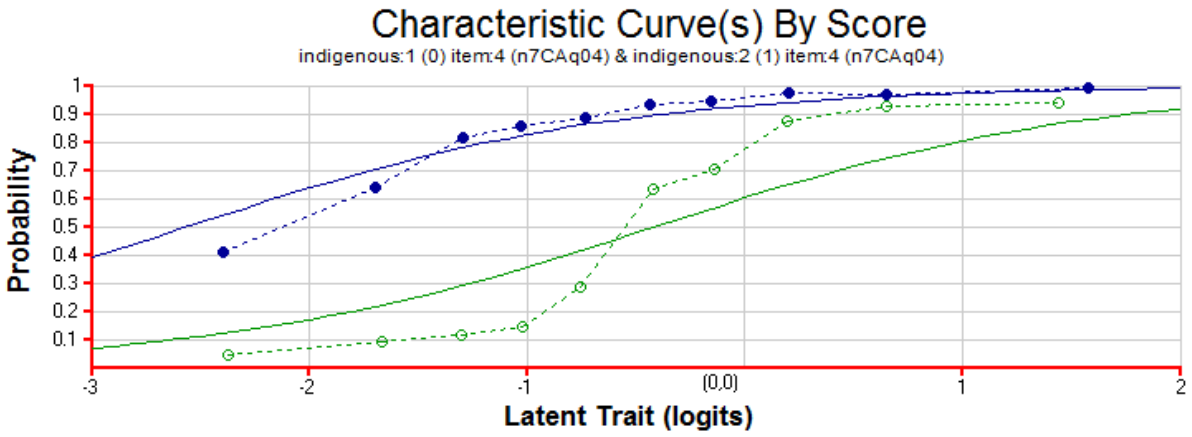

Characteristic Curve(s) By Score
indigenous:1 (0) item:33 (n3q33) & indigenous:2 (1) item:33 (n3q33)
Probability
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)

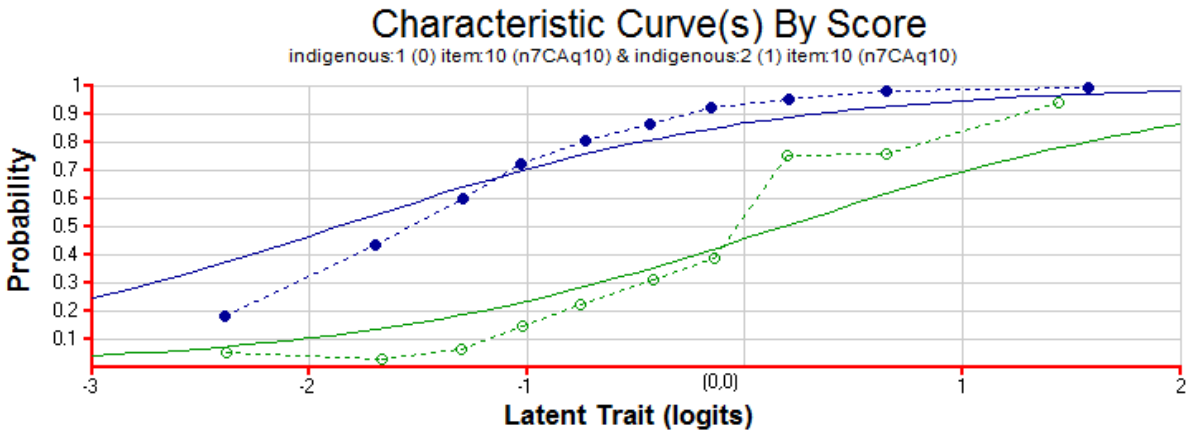

Characteristic Curve(s) By Score
indigenous:1 (0) item:5 (n5q05) & indigenous:2 (1) item:5 (n5q05)
Probability
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-3
-2
-1
(0,0)
1
2
3
Latent Trait (logits)

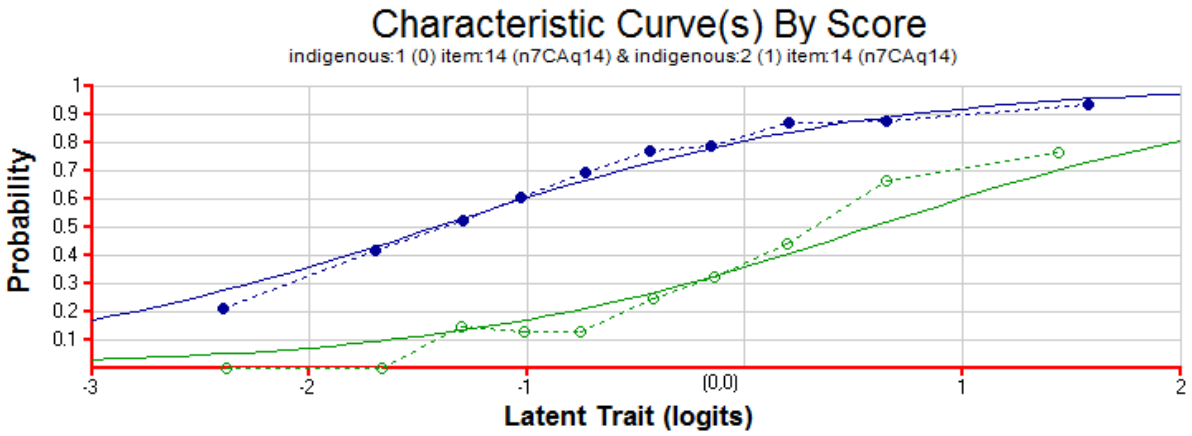

Characteristic Curve(s) By Score
indigenous:1 (0) item:10 (n5q10) & indigenous:2 (1) item:10 (n5q10)
Probability
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-3
-2
-1
(0,0)
1
2
3
Latent Trait (logits)

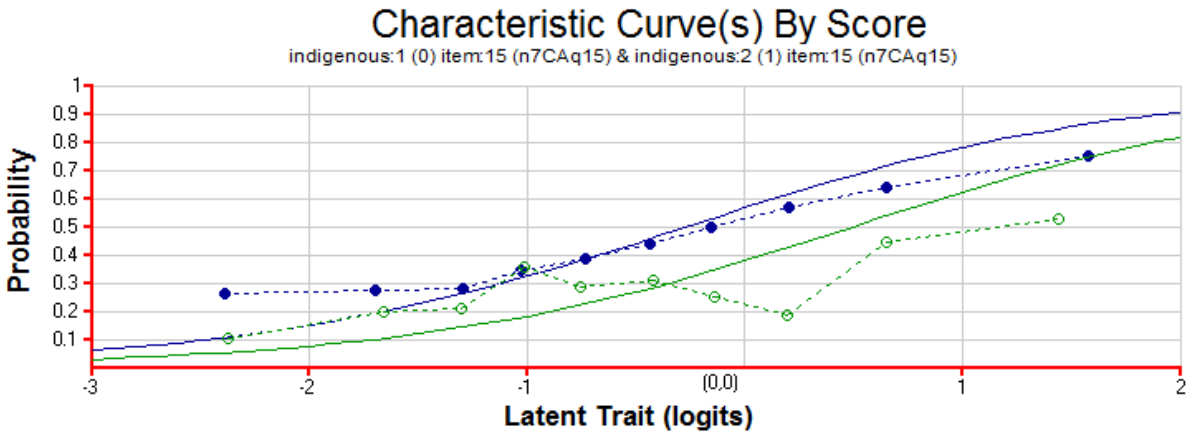

Characteristic Curve(s) By Score
indigenous:1 (0) item:38 (n5q38) & indigenous:2 (1) item:38 (n5q38)
Probability
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-3
-2
-1
(0,0)
1
2
3
Latent Trait (logits)

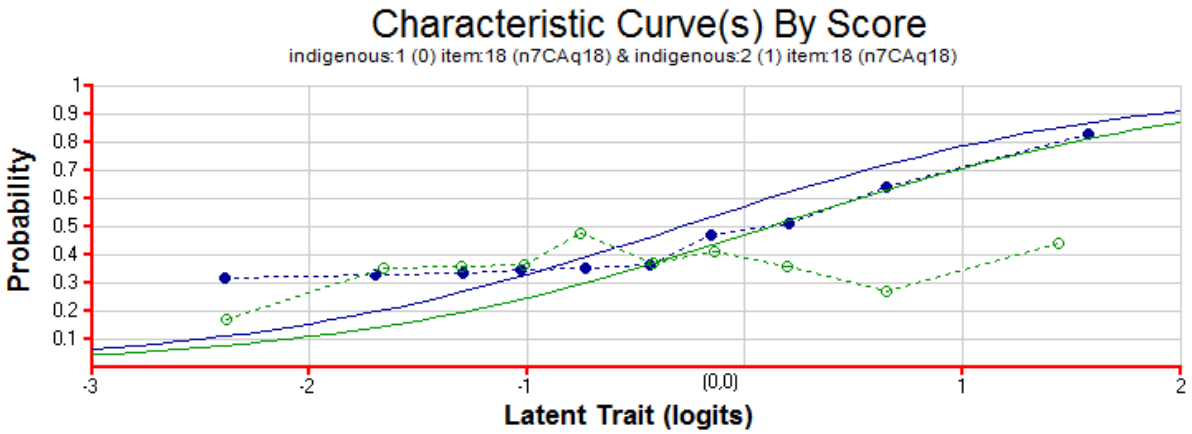

Characteristic Curve(s) By Score
indigenous:1 (0) item:1 (n7CAq01) & indigenous:2 (1) item:1 (n7CAq01)
Probability
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-3
-2
-1
(0,0)
1
2
Latent Trait (logits)

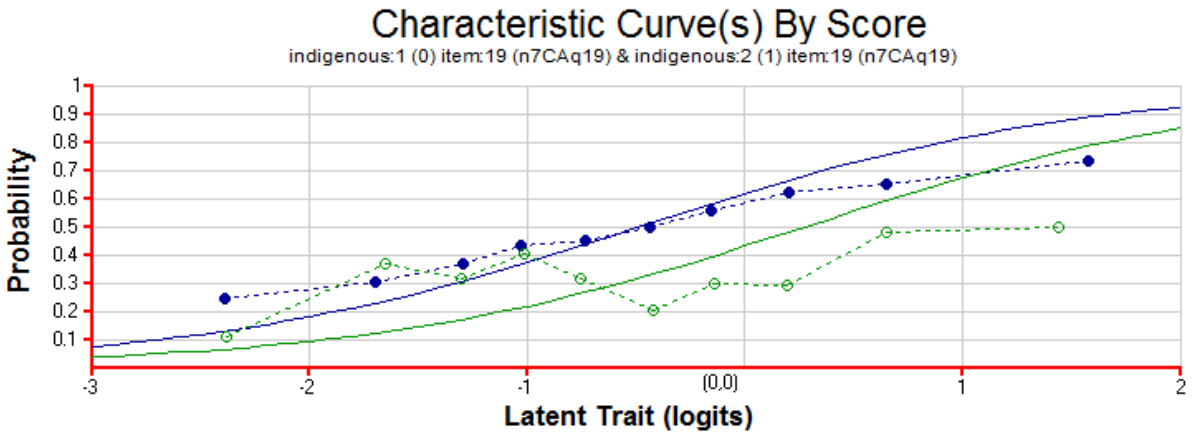

Characteristic Curve(s) By Score
indigenous:1 (0) item:4 (n7CAq04) & indigenous:2 (1) item:4 (n7CAq04)
Probability
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-3
-2
-1
(0,0)
1
2
Latent Trait (logits)

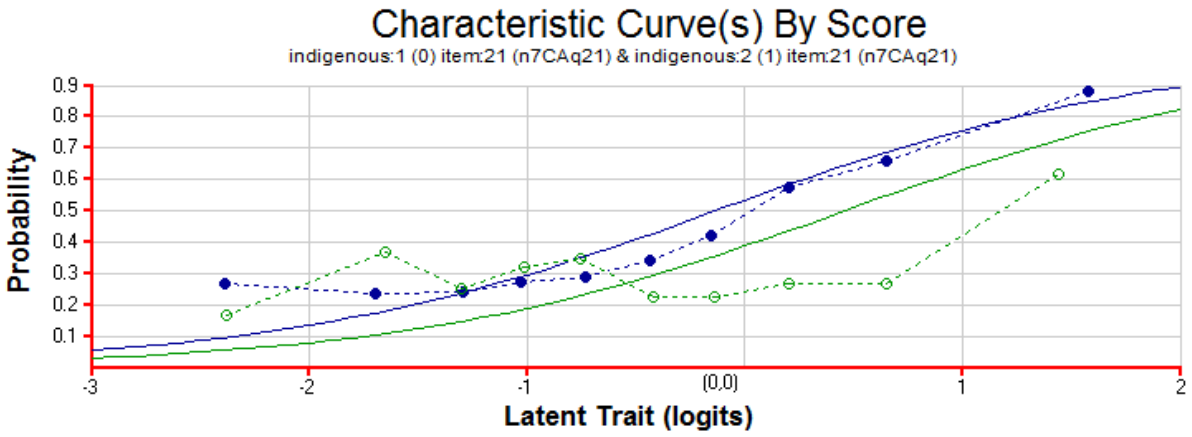

Characteristic Curve(s) By Score
indigenous:1 (0) item:10 (n7CAq10) & indigenous:2 (1) item:10 (n7CAq10)
Probability
Latent Trait (logits)
(0,0)

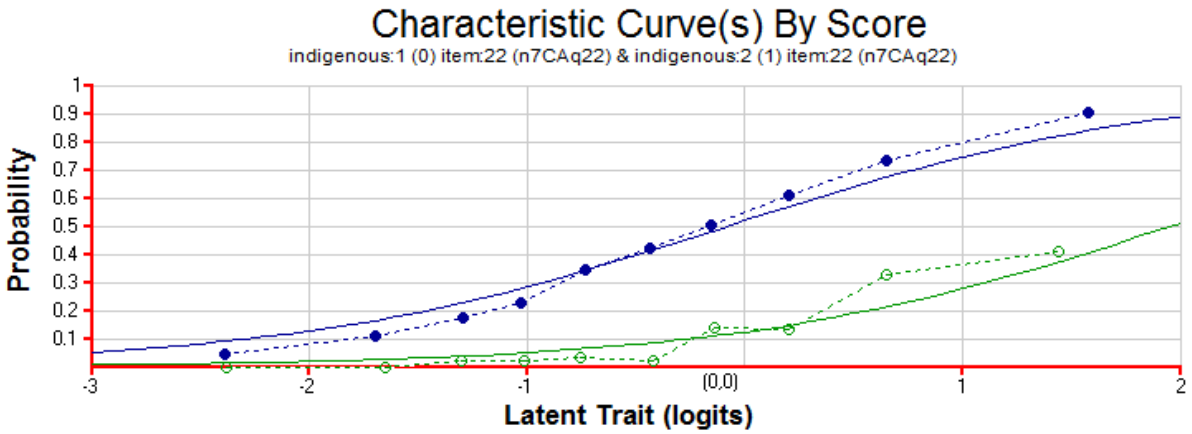

Characteristic Curve(s) By Score
indigenous:1 (0) item:14 (n7CAq14) & indigenous:2 (1) item:14 (n7CAq14)
Probability
Latent Trait (logits)
(0,0)

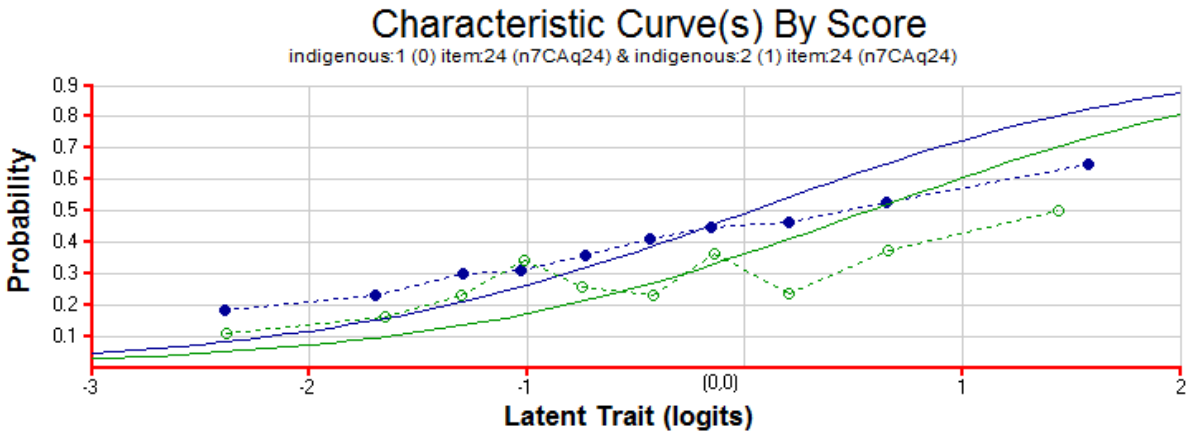

Characteristic Curve(s) By Score
indigenous:1 (0) item:15 (n7CAq15) & indigenous:2 (1) item:15 (n7CAq15)
Probability
Latent Trait (logits)
(0,0)

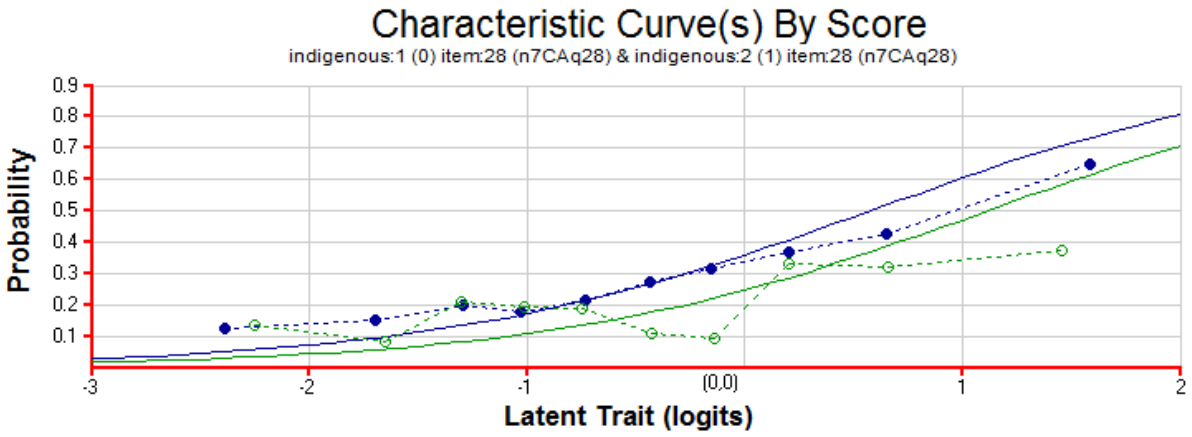

Characteristic Curve(s) By Score
indigenous:1 (0) item:18 (n7CAq18) & indigenous:2 (1) item:18 (n7CAq18)
Probability
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-3
-2
-1
(0,0)
1
2
Latent Trait (logits)

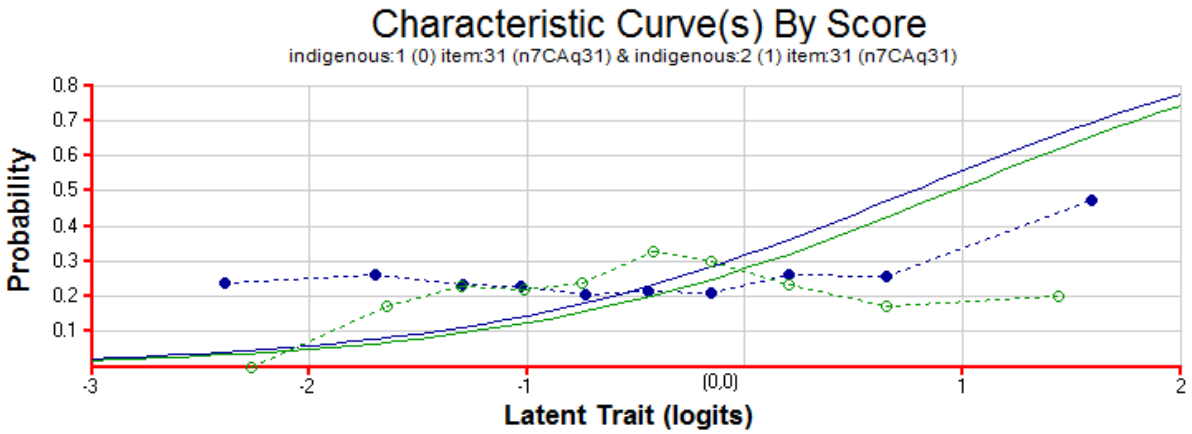

Characteristic Curve(s) By Score
indigenous:1 (0) item:19 (n7CAq19) & indigenous:2 (1) item:19 (n7CAq19)
Probability
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-3
-2
-1
(0,0)
1
2
Latent Trait (logits)

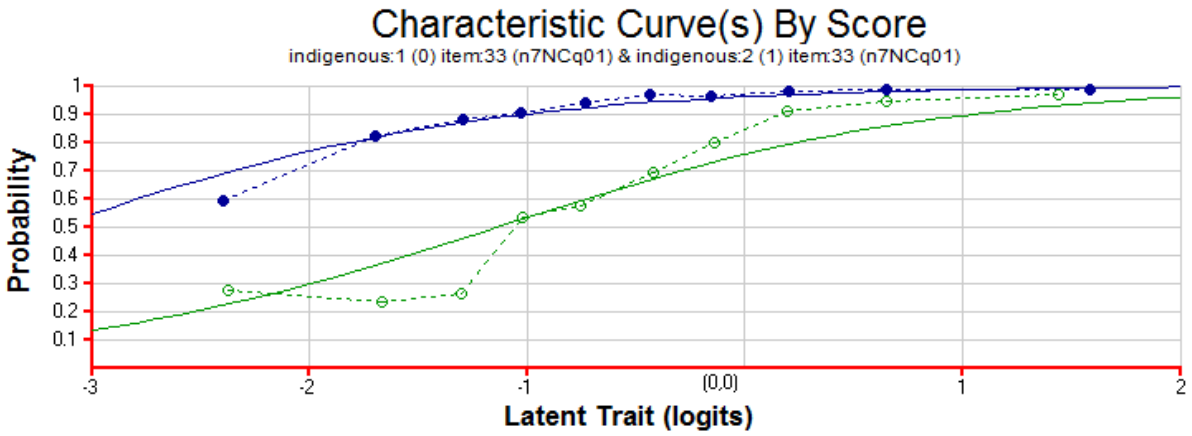

Characteristic Curve(s) By Score
indigenous:1 (0) item:21 (n7CAq21) & indigenous:2 (1) item:21 (n7CAq21)
Probability
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-3
-2
-1
(0,0)
1
2
Latent Trait (logits)

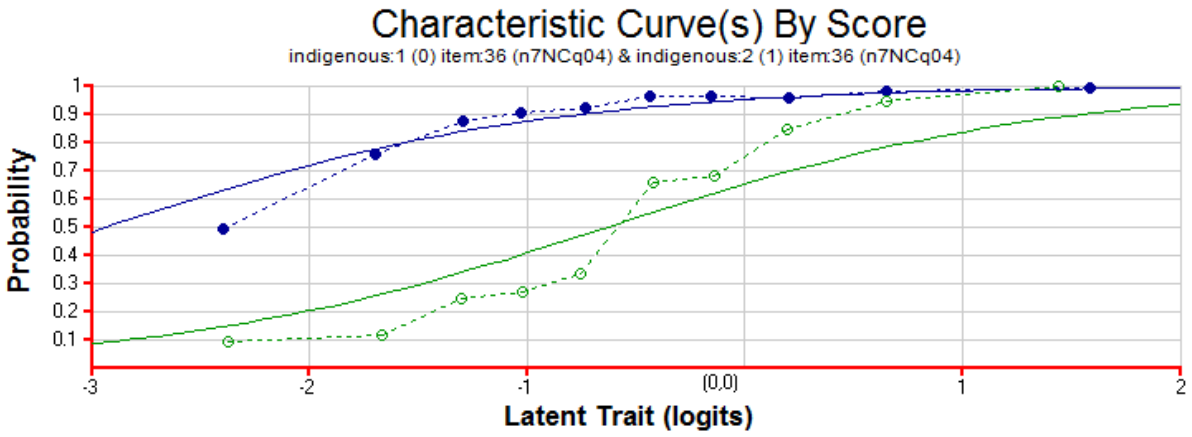

Characteristic Curve(s) By Score
indigenous:1 (0) item:22 (n7CAq22) & indigenous:2 (1) item:22 (n7CAq22)
Probability
Latent Trait (logits)
(0,0)

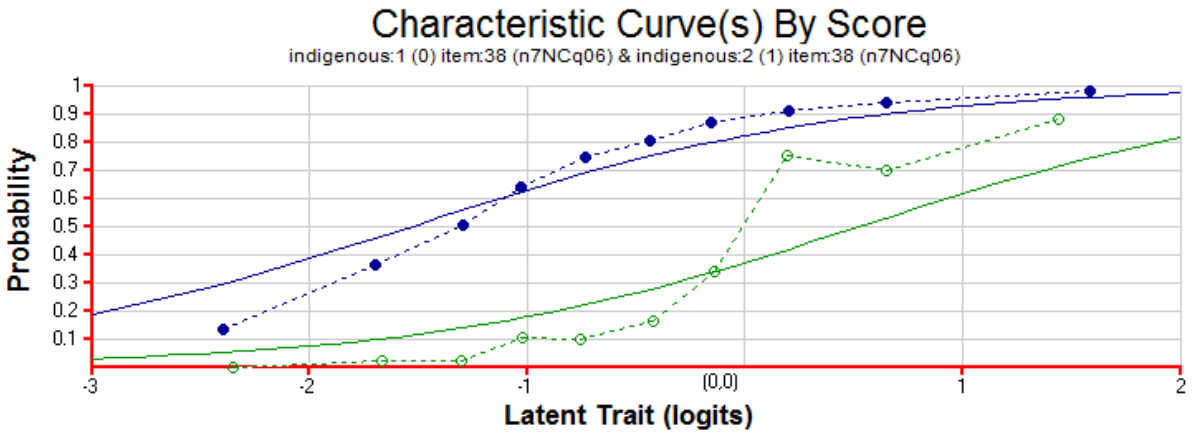

Characteristic Curve(s) By Score
indigenous:1 (0) item:24 (n7CAq24) & indigenous:2 (1) item:24 (n7CAq24)
Probability
Latent Trait (logits)
(0,0)

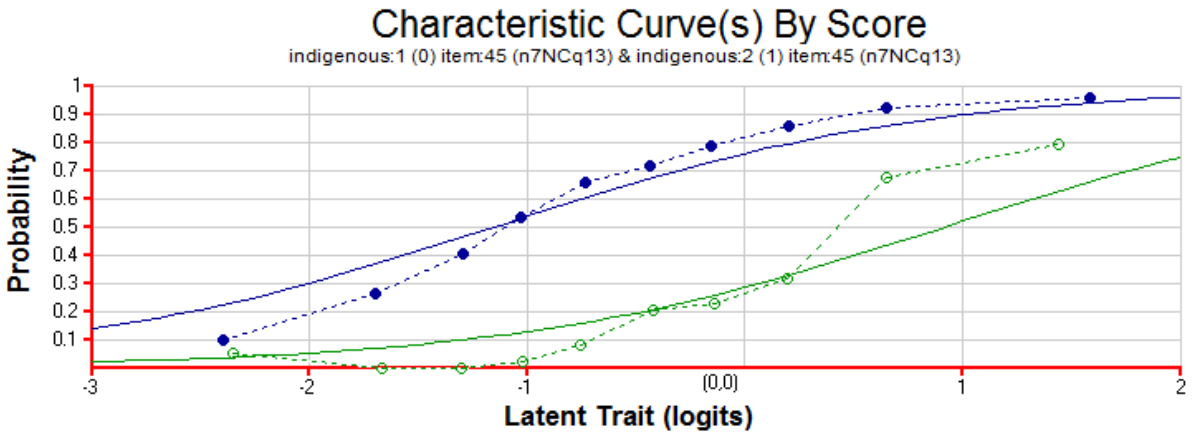

Characteristic Curve(s) By Score
indigenous:1 (0) item:28 (n7CAq28) & indigenous:2 (1) item:28 (n7CAq28)
Probability
Latent Trait (logits)
(0,0)

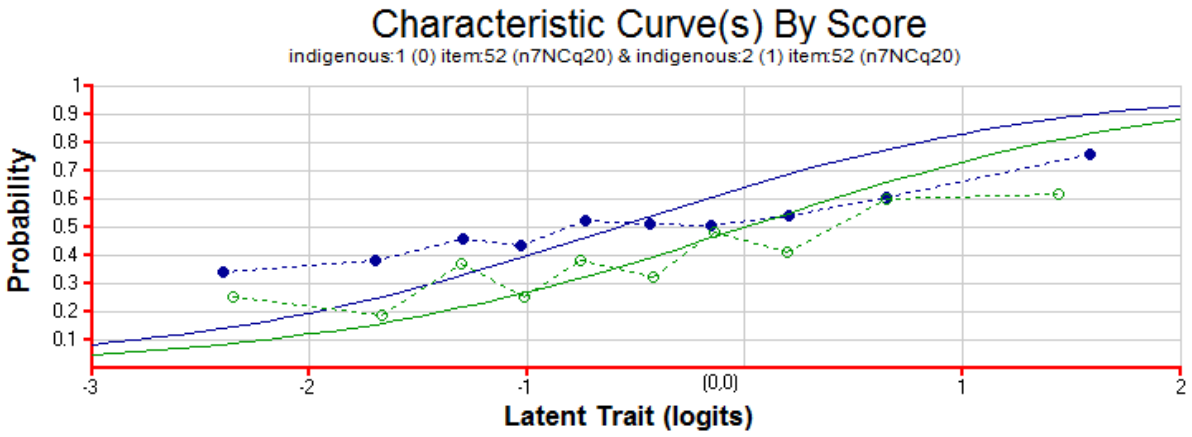

Characteristic Curve(s) By Score
indigenous:1 (0) item:31 (n7CAq31) & indigenous:2 (1) item:31 (n7CAq31)
Probability
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-3
-2
-1
(0,0)
1
2
Latent Trait (logits)

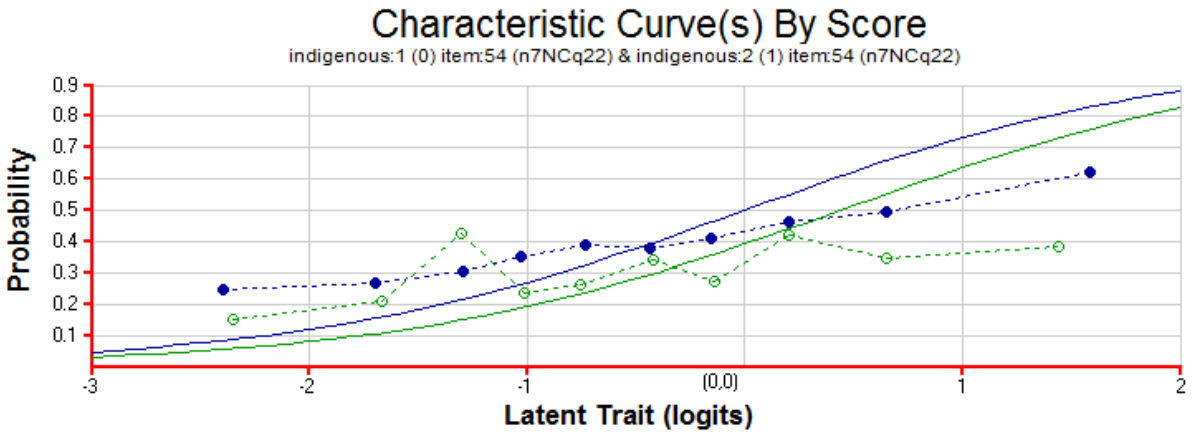

Characteristic Curve(s) By Score
indigenous:1 (0) item:33 (n7NCq01) & indigenous:2 (1) item:33 (n7NCq01)
Probability
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-3
-2
-1
(0,0)
1
2
Latent Trait (logits)

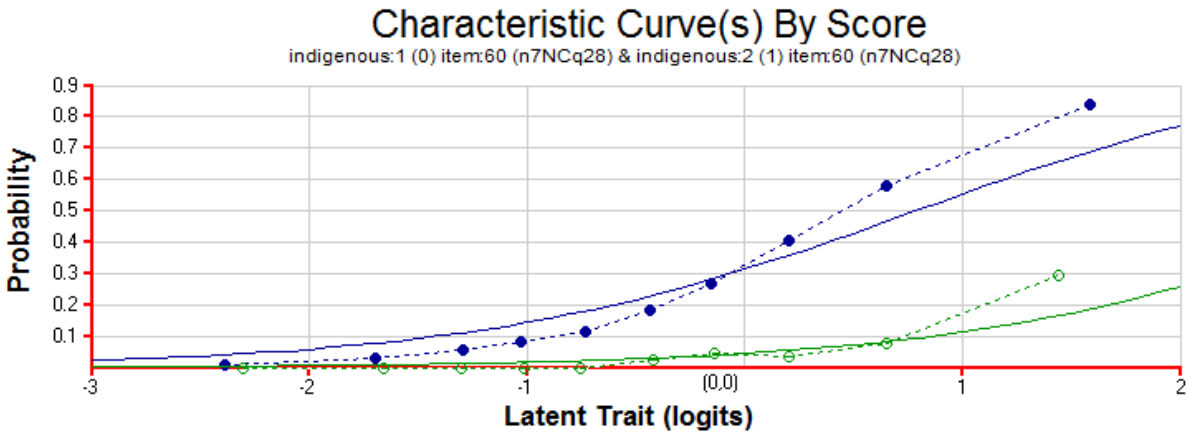

Characteristic Curve(s) By Score
indigenous:1 (0) item:36 (n7NCq04) & indigenous:2 (1) item:36 (n7NCq04)
Probability
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-3
-2
-1
(0,0)
1
2
Latent Trait (logits)

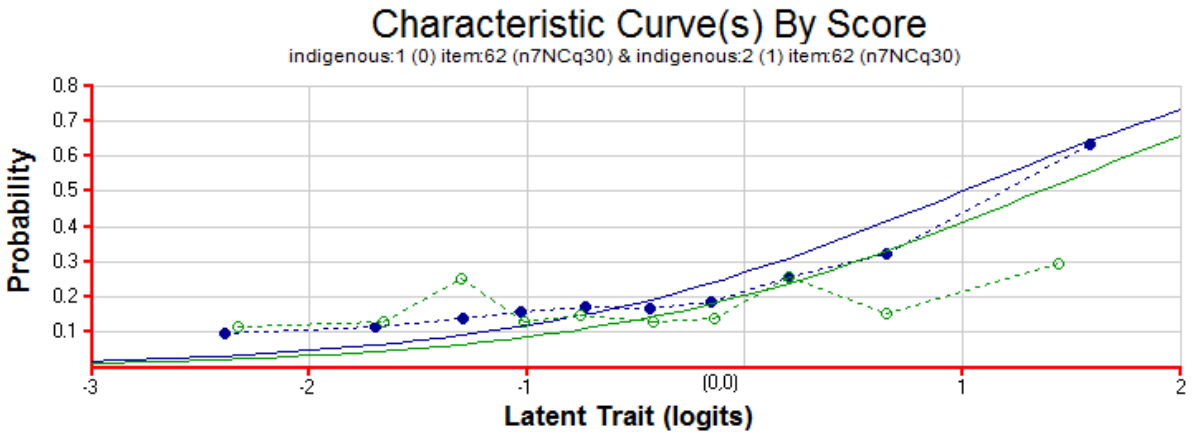

Characteristic Curve(s) By Score
indigenous:1 (0) item:38 (n7NCq06) & indigenous:2 (1) item:38 (n7NCq06)
Probability
Latent Trait (logits)
(0,0)

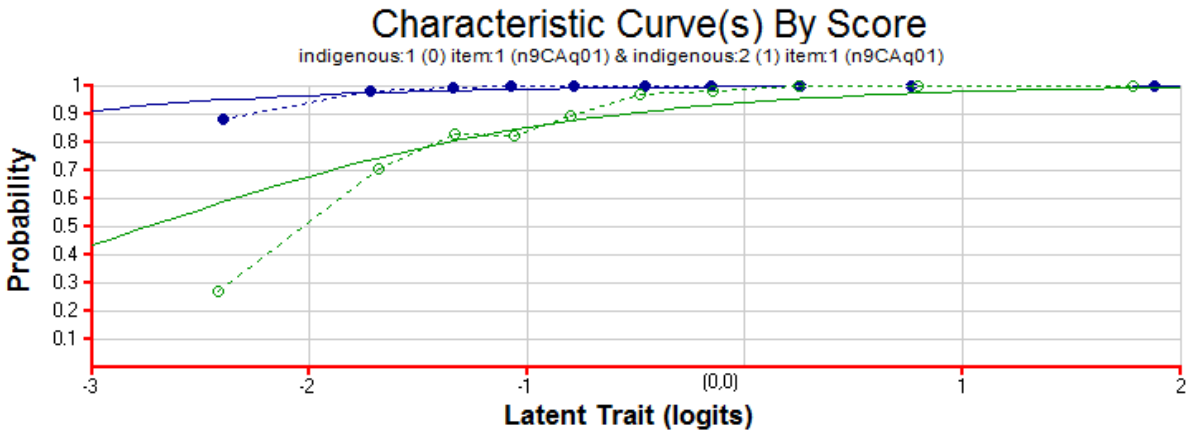

Characteristic Curve(s) By Score
indigenous:1 (0) item:45 (n7NCq13) & indigenous:2 (1) item:45 (n7NCq13)
Probability
Latent Trait (logits)
(0,0)

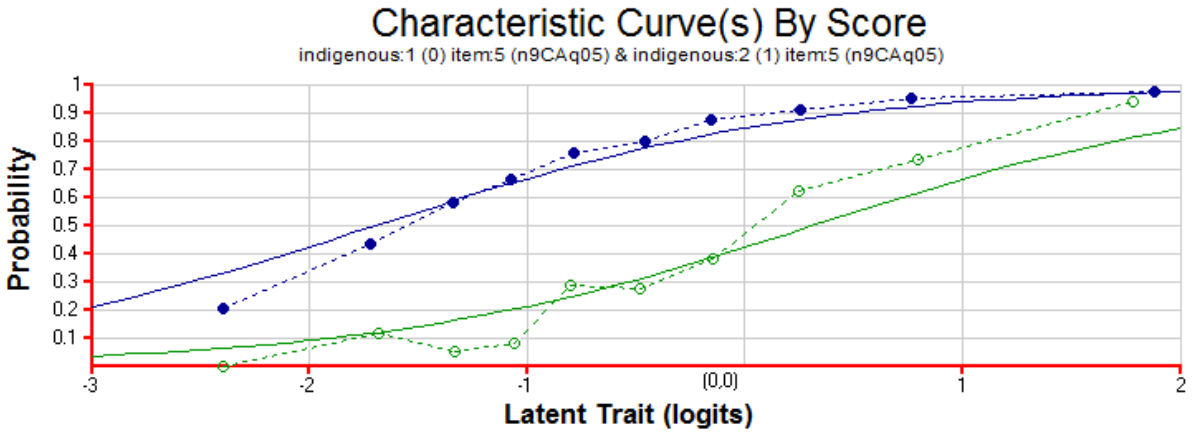

Characteristic Curve(s) By Score
indigenous:1 (0) item:52 (n7NCq20) & indigenous:2 (1) item:52 (n7NCq20)
Probability
Latent Trait (logits)
(0,0)

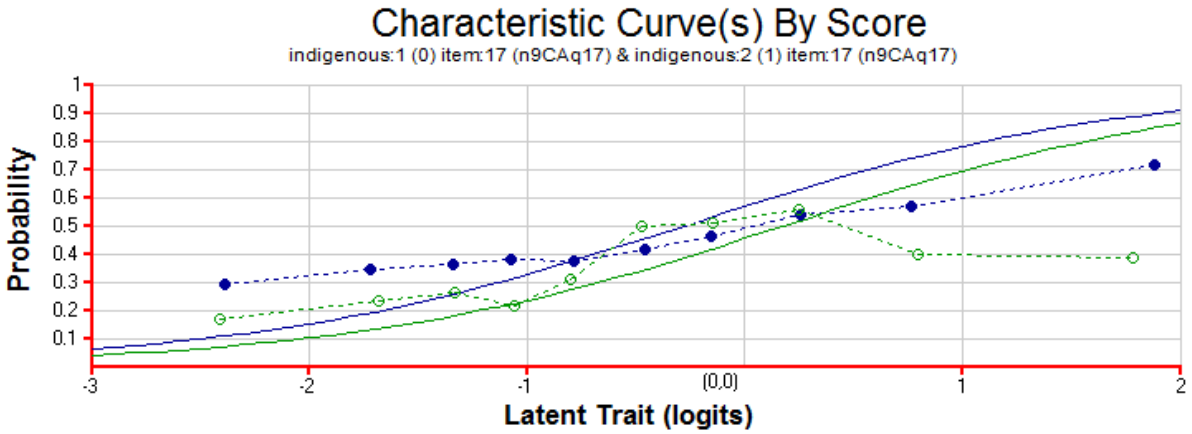

Characteristic Curve(s) By Score
indigenous:1 (0) item:54 (n7NCq22) & indigenous:2 (1) item:54 (n7NCq22)
Probability
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-3
-2
-1
(0,0)
1
2
Latent Trait (logits)

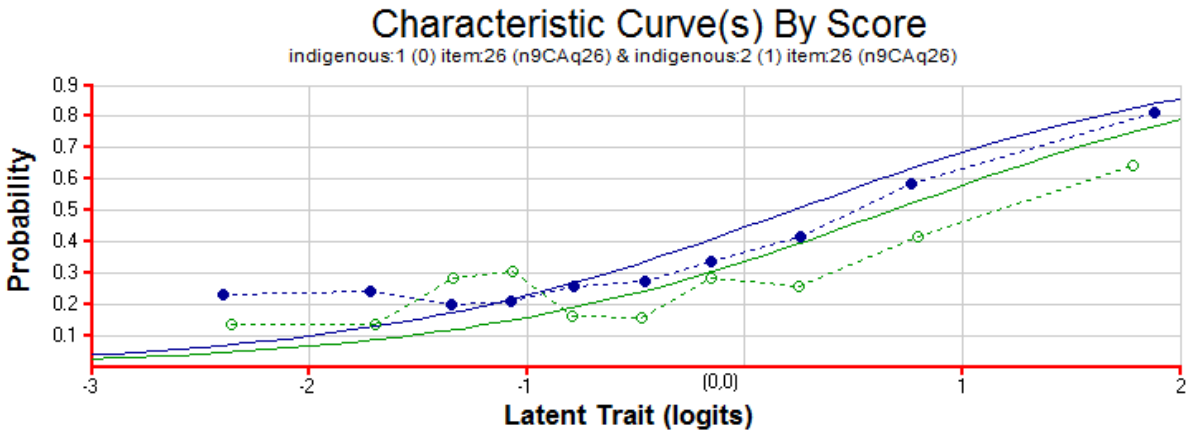

Characteristic Curve(s) By Score
indigenous:1 (0) item:60 (n7NCq28) & indigenous:2 (1) item:60 (n7NCq28)
Probability
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-3
-2
-1
(0,0)
1
2
Latent Trait (logits)

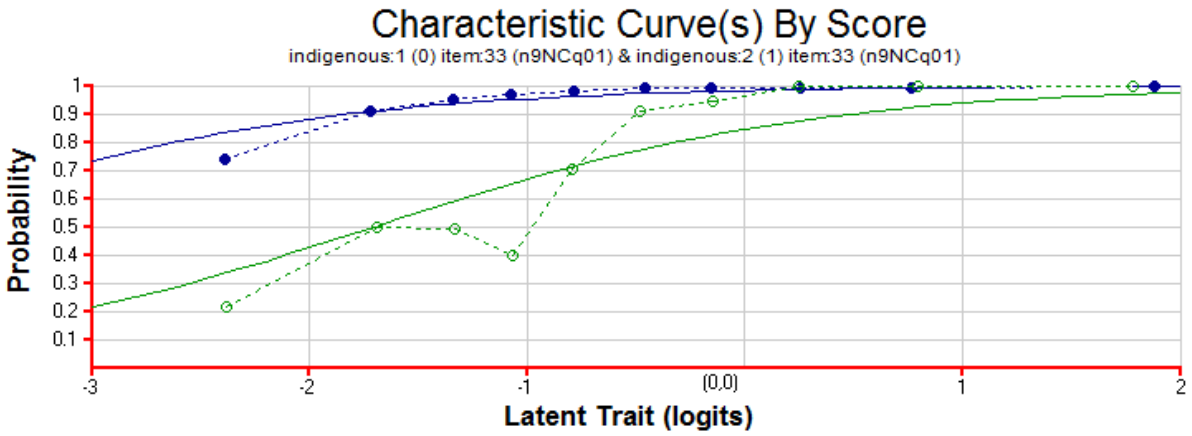

Characteristic Curve(s) By Score
indigenous:1 (0) item:62 (n7NCq30) & indigenous:2 (1) item:62 (n7NCq30)
Probability
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-3
-2
-1
(0,0)
1
2
Latent Trait (logits)

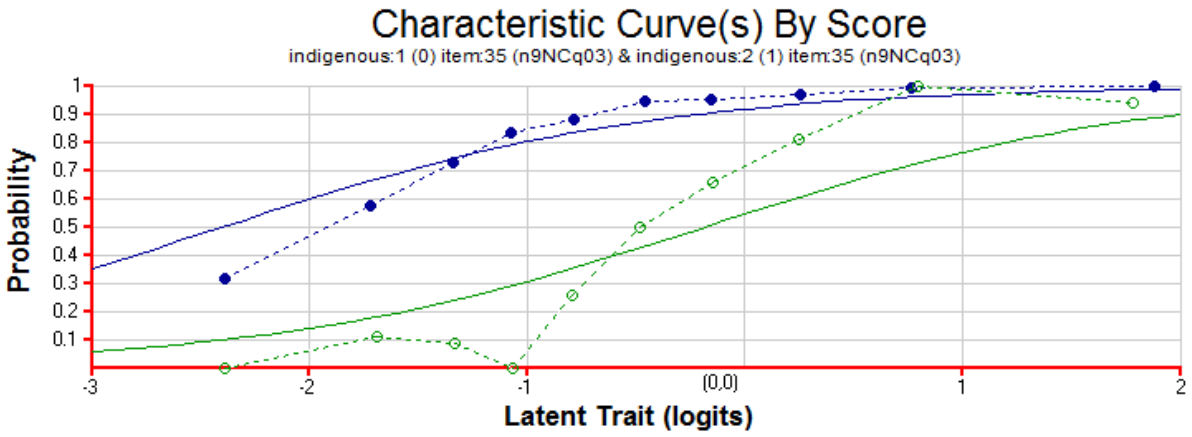

Characteristic Curve(s) By Score
indigenous:1 (0) item:1 (n9CAq01) & indigenous:2 (1) item:1 (n9CAq01)
Probability
Latent Trait (logits)
(0,0)

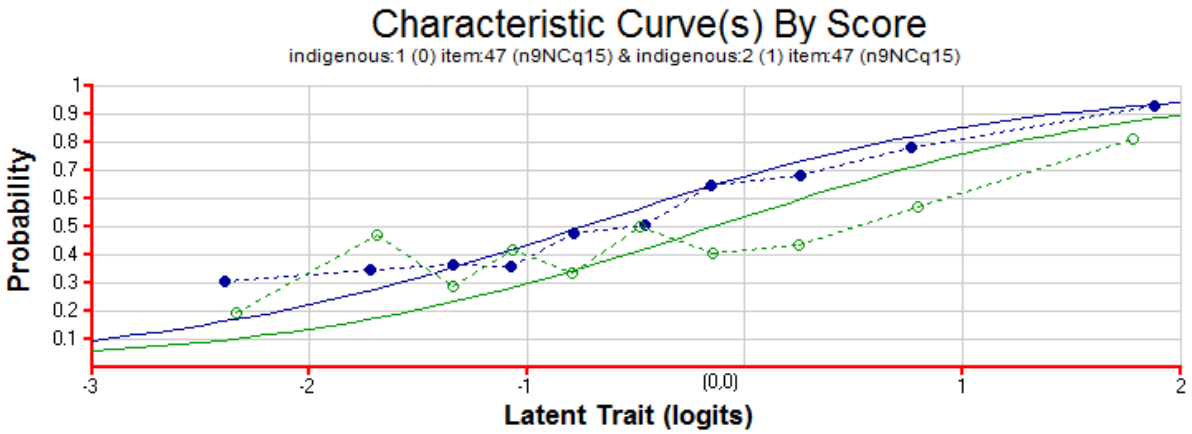

Characteristic Curve(s) By Score
indigenous:1 (0) item:5 (n9CAq05) & indigenous:2 (1) item:5 (n9CAq05)
Probability
Latent Trait (logits)
(0,0)

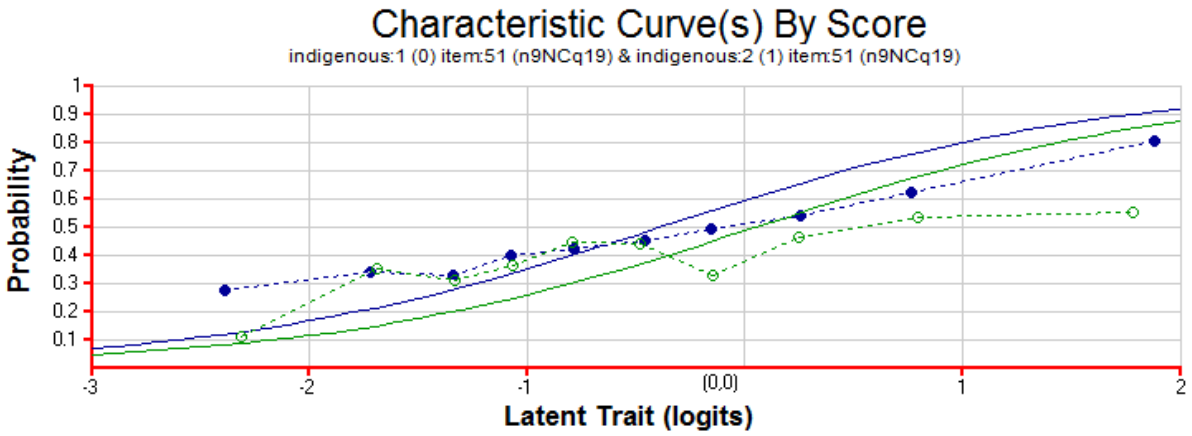

Characteristic Curve(s) By Score
indigenous:1 (0) item:17 (n9CAq17) & indigenous:2 (1) item:17 (n9CAq17)
Probability
Latent Trait (logits)
(0,0)

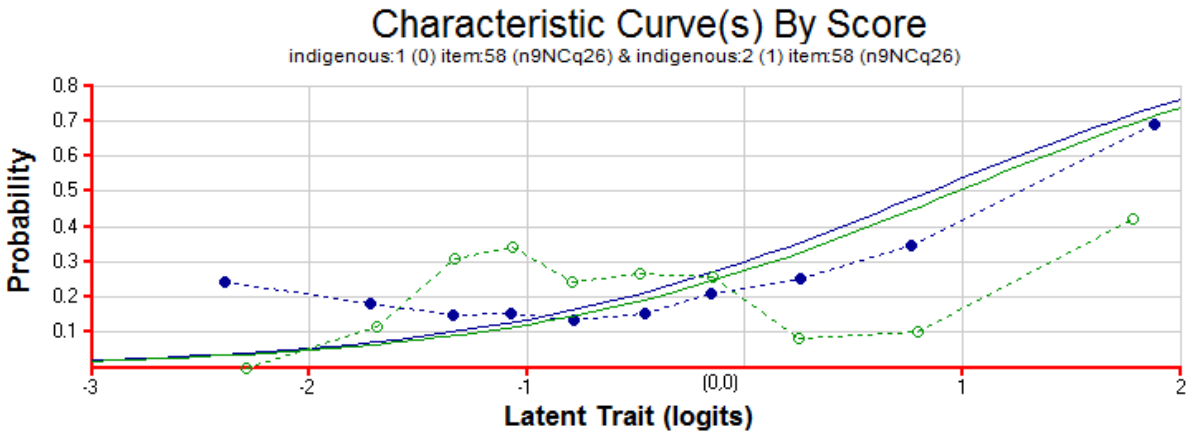

Characteristic Curve(s) By Score
indigenous:1 (0) item:26 (n9CAq26) & indigenous:2 (1) item:26 (n9CAq26)
Probability
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-3
-2
-1
(0,0)
1
2
Latent Trait (logits)

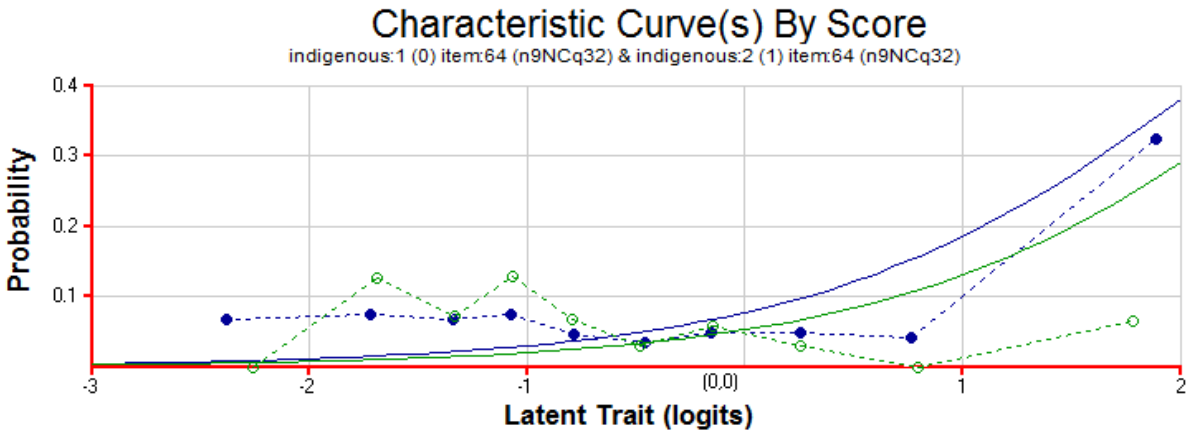

Characteristic Curve(s) By Score
indigenous:1 (0) item:33 (n9NCq01) & indigenous:2 (1) item:33 (n9NCq01)
Probability
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-3
-2
-1
(0,0)
1
2
Latent Trait (logits)


Characteristic Curve(s) By Score
indigenous:1 (0) item:35 (n9NCq03) & indigenous:2 (1) item:35 (n9NCq03)
Probability
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-3
-2
-1
(0,0)
1
2
Latent Trait (logits)

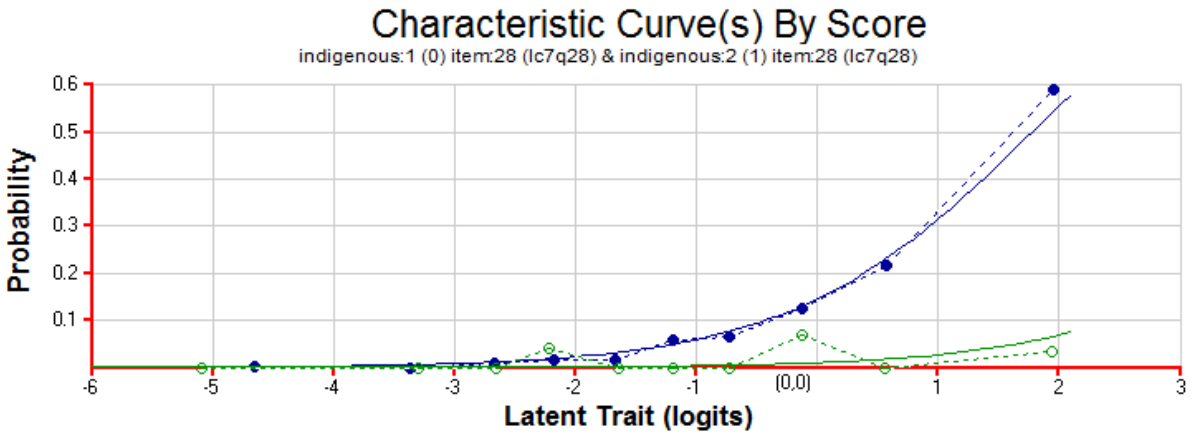

Characteristic Curve(s) By Score
indigenous:1 (0) item:47 (n9NCq15) & indigenous:2 (1) item:47 (n9NCq15)
Probability
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-3
-2
-1
(0,0)
1
2
Latent Trait (logits)

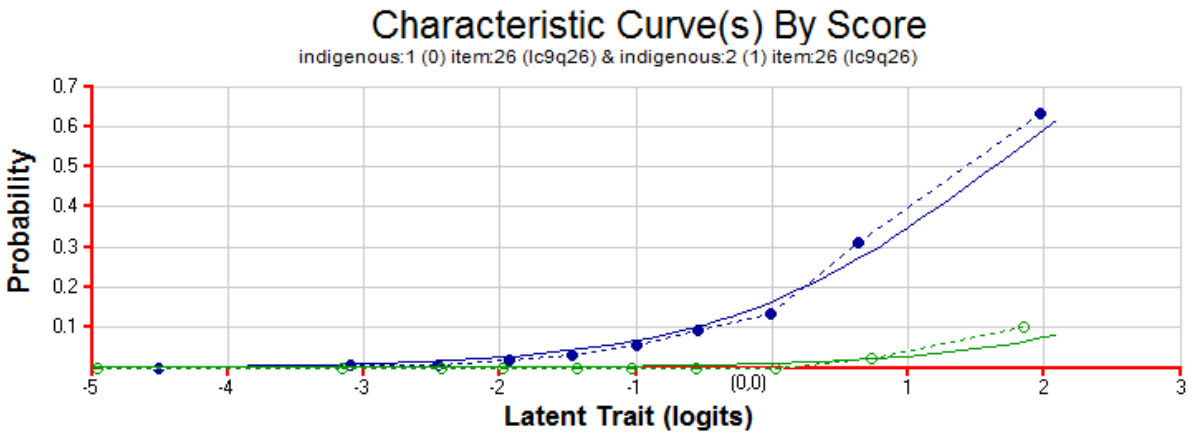

Characteristic Curve(s) By Score
indigenous:1 (0) item:51 (n9NCq19) & indigenous:2 (1) item:51 (n9NCq19)
Probability
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-3
-2
-1
(0,0)
1
2
Latent Trait (logits)

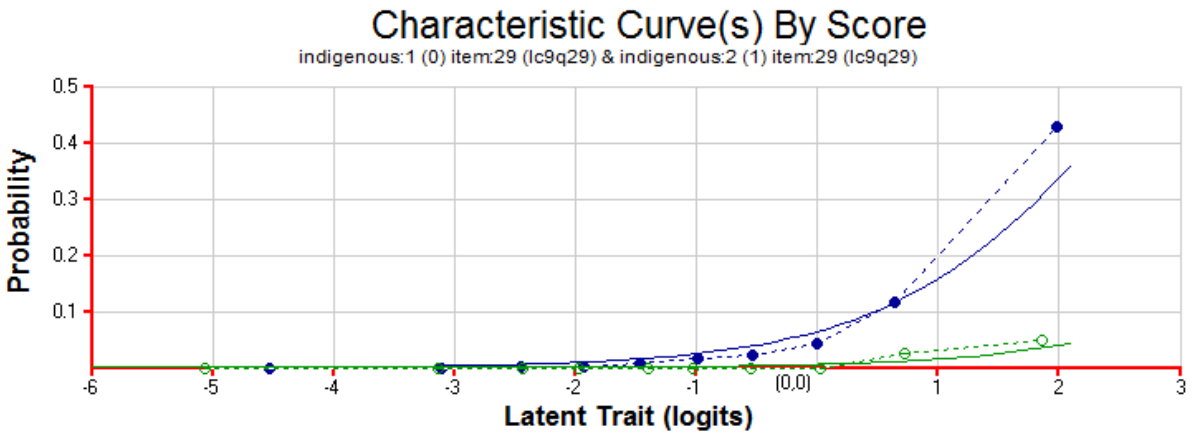

Characteristic Curve(s) By Score
indigenous:1 (0) item:58 (n9NCq26) & indigenous:2 (1) item:58 (n9NCq26)
Probability
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-3
-2
-1
(0,0)
1
2
Latent Trait (logits)


Characteristic Curve(s) By Score
indigenous:1 (0) item:64 (n9NCq32) & indigenous:2 (1) item:64 (n9NCq32)
Probability
0.4
0.3
0.2
0.1
-3
-2
-1
(0,0)
1
2
Latent Trait (logits)

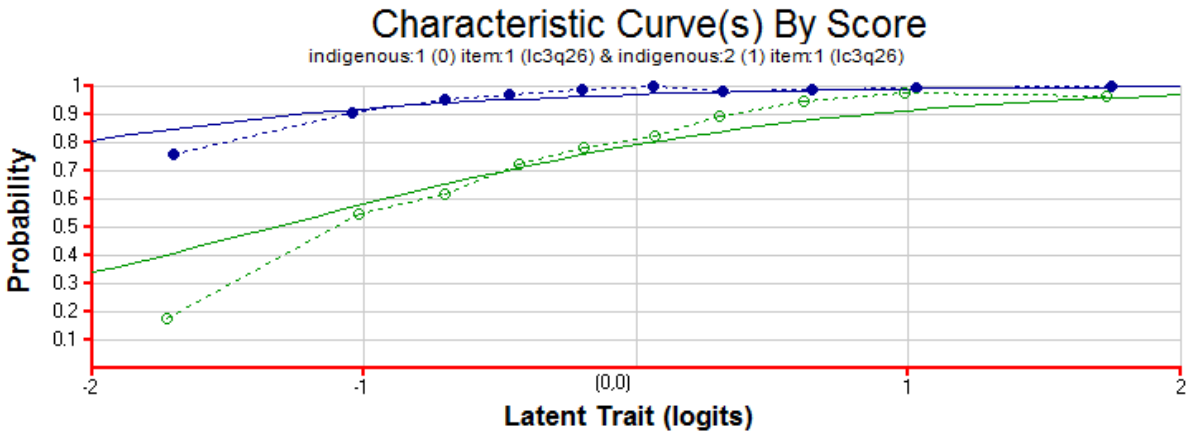
Spelling

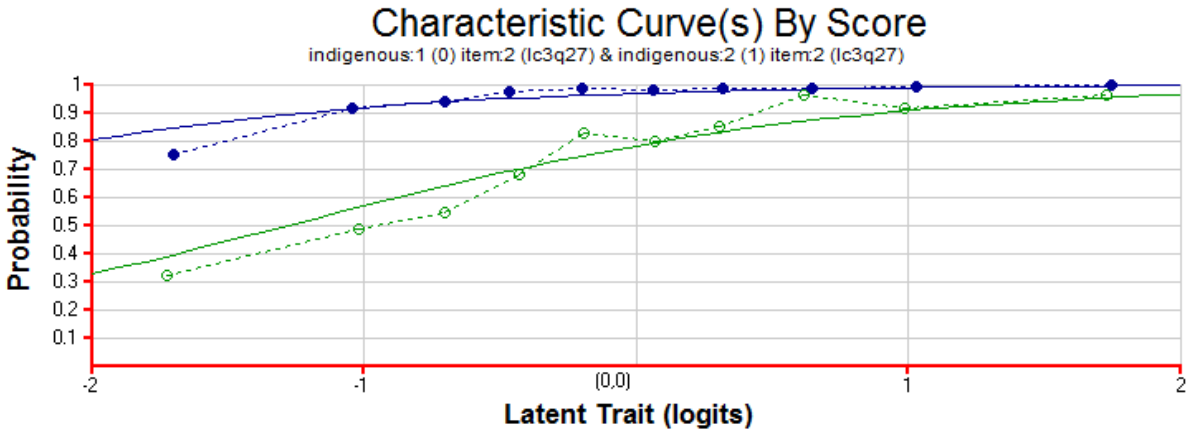

Characteristic Curve(s) By Score
indigenous:1 (0) item:28 (Ic7q28) & indigenous:2 (1) item:28 (Ic7q28)
Probability
0.6
0.5
0.4
0.3
0.2
0.1
-6
-5
-4
-3
-2
-1
(0,0)
1
2
3
Latent Trait (logits)

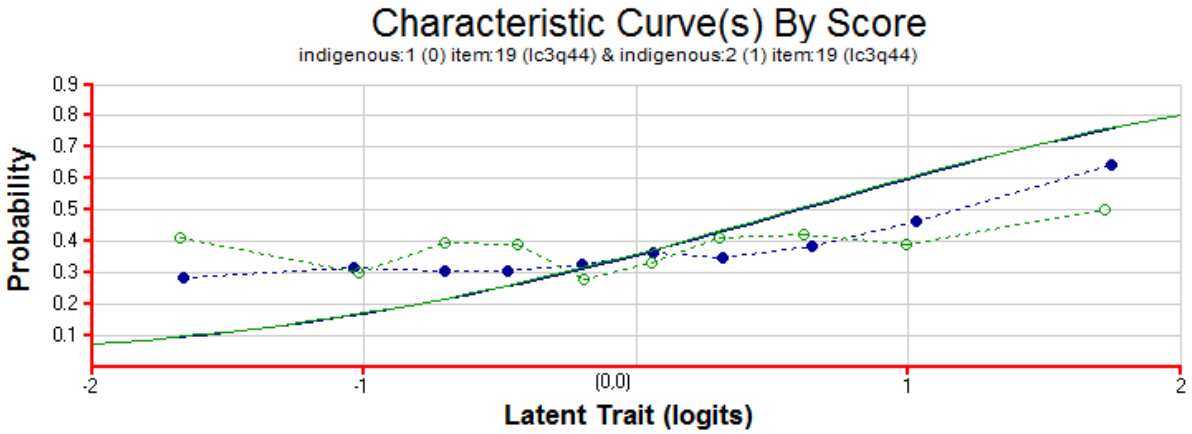

Characteristic Curve(s) By Score
indigenous:1 (0) item:26 (Ic9q26) & indigenous:2 (1) item:26 (Ic9q26)
Probability
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-5
-4
-3
-2
-1
(0,0)
1
2
3
Latent Trait (logits)

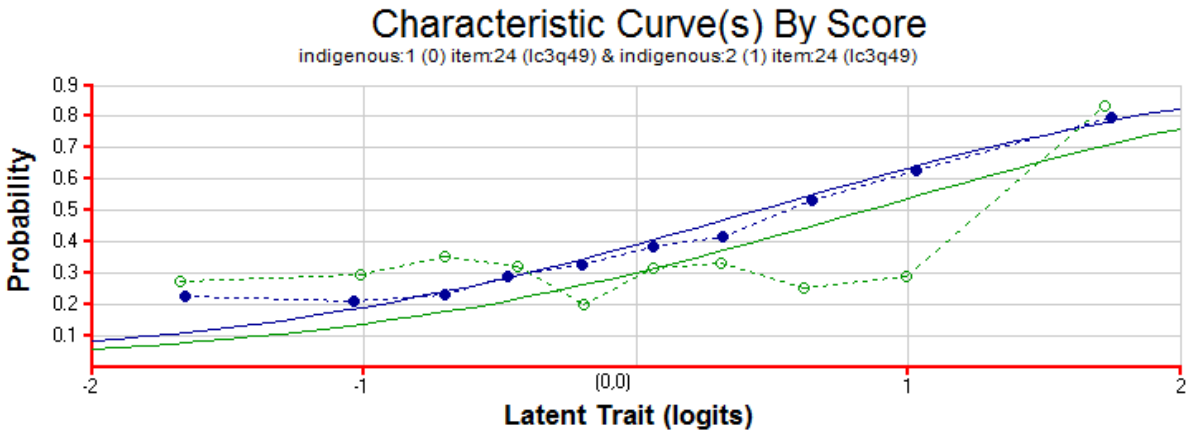

Characteristic Curve(s) By Score
indigenous:1 (0) item:29 (Ic9q29) & indigenous:2 (1) item:29 (Ic9q29)
Probability
0.5
0.4
0.3
0.2
0.1
-6
-5
-4
-3
-2
-1
(0,0)
1
2
3
Latent Trait (logits)

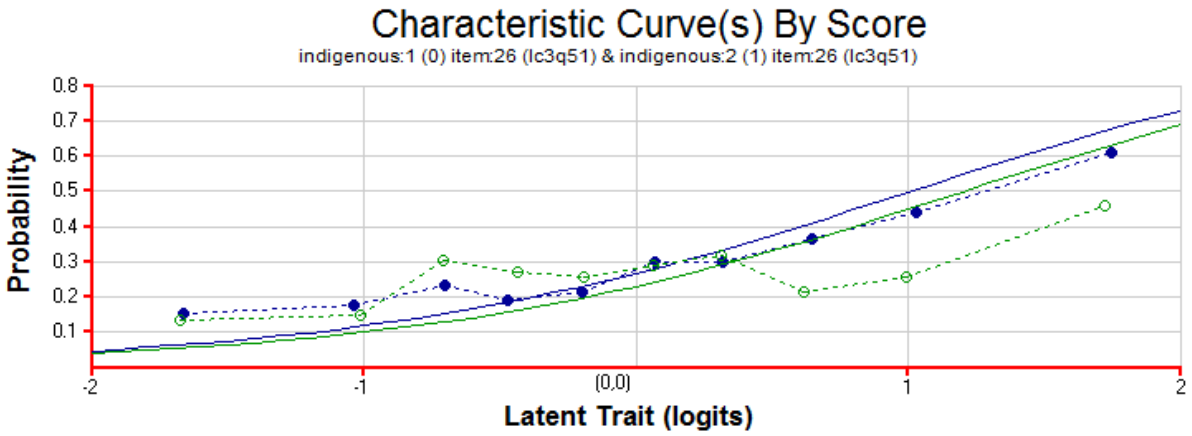
Grammar and Punctutation

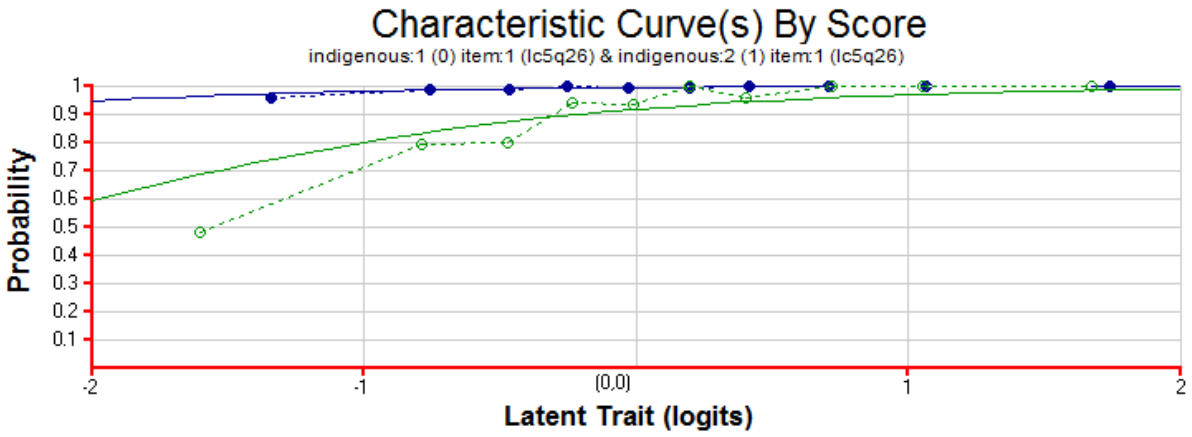


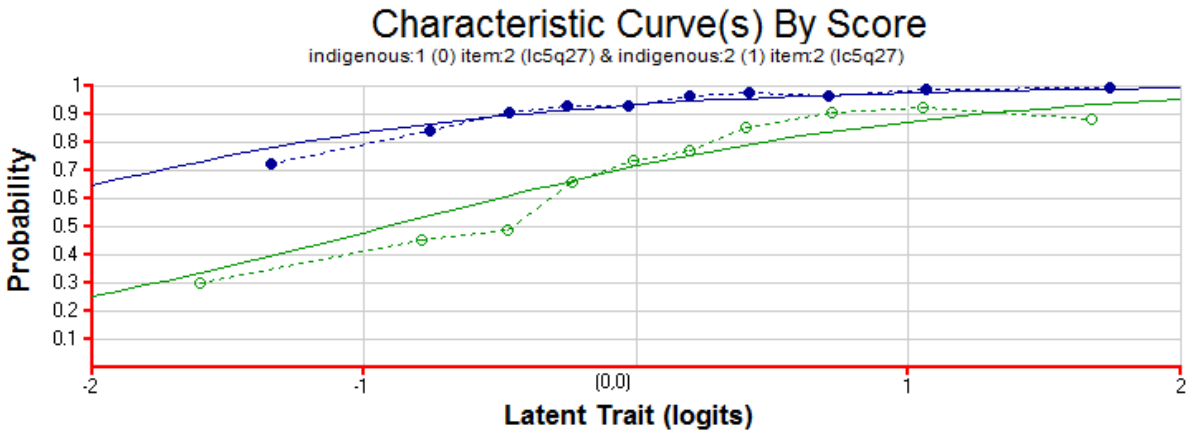


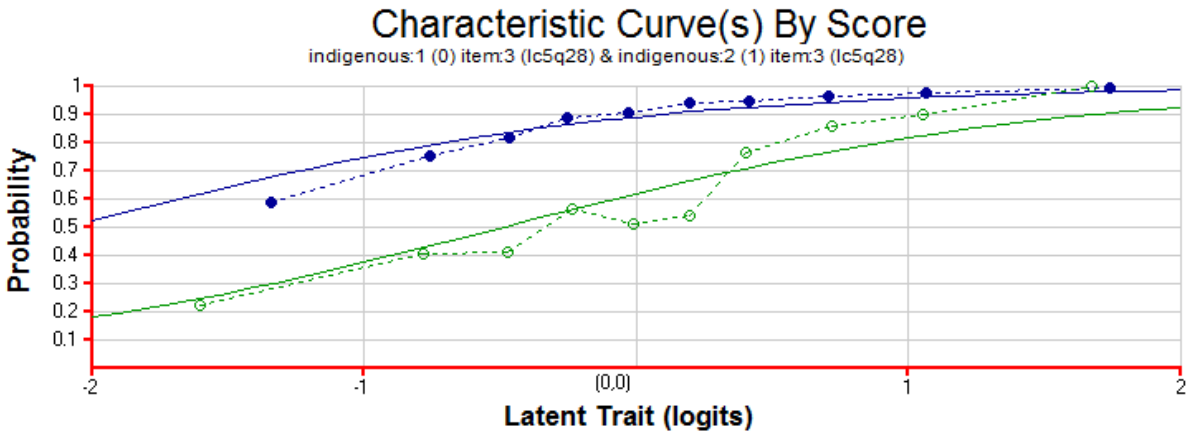


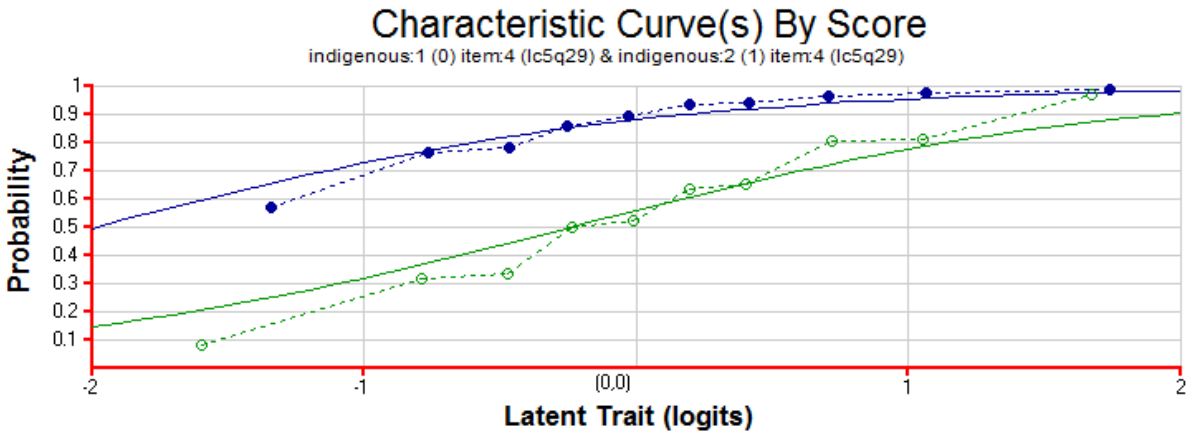

Characteristic Curve(s) By Score
indigenous:1 (0) item:24 (lc3q49) & indigenous:2 (1) item:24 (lc3q49)
Probability
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)

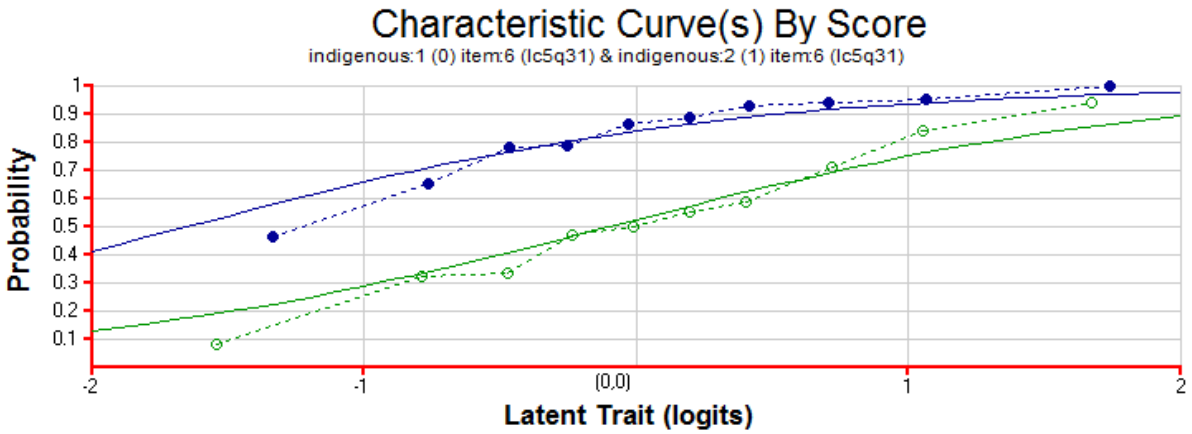

Characteristic Curve(s) By Score
indigenous:1 (0) item:26 (lc3q51) & indigenous:2 (1) item:26 (lc3q51)
Probability
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)

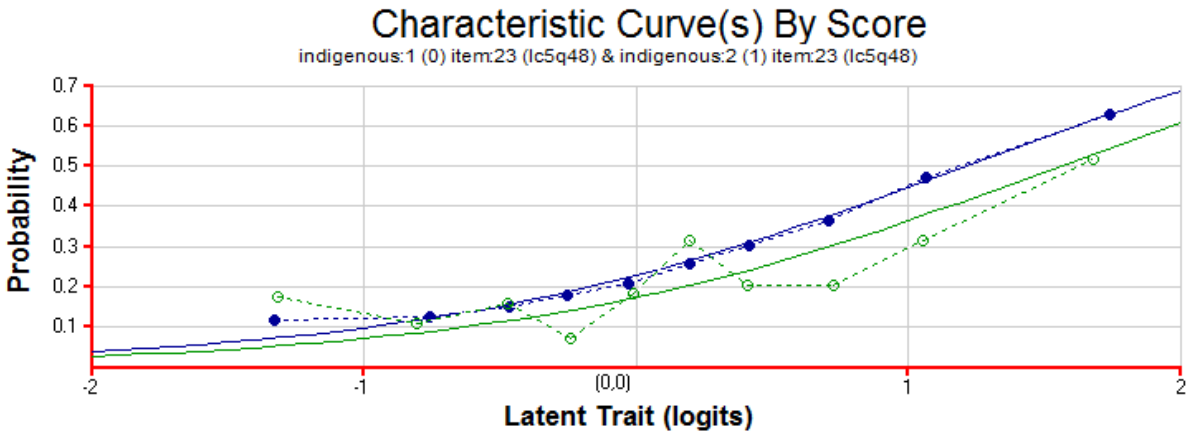

Characteristic Curve(s) By Score
indigenous:1 (0) item:1 (lc5q26) & indigenous:2 (1) item:1 (lc5q26)
Probability
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)

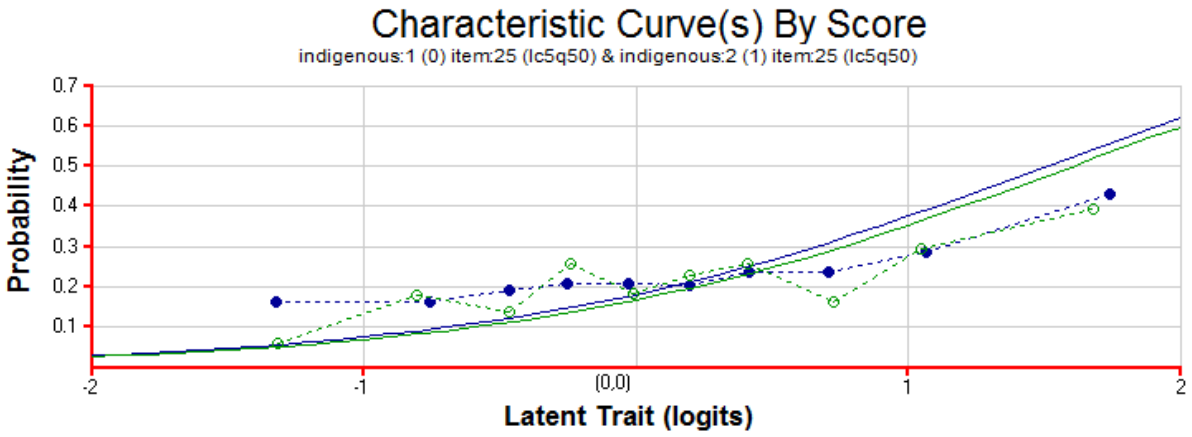

Characteristic Curve(s) By Score
indigenous:1 (0) item:2 (lc5q27) & indigenous:2 (1) item:2 (lc5q27)
Probability
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)

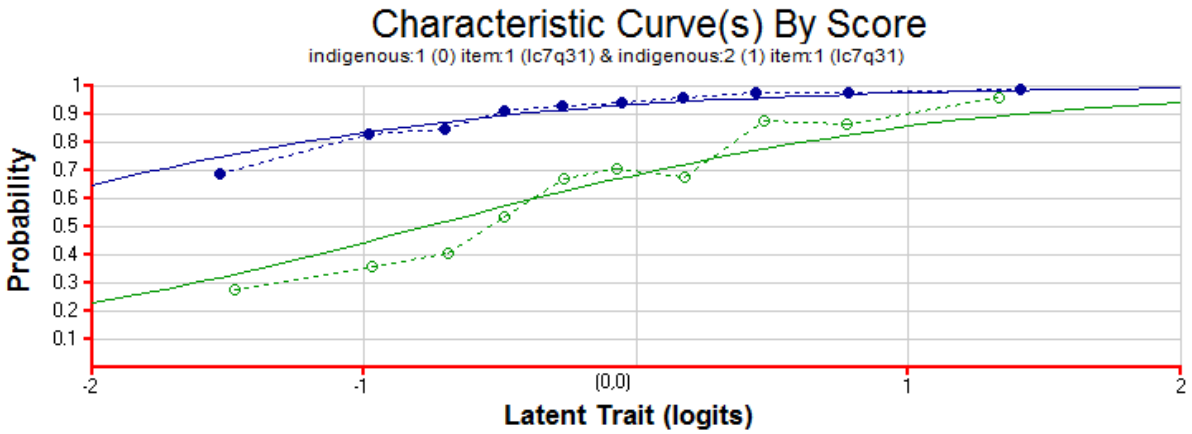

Characteristic Curve(s) By Score
indigenous:1 (0) item:3 (lc5q28) & indigenous:2 (1) item:3 (lc5q28)
Probability
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)

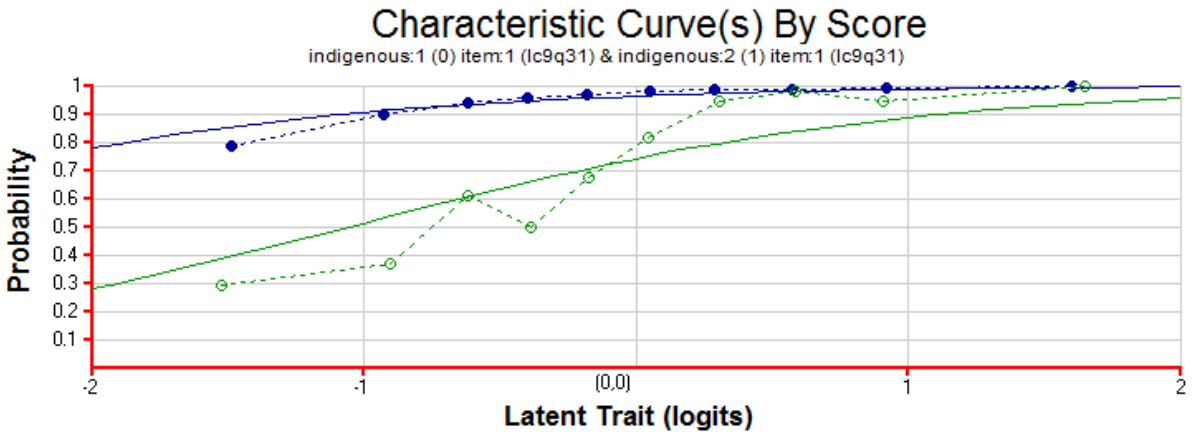

Characteristic Curve(s) By Score
indigenous:1 (0) item:4 (lc5q29) & indigenous:2 (1) item:4 (lc5q29)
Probability
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)

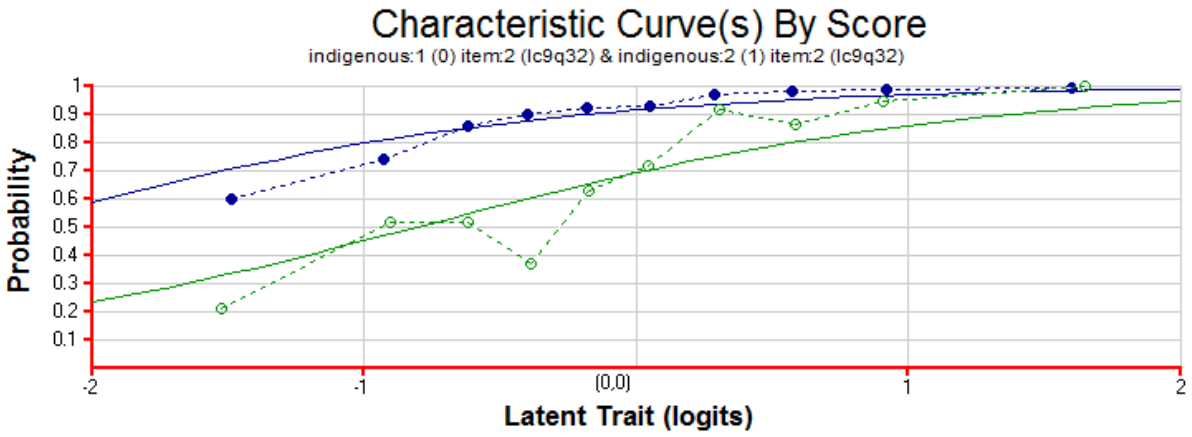

Characteristic Curve(s) By Score
indigenous:1 (0) item:6 (lc5q31) & indigenous:2 (1) item:6 (lc5q31)
Probability
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)

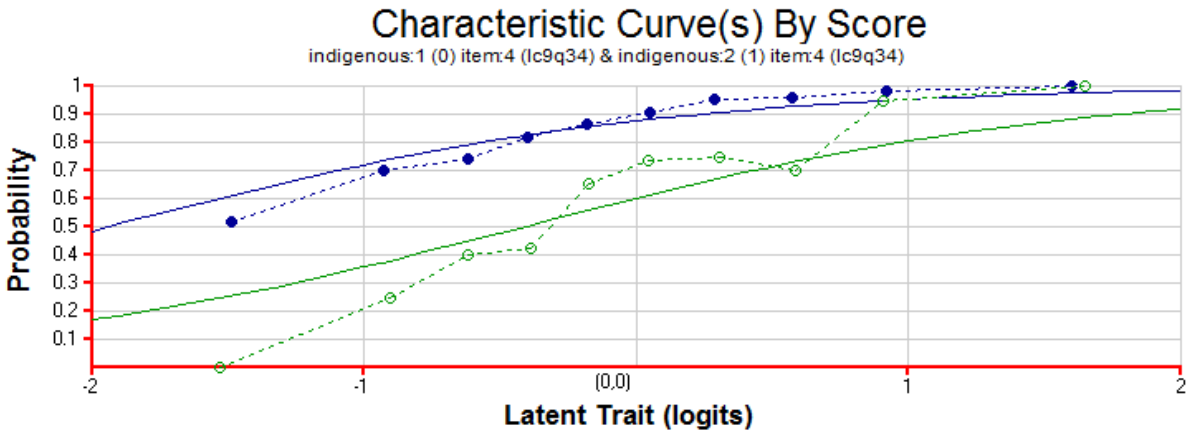

Characteristic Curve(s) By Score
indigenous:1 (0) item:23 (lc5q48) & indigenous:2 (1) item:23 (lc5q48)
Probability
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)

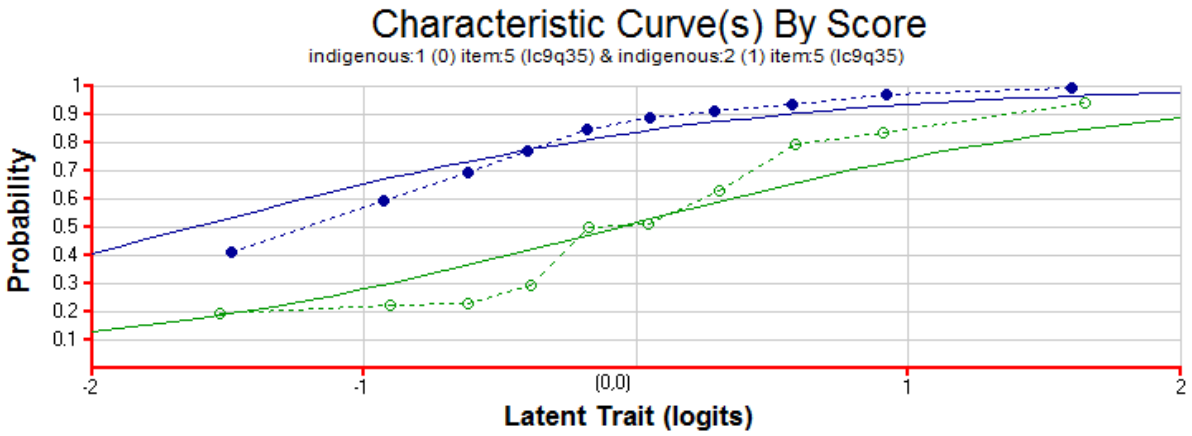

Characteristic Curve(s) By Score
indigenous:1 (0) item:25 (lc5q50) & indigenous:2 (1) item:25 (lc5q50)
Probability
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)

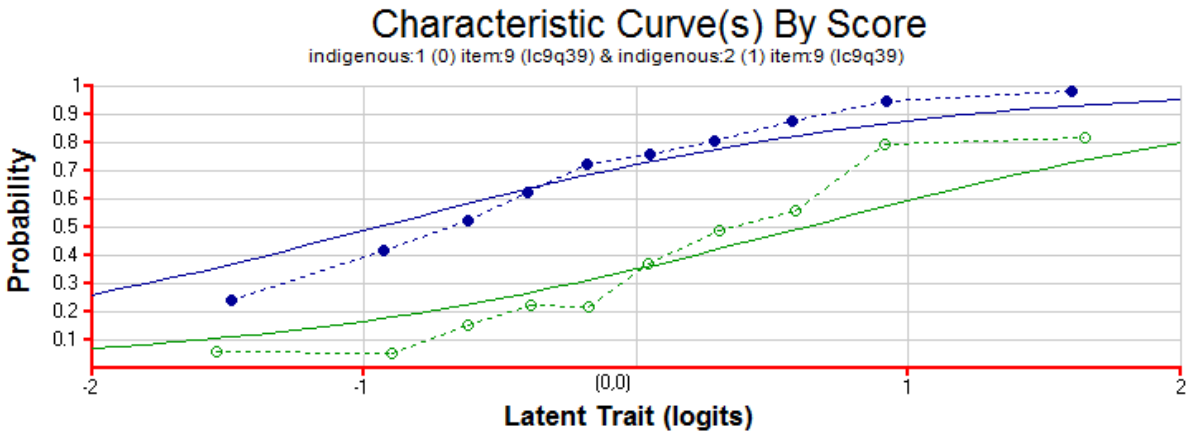

Characteristic Curve(s) By Score
indigenous:1 (0) item:1 (lc7q31) & indigenous:2 (1) item:1 (lc7q31)
Probability
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)

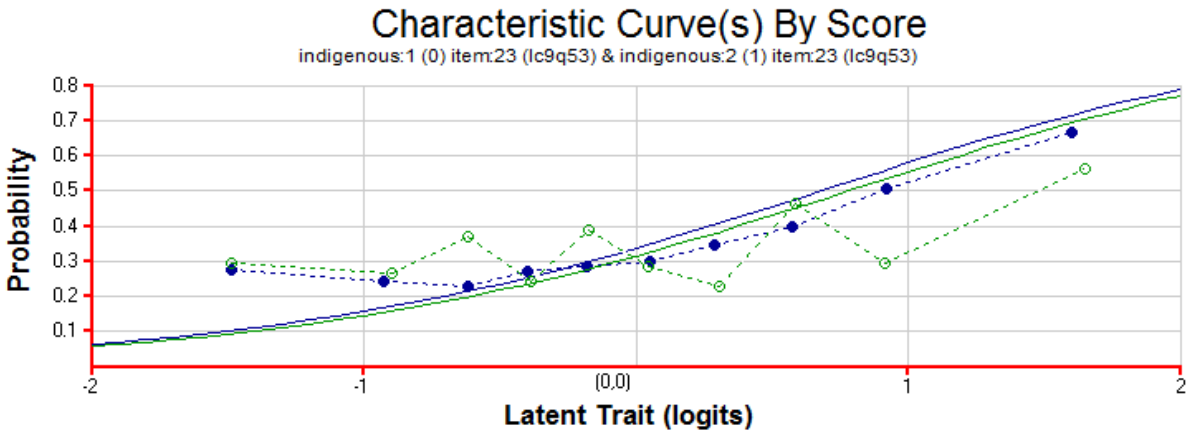

Characteristic Curve(s) By Score
indigenous:1 (0) item:1 (lc9q31) & indigenous:2 (1) item:1 (lc9q31)
Probability
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)

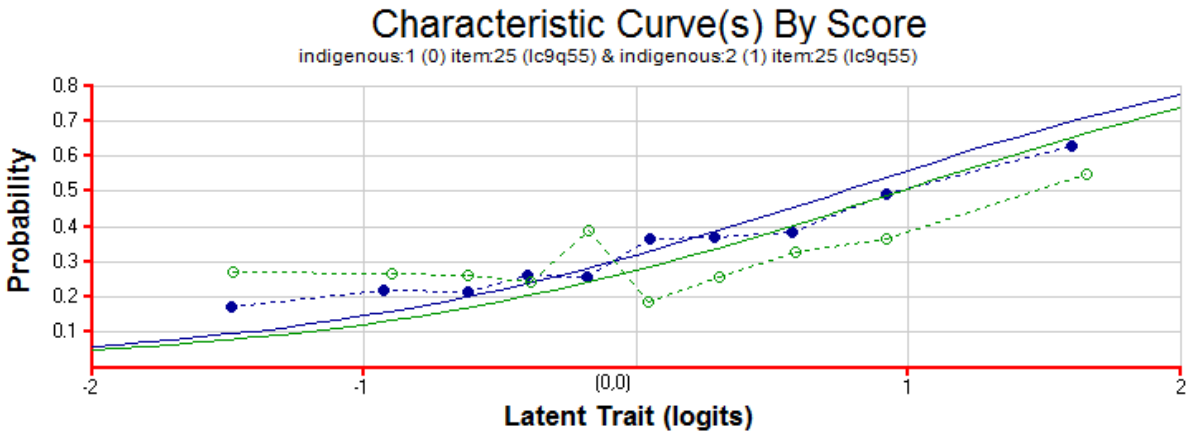

Characteristic Curve(s) By Score
indigenous:1 (0) item:2 (lc9q32) & indigenous:2 (1) item:2 (lc9q32)
Probability
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)

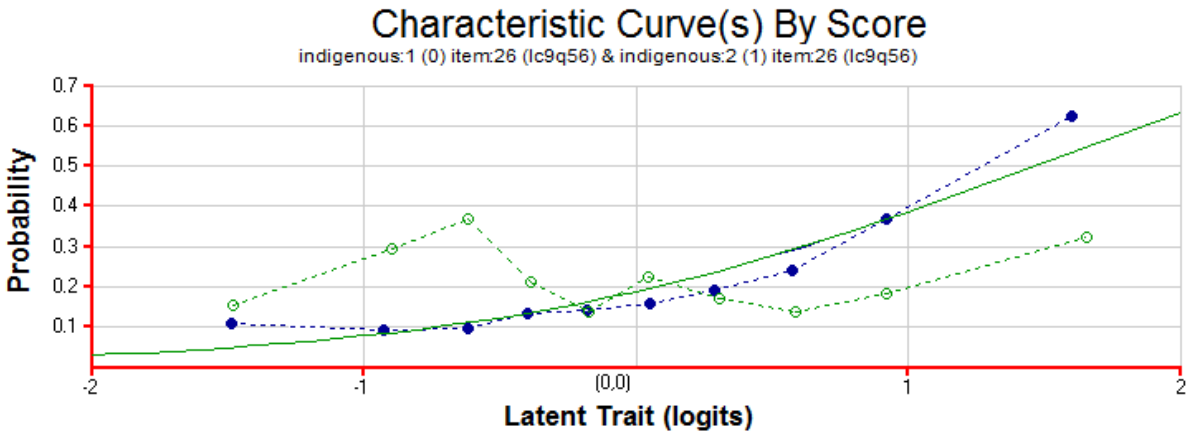

Characteristic Curve(s) By Score
indigenous:1 (0) item:4 (lc9q34) & indigenous:2 (1) item:4 (lc9q34)
Probability
Latent Trait (logits)
(0,0)

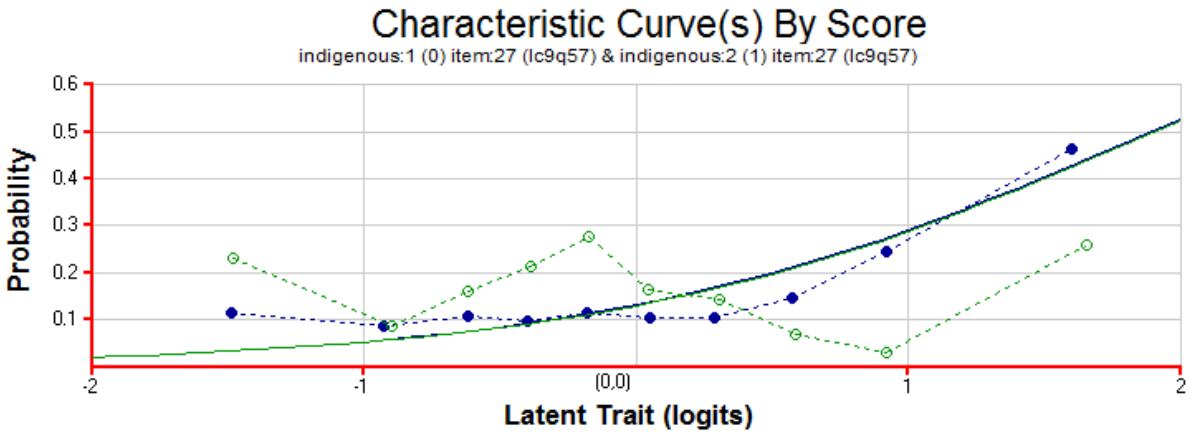

Characteristic Curve(s) By Score
indigenous:1 (0) item:5 (lc9q35) & indigenous:2 (1) item:5 (lc9q35)
Probability
Latent Trait (logits)
(0,0)

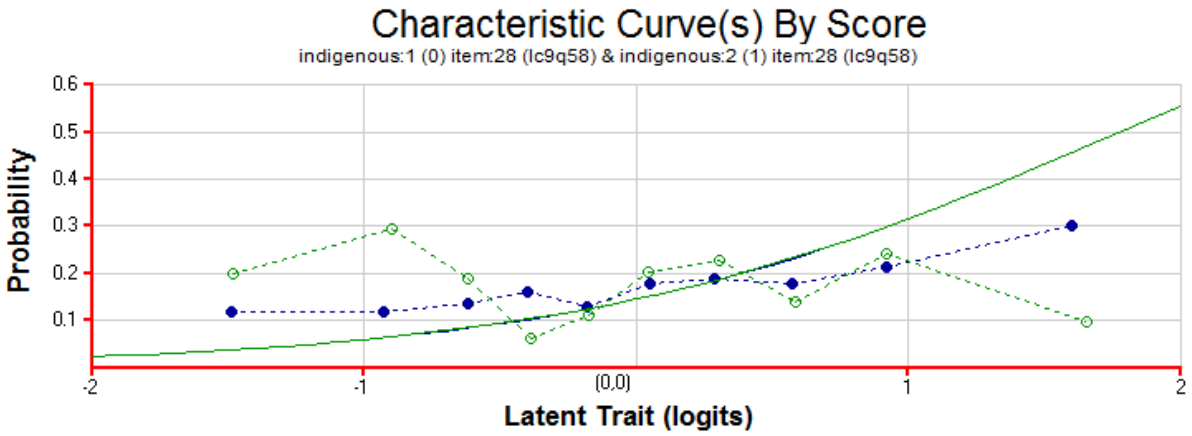

Characteristic Curve(s) By Score
indigenous:1 (0) item:9 (lc9q39) & indigenous:2 (1) item:9 (lc9q39)
Probability
Latent Trait (logits)
(0,0)


Characteristic Curve(s) By Score
indigenous:1 (0) item:23 (lc9q53) & indigenous:2 (1) item:23 (lc9q53)
Probability
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)


Characteristic Curve(s) By Score
indigenous:1 (0) item:25 (lc9q55) & indigenous:2 (1) item:25 (lc9q55)
Probability
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)


Characteristic Curve(s) By Score
indigenous:1 (0) item:26 (lc9q56) & indigenous:2 (1) item:26 (lc9q56)
Probability
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)


Characteristic Curve(s) By Score
indigenous:1 (0) item:27 (lc9q57) & indigenous:2 (1) item:27 (lc9q57)
Probability
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)


Characteristic Curve(s) By Score
indigenous:1 (0) item:28 (lc9q58) & indigenous:2 (1) item:28 (lc9q58)
Probability
0.6
0.5
0.4
0.3
0.2
0.1
-2
-1
(0,0)
1
2
Latent Trait (logits)

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	0.131	0.188	0.763
r3q02	0.370	0.527	0.514
r3q03	0.415	0.397	0.928
r3q04	0.313	0.087	0.800
r3q05	0.275	0.111	0.219
r3q06	0.048	0.132	-0.300
r3q07	-0.096	-0.015	0.203
r3q08	0.176	-0.009	0.700
r3q09	-0.043	0.287	0.721
r3q10	-0.137	0.000	0.224
r3q11	-0.133	-0.258	-0.094
r3q12	0.221	0.018	0.716
r3q13	-0.217	-0.045	-0.173
r3q14	-0.128	-0.026	0.388
r3q15	-0.152	-0.184	-0.436
r3q16	0.052	-0.103	-0.214
r3q17	-0.018	-0.098	0.438
r3q18	-0.080	-0.236	-0.298
r3q19	0.003	-0.075	-0.283
r3q20	0.180	0.011	0.252
r3q21	-0.090	-0.131	-0.072
r3q22	0.227	0.057	0.196
r3q23	-0.223	0.325	-1.008
r3q24	0.362	0.040	-0.183
r3q25	-0.083	0.068	-0.356
r3q26	-0.080	-0.238	-0.287
r3q27	-0.141	-0.132	-0.404
r3q28	0.127	0.020	-0.267
r3q29	0.108	-0.072	0.251
r3q30	0.200	0.052	0.000
r3q31	-0.096	-0.182	-0.448
r3q32	0.013	0.173	0.192
r3q33	-0.342	-0.038	-0.478
r3q34	-0.263	-0.081	-0.169
r3q35	-0.368	-0.069	-0.134
r3q36	-0.189	-0.029	-0.289
r3q37	-0.124	-0.255	-0.493
r3q38	-0.212	-0.214	-1.117

Table I.2 Year 3 Reading Item DIF:TAA

Item_Label	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
r3q01	-0.140	-0.104	0.220	-0.070	-0.085	0.215	-0.004	-0.153
r3q02	0.139	-0.190	0.104	-0.181	-0.112	0.252	0.039	-0.089
r3q03	-0.247	-0.196	0.266	-0.144	-0.104	0.286	-0.307	0.135
r3q04	-0.239	-0.091	0.338	-0.001	-0.181	0.006	0.087	-0.056
r3q05	0.165	-0.140	0.082	-0.109	0.139	-0.017	0.049	-0.126
r3q06	0.311	0.230	-0.304	0.131	0.050	-0.285	-0.153	0.041
r3q07	-0.122	-0.150	-0.055	0.017	0.178	-0.088	0.141	0.072
r3q08	0.022	-0.140	0.057	0.160	0.019	0.006	-0.120	-0.024
r3q09	-0.141	-0.045	0.091	0.106	-0.065	0.086	-0.104	0.008
r3q10	0.079	-0.114	0.041	-0.151	0.145	0.207	-0.081	-0.106
r3q11	0.133	0.006	-0.058	0.046	-0.005	0.006	-0.007	-0.079
r3q12	-0.143	-0.058	0.074	0.162	-0.060	-0.072	-0.042	0.091
r3q13	0.040	0.154	-0.176	-0.006	0.044	0.005	-0.092	0.041
r3q14	0.155	-0.142	0.186	-0.128	-0.043	0.148	0.047	-0.200
r3q15	0.040	0.035	-0.147	-0.016	0.057	-0.067	0.141	-0.022
r3q16	0.040	-0.006	0.101	0.088	-0.024	-0.163	0.080	-0.070
r3q17	0.051	-0.082	0.084	0.123	-0.132	0.135	0.003	-0.193
r3q18	0.200	0.042	-0.040	0.002	-0.031	0.052	-0.048	-0.140
r3q19	0.026	0.025	-0.205	0.086	0.102	0.058	-0.001	-0.074
r3q20	-0.151	0.081	0.074	-0.059	-0.044	0.036	-0.010	0.072
r3q21	-0.093	-0.126	0.125	0.068	-0.088	0.149	0.007	-0.010
r3q22	-0.043	-0.009	-0.114	0.088	0.034	0.187	-0.284	0.109
r3q23	0.189	0.044	0.021	-0.248	-0.223	-0.012	0.070	0.184
r3q24	0.010	0.028	0.175	-0.033	0.071	-0.195	-0.054	0.031
r3q25	-0.210	-0.085	0.224	0.078	0.126	-0.040	-0.211	0.270
r3q26	0.082	0.114	-0.293	-0.041	0.096	0.051	-0.004	-0.008
r3q27	-0.002	0.252	-0.208	-0.246	0.068	0.015	0.062	0.049
r3q28	0.116	0.014	0.050	0.106	0.012	-0.318	0.117	-0.047
r3q29	0.149	-0.18	-0.064	0.189	0.016	-0.010	0.053	-0.125
r3q30	0.010	-0.036	0.075	0.032	0.020	-0.118	0.102	-0.040
r3q31	0.091	0.037	0.009	-0.192	-0.024	-0.042	0.116	0.026
r3q32	-0.051	0.053	0.032	0.046	0.054	-0.019	-0.079	-0.024
r3q33	-0.085	0.159	0.044	0.065	-0.142	-0.256	0.112	0.190
r3q34	-0.156	0.024	0.030	0.145	-0.081	-0.162	0.163	0.056
r3q35	-0.148	0.025	-0.219	0.033	0.094	0.095	0.122	-0.004
r3q36	-0.345	0.163	-0.062	0.093	0.046	-0.013	-0.017	0.121
r3q37	-0.032	0.336	-0.510	-0.027	-0.028	-0.139	0.166	0.268
r3q38	0.300	0.075	-0.046	-0.210	0.103	0.022	-0.058	-0.170

Table I.3 Year 5 Reading Item DIF: Gender, LBOTE, and Indigenous

Item_Label	Gender_Difference	LBOTE__Difference	Indigenous Difference
r5q01	0.287	0.130	0.213
r5q02	0.385	0.180	0.684
r5q03	0.062	0.056	0.117
r5q04	-0.045	0.226	0.024
r5q05	0.439	0.719	1.125
r5q06	-0.214	0.048	0.291
r5q07	0.030	0.267	0.762
r5q08	0.162	-0.263	0.115
r5q09	0.360	0.043	0.256
r5q10	0.003	0.398	0.968
r5q11	-0.025	-0.101	0.411
r5q12	0.202	0.018	0.149
r5q13	-0.106	0.053	-0.222
r5q14	0.166	0.091	-0.023
r5q15	0.343	0.343	0.571
r5q16	0.245	-0.007	0.288
r5q17	0.167	-0.165	0.211
r5q18	0.125	0.221	0.386
r5q19	-0.209	-0.170	-0.183
r5q20	-0.088	0.056	0.012
r5q21	-0.017	-0.258	-0.175
r5q22	-0.182	-0.114	-0.553
r5q23	0.038	0.022	-0.083
r5q24	0.089	-0.244	-0.436
r5q25	0.161	0.110	-0.130
r5q26	0.141	-0.046	0.097
r5q27	-0.554	-0.044	-0.684
r5q28	-0.321	-0.155	-0.063
r5q29	-0.223	-0.183	-0.483
r5q30	-0.214	-0.123	-0.187
r5q31	-0.226	-0.068	-0.556
r5q32	-0.121	0.144	-0.158
r5q33	-0.141	-0.164	-0.691
r5q34	0.215	-0.360	-0.308
r5q35	-0.189	-0.181	-0.021
r5q36	-0.269	-0.162	-0.453
r5q37	-0.274	-0.310	-0.660
r5q38	-0.201	-0.010	-0.610

Table I.4 Year 5 Reading Item DIF: TAA

Item_Label	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
r5q01	0.091	-0.095	0.070	-0.010	0.024	-0.012	-0.088	0.069
r5q02	0.052	-0.199	0.325	-0.172	-0.116	0.158	-0.111	-0.109
r5q03	-0.177	-0.150	-0.014	0.041	0.144	-0.052	0.146	0.075
r5q04	-0.197	0.146	0.104	-0.054	-0.140	-0.043	0.185	0.015
r5q05	-0.600	-0.213	0.650	-0.120	-0.216	0.063	-0.212	-0.058
r5q06	-0.165	-0.020	0.094	0.011	0.055	0.007	0.109	-0.059
r5q07	-0.072	-0.468	0.536	-0.271	-0.131	0.267	-0.304	0.004
r5q08	-0.020	0.095	-0.085	0.084	0.004	0.163	-0.188	-0.017
r5q09	-0.119	0.080	0.151	0.042	-0.043	0.020	-0.218	0.077
r5q10	-0.199	-0.352	0.407	0.109	-0.087	0.144	-0.201	-0.171
r5q11	0.048	0.026	0.019	0.085	-0.048	0.057	-0.019	-0.094
r5q12	0.193	0.027	-0.109	-0.166	0.038	0.064	-0.059	0.079
r5q13	0.053	0.052	-0.154	0.093	-0.024	0.015	0.182	-0.139
r5q14	0.026	-0.040	0.057	0.083	-0.118	-0.004	-0.001	0.051
r5q15	-0.291	-0.318	0.273	-0.101	0.072	0.164	-0.056	0.077
r5q16	0.092	-0.051	0.081	0.146	-0.022	0.005	-0.076	-0.102
r5q17	0.153	-0.098	-0.042	0.073	-0.005	0.063	-0.095	0.036
r5q18	-0.095	0.028	0.102	0.162	-0.137	0.015	0.070	-0.121
r5q19	-0.077	0.016	-0.167	0.222	0.080	0.063	0.153	-0.249
r5q20	-0.079	0.045	-0.214	0.205	-0.033	-0.028	0.149	0.008
r5q21	0.041	0.124	-0.021	-0.067	-0.041	-0.003	-0.019	0.051
r5q22	0.052	0.184	-0.183	-0.211	0.082	0.200	0.065	-0.129
r5q23	0.108	0.169	-0.150	-0.092	0.117	-0.010	-0.075	-0.012
r5q24	0.275	0.066	-0.088	0.018	-0.123	0.053	-0.109	-0.021
r5q25	0.205	0.142	-0.019	-0.165	-0.046	-0.160	0.002	0.104
r5q26	-0.011	-0.014	-0.063	0.035	0.034	-0.078	0.187	-0.016
r5q27	0.004	0.028	-0.115	-0.044	0.072	-0.196	0.182	0.132
r5q28	-0.088	0.117	-0.203	0.004	0.101	0.029	0.079	0.004
r5q29	0.033	0.052	-0.210	0.090	0.001	-0.050	0.091	0.044
r5q30	-0.104	0.275	-0.016	0.014	-0.031	-0.161	-0.011	0.110
r5q31	0.192	0.051	-0.096	-0.067	0.02	-0.073	-0.093	0.121
r5q32	-0.042	0.157	-0.126	0.011	-0.007	-0.121	0.038	0.138
r5q33	0.448	-0.083	-0.199	0.023	-0.130	-0.042	0.019	0.025
r5q34	0.026	0.034	-0.127	0.112	0.190	-0.077	-0.054	-0.043
r5q35	0.102	0.107	-0.053	0.070	-0.032	-0.092	0.099	-0.130
r5q36	-0.099	0.133	-0.069	0.145	-0.074	-0.135	0.045	0.117
r5q37	0.211	-0.110	-0.235	-0.115	0.433	-0.103	0.127	-0.106
r5q38	0.030	0.055	-0.112	-0.227	0.135	-0.115	0.060	0.235

Table I.5 Year 7 Reading Item DIF: Gender, LBOTE, and Indigenous

Item_Label	Gender_Difference	LBOTE__Difference	Indigenous Difference
r7q01	0.256	0.225	0.715
r7q02	0.386	0.216	0.679
r7q03	-0.131	0.384	0.245
r7q04	-0.172	0.044	0.257
r7q05	0.108	0.360	0.679
r7q06	0.100	0.366	0.529
r7q07	0.056	-0.026	0.228
r7q08	-0.137	-0.102	-0.544
r7q09	0.059	0.143	0.415
r7q10	0.174	-0.120	-0.035
r7q11	0.194	0.086	0.301
r7q12	-0.070	0.213	0.987
r7q13	-0.354	0.152	-0.190
r7q14	0.015	0.021	0.522
r7q15	0.055	-0.271	0.205
r7q16	0.072	-0.117	-0.080
r7q17	0.482	0.162	0.372
r7q18	0.255	0.074	-0.050
r7q19	-0.465	-0.333	-0.193
r7q20	-0.114	0.037	0.178
r7q21	-0.028	-0.176	-0.367
r7q22	-0.104	-0.102	0.457
r7q23	-0.127	-0.081	0.027
r7q24	0.156	0.093	0.401
r7q25	0.037	0.228	-0.050
r7q26	0.117	0.161	0.260
r7q27	0.004	-0.067	0.265
r7q28	-0.040	-0.111	-0.209
r7q29	-0.176	0.089	-0.058
r7q30	0.165	-0.006	-0.204
r7q31	0.154	-0.268	-0.161
r7q32	-0.051	0.092	0.221
r7q33	-0.108	-0.130	0.060
r7q34	0.067	0.035	0.120
r7q35	-0.238	-0.042	-0.480
r7q36	0.211	-0.007	-0.249
r7q37	-0.261	-0.124	-0.073
r7q38	-0.238	0.150	-0.596
r7q39	-0.149	-0.280	-0.224
r7q40	-0.054	-0.223	-0.372
r7q41	-0.115	0.090	-0.513
r7q42	-0.770	-0.107	-0.889
r7q43	0.082	0.079	-0.099
r7q44	-0.049	-0.264	-0.947
r7q45	-0.164	-0.116	-0.565
r7q46	0.312	-0.067	0.119
r7q47	0.038	-0.084	-0.461
r7q48	0.077	-0.050	-0.189
r7q49	0.174	0.100	-0.216
r7q50	0.310	-0.328	-0.225

Table I.6 Year 7 Reading Item DIF: TAA

Item_Label	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
r7q01	-0.154	0.080	0.301	0.035	-0.397	-0.224	-0.089	0.126
r7q02	-0.169	0.084	0.298	-0.140	-0.219	0.215	-0.209	-0.100
r7q03	0.021	0.081	-0.096	-0.089	-0.145	-0.017	0.234	0.025
r7q04	0.174	-0.128	0.134	-0.153	-0.104	0.150	0.060	-0.158
r7q05	-0.018	-0.111	0.358	-0.255	-0.049	0.113	-0.237	-0.064
r7q06	-0.020	0.160	0.086	-0.018	-0.054	-0.099	0.033	-0.090
r7q07	-0.276	0.077	0.063	0.026	0.074	0.127	0.126	-0.175
r7q08	0.146	0.089	-0.383	-0.316	0.326	0.000	0.116	-0.020
r7q09	-0.156	0.187	0.031	-0.111	0.120	0.086	-0.108	-0.076
r7q10	0.243	-0.060	-0.074	0.198	-0.203	-0.081	-0.077	0.099
r7q11	0.077	-0.136	0.125	-0.162	-0.054	0.108	-0.025	0.092
r7q12	0.017	-0.032	0.437	-0.101	-0.236	0.051	-0.324	-0.056
r7q13	-0.177	-0.095	-0.096	0.043	0.113	0.056	0.099	0.088
r7q14	-0.033	0.008	0.332	-0.127	-0.055	-0.074	-0.128	0.099
r7q15	0.017	-0.069	-0.093	0.022	0.124	0.054	0.019	-0.046
r7q16	-0.094	-0.080	0.015	0.106	0.076	0.084	-0.026	-0.047
r7q17	-0.090	0.179	0.319	-0.001	-0.021	0.040	-0.293	-0.096
r7q18	0.024	0.016	-0.142	-0.023	0.069	0.026	0.028	0.028
r7q19	-0.022	-0.207	0.049	0.124	0.171	-0.030	-0.021	0.006
r7q20	0.066	-0.033	-0.085	-0.113	0.171	-0.031	-0.047	0.096
r7q21	0.126	-0.083	-0.103	0.075	0.030	-0.046	0.121	-0.091
r7q22	-0.170	0.072	0.130	0.194	-0.044	-0.047	-0.114	0.041
r7q23	0.016	0.016	-0.079	0.021	0.229	-0.127	0.015	-0.063
r7q24	-0.483	0.008	0.210	0.028	0.028	0.014	0.002	0.094
r7q25	0.098	-0.045	0.003	0.098	-0.092	-0.193	0.024	0.154
r7q26	0.018	0.112	-0.035	-0.008	-0.012	-0.101	0.044	0.015
r7q27	-0.101	0.031	-0.093	0.072	-0.106	0.069	0.095	0.049
r7q28	-0.094	0.021	-0.304	0.136	0.261	0.019	0.021	-0.059
r7q29	0.147	0.003	0.082	-0.075	-0.066	-0.041	0.087	-0.083
r7q30	-0.059	0.218	0.089	0.145	0.006	-0.112	-0.091	-0.135
r7q31	0.052	-0.115	0.090	-0.112	0.352	0.319	-0.247	-0.247
r7q32	-0.017	-0.154	0.076	-0.054	0.041	0.094	-0.006	0.054
r7q33	-0.157	-0.063	0.104	0.193	-0.050	-0.085	0.162	-0.023
r7q34	-0.074	-0.108	0.132	0.230	-0.196	-0.087	0.174	0.003
r7q35	0.263	-0.062	-0.186	-0.055	-0.091	0.006	0.044	0.075
r7q36	0.125	0.001	-0.015	-0.204	0.218	-0.025	-0.095	0.019
r7q37	0.116	0.113	-0.129	0.133	0.001	-0.139	-0.035	-0.033
r7q38	-0.013	0.056	-0.161	-0.041	0.012	-0.014	0.071	0.097
r7q39	0.205	-0.106	0.058	0.057	-0.026	-0.109	-0.068	0.047
r7q40	-0.079	0.107	-0.165	0.050	0.041	0.074	0.019	-0.034
r7q41	0.155	-0.058	0.060	0.026	0.030	-0.004	-0.154	-0.006
r7q42	0.210	-0.067	-0.316	-0.073	0.111	-0.019	-0.006	0.080
r7q43	-0.108	0.093	0.044	0.127	-0.046	-0.135	0.120	-0.031
r7q44	0.195	-0.208	-0.236	-0.092	-0.064	0.066	0.323	0.015
r7q45	0.248	-0.030	-0.280	0.040	-0.107	-0.127	0.046	0.178
r7q46	-0.172	0.033	-0.096	0.218	-0.147	0.098	0.027	0.054
r7q47	0.208	0.047	-0.188	0.064	-0.070	-0.155	-0.014	0.117
r7q48	-0.348	0.014	-0.089	-0.007	0.134	0.184	0.056	0.105
r7q49	0.007	0.221	-0.124	-0.049	0.027	-0.014	0.112	-0.160
r7q50	0.107	-0.079	-0.060	-0.082	-0.113	0.082	0.134	0.039

Table I.7 Year 9 Reading Item DIF: Gender, LBOTE, and Indigenous

Item_Label	Gender_Difference	LBOTE__Difference	Indigenous Difference
r9q01	-0.017	-0.077	0.462
r9q02	-0.186	0.295	0.519
r9q03	0.251	0.634	1.160
r9q04	-0.225	-0.061	0.530
r9q05	0.102	-0.092	0.561
r9q06	-0.418	0.240	0.120
r9q07	-0.149	0.692	0.684
r9q08	0.399	0.318	0.791
r9q09	0.144	-0.197	-0.160
r9q10	0.333	0.240	0.777
r9q11	0.145	0.057	-0.178
r9q12	0.467	0.291	0.670
r9q13	-0.014	0.369	-0.058
r9q14	-0.155	0.299	0.557
r9q15	0.071	0.067	0.062
r9q16	0.180	0.148	0.464
r9q17	-0.358	0.347	0.368
r9q18	0.462	0.139	-0.404
r9q19	-0.476	-0.172	-0.119
r9q20	0.160	-0.183	-0.182
r9q21	0.189	0.028	-0.009
r9q22	-0.130	-0.252	-0.397
r9q23	0.010	-0.185	-0.586
r9q24	-0.052	-0.138	0.194
r9q25	0.110	0.165	-0.310
r9q26	0.198	0.270	-0.164
r9q27	0.069	0.168	-0.015
r9q28	0.183	-0.108	-0.107
r9q29	0.102	-0.117	-0.226
r9q30	0.234	-0.134	0.240
r9q31	-0.372	-0.182	-0.639
r9q32	-0.084	-0.404	0.184
r9q33	0.040	-0.200	0.225
r9q34	-0.059	0.033	-0.268
r9q35	-0.668	-0.214	-0.439
r9q36	-0.018	-0.177	0.194
r9q37	0.124	-0.515	-0.587
r9q38	-0.216	-0.024	-0.584
r9q39	0.096	0.042	-0.099
r9q40	0.175	-0.156	-0.229
r9q41	-0.453	-0.117	-0.035
r9q42	0.103	-0.022	-0.145
r9q43	-0.024	-0.032	0.028
r9q44	-0.265	-0.123	-0.599
r9q45	-0.343	0.000	-0.540
r9q46	0.245	-0.045	0.116
r9q47	0.054	-0.156	-0.329
r9q48	0.049	-0.041	-0.069
r9q49	-0.045	-0.289	-0.545
r9q50	0.034	-0.431	-0.884

Table I.8 Year 9 Reading Item DIF: TAA

Item_Label	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
r9q01	0.025	-0.196	-0.106	-0.143	0.417	0.188	-0.005	-0.279
r9q02	-0.070	0.049	0.261	-0.374	-0.269	-0.106	0.226	0.119
r9q03	-0.727	-0.174	0.610	0.115	-0.253	0.135	-0.536	0.068
r9q04	-0.073	-0.145	0.115	0.013	0.055	0.165	-0.104	-0.019
r9q05	-0.013	0.035	0.211	0.056	-0.005	0.098	-0.258	-0.133
r9q06	0.135	0.126	-0.232	-0.151	0.004	0.107	-0.019	0.037
r9q07	-0.237	0.022	0.249	-0.184	-0.071	0.130	-0.044	0.070
r9q08	-0.156	-0.028	0.325	-0.027	-0.105	0.101	-0.098	-0.076
r9q09	-0.006	-0.046	-0.136	-0.051	0.010	0.085	0.057	0.107
r9q10	0.105	-0.162	0.315	0.114	-0.159	0.158	-0.082	-0.422
r9q11	-0.039	0.175	-0.015	0.026	-0.184	-0.113	0.077	0.105
r9q12	-0.206	0.023	0.369	0.091	-0.108	0.016	-0.322	0.068
r9q13	0.077	0.015	-0.039	0.027	0.109	-0.136	-0.106	0.108
r9q14	-0.153	-0.096	0.080	0.139	-0.065	0.171	0.151	-0.255
r9q15	0.027	0.126	0.084	-0.026	0.000	-0.076	0.018	-0.096
r9q16	-0.076	-0.072	0.297	-0.058	-0.022	0.077	0.136	-0.286
r9q17	-0.029	-0.034	0.142	0.248	-0.174	0.014	0.003	-0.165
r9q18	0.282	0.180	-0.062	-0.137	0.004	-0.191	0.052	-0.083
r9q19	-0.002	0.094	-0.174	-0.165	0.149	0.079	0.076	-0.044
r9q20	0.006	-0.004	0.092	0.018	0.140	0.059	-0.146	-0.083
r9q21	-0.064	0.210	-0.115	-0.105	0.150	-0.061	-0.071	0.081
r9q22	0.145	-0.109	-0.069	-0.213	0.141	-0.150	0.080	0.199
r9q23	0.261	0.117	-0.264	-0.006	-0.185	-0.139	0.106	0.075
r9q24	0.077	-0.091	0.018	0.088	-0.097	0.083	0.086	-0.069
r9q25	0.227	0.192	-0.142	0.124	-0.203	-0.264	0.080	0.002
r9q26	0.026	0.064	0.038	0.013	-0.014	-0.064	0.047	-0.048
r9q27	0.064	0.044	-0.150	0.086	-0.068	-0.022	0.110	-0.040
r9q28	-0.019	0.157	-0.103	0.034	0.019	-0.020	0.035	-0.064
r9q29	-0.028	0.092	-0.042	-0.027	-0.047	0.000	-0.012	0.100
r9q30	0.043	-0.007	-0.118	0.071	0.226	-0.046	-0.093	-0.034
r9q31	0.238	-0.122	-0.208	-0.159	-0.038	0.031	0.051	0.181
r9q32	-0.051	-0.060	0.215	0.116	0.204	-0.008	-0.113	-0.186
r9q33	-0.137	0.013	0.021	0.190	0.150	0.037	-0.079	-0.145
r9q34	-0.019	-0.043	0.061	0.095	0.110	-0.063	-0.007	-0.038
r9q35	0.011	0.012	-0.040	0.029	0.022	-0.018	0.003	0.037
r9q36	0.136	-0.053	-0.005	0.089	-0.095	0.101	-0.098	-0.012
r9q37	0.053	0.029	0.038	0.135	-0.008	-0.109	0.173	-0.206
r9q38	-0.063	-0.183	-0.231	0.080	0.088	0.123	0.184	0.019
r9q39	0.027	-0.021	-0.010	-0.040	-0.029	-0.061	0.081	0.097
r9q40	0.049	-0.048	-0.272	0.134	0.037	-0.064	0.036	0.119
r9q41	0.060	-0.059	-0.082	-0.007	-0.053	0.172	-0.124	0.131
r9q42	0.002	0.096	-0.087	0.012	-0.096	-0.113	-0.026	0.227
r9q43	-0.024	-0.047	-0.070	0.068	0.011	-0.144	0.098	0.141
r9q44	0.218	-0.044	-0.117	0.019	-0.012	-0.004	-0.001	-0.034
r9q45	0.048	0.195	-0.237	-0.205	0.002	-0.035	-0.012	0.214
r9q46	-0.151	0.007	-0.040	-0.071	-0.026	0.100	0.021	0.183
r9q47	0.170	0.035	-0.060	0.106	0.004	-0.269	0.025	0.025
r9q48	-0.210	0.015	0.006	-0.139	0.121	0.055	0.173	0.039
r9q49	0.086	-0.080	-0.069	-0.140	0.017	0.119	0.085	0.019
r9q50	-0.043	-0.196	-0.249	0.091	0.199	-0.125	0.087	0.246

Table I.9 Year 3 Spelling Item DIF: Gender, LBOTE, and Indigenous

Item_Label	Gender_Difference	LBOTE__Difference	Indigenous Difference
lc3q01	-0.359	0.286	-0.234
lc3q02	0.042	0.062	-0.092
lc3q03	-0.275	0.153	-0.260
lc3q04	0.435	-0.228	0.331
lc3q05	0.006	-0.073	-0.122
lc3q06	0.362	0.064	-0.007
lc3q07	0.515	0.103	-0.016
lc3q08	-0.136	-0.401	-0.201
lc3q09	-0.231	0.270	-0.020
lc3q10	-0.037	-0.391	0.320
lc3q11	-0.025	0.245	0.180
lc3q12	-0.215	0.342	0.248
lc3q13	-0.284	0.262	0.084
lc3q14	-0.012	0.253	-0.335
lc3q15	0.077	-0.192	-0.196
lc3q16	0.085	0.049	0.187
lc3q17	0.411	-0.322	0.175
lc3q18	0.201	0.009	-0.453
lc3q19	-0.714	-0.450	0.479
lc3q20	-0.366	-0.201	-0.147
lc3q21	0.207	0.158	0.142
lc3q22	0.304	-0.168	-0.155
lc3q23	0.126	0.254	0.209
lc3q24	-0.127	-0.147	-0.408
lc3q25	0.009	0.063	0.290

Table I.10 Year 3 Spelling Item DIF:TAA

Item_Label	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
lc3q01	0.039	0.045	-0.234	-0.054	-0.260	-0.123	0.126	0.247
lc3q02	0.148	0.293	-0.244	-0.339	0.089	0.184	-0.177	-0.086
lc3q03	0.023	-0.022	0.158	-0.407	0.021	-0.385	0.156	0.312
lc3q04	-0.018	-0.167	0.069	-0.004	-0.408	0.355	0.007	0.015
lc3q05	0.253	-0.122	-0.181	-0.086	0.071	0.054	-0.005	-0.046
lc3q06	0.108	0.076	0.022	0.042	-0.291	0.017	0.007	-0.039
lc3q07	-0.090	0.215	-0.093	0.018	-0.205	-0.012	0.026	0.068
lc3q08	0.087	-0.116	-0.172	0.026	-0.084	0.207	-0.077	0.062
lc3q09	0.001	0.059	0.171	-0.226	-0.126	-0.003	0.032	0.072
lc3q10	-0.184	0.071	-0.199	-0.048	0.464	0.120	-0.267	0.037
lc3q11	-0.027	-0.180	0.240	0.105	-0.022	-0.130	0.038	0.024
lc3q12	-0.105	-0.080	-0.027	0.061	0.032	-0.091	0.139	0.058
lc3q13	-0.127	-0.044	0.206	0.391	-0.194	-0.086	0.036	-0.033
lc3q14	0.064	0.221	-0.123	0.101	0.179	-0.263	0.120	-0.278
lc3q15	0.114	-0.292	-0.173	-0.125	0.105	-0.067	-0.164	0.516
lc3q16	0.224	-0.270	0.052	-0.041	0.065	0.003	0.169	-0.185
lc3q17	0.073	-0.090	-0.066	-0.044	0.092	0.263	0.009	-0.208
lc3q18	-0.119	0.030	0.007	-0.198	0.244	0.048	0.269	-0.268
lc3q19	-0.113	-0.101	-0.094	0.416	0.047	0.129	-0.128	-0.062
lc3q20	0.109	-0.156	-0.139	-0.039	-0.081	0.060	0.071	0.149
lc3q21	0.084	0.140	0.424	-0.193	-0.054	-0.177	0.096	-0.234
lc3q22	0.011	-0.193	-0.014	0.120	-0.083	0.141	-0.067	0.134
lc3q23	-0.119	0.107	0.039	0.096	0.089	-0.124	-0.047	-0.006
lc3q24	-0.238	0.159	0.259	0.405	0.521	-0.433	-0.073	-0.233
lc3q25	-0.201	0.415	0.115	0.021	-0.211	0.313	-0.295	-0.016

Table I.11 Year 5 Spelling Item DIF: Gender, LBOTE, and Indigenous

Item_Label	Gender_Difference	LBOTE__Difference	Indigenous Difference
lc5q01	0.264	0.328	-0.078
lc5q02	0.044	0.025	-0.110
lc5q03	0.181	0.030	0.200
lc5q04	-0.040	0.163	0.050
lc5q05	0.152	0.378	-0.043
lc5q06	-0.253	0.277	-0.041
lc5q07	0.338	-0.029	-0.245
lc5q08	0.339	-0.491	-0.413
lc5q09	0.154	0.191	0.335
lc5q10	-0.263	-0.006	0.396
lc5q11	0.067	-0.486	-0.095
lc5q12	-0.022	-0.019	0.264
lc5q13	-0.371	0.111	0.078
lc5q14	0.229	0.124	0.000
lc5q15	-0.594	0.525	0.010
lc5q16	-0.445	-0.562	-0.071
lc5q17	0.144	-0.156	-0.276
lc5q18	0.321	-0.086	-0.229
lc5q19	0.019	0.036	0.031
lc5q20	-0.132	-0.090	0.209
lc5q21	-0.332	-0.211	0.579
lc5q22	0.253	0.363	0.141
lc5q23	0.215	-0.081	-0.413
lc5q24	0.153	-0.094	-0.104
lc5q25	-0.423	-0.240	-0.179

Table I.12 Year 5 Spelling Item DIF: TAA

Item_Label	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
lc5q01	0.145	0.004	-0.064	-0.034	0.076	-0.289	0.141	-0.097
lc5q02	-0.056	0.059	-0.083	0.191	-0.088	0.078	-0.037	-0.215
lc5q03	0.200	-0.023	0.049	0.249	-0.230	-0.206	-0.206	0.008
lc5q04	0.252	0.028	0.109	0.069	-0.291	-0.178	0.243	-0.310
lc5q05	0.179	-0.128	0.219	-0.157	-0.166	-0.006	0.077	0.000
lc5q06	-0.058	0.080	-0.114	-0.066	0.010	-0.155	0.157	0.125
lc5q07	0.118	-0.011	-0.015	-0.170	-0.127	0.055	0.095	0.059
lc5q08	0.177	-0.430	-0.127	-0.072	0.071	0.329	0.125	-0.064
lc5q09	0.045	0.079	0.269	-0.101	0.131	-0.197	-0.143	-0.034
lc5q10	-0.144	-0.031	0.101	0.192	-0.319	0.091	0.221	-0.075
lc5q11	-0.100	-0.031	-0.196	0.189	0.026	-0.149	0.243	-0.003
lc5q12	-0.454	0.171	0.135	-0.027	0.269	-0.036	0.022	-0.024
lc5q13	-0.192	0.111	-0.046	-0.036	-0.174	0.054	-0.033	0.320
lc5q14	0.183	-0.089	0.149	-0.164	-0.073	-0.013	0.103	-0.104
lc5q15	0.000	-0.022	0.177	0.281	-0.034	0.026	-0.192	-0.197
lc5q16	-0.131	-0.104	-0.064	0.007	0.098	0.222	-0.102	0.053
lc5q17	0.073	0.044	0.035	-0.014	0.146	-0.111	-0.002	-0.163
lc5q18	0.187	0.077	-0.086	-0.167	0.191	-0.113	-0.146	0.039
lc5q19	-0.267	0.340	-0.013	-0.062	-0.111	0.065	-0.014	0.050
lc5q20	-0.116	0.119	-0.074	0.075	-0.060	0.225	-0.091	-0.058
lc5q21	-0.151	-0.104	0.073	0.050	0.037	0.520	-0.276	0.037
lc5q22	-0.206	-0.023	-0.206	-0.048	0.181	0.079	-0.088	0.340
lc5q23	0.403	-0.063	-0.202	-0.288	0.060	-0.007	-0.052	0.182
lc5q24	-0.024	0.009	-0.003	-0.005	0.315	-0.284	-0.087	0.139
lc5q25	-0.064	-0.061	-0.022	0.106	0.061	0.000	0.043	-0.007

Table I.13 Year 7 Spelling Item DIF: Gender, LBOTE, and Indigenous

Item_Label	Gender_Difference	LBOTE__Difference	Indigenous Difference
lc7q01	0.013	0.296	-0.076
lc7q02	-0.076	0.221	0.036
lc7q03	0.315	0.784	0.404
lc7q04	0.573	-0.041	-0.200
lc7q05	0.228	0.333	-0.095
lc7q06	0.009	-0.592	-0.454
lc7q07	0.094	0.103	0.076
lc7q08	0.354	0.017	-0.313
lc7q09	-0.168	0.113	0.072
lc7q10	-1.318	0.101	-0.264
lc7q11	0.066	0.001	-0.398
lc7q12	0.151	-0.309	0.010
lc7q13	0.268	-0.372	0.237
lc7q14	-0.298	0.639	0.042
lc7q15	0.131	0.145	0.033
lc7q16	0.191	-0.026	0.291
lc7q17	0.157	0.141	-0.029
lc7q18	0.060	-0.202	-0.447
lc7q19	0.080	-0.107	0.140
lc7q20	-0.326	-0.027	-0.079
lc7q21	0.486	-0.037	0.278
lc7q22	-0.149	-0.183	-0.083
lc7q23	-0.222	-0.158	-0.233
lc7q24	-0.455	0.059	0.482
lc7q25	0.183	-0.452	0.055
lc7q26	0.263	0.018	-0.402
lc7q27	0.050	-0.129	-0.138
lc7q28	-0.242	-0.466	0.959
lc7q29	-0.119	0.517	-0.362
lc7q30	-0.299	-0.387	0.459

Table I.14 Year 7 Spelling Item DIF: TAA

Item_Label	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
lc7q01	0.418	0.062	-0.304	-0.011	-0.012	0.006	-0.009	-0.238
lc7q02	0.085	-0.197	0.030	0.045	-0.042	-0.389	0.114	0.153
lc7q03	0.059	0.166	0.273	0.078	-0.379	-0.237	-0.181	0.069
lc7q04	0.006	0.139	0.015	0.079	0.023	-0.055	-0.139	-0.093
lc7q05	-0.015	0.002	0.138	0.307	-0.112	-0.320	-0.064	0.096
lc7q06	-0.075	-0.081	-0.300	0.097	0.053	0.144	0.012	0.074
lc7q07	-0.116	0.081	-0.201	-0.337	0.329	0.121	0.033	0.002
lc7q08	0.023	-0.137	0.145	-0.014	0.204	-0.202	-0.012	-0.006
lc7q09	-0.093	0.020	-0.137	-0.067	-0.002	0.155	-0.001	0.089
lc7q10	0.097	-0.014	-0.085	0.205	0.077	-0.141	-0.138	-0.025
lc7q11	-0.065	-0.050	0.468	-0.341	0.074	0.061	0.054	-0.032
lc7q12	-0.149	0.025	0.108	0.069	0.095	0.078	-0.022	-0.123
lc7q13	0.093	-0.014	-0.225	-0.050	-0.021	0.180	0.067	-0.079
lc7q14	0.121	0.036	0.108	0.130	0.058	-0.180	-0.176	-0.114
lc7q15	-0.206	0.209	0.045	-0.098	0.198	-0.016	-0.128	-0.074
lc7q16	-0.163	-0.344	0.241	0.056	0.066	0.160	-0.064	0.047
lc7q17	0.257	-0.128	0.046	0.008	0.009	-0.187	-0.107	0.088
lc7q18	0.087	0.061	-0.002	-0.093	0.010	-0.166	0.144	-0.062
lc7q19	-0.007	0.120	-0.124	0.061	-0.055	0.085	-0.050	-0.061
lc7q20	-0.145	0.049	0.059	-0.022	0.158	0.072	-0.030	-0.138
lc7q21	0.122	-0.010	-0.143	-0.133	0.049	0.019	0.075	-0.045
lc7q22	-0.057	0.070	-0.084	0.030	0.201	0.062	-0.181	-0.054
lc7q23	0.106	-0.008	0.017	0.042	-0.112	-0.083	0.043	-0.011
lc7q24	-0.088	0.170	0.170	0.120	-0.345	-0.081	0.164	0.007
lc7q25	-0.028	-0.058	-0.391	-0.072	0.112	0.352	-0.075	0.091
lc7q26	0.071	0.161	-0.032	-0.251	-0.396	0.167	0.319	0.007
lc7q27	0.087	-0.202	-0.035	-0.047	-0.211	0.000	0.182	0.231
lc7q28	-0.234	-0.216	0.213	0.545	0.046	0.203	-0.044	-0.125
lc7q29	0.163	0.090	0.246	-0.144	-0.149	-0.235	0.129	-0.049
lc7q30	-0.355	-0.002	-0.260	-0.192	0.073	0.427	0.085	0.377

Table I.15 Year 9 Spelling Item DIF: Gender, LBOTE, and Indigenous

Item_Label	Gender_Difference	LBOTE__Difference	Indigenous Difference
lc9q01	-0.098	-0.203	-0.443
lc9q02	-0.312	-0.102	-0.499
lc9q03	0.331	0.323	-0.023
lc9q04	0.173	-0.005	-0.217
lc9q05	0.267	0.089	-0.35
lc9q06	0.272	0.196	0.052
lc9q07	-0.092	-0.116	-0.347
lc9q08	0.021	0.265	-0.437
lc9q09	0.252	-0.146	-0.024
lc9q10	0.014	-0.145	-0.412
lc9q11	0.399	-0.092	-0.019
lc9q12	0.395	-0.132	-0.195
lc9q13	-1.090	0.177	-0.229
lc9q14	-0.236	0.110	-0.064
lc9q15	0.211	0.001	0.118
lc9q16	0.288	0.266	0.167
lc9q17	0.203	-0.105	-0.052
lc9q18	-0.253	0.087	0.132
lc9q19	-0.670	0.158	0.129
lc9q20	0.515	-0.270	0.048
lc9q21	0.037	-0.138	-0.178
lc9q22	-0.265	-0.027	0.013
lc9q23	-0.338	-0.133	0.100
lc9q24	-0.127	-0.306	0.166
lc9q25	0.428	0.174	0.366
lc9q26	-0.064	0.132	1.042
lc9q27	0.235	0.799	0.138
lc9q28	-0.079	-0.545	-0.014
lc9q29	-0.481	-0.164	0.681
lc9q30	0.063	-0.147	0.348

Table I.16 Year 9 Spelling Item DIF: TAA

Item_Label	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
lc9q01	0.067	-0.184	-0.040	0.335	-0.309	-0.131	0.079	-0.206
lc9q02	-0.091	-0.286	-0.258	0.150	-0.015	-0.082	0.397	-0.044
lc9q03	-0.314	-0.024	-0.002	0.093	-0.275	0.198	0.024	0.027
lc9q04	0.068	-0.141	0.078	-0.035	0.046	0.132	-0.038	-0.207
lc9q05	-0.107	0.153	0.001	0.023	0.112	-0.020	-0.051	-0.160
lc9q06	0.059	0.168	-0.028	-0.088	0.001	-0.181	-0.104	0.144
lc9q07	0.103	-0.107	0.040	0.283	0.169	-0.157	-0.475	0.159
lc9q08	0.071	-0.020	-0.194	-0.004	0.152	-0.199	-0.163	0.288
lc9q09	0.257	0.039	0.002	0.196	-0.166	-0.107	-0.251	0.031
lc9q10	0.206	0.156	-0.097	-0.063	-0.110	-0.105	0.024	-0.061
lc9q11	0.188	0.228	0.108	-0.288	0.081	0.166	-0.244	-0.200
lc9q12	-0.126	0.016	-0.007	-0.081	0.179	0.031	0.075	-0.100
lc9q13	-0.273	0.052	0.137	0.146	-0.137	-0.123	0.010	0.235
lc9q14	-0.098	-0.015	-0.404	0.188	0.177	-0.049	0.130	0.006
lc9q15	0.140	0.135	0.190	-0.094	-0.133	-0.057	-0.123	-0.015
lc9q16	-0.201	0.057	0.030	-0.019	0.110	-0.016	-0.267	0.199
lc9q17	0.120	-0.493	-0.077	0.021	-0.103	0.231	0.030	0.175
lc9q18	-0.062	-0.112	0.006	0.000	-0.038	0.113	0.041	0.007
lc9q19	-0.180	0.187	-0.266	0.222	-0.117	-0.01	0.134	-0.105
lc9q20	0.055	-0.019	0.190	-0.165	0.035	0.006	-0.026	-0.046
lc9q21	0.087	0.260	-0.035	-0.279	0.171	-0.241	-0.072	0.072
lc9q22	-0.023	0.055	-0.080	0.075	-0.252	0.154	-0.024	0.065
lc9q23	0.162	-0.151	-0.008	0.213	-0.052	0.027	-0.056	-0.113
lc9q24	-0.315	0.029	-0.077	0.088	0.105	0.318	-0.003	0.004
lc9q25	0.006	0.041	0.002	-0.263	0.099	-0.011	0.210	-0.049
lc9q26	-0.038	-0.114	0.265	-0.299	0.216	0.324	0.113	-0.148
lc9q27	0.245	0.206	0.414	-0.171	-0.015	-0.441	0.101	-0.162
lc9q28	0.245	-0.207	-0.403	0.024	-0.006	0.217	-0.091	0.125
lc9q29	-0.459	0.141	0.793	0.261	0.041	0.090	0.292	-0.120
lc9q30	0.205	-0.050	-0.282	-0.472	0.030	-0.077	0.324	0.197

Table I.17 Year 3 G&P DIF: Gender, LBOTE, and Indigenous

Item_Label	Gender_Difference	LBOTE__Difference	Indigenous Difference
lc3q26	0.274	0.722	1.095
lc3q27	0.223	0.279	1.128
lc3q28	0.007	0.450	0.562
lc3q29	0.171	0.284	0.501
lc3q30	0.047	0.121	0.326
lc3q31	0.294	-0.228	0.148
lc3q32	-0.093	0.098	0.133
lc3q33	-0.039	0.450	0.388
lc3q34	-0.047	0.240	0.357
lc3q35	-0.240	-0.279	-0.332
lc3q36	0.172	-0.156	0.196
lc3q37	0.148	-0.275	0.308
lc3q38	0.035	-0.288	-0.271
lc3q39	0.208	-0.311	0.049
lc3q40	0.103	-0.105	0.235
lc3q41	-0.035	-0.018	0.110
lc3q42	0.166	0.020	-0.205
lc3q43	-0.024	-0.248	-0.443
lc3q44	-0.372	-0.333	-1.053
lc3q45	-0.011	-0.245	-0.497
lc3q46	-0.115	0.417	-0.261
lc3q47	-0.262	-0.198	-0.342
lc3q48	-0.097	-0.209	-0.443
lc3q49	-0.309	-0.144	-0.645
lc3q50	-0.008	-0.026	-0.193
lc3q51	-0.196	-0.014	-0.853

Table I.18 Year 3 G&P Item DIF: TAA

Item_Label	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
lc3q26	-2.711	-0.335	-0.379	0.487	0.221	-0.355	0.081	-0.662
lc3q27	-2.668	-0.257	-0.338	0.345	0.061	-0.190	0.148	-0.287
lc3q28	-1.399	-0.089	-0.008	0.134	-0.073	0.006	0.044	-0.086
lc3q29	-1.352	-0.230	-0.034	0.117	0.060	0.028	-0.167	0.068
lc3q30	-0.630	-0.089	-0.186	0.063	0.114	-0.008	0.226	0.004
lc3q31	-0.358	-0.006	0.108	-0.001	0.058	0.046	0.114	-0.138
lc3q32	-0.626	-0.065	-0.136	0.235	-0.058	0.005	0.020	0.004
lc3q33	-0.540	-0.249	-0.013	0.100	0.145	-0.172	0.144	0.111
lc3q34	-0.789	-0.060	0.049	0.194	-0.088	-0.085	-0.068	0.053
lc3q35	-0.069	0.338	-0.132	0.117	0.106	-0.012	-0.229	0.197
lc3q36	0.002	-0.033	-0.108	0.088	0.147	0.077	-0.051	0.051
lc3q37	0.216	-0.016	0.191	-0.123	-0.158	0.029	0.316	-0.154
lc3q38	0.440	0.243	-0.051	-0.106	-0.202	0.066	-0.027	0.098
lc3q39	0.081	-0.061	0.085	0.002	-0.088	0.075	0.078	0.095
lc3q40	-0.016	-0.081	0.212	-0.037	-0.044	0.008	-0.084	-0.019
lc3q41	0.085	0.069	-0.095	-0.048	0.123	-0.078	-0.243	0.135
lc3q42	0.544	-0.045	-0.108	-0.206	0.023	0.041	0.036	0.088
lc3q43	1.144	-0.042	0.135	-0.191	-0.093	0.165	0.087	0.010
lc3q44	1.041	0.086	-0.038	-0.227	-0.253	0.076	0.161	0.280
lc3q45	0.575	0.090	0.071	-0.098	0.136	0.142	-0.088	0.002
lc3q46	0.904	0.099	0.124	-0.123	0.182	0.019	-0.477	0.093
lc3q47	1.072	-0.026	0.079	-0.141	0.063	-0.035	0.029	0.018
lc3q48	1.435	0.248	0.137	-0.215	-0.025	-0.189	0.265	-0.048
lc3q49	0.908	0.050	0.141	-0.040	-0.101	0.233	-0.042	-0.122
lc3q50	1.247	0.153	0.228	0.119	-0.133	0.012	-0.220	0.182
lc3q51	1.462	0.308	0.068	-0.442	-0.123	0.099	-0.050	0.026

Table I.19 Year 5 G&P Item DIF: Gender, LBOTE, and Indigenous

Item_Label	Gender_Difference	LBOTE__Difference	Indigenous Difference
lc5q26	0.241	0.913	1.552
lc5q27	-0.067	0.619	0.758
lc5q28	0.103	0.265	0.664
lc5q29	0.015	0.488	0.812
lc5q30	-0.143	-0.036	0.312
lc5q31	0.240	-0.115	0.618
lc5q32	0.187	0.268	0.238
lc5q33	0.166	-0.189	-0.050
lc5q34	0.080	-0.148	0.092
lc5q35	-0.104	-0.057	-0.042
lc5q36	0.147	-0.199	-0.497
lc5q37	0.020	0.864	0.173
lc5q38	-0.004	-0.298	-0.039
lc5q39	-0.029	-0.306	-0.087
lc5q40	-0.010	-0.225	-0.038
lc5q41	0.058	-0.302	-0.060
lc5q42	0.004	-0.244	-0.214
lc5q43	0.202	0.002	-0.138
lc5q44	0.032	-0.183	-0.172
lc5q45	-0.186	-0.144	-0.540
lc5q46	-0.105	-0.271	-0.478
lc5q47	-0.172	-0.116	-0.524
lc5q48	0.100	-0.136	-0.613
lc5q49	-0.087	-0.096	-0.507
lc5q50	-0.315	-0.378	-0.857
lc5q51	-0.372	0.022	-0.360

Table I.20 Year 5 G&P Item DIF: TAA

Item_Label	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
lc5q26	-1.069	-0.808	0.818	0.136	-0.782	0.217	-0.407	-0.088
lc5q27	-0.377	-0.112	0.428	0.059	0.094	-0.141	-0.080	-0.061
lc5q28	-0.308	0.071	0.440	-0.027	-0.026	0.010	0.005	-0.268
lc5q29	-0.063	-0.185	0.049	0.113	0.021	0.229	-0.118	-0.038
lc5q30	0.170	-0.096	-0.011	0.131	-0.048	-0.092	-0.122	0.148
lc5q31	0.216	-0.047	0.036	0.057	-0.077	0.033	-0.244	0.099
lc5q32	0.060	-0.205	0.062	-0.001	0.107	0.173	-0.071	-0.062
lc5q33	-0.046	0.181	0.051	-0.043	-0.061	-0.118	0.184	-0.040
lc5q34	-0.299	0.076	-0.039	0.126	0.024	0.253	-0.148	0.043
lc5q35	-0.092	0.024	0.043	0.043	0.075	-0.070	0.052	0.030
lc5q36	0.070	0.078	-0.061	-0.066	0.076	0.026	-0.023	0.012
lc5q37	-0.189	0.132	0.003	0.171	0.022	-0.513	0.182	0.286
lc5q38	0.221	0.053	-0.028	-0.070	-0.043	0.180	-0.007	-0.187
lc5q39	0.114	0.095	-0.072	0.209	0.088	-0.014	-0.092	-0.200
lc5q40	0.128	0.047	-0.118	0.072	-0.006	0.140	0.082	-0.235
lc5q41	-0.152	0.259	-0.217	0.025	0.062	0.221	0.007	-0.108
lc5q42	0.031	-0.074	-0.046	0.163	-0.011	-0.236	0.082	0.227
lc5q43	0.120	0.018	-0.004	-0.026	0.041	-0.074	0.050	-0.004
lc5q44	-0.050	0.145	0.003	-0.072	0.043	-0.016	-0.063	0.132
lc5q45	0.269	0.057	-0.166	-0.213	-0.013	-0.024	0.096	0.099
lc5q46	0.140	-0.001	-0.348	-0.099	0.050	0.104	0.225	0.025
lc5q47	0.182	0.046	-0.016	-0.172	0.155	-0.036	0.062	-0.096
lc5q48	0.288	0.190	-0.176	-0.069	0.050	-0.052	-0.092	-0.039
lc5q49	0.049	-0.018	-0.202	-0.070	0.022	0.019	0.197	0.109
lc5q50	0.202	0.221	-0.191	-0.188	-0.078	-0.018	0.090	0.049
lc5q51	0.383	-0.147	-0.240	-0.187	0.215	-0.202	0.151	0.167

Table I.21 Year 7 G&P Item DIF: Gender, LBOTE, and Indigenous

Item_Label	Gender_Difference	LBOTE__Difference	Indigenous Difference
lc7q31	0.004	0.406	0.881
lc7q32	-0.088	-0.139	0.178
lc7q33	0.077	0.232	0.417
lc7q34	-0.157	0.500	0.437
lc7q35	0.345	0.252	0.495
lc7q36	0.242	-0.127	0.094
lc7q37	0.218	0.612	0.197
lc7q38	0.071	0.131	0.264
lc7q39	0.029	0.138	0.352
lc7q40	-0.137	-0.157	0.081
lc7q41	0.141	-0.328	0.080
lc7q42	0.097	0.001	0.368
lc7q43	0.006	0.087	-0.219
lc7q44	0.028	-0.236	-0.239
lc7q45	0.210	0.126	-0.093
lc7q46	-0.103	-0.093	0.140
lc7q47	-0.129	-0.091	0.045
lc7q48	0.079	0.057	-0.427
lc7q49	0.169	-0.077	-0.093
lc7q50	0.093	0.359	0.091
lc7q51	-0.203	-0.045	-0.500
lc7q52	-0.187	-0.319	-0.494
lc7q53	-0.175	-0.313	-0.324
lc7q54	-0.219	-0.229	-0.123
lc7q55	0.215	-0.211	-0.159
lc7q56	-0.424	-0.330	-0.563
lc7q57	-0.150	-0.021	-0.526
lc7q58	-0.055	-0.185	-0.362

Table I.22 Year 7 G&P Item DIF: TAA

Item_Label	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
lc7q31	-0.104	-0.173	0.434	-0.041	-0.021	-0.122	-0.144	0.009
lc7q32	0.112	-0.136	0.190	-0.050	-0.139	0.132	-0.213	0.052
lc7q33	-0.109	-0.408	0.201	0.370	-0.222	0.076	0.054	-0.155
lc7q34	-0.155	0.047	0.078	0.124	0.010	-0.184	-0.024	0.105
lc7q35	-0.327	0.090	0.153	0.021	-0.081	0.149	0.002	-0.064
lc7q36	-0.057	-0.007	-0.083	-0.046	-0.007	0.002	0.204	0.009
lc7q37	0.022	0.119	0.211	-0.116	-0.100	-0.258	0.070	0.069
lc7q38	-0.105	-0.112	0.051	-0.025	0.033	0.072	-0.030	0.122
lc7q39	-0.311	0.134	0.199	0.121	-0.013	0.041	-0.036	-0.089
lc7q40	0.125	-0.099	-0.122	0.122	-0.126	0.157	0.095	-0.129
lc7q41	-0.184	-0.001	0.069	0.094	0.088	0.018	-0.094	0.047
lc7q42	-0.285	0.229	0.037	0.001	-0.024	0.102	-0.132	0.069
lc7q43	0.154	0.112	-0.192	0.050	-0.021	-0.103	-0.056	0.084
lc7q44	0.120	-0.061	-0.035	0.081	-0.025	0.058	-0.148	0.053
lc7q45	0.028	-0.025	0.004	-0.105	0.100	0.118	-0.025	-0.079
lc7q46	-0.045	0.135	-0.043	0.040	-0.016	-0.094	-0.092	0.145
lc7q47	-0.055	0.050	0.019	0.016	0.067	0.076	-0.013	-0.115
lc7q48	0.104	0.207	-0.033	-0.233	0.124	-0.030	0.107	-0.222
lc7q49	0.097	0.030	-0.008	-0.251	0.130	-0.018	0.097	-0.060
lc7q50	0.079	-0.107	-0.007	0.117	-0.020	-0.119	-0.117	0.219
lc7q51	0.190	0.063	-0.185	0.039	0.088	-0.202	0.012	-0.003
lc7q52	0.094	-0.173	-0.113	0.086	0.043	0.037	0.081	-0.029
lc7q53	0.251	-0.122	-0.195	-0.382	0.130	0.132	0.196	-0.038
lc7q54	-0.116	0.080	-0.086	0.110	-0.040	0.043	0.082	-0.027
lc7q55	-0.150	0.160	-0.184	-0.023	0.103	0.021	0.049	0.031
lc7q56	0.297	-0.105	-0.235	-0.178	-0.127	0.038	0.274	0.019
lc7q57	0.267	0.077	-0.088	-0.027	0.061	-0.123	-0.125	-0.043
lc7q58	0.061	-0.004	-0.037	0.085	0.005	-0.019	-0.075	0.021

Table I.23 Year 9 G&P Item DIF: Gender, LBOTE, and Indigenous

Item_Label	Gender_Difference	LBOTE__Difference	Indigenous Difference
lc9q31	-0.042	0.791	1.308
lc9q32	-0.177	0.279	0.663
lc9q33	0.172	-0.068	0.367
lc9q34	0.545	-0.005	0.632
lc9q35	0.420	0.297	0.657
lc9q36	0.127	0.400	0.567
lc9q37	0.169	-0.061	0.409
lc9q38	0.254	0.453	0.341
lc9q39	0.180	0.274	0.652
lc9q40	-0.762	0.482	-0.202
lc9q41	0.316	-0.202	-0.118
lc9q42	-0.041	-0.023	0.245
lc9q43	0.078	0.045	0.020
lc9q44	-0.168	-0.298	-0.105
lc9q45	0.088	-0.433	0.209
lc9q46	-0.190	-0.129	-0.074
lc9q47	0.027	-0.248	0.096
lc9q48	0.181	-0.157	-0.035
lc9q49	0.039	-0.387	-0.189
lc9q50	0.183	-0.275	-0.210
lc9q51	-0.263	-0.356	-0.137
lc9q52	0.192	-0.233	-0.354
lc9q53	-0.364	-0.260	-0.819
lc9q54	-0.191	0.598	-0.413
lc9q55	-0.014	-0.326	-0.717
lc9q56	-0.105	-0.266	-0.935
lc9q57	-0.424	0.103	-0.919
lc9q58	-0.226	0.005	-0.940

Table I.24 Year 9 G&P Item DIF: TAA

Item_Label	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
lc9q31	-0.333	-0.17	0.698	-0.010	-0.376	0.033	-0.294	-0.045
lc9q32	-0.002	-0.071	0.187	0.128	0.010	-0.038	-0.060	-0.153
lc9q33	-0.003	-0.347	0.073	-0.045	0.271	0.148	-0.144	-0.001
lc9q34	-0.370	0.052	0.241	0.055	0.003	0.049	0.091	-0.202
lc9q35	-0.028	0.053	0.116	-0.126	-0.041	0.110	0.049	-0.117
lc9q36	0.019	-0.261	0.372	0.096	0.057	-0.07	0.011	-0.268
lc9q37	-0.203	0.079	0.134	0.022	0.052	0.035	-0.119	0.025
lc9q38	0.119	0.008	0.160	0.049	-0.024	-0.084	-0.101	-0.062
lc9q39	-0.289	0.104	0.178	0.236	-0.033	-0.069	-0.101	0.016
lc9q40	0.055	0.095	-0.027	0.186	-0.180	-0.169	0.009	0.076
lc9q41	-0.101	-0.119	-0.049	0.014	0.029	0.083	0.054	0.124
lc9q42	-0.126	0.147	-0.033	0.037	0.035	-0.022	0.065	-0.077
lc9q43	-0.024	0.102	0.060	0.074	0.026	0.029	-0.197	-0.005
lc9q44	0.073	0.041	-0.049	-0.052	-0.219	0.112	-0.038	0.159
lc9q45	-0.067	0.026	0.188	-0.126	0.041	0.124	0.094	-0.174
lc9q46	0.099	-0.033	-0.186	-0.103	0.015	0.103	0.028	0.091
lc9q47	0.296	-0.033	-0.120	0.070	-0.034	-0.135	0.000	-0.016
lc9q48	0.171	0.023	-0.003	-0.105	0.034	0.165	0.143	-0.376
lc9q49	-0.170	0.029	0.138	-0.067	0.028	0.174	-0.005	-0.014
lc9q50	0.296	-0.236	-0.150	-0.303	0.187	0.157	0.166	-0.087
lc9q51	0.144	0.002	-0.232	-0.099	0.042	0.081	-0.124	0.168
lc9q52	0.064	-0.024	-0.228	0.013	0.070	-0.030	-0.006	0.139
lc9q53	0.085	0.034	-0.163	-0.185	0.130	-0.179	0.114	0.162
lc9q54	0.037	0.109	0.011	0.135	-0.133	-0.292	-0.030	0.224
lc9q55	0.247	-0.021	-0.141	0.066	-0.074	-0.139	0.005	0.068
lc9q56	-0.082	0.068	-0.416	0.012	0.148	0.097	0.117	0.055
lc9q57	-0.094	0.190	-0.251	-0.091	0.007	-0.115	0.213	0.164
lc9q58	0.188	0.156	-0.507	0.121	-0.070	-0.158	0.063	0.128

Table I.25 Year 3 Numeracy Item DIF: Gender, LBOTE, and Indigenous

Item_Label	Gender_Difference	LBOTE__Difference	Indigenous Difference
n3q01	0.554	0.746	0.645
n3q02	0.329	0.266	0.718
n3q03	-0.148	0.248	0.486
n3q04	0.379	0.434	0.768
n3q05	0.240	0.205	0.372
n3q06	0.300	-0.068	0.695
n3q07	0.100	0.009	0.179
n3q08	-0.447	0.209	0.513
n3q09	0.153	0.014	0.632
n3q10	-0.036	0.024	0.455
n3q11	0.049	0.160	0.097
n3q12	-0.033	-0.279	-0.256
n3q13	-0.337	-0.097	0.663
n3q14	-0.349	-0.166	0.079
n3q15	0.132	0.018	-0.392
n3q16	-0.094	0.063	0.425
n3q17	0.085	0.052	-0.282
n3q18	0.219	0.417	-0.398
n3q19	-0.140	-0.243	-0.086
n3q20	-0.166	0.214	0.058
n3q21	-0.059	-0.039	0.003
n3q22	0.014	-0.323	-0.193
n3q23	-0.265	-0.058	-0.179
n3q24	0.104	-0.265	-0.542
n3q25	-0.333	-0.177	-0.380
n3q26	0.292	-0.203	-0.002
n3q27	0.002	0.012	-0.322
n3q28	-0.064	-0.114	-0.359
n3q29	0.093	-0.081	-0.436
n3q30	0.079	-0.359	-0.826
n3q31	-0.072	-0.084	-0.704
n3q32	-0.237	-0.035	-0.724
n3q33	-0.130	-0.302	-0.957
n3q34	-0.020	-0.013	0.027
n3q35	-0.194	-0.185	0.228

Table I.26 Year 3 Numeracy Item DIF:TAA

Item_Label	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
n3q01	-0.531	-0.146	0.251	-0.125	-0.437	-0.038	0.032	0.404
n3q02	-0.201	0.005	0.339	-0.191	-0.184	0.217	-0.085	-0.086
n3q03	0.161	-0.051	0.214	-0.013	-0.010	-0.006	-0.153	-0.176
n3q04	-0.183	-0.273	0.172	0.130	0.019	-0.166	-0.221	0.277
n3q05	-0.020	0.057	-0.101	0.145	0.065	0.009	-0.076	-0.075
n3q06	-0.238	0.011	0.270	0.048	-0.146	0.157	-0.100	-0.062
n3q07	0.264	0.039	-0.184	-0.428	0.106	0.141	0.012	0.039
n3q08	-0.146	0.047	0.159	0.008	0.095	-0.125	-0.146	0.056
n3q09	0.089	-0.079	0.209	-0.217	-0.136	0.302	-0.064	-0.102
n3q10	-0.218	-0.071	0.022	0.326	0.038	0.041	-0.110	-0.077
n3q11	0.056	0.250	-0.190	-0.100	-0.056	-0.038	0.110	-0.009
n3q12	0.009	0.196	-0.126	-0.185	-0.023	0.165	0.137	-0.162
n3q13	-0.020	-0.106	0.088	0.030	0.012	-0.003	-0.018	0.049
n3q14	0.013	-0.086	-0.172	0.045	0.078	0.160	-0.114	0.083
n3q15	-0.230	-0.022	-0.075	0.043	-0.013	0.042	0.119	0.129
n3q16	-0.222	-0.011	0.149	0.130	0.004	-0.023	-0.043	0.028
n3q17	0.318	-0.086	-0.086	0.171	-0.101	-0.013	-0.089	-0.074
n3q18	0.176	0.086	-0.223	0.086	-0.182	-0.132	0.140	0.082
n3q19	-0.064	0.089	-0.166	-0.103	0.062	0.078	0.067	0.053
n3q20	-0.007	0.018	0.006	0.014	-0.029	0.001	-0.057	0.089
n3q21	-0.130	-0.151	0.157	0.043	-0.033	0.027	0.082	0.057
n3q22	-0.183	0.196	0.187	-0.107	-0.040	0.076	0.047	-0.130
n3q23	0.135	0.031	-0.108	0.141	0.090	-0.143	-0.093	-0.010
n3q24	0.257	-0.126	-0.034	0.117	-0.124	-0.042	-0.007	0.006
n3q25	-0.046	0.107	-0.191	-0.018	-0.015	0.001	0.244	-0.066
n3q26	-0.114	0.015	0.006	0.088	0.155	-0.106	-0.026	0.035
n3q27	0.213	-0.118	-0.079	0.061	-0.055	-0.109	0.068	0.061
n3q28	-0.063	0.196	-0.319	0.077	-0.025	-0.061	0.171	0.035
n3q29	0.009	0.066	-0.160	-0.063	0.174	0.115	-0.044	-0.069
n3q30	0.224	0.024	-0.298	-0.157	0.131	0.100	-0.068	0.052
n3q31	0.273	-0.072	-0.095	-0.205	0.253	-0.029	-0.019	-0.051
n3q32	-0.203	0.082	-0.226	-0.020	0.056	0.131	0.212	0.015
n3q33	0.299	-0.131	-0.138	-0.236	0.305	-0.057	0.088	-0.056
n3q34	0.117	0.026	0.485	0.197	0.056	-0.227	-0.118	-0.231
n3q35	0.206	-0.010	0.261	0.269	-0.088	-0.442	0.125	-0.115

Table I.27 Year 5 Numeracy Item DIF: Gender, LBOTE, and Indigenous

Item_Label	Gender_Difference	LBOTE__Difference	Indigenous Difference
n5q01	-0.318	0.306	0.567
n5q02	0.379	0.111	0.223
n5q03	0.152	0.519	0.596
n5q04	-0.012	-0.014	0.149
n5q05	0.078	0.163	0.682
n5q06	-0.152	0.062	0.491
n5q07	0.131	-0.116	0.400
n5q08	0.128	0.165	-0.038
n5q09	0.023	0.004	0.546
n5q10	0.005	0.333	0.606
n5q11	0.013	0.082	0.172
n5q12	0.072	-0.008	0.521
n5q13	0.252	-0.026	-0.299
n5q14	0.407	0.121	-0.338
n5q15	-0.110	0.173	0.170
n5q16	0.063	-0.083	0.341
n5q17	0.283	-0.279	-0.472
n5q18	-0.315	-0.097	-0.208
n5q19	-0.251	0.109	-0.057
n5q20	-0.083	0.299	-0.256
n5q21	0.144	0.200	0.012
n5q22	0.270	-0.183	0.084
n5q23	0.507	0.263	-0.143
n5q24	0.150	0.022	-0.163
n5q25	-0.001	0.156	-0.140
n5q26	-0.020	-0.128	-0.106
n5q27	-0.101	0.059	0.132
n5q28	-0.345	-0.255	-0.342
n5q29	-0.184	0.202	0.067
n5q30	0.321	-0.174	-0.372
n5q31	0.117	0.165	-0.401
n5q32	0.163	-0.398	-0.216
n5q33	-0.199	0.026	-0.004
n5q34	0.157	-0.067	-0.281
n5q35	-0.588	-0.318	0.038
n5q36	-0.060	-0.178	0.099
n5q37	-0.396	-0.351	-0.456
n5q38	0.126	-0.230	-0.893
n5q39	-0.486	-0.552	-0.498
n5q40	-0.324	-0.087	-0.212

Table I.28 Year 5 Numeracy Item DIF: TAA

Item_Label	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
n5q01	0.067	0.087	0.532	-0.073	-0.085	-0.289	-0.323	-0.280
n5q02	0.138	0.041	0.002	-0.177	-0.055	0.177	0.023	-0.152
n5q03	-0.088	-0.258	0.368	0.111	0.014	-0.159	-0.147	-0.054
n5q04	-0.136	-0.329	-0.122	0.158	-0.087	0.237	0.176	0.018
n5q05	-0.006	-0.270	0.205	0.002	0.025	0.026	-0.087	0.028
n5q06	0.013	-0.079	0.107	0.045	-0.018	0.110	-0.01	-0.222
n5q07	-0.234	0.064	0.212	-0.149	0.151	0.154	-0.196	-0.084
n5q08	0.078	0.196	-0.121	-0.017	-0.074	-0.242	0.301	-0.098
n5q09	-0.052	-0.100	0.271	0.072	-0.058	-0.123	-0.148	0.062
n5q10	0.025	0.138	0.040	-0.218	-0.090	-0.064	0.214	-0.025
n5q11	-0.111	0.267	-0.135	0.086	-0.080	0.107	-0.065	-0.100
n5q12	0.088	-0.283	0.007	-0.097	0.079	0.334	-0.062	-0.092
n5q13	0.175	-0.211	0.015	-0.331	0.107	0.212	0.242	-0.209
n5q14	0.020	0.062	-0.155	-0.028	-0.128	0.167	0.018	0.055
n5q15	-0.190	0.055	-0.019	0.109	-0.157	-0.072	0.178	0.104
n5q16	-0.181	0.011	0.153	0.107	-0.124	-0.005	0.052	-0.006
n5q17	0.119	0.054	-0.218	-0.072	0.098	0.039	0.017	-0.031
n5q18	-0.167	0.131	-0.136	0.116	0.022	-0.128	0.075	0.083
n5q19	0.032	0.211	0.049	-0.035	-0.070	-0.333	0.111	0.049
n5q20	0.061	0.097	0.015	-0.132	-0.092	0.251	-0.150	-0.032
n5q21	0.081	0.254	0.020	-0.208	-0.024	-0.11	0.249	-0.249
n5q22	0.031	-0.066	0.098	-0.072	-0.223	0.061	-0.008	0.215
n5q23	0.043	0.085	-0.093	0.033	-0.096	-0.051	-0.081	0.171
n5q24	-0.044	-0.059	0.011	0.059	-0.046	-0.016	0.073	0.049
n5q25	-0.025	-0.178	0.096	0.126	0.151	-0.248	0.141	-0.021
n5q26	0.077	0.079	-0.081	-0.232	0.121	0.119	0.018	-0.091
n5q27	0.106	0.004	-0.102	-0.048	-0.060	0.113	0.003	-0.002
n5q28	-0.110	0.192	-0.079	-0.106	-0.113	0.238	-0.121	0.113
n5q29	0.036	0.023	0.065	-0.048	0.086	-0.132	-0.003	0.004
n5q30	0.053	-0.089	-0.226	0.226	-0.055	0.026	0.081	0.004
n5q31	0.117	0.151	-0.013	0.049	-0.041	-0.243	0.040	-0.037
n5q32	0.089	0.028	-0.144	0.185	0.121	0.080	-0.219	-0.109
n5q33	-0.012	0.118	0.036	0.050	0.022	-0.147	0.090	-0.124
n5q34	0.040	0.051	-0.265	0.072	0.050	0.054	0.005	-0.013
n5q35	-0.247	-0.031	-0.039	0.040	0.260	-0.074	0.047	0.145
n5q36	0.120	-0.077	-0.001	-0.019	0.025	0.134	-0.175	0.054
n5q37	0.092	-0.042	-0.151	-0.003	0.113	0.055	-0.105	0.065
n5q38	0.008	-0.070	-0.112	0.057	0.181	-0.189	0.001	0.184
n5q39	0.100	-0.136	-0.180	0.172	0.201	0.082	-0.349	0.364
n5q40	-0.202	-0.117	0.093	0.193	-0.046	-0.148	0.097	0.269

Table I.29 Year 7 Numeracy Item DIF: Gender, LBOTE, and Indigenous

Item_Label	Gender_Difference	LBOTE__Difference	Indigenous Difference
n7CAq01	0.097	0.214	0.694
n7CAq02	0.087	0.226	0.540
n7CAq03	0.076	-0.200	-0.568
n7CAq04	0.193	0.257	0.789
n7CAq05	-0.050	0.084	0.083
n7CAq06	-0.060	0.223	0.163
n7CAq07	0.052	0.200	-0.046
n7CAq08	-0.041	0.071	-0.192
n7CAq09	0.168	0.209	0.016
n7CAq10	-0.406	0.209	0.674
n7CAq11	0.072	0.081	-0.311
n7CAq12	0.240	-0.134	-0.427
n7CAq13	-0.173	0.082	-0.090
n7CAq14	0.088	0.227	0.629
n7CAq15	0.042	0.202	-0.607
n7CAq16	-0.167	0.011	-0.293
n7CAq17	-0.012	0.120	-0.208
n7CAq18	-0.227	0.039	-0.963
n7CAq19	-0.200	0.342	-0.612
n7CAq20	-0.048	-0.441	0.052
n7CAq21	-0.513	0.017	-0.781
n7CAq22	-0.636	-0.025	0.645
n7CAq23	-0.196	0.033	-0.258
n7CAq24	0.006	0.252	-0.840
n7CAq25	-0.107	-0.524	-0.495
n7CAq26	-0.166	-0.268	0.294
n7CAq27	-0.266	-0.064	-0.230
n7CAq28	0.039	-0.139	-0.842
n7CAq29	-0.025	0.265	0.511
n7CAq30	-0.216	-0.141	0.371
n7CAq31	-0.090	0.003	-1.198
n7CAq32	-0.121	-0.477	0.530

(continued)

Table I.29 (continued)

Item_Label	Gender_Difference	LBOTE__Difference	Indigenous Difference
n7NCq01	0.161	0.378	0.704
n7NCq02	0.056	0.039	0.127
n7NCq03	-0.293	0.229	0.424
n7NCq04	0.169	0.192	0.949
n7NCq05	0.044	0.191	-0.253
n7NCq06	-0.337	0.262	0.687
n7NCq07	0.068	-0.068	0.161
n7NCq08	0.495	-0.265	0.276
n7NCq09	0.184	0.169	0.304
n7NCq10	0.442	0.402	-0.158
n7NCq11	0.279	0.079	-0.104
n7NCq12	0.113	-0.110	-0.042
n7NCq13	0.202	-0.164	0.694
n7NCq14	0.305	0.059	-0.141
n7NCq15	0.135	-0.193	-0.026
n7NCq16	0.165	0.069	-0.054
n7NCq17	-0.234	-0.090	0.204
n7NCq18	0.185	0.032	-0.059
n7NCq19	0.102	-0.096	-0.258
n7NCq20	-0.123	0.054	-0.780
n7NCq21	0.484	-0.148	0.311
n7NCq22	0.074	0.135	-0.931
n7NCq23	-0.394	-0.051	0.167
n7NCq24	-0.117	0.242	0.457
n7NCq25	0.218	-0.172	-0.412
n7NCq26	0.118	-0.290	0.130
n7NCq27	-0.121	-0.439	0.670
n7NCq28	0.077	-0.439	0.880
n7NCq29	0.185	-0.361	0.121
n7NCq30	-0.060	-0.378	-1.027
n7NCq31	-0.007	-0.215	0.301
n7NCq32	-0.014	-0.006	-0.359

Table I.30 Year 7 Numeracy Item DIF: TAA

Item_Label	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
n7CAq01	-0.181	0.119	0.325	0.214	-0.033	-0.190	-0.240	-0.129
n7CAq02	-0.089	0.191	0.028	0.180	-0.052	-0.136	-0.088	-0.074
n7CAq03	0.076	-0.042	-0.361	-0.146	0.135	0.152	0.151	0.014
n7CAq04	-0.120	0.010	0.363	-0.137	-0.092	0.047	-0.011	-0.210
n7CAq05	0.128	-0.008	-0.024	0.148	-0.094	0.068	-0.327	0.069
n7CAq06	0.091	-0.126	0.191	-0.456	0.057	-0.035	0.250	-0.047
n7CAq07	-0.103	0.285	-0.004	-0.089	0.197	-0.102	-0.022	-0.179
n7CAq08	-0.020	0.044	-0.121	-0.070	0.047	-0.054	-0.007	0.176
n7CAq09	0.073	-0.018	0.082	0.043	-0.095	-0.181	0.096	0.027
n7CAq10	-0.133	-0.027	0.223	0.094	0.067	-0.210	-0.131	0.097
n7CAq11	0.040	0.258	-0.215	0.048	0.016	-0.108	0.028	-0.067
n7CAq12	0.131	-0.021	-0.198	-0.068	-0.128	-0.091	0.227	0.134
n7CAq13	-0.103	0.030	-0.018	0.020	0.048	0.091	-0.113	0.038
n7CAq14	-0.237	0.041	0.364	0.029	0.115	-0.150	-0.090	-0.071
n7CAq15	0.211	-0.027	-0.264	0.000	0.181	-0.214	0.044	0.030
n7CAq16	0.038	0.081	-0.210	-0.178	0.132	0.085	0.026	-0.013
n7CAq17	0.010	0.014	-0.177	-0.054	0.086	-0.020	0.043	0.076
n7CAq18	0.181	0.017	-0.377	0.204	-0.065	-0.147	0.092	0.062
n7CAq19	-0.001	0.181	-0.166	0.127	0.062	-0.191	0.119	-0.130
n7CAq20	0.177	-0.128	-0.042	0.105	-0.026	0.089	0.094	-0.241
n7CAq21	0.094	0.130	-0.426	-0.139	0.174	-0.048	0.188	-0.044
n7CAq22	0.041	-0.168	0.128	-0.124	0.053	0.031	0.155	-0.081
n7CAq23	-0.012	0.065	-0.196	0.023	0.037	-0.100	0.090	0.066
n7CAq24	0.163	0.022	-0.314	-0.173	0.100	-0.094	0.144	0.074
n7CAq25	0.178	-0.215	-0.020	-0.094	0.137	0.065	0.115	-0.148
n7CAq26	-0.110	-0.260	0.002	-0.223	0.007	0.466	0.184	-0.003
n7CAq27	0.044	0.110	0.051	0.052	0.024	0.097	-0.101	-0.170
n7CAq28	0.078	-0.103	-0.409	0.109	0.051	-0.131	0.354	-0.029
n7CAq29	-0.102	-0.072	0.054	0.204	-0.055	-0.088	0.020	0.121
n7CAq30	0.054	-0.163	0.469	0.376	0.043	-0.107	-0.064	-0.199
n7CAq31	0.289	-0.241	-0.343	0.107	-0.089	-0.263	0.111	0.354
n7CAq32	0.092	-0.033	0.319	0.014	-0.218	0.076	0.183	-0.155

(continued)

Table I.30 (continued)

Item_Label	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
n7NCq01	-0.063	-0.029	0.299	-0.031	-0.366	0.056	-0.183	0.094
n7NCq02	-0.124	0.023	0.156	-0.212	0.003	-0.078	0.056	0.081
n7NCq03	-0.226	0.096	0.156	0.182	-0.169	-0.080	-0.115	0.038
n7NCq04	-0.159	-0.215	0.365	-0.154	-0.226	0.214	-0.030	-0.043
n7NCq05	0.476	-0.242	-0.030	-0.001	-0.161	-0.172	-0.178	0.280
n7NCq06	-0.325	0.113	0.231	0.118	-0.005	-0.068	-0.147	0.054
n7NCq07	-0.151	0.041	-0.009	-0.066	0.030	0.288	-0.167	-0.046
n7NCq08	0.001	-0.108	0.110	0.053	-0.013	0.203	-0.299	-0.066
n7NCq09	0.014	0.142	-0.023	-0.080	-0.275	0.092	0.083	0.015
n7NCq10	-0.018	0.133	-0.151	0.177	-0.107	-0.213	0.001	0.196
n7NCq11	0.078	-0.065	-0.111	0.044	-0.025	0.020	0.026	0.041
n7NCq12	-0.071	-0.143	-0.024	0.102	-0.092	-0.120	0.173	0.186
n7NCq13	-0.022	-0.110	0.223	-0.003	-0.150	0.142	-0.033	-0.035
n7NCq14	0.102	-0.082	-0.032	0.058	-0.085	-0.040	-0.005	0.091
n7NCq15	-0.108	0.114	-0.103	-0.039	-0.006	0.107	-0.047	0.068
n7NCq16	-0.097	0.125	0.004	0.139	-0.049	-0.055	-0.166	0.116
n7NCq17	-0.147	0.120	0.070	-0.361	0.529	-0.007	-0.035	-0.154
n7NCq18	0.038	0.043	0.146	0.016	-0.034	0.040	-0.157	-0.063
n7NCq19	-0.112	0.087	-0.028	0.191	-0.007	-0.072	-0.195	0.140
n7NCq20	0.189	-0.051	-0.335	0.194	-0.111	-0.047	0.038	0.101
n7NCq21	-0.221	0.123	0.234	-0.142	-0.012	0.100	-0.125	0.002
n7NCq22	0.276	0.039	-0.485	-0.059	-0.148	0.108	0.076	0.107
n7NCq23	-0.048	0.037	0.086	0.020	0.017	0.039	-0.070	-0.014
n7NCq24	-0.194	0.162	0.249	0.041	0.048	-0.024	0.024	-0.184
n7NCq25	-0.070	-0.061	0.000	-0.054	0.081	0.029	0.047	0.051
n7NCq26	0.032	-0.165	0.111	-0.160	0.010	0.134	0.223	-0.120
n7NCq27	-0.099	-0.070	0.288	-0.112	0.229	0.302	-0.058	-0.198
n7NCq28	-0.208	0.212	0.348	-0.227	0.027	0.376	-0.118	-0.122
n7NCq29	-0.040	-0.180	0.254	0.056	0.068	0.142	-0.085	-0.042
n7NCq30	0.300	-0.180	-0.392	0.093	-0.045	0.111	-0.074	0.100
n7NCq31	-0.022	0.129	-0.061	0.085	0.261	0.022	-0.129	-0.192
n7NCq32	0.039	0.019	-0.262	-0.013	-0.043	-0.154	0.149	0.167

Table I.31 Year 9 Numeracy Item DIF: Gender, LBOTE, and Indigenous

Item_Label	Gender_Difference	LBOTE__Difference	Indigenous Difference
n9CAq01	0.109	0.956	1.273
n9CAq02	0.390	-0.085	0.156
n9CAq03	0.085	0.482	0.551
n9CAq04	0.615	-0.119	0.047
n9CAq05	0.051	0.130	0.686
n9CAq06	-0.063	0.034	0.077
n9CAq07	-0.099	0.218	-0.242
n9CAq08	0.009	0.108	-0.064
n9CAq09	0.128	-0.037	0.086
n9CAq10	0.062	-0.124	-0.427
n9CAq11	0.159	-0.140	-0.079
n9CAq12	0.280	-0.179	0.353
n9CAq13	-0.404	0.027	-0.570
n9CAq14	-0.601	0.029	0.368
n9CAq15	-0.050	0.148	-0.246
n9CAq16	-0.062	-0.219	0.443
n9CAq17	-0.261	0.269	-0.862
n9CAq18	0.315	-0.463	0.196
n9CAq19	0.273	0.035	-0.045
n9CAq20	0.074	-0.132	-0.374
n9CAq21	-0.090	-0.012	-0.279
n9CAq22	-0.360	-0.009	0.499
n9CAq23	0.047	0.512	0.278
n9CAq24	-0.087	-0.098	-0.215
n9CAq25	0.072	-0.273	0.065
n9CAq26	-0.024	0.064	-0.866
n9CAq27	0.083	-0.413	0.502
n9CAq28	-0.586	0.195	-0.180
n9CAq29	0.294	-0.393	0.572
n9CAq30	0.014	-0.468	0.267
n9CAq31	0.161	-0.517	0.204
n9CAq32	-0.608	-0.154	-0.009

(continued)

Table I.31 (continued)

Item_Label	Gender_Difference	LBOTE__Difference	Indigenous Difference
n9NCq01	-0.075	0.715	1.002
n9NCq02	-0.199	0.311	-0.242
n9NCq03	-0.246	0.494	0.904
n9NCq04	0.484	0.197	-0.307
n9NCq05	0.171	0.191	0.454
n9NCq06	0.680	0.125	0.536
n9NCq07	-0.417	0.210	-0.238
n9NCq08	0.457	0.069	0.292
n9NCq09	0.044	0.269	0.366
n9NCq10	-0.172	0.018	0.103
n9NCq11	-0.212	-0.267	-0.237
n9NCq12	-0.063	0.139	-0.573
n9NCq13	0.528	-0.098	0.522
n9NCq14	-0.282	0.274	-0.505
n9NCq15	-0.173	-0.008	-0.714
n9NCq16	0.297	0.341	-0.001
n9NCq17	-0.022	0.045	-0.443
n9NCq18	-0.042	0.162	0.003
n9NCq19	-0.054	-0.010	-0.881
n9NCq20	-0.123	0.145	-0.589
n9NCq21	0.214	-0.301	-0.442
n9NCq22	-0.129	-0.313	0.102
n9NCq23	0.000	-0.077	-0.214
n9NCq24	0.075	-0.372	0.153
n9NCq25	-0.549	0.297	-0.101
n9NCq26	-0.062	-0.639	-1.202
n9NCq27	0.090	-0.359	0.558
n9NCq28	0.050	-0.262	0.515
n9NCq29	-0.116	-0.275	-0.534
n9NCq30	-0.183	-0.200	0.513
n9NCq31	-0.095	0.231	-0.030
n9NCq32	0.195	-0.430	-0.933

Table I.32 Year 9 Numeracy Item DIF: TAA

Item_Label	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
n9CAq01	-0.301	-0.021	0.773	-0.044	-0.674	0.007	-0.533	-0.632
n9CAq02	0.211	-0.279	0.293	-0.390	-0.044	0.209	-0.034	-0.131
n9CAq03	-0.090	0.135	0.214	0.186	-0.222	-0.128	-0.203	0.023
n9CAq04	0.040	-0.799	0.275	-0.213	0.019	0.289	0.115	0.064
n9CAq05	0.062	0.108	0.272	0.077	-0.084	-0.210	-0.205	0.012
n9CAq06	-0.019	-0.038	-0.024	0.166	-0.214	0.000	0.051	0.044
n9CAq07	0.050	-0.036	-0.016	-0.003	0.060	-0.191	0.015	0.131
n9CAq08	0.015	0.000	-0.098	0.038	-0.049	-0.043	0.052	0.071
n9CAq09	-0.119	0.177	-0.202	-0.133	-0.009	0.107	-0.047	0.179
n9CAq10	0.075	0.052	-0.369	-0.073	0.234	0.058	-0.056	0.018
n9CAq11	0.080	0.134	-0.142	0.042	0.231	-0.148	-0.177	-0.049
n9CAq12	0.083	0.012	0.053	-0.072	0.038	0.005	0.044	-0.150
n9CAq13	-0.027	0.051	-0.239	0.018	0.178	-0.019	-0.193	0.189
n9CAq14	0.092	-0.057	0.019	-0.126	-0.072	0.043	0.098	0.004
n9CAq15	-0.201	-0.068	0.078	-0.057	0.093	-0.140	0.102	0.190
n9CAq16	-0.137	0.017	-0.034	-0.289	0.126	0.184	0.134	-0.028
n9CAq17	0.234	0.103	-0.376	-0.012	-0.095	-0.292	0.148	0.185
n9CAq18	0.045	-0.052	-0.024	-0.048	-0.111	0.178	0.121	-0.087
n9CAq19	0.006	-0.199	0.107	-0.034	0.239	0.064	-0.032	-0.107
n9CAq20	0.053	-0.218	-0.199	0.081	-0.101	-0.051	0.186	0.189
n9CAq21	-0.174	0.116	-0.343	0.062	0.289	0.204	-0.197	0.033
n9CAq22	0.034	-0.045	-0.019	-0.192	0.145	0.339	-0.091	-0.064
n9CAq23	0.118	0.102	0.071	-0.007	-0.044	-0.154	-0.101	0.043
n9CAq24	-0.025	0.018	-0.123	0.040	-0.081	-0.065	0.022	0.182
n9CAq25	-0.130	-0.072	0.036	-0.355	0.273	-0.046	0.657	-0.126
n9CAq26	-0.133	0.221	-0.033	0.004	-0.136	-0.191	0.018	0.240
n9CAq27	-0.063	-0.091	-0.178	-0.016	0.464	0.192	0.172	-0.250
n9CAq28	0.098	-0.216	0.302	0.155	-0.050	-0.251	-0.199	0.279
n9CAq29	-0.136	0.021	0.073	-0.237	0.595	0.322	-0.017	-0.194
n9CAq30	-0.045	0.059	-0.151	0.186	0.187	0.008	0.192	-0.251
n9CAq31	-0.237	-0.150	0.083	0.377	0.270	0.115	-0.009	-0.073
n9CAq32	-0.155	-0.214	0.425	0.680	0.007	0.410	0.793	-0.480

(continued)

Table I.32 (continued)

Item_Label	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
n9NCq01	0.149	-0.032	0.678	0.152	-0.559	-0.160	-0.725	-0.182
n9NCq02	0.172	0.092	-0.028	0.114	-0.262	-0.394	-0.074	0.382
n9NCq03	-0.202	0.068	0.290	0.200	0.022	0.026	-0.339	-0.185
n9NCq04	-0.019	0.165	0.019	0.174	-0.036	-0.172	-0.084	-0.058
n9NCq05	-0.186	0.047	0.136	-0.232	0.020	0.213	-0.036	-0.057
n9NCq06	-0.337	-0.270	0.429	0.235	-0.087	0.195	-0.170	-0.475
n9NCq07	-0.064	0.112	-0.159	0.072	-0.038	-0.091	-0.065	0.215
n9NCq08	-0.229	-0.078	0.114	0.083	0.034	-0.078	-0.035	0.155
n9NCq09	-0.112	0.120	0.158	-0.038	-0.203	-0.008	-0.062	0.117
n9NCq10	0.176	0.024	0.035	0.149	-0.044	-0.306	-0.037	0.022
n9NCq11	0.033	0.326	-0.245	0.005	-0.268	0.111	0.331	-0.308
n9NCq12	0.087	0.183	-0.216	0.150	-0.176	-0.256	-0.024	0.221
n9NCq13	-0.125	0.118	0.138	0.146	0.100	-0.044	-0.120	-0.307
n9NCq14	0.098	0.233	-0.318	-0.047	-0.079	-0.222	-0.157	0.420
n9NCq15	0.158	0.114	-0.318	-0.029	-0.013	-0.043	-0.086	0.159
n9NCq16	0.118	0.277	-0.194	-0.452	-0.093	-0.016	0.272	0.021
n9NCq17	0.116	-0.127	-0.041	0.051	-0.132	-0.226	0.236	0.100
n9NCq18	0.204	0.046	0.107	0.099	-0.039	-0.232	-0.112	-0.031
n9NCq19	0.118	-0.002	-0.232	-0.164	-0.070	-0.032	0.140	0.178
n9NCq20	0.159	0.091	-0.160	-0.012	-0.236	-0.194	0.091	0.212
n9NCq21	0.117	0.014	0.119	-0.029	-0.049	-0.037	-0.031	-0.050
n9NCq22	0.094	-0.026	-0.147	-0.095	0.173	0.070	0.045	-0.115
n9NCq23	-0.047	0.122	-0.113	0.027	-0.035	-0.008	-0.096	0.136
n9NCq24	0.185	-0.041	0.318	-0.026	-0.185	0.084	-0.080	-0.101
n9NCq25	0.060	-0.082	-0.238	0.130	-0.006	0.137	-0.182	0.150
n9NCq26	0.172	0.050	-0.373	-0.134	0.004	-0.106	0.040	0.205
n9NCq27	-0.237	0.200	0.348	-0.079	0.205	0.454	-0.148	-0.308
n9NCq28	-0.078	-0.130	0.108	-0.109	0.270	0.094	0.301	-0.261
n9NCq29	0.074	-0.094	-0.381	-0.083	-0.013	0.230	0.044	0.160
n9NCq30	-0.168	-0.02	0.135	0.010	0.213	0.166	0.011	-0.088
n9NCq31	-0.047	0.008	0.110	0.109	-0.039	-0.262	0.038	0.129
n9NCq32	0.254	-0.282	-0.58	-0.185	0.163	0.301	0.290	0.086

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	0.172	-0.263	-0.402
WQ02	-0.013	0.071	-0.133
WQ03	-0.006	0.152	0.064
WQ04	0.027	0.075	-0.274
WQ05	-0.169	0.072	0.053
WQ06	0.013	0.117	-0.004
WQ07	-0.009	-0.174	-0.088
WQ08	0.016	0.315	0.417
WQ09	0.091	-0.191	0.280
WQ10	-0.122	-0.173	0.086

APPENDIX J. EXPECTED SCORE CURVES OF WRITING CRITERIA

FIGURE J.1 Criterion 1: Audience

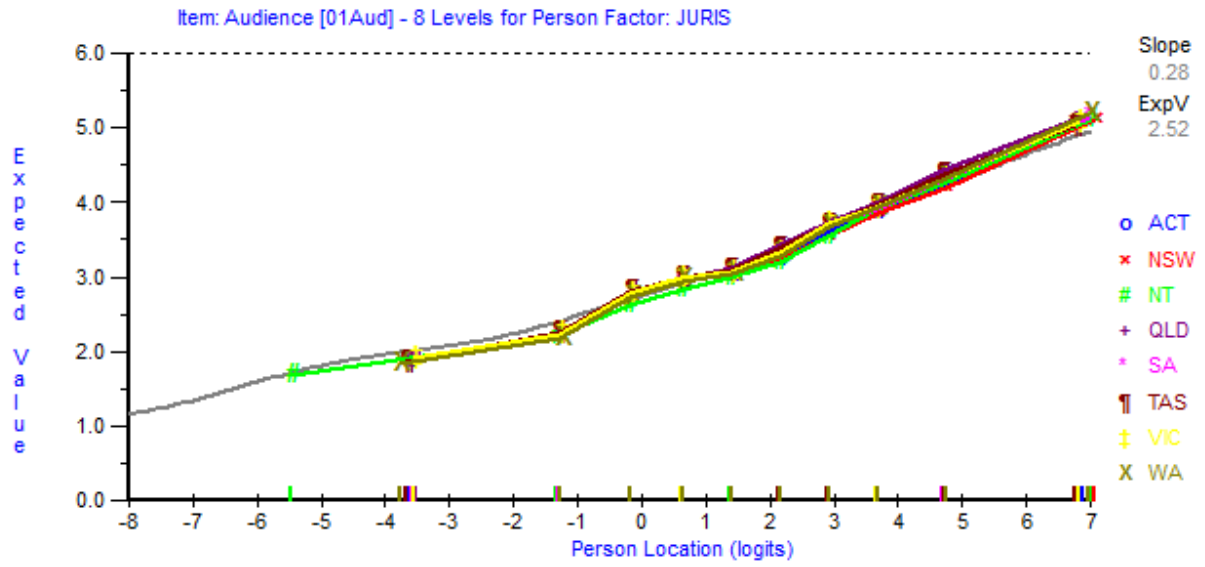


FIGURE J.2 Criterion 2: Text Structure

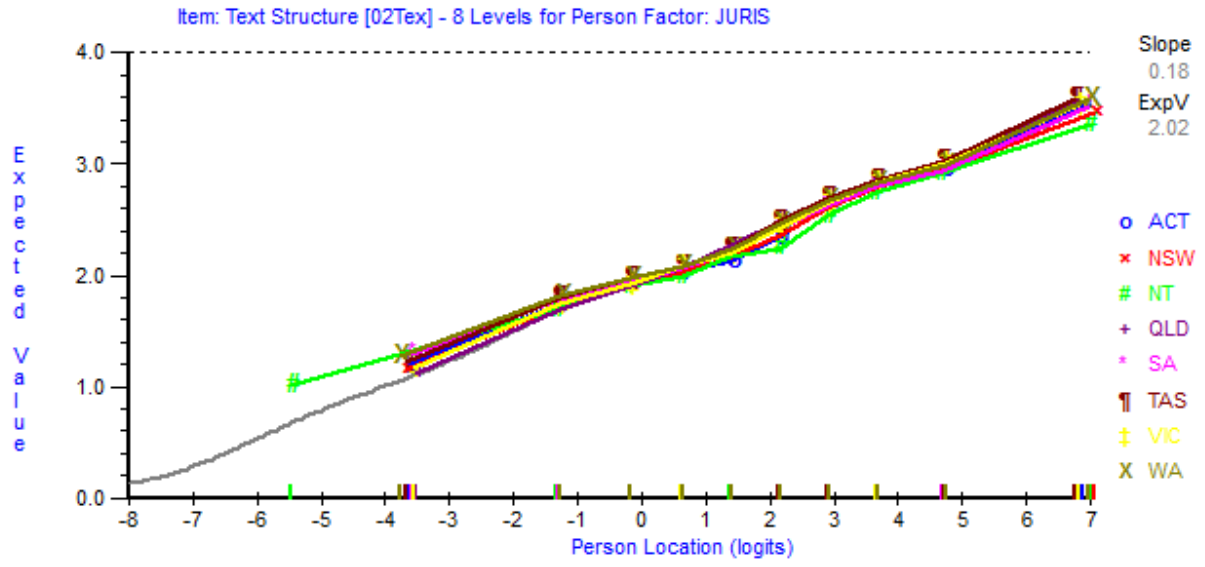


FIGURE J.3 Criterion 3: Ideas

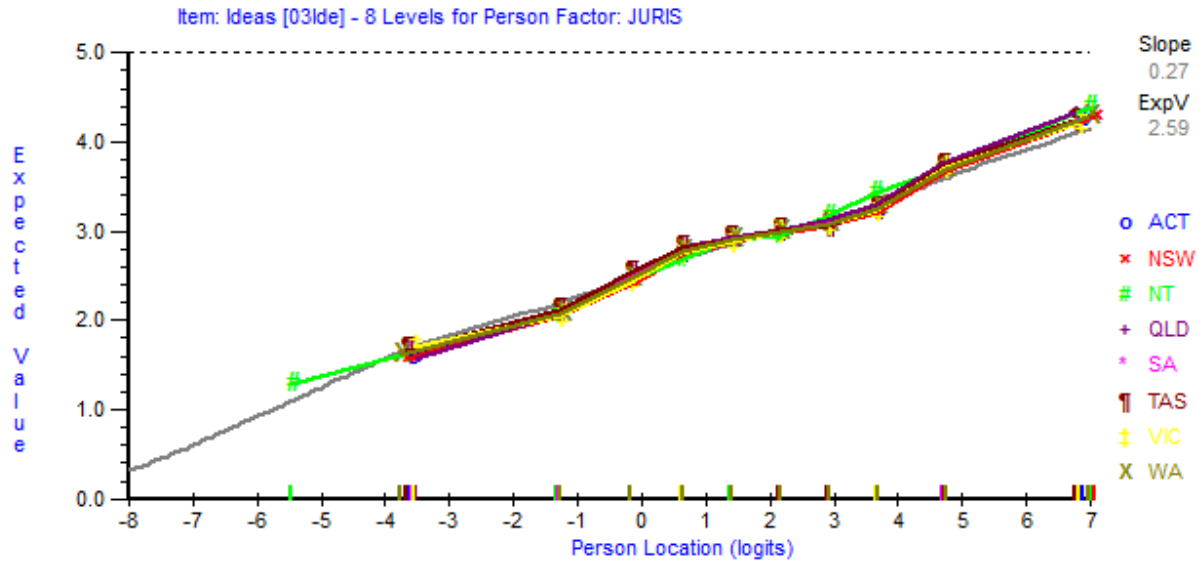


FIGURE J.4 Criterion 4: Character_and_Setting

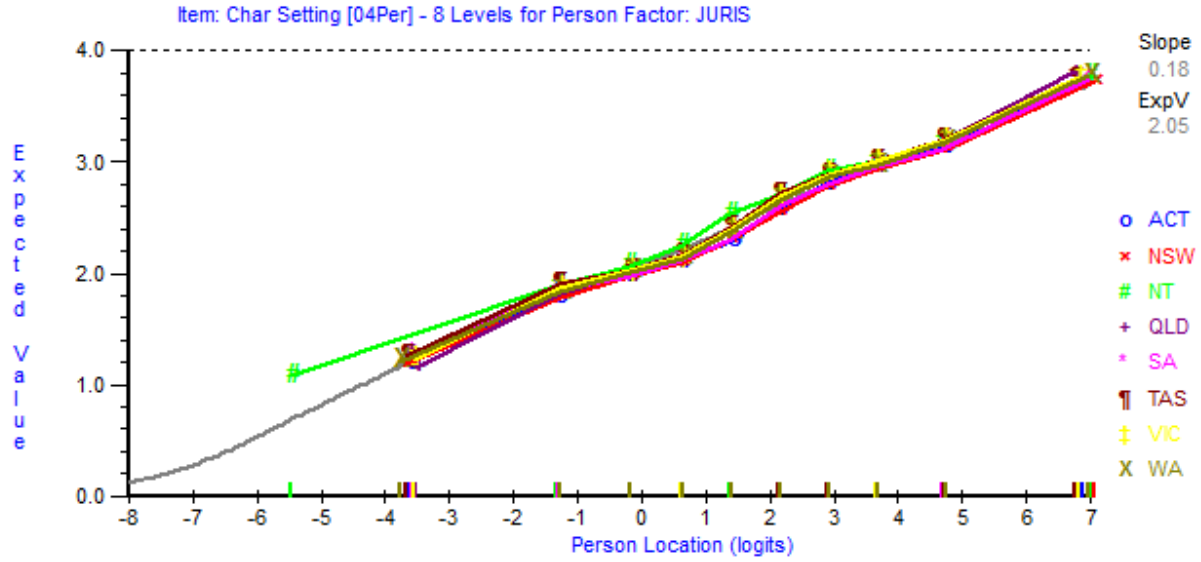


FIGURE J.5 Criterion 5: Vocabulary

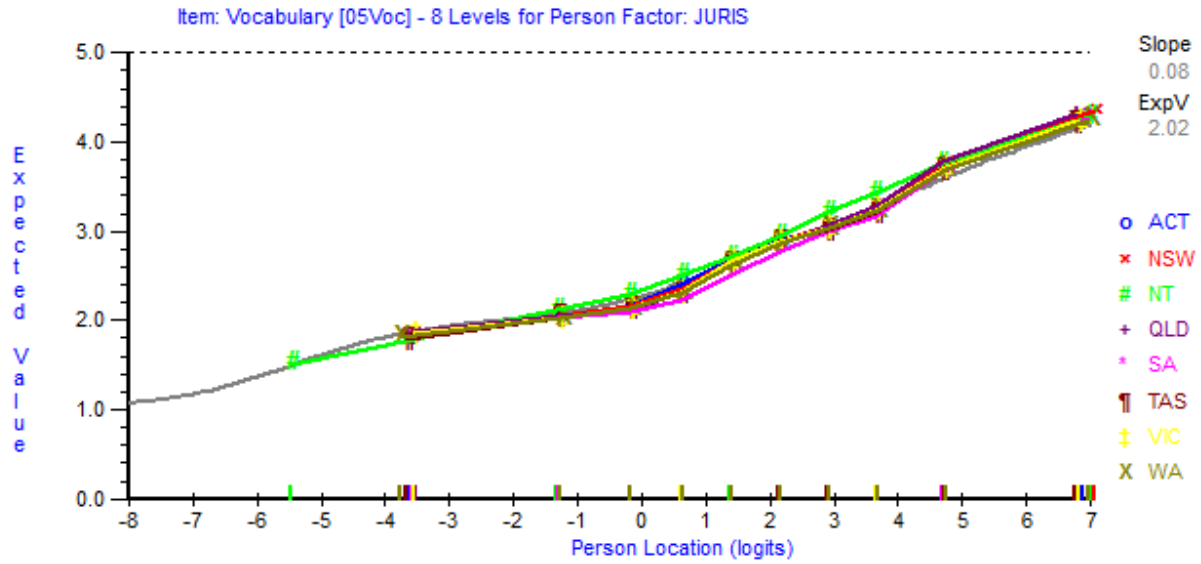


FIGURE J.6 Criterion 6: Cohesion

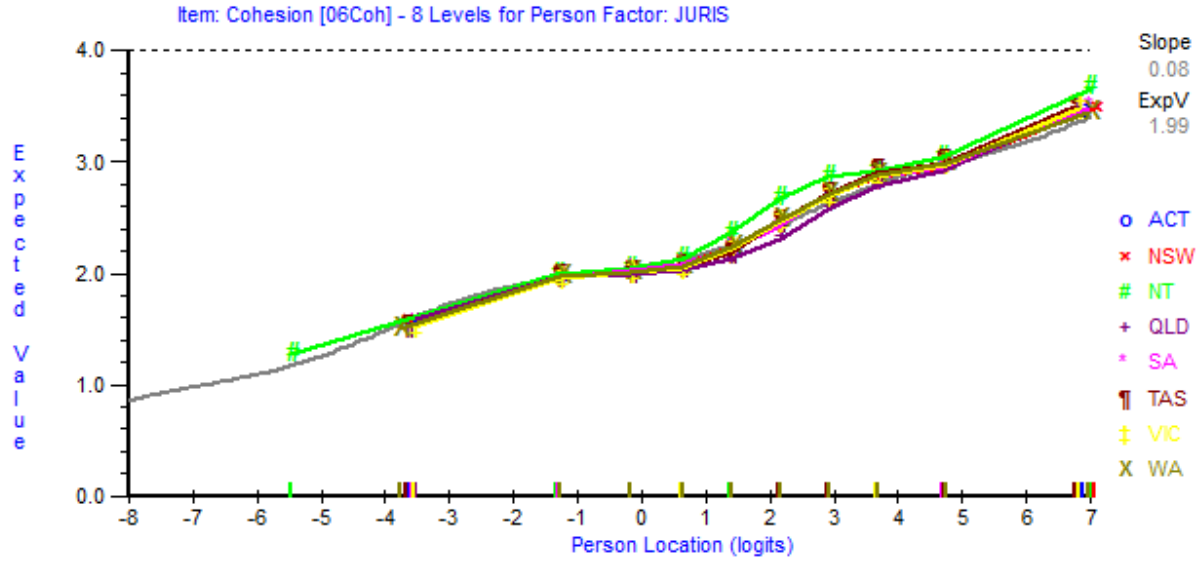


FIGURE J.7 Criterion 7: Paragraphing

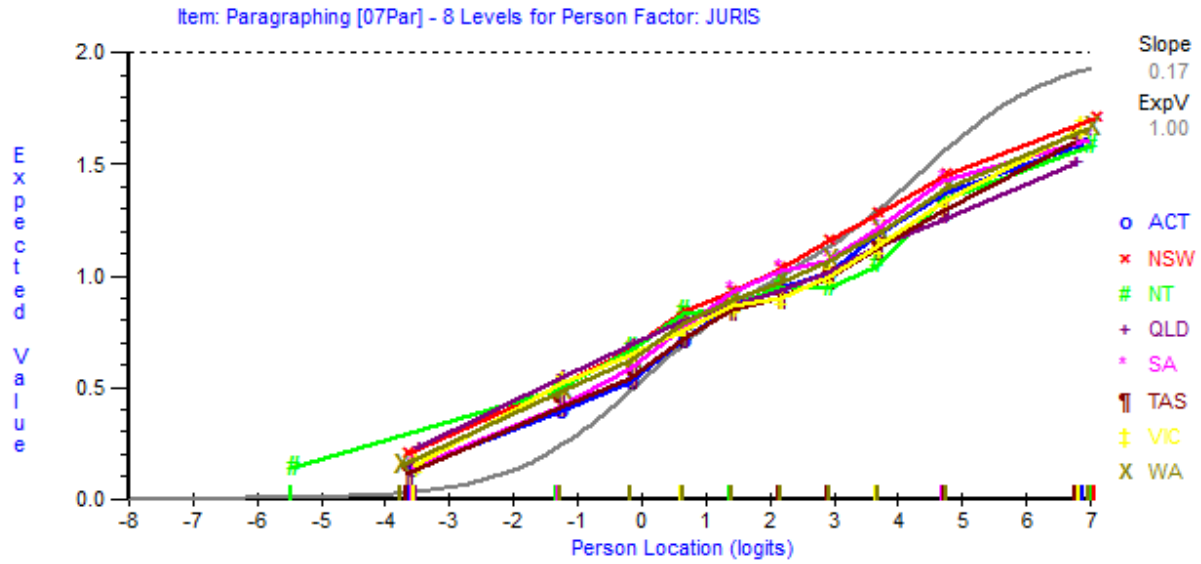


FIGURE J.8 Criterion 8: Sentence Structure

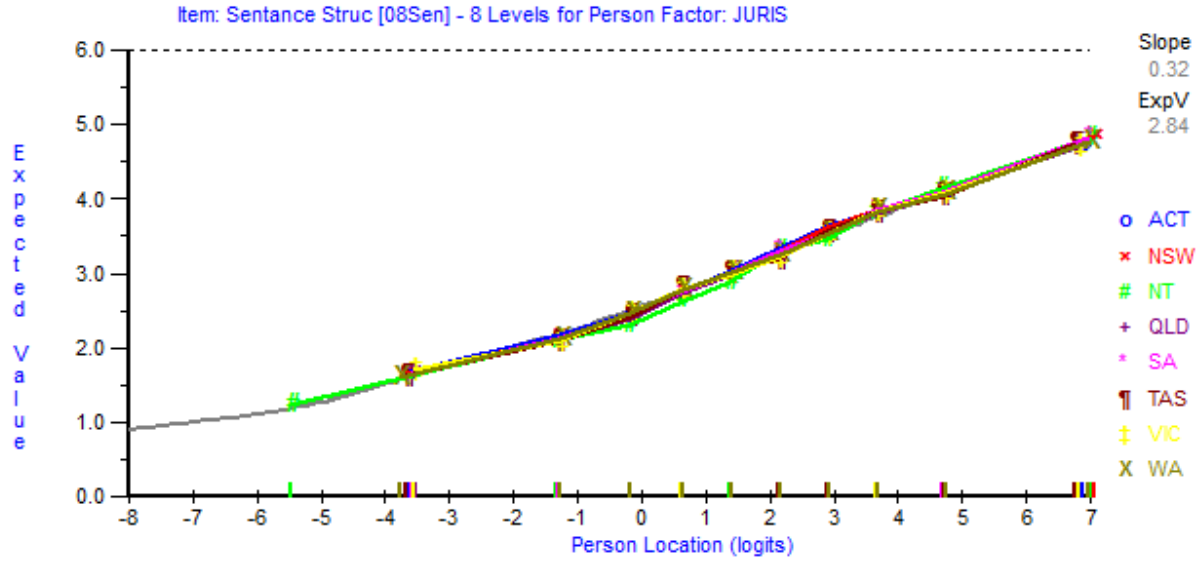


FIGURE J.9 Criterion 9: Punctuation

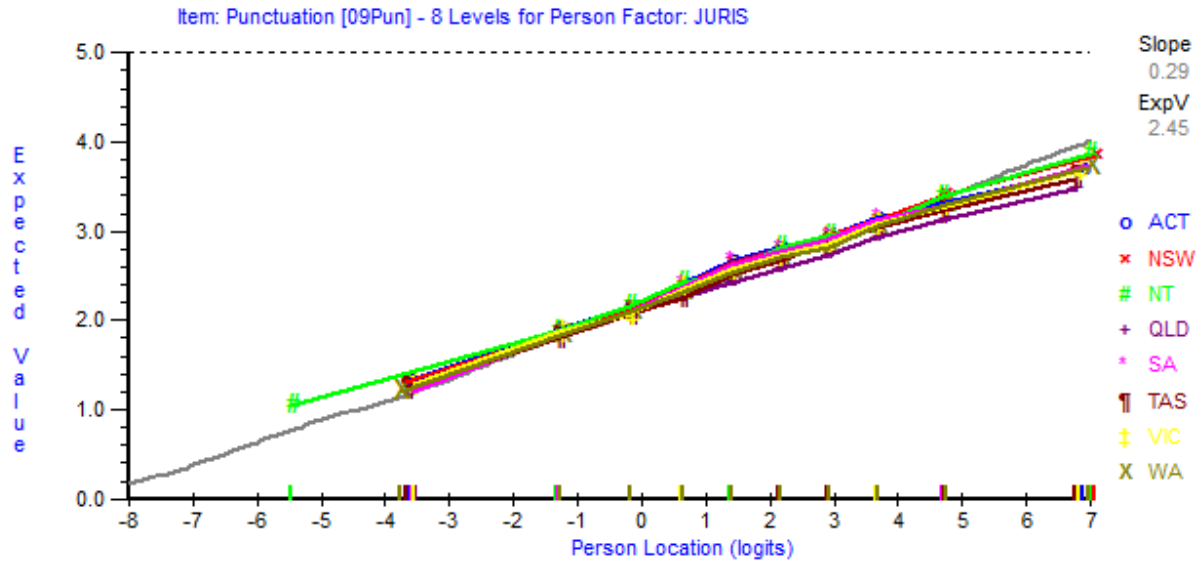
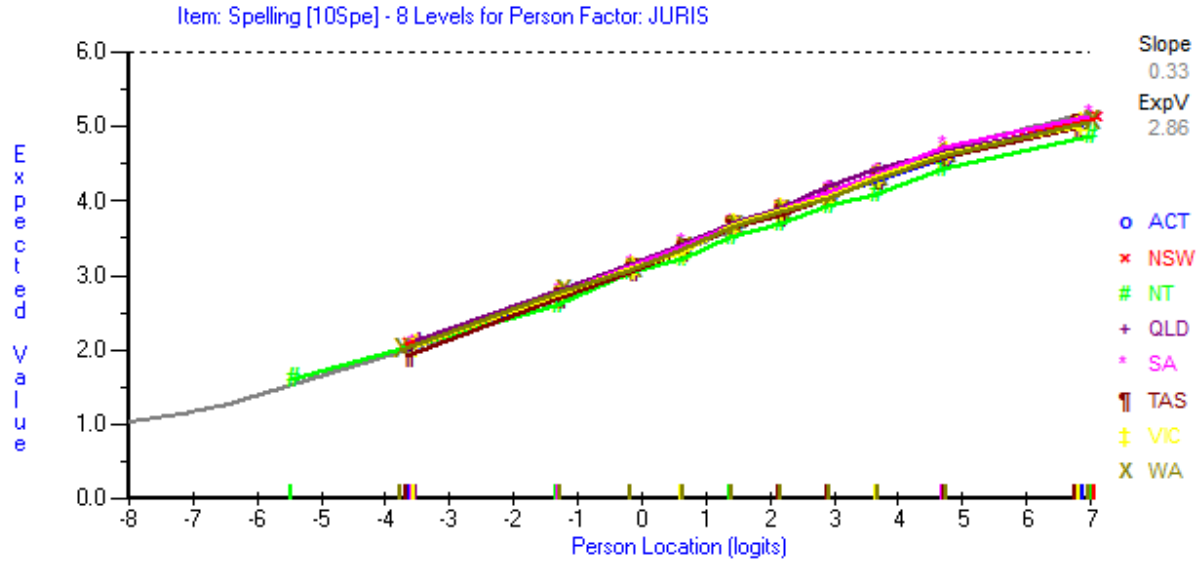


FIGURE J.10 Criterion 10: Spelling



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	-5.80669	-8.20288	1.68469	-41.26111	101.17043	1
3	Numeracy	1	-4.34001	-6.43803	1.00393	64.72316	60.28885	1
3	Numeracy	2	-3.56594	-5.50659	0.78594	120.65878	47.19793	1
3	Numeracy	3	-3.04808	-4.88345	0.67010	158.08011	40.24141	1
3	Numeracy	4	-2.65632	-4.41204	0.59752	186.38962	35.88278	1
3	Numeracy	5	-2.33683	-4.02760	0.54767	209.47634	32.88914	1
3	Numeracy	6	-2.06357	-3.69879	0.51134	229.22232	30.70742	1
3	Numeracy	7	-1.82210	-3.40823	0.48390	246.67127	29.05957	1
3	Numeracy	8	-1.60356	-3.14526	0.46263	262.46337	27.78225	1
3	Numeracy	9	-1.40208	-2.90282	0.44593	277.02258	26.77937	2
3	Numeracy	10	-1.21361	-2.67603	0.43260	290.64196	25.97886	2
3	Numeracy	11	-1.03516	-2.46130	0.42198	303.53711	25.34110	2
3	Numeracy	12	-0.86445	-2.25589	0.41356	315.87257	24.83546	2
3	Numeracy	13	-0.69970	-2.05764	0.40699	327.77804	24.44091	3
3	Numeracy	14	-0.53945	-1.86481	0.40201	339.35804	24.14184	3
3	Numeracy	15	-0.38250	-1.67596	0.39844	350.69902	23.92746	3
3	Numeracy	16	-0.22778	-1.48978	0.39614	361.87965	23.78933	3
3	Numeracy	17	-0.07436	-1.30517	0.39504	372.96601	23.72328	3
3	Numeracy	18	0.07867	-1.12103	0.39509	384.02414	23.72628	4
3	Numeracy	19	0.23218	-0.93631	0.39630	395.11710	23.79894	4
3	Numeracy	20	0.38706	-0.74994	0.39871	406.30915	23.94367	4
3	Numeracy	21	0.54426	-0.56078	0.40240	417.66875	24.16527	4
3	Numeracy	22	0.70488	-0.36751	0.40748	429.27516	24.47033	5
3	Numeracy	23	0.87008	-0.16873	0.41423	441.21247	24.87569	5
3	Numeracy	24	1.04139	0.03741	0.42282	453.59176	25.39154	5
3	Numeracy	25	1.22063	0.25309	0.43367	466.54396	26.04312	5
3	Numeracy	26	1.41014	0.48113	0.44727	480.23841	26.85984	6
3	Numeracy	27	1.61304	0.72528	0.46429	494.90031	27.88194	6
3	Numeracy	28	1.83355	0.99062	0.48599	510.83473	29.18508	6
3	Numeracy	29	2.07781	1.28454	0.51383	528.48547	30.85695	6
3	Numeracy	30	2.35496	1.61803	0.55030	548.51249	33.04708	6
3	Numeracy	31	2.67937	2.00839	0.59936	571.95472	35.99327	6
3	Numeracy	32	3.07469	2.48408	0.66860	600.52126	40.15133	6
3	Numeracy	33	3.58249	3.09512	0.77384	637.21595	46.47129	6
3	Numeracy	34	4.29212	3.94902	0.96560	688.49508	57.98703	6
3	Numeracy	35	5.60183	5.52499	1.59184	783.13656	95.59452	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	-5.06840	-5.72683	1.47843	36.57564	99.44373	1
3	Reading	1	-3.90521	-4.57027	0.87701	114.36941	58.99038	1
3	Reading	2	-3.32899	-3.99734	0.69760	152.90644	46.92271	1
3	Reading	3	-2.92636	-3.59700	0.60512	179.83453	40.70223	1
3	Reading	4	-2.60820	-3.28066	0.54729	201.11253	36.81240	1
3	Reading	5	-2.33999	-3.01397	0.50732	219.05092	34.12390	1
3	Reading	6	-2.10472	-2.78005	0.47801	234.78509	32.15242	1
3	Reading	7	-1.89269	-2.56922	0.45563	248.96617	30.64707	1
3	Reading	8	-1.69788	-2.37552	0.43804	261.99502	29.46391	1
3	Reading	9	-1.51622	-2.19490	0.42401	274.14408	28.52021	2
3	Reading	10	-1.34489	-2.02455	0.41259	285.60234	27.75207	2
3	Reading	11	-1.18175	-1.86234	0.40326	296.51308	27.12450	2
3	Reading	12	-1.02518	-1.70666	0.39563	306.98460	26.61129	2
3	Reading	13	-0.87388	-1.55622	0.38944	317.10365	26.19493	2
3	Reading	14	-0.72677	-1.40995	0.38450	326.94222	25.86265	3
3	Reading	15	-0.58293	-1.26693	0.38066	336.56218	25.60436	3
3	Reading	16	-0.44158	-1.12639	0.37782	346.01534	25.41333	3
3	Reading	17	-0.30197	-0.98757	0.37592	355.35279	25.28553	3
3	Reading	18	-0.16345	-0.84984	0.37490	364.61694	25.21692	3
3	Reading	19	-0.02535	-0.71253	0.37476	373.85283	25.20751	3
3	Reading	20	0.11295	-0.57502	0.37549	383.10217	25.25661	4
3	Reading	21	0.25211	-0.43665	0.37710	392.40936	25.36490	4
3	Reading	22	0.39280	-0.29676	0.37963	401.81879	25.53508	4
3	Reading	23	0.53573	-0.15465	0.38316	411.37755	25.77252	4
3	Reading	24	0.68172	-0.00949	0.38773	421.14145	26.07991	4
3	Reading	25	0.83162	0.13956	0.39350	431.16701	26.46802	5
3	Reading	26	0.98648	0.29353	0.40060	441.52351	26.94558	5
3	Reading	27	1.14750	0.45364	0.40925	452.29300	27.52741	5
3	Reading	28	1.31615	0.62133	0.41971	463.57234	28.23098	5
3	Reading	29	1.49427	0.79843	0.43237	475.48463	29.08253	5
3	Reading	30	1.68422	0.98730	0.44789	488.18861	30.12645	6
3	Reading	31	1.88919	1.19110	0.46704	501.89682	31.41454	6
3	Reading	32	2.11358	1.41421	0.49115	516.90388	33.03625	6
3	Reading	33	2.36394	1.66314	0.52232	533.64768	35.13284	6
3	Reading	34	2.65053	1.94810	0.56425	552.81496	37.95318	6
3	Reading	35	2.99120	2.28683	0.62399	575.59898	41.97148	6
3	Reading	36	3.42128	2.71446	0.71911	604.36268	48.36954	6
3	Reading	37	4.03115	3.32085	0.90140	645.15033	60.63093	6
3	Reading	38	5.23515	4.51799	1.51102	725.67364	101.63584	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	-5.79092	-7.37910	1.61662	182.95034	61.60665	1
3	Spelling	1	-4.45683	-5.87065	0.99209	240.43482	37.80687	1
3	Spelling	2	-3.71686	-5.03396	0.81161	272.31965	30.92908	2
3	Spelling	3	-3.16138	-4.40588	0.71978	296.25472	27.42959	2
3	Spelling	4	-2.70122	-3.88558	0.66261	316.08247	25.25094	2
3	Spelling	5	-2.29997	-3.43188	0.62374	333.37220	23.76967	3
3	Spelling	6	-1.93792	-3.02251	0.59610	348.97260	22.71636	3
3	Spelling	7	-1.60261	-2.64338	0.57617	363.42060	21.95686	3
3	Spelling	8	-1.28577	-2.28513	0.56161	377.07290	21.40200	4
3	Spelling	9	-0.98178	-1.94141	0.55104	390.17149	20.99920	4
3	Spelling	10	-0.68684	-1.60792	0.54347	402.88023	20.71072	4
3	Spelling	11	-0.39833	-1.28170	0.53828	415.31192	20.51294	4
3	Spelling	12	-0.11418	-0.96041	0.53520	427.55573	20.39556	5
3	Spelling	13	0.16751	-0.64190	0.53419	439.69361	20.35707	5
3	Spelling	14	0.44884	-0.32380	0.53541	451.81586	20.40357	5
3	Spelling	15	0.73229	-0.00331	0.53916	464.02919	20.54647	5
3	Spelling	16	1.02084	0.32296	0.54584	476.46279	20.80104	5
3	Spelling	17	1.31811	0.65908	0.55595	489.27175	21.18631	6
3	Spelling	18	1.62851	1.01005	0.57017	502.64662	21.72821	6
3	Spelling	19	1.95746	1.38199	0.58947	516.82062	22.46370	6
3	Spelling	20	2.31184	1.78269	0.61538	532.09062	23.45109	6
3	Spelling	21	2.70115	2.22288	0.65104	548.86552	24.81003	6
3	Spelling	22	3.14076	2.71995	0.70340	567.80801	26.80538	6
3	Spelling	23	3.66232	3.30968	0.78911	590.28162	30.07164	6
3	Spelling	24	4.35131	4.08872	0.96215	619.96951	36.66590	6
3	Spelling	25	5.61800	5.52096	1.57037	674.54975	59.84414	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	-4.78945	-5.59139	1.55742	-3.07166	114.47409	1
3	GP	1	-3.52890	-4.14894	0.94003	102.95186	69.09445	1
3	GP	2	-2.86361	-3.38765	0.75525	158.90849	55.51268	1
3	GP	3	-2.38475	-2.83969	0.65822	199.18486	48.38074	1
3	GP	4	-2.00336	-2.40327	0.59589	231.26277	43.79934	1
3	GP	5	-1.68254	-2.03615	0.55217	258.24697	40.58581	1
3	GP	6	-1.40256	-1.71577	0.51995	281.79566	38.21757	2
3	GP	7	-1.15134	-1.42830	0.49574	302.92540	36.43807	2
3	GP	8	-0.92104	-1.16477	0.47710	322.29548	35.06799	3
3	GP	9	-0.70613	-0.91885	0.46281	340.37119	34.01764	3
3	GP	10	-0.50256	-0.68590	0.45202	357.49357	33.22455	3
3	GP	11	-0.30720	-0.46235	0.44423	373.92503	32.65197	3
3	GP	12	-0.11756	-0.24535	0.43898	389.87505	32.26608	4
3	GP	13	0.06850	-0.03244	0.43608	405.52444	32.05292	4
3	GP	14	0.25295	0.17863	0.43542	421.03859	32.00441	4
3	GP	15	0.43766	0.38999	0.43702	436.57405	32.12201	5
3	GP	16	0.62457	0.60387	0.44103	452.29474	32.41676	5
3	GP	17	0.81582	0.82272	0.44774	468.38074	32.90996	5
3	GP	18	1.01395	1.04944	0.45765	485.04520	33.63837	6
3	GP	19	1.22218	1.28772	0.47155	502.55935	34.66005	6
3	GP	20	1.44490	1.54258	0.49060	521.29217	36.06027	6
3	GP	21	1.68839	1.82120	0.51697	541.77141	37.99853	6
3	GP	22	1.96259	2.13497	0.55429	564.83425	40.74164	6
3	GP	23	2.28467	2.50353	0.61011	591.92429	44.84454	6
3	GP	24	2.68946	2.96673	0.70074	625.97060	51.50606	6
3	GP	25	3.26620	3.62669	0.87884	674.47924	64.59684	6
3	GP	26	4.42852	4.95673	1.47927	772.24035	108.72988	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	-5.27377	-4.68846	1.47984	169.78982	88.86860	3
5	Numeracy	1	-4.10882	-3.60145	0.87804	235.06786	52.72880	3
5	Numeracy	2	-3.53123	-3.06250	0.69853	267.43334	41.94871	3
5	Numeracy	3	-3.12749	-2.68577	0.60598	290.05705	36.39082	3
5	Numeracy	4	-2.80839	-2.38802	0.54812	307.93779	32.91617	3
5	Numeracy	5	-2.53936	-2.13699	0.50814	323.01285	30.51525	3
5	Numeracy	6	-2.30330	-1.91672	0.47884	336.24069	28.75571	3
5	Numeracy	7	-2.09051	-1.71817	0.45647	348.16418	27.41232	3
5	Numeracy	8	-1.89495	-1.53569	0.43889	359.12263	26.35659	3
5	Numeracy	9	-1.71253	-1.36547	0.42486	369.34482	25.51405	3
5	Numeracy	10	-1.54044	-1.20489	0.41342	378.98811	24.82705	4
5	Numeracy	11	-1.37657	-1.05199	0.40405	388.17019	24.26435	4
5	Numeracy	12	-1.21930	-0.90524	0.39636	396.98294	23.80255	4
5	Numeracy	13	-1.06736	-0.76346	0.39006	405.49724	23.42421	4
5	Numeracy	14	-0.91967	-0.62565	0.38503	413.77312	23.12215	4
5	Numeracy	15	-0.77537	-0.49101	0.38104	421.85864	22.88254	4
5	Numeracy	16	-0.63368	-0.35880	0.37802	429.79822	22.70118	5
5	Numeracy	17	-0.49390	-0.22837	0.37590	437.63092	22.57387	5
5	Numeracy	18	-0.35537	-0.09911	0.37464	445.39335	22.49820	5
5	Numeracy	19	-0.21747	0.02957	0.37421	453.12095	22.47238	5
5	Numeracy	20	-0.07960	0.15822	0.37461	460.84675	22.49640	5
5	Numeracy	21	0.05885	0.28740	0.37586	468.60437	22.57146	5
5	Numeracy	22	0.19857	0.41778	0.37796	476.43406	22.69757	5
5	Numeracy	23	0.34018	0.54991	0.38099	484.36884	22.87953	6
5	Numeracy	24	0.48443	0.68451	0.38500	492.45196	23.12035	6
5	Numeracy	25	0.63215	0.82235	0.39008	500.72964	23.42541	6
5	Numeracy	26	0.78425	0.96427	0.39633	509.25234	23.80074	6
5	Numeracy	27	0.94179	1.11127	0.40390	518.08011	24.25534	6
5	Numeracy	28	1.10603	1.26453	0.41296	527.28381	24.79942	6
5	Numeracy	29	1.27844	1.42540	0.42372	536.94451	25.44559	7
5	Numeracy	30	1.46082	1.59558	0.43652	547.16430	26.21427	7
5	Numeracy	31	1.65539	1.77713	0.45176	558.06690	27.12947	7
5	Numeracy	32	1.86499	1.97271	0.47000	569.81203	28.22484	7
5	Numeracy	33	2.09328	2.18573	0.49205	582.60449	29.54900	8
5	Numeracy	34	2.34526	2.42085	0.51919	596.72412	31.17884	8
5	Numeracy	35	2.62815	2.68482	0.55351	612.57627	33.23985	8
5	Numeracy	36	2.95325	2.98817	0.59866	630.79330	35.95124	8
5	Numeracy	37	3.34005	3.34909	0.66261	652.46757	39.79162	8
5	Numeracy	38	3.82732	3.80376	0.76235	679.77180	45.78129	8
5	Numeracy	39	4.51054	4.44127	0.95141	718.05609	57.13488	8
5	Numeracy	40	5.80736	5.65134	1.58025	790.72424	94.89851	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	-5.24931	-6.12343	1.49208	9.89911	100.36188	3
5	Reading	1	-4.07083	-4.69523	0.88905	105.96422	59.80023	3
5	Reading	2	-3.47950	-3.97859	0.70986	154.16762	47.74736	3
5	Reading	3	-3.06217	-3.47283	0.61762	188.18659	41.54301	3
5	Reading	4	-2.72985	-3.07009	0.55992	215.27611	37.66194	3
5	Reading	5	-2.44817	-2.72872	0.51993	238.23771	34.97209	3
5	Reading	6	-2.20017	-2.42817	0.49047	258.45362	32.99052	3
5	Reading	7	-1.97618	-2.15672	0.46784	276.71218	31.46835	3
5	Reading	8	-1.77016	-1.90704	0.44994	293.50642	30.26434	3
5	Reading	9	-1.57802	-1.67419	0.43551	309.16863	29.29374	3
5	Reading	10	-1.39685	-1.45463	0.42372	323.93691	28.50071	3
5	Reading	11	-1.22448	-1.24573	0.41400	337.98816	27.84691	3
5	Reading	12	-1.05921	-1.04544	0.40599	351.46028	27.30813	3
5	Reading	13	-0.89968	-0.85211	0.39941	364.46425	26.86554	3
5	Reading	14	-0.74478	-0.66439	0.39407	377.09087	26.50636	4
5	Reading	15	-0.59355	-0.48111	0.38985	389.41885	26.22251	4
5	Reading	16	-0.44519	-0.30131	0.38658	401.51275	26.00256	4
5	Reading	17	-0.29894	-0.12407	0.38425	413.43445	25.84583	4
5	Reading	18	-0.15412	0.05143	0.38279	425.23912	25.74763	4
5	Reading	19	-0.01010	0.22597	0.38218	436.97922	25.70660	5
5	Reading	20	0.13374	0.40029	0.38240	448.70451	25.72140	5
5	Reading	21	0.27804	0.57517	0.38349	460.46748	25.79471	5
5	Reading	22	0.42345	0.75139	0.38547	472.32058	25.92789	5
5	Reading	23	0.57065	0.92978	0.38841	484.31963	26.12565	6
5	Reading	24	0.72044	1.11131	0.39239	496.52990	26.39335	6
5	Reading	25	0.87364	1.29698	0.39759	509.01863	26.74312	6
5	Reading	26	1.03129	1.48803	0.40413	521.86924	27.18302	6
5	Reading	27	1.19462	1.68597	0.41227	535.18329	27.73054	7
5	Reading	28	1.36511	1.89259	0.42235	549.08119	28.40856	7
5	Reading	29	1.54472	2.11026	0.43481	563.72234	29.24665	7
5	Reading	30	1.73600	2.34207	0.45028	579.31459	30.28721	7
5	Reading	31	1.94241	2.59222	0.46993	596.14045	31.60893	8
5	Reading	32	2.16905	2.86688	0.49516	614.61492	33.30598	8
5	Reading	33	2.42361	3.17539	0.52849	635.36625	35.54786	8
5	Reading	34	2.71862	3.53291	0.57419	659.41414	38.62178	8
5	Reading	35	3.07640	3.96650	0.64047	688.57873	43.07998	8
5	Reading	36	3.54176	4.53047	0.74615	726.51308	50.18834	8
5	Reading	37	4.22301	5.35608	0.94655	782.04614	63.66785	8
5	Reading	38	5.55234	6.96709	1.59482	890.40761	107.27248	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	-5.53157	-4.61277	1.58335	288.37049	60.33878	3
5	Spelling	1	-4.25001	-3.36799	0.97462	335.80694	37.14112	3
5	Spelling	2	-3.54220	-2.68049	0.80312	362.00640	30.60554	3
5	Spelling	3	-2.99809	-2.15200	0.71775	382.14626	27.35224	4
5	Spelling	4	-2.53520	-1.70239	0.66367	399.28013	25.29134	4
5	Spelling	5	-2.12685	-1.30576	0.62386	414.39503	23.77425	4
5	Spelling	6	-1.76113	-0.95054	0.59246	427.93186	22.57765	5
5	Spelling	7	-1.42941	-0.62834	0.56737	440.21036	21.62151	5
5	Spelling	8	-1.12407	-0.33176	0.54755	451.51252	20.86620	5
5	Spelling	9	-0.83853	-0.05442	0.53229	462.08148	20.28467	5
5	Spelling	10	-0.56732	0.20901	0.52106	472.12035	19.85671	5
5	Spelling	11	-0.30597	0.46286	0.51336	481.79414	19.56328	6
5	Spelling	12	-0.05075	0.71075	0.50882	491.24081	19.39027	6
5	Spelling	13	0.20155	0.95581	0.50715	500.57963	19.32663	6
5	Spelling	14	0.45373	1.20076	0.50818	509.91426	19.36588	6
5	Spelling	15	0.70846	1.44817	0.51185	519.34263	19.50574	6
5	Spelling	16	0.96835	1.70061	0.51826	528.96269	19.75001	6
5	Spelling	17	1.23620	1.96077	0.52770	538.87695	20.10975	7
5	Spelling	18	1.51525	2.23181	0.54081	549.20582	20.60935	7
5	Spelling	19	1.80976	2.51787	0.55861	560.10708	21.28768	7
5	Spelling	20	2.12573	2.82477	0.58315	571.80252	22.22286	7
5	Spelling	21	2.47268	3.16176	0.61813	584.64464	23.55589	8
5	Spelling	22	2.86745	3.54520	0.67071	599.25689	25.55962	8
5	Spelling	23	3.34423	4.00830	0.75801	616.90484	28.88648	8
5	Spelling	24	3.99172	4.63721	0.93320	640.87154	35.56267	8
5	Spelling	25	5.22272	5.83288	1.53935	686.43649	58.66202	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	-5.30785	-5.52957	1.69442	1.47225	124.54392	3
5	GP	1	-3.82767	-3.79450	1.01243	129.00404	74.41602	3
5	GP	2	-3.04329	-2.87505	0.79611	196.58581	58.51599	3
5	GP	3	-2.51452	-2.25523	0.68354	242.14406	50.24182	3
5	GP	4	-2.10833	-1.77909	0.61440	277.14149	45.15987	3
5	GP	5	-1.77072	-1.38335	0.56792	306.22933	41.74348	3
5	GP	6	-1.47612	-1.03802	0.53487	331.61191	39.31422	3
5	GP	7	-1.21070	-0.72689	0.51039	354.48071	37.51488	3
5	GP	8	-0.96606	-0.44012	0.49194	375.55899	36.15877	4
5	GP	9	-0.73675	-0.17133	0.47778	395.31569	35.11797	4
5	GP	10	-0.51886	0.08408	0.46703	414.08894	34.32782	4
5	GP	11	-0.30944	0.32957	0.45908	432.13304	33.74348	5
5	GP	12	-0.10610	0.56792	0.45358	449.65233	33.33921	5
5	GP	13	0.09322	0.80156	0.45032	466.82543	33.09960	5
5	GP	14	0.29042	1.03272	0.44923	483.81624	33.01948	6
5	GP	15	0.48738	1.26360	0.45036	500.78648	33.10254	6
5	GP	16	0.68608	1.49651	0.45387	517.90592	33.36053	6
5	GP	17	0.88871	1.73404	0.46008	535.36494	33.81698	7
5	GP	18	1.09790	1.97925	0.46948	553.38846	34.50790	7
5	GP	19	1.31694	2.23601	0.48290	572.26093	35.49430	7
5	GP	20	1.55028	2.50953	0.50161	592.36531	36.86953	8
5	GP	21	1.80442	2.80743	0.52746	614.26167	38.76957	8
5	GP	22	2.08921	3.14126	0.56451	638.79897	41.49283	8
5	GP	23	2.42209	3.53147	0.61971	667.48034	45.55017	8
5	GP	24	2.83778	4.01874	0.70995	703.29585	52.18302	8
5	GP	25	3.42562	4.70780	0.88775	753.94340	65.25175	8
5	GP	26	4.59925	6.08353	1.48928	855.06284	109.46564	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	-5.62115	-3.86497	1.45340	219.24273	87.28081	4
7	Numeracy	1	-4.48433	-2.77442	0.85356	284.73337	51.25871	4
7	Numeracy	2	-3.93500	-2.24745	0.67246	316.37941	40.38314	4
7	Numeracy	3	-3.55975	-1.88747	0.57781	337.99724	34.69914	4
7	Numeracy	4	-3.26937	-1.60891	0.51792	354.72556	31.10257	4
7	Numeracy	5	-3.02936	-1.37867	0.47606	368.55213	28.58876	4
7	Numeracy	6	-2.82267	-1.18039	0.44491	380.45940	26.71811	4
7	Numeracy	7	-2.63965	-1.00482	0.42074	391.00288	25.26663	4
7	Numeracy	8	-2.47428	-0.84618	0.40136	400.52967	24.10281	4
7	Numeracy	9	-2.32256	-0.70063	0.38546	409.27036	23.14797	4
7	Numeracy	10	-2.18167	-0.56548	0.37220	417.38650	22.35167	4
7	Numeracy	11	-2.04958	-0.43876	0.36098	424.99640	21.67788	4
7	Numeracy	12	-1.92475	-0.31902	0.35139	432.18712	21.10197	5
7	Numeracy	13	-1.80599	-0.20509	0.34312	439.02895	20.60533	5
7	Numeracy	14	-1.69239	-0.09611	0.33590	445.57350	20.17175	5
7	Numeracy	15	-1.58315	0.00868	0.32965	451.86644	19.79642	5
7	Numeracy	16	-1.47769	0.10985	0.32417	457.94199	19.46733	5
7	Numeracy	17	-1.37549	0.20789	0.31934	463.82957	19.17728	5
7	Numeracy	18	-1.27610	0.30323	0.31509	469.55501	18.92205	5
7	Numeracy	19	-1.17916	0.39623	0.31135	475.13992	18.69745	5
7	Numeracy	20	-1.08434	0.48719	0.30807	480.60233	18.50048	6
7	Numeracy	21	-0.99136	0.57639	0.30521	485.95904	18.32873	6
7	Numeracy	22	-0.89997	0.66406	0.30271	491.22388	18.17860	6
7	Numeracy	23	-0.80995	0.75041	0.30056	496.40944	18.04948	6
7	Numeracy	24	-0.72109	0.83566	0.29873	501.52895	17.93959	6
7	Numeracy	25	-0.63321	0.91996	0.29719	506.59140	17.84711	6
7	Numeracy	26	-0.54613	1.00350	0.29593	511.60822	17.77144	6
7	Numeracy	27	-0.45970	1.08641	0.29492	516.58720	17.71079	6
7	Numeracy	28	-0.37377	1.16884	0.29417	521.53735	17.66575	6
7	Numeracy	29	-0.28820	1.25093	0.29366	526.46709	17.63512	6
7	Numeracy	30	-0.20285	1.33280	0.29337	531.38362	17.61770	7
7	Numeracy	31	-0.11758	1.41460	0.29332	536.29594	17.61470	7
7	Numeracy	32	-0.03227	1.49644	0.29349	541.21067	17.62491	7
7	Numeracy	33	0.05321	1.57844	0.29388	546.13500	17.64833	7
7	Numeracy	34	0.13898	1.66072	0.29450	551.07615	17.68556	7
7	Numeracy	35	0.22519	1.74342	0.29534	556.04252	17.73601	7
7	Numeracy	36	0.31197	1.82667	0.29640	561.04192	17.79966	7
7	Numeracy	37	0.39945	1.91059	0.29769	566.08155	17.87713	7
7	Numeracy	38	0.48776	1.99531	0.29926	571.16923	17.97141	7
7	Numeracy	39	0.57706	2.08097	0.30106	576.31336	18.07951	7
7	Numeracy	40	0.66752	2.16775	0.30314	581.52474	18.20442	7
7	Numeracy	41	0.75931	2.25580	0.30551	586.81239	18.34675	8
7	Numeracy	42	0.85262	2.34532	0.30819	592.18833	18.50769	8
7	Numeracy	43	0.94765	2.43648	0.31120	597.66274	18.68845	8
7	Numeracy	44	1.04464	2.52952	0.31458	603.25006	18.89142	8

Year	Domain	Raw Score	Delta-Centered Logit	Logit	Logit SE	Scale Score	Scale SE	Band
7	Numeracy	45	1.14383	2.62467	0.31837	608.96409	19.11902	8
7	Numeracy	46	1.24554	2.72224	0.32260	614.82344	19.37305	8
7	Numeracy	47	1.35008	2.82253	0.32733	620.84614	19.65710	8
7	Numeracy	48	1.45786	2.92592	0.33263	627.05501	19.97538	8
7	Numeracy	49	1.56930	3.03283	0.33865	633.47526	20.33690	8
7	Numeracy	50	1.68495	3.14377	0.34541	640.13752	20.74285	9
7	Numeracy	51	1.80547	3.25938	0.35307	647.08023	21.20286	9
7	Numeracy	52	1.93162	3.38040	0.36180	654.34783	21.72712	9
7	Numeracy	53	2.06438	3.50776	0.37184	661.99616	22.33005	9
7	Numeracy	54	2.20496	3.64262	0.38348	670.09488	23.02907	9
7	Numeracy	55	2.35494	3.78649	0.39714	678.73469	23.84939	9
7	Numeracy	56	2.51641	3.94139	0.41340	688.03687	24.82585	9
7	Numeracy	57	2.69221	4.11003	0.43309	698.16418	26.00829	9
7	Numeracy	58	2.88640	4.29632	0.45746	709.35143	27.47178	9
7	Numeracy	59	3.10501	4.50603	0.48889	721.94511	29.35924	9
7	Numeracy	60	3.35778	4.74852	0.53086	736.50733	31.87965	9
7	Numeracy	61	3.66176	5.04012	0.59075	754.01874	35.47622	9
7	Numeracy	62	4.05147	5.41397	0.68530	776.46949	41.15422	9
7	Numeracy	63	4.61612	5.95564	0.86641	808.99832	52.03039	9
7	Numeracy	64	5.76908	7.06168	1.46822	875.41917	88.17079	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	-5.05408	-3.32098	1.49410	251.91088	89.72496	4
7	NC	1	-3.87462	-2.18953	0.89247	319.85767	53.59536	4
7	NC	2	-3.28077	-1.61985	0.71431	354.06858	42.89635	4
7	NC	3	-2.85910	-1.21534	0.62359	378.36056	37.44835	4
7	NC	4	-2.52068	-0.89069	0.56770	397.85671	34.09200	4
7	NC	5	-2.23126	-0.61305	0.52950	414.52979	31.79798	4
7	NC	6	-1.97392	-0.36618	0.50193	429.35503	30.14233	5
7	NC	7	-1.73912	-0.14094	0.48124	442.88134	28.89983	5
7	NC	8	-1.52089	0.06841	0.46526	455.45340	27.94019	5
7	NC	9	-1.31512	0.26580	0.45281	467.30723	27.19253	5
7	NC	10	-1.11886	0.45408	0.44314	478.61398	26.61182	6
7	NC	11	-0.92982	0.63542	0.43573	489.50396	26.16683	6
7	NC	12	-0.74615	0.81162	0.43023	500.08528	25.83654	6
7	NC	13	-0.56630	0.98415	0.42640	510.44619	25.60653	6
7	NC	14	-0.38892	1.15431	0.42407	520.66479	25.46661	6
7	NC	15	-0.21279	1.32327	0.42312	530.81131	25.40956	7
7	NC	16	-0.03677	1.49212	0.42348	540.95124	25.43118	7
7	NC	17	0.14019	1.66188	0.42512	551.14581	25.52967	7
7	NC	18	0.31917	1.83358	0.42802	561.45688	25.70382	7
7	NC	19	0.50124	2.00824	0.43221	571.94571	25.95544	7
7	NC	20	0.68752	2.18694	0.43778	582.67716	26.28994	8
7	NC	21	0.87926	2.37087	0.44487	593.72268	26.71571	8
7	NC	22	1.07787	2.56140	0.45370	605.16454	27.24598	8
7	NC	23	1.28507	2.76017	0.46461	617.10125	27.90115	8
7	NC	24	1.50307	2.96929	0.47812	629.65950	28.71247	8
7	NC	25	1.73483	3.19162	0.49501	643.01105	29.72676	9
7	NC	26	1.98449	3.43112	0.51673	657.39371	31.03111	9
7	NC	27	2.25832	3.69380	0.54528	673.16839	32.74562	9
7	NC	28	2.56630	3.98925	0.58447	690.91100	35.09909	9
7	NC	29	2.92596	4.33427	0.64139	711.63043	38.51730	9
7	NC	30	3.37228	4.76243	0.73350	737.34266	44.04876	9
7	NC	31	3.99526	5.36005	0.91305	773.23144	54.83125	9
7	NC	32	5.20888	6.52428	1.52146	843.14677	91.36800	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	-4.82061	-3.09701	1.48028	265.36092	88.89503	4
7	CA	1	-3.65610	-1.97990	0.87976	332.44655	52.83209	4
7	CA	2	-3.07781	-1.42515	0.70102	365.76087	42.09825	4
7	CA	3	-2.67225	-1.03609	0.60927	389.12503	36.58840	4
7	CA	4	-2.35010	-0.72705	0.55272	407.68376	33.19241	4
7	CA	5	-2.07690	-0.46497	0.51408	423.42241	30.87197	4
7	CA	6	-1.83550	-0.23340	0.48628	437.32885	29.20250	5
7	CA	7	-1.61622	-0.02304	0.46543	449.96157	27.95040	5
7	CA	8	-1.41288	0.17202	0.44959	461.67547	26.99916	5
7	CA	9	-1.22145	0.35566	0.43726	472.70358	26.25871	5
7	CA	10	-1.03896	0.53072	0.42771	483.21643	25.68520	6
7	CA	11	-0.86322	0.69931	0.42039	493.34074	25.24562	6
7	CA	12	-0.69253	0.86305	0.41492	503.17379	24.91713	6
7	CA	13	-0.52548	1.02330	0.41103	512.79726	24.68352	6
7	CA	14	-0.36087	1.18121	0.40855	522.28021	24.53459	6
7	CA	15	-0.19766	1.33778	0.40737	531.68268	24.46373	7
7	CA	16	-0.03484	1.49398	0.40743	541.06294	24.46733	7
7	CA	17	0.12852	1.65069	0.40873	550.47382	24.54540	7
7	CA	18	0.29344	1.80889	0.41130	559.97418	24.69974	7
7	CA	19	0.46095	1.96959	0.41522	569.62467	24.93514	7
7	CA	20	0.63220	2.13387	0.42061	579.49015	25.25883	7
7	CA	21	0.80853	2.30302	0.42768	589.64809	25.68340	8
7	CA	22	0.99149	2.47853	0.43668	600.18797	26.22388	8
7	CA	23	1.18302	2.66227	0.44801	611.22208	26.90428	8
7	CA	24	1.38559	2.85659	0.46220	622.89154	27.75643	8
7	CA	25	1.60244	3.06462	0.48000	635.38434	28.82537	9
7	CA	26	1.83800	3.29059	0.50288	648.95448	30.19938	9
7	CA	27	2.09880	3.54078	0.53278	663.97910	31.99496	9
7	CA	28	2.39498	3.82490	0.57339	681.04132	34.43370	9
7	CA	29	2.74400	4.15972	0.63171	701.14821	37.93598	9
7	CA	30	3.18058	4.57853	0.72489	726.29894	43.53171	9
7	CA	31	3.79392	5.16690	0.90520	761.63224	54.35984	9
7	CA	32	4.99699	6.32101	1.51232	830.93983	90.81912	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	-5.31978	-4.58809	1.48531	113.17078	99.90650	4
7	Reading	1	-4.14605	-3.25591	0.87982	202.77729	59.17939	4
7	Reading	2	-3.56366	-2.59490	0.69760	247.23885	46.92271	4
7	Reading	3	-3.15896	-2.13556	0.60193	278.13547	40.48766	4
7	Reading	4	-2.84235	-1.77621	0.54107	302.30645	36.39403	4
7	Reading	5	-2.57899	-1.47730	0.49803	322.41205	33.49902	4
7	Reading	6	-2.35145	-1.21904	0.46591	339.78341	31.33854	4
7	Reading	7	-2.14980	-0.99017	0.44063	355.17791	29.63812	4
7	Reading	8	-1.96769	-0.78347	0.42020	369.08119	28.26394	4
7	Reading	9	-1.80085	-0.59411	0.40332	381.81812	27.12854	4
7	Reading	10	-1.64624	-0.41862	0.38916	393.62212	26.17609	4
7	Reading	11	-1.50161	-0.25447	0.37714	404.66335	25.36759	4
7	Reading	12	-1.36524	-0.09969	0.36684	415.07433	24.67478	4
7	Reading	13	-1.23578	0.04725	0.35795	424.95796	24.07681	4
7	Reading	14	-1.11214	0.18758	0.35030	434.39699	23.56225	5
7	Reading	15	-0.99345	0.32229	0.34364	443.45799	23.11428	5
7	Reading	16	-0.87897	0.45223	0.33786	452.19816	22.72550	5
7	Reading	17	-0.76808	0.57809	0.33286	460.66389	22.38918	5
7	Reading	18	-0.66025	0.70047	0.32854	468.89554	22.09861	5
7	Reading	19	-0.55502	0.81991	0.32485	476.92944	21.85041	5
7	Reading	20	-0.45196	0.93688	0.32173	484.79720	21.64055	6
7	Reading	21	-0.35073	1.05178	0.31915	492.52573	21.46701	6
7	Reading	22	-0.25098	1.16500	0.31705	500.14125	21.32576	6
7	Reading	23	-0.15240	1.27688	0.31544	507.66664	21.21746	6
7	Reading	24	-0.05468	1.38780	0.31428	515.12746	21.13944	6
7	Reading	25	0.04240	1.49798	0.31355	522.53851	21.09033	6
7	Reading	26	0.13919	1.60784	0.31328	529.92803	21.07217	6
7	Reading	27	0.23592	1.71763	0.31346	537.31284	21.08428	7
7	Reading	28	0.33287	1.82767	0.31408	544.71447	21.12598	7
7	Reading	29	0.43033	1.93828	0.31517	552.15444	21.19930	7
7	Reading	30	0.52859	2.04981	0.31676	559.65629	21.30625	7
7	Reading	31	0.62797	2.16260	0.31886	567.24289	21.44750	7
7	Reading	32	0.72881	2.27706	0.32153	574.94182	21.62709	7
7	Reading	33	0.83151	2.39362	0.32480	582.78200	21.84704	8
7	Reading	34	0.93647	2.51275	0.32879	590.79505	22.11542	8
7	Reading	35	1.04421	2.63504	0.33352	599.02065	22.43358	8
7	Reading	36	1.15528	2.76110	0.33913	607.49983	22.81092	8
7	Reading	37	1.27037	2.89173	0.34574	616.28641	23.25553	8
7	Reading	38	1.39029	3.02784	0.35352	625.44158	23.77884	8
7	Reading	39	1.51603	3.17055	0.36268	635.04069	24.39497	9
7	Reading	40	1.64885	3.32130	0.37359	645.18060	25.12881	9
7	Reading	41	1.79035	3.48191	0.38664	655.98372	26.00659	9
7	Reading	42	1.94265	3.65477	0.40243	667.61082	27.06868	9
7	Reading	43	2.10867	3.84320	0.42182	680.28520	28.37291	9
7	Reading	44	2.29251	4.05186	0.44613	694.32031	30.00807	9

Year	Domain	Raw Score	Delta-Centered Logit	Logit	Logit SE	Scale Score	Scale SE	Band
7	Reading	45	2.50034	4.28774	0.47747	710.18632	32.11610	9
7	Reading	46	2.74197	4.56199	0.51957	728.63321	34.94787	9
7	Reading	47	3.03460	4.89413	0.57982	750.97397	39.00047	9
7	Reading	48	3.41299	5.32360	0.67501	779.86144	45.40324	9
7	Reading	49	3.96663	5.95198	0.85669	822.12820	57.62360	9
7	Reading	50	5.10926	7.24887	1.45790	909.36100	98.06282	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	-5.99386	-3.28721	1.60065	338.88533	60.99806	4
7	Spelling	1	-4.68316	-2.02108	0.98312	387.13540	37.46504	4
7	Spelling	2	-3.95480	-1.31748	0.80225	413.94840	30.57239	4
7	Spelling	3	-3.40845	-0.78971	0.70665	434.06082	26.92923	5
7	Spelling	4	-2.96301	-0.35941	0.64377	450.45882	24.53298	5
7	Spelling	5	-2.58468	0.00606	0.59855	464.38627	22.80973	5
7	Spelling	6	-2.25340	0.32607	0.56478	476.58130	21.52281	5
7	Spelling	7	-1.95563	0.61372	0.53930	487.54316	20.55181	6
7	Spelling	8	-1.68203	0.87802	0.51992	497.61518	19.81327	6
7	Spelling	9	-1.42579	1.12554	0.50542	507.04775	19.26070	6
7	Spelling	10	-1.18183	1.36121	0.49487	516.02873	18.85866	6
7	Spelling	11	-0.94625	1.58878	0.48757	524.70104	18.58047	6
7	Spelling	12	-0.71594	1.81126	0.48299	533.17938	18.40593	7
7	Spelling	13	-0.48836	2.03110	0.48071	541.55711	18.31904	7
7	Spelling	14	-0.26143	2.25032	0.48040	549.91121	18.30723	7
7	Spelling	15	-0.03341	2.47058	0.48179	558.30494	18.36020	7
7	Spelling	16	0.19712	2.69328	0.48469	566.79166	18.47071	7
7	Spelling	17	0.43145	2.91964	0.48896	575.41786	18.63344	7
7	Spelling	18	0.67072	3.15077	0.49463	584.22583	18.84951	8
7	Spelling	19	0.91618	3.38789	0.50176	593.26207	19.12122	8
7	Spelling	20	1.16938	3.63248	0.51064	602.58298	19.45962	8
7	Spelling	21	1.43227	3.88643	0.52163	612.26058	19.87843	8
7	Spelling	22	1.70751	4.15231	0.53527	622.39282	20.39823	8
7	Spelling	23	1.99857	4.43348	0.55228	633.10773	21.04645	8
7	Spelling	24	2.31005	4.73437	0.57396	644.57414	21.87264	9
7	Spelling	25	2.64838	5.06119	0.60202	657.02870	22.94196	9
7	Spelling	26	3.02316	5.42323	0.64002	670.82543	24.39008	9
7	Spelling	27	3.45105	5.83657	0.69492	686.57711	26.48222	9
7	Spelling	28	3.96571	6.33373	0.78399	705.52304	29.87653	9
7	Spelling	29	4.65505	6.99964	0.96087	730.89974	36.61713	9
7	Spelling	30	5.93036	8.23159	1.57392	777.84726	59.97942	9

TABLE K.14 Year 7 Grammar & Punctuation Score Equivalence Table

Year	Domain	Raw Score	Delta-Centered Logit	Logit	Logit SE	Scale Score	Scale SE	Band
7	GP	0	-4.60068	-3.71252	1.50148	135.02977	110.36237	4
7	GP	1	-3.41076	-2.37314	0.89636	233.47740	65.88460	4
7	GP	2	-2.80957	-1.69644	0.71672	283.21646	52.68063	4
7	GP	3	-2.38392	-1.21733	0.62390	318.43219	45.85814	4
7	GP	4	-2.04441	-0.83518	0.56617	346.52113	41.61485	4
7	GP	5	-1.75640	-0.51099	0.52631	370.34987	38.68504	4
7	GP	6	-1.50252	-0.22523	0.49724	391.35391	36.54833	4
7	GP	7	-1.27268	0.03348	0.47538	410.36972	34.94157	4
7	GP	8	-1.06054	0.27227	0.45847	427.92135	33.69864	5
7	GP	9	-0.86163	0.49616	0.44534	444.37780	32.73355	5
7	GP	10	-0.67269	0.70883	0.43523	460.00956	31.99044	5
7	GP	11	-0.49122	0.91309	0.42763	475.02315	31.43183	5
7	GP	12	-0.31519	1.11123	0.42219	489.58692	31.03197	6
7	GP	13	-0.14287	1.30520	0.41868	503.84417	30.77398	6
7	GP	14	0.02725	1.49668	0.41699	517.91841	30.64976	6
7	GP	15	0.19668	1.68739	0.41708	531.93605	30.65638	7
7	GP	16	0.36680	1.87888	0.41898	546.01103	30.79603	7
7	GP	17	0.53913	2.07285	0.42282	560.26828	31.07828	7
7	GP	18	0.71534	2.27120	0.42882	574.84748	31.51929	7
7	GP	19	0.89738	2.47610	0.43736	589.90812	32.14700	8
7	GP	20	1.08769	2.69031	0.44889	605.65307	32.99449	8
7	GP	21	1.28940	2.91736	0.46422	622.34179	34.12128	8
7	GP	22	1.50679	3.16205	0.48470	640.32709	35.62661	9
7	GP	23	1.74614	3.43146	0.51238	660.12936	37.66115	9
7	GP	24	2.01736	3.73675	0.55102	682.56891	40.50129	9
7	GP	25	2.33769	4.09731	0.60794	709.07093	44.68504	9
7	GP	26	2.74190	4.55229	0.69953	742.51305	51.41713	9
7	GP	27	3.31919	5.20209	0.87869	790.27490	64.58581	9
7	GP	28	4.48322	6.51232	1.48028	886.57993	108.80412	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	-6.20694	-2.98030	1.53000	272.36969	91.88086	5
9	Numeracy	1	-4.97213	-1.94121	0.90739	334.77000	54.49135	5
9	Numeracy	2	-4.34945	-1.41722	0.71733	366.23709	43.07771	5
9	Numeracy	3	-3.91896	-1.05497	0.61702	387.99123	37.05381	5
9	Numeracy	4	-3.58558	-0.77443	0.55275	404.83846	33.19421	5
9	Numeracy	5	-3.31080	-0.54320	0.50746	418.72448	30.47442	5
9	Numeracy	6	-3.07509	-0.34485	0.47346	430.63596	28.43262	5
9	Numeracy	7	-2.86713	-0.16985	0.44721	441.14521	26.85623	5
9	Numeracy	8	-2.67988	-0.01228	0.42608	450.60773	25.58732	5
9	Numeracy	9	-2.50861	0.13184	0.40873	459.26255	24.54540	5
9	Numeracy	10	-2.34999	0.26532	0.39424	467.27840	23.67523	5
9	Numeracy	11	-2.20162	0.39018	0.38198	474.77660	22.93899	5
9	Numeracy	12	-2.06170	0.50792	0.37149	481.84723	22.30903	6
9	Numeracy	13	-1.92883	0.61973	0.36243	488.56173	21.76495	6
9	Numeracy	14	-1.80193	0.72651	0.35453	494.97418	21.29054	6
9	Numeracy	15	-1.68014	0.82900	0.34762	501.12899	20.87557	6
9	Numeracy	16	-1.56274	0.92779	0.34150	507.06161	20.50805	6
9	Numeracy	17	-1.44915	1.02338	0.33613	512.80207	20.18556	6
9	Numeracy	18	-1.33888	1.11617	0.33136	518.37437	19.89911	6
9	Numeracy	19	-1.23154	1.20650	0.32711	523.79894	19.64389	6
9	Numeracy	20	-1.12676	1.29467	0.32333	529.09380	19.41689	6
9	Numeracy	21	-1.02425	1.38093	0.31997	534.27396	19.21511	7
9	Numeracy	22	-0.92372	1.46553	0.31698	539.35443	19.03555	7
9	Numeracy	23	-0.82495	1.54864	0.31434	544.34542	18.87701	7
9	Numeracy	24	-0.72771	1.63047	0.31202	549.25955	18.73769	7
9	Numeracy	25	-0.63181	1.71117	0.31000	554.10581	18.61638	7
9	Numeracy	26	-0.53706	1.79090	0.30826	558.89383	18.51189	7
9	Numeracy	27	-0.44330	1.86980	0.30679	563.63200	18.42361	7
9	Numeracy	28	-0.35035	1.94802	0.30558	568.32933	18.35095	7
9	Numeracy	29	-0.25806	2.02568	0.30462	572.99303	18.29330	7
9	Numeracy	30	-0.16629	2.10291	0.30391	577.63092	18.25066	7
9	Numeracy	31	-0.07488	2.17983	0.30345	582.25018	18.22304	8
9	Numeracy	32	0.01631	2.25656	0.30322	586.85804	18.20922	8
9	Numeracy	33	0.10742	2.33323	0.30324	591.46229	18.21043	8
9	Numeracy	34	0.19863	2.40999	0.30350	596.07194	18.22604	8
9	Numeracy	35	0.29005	2.48692	0.30401	600.69181	18.25667	8
9	Numeracy	36	0.38186	2.56417	0.30478	605.33089	18.30291	8
9	Numeracy	37	0.47420	2.64188	0.30581	609.99760	18.36476	8
9	Numeracy	38	0.56723	2.72016	0.30712	614.69853	18.44343	8
9	Numeracy	39	0.66116	2.79920	0.30869	619.44511	18.53771	8
9	Numeracy	40	0.75613	2.87912	0.31057	624.24454	18.65061	8
9	Numeracy	41	0.85236	2.96010	0.31277	629.10761	18.78273	8
9	Numeracy	42	0.95004	3.04230	0.31530	634.04396	18.93466	9
9	Numeracy	43	1.04941	3.12592	0.31819	639.06558	19.10822	9
9	Numeracy	44	1.15072	3.21117	0.32147	644.18508	19.30519	9

Year	Domain	Raw Score	Delta-Centered Logit	Logit	Logit SE	Scale Score	Scale SE	Band
9	Numeracy	45	1.25424	3.29828	0.32518	649.41629	19.52798	9
9	Numeracy	46	1.36028	3.38751	0.32935	654.77480	19.77840	9
9	Numeracy	47	1.46919	3.47916	0.33404	660.27865	20.06005	9
9	Numeracy	48	1.58138	3.57357	0.33930	665.94823	20.37593	9
9	Numeracy	49	1.69730	3.67112	0.34522	671.80639	20.73144	9
9	Numeracy	50	1.81749	3.77226	0.35199	677.88013	21.13800	9
9	Numeracy	51	1.94262	3.87755	0.35962	684.20310	21.59620	9
9	Numeracy	52	2.07347	3.98766	0.36832	690.81552	22.11866	10
9	Numeracy	53	2.21102	4.10341	0.37834	697.76663	22.72039	10
9	Numeracy	54	2.35651	4.22584	0.38995	705.11890	23.41761	10
9	Numeracy	55	2.51152	4.35628	0.40359	712.95220	24.23673	10
9	Numeracy	56	2.67817	4.49652	0.41983	721.37401	25.21199	10
9	Numeracy	57	2.85935	4.64898	0.43953	730.52967	26.39503	10
9	Numeracy	58	3.05918	4.81714	0.46395	740.62815	27.86152	10
9	Numeracy	59	3.28379	5.00615	0.49536	751.97874	29.74778	10
9	Numeracy	60	3.54302	5.22429	0.53738	765.07867	32.27120	10
9	Numeracy	61	3.85408	5.48605	0.59738	780.79810	35.87437	10
9	Numeracy	62	4.25172	5.82066	0.69217	800.89239	41.56678	10
9	Numeracy	63	4.82542	6.30343	0.87356	829.88410	52.45976	10
9	Numeracy	64	5.98881	7.28242	1.47708	888.67523	88.70286	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	-5.24855	-2.17382	1.52171	320.80110	91.38302	5
9	NC	1	-4.03461	-1.15229	0.91328	382.14689	54.84506	5
9	NC	2	-3.41110	-0.62760	0.73365	413.65602	44.05777	5
9	NC	3	-2.96458	-0.25186	0.64129	436.22027	38.51129	5
9	NC	4	-2.60514	0.05061	0.58425	454.38446	35.08588	5
9	NC	5	-2.29765	0.30937	0.54509	469.92373	32.73421	5
9	NC	6	-2.02435	0.53935	0.51674	483.73469	31.03171	6
9	NC	7	-1.77498	0.74919	0.49544	496.33618	29.75258	6
9	NC	8	-1.54308	0.94434	0.47901	508.05549	28.76591	6
9	NC	9	-1.32435	1.12840	0.46606	519.10882	27.98823	6
9	NC	10	-1.11575	1.30393	0.45576	529.64989	27.36969	6
9	NC	11	-0.91510	1.47278	0.44753	539.78982	26.87545	7
9	NC	12	-0.72074	1.63634	0.44099	549.61206	26.48270	7
9	NC	13	-0.53133	1.79572	0.43592	559.18328	26.17824	7
9	NC	14	-0.34575	1.95189	0.43212	568.56173	25.95004	7
9	NC	15	-0.16295	2.10572	0.42955	577.79966	25.79570	7
9	NC	16	0.01806	2.25804	0.42820	586.94691	25.71463	8
9	NC	17	0.19831	2.40972	0.42807	596.05573	25.70682	8
9	NC	18	0.37882	2.56162	0.42923	605.17776	25.77648	8
9	NC	19	0.56074	2.71470	0.43177	614.37065	25.92902	8
9	NC	20	0.74530	2.87001	0.43583	623.69745	26.17283	8
9	NC	21	0.93391	3.02872	0.44162	633.22844	26.52054	8
9	NC	22	1.12821	3.19223	0.44939	643.04768	26.98715	9
9	NC	23	1.33018	3.36218	0.45954	653.25366	27.59669	9
9	NC	24	1.54233	3.54071	0.47261	663.97490	28.38158	9
9	NC	25	1.76792	3.73054	0.48939	675.37473	29.38926	9
9	NC	26	2.01146	3.93548	0.51106	687.68196	30.69061	10
9	NC	27	2.27941	4.16096	0.53999	701.22268	32.42794	10
9	NC	28	2.58203	4.41562	0.57968	716.51573	34.81143	10
9	NC	29	2.93697	4.71430	0.63728	734.45232	38.27048	10
9	NC	30	3.37932	5.08654	0.72991	756.80639	43.83317	10
9	NC	31	3.99888	5.60790	0.91015	788.11554	54.65710	10
9	NC	32	5.20953	6.62666	1.51861	849.29498	91.19685	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	-5.85348	-2.68286	1.68987	290.23180	101.48150	5
9	CA	1	-4.37909	-1.44217	1.00841	364.73877	60.55789	5
9	CA	2	-3.60082	-0.78725	0.79243	404.06858	47.58768	5
9	CA	3	-3.07692	-0.34639	0.67977	430.54348	40.82212	5
9	CA	4	-2.67493	-0.00812	0.61056	450.85755	36.66587	5
9	CA	5	-2.34138	0.27257	0.56368	467.71379	33.85059	5
9	CA	6	-2.05105	0.51688	0.53003	482.38530	31.82981	6
9	CA	7	-1.79029	0.73631	0.50483	495.56270	30.31648	6
9	CA	8	-1.55089	0.93776	0.48551	507.66034	29.15626	6
9	CA	9	-1.32753	1.12572	0.47033	518.94787	28.24466	6
9	CA	10	-1.11643	1.30336	0.45836	529.61566	27.52582	6
9	CA	11	-0.91476	1.47307	0.44899	539.80723	26.96313	7
9	CA	12	-0.72032	1.63669	0.44179	549.63308	26.53075	7
9	CA	13	-0.53128	1.79577	0.43647	559.18628	26.21127	7
9	CA	14	-0.34605	1.95164	0.43284	568.54672	25.99327	7
9	CA	15	-0.16323	2.10548	0.43079	577.78525	25.87017	7
9	CA	16	0.01850	2.25841	0.43023	586.96913	25.83654	8
9	CA	17	0.20043	2.41150	0.43114	596.16262	25.89118	8
9	CA	18	0.38380	2.56581	0.43354	605.42938	26.03531	8
9	CA	19	0.56995	2.72245	0.43747	614.83606	26.27132	8
9	CA	20	0.76025	2.88259	0.44302	624.45292	26.60461	8
9	CA	21	0.95624	3.04751	0.45033	634.35683	27.04360	9
9	CA	22	1.15964	3.21868	0.45962	644.63608	27.60149	9
9	CA	23	1.37247	3.39777	0.47119	655.39094	28.29630	9
9	CA	24	1.59720	3.58688	0.48551	666.74754	29.15626	9
9	CA	25	1.83698	3.78866	0.50327	678.86500	30.22280	9
9	CA	26	2.09607	4.00668	0.52593	691.95772	31.58359	10
9	CA	27	2.38084	4.24632	0.55538	706.34879	33.35215	10
9	CA	28	2.70139	4.51606	0.59545	722.54744	35.75847	10
9	CA	29	3.07560	4.83096	0.65332	741.45808	39.23373	10
9	CA	30	3.53926	5.22113	0.74650	764.88890	44.82945	10
9	CA	31	4.18370	5.76342	0.92790	797.45496	55.72304	10
9	CA	32	5.42438	6.80745	1.54210	860.15193	92.60749	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	-5.50146	-3.65640	1.48735	175.83911	100.04372	5
9	Reading	1	-4.32744	-2.46630	0.88296	255.88888	59.39060	5
9	Reading	2	-3.74211	-1.87295	0.70237	295.79942	47.24356	5
9	Reading	3	-3.33242	-1.45765	0.60838	323.73377	40.92150	5
9	Reading	4	-3.00933	-1.13013	0.54884	345.76377	36.91666	5
9	Reading	5	-2.73833	-0.85542	0.50706	364.24161	34.10641	5
9	Reading	6	-2.50234	-0.61620	0.47589	380.33228	32.00982	5
9	Reading	7	-2.29163	-0.40260	0.45146	394.69967	30.36658	5
9	Reading	8	-2.10003	-0.20837	0.43173	407.76418	29.03948	5
9	Reading	9	-1.92342	-0.02934	0.41543	419.80628	27.94310	5
9	Reading	10	-1.75888	0.13745	0.40172	431.02509	27.02092	5
9	Reading	11	-1.60425	0.29420	0.39003	441.56857	26.23461	5
9	Reading	12	-1.45788	0.44257	0.37996	451.54840	25.55727	5
9	Reading	13	-1.31851	0.58385	0.37119	461.05132	24.96738	5
9	Reading	14	-1.18508	0.71911	0.36360	470.14932	24.45685	5
9	Reading	15	-1.05677	0.84918	0.35693	478.89823	24.00821	6
9	Reading	16	-0.93287	0.97478	0.35108	487.34647	23.61472	6
9	Reading	17	-0.81278	1.09651	0.34595	495.53441	23.26966	6
9	Reading	18	-0.69599	1.21490	0.34147	503.49768	22.96832	6
9	Reading	19	-0.58203	1.33042	0.33758	511.26791	22.70667	6
9	Reading	20	-0.47051	1.44347	0.33424	518.87200	22.48201	6
9	Reading	21	-0.36104	1.55444	0.33141	526.33618	22.29165	6
9	Reading	22	-0.25330	1.66366	0.32907	533.68265	22.13426	7
9	Reading	23	-0.14696	1.77145	0.32718	540.93294	22.00713	7
9	Reading	24	-0.04172	1.87814	0.32575	548.10924	21.91094	7
9	Reading	25	0.06269	1.98398	0.32474	555.22836	21.84301	7
9	Reading	26	0.16660	2.08931	0.32419	562.31318	21.80601	7
9	Reading	27	0.27025	2.19438	0.32407	569.38051	21.79794	7
9	Reading	28	0.37393	2.29948	0.32439	576.44986	21.81947	7
9	Reading	29	0.47794	2.40491	0.32519	583.54140	21.87328	8
9	Reading	30	0.58257	2.51098	0.32646	590.67599	21.95870	8
9	Reading	31	0.68815	2.61800	0.32825	597.87449	22.07910	8
9	Reading	32	0.79502	2.72634	0.33059	605.16177	22.23650	8
9	Reading	33	0.90357	2.83638	0.33352	612.56340	22.43358	8
9	Reading	34	1.01420	2.94852	0.33713	620.10628	22.67640	8
9	Reading	35	1.12741	3.06328	0.34148	627.82539	22.96899	8
9	Reading	36	1.24375	3.18122	0.34668	635.75839	23.31876	9
9	Reading	37	1.36388	3.30299	0.35285	643.94901	23.73377	9
9	Reading	38	1.48859	3.42941	0.36018	652.45241	24.22681	9
9	Reading	39	1.61885	3.56145	0.36886	661.33383	24.81065	9
9	Reading	40	1.75589	3.70037	0.37919	670.67801	25.50548	9
9	Reading	41	1.90125	3.84772	0.39167	680.58922	26.34493	9
9	Reading	42	2.05701	4.00562	0.40683	691.21006	27.36463	10
9	Reading	43	2.22601	4.17693	0.42555	702.73290	28.62380	10
9	Reading	44	2.41227	4.36574	0.44914	715.43284	30.21053	10

Year	Domain	Raw Score	Delta-Centered Logit	Logit	Logit SE	Scale Score	Scale SE	Band
9	Reading	45	2.62184	4.57819	0.47974	729.72288	32.26878	10
9	Reading	46	2.86444	4.82411	0.52098	746.26421	35.04271	10
9	Reading	47	3.15708	5.12076	0.58034	766.21780	39.03545	10
9	Reading	48	3.53431	5.50316	0.67463	791.93919	45.37768	10
9	Reading	49	4.08542	6.06182	0.85497	829.51638	57.50790	10
9	Reading	50	5.22372	7.21571	1.45491	907.13056	97.86171	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	-6.02819	-2.80388	1.60453	357.30422	61.14592	5
9	Spelling	1	-4.70871	-1.45009	0.98063	408.89486	37.37015	5
9	Spelling	2	-3.98742	-0.71005	0.79899	437.09653	30.44815	5
9	Spelling	3	-3.45042	-0.15909	0.70643	458.09268	26.92085	5
9	Spelling	4	-3.00679	0.29608	0.64822	475.43844	24.70256	5
9	Spelling	5	-2.62161	0.69127	0.60686	490.49846	23.12641	6
9	Spelling	6	-2.27791	1.04391	0.57544	503.93697	21.92904	6
9	Spelling	7	-1.96568	1.36426	0.55067	516.14496	20.98510	6
9	Spelling	8	-1.67778	1.65964	0.53100	527.40139	20.23551	6
9	Spelling	9	-1.40877	1.93565	0.51532	537.91967	19.63797	7
9	Spelling	10	-1.15422	2.19681	0.50300	547.87203	19.16848	7
9	Spelling	11	-0.91057	2.44680	0.49362	557.39873	18.81102	7
9	Spelling	12	-0.67492	2.68858	0.48675	566.61255	18.54922	7
9	Spelling	13	-0.44473	2.92475	0.48221	575.61259	18.37621	7
9	Spelling	14	-0.21782	3.15756	0.47980	584.48459	18.28436	8
9	Spelling	15	0.00784	3.38909	0.47941	593.30780	18.26950	8
9	Spelling	16	0.23419	3.62132	0.48097	602.15769	18.32895	8
9	Spelling	17	0.46316	3.85625	0.48446	611.11048	18.46195	8
9	Spelling	18	0.69666	4.09582	0.48992	620.24008	18.67002	8
9	Spelling	19	0.93676	4.34216	0.49731	629.62768	18.95164	8
9	Spelling	20	1.18553	4.59740	0.50676	639.35445	19.31176	9
9	Spelling	21	1.44520	4.86382	0.51837	649.50726	19.75420	9
9	Spelling	22	1.71820	5.14392	0.53237	660.18140	20.28772	9
9	Spelling	23	2.00725	5.44048	0.54925	671.48279	20.93099	9
9	Spelling	24	2.31578	5.75703	0.56996	683.54598	21.72021	9
9	Spelling	25	2.64875	6.09866	0.59639	696.56492	22.72741	10
9	Spelling	26	3.01445	6.47387	0.63220	710.86353	24.09207	10
9	Spelling	27	3.42850	6.89868	0.68467	727.05232	26.09161	10
9	Spelling	28	3.92405	7.40712	0.77135	746.42811	29.39484	10
9	Spelling	29	4.58916	8.08952	0.94584	772.43322	36.04436	10
9	Spelling	30	5.83629	9.36908	1.55325	821.19508	59.19172	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	-4.84402	-3.04864	1.51431	183.82653	111.30540	5
9	GP	1	-3.64061	-1.82561	0.90797	273.72216	66.73796	5
9	GP	2	-3.02556	-1.20054	0.72887	319.66630	53.57369	5
9	GP	3	-2.58526	-0.75306	0.63756	352.55715	46.86218	5
9	GP	4	-2.23038	-0.39240	0.58117	379.06652	42.71738	5
9	GP	5	-1.92621	-0.08327	0.54260	401.78831	39.88240	5
9	GP	6	-1.65541	0.19195	0.51477	422.01764	37.83682	5
9	GP	7	-1.40807	0.44332	0.49384	440.49394	36.29842	5
9	GP	8	-1.17783	0.67731	0.47790	457.69276	35.12679	5
9	GP	9	-0.96043	0.89825	0.46551	473.93238	34.21610	5
9	GP	10	-0.75272	1.10935	0.45599	489.44873	33.51635	6
9	GP	11	-0.55228	1.31306	0.44881	504.42190	32.98861	6
9	GP	12	-0.35720	1.51132	0.44364	518.99449	32.60860	6
9	GP	13	-0.16583	1.70581	0.44027	533.28997	32.36090	7
9	GP	14	0.02331	1.89803	0.43861	547.41860	32.23888	7
9	GP	15	0.21163	2.08942	0.43862	561.48622	32.23962	7
9	GP	16	0.40053	2.28140	0.44037	575.59721	32.36825	7
9	GP	17	0.59153	2.47551	0.44401	589.86476	32.63580	8
9	GP	18	0.78635	2.67351	0.44976	604.41823	33.05843	8
9	GP	19	0.98702	2.87745	0.45798	619.40831	33.66262	8
9	GP	20	1.19601	3.08984	0.46932	635.01948	34.49614	9
9	GP	21	1.41668	3.31411	0.48442	651.50386	35.60603	9
9	GP	22	1.65344	3.55473	0.50467	669.19000	37.09445	9
9	GP	23	1.91279	3.81831	0.53215	688.56376	39.11430	10
9	GP	24	2.20485	4.11513	0.57051	710.38074	41.93385	10
9	GP	25	2.54699	4.46285	0.62713	735.93899	46.09555	10
9	GP	26	2.97414	4.89696	0.71842	767.84712	52.80559	10
9	GP	27	3.57548	5.50810	0.89747	812.76736	65.96619	10
9	GP	28	4.76449	6.71649	1.50195	901.58692	110.39691	10

TABLE K.21 Years 3, 5, 7, and 9 Writing Score Equivalence Table

Year	Domain	Raw Score	Delta-Centered Logit	Logit	Logit SE	Scale Score	Scale SE	Band
3579	Writing	0	-11.56130	-11.56130	1.58059	123.58384	46.93103	1
3579	Writing	1	-10.28530	-10.28530	0.97552	161.47213	28.96523	1
3579	Writing	2	-9.58163	-9.58163	0.80886	182.36498	24.01675	1
3579	Writing	3	-9.03624	-9.03624	0.73227	198.55875	21.74263	1
3579	Writing	4	-8.55912	-8.55912	0.69179	212.72544	20.54069	1
3579	Writing	5	-8.11505	-8.11505	0.66970	225.91080	19.88479	1
3579	Writing	6	-7.68683	-7.68683	0.65815	238.62555	19.54185	1
3579	Writing	7	-7.26561	-7.26561	0.65307	251.13246	19.39102	1
3579	Writing	8	-6.84642	-6.84642	0.65264	263.57908	19.37825	1
3579	Writing	9	-6.42459	-6.42459	0.65629	276.10410	19.48662	2
3579	Writing	10	-5.99373	-5.99373	0.66360	288.89724	19.70367	2
3579	Writing	11	-5.54733	-5.54733	0.67291	302.15179	19.98011	2
3579	Writing	12	-5.08407	-5.08407	0.68103	315.90694	20.22121	2
3579	Writing	13	-4.61145	-4.61145	0.68562	329.94002	20.35749	3
3579	Writing	14	-4.13850	-4.13850	0.68783	343.98290	20.42311	3
3579	Writing	15	-3.66599	-3.66599	0.69055	358.01271	20.50387	3
3579	Writing	16	-3.18815	-3.18815	0.69505	372.20078	20.63749	3
3579	Writing	17	-2.69970	-2.69970	0.69986	386.70388	20.78031	4
3579	Writing	18	-2.20165	-2.20165	0.70177	401.49203	20.83702	4
3579	Writing	19	-1.70308	-1.70308	0.69838	416.29561	20.73636	4
3579	Writing	20	-1.21560	-1.21560	0.69050	430.76992	20.50239	5
3579	Writing	21	-0.74465	-0.74465	0.68119	444.75341	20.22596	5
3579	Writing	22	-0.28818	-0.28818	0.67279	458.30696	19.97654	5
3579	Writing	23	0.15803	0.15803	0.66590	471.55587	19.77196	5
3579	Writing	24	0.59630	0.59630	0.66009	484.56902	19.59945	6
3579	Writing	25	1.02729	1.02729	0.65523	497.36601	19.45515	6
3579	Writing	26	1.45187	1.45187	0.65163	509.97268	19.34826	6
3579	Writing	27	1.87212	1.87212	0.64976	522.45079	19.29273	6
3579	Writing	28	2.29142	2.29142	0.64982	534.90068	19.29452	6
3579	Writing	29	2.71388	2.71388	0.65108	547.44440	19.33193	6
3579	Writing	30	3.14184	3.14184	0.65143	560.15143	19.34232	6
3579	Writing	31	3.57154	3.57154	0.64816	572.91012	19.24523	6
3579	Writing	32	3.99295	3.99295	0.64055	585.42267	19.01927	6
3579	Writing	33	4.39810	4.39810	0.63115	597.45242	18.74016	6
3579	Writing	34	4.78725	4.78725	0.62332	609.00710	18.50768	6
3579	Writing	35	5.16635	5.16635	0.61901	620.26337	18.37970	6
3579	Writing	36	5.54267	5.54267	0.61868	631.43710	18.36990	6
3579	Writing	37	5.92235	5.92235	0.62175	642.71059	18.46106	6
3579	Writing	38	6.30943	6.30943	0.62724	654.20381	18.62407	6
3579	Writing	39	6.70562	6.70562	0.63419	665.96752	18.83043	6
3579	Writing	40	7.11090	7.11090	0.64237	678.00113	19.07331	6
3579	Writing	41	7.52533	7.52533	0.65290	690.30642	19.38597	6
3579	Writing	42	7.95170	7.95170	0.66840	702.96624	19.84619	6
3579	Writing	43	8.39809	8.39809	0.69361	716.22049	20.59473	6
3579	Writing	44	8.88173	8.88173	0.73684	730.58078	21.87832	6

Year	Domain	Raw Score	Delta-Centered Logit	Logit	Logit SE	Scale Score	Scale SE	Band
3579	Writing	45	9.43857	9.43857	0.81617	747.11452	24.23380	6
3579	Writing	46	10.16002	10.16002	0.98590	768.53588	29.27343	6
3579	Writing	47	11.46100	11.46100	1.59800	807.16470	47.44796	6

APPENDIX L. VERTICAL LINK ITEM STATISTICS

Table L.1 Reading Year 3 to Year 5

Year 3						Year 5						
Label	Locn	SE	Infit	Facil	Disc	Label	Locn	SE	Infit	Facil	Disc	Retained
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						
Label	Locn	SE	Infit	Facil	Disc	Label	Locn	SE	Infit	Facil	Disc	Retained
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						
Label	Locn	SE	Infit	Facil	Disc	Label	Locn	SE	Infit	Facil	Disc	Retained
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						
Label	Locn	SE	Infit	Facil	Disc	Label	Locn	SE	Infit	Facil	Disc	Retained
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						
Label	Locn	SE	Infit	Facil	Disc	Label	Locn	SE	Infit	Facil	Disc	Retained
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						
Label	Locn	SE	Infit	Facil	Disc	Label	Locn	SE	Infit	Facil	Disc	Retained
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						
Label	Locn	SE	Infit	Facil	Disc	Label	Locn	SE	Infit	Facil	Disc	Retained
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						
Label	Locn	SE	Infit	Facil	Disc	Label	Locn	SE	Infit	Facil	Disc	Retained
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						
Label	Locn	SE	Infit	Facil	Disc	Label	Locn	SE	Infit	Facil	Disc	Retained
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						
Label	Locn	SE	Infit	Facil	Disc	Label	Locn	SE	Infit	Facil	Disc	Retained
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						
Label	Locn	SE	Infit	Facil	Disc	Label	Locn	SE	Infit	Facil	Disc	Retained
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

Year 7						Year 9						
Label	Locn	SE	Infit	Facil	Disc	Label	Locn	SE	Infit	Facil	Disc	Retained
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, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	2	geo1, geo3, geo4, geo5, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	3	geo4, geo5, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	4	geo1, geo3, geo4, geo5, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	5	geo1, geo3, geo4, geo5, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	6	geo3, geo4, geo5, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	7	geo1, geo3, geo4, sectorc, sectori, gender2, atsi123, atsim, lbotey, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	8	geo1, geo3, geo4, geo5, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle

Note 1. geo= ABS Remoteness Code; School Geolocation; sector= School Sector; atsi=Indigenous Status; lbote= Indicator for Language Background Other Than English; partented=Partental 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, geo5, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	3	geo4, geo5, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	4	geo1, geo3, geo4, geo5, sectorc, sectori, gender2, atsi123, atsim, lbotey, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	5	geo1, geo3, geo4, geo5, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	6	geo3, geo4, geo5, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	7	geo1, geo3, geo4, sectorc, sectori, gender2, atsi123, atsim, lbotey, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	8	geo1, geo3, geo4, geo5, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle

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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, geo5, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	3	geo4, geo5, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	4	geo1, geo3, geo4, geo5, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	5	geo1, geo3, geo4, geo5, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	6	geo3, geo4, geo5, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	7	geo1, geo3, geo4, sectorc, sectori, gender2, atsi123, atsim, lbotey, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	8	geo1, geo3, geo4, geo5, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle

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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, geo5, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	3	geo4, geo5, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	4	geo1, geo3, geo4, geo5, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	5	geo1, geo3, geo4, geo5, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	6	geo3, geo4, geo5, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	7	geo1, geo3, geo4, sectorc, sectori, gender2, atsi123, atsim, lbotey, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	8	geo1, geo3, geo4, geo5, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle

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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, 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