

# NATIONAL ASSESSMENT PROGRAM

Literacy and Numeracy

2014

2014 Technical Report



# National Assessment Program – Literacy and Numeracy (NAPLAN) 2014 Central Analysis of Data

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## CHAPTER 1. INTRODUCTION AND OVERVIEW

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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) 2014.

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 2014 NAPLAN administration. The NAPLAN 2014 tests were administered nationally to all students in Years 3, 5, 7 and 9 in May 2014. Students in each year level were assessed using the same test items presented across five domains: reading, writing, spelling, grammar and punctuation and numeracy. The language conventions test includes the spelling domain and the grammar and punctuation domain.

NAPLAN results are reported using five national achievement scales, one for each of the assessed aspects of literacy – reading, persuasive writing, spelling and grammar and punctuation – and one for numeracy. Each NAPLAN achievement scale spans Years 3, 5, 7 and 9 with scores that range from approximately 0 to 1000. There are also ten proficiency bands that span Years 3, 5, 7 and 9. Each year level is reported against six of these bands.

As in previous years, the central analyses were carried out in two stages. The first stage involved item and test analyses and the construction of reporting scales and score-equivalence tables for the 2014 tests. The vertical reporting scales in the five domains were equated onto the historic NAPLAN reporting scales to ensure that NAPLAN results were comparable from 2008 to 2014. The equating was achieved using data collected by administering the secure equating tests and the 2014 NAPLAN tests to a sample of Australian students. The equating forms for each domain and year level had already been scaled onto the historical NAPLAN scale in 2009. The equated reporting scale information with score-equivalence tables for the tests and cut points for proficiency bands provided the necessary information for the jurisdictions to report back to parents and schools.

The second stage involved analyses of the full cohort data that informed national reporting. The analyses provided performance results for the preparation of the NAPLAN 2014 summary information, the NAPLAN 2014 National Report, and for other reporting.

Over one million students in Years 3, 5, 7 and 9 in all states and territories of Australia participated in NAPLAN 2014. 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 2014 assessment scales and the methodology used to report on the performance of the 2014 student cohort. It includes descriptions of test calibration, equating and scale construction processes, and outlines the steps in the analysis. The NAPLAN 2014 test design

is described in Chapter 2. This chapter describes each test in terms of the number and type of items used for each domain and strand level. Chapter 3 summarizes the methodology used in sampling for equating and calibration and presents the participation rates. Chapter 4 is the analysis procedure and methodology chapter, which describes the scaling and equating procedures. Chapter 5 describes the data preparation process, test calibration outcomes and differential item functioning (DIF) analysis outcomes. Test reliabilities, average item discrimination and illustrative tables and figures showing item location, fit and DIF are included in this chapter. Chapter 6 describes the NAPLAN vertical, horizontal and pair-wise equating processes. Graphs showing the equating process, including link reviews, and the shift factors are included in that chapter. Translation constants and equating error calculations are also presented. Finally, Chapter 7 describes the generation of student proficiency estimates, scale transformation procedures and the methodology used for reporting student performance on NAPLAN in 2014. Many of these procedures are similar, if not identical, to those used in the Programme for International Student Assessment (PISA). The first appendix is an equating and calibration sampling report from a sub-contractor. The remaining appendices contain classical item analyses, Rasch-based item analyses, item characteristic curves, variable maps and DIF analysis graphs.

This report does not include student performance results. The results are included in the 2014 NAPLAN National Report. The NAPLAN national reports can be found at <http://www.nap.edu.au/results-and-reports/national-reports.html>.

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

## CHAPTER 2. NAPLAN TEST DESIGN

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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 2014**

Domain	Strand	Number of MC Items	Number of CR Items	Total for Strand	Total in Test
Numeracy	Measurement, Chance and Data	10	1	11	35
	Space	8	1	9	
	Number	6	4	10	
	Algebra, Function and Pattern	1	4	5	
Reading	Text Location and Interpretation	28	2	30	38
	Text and Language Knowledge	5	0	5	
	Contextual Understanding	3	0	3	
Spelling	Mistake Identified	0	11	11	25
	Mistake Not Identified	3	11	14	
Grammar & Punctuation	Grammar	17	0	17	26
	Punctuation	9	0	9	

**Table 2.2. Structure of Year 5 Test Domains, NAPLAN 2014**

Domain	Strand	Number of MC Items	Number of CR Items	Total for Strand	Total in Test
Numeracy	Measurement, Chance and Data	10	2	12	40
	Space	9	2	11	
	Number	8	4	12	
	Algebra, Function and Pattern	3	2	5	
Reading	Text Location and Interpretation	25	3	28	38
	Text and Language Knowledge	5	0	5	
	Contextual Understanding	5	0	5	
Spelling	Mistake Identified	0	13	13	25
	Mistake Not Identified	0	12	12	
Grammar & Punctuation	Grammar	18	0	18	26
	Punctuation	8	0	8	

**Table 2.3. Structure of Year 7 Test Domains, NAPLAN 2014**

Domain	Strand	Number of MC Items	Number of CR Items	Total for Strand	Total in Test
Numeracy (Non-calculator)	Measurement, Chance and Data	7	1	8	64
	Space	6	2	8	
	Number	6	3	9	
	Algebra, Function and Pattern	6	1	7	
Numeracy (Calculator)	Measurement, Chance and Data	6	2	8	64
	Space	8	1	9	
	Number	6	4	10	
	Algebra, Function and Pattern	4	1	5	
Reading	Text Location and Interpretation	32	2	34	50
	Text and Language Knowledge	7	1	8	
	Contextual Understanding	6	2	8	
Spelling	Mistake Identified	0	15	15	30
	Mistake Not Identified	0	15	15	
Grammar & Punctuation	Grammar	20	0	20	28
	Punctuation	8	0	8	



**Table 2.4. Structure of Year 9 Test Domains, NAPLAN 2014**

Domain	Strand	Number of MC Items	Number of CR Items	Total for Strand	Total in Test
Numeracy (Non-calculator)	Measurement, Chance and Data	6	1	7	64
	Space	7	1	8	
	Number	6	2	8	
	Algebra, Function and Pattern	7	2	9	
Numeracy (Calculator)	Measurement, Chance and Data	6	3	9	50
	Space	8	0	8	
	Number	7	3	10	
	Algebra, Function and Pattern	3	2	5	
Reading	Text Location and Interpretation	31	1	32	50
	Text and Language Knowledge	5	2	7	
	Contextual Understanding	10	1	11	
Spelling	Mistake Identified	0	16	16	30
	Mistake Not Identified	0	14	14	
Grammar & Punctuation	Grammar	20	0	20	28
	Punctuation	8	0	8	

For writing, all students in Years 3, 5, 7 and 9 were required to write a persuasive text in response to the same writing 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 2014**

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

## CHAPTER 3. SAMPLING DESIGN FOR STAGE-1 ANALYSES

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### 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 2014:

- 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 2014 NAPLAN results on the existing NAPLAN scale. It should be noted that plausible values (PVs) for the 2014 NAPLAN administration were obtained using a new procedure that combined MLDR analyses of stratified random samples from the census data together with analyses of the complete census data. Detailed sampling and MDLR procedures can be found in Chapter 4.
- The Item Calibration Sample – This was a sub-sample of the National Calibration Sample that was used for test calibrations and scaling.
- The Equating Sample – This sample was required to equate the 2014 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 2014 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 2014 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 2014 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 2014 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 2014 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 2014 NAPLAN tests.

**Table 3.1. Numbers of Schools and Students included in the National Calibration Sample by State/Territory and Year Level (2014)**

		NSW	VIC	QLD	WA	SA	TAS	ACT	NT	Total
Year 3	Schools	46	47	48	43	44	30	20	24	302
	Students (N)	1914	1872	2137	1691	1502	873	1101	474	11564
	Students (Weighted N)	92208	71450	65813	32532	20514	6267	5103	3599	297487
Year 5	Schools	47	48	48	43	44	30	20	24	304
	Students (N)	1810	1779	1927	1760	1493	800	1001	465	11035
	Students (Weighted N)	89430	70211	62019	31006	20152	6528	5029	3767	288143
Year 7	Schools	48	44	45	36	44	29	16	16	278
	Students (N)	5579	5164	1277	1740	1571	2177	2358	470	20336
	Students (Weighted N)	90455	70820	44350	31263	20370	6685	5288	3855	273085
Year 9	Schools	47	44	48	43	46	29	16	15	288
	Students (N)	5593	4890	6081	5084	4480	2342	2387	492	31349
	Students (Weighted N)	93496	73592	67003	32113	22385	7045	5513	3270	304418
Total	Schools	96	94	97	84	87	59	35	41	593
	Students (N)	14896	13705	11422	10275	9046	6192	6847	1901	74284
	Students (Weighted N)	365589	286072	239185	126915	83422	26525	20933	14491	1163132

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

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

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

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

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

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

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

where  $RRsr$  is the response rate using sampled schools and replacement schools,  $P_{sr}$  is the number of sampled or replacement schools that participated, and  $NP$  is the number of sampled schools that did not participate.

**Table 3.2. Percentage of Sampled Schools included in the National Calibration Sample (2014)**

		NSW	VIC	QLD	WA	SA	TAS	ACT	NT
Year 3	Sampled Schools	100	96	96	100	98	100	95	92
	Sampled and Replaced Schools	100	98	100	100	100	100	100	100
Year 5	Sampled Schools	100	96	98	100	98	100	95	100
	Sampled and Replaced Schools	100	98	100	100	100	100	100	100
Year 7	Sampled Schools	96	91	96	100	98	97	82	100
	Sampled and Replaced Schools	98	96	100	100	100	100	94	100
Year 9	Sampled Schools	96	93	98	100	100	97	82	100
	Sampled and Replaced Schools	98	98	100	100	100	100	94	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 labeled *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 (2014)**

Domain	Participation Code	NSW	VIC	QLD	WA	SA	TAS	ACT	NT	AUS
Reading	Absent	1.8	2.4	1.9	2.5	3.7	2.9	2.0	5.1	2.5
	Exempt	0.8	1.6	0.4	0.6	2.2	3.0	2.1	0.6	1.3
	Withdrawn	1.1	2.7	5.1	2.2	3.8	0.5	3.3	1.1	2.8
	Other	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
	Present	96.2	93.3	92.7	94.6	90.3	93.7	92.6	93.2	93.4
Writing	Absent	1.8	2.3	1.9	2.7	4.5	2.9	2.4	4.4	2.6
	Exempt	0.9	1.6	0.4	0.6	2.2	2.9	2.1	0.6	1.3
	Withdrawn	1.3	2.7	5.3	2.3	3.7	0.5	3.3	1.1	2.8
	Other	0.1	0.0	0.1	0.2	0.0	0.0	0.1	0.0	0.1
	Present	96.0	93.4	92.3	94.2	89.6	93.8	92.2	93.9	93.2
Spelling	Absent	1.9	2.2	1.7	2.2	3.9	2.9	2.3	4.9	2.5
	Exempt	0.8	1.6	0.4	0.6	2.2	3.0	2.1	0.6	1.3
	Withdrawn	1.1	2.6	5.2	2.1	3.6	0.5	3.1	1.1	2.7
	Other	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0
	Present	96.1	93.5	92.7	95.0	90.3	93.7	92.5	93.5	93.5
Grammar & Punctuation	Absent	1.9	2.2	1.7	2.2	3.9	2.9	2.3	4.9	2.5
	Exempt	0.8	1.6	0.4	0.6	2.2	3.0	2.1	0.6	1.3
	Withdrawn	1.1	2.6	5.2	2.1	3.6	0.5	3.1	1.1	2.7
	Other	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0
	Present	96.1	93.5	92.7	95.0	90.3	93.7	92.5	93.5	93.5
Numeracy	Absent	2.1	2.9	2.6	2.8	4.1	3.4	2.3	5.7	2.9
	Exempt	0.8	1.5	0.3	0.6	2.1	2.9	2.1	0.6	1.3
	Withdrawn	1.1	2.5	5.0	2.0	3.6	0.5	3.1	1.1	2.6
	Other	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
	Present	96.0	93.1	92.0	94.6	90.2	93.2	92.6	92.6	93.2

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 (2014)**

Domain	Participation Code	NSW	VIC	QLD	WA	SA	TAS	ACT	NT	AUS
Reading	Absent	1.9	2.3	1.7	2.3	3.5	3.0	2.7	3.4	2.4
	Exempt	0.9	1.7	0.7	0.4	1.7	1.9	2.7	1.9	1.3
	Withdrawn	0.3	2.0	4.5	1.4	3.0	0.6	2.9	0.6	2.1
	Other	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.2	0.0
	Present	96.9	94.0	93.1	95.7	91.8	94.5	91.7	93.8	94.1
Writing	Absent	1.9	1.9	1.7	2.1	3.9	3.1	2.9	3.4	2.4
	Exempt	0.9	1.7	0.6	0.4	1.7	1.9	2.6	1.7	1.3
	Withdrawn	0.3	2.1	4.5	1.5	2.9	0.6	3.0	0.6	2.1
	Other	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
	Present	96.9	94.3	93.2	95.9	91.5	94.4	91.5	94.2	94.2
Spelling	Absent	1.8	2.1	1.6	1.9	3.3	2.8	2.5	3.7	2.2
	Exempt	0.9	1.7	0.6	0.4	1.7	1.9	2.6	1.7	1.3
	Withdrawn	0.3	2.1	4.4	1.4	2.8	0.6	2.9	0.6	2.1
	Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Present	97.0	94.1	93.4	96.3	92.2	94.8	92.0	94.0	94.4
Grammar & Punctuation	Absent	1.8	2.1	1.6	1.9	3.3	2.8	2.5	3.7	2.2
	Exempt	0.9	1.7	0.6	0.4	1.7	1.9	2.6	1.7	1.3
	Withdrawn	0.3	2.1	4.4	1.4	2.8	0.6	2.9	0.6	2.1
	Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Present	97.0	94.1	93.4	96.3	92.2	94.8	92.0	94.0	94.4
Numeracy	Absent	2.3	2.3	3.0	2.9	4.1	2.9	3.4	4.7	3.0
	Exempt	0.8	1.6	0.6	0.3	1.5	1.9	2.5	1.7	1.2
	Withdrawn	0.3	2.0	4.4	1.3	2.6	0.6	2.9	0.6	2.0
	Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Present	96.6	94.2	92.0	95.5	91.8	94.6	91.2	92.9	93.8

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 (2014)**

Domain	Participation Code	NSW	VIC	QLD	WA	SA	TAS	ACT	NT	AUS
Reading	Absent	3.2	3.8	2.5	3.4	3.2	3.1	2.7	8.5	3.4
	Exempt	1.2	0.9	0.5	0.5	1.1	1.1	0.9	1.1	1.0
	Withdrawn	0.4	1.8	4.2	0.8	2.2	0.5	2.7	0.2	1.4
	Other	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
	Present	95.1	93.5	92.8	95.2	93.6	95.2	93.7	90.2	94.2
Writing	Absent	2.8	4.3	2.5	3.0	3.9	3.0	2.5	8.5	3.4
	Exempt	1.2	0.9	0.6	0.5	1.1	1.1	0.9	1.1	1.0
	Withdrawn	0.4	1.7	4.1	0.9	2.2	0.5	2.6	0.2	1.4
	Other	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.2	0.0
	Present	95.7	93.0	92.7	95.5	92.8	95.5	94.0	90.0	94.2
Spelling	Absent	2.7	4.1	2.3	2.8	3.4	2.1	2.5	8.7	3.2
	Exempt	1.2	0.9	0.6	0.5	1.1	1.1	0.9	1.1	1.0
	Withdrawn	0.4	1.7	4.1	0.8	2.2	0.5	2.6	0.2	1.4
	Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Present	95.7	93.2	93.0	95.9	93.3	96.2	93.9	90.0	94.5
Grammar & Punctuation	Absent	2.7	4.1	2.3	2.8	3.4	2.1	2.5	8.7	3.2
	Exempt	1.2	0.9	0.6	0.5	1.1	1.1	0.9	1.1	1.0
	Withdrawn	0.4	1.7	4.1	0.8	2.2	0.5	2.6	0.2	1.4
	Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Present	95.7	93.2	93.0	95.9	93.3	96.2	93.9	90.0	94.5
Numeracy (Calculator)	Absent	3.4	4.7	3.5	4.1	4.4	3.7	3.2	11.1	4.1
	Exempt	1.2	0.9	0.6	0.5	1.1	1.1	0.9	1.1	1.0
	Withdrawn	0.4	1.7	4.0	0.7	2.2	0.6	2.8	0.2	1.4
	Other	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.6	0.0
	Present	95.0	92.7	91.9	94.6	92.2	94.6	93.1	87.0	93.5
Numeracy (Non-calculator)	Absent	3.4	4.6	4.1	4.2	4.3	3.6	3.1	11.3	4.1
	Exempt	1.2	0.9	0.6	0.5	1.1	1.1	0.9	1.1	1.0
	Withdrawn	0.4	1.7	4.0	0.7	2.3	0.6	2.8	0.2	1.4
	Other	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.6	0.0
	Present	95.0	92.8	91.3	94.5	92.3	94.7	93.2	86.8	93.5

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 (2014)**

Domain	Participation Code	NSW	VIC	QLD	WA	SA	TAS	ACT	NT	AUS
Reading	Absent	5.7	6.0	4.5	4.0	6.4	6.6	5.4	11.0	5.5
	Exempt	1.0	0.9	1.1	0.3	1.0	1.0	0.8	1.0	0.9
	Withdrawn	0.9	2.8	5.7	0.6	3.8	0.3	3.9	0.0	2.7
	Other	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
	Present	92.3	90.3	88.7	95.1	88.9	92.0	89.9	88.0	91.0
Writing	Absent	5.7	5.9	4.3	4.0	6.7	6.6	5.1	7.5	5.4
	Exempt	1.0	0.9	1.2	0.3	1.0	0.9	0.8	1.0	0.9
	Withdrawn	0.9	2.8	5.8	0.6	3.6	0.3	3.7	0.0	2.7
	Other	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0
	Present	92.3	90.4	88.6	95.0	88.8	92.1	90.4	91.5	91.0
Spelling	Absent	5.8	5.9	4.0	3.8	6.2	6.1	5.1	7.7	5.2
	Exempt	1.0	0.9	1.1	0.3	1.0	0.9	0.8	1.0	0.9
	Withdrawn	0.9	2.8	5.6	0.6	3.5	0.3	3.6	0.0	2.6
	Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Present	92.3	90.4	89.2	95.4	89.3	92.7	90.5	91.3	91.4
Grammar & Punctuation	Absent	5.8	5.9	4.0	3.8	6.2	6.1	5.1	7.7	5.2
	Exempt	1.0	0.9	1.1	0.3	1.0	0.9	0.8	1.0	0.9
	Withdrawn	0.9	2.8	5.6	0.6	3.5	0.3	3.6	0.0	2.6
	Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Present	92.3	90.4	89.2	95.4	89.3	92.7	90.5	91.3	91.4
Numeracy (Calculator)	Absent	7.0	6.6	5.8	4.6	7.0	7.4	6.4	9.8	6.3
	Exempt	1.0	0.9	1.1	0.3	1.0	0.9	0.8	1.4	0.9
	Withdrawn	1.0	2.8	5.7	0.6	3.7	0.3	3.8	0.0	2.7
	Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Present	91.1	89.8	87.4	94.5	88.3	91.3	89.0	88.8	90.1
Numeracy (Non-calculator)	Absent	7.0	6.3	5.8	4.7	7.0	7.4	6.2	13.0	6.4
	Exempt	1.0	0.9	1.1	0.3	1.0	0.9	0.8	1.4	0.9
	Withdrawn	1.0	2.8	5.7	0.6	3.7	0.3	3.8	0.0	2.7
	Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Present	91.0	90.0	87.3	94.5	88.3	91.3	89.2	85.6	90.1

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



Table 3.7 to Table 3.10 shows the overall distributions of the National Calibration Sample by several student-level and school-level demographic variables by year level and jurisdiction. The definitions of these variables are taken from the *National Assessment Program – Literacy and Numeracy Achievement in Reading, Persuasive Writing, Language Conventions and Numeracy: National Report for 2013* (ACARA, 2013b):

- *Gender* is the distinction ‘male’ and ‘female’ as reported on a student’s enrolment record (Table 3.7).
- A student is classified as *language background other than English* (LBOTE) if either the student or parents/ guardians speak a language other than English at home (Table 3.8).
- A student is considered to be *Indigenous* if he or she identifies as being of Aboriginal and/or Torres Strait Islander origin. The term ‘origin’ is considered to relate to a person’s Australian Aboriginal or Torres Strait Islander descent and for some, but not all, their cultural identity (Table 3.9).
- The *geolocation* of a school uses the MCEECDYA Schools Geographic Location Classification System which is based on the locality of individual schools and is used to disaggregate data according to Metropolitan, Provincial, Remote and Very Remote (Table 3.10).

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

Year Level	Gender	NSW	VIC	QLD	WA	SA	TAS	ACT	NT	AUS
3	Male	51.1	51.7	49.3	51.9	48.3	51.2	49.0	47.0	50.3
	Female	48.9	48.3	50.7	48.1	51.7	48.8	51.0	53.0	49.7
5	Male	50.2	50.1	50.8	50.6	46.6	48.5	47.8	47.5	49.4
	Female	49.8	49.9	49.2	49.4	53.4	51.5	52.2	52.5	50.6
7	Male	50.1	49.8	52.9	58.7	45.3	51.9	48.2	50.6	50.5
	Female	49.9	50.2	47.1	41.3	54.7	48.1	51.8	49.4	49.5
9	Male	50.4	49.9	52.2	45.3	52.4	52.9	51.2	55.3	50.4
	Female	49.6	50.1	47.8	54.7	47.6	47.1	48.8	44.7	49.6

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 (2014)**

Year Level	Language Status	NSW	VIC	QLD	WA	SA	TAS	ACT	NT	AUS
3	Non-LBOTE	62.4	70.8	83.9	58.7	80.8	71.9	77.2	35.0	70.6
	LBOTE	26.4	29.2	16.0	18.5	17.3	4.7	22.7	43.9	21.3
	Not Stated	11.2	0.0	0.1	22.8	1.9	23.4	0.1	21.1	8.1
5	Non-LBOTE	60.2	70.3	84.8	59.1	81.0	71.0	78.4	38.1	70.3
	LBOTE	28.1	29.7	15.1	18.8	17.0	5.9	21.6	42.6	21.5
	Not Stated	11.7	0.0	0.1	22.1	1.9	23.1	0.0	19.4	8.2
7	Non-LBOTE	68.7	69.2	83.4	57.2	78.9	66.7	82.6	49.8	70.5
	LBOTE	23.2	30.8	16.5	18.7	18.8	3.2	17.4	23.6	21.2
	Not Stated	8.0	0.0	0.1	24.1	2.3	30.1	0.0	26.6	8.3
9	Non-LBOTE	67.1	71.3	89.7	63.5	80.5	68.3	83.5	54.3	74.6
	LBOTE	25.0	28.7	10.3	16.9	16.9	3.1	16.5	23.4	18.0
	Not Stated	8.0	0.0	0.0	19.6	2.6	28.6	0.0	22.4	7.5

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 (2014)**

Year Level	Indigenous Status	NSW	VIC	QLD	WA	SA	TAS	ACT	NT	AUS
3	Aboriginal and/or Torre Strait Isl.	4.9	1.2	8.1	4.8	3.0	4.6	2.4	34.6	5.6
	Non-Aboriginal and/or Torre Strait Isl.	92.9	98.4	89.8	94.3	95.4	70.7	96.6	63.9	91.2
	Not Stated	2.2	0.4	2.1	0.8	1.6	24.7	1.0	1.5	3.2
5	Aboriginal and/or Torre Strait Isl.	4.6	1.7	9.0	5.1	3.0	4.5	3.6	34.0	5.9
	Non-Aboriginal and/or Torre Strait Isl.	93.1	98.2	89.1	93.9	94.1	71.6	95.5	63.7	90.9
	Not Stated	2.3	0.1	2.0	1.0	2.9	23.9	0.9	2.4	3.2
7	Aboriginal and/or Torre Strait Isl.	5.8	1.8	7.4	4.7	2.1	6.0	2.2	36.8	4.8
	Non-Aboriginal and/or Torre Strait Isl.	92.8	98.0	90.8	94.3	96.5	63.2	96.6	60.4	90.9
	Not Stated	1.4	0.2	1.9	1.1	1.4	30.8	1.2	2.8	4.3
9	Aboriginal and/or Torre Strait Isl.	5.3	1.2	5.8	3.8	3.6	6.2	2.5	36.6	4.6
	Non-Aboriginal and/or Torre Strait Isl.	93.5	98.7	91.7	95.4	92.7	62.4	96.0	61.8	91.5
	Not Stated	1.3	0.1	2.5	0.8	3.6	31.4	1.6	1.6	3.9

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 (2014)**

Year Level	Geolocation	NSW	VIC	QLD	WA	SA	TAS	ACT	NT	AUS
3	Metro	78.6	82.1	68.8	74.8	78.2	43.9	100.0	-	72.9
	Provincial	21.1	17.9	28.8	21.6	16.2	55.9	0.0	69.2	24.0
	Remote	0.4	0.0	0.5	3.5	4.7	0.2	-	10.3	1.7
	Very Remote	0.0	-	2.0	0.0	0.9	0.0	-	20.5	1.3
5	Metro	79.8	81.1	67.4	72.7	79.8	44.1	100.0	-	72.6
	Provincial	20.1	18.9	29.0	24.1	15.6	55.3	0.0	68.0	24.2
	Remote	0.1	0.0	0.8	3.2	4.1	0.6	-	12.7	1.8
	Very Remote	0.0	-	2.9	0.0	0.5	0.0	-	19.4	1.4
7	Metro	74.0	75.6	68.0	68.4	79.9	42.2	100.0	-	71.9
	Provincial	26.0	24.4	29.8	29.5	14.8	57.1	-	47.2	26.1
	Remote	0.1	0.0	0.4	2.1	5.0	0.0	-	31.5	1.3
	Very Remote	0.0	-	1.8	0.0	0.3	0.7	-	21.3	0.7
9	Metro	75.5	75.5	70.1	75.0	76.1	41.7	100.0	-	72.6
	Provincial	24.4	24.5	28.2	22.8	21.9	57.9	-	54.9	25.6
	Remote	0.1	0.0	0.4	2.1	1.5	0.0	-	26.2	1.1
	Very Remote	0.0	-	1.3	0.0	0.5	0.4	-	18.9	0.7

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

A ‘-’ indicates that the geolocation does not apply within this state/territory or for this year level.

### 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 (2014)**

Domain	Year Level	Sample	NSW	VIC	QLD	WA	SA	TAS	ACT	NT	AUS
Reading	3	School	10	8	6	4	2	2	2	2	36
		Student	261	204	131	90	49	45	46	42	868
	5	School	10	8	6	4	2	2	2	2	36
		Student	240	186	140	90	49	50	36	45	836
	7	School	13	10	6	4	2	2	2	2	41
		Student	278	221	130	75	54	37	49	38	882
	9	School	13	10	8	4	4	2	2	2	45
		Student	260	207	149	81	89	36	36	41	899
	All	School	46	36	26	16	10	8	8	8	158
		Student	1039	818	550	336	241	168	167	166	3485
Language Conventions (Spelling, Grammar and Punctuation)	3	School	11	8	5	4	3	2	2	2	37
		Student	273	177	100	85	74	40	46	39	834
	5	School	11	8	5	4	3	2	2	2	37
		Student	247	197	93	89	70	45	49	43	833
	7	School	13	10	5	3	3	2	2	2	40
		Student	308	232	99	58	76	43	39	44	899
	9	School	13	10	9	5	3	2	2	2	46
		Student	288	224	186	114	67	40	34	31	984
	All	School	48	36	24	16	12	8	8	8	160
		Student	1116	830	478	346	287	168	168	157	3550
Numeracy	3	School	10	8	6	3	3	2	2	2	36
		Student	242	182	133	72	64	49	56	38	836
	5	School	10	8	6	3	3	2	2	2	36
		Student	228	194	138	72	53	50	50	45	830
	7	School	13	9	6	2	3	2	2	2	39
		Student	293	220	146	51	41	42	39	48	880
	9	School	13	9	8	5	4	2	2	2	45
		Student	289	198	138	104	84	39	37	36	925
	All	School	46	34	26	13	13	8	8	8	156
		Student	1052	794	555	299	242	180	182	167	3471
All Domains	Total	School	140	106	76	45	35	24	24	24	474
		Student	3207	2442	1583	981	770	516	517	490	10506

## CHAPTER 4. ANALYSIS PROCEDURES AND METHODOLOGY

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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 2014 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 2014 administration was achieved using a new procedure that combined analyses of stratified random samples from the census data together with analyses of the complete census data. Detailed steps to obtain the PVs can be found in section 4.6, *Stratified Random Sampling and Multidimensional Linear Regression*.

### 4.1 Data Collection and Data Delivery

Data collection was undertaken by the Test Administration Authorities (TAAs) in the jurisdictions. There were three rounds of data delivery. The first round involved delivery of data from the equating samples and the second round involved the delivery of the calibration samples, both described in Chapter 3. The third round involved delivery of nearly complete full cohort NAPLAN test data of Years 3, 5, 7 and 9 students in late July 2014. These data were used for the generation of the NAPLAN 2014 national summary information. The complete set of full cohort data used in the production of the national report was delivered in October 2014. 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 ( $\theta_n$ ) and the item difficulty or location ( $\delta_i$ ). This is modeled as

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

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

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

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

where  $P_i(x|\theta)$  is the probability of person  $n$  to score  $x$  on item  $i$ .  $\theta_n$  denotes the person's latent trait, the item parameter  $\delta_i$  gives the location of the item on the latent continuum, and  $\tau_{ij}$  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 ( $\theta_n$ ) with just two categories (correct and incorrect), for students who have the same ability as the estimated difficulty parameter of an item ( $\delta_i$ ), the probability of giving a correct response is 0.5.

### **Software used for analyses**

For data checking and data analysis the statistical software packages SPSS and SAS were used. For the Rasch scaling analysis, the software *ACER ConQuest* (Wu, Adams, Wilson, and Haldane, 2007) was used. *ACER ConQuest* provides tools for the estimation of a variety of item response models and regression models. It was used for test calibrations, for generating weighted likelihood estimates (WLE) for the score-equivalence tables and for drawing plausible values based on a multidimensional item response model with latent regression. In addition, *RUMM2030's* (Andrich, Sheridan and Luo, 2011) person and item estimates, obtained through independent data recoding and calibration, were compared with the results from *ACER ConQuest* to confirm the accuracy of the calibration results.

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

### **Sequence of analyses**

Analyses were undertaken in the following order:

- Item and test analyses based on item calibration sample data (treating 'not reached' items as 'not administered' to obtain appropriate estimates of item difficulty). No weights were used.
- A check of item characteristics using classical statistics such as item facilities ( $p$ -values) and distractor analysis, a check of test characteristics using descriptive statistics and frequency distributions, and differential item functioning (DIF) analysis.
- Horizontal equating using the equating data.

- Vertical equating based on common items in tests of adjacent year levels (Year 3 and Year 5, Year 5 and Year 7, Year 7 and Year 9).
- The combination of results from the horizontal and vertical equatings to construct the NAPLAN 2014 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 2014 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 2014 tests of adjacent year levels (Year 3 and Year 5, Year 5 and Year 7, Year 7 and Year 9), based on the 2014 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*

All students in Years 3, 5, 7 and 9 wrote a persuasive piece in response to the same prompt. The persuasive writing scripts were rated according to the same ten criteria used for the scripts in NAPLAN 2011, 2012 and 2013. The data from all four year levels were analysed concurrently to construct the vertical writing scale. The writing analysis was based on the Partial Credit model, a polytomous extension of the Rasch model. The equating of the 2014 persuasive writing scale to the 2011 persuasive writing scale was conducted using the pairwise-comparison method. The details of this method are shown in section 6.5. The results were checked against those from the common-item equating method. The results of the equating are discussed in Chapter 6.

### **Scoring**

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

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

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

### ***National NAPLAN Reporting Scales and Proficiency Bands***

A linear transformation was applied to the logit scores in each domain. The transformation for each domain score was based on standardisation procedures established in 2008 and the equating constants and scale factors estimated from the horizontal and vertical equating, with the result that all five domain scales were put on the NAPLAN historical scales. These scales share the same set of cut-points separating the bands. The cut-points established for NAPLAN 2008 were used in 2009 through 2014 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 2014 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  $\theta$  is the population parameter and  $\theta_i$  is the statistic of interest computed on one set of plausible values, then:

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

with  $M$  being the number of plausible values.

The plausible values also allow the computation of the uncertainty in the estimate of  $\theta$  due to the lack of precision of the test. If a perfect test could be developed, then the measurement

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

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

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

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

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

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

### ***The estimation of standard errors for census data***

NAPLAN results from census data were reported with standard errors that included both sampling and measurement errors. The inclusion of sampling error might be considered surprising in that all students in the target year levels were included in the assessment. However, the aim of NAPLAN is to make inference about the educational systems each year and not about the specific student cohorts in 2014. 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  $\theta$  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 2014, 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 2014 performance in the reports.

Two additional sets of standard errors were calculated, one set for the comparisons of means across 2008 (the baseline year) and 2014, and one set for the comparisons of means across 2013 and 2014. These took into consideration, in addition to sampling and measurement errors, the errors due to the equating of measurement scales across 2008, 2013 and 2014. See section 6.8 for a discussion of the estimation procedure used to calculate the standard errors of equating.

### ***The calculation of effect size for census data***

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

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

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

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

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

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

The effect size for differences in percentages at or above national minimum standards was calculated using Cox's  $d$  by dividing the log odd ratio by 1.65:

$$OR = \frac{p_E q_C}{q_E p_C} \quad (4.8)$$

$$d_{cox} = \frac{L(OR)}{1.65} \quad (4.9)$$

Where comparisons of results are shown, a representation of the effect size and statistical significance of the comparison is also provided. This representation is referred to as ‘nature of the difference’. The ‘nature of the difference’ representation combines the outcomes of statistical significance tests with an effect size measure of the difference.

#### 4.6 Stratified Random Sampling and Multidimensional Linear Regression

As mentioned earlier, plausible values for the 2014 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. This procedure is described below, and Figure 4.1 below is for a flowchart showing non-writing MDLR analysis.

##### ***Stratified random sampling Non-Writing MDLR***

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

- a. If convergence occurs at 2,500 nodes, output final PVs.
- b. If convergence does not occur, then test to determine whether the ratio of the standard deviations of the PVs from consecutive runs is close to 1.00.
  - i. If it is, then output the final PVs.
  - ii. If not, then consult with ACARA about the analysis results and next steps.

### ***Writing MDLR Analysis***

1. Since the same prompt is provided all students regardless of grades, writing responses are first combined and then divided into each TAA (i.e., total 8 data files).
2. MDLR analysis is run for each TAA, anchoring on the item difficulties from 2011 persuasive writing, and regression coefficients for each demographic variable are estimated. It should be noted that the categorical variables used in the model were gender, LBOTE status, Indigenous status, parental education, parental occupation, school geolocation and school sector, and the continuous variable was a measure of average school ability, specifically the school writing WLE average score. Regressing variables for each TAA can be found in Appendix M (see Table M.5)
3. Convergence criterion was set to 0.0001 and the minimum and maximum node values to were widen from – 15 to + 15 logits.

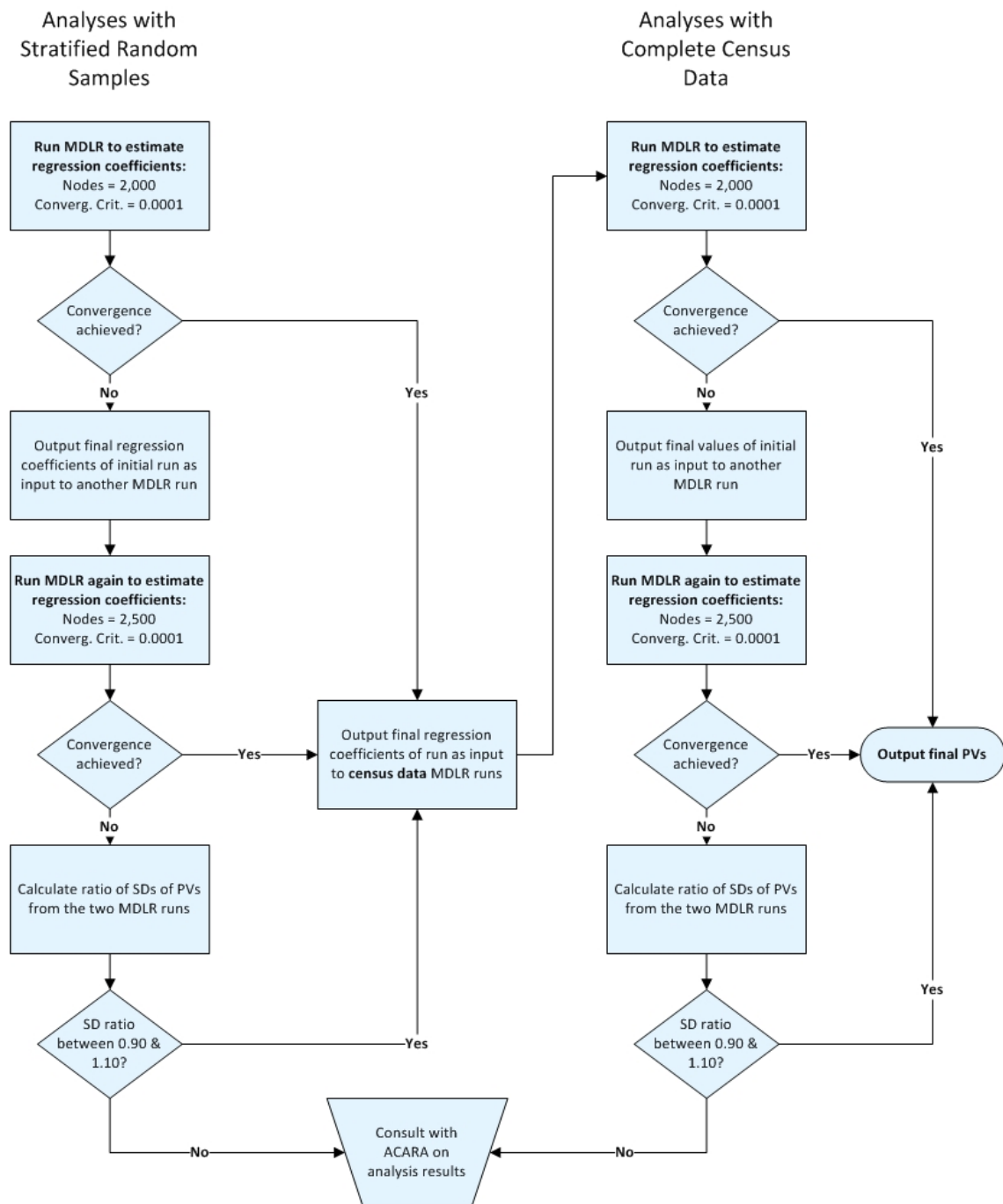


Figure 4.1. Non-writing MDLR process with TAA (using stratified random sample).



## CHAPTER 5. TEST CALIBRATIONS

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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).

As explained earlier, students across Years 3, 5, 7 and 9 responded to the same prompt for the writing assessment and the resulting scripts were rated using the same marking rubric based on the ten criteria. As a result, 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 0.87 and 0.90 for the reading tests, between 0.90 and 0.92 for the spelling tests, between 0.79 and 0.82 for the grammar and punctuation tests and between 0.86 and 0.94 for the numeracy tests. The reliability for the writing test is 0.96. The reliabilities are generally high with the exception of the reliabilities for the grammar and punctuation tests. The shorter multiple-choice tests may explain the slightly lower reliability for the grammar and punctuation tests.

**Table 5.2. Coefficient Alpha for NAPLAN 2014 Tests**

Year Level	Reading	Spelling	Grammar and Punctuation	Numeracy	Writing
3	0.88	0.92	0.79	0.86	
5	0.87	0.91	0.80	0.87	
7	0.89	0.92	0.82	0.94	0.96*
9	0.90	0.90	0.82	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 0.40 to 0.44, with the Year 7 test having the lowest average item discrimination. The spelling tests have the highest average item discriminations, ranging from 0.53 to 0.59. The averages for the grammar and punctuation tests are between 0.41 and 0.43, and those for the numeracy tests are between 0.41 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. These average item discrimination indices are considered high.

The unusually high average item discrimination (i.e., 0.87) 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 2014 Tests**

Year Level	Reading	Spelling	Grammar and Punctuation	Numeracy (ALL)	Numeracy (NC)	Numeracy (C)	Writing
3	0.44	0.59	0.43	0.41			
5	0.44	0.57	0.41	0.41			
7	0.40	0.54	0.41	0.45	0.45	0.44	0.87*
9	0.42	0.53	0.41	0.43	0.42	0.44	

\*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 seven 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.

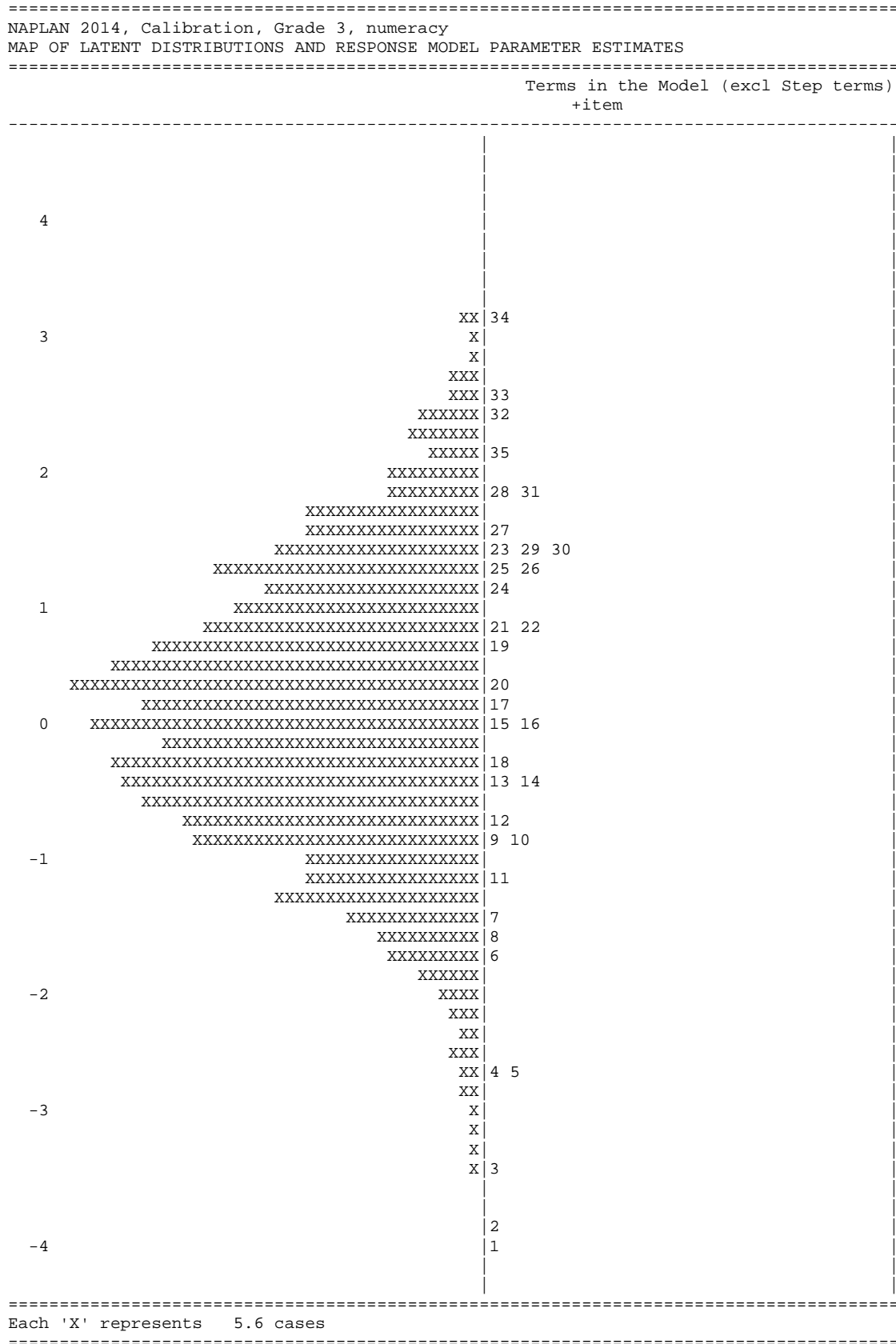


Figure 5.1. Example of a Wright map for Year 3 numeracy.

## 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 trialed 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, most of the items have Infit less than or equal to 1.20: there was a total of 10 items across the 16 tests with Infit statistics greater than 1.20 with most of these items appearing on the numeracy tests at Years 7 and 9 and reading tests at Years 3 and 5. Regarding classical test statistics, there was a total of 19 items across the 16 tests with discrimination less than 0.25. While there was a total of 46 items with facility higher than 0.90, there was a total of 13 items with facility less than 0.10 (mainly in numeracy). Figure 5.2 shows the ICC of one reading item (i.e., Item r3q15) with an Infit statistic close to 0.95. In contrast, Figure 5.3 shows the ICC of one numeracy item (i.e., Item n9NCq23) with an Infit statistic (i.e., 1.32) higher than the criterion value (i.e., 1.20) for evaluating the goodness of fit of each item.

### ***Writing***

The evaluation of goodness of fit to the Rasch model for individual writing items was also based on the weighted mean square statistics. None of the criteria exhibited misfit to the Rasch partial credit model except for punctuation and spelling (i.e., 1.41 and 1.23, respectively). Regarding the ICCs, there were not large differences between the empirical and the expected curves for each of the ten criteria. The ICCs of the ten writing criteria are also included in Appendix D.

**Table 5.4. Summary of Item Statistics in NAPLAN 2014 Tests**

<b>Domain</b>	<b>Year</b>	<b>Total Number of Items</b>	<b>Number of Items with Discrimination &lt; 0.25</b>	<b>Number of Items with</b>		<b>Number of Items with</b>	
				<b>Infit ≤ 1.20</b>	<b>Infit &gt; 1.20</b>	<b>Facility &gt; 0.90</b>	<b>Facility &lt; 0.10</b>
<b>Reading</b>	<b>3</b>	38	3	36	2	5	0
	<b>5</b>	38	0	36	2	4	0
	<b>7</b>	50	2	50	0	4	1
	<b>9</b>	50	3	50	0	3	1
<b>Spelling</b>	<b>3</b>	25	0	24	1	1	1
	<b>5</b>	25	0	25	0	2	0
	<b>7</b>	30	0	29	1	0	1
	<b>9</b>	30	0	30	0	4	1
<b>Grammar and Punctuation</b>	<b>3</b>	26	0	26	0	2	0
	<b>5</b>	26	2	25	1	3	0
	<b>7</b>	28	1	28	0	4	1
	<b>9</b>	28	1	28	0	3	1
<b>Numeracy</b>	<b>3</b>	35	3	35	0	5	1
	<b>5</b>	40	1	40	0	3	0
	<b>7</b>	64	0	63	1	0	2
	<b>9</b>	64	3	62	2	3	3

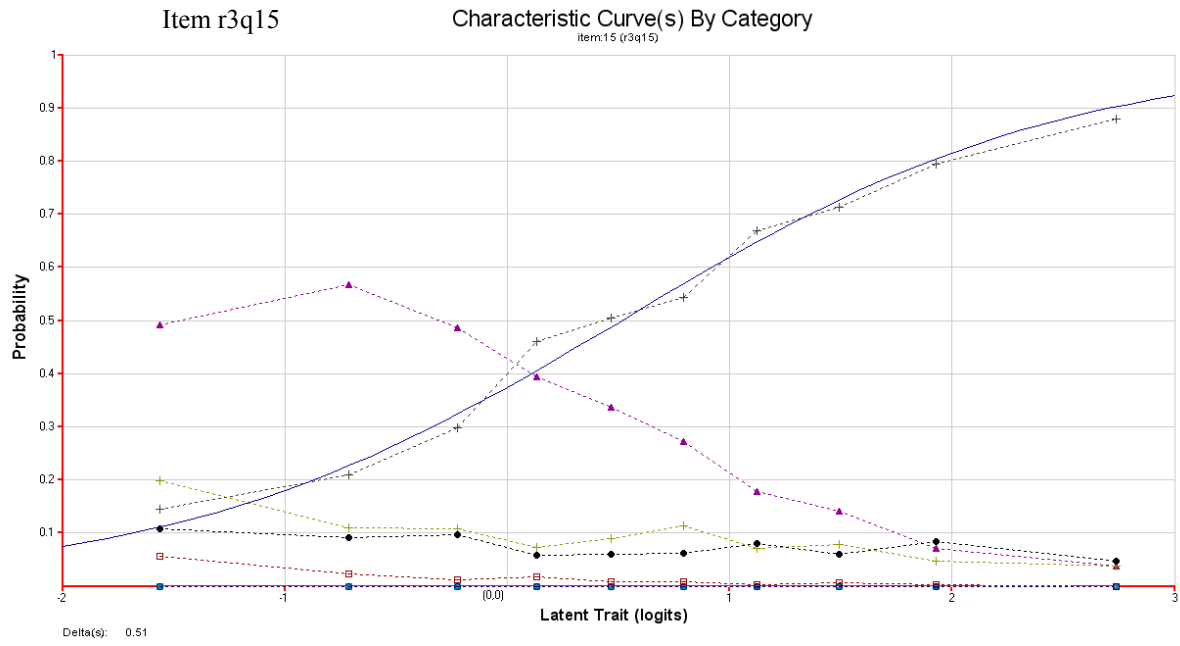


Figure 5.2. Item characteristic curves for an item with Infit =0.95

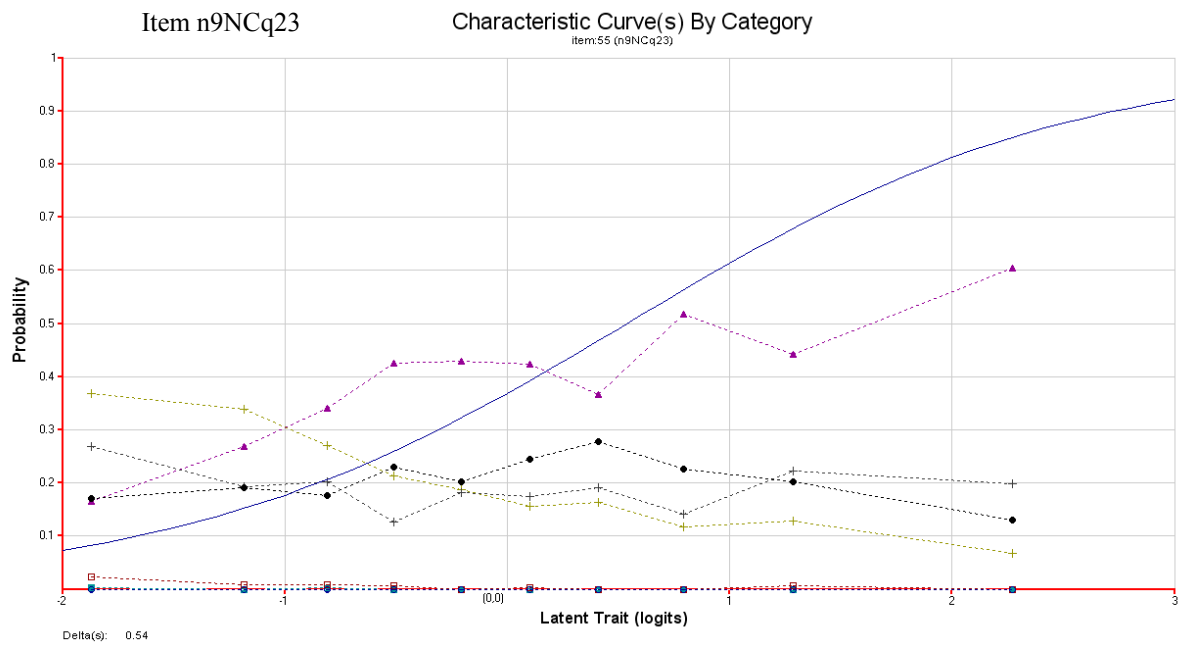


Figure 5.3. Item characteristic curves for an item with Infit > 1.20.



## 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 numeracy item (Item n9CAq29) 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. 0.63) 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 spelling item (Item lc7q02) with an absolute adjusted difference of 0.50 or greater. This item was relatively easier (i.e., 1.00) 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 reading item (Item r5q05) with an absolute adjusted difference of 0.60 or greater. This item was relatively easier (i.e., 0.95) 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).

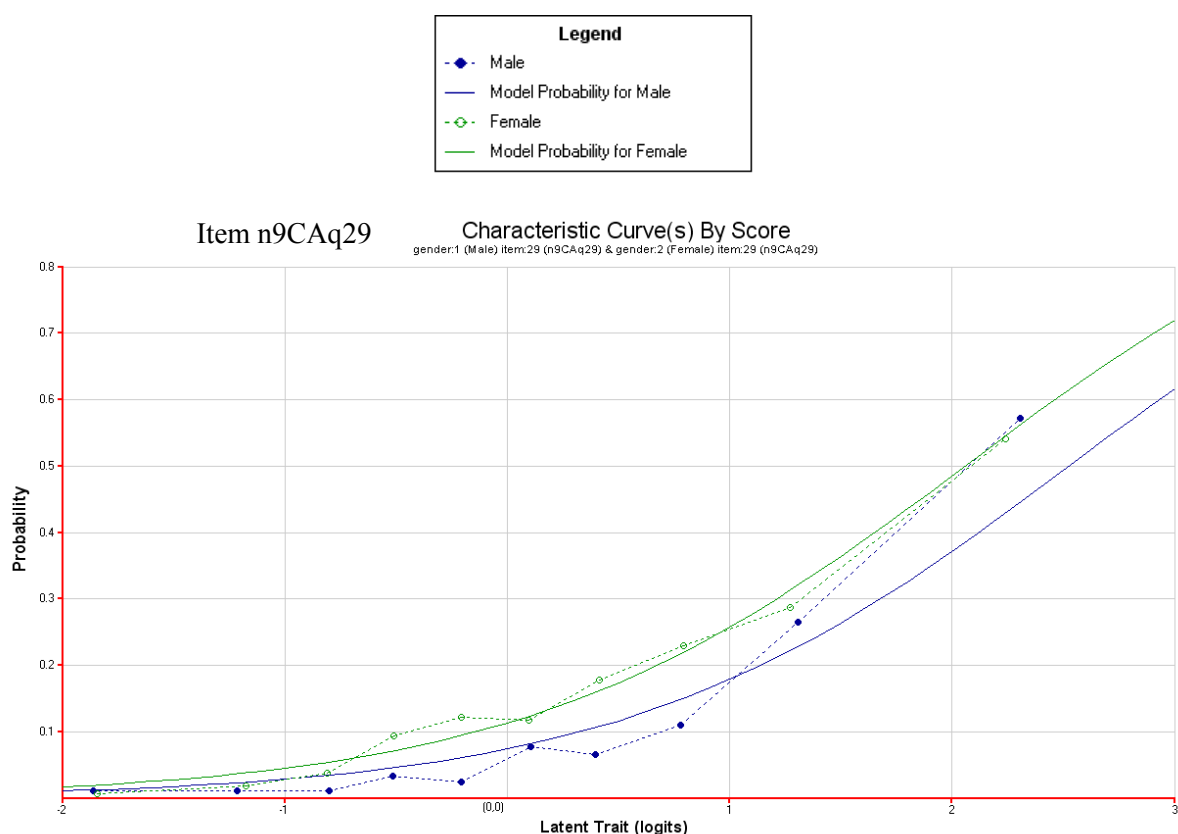
***State/Territory DIF***

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 15 items in reading, 12 items in spelling, 11 items in grammar and punctuation and 16 items in numeracy across all four year levels that showed potential DIF for some jurisdictions. The total number of items showing state/territory DIF may not match with the sum of the cells in each domain because the same items may be flagged in multiple jurisdictions. Table 5.8 can be read in conjunction with Appendix I, from which the items showing state/territory related DIF can be identified. For example, from Table 5.8, there were four items in year 7 reading showing DIF in NT when compared to the national level, with three items being harder (i.e., r7q03, r7q05, and r7q08) and one item being easier (i.e., r7q12). The adjusted differences are 0.786, 0.517, 0.564, and -0.565, respectively as seen from Appendix I.

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

**Table 5.5. Number of Items Showing Gender DIF by Domain by Year Level**

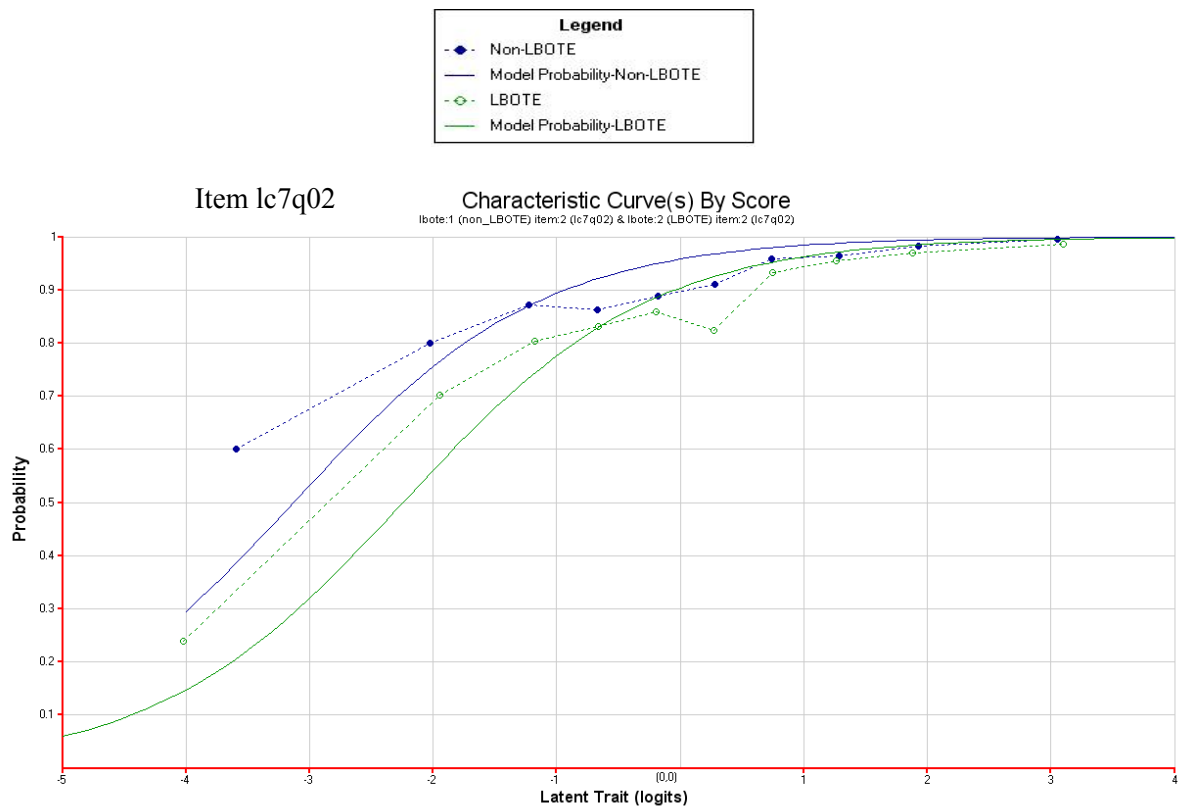
Year Level	Reading		Spelling		Grammar and Punctuation		Numeracy	
	Total of Test Items	Total of DIF Items	Total of Test Items	Total of DIF Items	Total of Test Items	Total of DIF Items	Total of Test Items	Total of DIF Items
3	38	1	25	1	26	0	35	1
5	38	1	25	2	26	0	40	2
7	50	2	30	3	28	1	64	0
9	50	5	30	5	28	2	64	3



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

**Table 5.6. Number of Items Showing LBOTE DIF by Domain by Year Level**

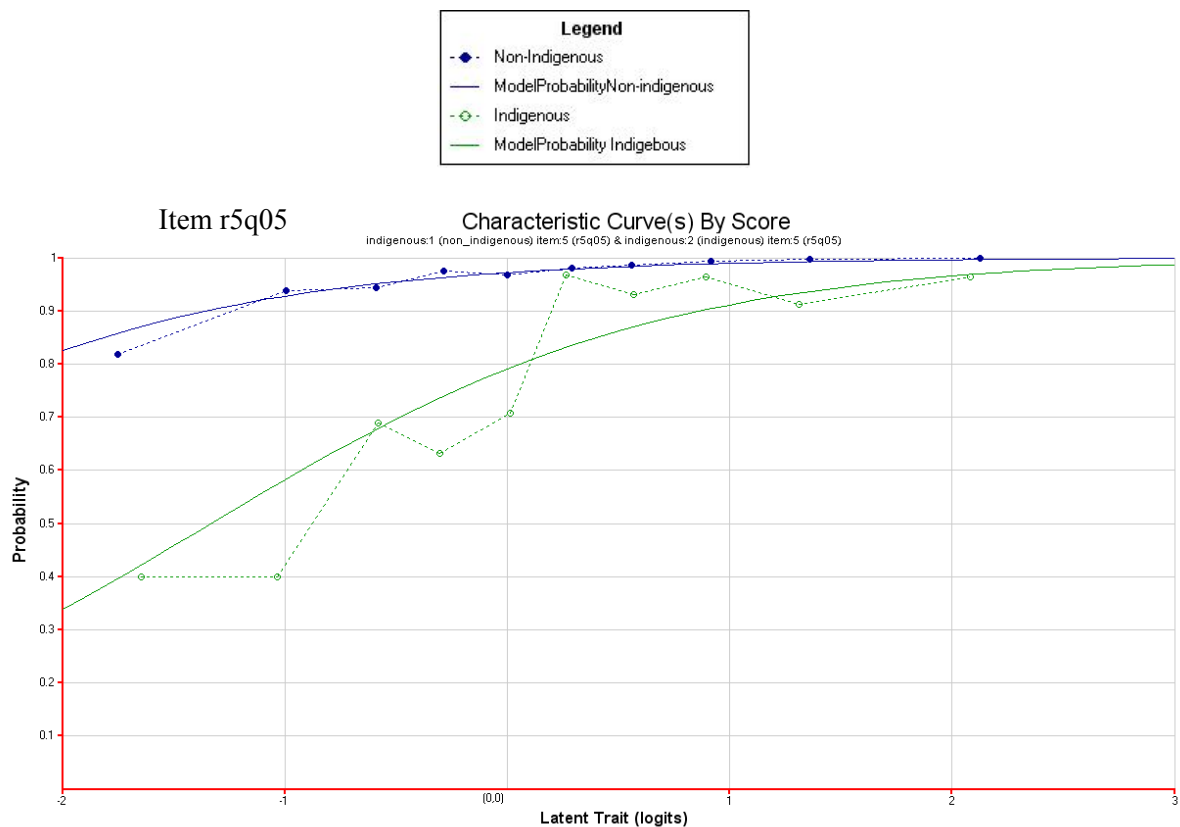
Year Level	Reading		Spelling		Grammar and Punctuation		Numeracy	
	Total of Test Items	Total of DIF Items	Total of Test Items	Total of DIF Items	Total of Test Items	Total of DIF Items	Total of Test Items	Total of DIF Items
3	38	0	25	1	26	2	35	2
5	38	2	25	3	26	6	40	0
7	50	4	30	2	28	5	64	3
9	50	2	30	1	28	3	64	8



**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	13	25	2	26	8	35	7
5	38	7	25	2	26	10	40	4
7	50	10	30	3	28	7	64	8
9	50	9	30	6	28	8	64	17

**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	NSW		VIC		QLD		WA		SA		TAS		ACT		NT	
		E	H	E	H	E	H	E	H	E	H	E	H	E	H	E	H
Reading	3	0	0	0	0	0	0	1	0	0	0	0	0	1	0	3	1
	5	0	0	1	0	0	0	0	0	0	0	0	0	3	0	1	0
	7	0	0	1	1	0	0	0	0	0	0	0	0	1	0	1	3
	9	0	0	0	0	0	0	2	0	0	0	0	0	1	0	1	2
Spelling	3	1	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0
	5	0	0	0	0	2	2	0	0	0	0	0	1	0	0	1	1
	7	0	0	1	0	0	1	0	0	0	0	1	0	1	0	0	1
	9	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2
GP	3	0	0	1	0	0	0	0	0	0	0	0	0	2	0	1	1
	5	1	0	1	0	0	1	0	0	0	0	0	1	1	0	3	1
	7	0	0	1	0	0	0	1	0	0	0	0	0	1	1	1	3
	9	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	3
Numeracy	3	0	0	2	0	1	1	1	0	0	0	0	1	1	0	1	2
	5	2	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1
	7	0	0	0	0	3	0	0	0	0	0	0	2	0	0	1	2
	9	3	0	0	0	0	0	0	0	0	2	1	1	1	0	2	4

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

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NAPLAN results are reported using five national achievement scales, one for each of the assessed domains of literacy – reading, writing, spelling and grammar and punctuation – and one for numeracy. The vertical and horizontal equating design is represented schematically in terms of the data matrix in Figure 6.1. Each year in NAPLAN, the scales are vertically equated so that each NAPLAN achievement scale spans Years 3, 5, 7 and 9; i.e., there is a single scale for each assessment domain. All assessments other than writing are vertically equated by including common items in tests administered to adjacent year levels; i.e., Year 3 and Year 5, Year 5 and Year 7 and Year 7 and Year 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 2014 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 2013 were used for common-person equating again in 2014. 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 2014 main NAPLAN test forms. The equating data were used to equate the 2014 tests onto the existing NAPLAN reporting scales.

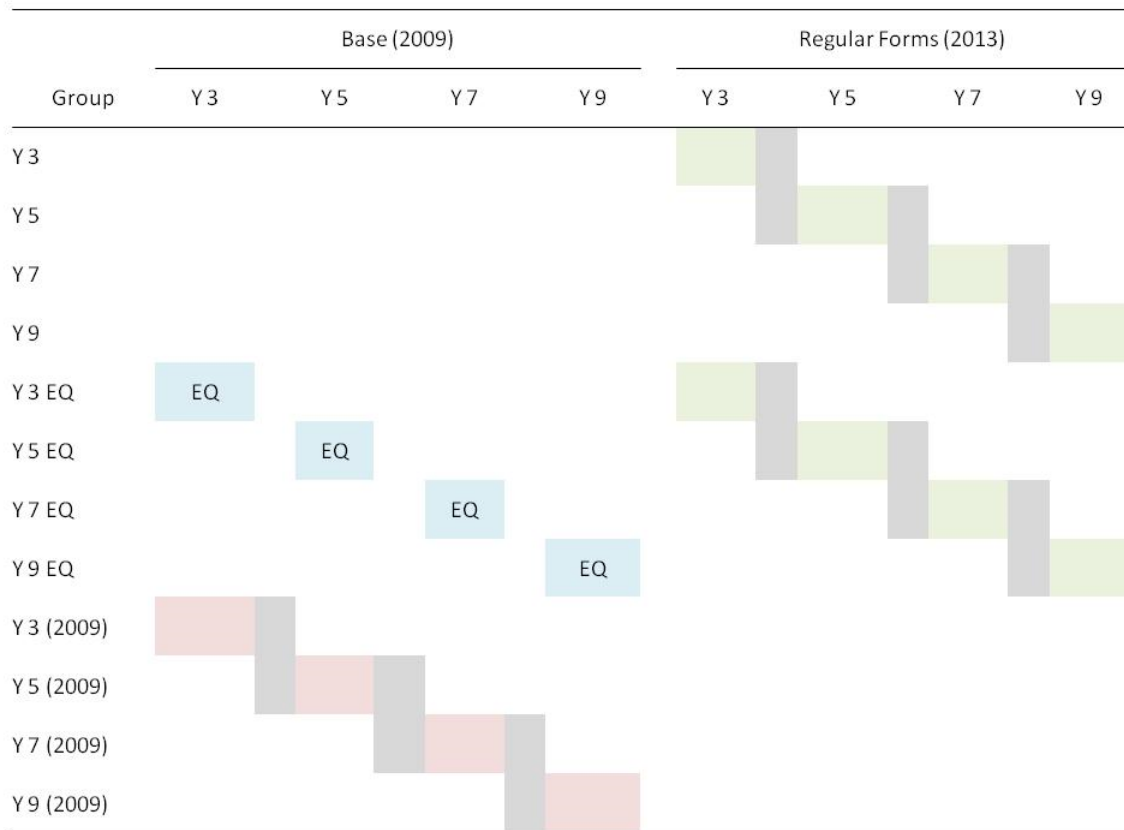
The horizontal equating provides one basis for placing the 2014 NAPLAN Year 3, Year 5, Year 7 and Year 9 tests on the vertical NAPLAN scale for each domain because item locations for the secure forms are on the NAPLAN scale. The common items in the tests administered to adjacent year levels also provide a basis for vertically equating the scales. The results of common person equating were checked against the results of 2014 common-item vertical equating and both sets of results were taken into consideration in finalising the scaling of the 2014 reading, spelling, grammar and punctuation and numeracy tests.

In 2011, a persuasive writing scale, separate from the narrative scale, was introduced. In 2014 a persuasive writing task was administered in NAPLAN and the resulting scale was equated to the 2011 persuasive writing scale. 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 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 2014 tests for reading, spelling, grammar and punctuation and numeracy. Each student in the equating sample completed an equating form in addition to the NAPLAN 2014 tests that the full cohort to which they belong completed. Figure 6.1 shows the horizontal equating design for each of reading, spelling, grammar and punctuation and numeracy at each year level.

The equating form for each domain at each year level had already been scaled onto the historic NAPLAN scale in 2009. In 2014, the first step was to place the NAPLAN 2014 test and the equating form on the same scale, for each domain at each year level, using the common-person equating data. The second step was to equate each of the NAPLAN tests onto the historic NAPLAN domain scale using the relevant equating form through the process of common-item equating.



**Figure 6.1. Equating design for each assessment domain.**

The vertical scales were originally established in 2008. In each new calendar year, link items are included in the tests for adjacent year levels and new vertical equating is conducted. This provides the basis for obtaining new estimates of vertical shift constants to equate vertical tests. The tests are equated back using the secure forms. The secure forms are on the original scale. Consequently, there are two ways of vertically equating. First, the tests have direct vertical links. Second, the horizontal equating through equating forms places the items on the original scale, which had vertical links. Therefore, the horizontal equating provides indirect vertical links that ideally will agree with the direct links. Where divergences are found, these warrant further investigation. 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 2014 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 2014 scale for each of the equating forms. The set of 2014 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 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 2014 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. Any change to the standard deviations of link items by a scaling factor would imply that the same scaling factor should be used for the NAPLAN test because the equating items are on the same scale with the same unit as the NAPLAN items. No scaling factors based on equating have been used in the past and none were used in 2014. However, the issue has been discussed with the Measurement Advisory Group in previous years, particularly in relation to grammar and punctuation.

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

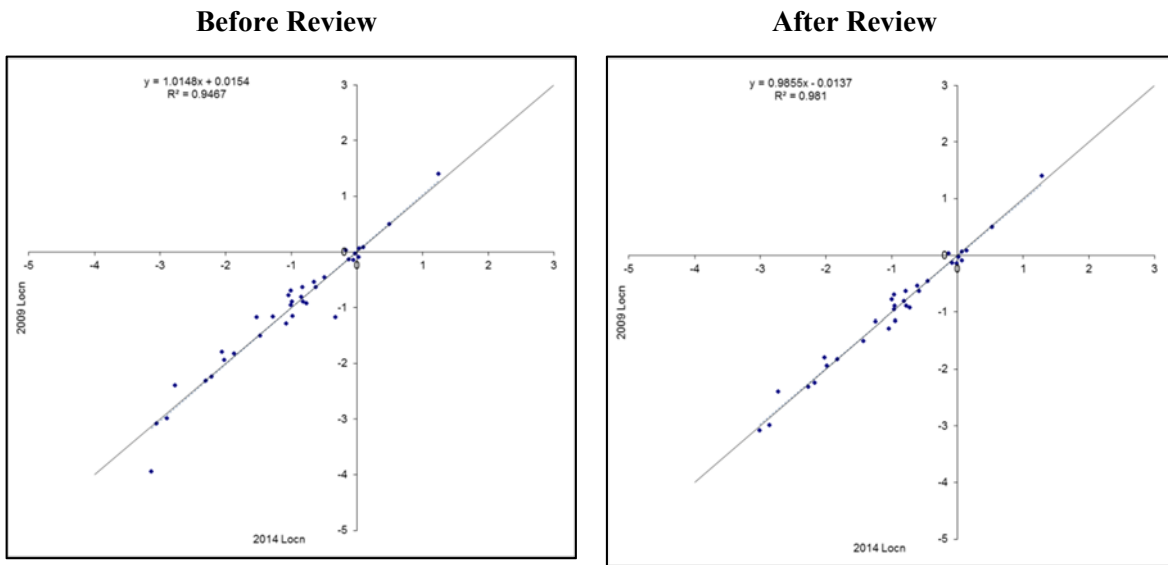


Figure 6.2. Links review for Reading equating form Year 3 (2014 vs. 2009).

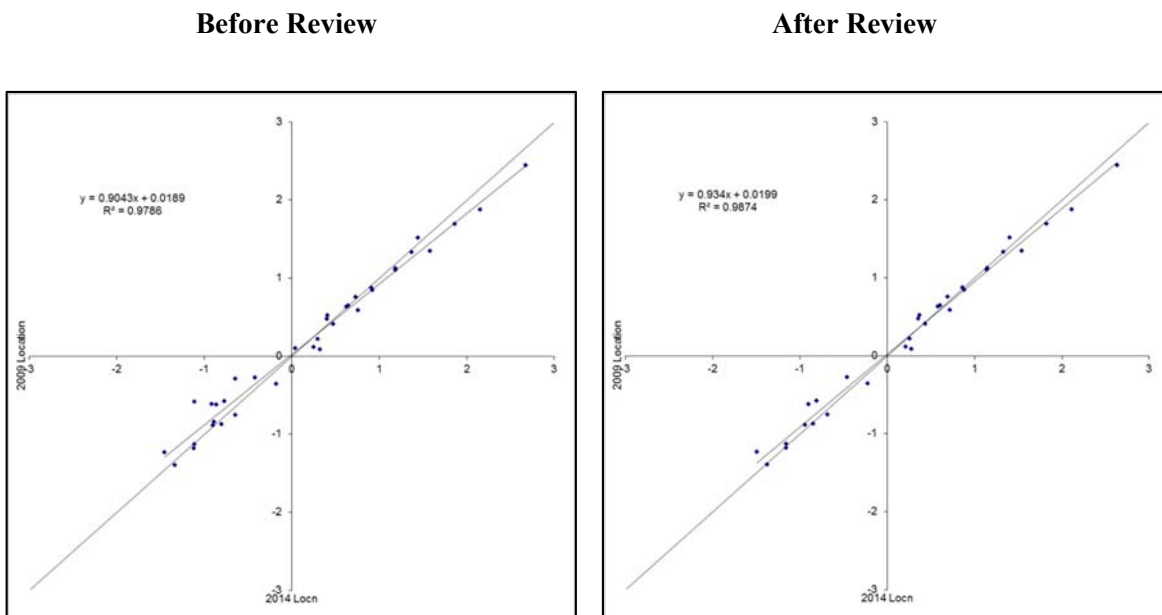


Figure 6.3. Links Review for Reading equating form Year 5 (2014 vs. 2009).

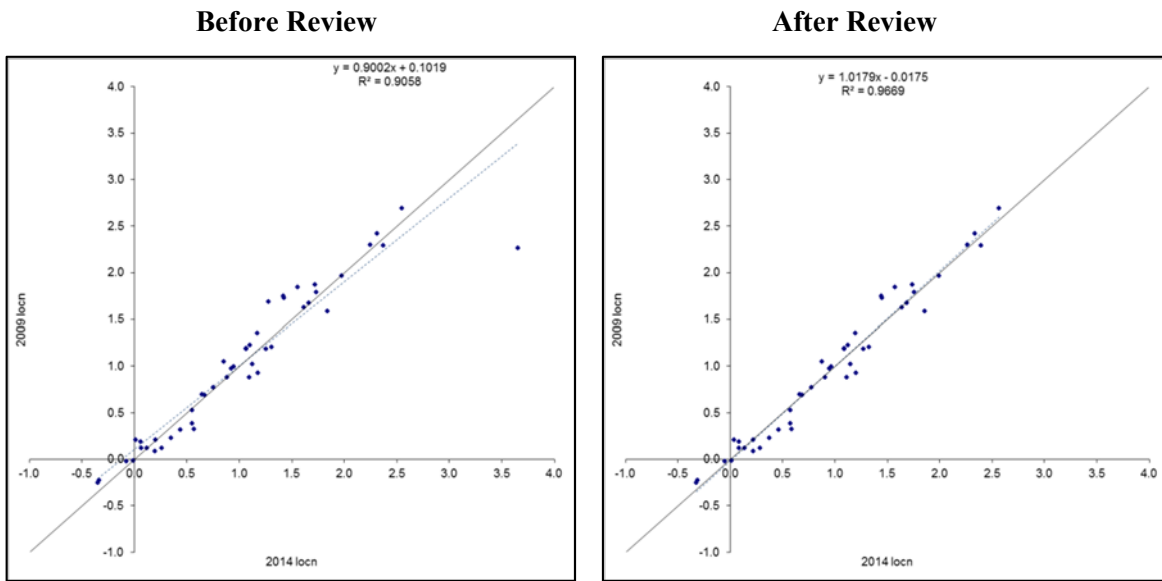


Figure 6.4. Links Review for Reading equating form Year 7 (2014 vs. 2009).

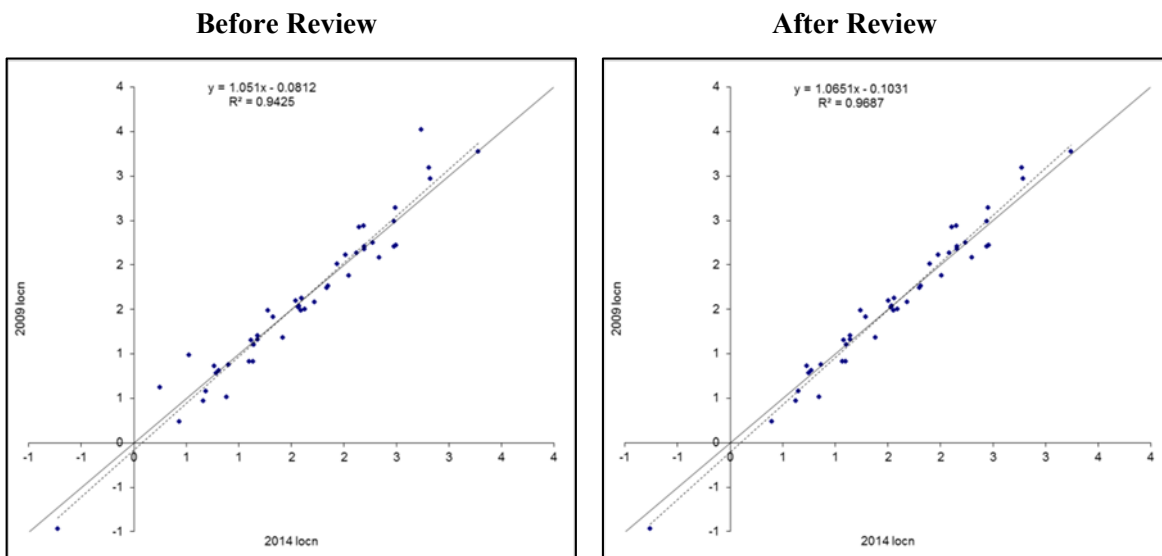


Figure 6.5. Links review for Reading equating form Year 9 (2014 vs. 2009).

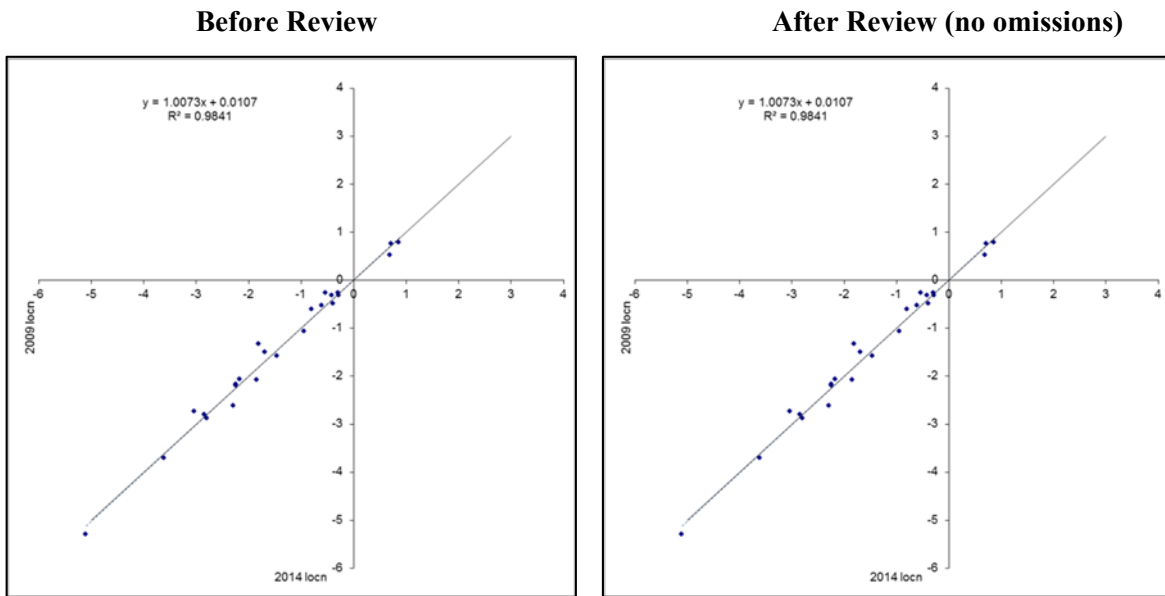


Figure 6.6. Links review for Spelling equating form Year 3 (2014 vs. 2009).

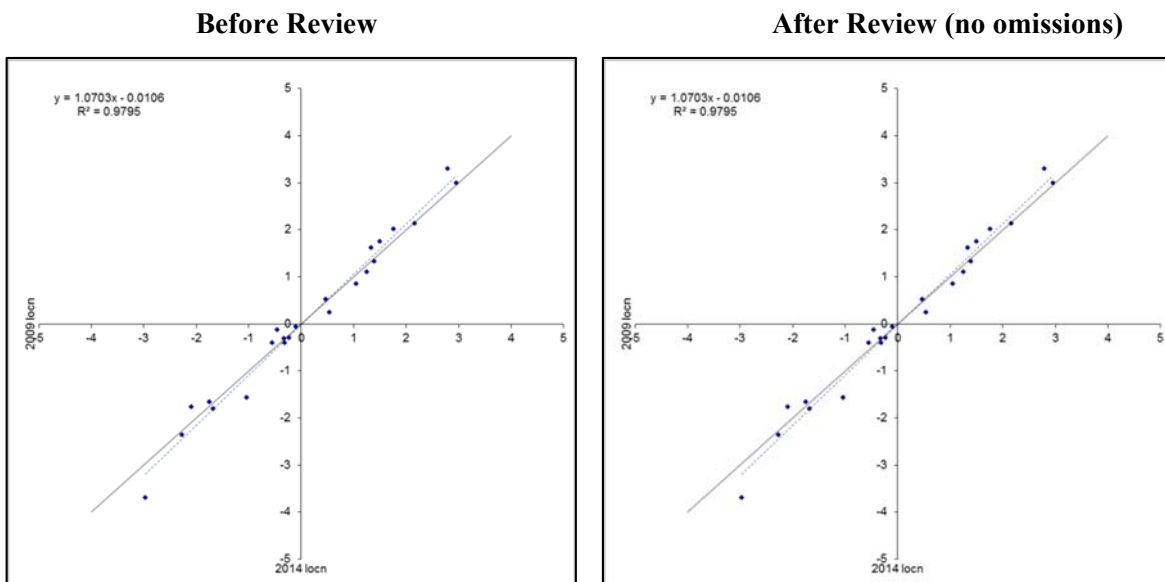


Figure 6.7. Links review for Spelling equating form Year 5 (2014 vs. 2009).

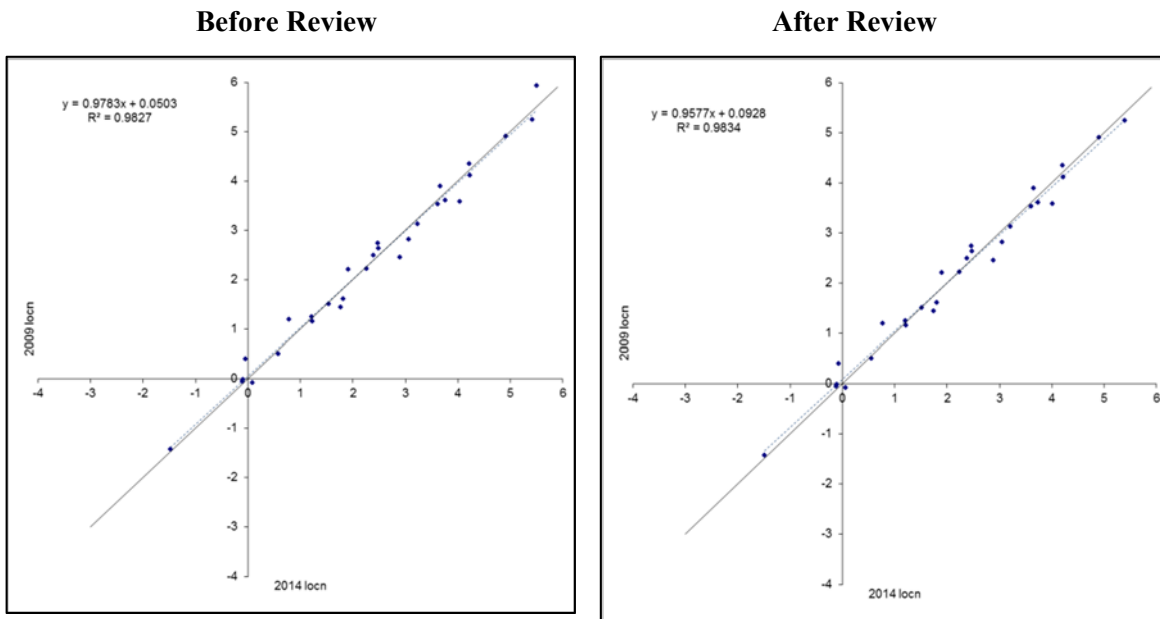


Figure 6.8. Links Review for Spelling equating form Year 7 (2014 vs. 2009).

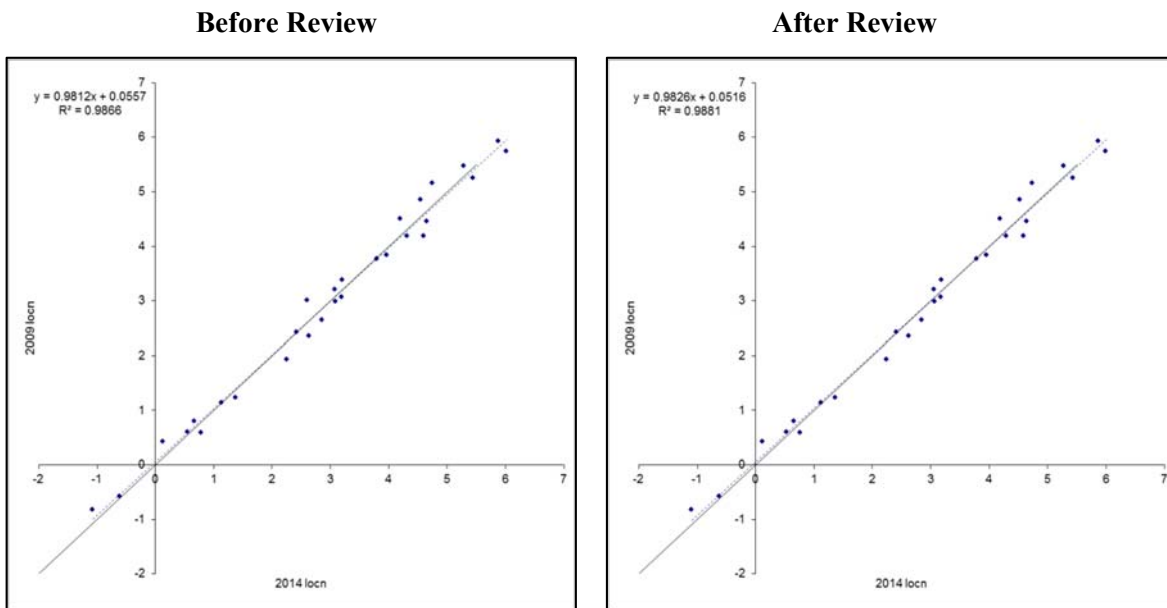
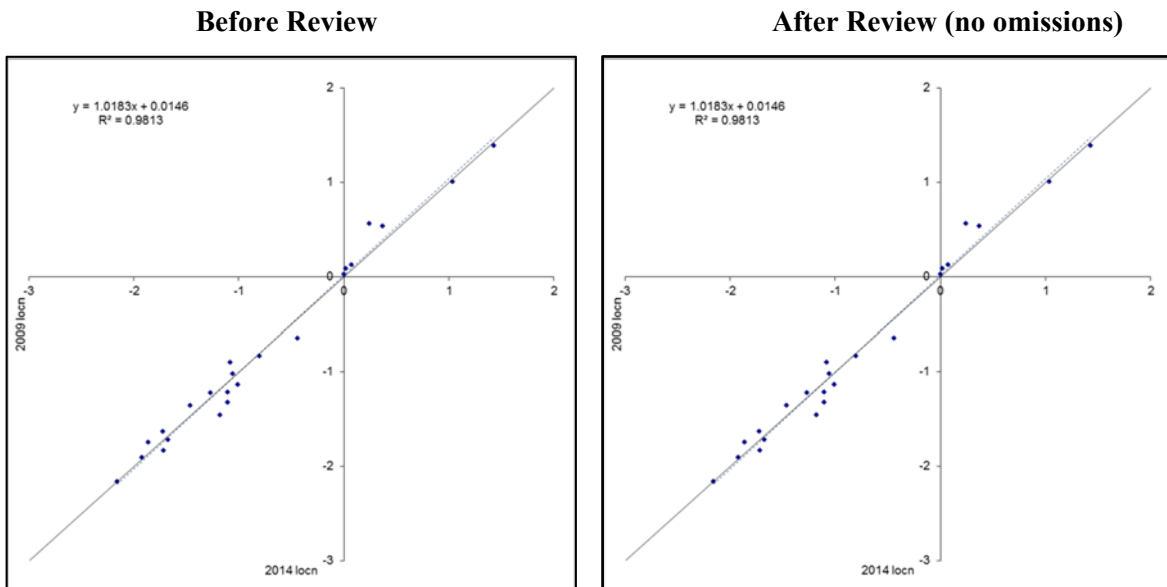
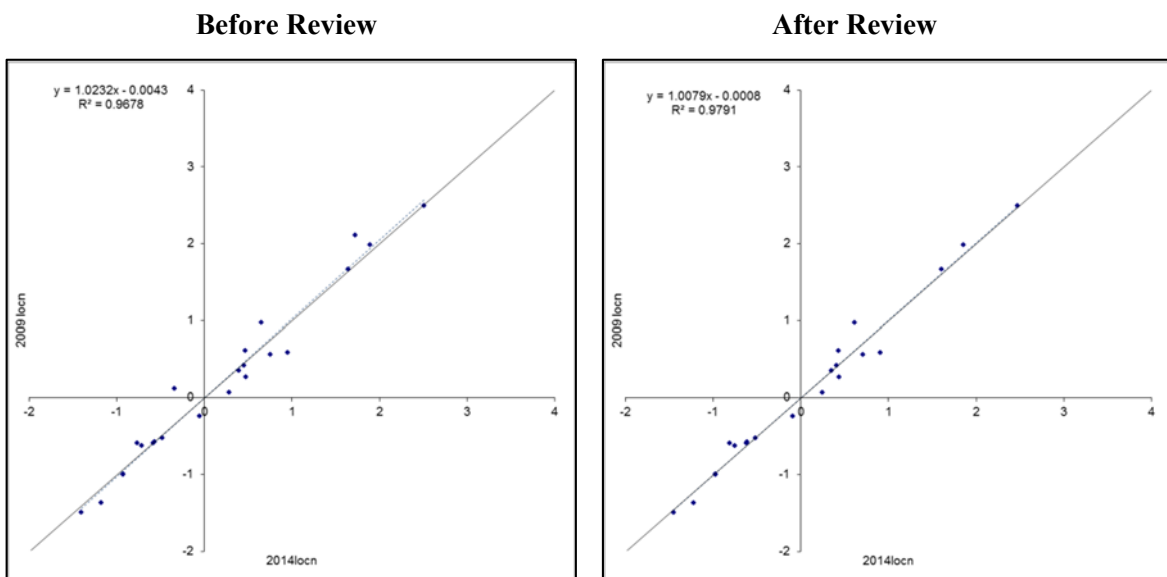


Figure 6.9. Links Review for Spelling equating form Year 9 (2014 vs. 2009).



**Figure 6.10. Links review for Grammar and Punctuation equating form Year 3 (2014 vs. 2009).**



**Figure 6.11. Links Review for Grammar and Punctuation equating form Year 5 (2014 vs. 2009).**

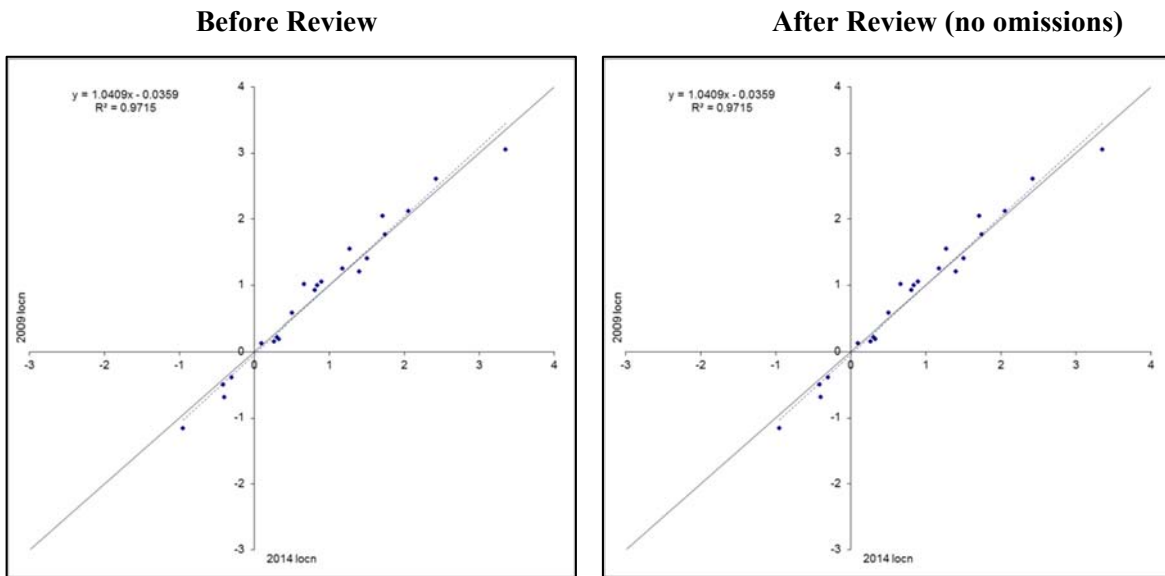


Figure 6.12. Links Review for Grammar and Punctuation equating form Year 7 (2014 vs. 2009).

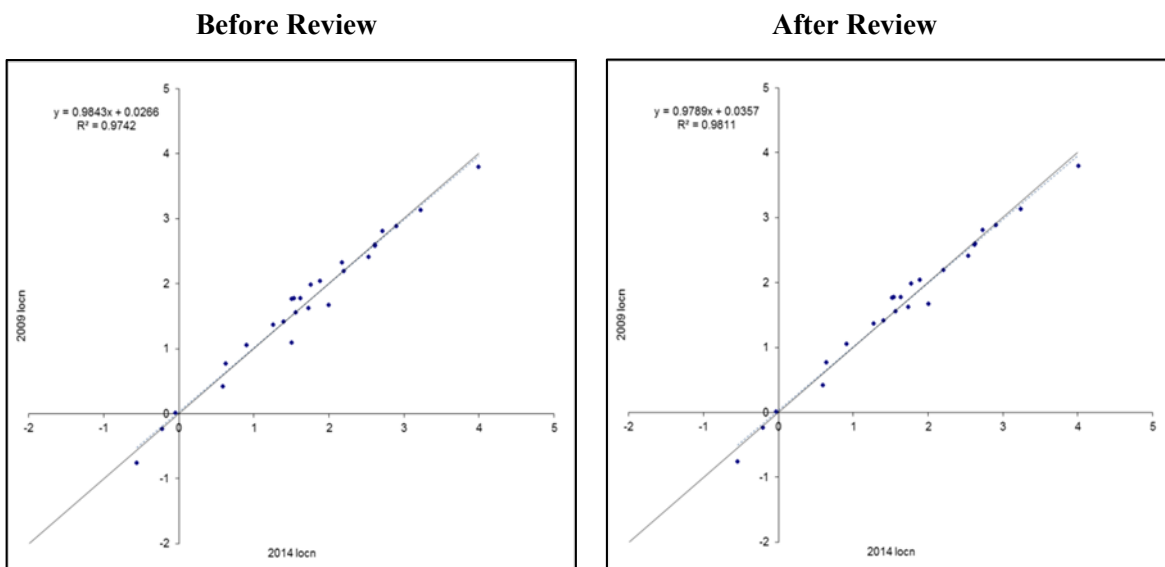


Figure 6.13. Links review for Grammar and Punctuation equating form Year 9 (2014 vs. 2009).

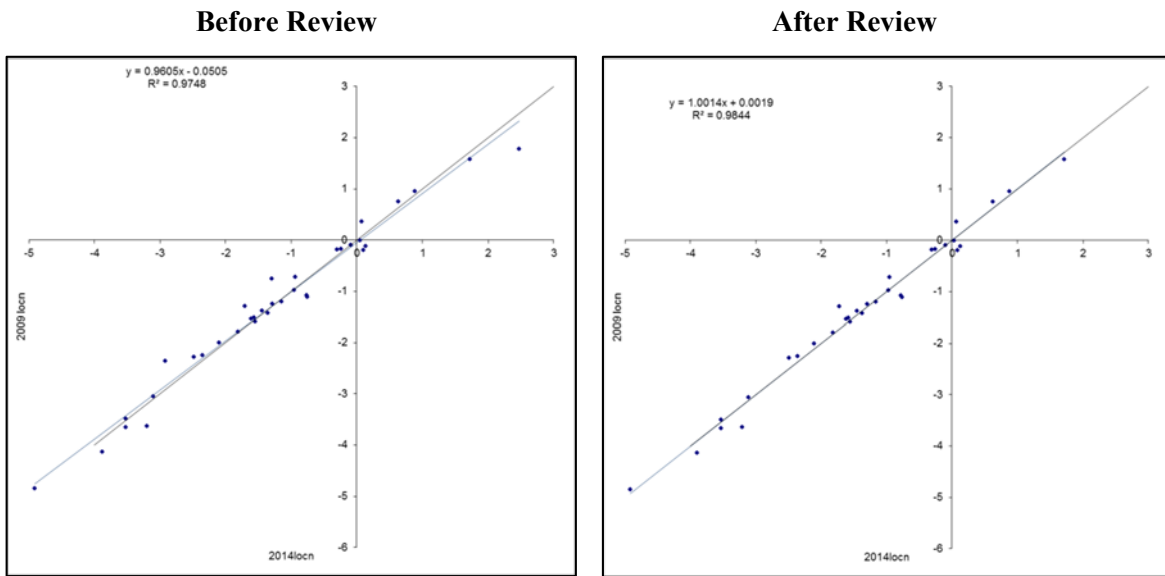


Figure 6.14. Links review for Numeracy equating form Year 3 (2014 vs. 2009).

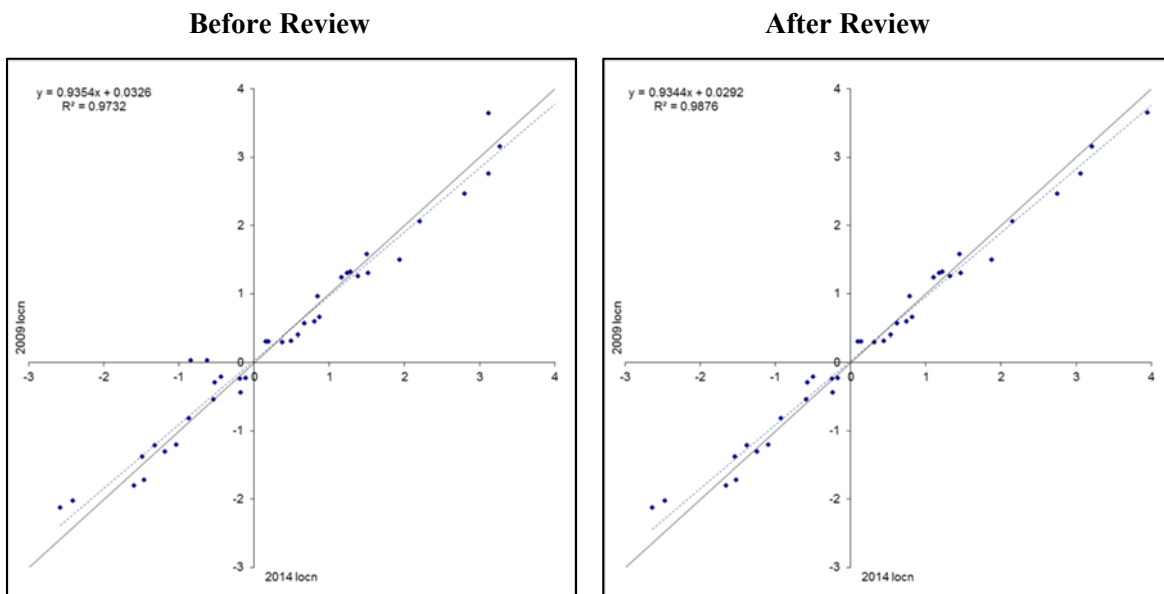
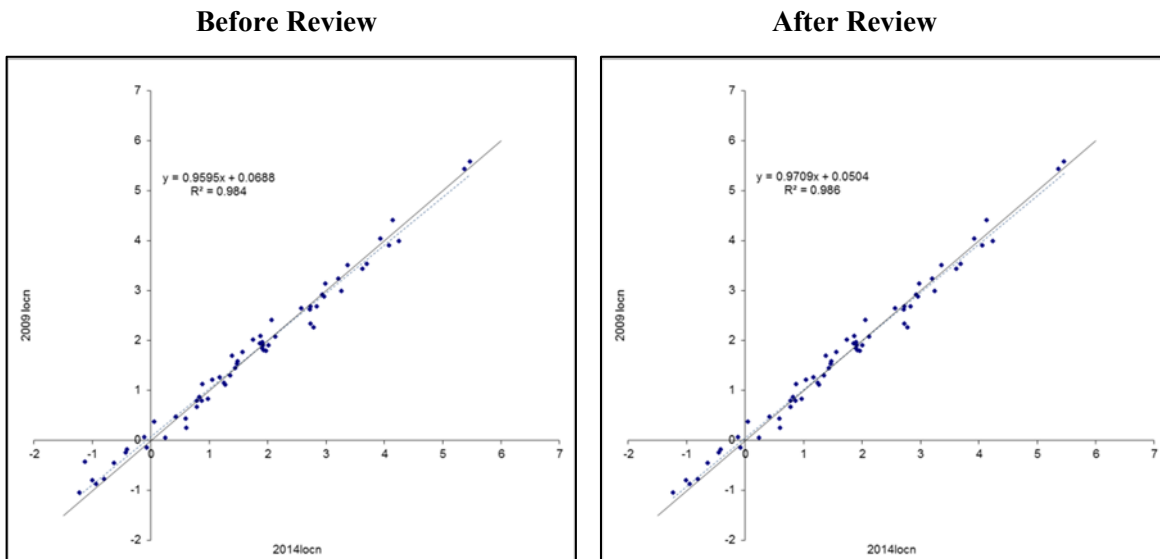
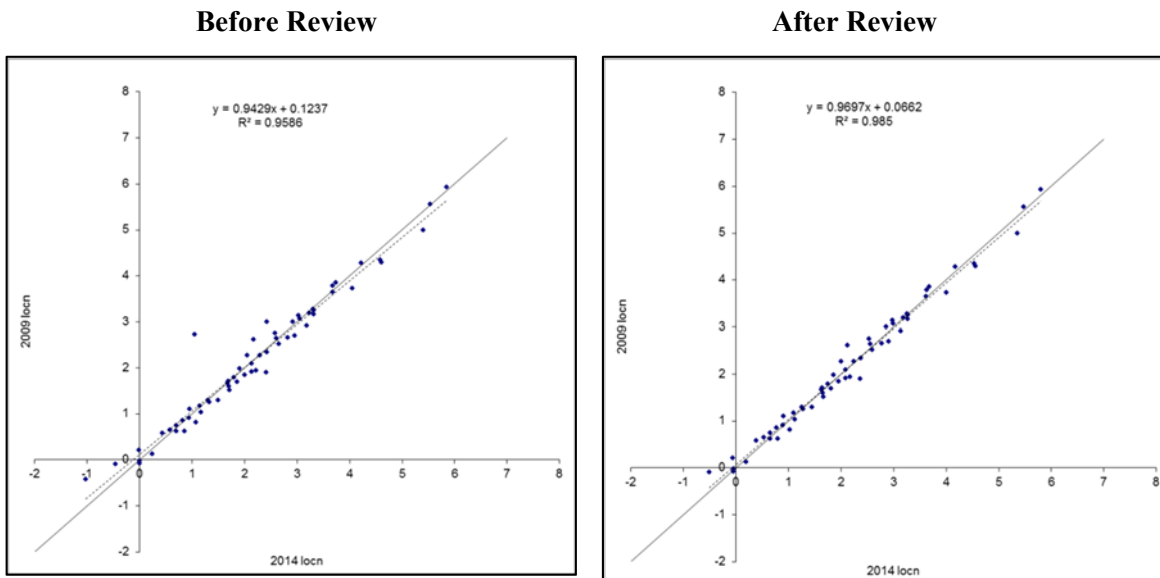


Figure 6.15. Links review for Numeracy equating form Year 5 (2014 vs. 2009).





**Figure 6.16. Links review for Numeracy equating form Year 7 (2014 vs. 2009).**



**Figure 6.17. Links review for Numeracy equating form Year 9 (2014 vs. 2009).**

The secure equating forms were calibrated with the NAPLAN 2014 forms. The locations of the equating items from the 2014 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 2014 equating forms onto the historic NAPLAN reporting scale, thus aligning the 2014 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 2014 calibration, with the 2009 item locations of the same set of link items.

**Table 6.1. Horizontal Shifts for Equating the 2014 Item Locations with 2009 Item Locations**

	Reading	Spelling	Grammar & Punctuation	Numeracy
<b>Year 3</b>	-0.692	-1.067	-0.284	-1.011
<b>Year 5</b>	0.535	0.774	0.553	0.337
<b>Year 7</b>	1.390	2.005	0.933	1.564
<b>Year 9</b>	1.866	2.703	1.718	2.136

The horizontal equating of each of the 2014 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 2014 tests and both sets of results were taken into consideration in determining the final shifts. The vertical equating of the 2014 tests is described in the next section.

### 6.3 Common-Item Vertical Equating of NAPLAN 2014 Tests

As in previous years of testing, the 2014 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 a link item) based on the fit of the item and evidence for differential item functioning (DIF). An overarching principle was adopted to maximise the number of links retained where possible. In practice, 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: detailed inspection of the ICC; 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.

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. This stage involves the sequential omission of items with cross year-level DIF that affect the vertical shift.

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

Items were considered for deletion in the third stage based on high or low discrimination, i.e., if the discrimination (slope) estimate lay outside the range of approximately 0.8 to 1.15, and based on visual inspection of the level of discrimination evident in the ICC for the item. (The discrimination estimates were obtained from Winsteps and these are not the traditional discrimination indices.) Detailed comments were made about the functioning of items, including discrimination and 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 point 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 same criterion for DIF used in previous years of testing.

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.

Due to the larger number of links available and the quality of the items, it was not necessary to combine vertical links from 2013 and 2014 in spelling and grammar and punctuation and to use all data to vertically link. Links had been combined in this manner in 2012 and 2013.

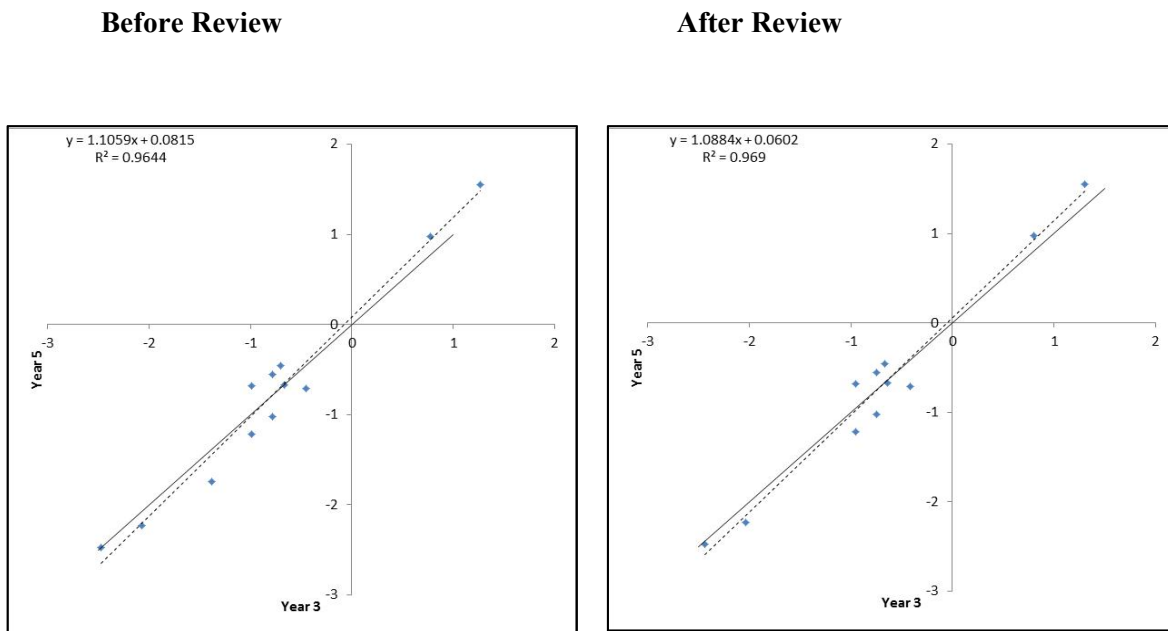
Three sets of link items (Year 3 and Year 5, Year 5 and Year 7, Year 7 and Year 9) were reviewed for each of the four domains. In each domain, the items administered to each year level were calibrated separately. For each pair of adjacent tests with common items, mean item parameters of the common items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

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

For each pair of adjacent tests, one set of item parameters was then plotted against the other set of item parameters. Two plots are presented below for each review: one plot for the full set of common items before review and one plot for the retained link items after review. On the plots, each dot represents a common item. The 24 plots are shown in Figure 6.18 to Figure 6.29.

**Vertical Equating of 2013 Reading Tests***Reading – Year 3/Year 5*

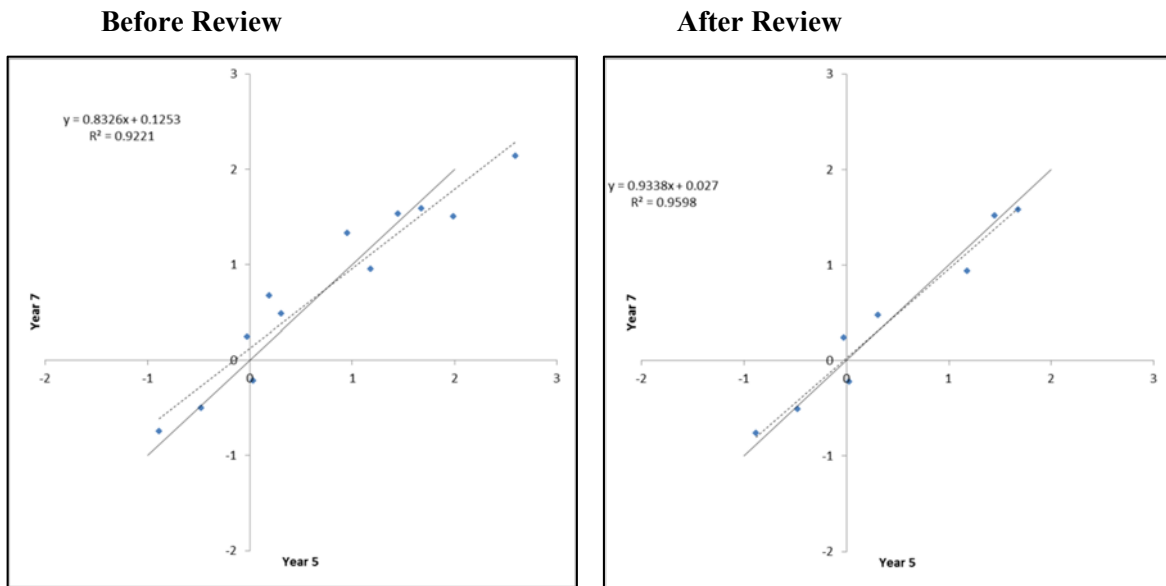
Figure 6.18 shows the Year3/Year 5 reading links before and after review. No items were omitted due to the effects of high or low discrimination or guessing. One item was omitted based on the cross-year level DIF.



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

*Reading – Year 5/Year 7*

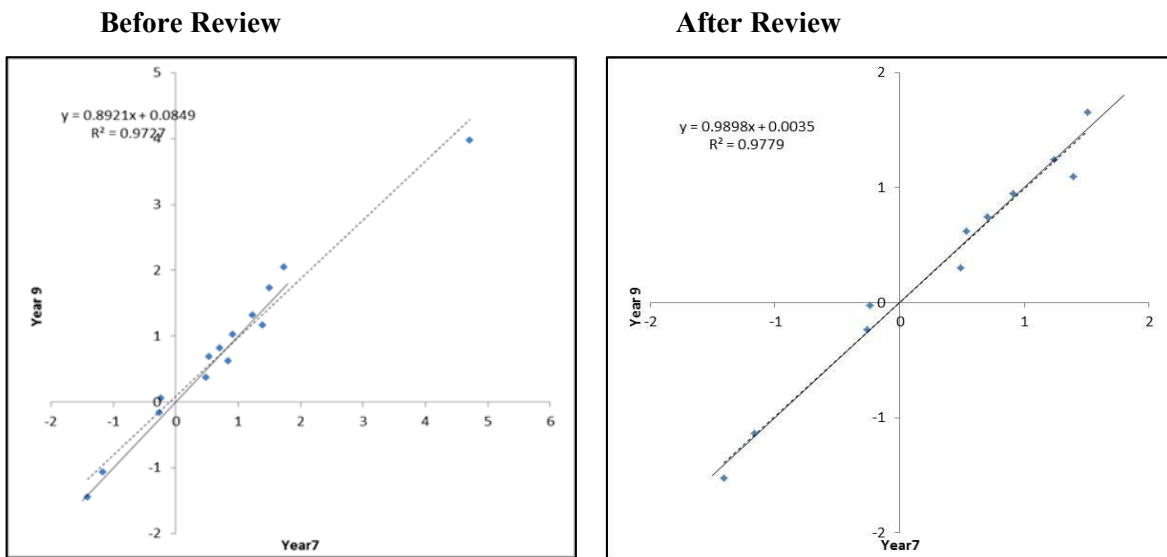
Figure 6.19 shows the Year5/Year 7 reading links before and after review. Two items were omitted due to high discrimination that affected the shift in the predicted direction and two items were omitted due to low discrimination that affected the shift in the predicted direction. However, the change in the shift constant was very small.



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

*Reading – Year 7/Year 9*

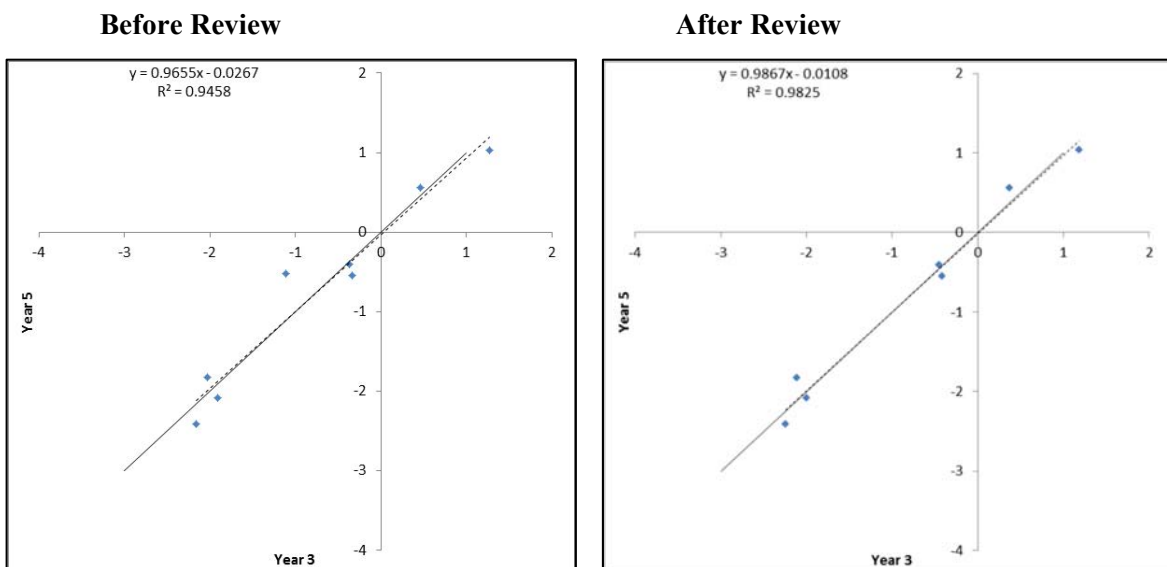
Figure 6.20 shows the Year 7/ Year 9 reading links before and after review. One item with low discrimination and/or guessing was omitted and one item with high discrimination was omitted.



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

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

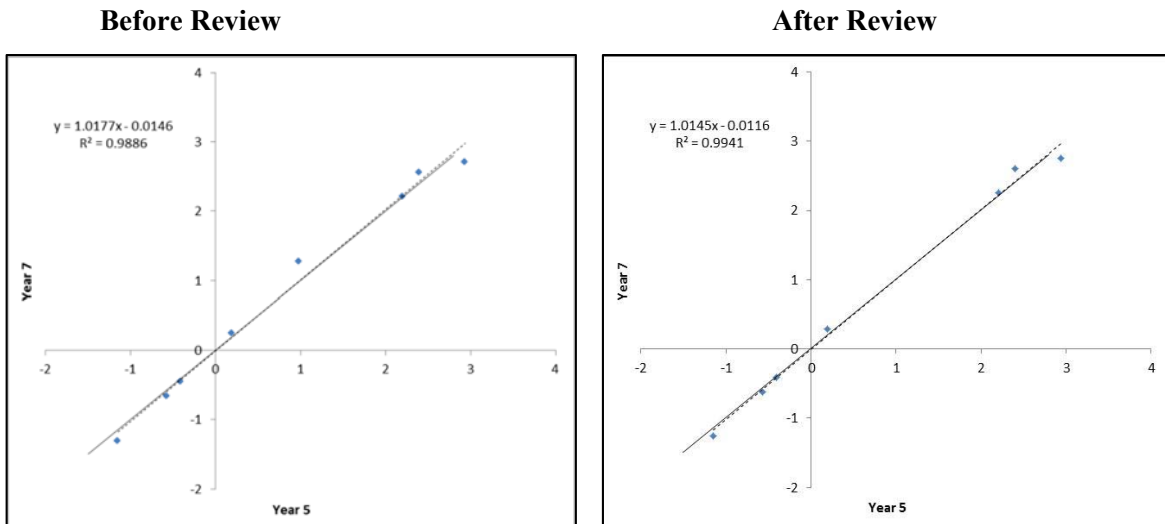
The Year 3/Year 5 vertical equating is summarised in Figure 6.21. One item was omitted due to cross-year level DIF.



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

*Spelling – Year 5/Year 7*

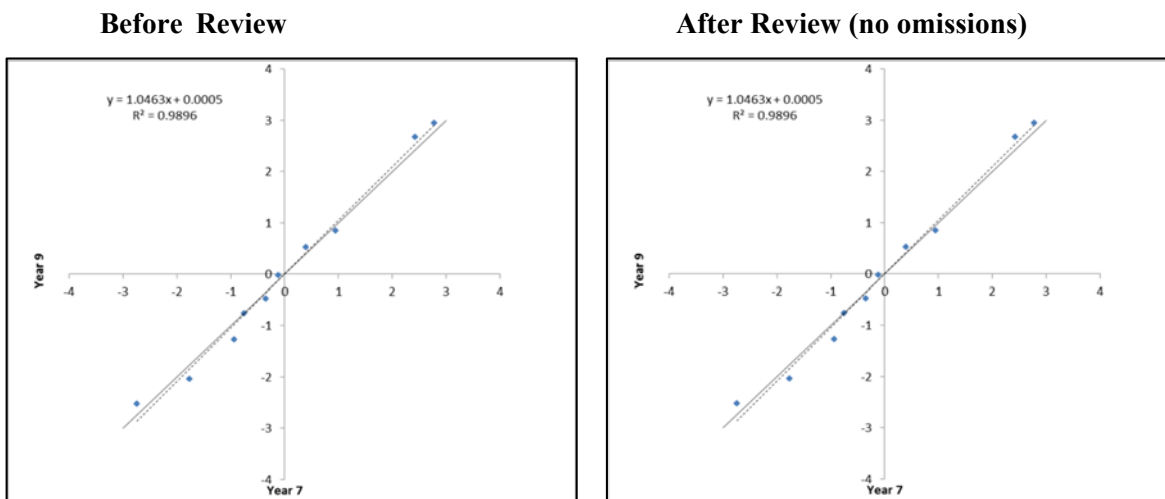
The Year 5/ Year 7 links are shown in Figure 6.22. One item had high discrimination but did not affect the shift in the predicted direction so it was retained. One item was omitted due to cross-year level DIF.



**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. All items were retained. One item slightly exceeded the DIF criterion of 0.3 but its omission would have led to a balancing omission, which would have resulted in a negligible impact on the shift constant overall.



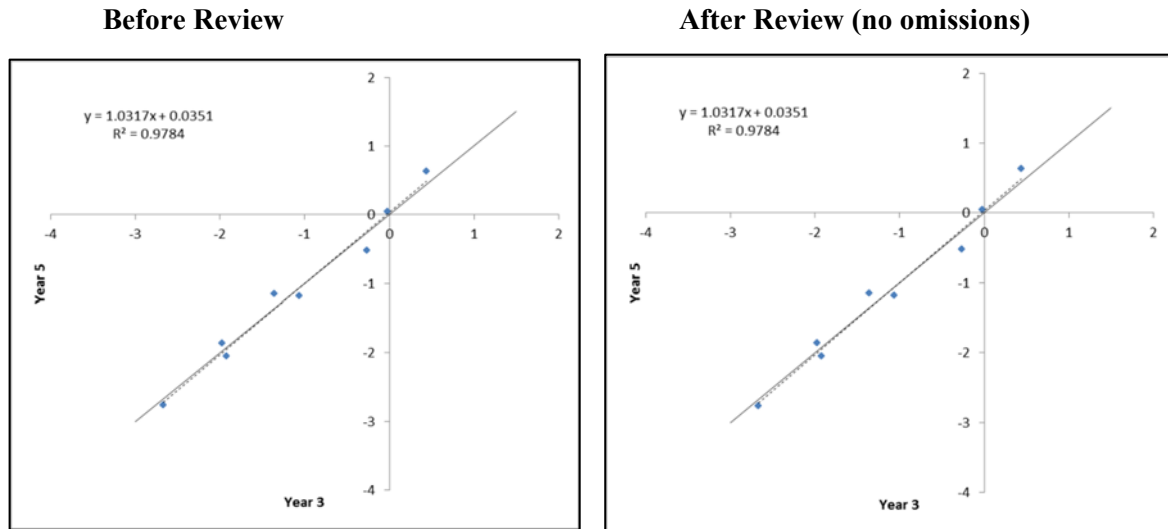
**Figure 6.23.** Links review for Spelling Year 7 and Year 9.



### Vertical Equating of Grammar and Punctuation Tests

#### Grammar and Punctuation – Year 3/Year 5

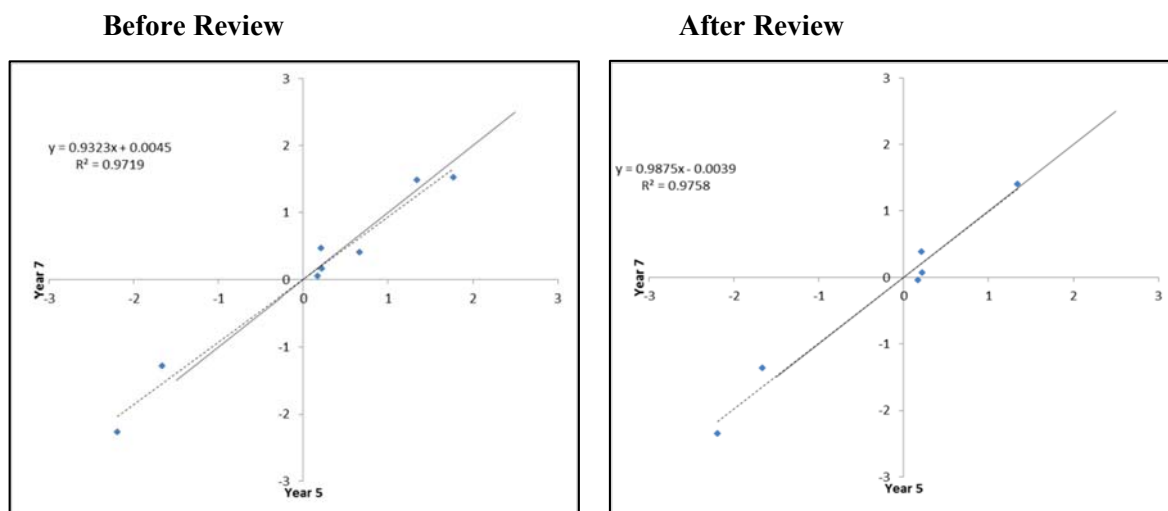
Figure 6.24 shows the Year 3/Year 5 grammar and punctuation scatterplots before and after review. It was unnecessary to omit items based on any of the criteria.



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

#### Grammar and Punctuation – Year 5/Year 7

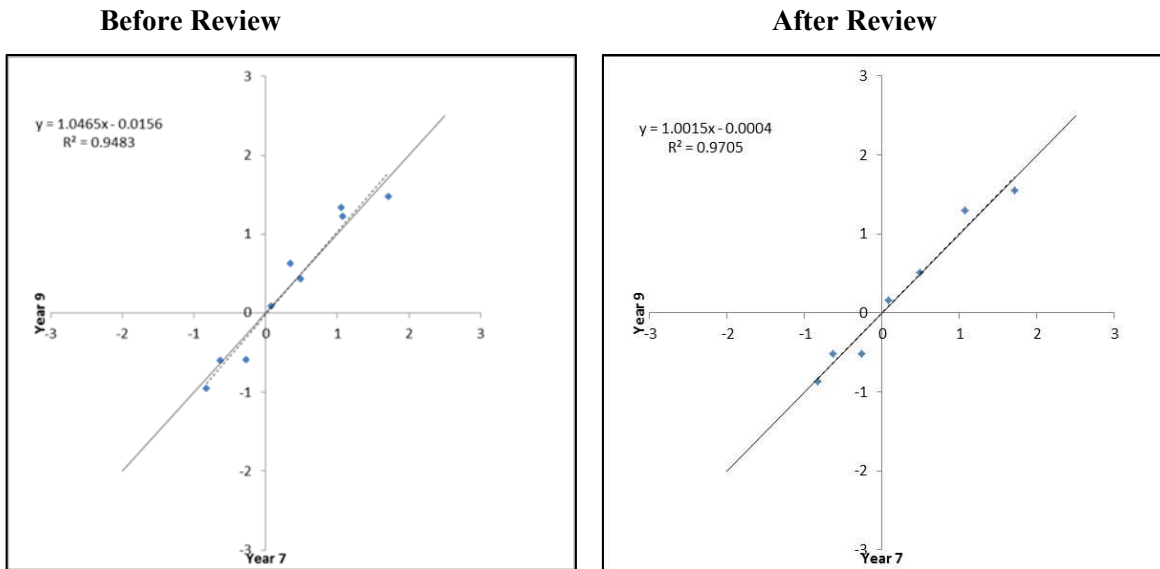
Figure 6.25 shows the bivariate locations of the Year 5/Year 7 grammar and punctuation link items before and after review. One item that had high discrimination and inflated the absolute magnitude of the shift constant as predicted was omitted. One item was omitted due to DIF as judged relative to the reference item set.



**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. One item was omitted with very low discrimination and/or guessing that affected the magnitude of the shift as predicted. One other item was omitted due to cross-year level DIF.



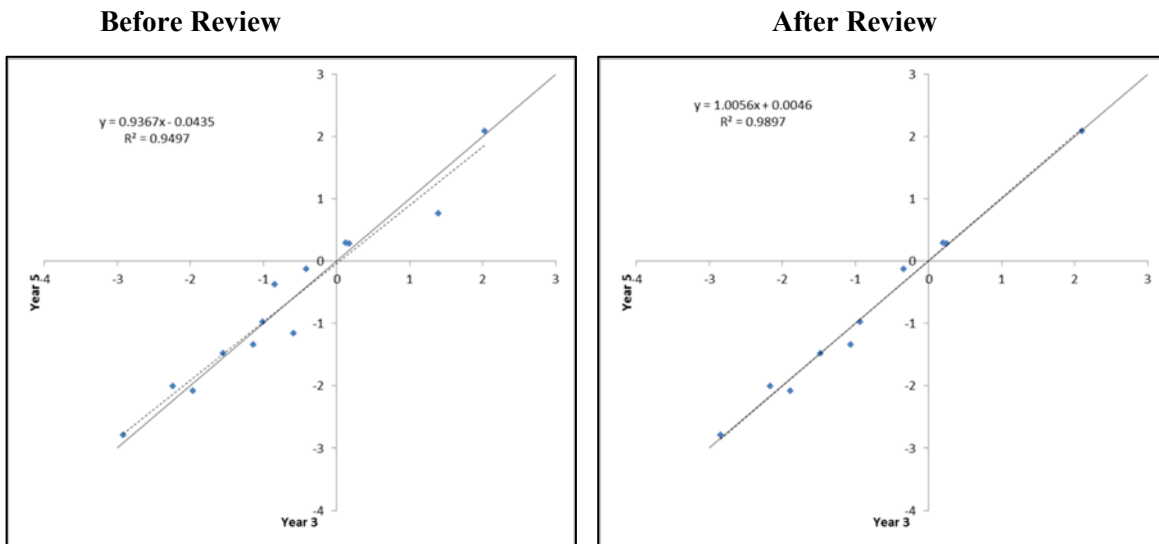
**Figure 6.26. Links review for Grammar and Punctuation Year 7 and Year 9.**

*Vertical Equating of 2014 Numeracy Tests*

The quality of the 2014 numeracy vertical links was generally high.

*Numeracy – Year 3/Year 5*

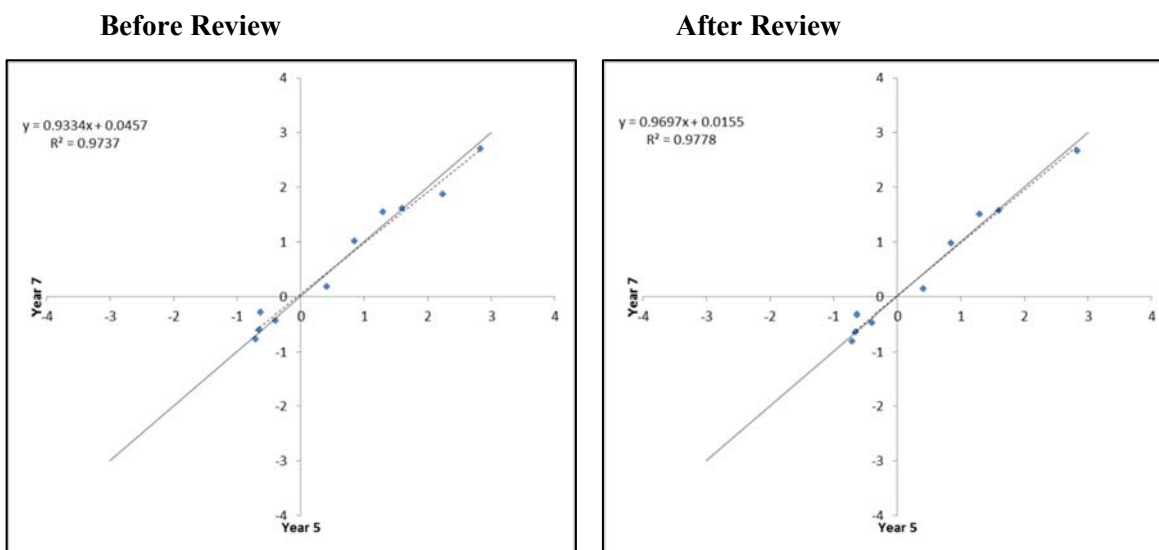
Figure 6.27 shows the scatterplots for Year 3/ Year 5 vertical links for numeracy before and after review. One item with high discrimination and one item with low discrimination affected the shift as predicted and were omitted. Having omitted these items, one other item showed pronounced DIF and was also omitted.



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

*Numeracy – Year 5/Year 7*

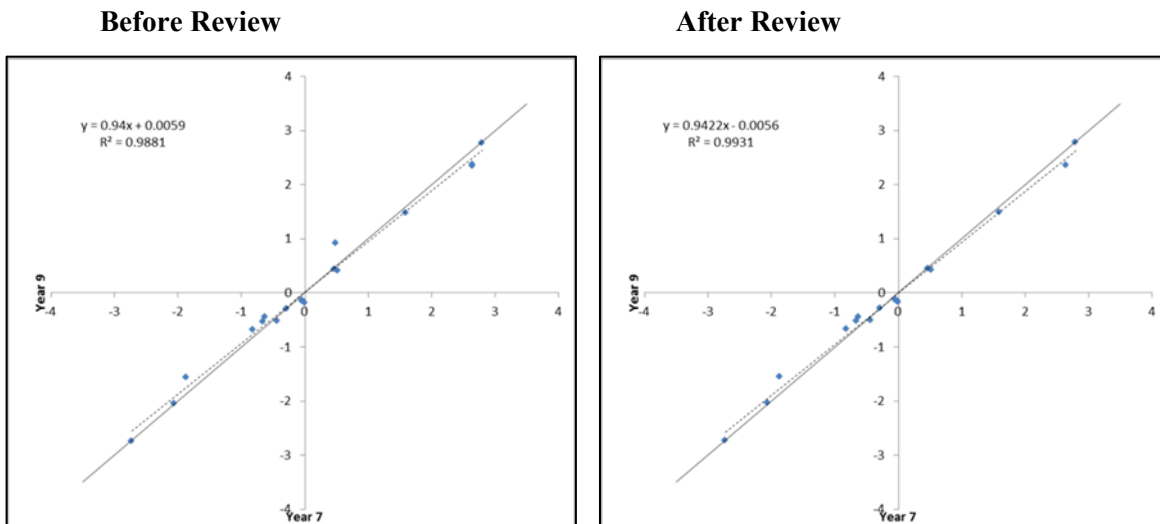
Figure 6.28 shows the scatterplot before and after review for numeracy Years 5 and 7. One item had high discrimination that affected the shift in the predicted direction and was omitted. One other item had marginal DIF relative to all items but acceptable relative to the reference set and was retained.



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

*Numeracy – Year 7/Year 9*

It can be seen in Figure 6.29 that the items provided a strong basis for vertical equating of the NAPLAN 2014 Year 7 and Year 9 numeracy tests. One item had extremely high discrimination and another item high discrimination that in both cases affected the shift in the predicted direction to a sufficient extent. These items were omitted. One other item showed DIF beyond the criterion level relative to the reference set and also relative to the other remaining items.



**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 2014 item locations (i.e., Rasch difficulty parameters), standard errors, mean square statistics, item facilities, and item discriminations by domain for each adjacent pair of year levels.

**Table 6.2.** Vertical Link Review Summary

Domain	Years 3 / 5		Years 5 / 7		Years 7 / 9	
	No. Links Retained	Total No. of Links	No. Links Retained	Total No. of Links	No. Links Retained	Total No. of Links
Reading	11	12	8	12	11	14
Spelling	7	8	7	8	10	10
Grammar & Punctuation	8	8	6	8	7	9
Numeracy	10	13	9	10	15	18

### **Summary of Vertical Equating of NAPLAN 2014 Tests**

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

**Table 6.3. Vertical Shift Constants**

Shift	Reading	Spelling	Grammar & Punctuation	Numeracy
Year 3 to 5	-1.183	-1.730	-1.128	-1.088
Year 5 to 5	0.000	0.000	0.000	0.000
Year 7 to 5	0.996	1.201	0.599	1.004
Year 9 to 5	1.450	1.639	1.257	1.468

The final locations of the 2014 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 2014 NAPLAN tests on the vertical scale for each domain. The reason for this is that the four 2014 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 diagrammatically. 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 2014 test can be equated with the Year 5 NAPLAN 2014 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 2014 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 2014 vertical equating results based on the 2014 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.

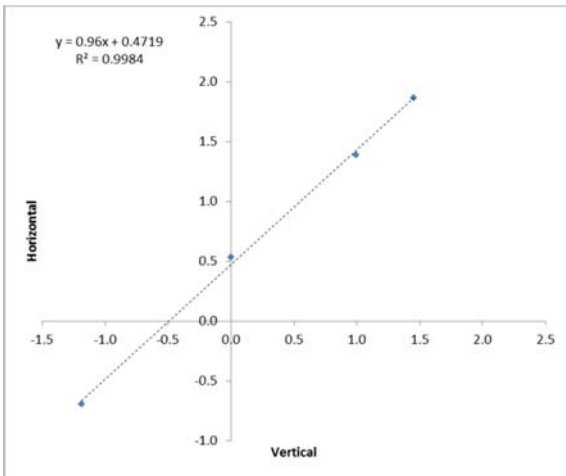
Figure 6.30 shows plots of the horizontal shifts for the 2014 tests (vertical axes) against the vertical shifts (horizontal axes). The latter are based on the common-item vertical equating and delta-

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.

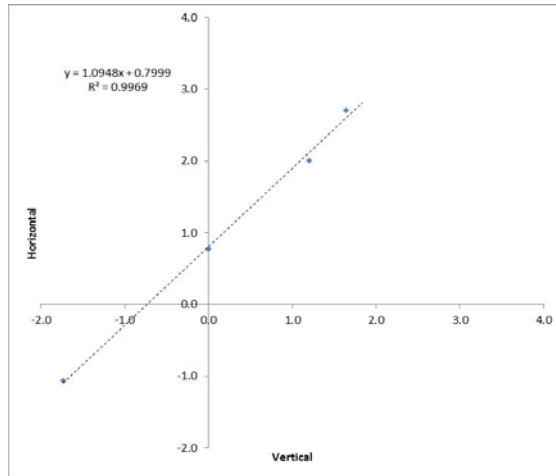
Ideally, each regression line would have a slope of 1.0 and pass through all four points, showing perfect correspondence of the two methods. It can be seen from the plots that this is not always the case. There is, to some degree, a re-setting of the vertical scale when the regression slopes deviate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

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

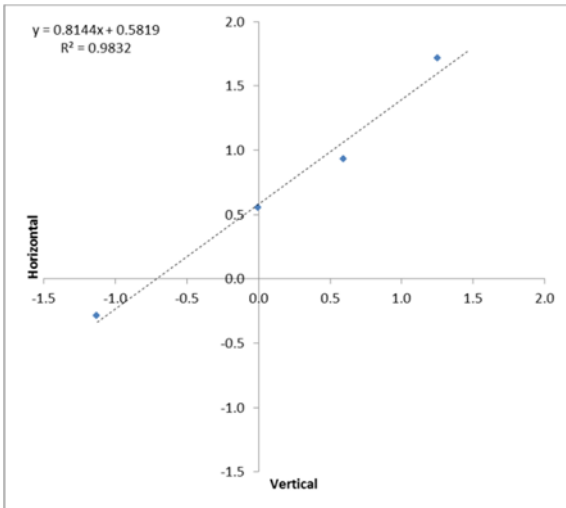
2014 Reading Tests



2014 Spelling Tests



2014 Grammar & Punctuation Tests



2014 Numeracy Tests

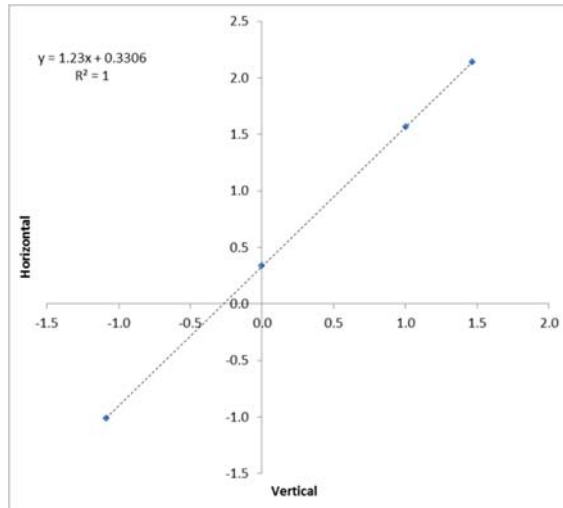


Figure 6.30. Regression-based combination of vertical and horizontal equating shifts.

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

**Table 6.4 Regression Intercepts and Slopes**

<b>Regression Coefficient</b>	<b>Reading</b>	<b>Spelling</b>	<b>Grammar &amp; Punctuation</b>	<b>Numeracy</b>
Intercept	0.472	0.800	0.582	0.331
Slope	0.960	1.095	0.814	1.230

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

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

where  $y$  is the final shift onto the NAPLAN scale;  $x$  is the vertical, Year-5 centred shift;  $b$  is the regression slope; and  $a$  is the regression intercept.

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

**Table 6.5 Final Shifts Applied for Equating NAPLAN 2014 onto the NAPLAN 2008 Scale**

<b>Year Level</b>	<b>Reading</b>	<b>Spelling</b>	<b>Grammar &amp; Punctuation</b>	<b>Numeracy</b>
3	-0.664	-1.094	-0.337	-1.007
5	0.472	0.800	0.582	0.331
7	1.428	2.114	1.070	1.566
9	1.864	2.595	1.605	2.137



## 6.5 Calibration and Scaling of Persuasive Writing

### *Background*

In 2014 a persuasive writing task was administered for the fourth time as part of NAPLAN. The rating of NAPLAN 2014 writing was based on the same 10 criteria and the same marking guide used for the writing tests in 2011 through 2013.

### *Raw score summary*

Tables 6.6 present the distributions of raw scores by year level for both calibration sample and census data, which indicate that the distributions of raw scores were very similar from 2011 to 2014.

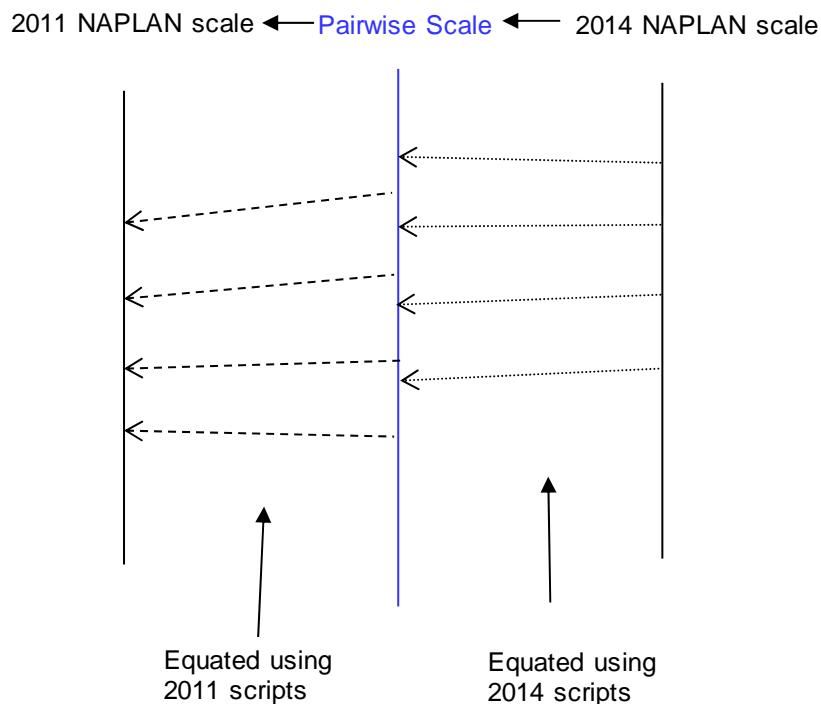
**Table 6.6. NAPLAN 2011—2014 Persuasive Writing Raw Score Distribution by Year Level**

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

### Equating Methodology

The equating study design for persuasive writing in the NAPLAN 2014 assessment was the same as that used in 2009 and 2010 to equate narrative writing and to equate persuasive writing in 2011 through 2013.

The purpose of the equating exercise was to determine the transformation constant required to equate the 2014 and 2011 NAPLAN persuasive writing scales. In the pairwise equating study, judges compared (i) 2011 scripts with other 2011 scripts, (ii) 2014 scripts with other 2014 scripts, and (iii) 2011 scripts with 2014 scripts. The Bradley-Terry-Luce (BTL) model was applied to the pairwise judgements by markers to calibrate a pairwise equating scale to scale both the 2011 and 2014 equating scripts together.

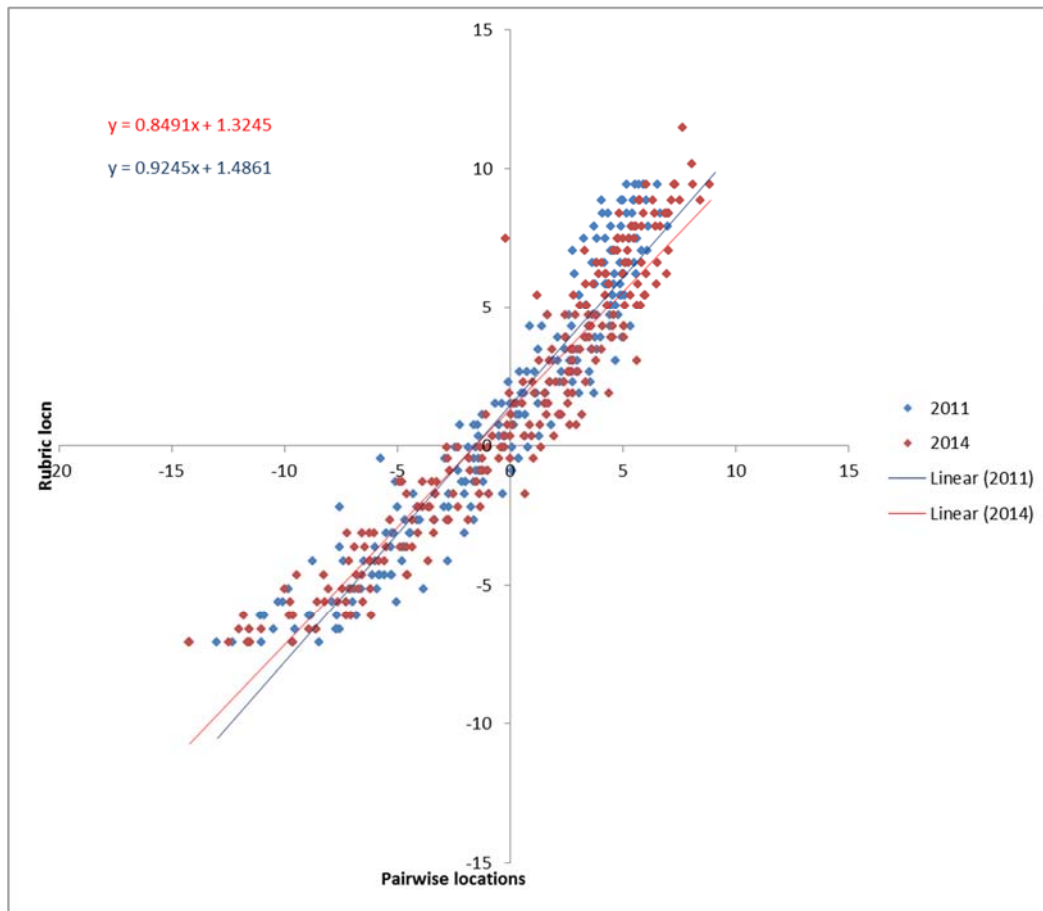


**Figure 6.31. A schematic of the pairwise equating process used for Persuasive Writing.**

Figure 6.31 is a schematic representation of the steps involved in the equating process. Both the 2011 and 2014 scripts used in the equating study have locations on the pairwise equating scale. The correspondences of the locations for four scripts from each year are shown for the purpose of illustration. In total, 234 scripts from 2011 were compared with other scripts and 237 scripts from 2014 were compared with other scripts. In 2014, markers judged each comparison with respect to two criteria, referred to as Authorial Choices and Conventions. This meant significantly more comparisons per script than in years prior to 2013.

Figure 6.32 shows the plot of pairwise scale locations ( $x$ -axis) against locations based on the rubrics ( $y$ -axis). The correlation overall is approximately  $r = 0.947$ . The pairwise scale locations show the ordering of the scripts based on direct comparisons whereas the NAPLAN scale locations are based on marking. In the plot, persuasive writing 2011 and persuasive writing 2014 are highlighted separately. The rubric locations for both 2011 and 2014 in Figure 6.32 are based on the 2011 total score to rubric correspondence table. Regression lines are shown separately for each of these years. It can be seen that there is a relatively similar correspondence between the pairwise and NAPLAN

scale locations for 2011 and 2014 scripts. The most distinctive difference between the scatterplots for 2011 and 2014 is that the rubric locations (y-axis) show a somewhat larger spread in 2011.



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

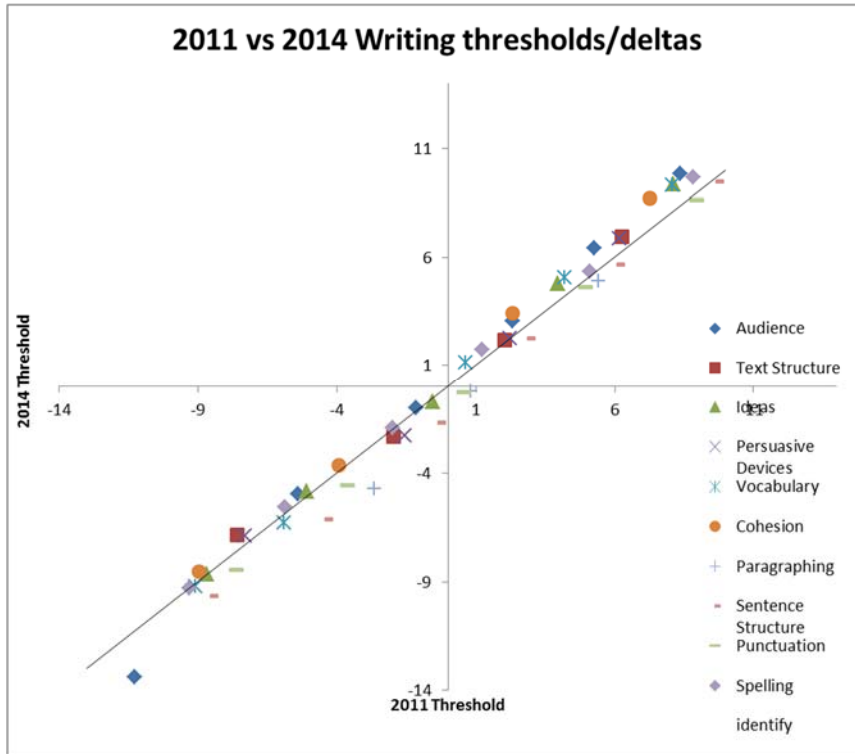
## 6.6 Equating

In previous years, the two-stage equating method detailed in Humphry & McGrane (in press) has been used to check whether the results are comparable across calendar years. Inspection of the data indicated subtle increases in local dependencies in 2014. The most obvious indicator is that the distribution in 2014 is somewhat multimodal compared with the distribution in 2011. See Humphry & Heldsinger (2014) and background literature cited therein for a detailed account of the evidence that a multimodal distribution and increased spread of scale locations in combination indicate intra-marker scoring dependencies. A multimodal distribution is symptomatic of dependencies, particularly so for rubrics with a simple grid-like structure. The NAPLAN rubric does not have a simple grid-like structure and it is likely that the dependencies occurring are more subtle and due to more complex sources.

In general, dependencies increase the spread of scale locations. However, they have the effect of distorting the shape of the distribution of scale locations rather than producing a uniform increase in the spread of the scale. Equating methods are designed to equate the unit and origin of two scales. Where units of scales need to be equated, equating methods, including the pairwise comparison method, assume there is a uniform difference between the units of the two scales. For the NAPLAN 2014 equating the evidence does not indicate that this assumption is clearly met.

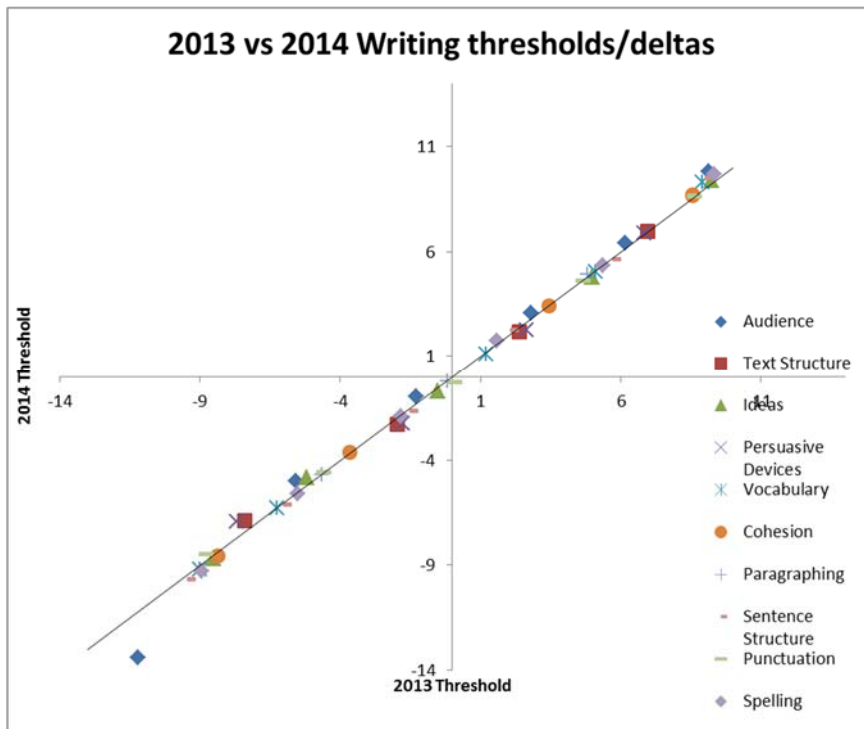
Given that one of the assumptions for equating is not clearly met, following the equating procedure may introduce more error than not doing so.

Despite the subtle dependencies evident, the threshold/delta locations for 2011 and 2014 are highly correlated and similar as shown in Figure 6.33. The reference line is the identity line.



**Figure 6.33. Writing thresholds/deltas for 2011 against 2014**

Figure 6.34 shows that the thresholds/deltas remained very similar between 2013 and 2014, suggesting changes had largely occurred by 2013. Again the reference line is the identity line.



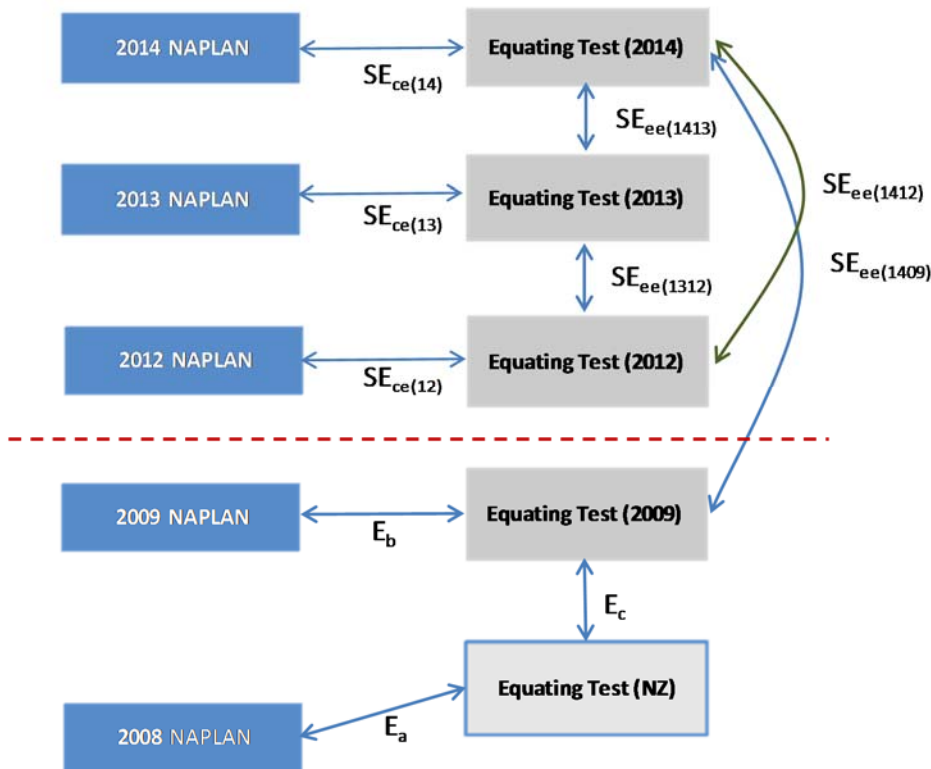
**Figure 6.34. Writing thresholds/deltas for 2013 against 2014**

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

### 6.7 Estimating Standard Errors of Equating

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

The errors considered in the equating processes over the course of the program are shown in Figure 6.35.



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

For each domain and year level:

- SE<sub>a</sub> is the standard error associated with equating the offshore equating form and the 2008 NAPLAN test;
- SE<sub>b</sub> is the standard error associated with equating the onshore equating form and the 2009 NAPLAN test;
- SE<sub>c</sub> is the standard error associated with equating the offshore and onshore equating forms;
- SE<sub>ce(13)</sub> is the standard error associated with equating the NAPLAN 2013 calibration with the equating test (calibration to equating);
- SE<sub>ce(14)</sub> is the error associated with equating the NAPLAN 2014 calibration with the equating test; and
- SE<sub>ee(1314)</sub> is the standard error associated with equating the 2013 and 2014 administrations of the equating test (equating to equating); and so forth

The equating errors for equating of the 2014 scale to the 2013 and 2008 scales are estimated by combining the relevant standard errors as follows:

$$SE_{2014to2013} = \sqrt{SE_{ce(13)}^2 + SE_{ce(14)}^2 + SE_{ce(1413)}^2} \quad (6.7)$$

$$SE_{2014to2008} = \sqrt{SE_a^2 + SE_c^2 + SE_{ce(1409)}^2 + SE_{ce(14)}^2} \quad (6.8)$$

It was decided in 2011 to include component *c* of equating error, associated with the offshore testing, in equating back to 2008. The reason is that even though most items are in common with the equating form in 2009 and subsequent years, a different population of persons attempted the items in the offshore equating exercise. Component *c* was included again in 2014.

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	2014 to Base Year*	2014 to 2013
Grammar & Punctuation	3	0.087	0.063
	5	0.098	0.051
	7	0.092	0.046
	9	0.085	0.063
Numeracy	3	0.070	0.050
	5	0.069	0.037
	7	0.048	0.032
	9	0.052	0.036
Reading	3	0.061	0.048
	5	0.055	0.041
	7	0.049	0.034
	9	0.048	0.031
Spelling	3	0.090	0.068
	5	0.102	0.057
	7	0.094	0.042
	9	0.094	0.043
Writing	All Years		0.189**

\* Base year for grammar & punctuation, numeracy, reading and spelling was 2008; base year for persuasive writing was 2011.

\*\*The Writing equating error was calculated based on the pairwise equating data in a manner consistent with keeping the item parameters constant.

The equating errors are taken into account, together with sampling and measurement errors, in estimating the standard errors used to determine statistical significance in the comparisons between mean scores across years in NAPLAN reports. The equating errors are not included when estimating standard errors of estimates used to determine statistical significance in the comparisons between mean scores of different subgroups on NAPLAN 2014. 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 2014. 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 2014

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NAPLAN 2014 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 2013, while the NAPLAN 2014 achievement scores in persuasive writing used the same scale as the 2011 through 2013 assessments. This was made possible by applying the equating shifts and scale transformations necessary to bring the 2014 logit scores for each test in each domain onto the NAPLAN reporting scale, the details of which are reported in previous chapters. As in previous years, student results were reported against proficiency bands. The cut-points for proficiency bands established for NAPLAN 2008 reporting were used for NAPLAN 2014. The scale equating enabled achievement scores to be compared across NAPLAN administration years for reading, numeracy, spelling and grammar and punctuation and across 2011, 2012, 2013 and 2014 for persuasive writing.

### 7.1 Proficiency Estimates

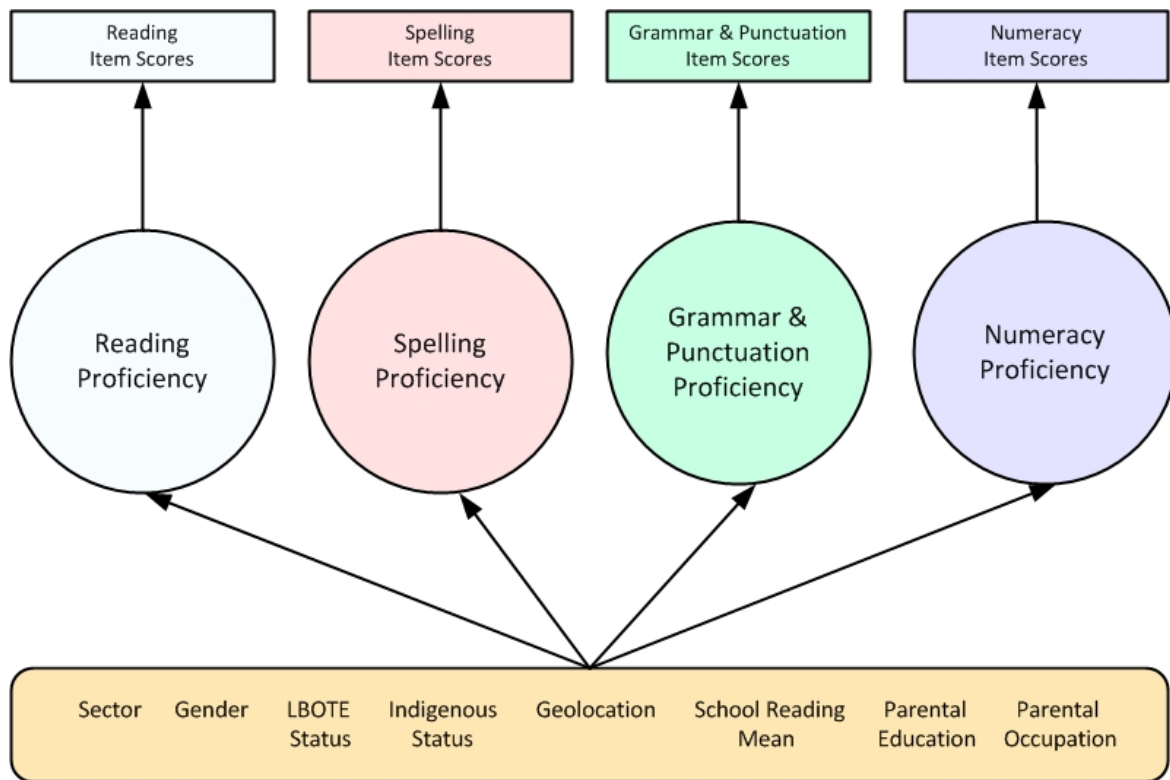
As for the previous years, population statistics for the reporting of NAPLAN 2014 achievement at the state/territory and national levels were estimated using the technique of *plausible values*. In this approach, student achievement is not estimated as a single value or point estimate such as one would 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 2013 were also used in 2014. 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 2014 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 the school writing WLE average score, each student's WLE was first obtained by running the ConQest program on the full census writing data. At this step, items were fixed using 2011 persuasive writing item parameters, and grade was set as a predictor. After this, the full census data was divided by grade, and only the WLEs of students who participated in the writing test were used to calculate means of school and jurisdiction using the test participation flag (i.e., `test_writing = P`) available from 2014 calibration data dictionary. If a student missed the writing test, his/her school WLE average score was the mean of the school that he/she attended. If a school did not have any student who participated in the writing test, then school WLE average score of those students was the mean of the jurisdiction 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 2014 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 2014 and 2013 as well as 2014 and 2008 for reading, numeracy, spelling, and grammar and punctuation and between 2014 and 2013 as well as 2014 and 2011 for persuasive writing.

## **7.2 Reporting NAPLAN 2014 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 2014 latent distributions of student achievement were estimated using the plausible values drawn for the 2014 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 2014 were then compared to the population standard deviations for what were referred to as each domain's *base year*. For the standard deviations for the reading, numeracy, spelling and grammar and punctuation domains, the base year chosen was 2009, while for persuasive writing, it was 2011. The ratio of the base year standard deviation to the 2014 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 2014 test did for that domain at the particular year level. Conversely, a ratio that was less than 1.0 indicated that the 2014 test spread the students out more than the base year test for that domain at that particular year level.

These ratios of standard deviations were then used as scaling factors to correct for the different standard deviations.

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

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

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

where

*LocalMean* = the mean of the latent distribution estimated using the 2014 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 2014 standard deviation.

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

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

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

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

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

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

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

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

**Table 7.1. Parameters for transforming the 2014 logit scores to the NAPLAN Scales**

Year	Domain	Local Mean	Scaling Factor	Equating Shift
Year 3	Reading	0.6207	1.0698	-0.6642
	Persuasive Writing	—*	1.0000	0.0000
	Spelling	-0.2179	1.0313	-1.0941
	Grammar and Punctuation	0.6172	1.1333	-0.3369
	Numeracy	0.1908	1.0989	-1.0073
Year 5	Reading	0.7365	1.0149	0.4719
	Persuasive Writing	—*	1.0000	0.0000
	Spelling	0.1388	0.9618	0.7999
	Grammar and Punctuation	0.7578	1.0174	0.5819
	Numeracy	0.2908	1.0546	0.3306
Year 7	Reading	0.4067	1.0239	1.4277
	Persuasive Writing	—*	1.0000	0.0000
	Spelling	-0.0203	1.0612	2.1144
	Grammar and Punctuation	0.7488	0.9867	1.0696
	Numeracy	-0.0239	0.9718	1.5655
Year 9	Reading	0.5014	0.9562	1.8637
	Persuasive Writing	—*	1.0000	0.0000
	Spelling	0.4827	1.0639	2.5946
	Grammar and Punctuation	0.6489	0.9612	1.6055
	Numeracy	0.1311	0.9452	2.1368

\*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 2014 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 2014 results.

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

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

**Table 7.3. Proficiency Bands Cut Scores**

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

Figure 7.2 depicts how student results are reported against the proficiency bands. Results in each year level are reported against six bands. For Year 3, scores above Band 6 are reported against Band 6. For Year 5, scores above Band 8 are reported against Band 8 and scores below Band 3 are reported against Band 3. For Year 7, scores above Band 9 are reported against Band 9 and scores

below Band 4 are reported against Band 4. For Year 9, scores below Band 5 are reported against Band 5.

The yellow band for each year level in Figure 7.2 is identified as the national minimum standard for that year level. Band 2 is the national minimum standard for Year 3, Band 4 for Year 5, Band 5 for Year 7 and Band 6 for Year 9. Students are deemed to have performed above national minimum standard if their scores fall in the green bands at their respective year level and below national minimum standard if their scores fall in the orange band.

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

**Figure 7.2. Reporting against the NAPLAN proficiency bands.**

### 7.5 National Reports

The NAPLAN 2014 Summary Information was released on 18 August 2014. 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 10 December 2014.

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***Purpose***

The purpose of this report is to provide information regarding the 2014 NAPLAN Calibration and Equating Samples that complements existing NAPLAN technical documentation. It should be read in conjunction with the *NAPLAN 2014 Calibration Sample Weighting .pdf*.

***Sample frame***

The original file used to develop the calibration and equating sample frames was based on ‘ACARA Sampling Frame NAPLAN 2014\_12022014.xlsx’ provided by ACARA (12 February 2014) which contained 2013 enrolment information. SEIFA information was obtained separately and appended to existing sample frame information. SEIFA results were sourced from Table 5 in the Postal Area, Indexes, SEIFA 2011 downloaded from <http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/2033.0.55.0012011?OpenDocument> (accessed on 12FEB2014).

Sample frame enrolment totals closely matched ABS 2012 enrolment totals (see Appendix A for more details).

***Data preparation***

Prior to sample selection, all very remote schools in WA and NSW (94 schools in total) were removed from the original list as per 2011, 2012 and 2013 procedures. The remaining schools were then used to create Primary and Secondary sample frames.

***Primary and Secondary samples***

The 2014 NAPLAN Calibration and Equating Samples each consist of two sub-samples. For the Calibration Sample, one sample was drawn for the Primary grade levels and the other sample for the Secondary grade levels. This same procedure was also followed for the 2014 NAPLAN Equating Sample. Figure 1 illustrates the relationship between NAPLAN Grade Levels, State/Territory and Primary and Secondary Schooling.<sup>1</sup>

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<sup>1</sup> 4221.0 Schools, Australia, ABS (2012) APPENDIX: DIFFERENCES IN SCHOOLING STRUCTURES

<http://www.abs.gov.au/AUSSTATS/abs@.nsf/Previousproducts/4221.0Appendix12012?opendocument&tabname=Notes&prodno=4221.0&issue=2012&num=&view=>

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

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

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

The alignment of grade to primary or secondary is consistent with ABS reporting. The ABS notes however:

*17. In Western Australia and Queensland, Year 7 is being piloted in some secondary schools, commencing in 2011 for Western Australia, and in 2012 for Queensland. The ABS has been advised that, for reporting purposes, Year 7 will remain at the primary level for all schools until such time as the respective states decide whether to formally transition Year 7 to the secondary level. As students may commence non-government schooling in the first Year of secondary school, this may affect comparisons between students in primary and secondary levels of education in Western Australia from 2011 onwards, and in Queensland from 2012 onwards.<sup>2</sup>*

### Measures of enrolment size

The measure of enrolment size for a particular grade level was taken to be the enrolment size in the equivalent grade for the calendar year prior. That is, the 2013 enrolment numbers contained in the sample frame were used to estimate 2014 enrolment sizes (e.g. Grade 3 enrolment sizes in the sample frame were used to estimate 2014 Grade 3 enrolment sizes).

The exception to this rule was the enrolment size estimation for Grade 7 students in QLD. QLD Grade 7 in 2014 comprises approximately 40000 students while typically enrolments at this Grade in QLD are closer to 57000 students (the difference due to a change in school starting age at the time this cohort commenced school). Since the sample frame constitutes enrolments for the year prior, it is the Grade 6 students in QLD which provide the best indication, in general, of the 2014 Grade 7 cohort size. However, this is not necessarily the case at the school level. To take the reduced enrolments into account, while ensuring that school level enrolment sizes are appropriate,

<sup>2</sup>

<http://www.abs.gov.au/AUSSTATS/abs@.nsf/Previousproducts/4221.0Explanatory%20Notes12012?opendocument&tbname=Notes&prodno=4221.0&issue=2012&num=&view=>

the following steps were used to provide an estimate of enrolment size for Grade 7 in QLD for 2014:

- If a QLD school has both Grade 6 and Grade 7 enrolments in the sample frame, then use the Grade 6 enrolments as the measure of size for Grade 7;
- If a QLD school has Grade 7 enrolments but no Grade 6 enrolments then multiply the Grade 7 enrolments by the sum of Grade 6 enrolments in QLD divided by the sum of Grade 7 enrolments in QLD.

#### *Calibration sample frames*

The calibration sample frame consisted of 7648 schools with Primary grade levels and 2725 schools with Secondary grade levels.

#### *Equating sample frames*

The equating sample frame comprised 3508 primary schools and 1919 secondary schools. Schools that were in the equating sample in 2013 were excluded from selection, as were remote and very remote schools in each state. Schools with an enrolment in any of the target grade levels were also excluded if they were less than the desired target cluster size. The target cluster size was 25 students for Primary grades and 20 students for Secondary. Sampled schools were then assigned to one of three assessment domains (Reading, Language Conventions or Numeracy).<sup>3</sup>

#### ***Sampling methodology***

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

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

#### *Explicit stratification*

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

#### *Implicit stratification*

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

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<sup>3</sup> The equating sample does not include the Writing domain.

Table 1: Implicit stratification variables

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

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

### *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 grade 7 students enrolled and no grade 3 or 5 students (by definition this only occurs in QLD, SA and WA). Set equal to 2 for all other primary schools.

SecSchtype was set to 1 if the secondary school had no grade 7 students but had more than five grade 9 students (by definition this can only occur in ACT, NSW, NT, TAS, & VIC). Set equal to 2 for all other secondary schools.

### *Geolocation*

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

### *SEIFA*

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

For example, level 5 represents schools with SEIFA scores that placed them above the 80<sup>th</sup> percentile of other schools in the same state/territory (e.g. in ACT this was schools with SEIFA scores higher than 1165, in SA this was schools with SEIFA scores higher than 1043). Level 4 denotes schools with a SEIFA percentile rank in their state/territory above the 60<sup>th</sup> percentile but less than or equal to the 80<sup>th</sup> percentile (e.g. in Victoria a SEIFA level 4 indicated that the school had a SEIFA score above 1009 but equal to or less than 1082).

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

**Table 2: SEIFA percentile groups**

<b>Percentiles (within state)</b>				
<b>State/Territory</b>	<b>20</b>	<b>40</b>	<b>60</b>	<b>80</b>
<b>ACT</b>	1070.36	1114.87	1135.46	1164.64
<b>NSW</b>	922.65	954.20	989.94	1067.66
<b>NT</b>	882.48	898.83	980.92	1024.63
<b>QLD</b>	907.61	934.16	968.19	1007.98
<b>SA</b>	900.70	937.80	986.82	1043.06
<b>TAS</b>	881.10	911.01	945.04	996.48
<b>VIC</b>	933.71	967.73	1008.73	1081.72
<b>WA</b>	928.27	954.50	993.70	1057.51

### *MeanENR*

For the Primary and Secondary samples, the average enrolment size was estimated by taking the mean of enrolments for each target grade level where the enrolment size was greater than zero. For example, the enrolment size for a school in SA was equal to the average enrolment across Grades 3, 5 and 7. However, in cases where there were no students in Grade 7 for example, then the average was calculated using Grades 3 and 5 students only. While not perfect, this rule was considered the best option for calculating the average and is consistent with procedures used in previous NAPLAN cycles. The sample frame contains enrolments that are both zero and system missing. It appears that zero may sometimes be used to indicate that a school does not cater for a particular Grade level while for other schools (especially small schools) zero may indicate that there are simply no enrolments for students in a particular Grade 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.

### *Equating sample revised targets*

In 2013, the target sample size was increased from 800 to 900 students per domain. It was determined that 109 primary schools and 137 secondary schools were necessary to reach this new

target (approximately 36 primary schools and 46 secondary schools for each of 3 domains). The number of expected students per domain can be seen in Table 3.

**Table 3: Number of schools and students in the equating sample by grade level, per domain**

		Number of schools	Expected sample size per domain <sup>4</sup>
<b>Primary</b>	<b>Grade 3</b>	109	908
	<b>Grade 5</b>	109	908
	<b>Grade 7</b>	36	300
<b>Secondary</b>	<b>Grade 7</b>	87	580
	<b>Grade 9</b>	137	913

The increase in schools sampled across the states was allocated in approximate proportion to student enrolment numbers with the exception of ACT, NT and TAS where the number of sampled schools was kept consistent with previous NAPLAN cycles. The small number of schools within the ACT, NT and TAS means that it would be difficult to increase the number of schools sampled without selecting schools that had already been involved in the equating study in the prior year.

Table 4 displays the number of schools to select in each state for a target sample size of 900 students.

<sup>4</sup> Assuming a target cluster size of 25 students per school at Primary grade levels and 20 students per school at Secondary grade levels.



**Table 4: Number of schools selected in each state for the equating sample per domain**

	Number of schools	
	Primary	Secondary
<b>ACT</b>	6	6
<b>NSW</b>	31	39
<b>NT</b>	6	6
<b>QLD</b>	17	25
<b>SA</b>	8	11
<b>TAS</b>	6	6
<b>VIC</b>	24	30
<b>WA</b>	11	14
<b>Total</b>	109	137

***Selected schools***

As shown in Table 5, 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 137 schools in the secondary equating sample.

Table 5: Number of selected schools in each state and sample

	Calibration Sample		Equating Sample	
	Primary	Secondary	Primary	Secondary
<b>ACT</b>	20	17	6	6
<b>NSW</b>	48	48	31	39
<b>NT</b>	25	17	6	6
<b>QLD</b>	48	48	17	25
<b>SA</b>	45	46	8	11
<b>TAS</b>	30	30	6	6
<b>VIC</b>	48	48	24	30
<b>WA</b>	45	46	11	14
<b>Total</b>	309	300	109	137

### *Replacement schools*

Up to two replacement schools were also selected for each sample school. The overall numbers of replacement1 and replacement2 schools were close to, but slightly less than the number of selected schools (as shown in Table 6). 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)<sup>5</sup>.

<sup>5</sup> OECD (2012), *PISA 2009 Technical Report*, PISA, OECD Publishing.  
<http://dx.doi.org/10.1787/9789264167872-en>

**Table 6: Number of selected and replacement schools**

Sample type	selected	replacement1	replacement2	Total
<b>Calibration Primary</b>	309	309	309	927
<b>Calibration Secondary</b>	300	297	284	881
<b>Equating Primary</b>	109	108	108	325
<b>Equating Secondary</b>	137	132	132	4011

*Expected sample sizes*

The expected number of students included in the calibration sample is equivalent to the sum of all enrolments at the target grade levels for selected schools. The expected calibration sample sizes for 2014 are shown in Table 7. For example, approximately 11000 students are expected to be included in the calibration sample for Grade 3 while 31000 students are expected to be included at Grade 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 20000 students for Grade 7 is comprised of students drawn from both the primary and secondary calibration samples.

**Table 7: Expected calibration sample sizes by grade**

Grade	Sum ENR
<b>Grade 3</b>	11031
<b>Grade 5</b>	10835
<b>Grade 7<sup>6</sup></b>	19530
<b>Grade 9</b>	30834

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 grade. These figures assume 25 students per class for the primary sample and 20 students per class for the secondary sample. As shown in Table 8, approximately 2700 students are sampled at each grade level across the 3 domains. Grade 7 is comprised of 36 schools from the primary equating sample

<sup>6</sup> Comprising 4364 Grade 7 students from the primary calibration sample and 15166 students from the secondary calibration 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 8: Expected equating sample sizes by grade**

<b>Grade</b>	<b>Nschools</b>	<b>Expected total sample size (R and LC and N)</b>	<b>Expected sample size per domain</b>
<b>Grade 3</b>	109	2725	908
<b>Grade 5</b>	109	2725	908
<b>Grade 7<sup>7</sup></b>	123	2640	880
<b>Grade 9</b>	137	2740	913

Table 9 contains the number of schools included in the equating sample for each grade and domain.

**Table 9: Equating sample number of schools by domain and grade**

<b>Grade</b>	<b>R</b>	<b>LC</b>	<b>N</b>
<b>Grade 3</b>	36	37	36
<b>Grade 5</b>	36	37	36
<b>Grade 7<sup>8</sup></b>	41	41	41
<b>Grade 9</b>	45	46	46

<sup>7</sup> Comprising 36 primary schools with Grade 7 students (target cluster size of 25) and 87 secondary schools with Grade 7 students (target cluster size 20)

<sup>8</sup> Comprising 12 primary schools and 29 secondary schools per domain

## 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 2013 information. The number of schools per state/territory is shown in **Error! Not a valid bookmark self-reference.** compared to ABS 2012 totals.<sup>9</sup>

Table 10 Number of schools per state/territory

State/territory	ABS All (2012)	ACARA Sample Frame <sup>10</sup>	% Comparison
ACT	123	125	98%
NSW	2931	2936	100%
NT	185	189	98%
QLD	1652	1685	98%
SA	729	708	103%
TAS	256	263	97%
VIC	2138	2271	94%
WA	989	921	107%
Aus	9003	9098	99%

Table 11 contains enrolment totals by Grade and state/territory while Table 12 contains corresponding ABS totals. Highlighted cells in Table 11 and Table 12 indicate the presence of ‘half cohorts’. Green highlighted cells indicate ‘half cohorts’ that do not affect the sample design.

<sup>9</sup> ABS totals are based on Primary + Secondary + Combined only and do not include special schools.

<sup>10</sup> The totals in this table are based on the original file from ACARA after approximately 500 schools were removed. The schools removed consisted of NSW and WA very remote schools and those schools with zero enrolments in any of the target grades (i.e. no enrolments in any of Years 3, 5, 7 or 9).

Table 11 ACARA sample frame enrolment totals by grade and state/territory

ACARA Sample Frame containing 2013 enrolment information

State	gr00_sum	gr01_sum	gr02_sum	gr03_sum	gr04_sum	gr05_sum	gr06_sum	gr07_sum	gr08_sum	gr09_sum	gr10_sum	gr11_sum	gr12_sum
ACT		5021	4904	4720	4829	4620	4507	4950	4877	4968	4509	2869	2535
NSW		95126	91666	88602	87860	86981	86589	86971	87116	86290	86132	71755	61643
NT		3534	3475	3270	3307	3467	3301	3329	3020	2895	1909	1346	1061
QLD		64495	62787	60673	59302	57177	40246	58553	60320	59075	58825	54812	48731
SA		19882	19500	18561	19006	18564	18954	18882	19617	19577	19622	18916	16445
TAS		6502	6292	5927	5971	6260	6220	6547	6658	6613	6422	1587	1398
VIC		73138.9	70090.3	67309.9	67372.2	66530.4	65446	67090	67506	67548	62651	56644	50048
WA		32014	30614	29654	29236	28656	28667	29051	29106	29746	28371	16275	21387

Table 12 ABS enrolment totals by grade and state/territory

ABS 2012 measure													
State	Pre Grade1	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
ACT	5207	4968	4627	4731	4517	4401	4656	4864	4916	4818	4893	5109	4501
NSW	96501	92481	88805	87699	86497	86572	87456	87088	86110	86553	87307	77867	67381
NT	3571	3533	3320	3342	3543	3442	3342	3181	3095	2975	2609	2352	1726
QLD	64576	62675	60162	58747	56738	40040	58743	60933	59845	59890	60192	57055	50851
SA	23295	19652	18429	18848	18408	18793	18771	19438	19615	19598	20316	22374	19364
TAS	6489	6277	5882	5963	6195	6147	6469	6611	6572	6381	6712	6715	6038
VIC	73589	69568	66715	66734	65833	64845	65828	66388	66081	66787	67005	63879	55745
WA	32908	31575	30388	29776	29324	29468	29595	30071	30321	29508	18613	29323	23600

**Appendix B****Sampling parameters**

The sampling parameters used to draw the sample are provided in Table 14 . 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 13.

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 13: Sample parameters glossary**

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



Table 14: Sampling parameters

Sample	strataID	State	Sector	cases	units	interval	RN	inclprob	designweight	Nsel	Nr1	Nr2
CP	1	ACT	C	24	5	4.8000	0.7618	0.2083	4.8008	5	5	5
CP	2	ACT	G	60	11	5.4545	0.1234	0.1833	5.4555	11	11	11
CP	3	ACT	I	15	4	3.7500	0.5483	0.2667	3.7495	4	4	4
CP	4	NSW	C	432	9	48.0000	0.0544	0.0208	48.0769	9	9	9
CP	5	NSW	G	1644	33	49.8182	0.4795	0.0201	49.7512	33	33	33
CP	6	NSW	I	319	6	53.1667	0.9116	0.0188	53.1915	6	6	6
CP	7	NT	C	13	3	4.3333	0.3169	0.2308	4.3328	3	3	3
CP	8	NT	G	134	19	7.0526	0.3203	0.1418	7.0522	19	19	19
CP	9	NT	I	15	3	5.0000	0.3975	0.2000	5.0000	3	3	3
CP	10	QLD	C	231	9	25.6667	0.0073	0.0390	25.6410	9	9	9
CP	11	QLD	G	1037	33	31.4242	0.6600	0.0318	31.4465	33	33	33
CP	12	QLD	I	185	6	30.8333	0.6179	0.0324	30.8642	6	6	6
CP	13	SA	C	92	9	10.2222	0.7727	0.0978	10.2249	9	9	9
CP	14	SA	G	439	27	16.2593	0.3425	0.0615	16.2602	27	27	27
CP	15	SA	I	99	9	11.0000	0.7533	0.0909	11.0011	9	9	9
CP	16	TAS	C	33	6	5.5000	0.5717	0.1818	5.5006	6	6	6
CP	17	TAS	G	153	21	7.2857	0.4245	0.1373	7.2833	21	21	21
CP	18	TAS	I	36	3	12.0000	0.4743	0.0833	12.0048	3	3	3
CP	19	VIC	C	396	11	36.0000	0.9423	0.0278	35.9712	11	11	11
CP	20	VIC	G	1230	31	39.6774	0.0336	0.0252	39.6825	31	31	31
CP	21	VIC	I	231	6	38.5000	0.0977	0.0260	38.4615	6	6	6
CP	22	WA	C	143	11	13.0000	0.3355	0.0769	13.0039	11	11	11
CP	23	WA	G	555	27	20.5556	0.0498	0.0486	20.5761	27	27	27
CP	24	WA	I	132	7	18.8571	0.9743	0.0530	18.8679	7	7	7

Sample	strataID	State	Sector	cases	units	interval	RN	inclprob	designweight	Nsel	Nr1	Nr2
CS	1	ACT	C	5	3	1.6667	0.2778	0.6000	1.6667	3	1	1
CS	2	ACT	G	23	9	2.5556	0.5483	0.3913	2.5556	9	9	5
CS	3	ACT	I	15	5	3.0000	0.8562	0.3333	3.0003	5	4	5
CS	4	NSW	C	121	9	13.4444	0.8441	0.0744	13.4409	9	9	9
CS	5	NSW	G	440	28	15.7143	0.2372	0.0636	15.7233	28	28	28
CS	6	NSW	I	274	11	24.9091	0.5946	0.0401	24.9377	11	11	11
CS	7	NT	C	10	3	3.3333	0.4443	0.3000	3.3333	3	3	3
CS	8	NT	G	84	10	8.4000	0.8315	0.1190	8.4034	10	10	10
CS	9	NT	I	19	4	4.7500	0.9791	0.2105	4.7506	4	4	4
CS	10	QLD	C	85	10	8.5000	0.0611	0.1176	8.5034	10	10	10
CS	11	QLD	G	261	30	8.7000	0.6811	0.1149	8.7032	30	30	30
CS	12	QLD	I	142	8	17.7500	0.7118	0.0563	17.7620	8	8	8
CS	13	SA	C	30	10	3.0000	0.1996	0.3333	3.0003	10	10	9
CS	14	SA	G	136	27	5.0370	0.3181	0.1985	5.0378	27	27	27
CS	15	SA	I	57	9	6.3333	0.1664	0.1579	6.3331	9	9	9
CS	16	TAS	C	12	6	2.0000	0.5561	0.5000	2.0000	6	6	0
CS	17	TAS	G	54	19	2.8421	0.7369	0.3519	2.8417	19	19	16
CS	18	TAS	I	29	5	5.8000	0.3613	0.1724	5.8005	5	5	5
CS	19	VIC	C	116	12	9.6667	0.7975	0.1034	9.6712	12	12	12
CS	20	VIC	G	340	26	13.0769	0.5219	0.0765	13.0719	26	26	26
CS	21	VIC	I	197	10	19.7000	0.6267	0.0508	19.6850	10	10	10
CS	22	WA	C	41	10	4.1000	0.3861	0.2439	4.1000	10	10	10
CS	23	WA	G	144	26	5.5385	0.5775	0.1806	5.5371	26	26	26
CS	24	WA	I	90	10	9.0000	0.0507	0.1111	9.0009	10	10	10

Sample	strataID	State	Sector	cases	units	interval	RN	inclprob	designweight	Nsel	Nr1	Nr2
EP	1	ACT	C	18	1	18.0000	0.4828	0.0556	17.9856	1	1	1
EP	2	ACT	G	47	4	11.7500	0.6786	0.0851	11.7509	4	4	4
EP	3	ACT	I	6	1	6.0000	0.2151	0.1667	5.9988	1	1	1
EP	4	NSW	C	267	6	44.5000	0.4919	0.0225	44.4444	6	6	6
EP	5	NSW	G	851	21	40.5238	0.9092	0.0247	40.4858	21	21	21
EP	6	NSW	I	138	4	34.5000	0.4284	0.0290	34.4828	4	4	4
EP	7	NT	C	4	1	4.0000	0.7192	0.2500	4.0000	1	1	1
EP	8	NT	G	21	4	5.2500	0.2624	0.1905	5.2493	4	4	4
EP	9	NT	I	1	1	1.0000	0.5710	1.0000	1.0000	1	0	0
EP	10	QLD	C	102	3	34.0000	0.4914	0.0294	34.0136	3	3	3
EP	11	QLD	G	400	12	33.3333	0.8049	0.0300	33.3333	12	12	12
EP	12	QLD	I	71	2	35.5000	0.7448	0.0282	35.4610	2	2	2
EP	13	SA	C	39	2	19.5000	0.1759	0.0513	19.4932	2	2	2
EP	14	SA	G	160	4	40.0000	0.3824	0.0250	40.0000	4	4	4
EP	15	SA	I	38	2	19.0000	0.7835	0.0526	19.0114	2	2	2
EP	16	TAS	C	13	1	13.0000	0.6480	0.0769	13.0039	1	1	1
EP	17	TAS	G	72	4	18.0000	0.3454	0.0556	17.9856	4	4	4
EP	18	TAS	I	7	1	7.0000	0.0011	0.1429	6.9979	1	1	1
EP	19	VIC	C	228	5	45.6000	0.2608	0.0219	45.6621	5	5	5
EP	20	VIC	G	624	16	39.0000	0.5007	0.0256	39.0625	16	16	16
EP	21	VIC	I	99	3	33.0000	0.8823	0.0303	33.0033	3	3	3
EP	22	WA	C	12	3	4.0000	0.2320	0.2500	4.0000	3	3	3
EP	23	WA	G	242	6	40.3333	0.7326	0.0248	40.3226	6	6	6
EP	24	WA	I	48	2	24.0000	0.5821	0.0417	23.9808	2	2	2

Sample	strataID	State	Sector	cases	units	interval	RN	inclprob	designweight	Nsel	Nr1	Nr2
ES	1	ACT	C	4	1	4.0000	0.0876	0.2500	4.0000	1	1	1
ES	2	ACT	G	17	3	5.6667	0.3634	0.1765	5.6657	3	3	3
ES	3	ACT	I	7	2	3.5000	0.8022	0.2857	3.5002	2	2	2
ES	4	NSW	C	106	7	15.1429	0.5696	0.0660	15.1515	7	7	7
ES	5	NSW	G	367	23	15.9565	0.2088	0.0627	15.9490	23	23	23
ES	6	NSW	I	188	9	20.8889	0.7838	0.0479	20.8768	9	9	9
ES	7	NT	C	2	1	2.0000	0.9065	0.5000	2.0000	1	0	1
ES	8	NT	G	3	3	1.0000	0.5945	1.0000	1.0000	3	0	0
ES	9	NT	I	3	2	1.5000	0.8556	0.6667	1.4999	2	1	0
ES	10	QLD	C	80	5	16.0000	0.7530	0.0625	16.0000	5	5	5
ES	11	QLD	G	185	15	12.3333	0.1801	0.0811	12.3305	15	15	15
ES	12	QLD	I	101	5	20.2000	0.6491	0.0495	20.2020	5	5	5
ES	13	SA	C	27	2	13.5000	0.4093	0.0741	13.4953	2	2	2
ES	14	SA	G	77	7	11.0000	0.7383	0.0909	11.0011	7	7	7
ES	15	SA	I	44	2	22.0000	0.9652	0.0455	21.9780	2	2	2
ES	16	TAS	C	10	1	10.0000	0.6635	0.1000	10.0000	1	1	1
ES	17	TAS	G	35	4	8.7500	0.3568	0.1143	8.7489	4	4	4
ES	18	TAS	I	10	1	10.0000	0.6995	0.1000	10.0000	1	1	1
ES	19	VIC	C	83	8	10.3750	0.7421	0.0964	10.3734	8	8	8
ES	20	VIC	G	258	16	16.1250	0.1064	0.0620	16.1290	16	16	16
ES	21	VIC	I	127	6	21.1667	0.4044	0.0472	21.1864	6	6	6
ES	22	WA	C	33	3	11.0000	0.0152	0.0909	11.0011	3	3	3
ES	23	WA	G	88	8	11.0000	0.6072	0.0909	11.0011	8	8	8
ES	24	WA	I	64	3	21.3333	0.3602	0.0469	21.3220	3	3	3

## APPENDIX B. ITEM ANALYSIS

### Appendix B.1 Year 3 G&P

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NAPLAN 2014, Calibration, Grade 3, GP  
GENERALISED ITEM ANALYSIS

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Item 1

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item:1 (lc3q26)  
Cases for this item 3512 Discrimination 0.38  
Item Threshold(s): -2.70 Weighted MNSQ 0.90  
Item Delta(s): -2.70

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.03	-1.92(.054)	-0.94	0.00
9	0.00	29	0.83	-0.09	-5.65(.000)	-0.59	1.05
A	0.00	63	1.79	-0.20	-11.90(.000)	-0.89	0.83
B	0.00	49	1.40	-0.21	-12.73(.000)	-1.18	0.84
C	0.00	58	1.65	-0.22	-13.46(.000)	-1.01	0.68
D	1.00	3312	94.31	0.38	24.37(.000)	0.66	1.02

=====

Item 2

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item:2 (lc3q27)  
Cases for this item 3512 Discrimination 0.38  
Item Threshold(s): -2.15 Weighted MNSQ 0.93  
Item Delta(s): -2.15

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	33	0.94	-0.16	-9.56(.000)	-1.30	1.09
A	1.00	3191	90.86	0.38	24.33(.000)	0.69	1.01
B	0.00	132	3.76	-0.20	-11.88(.000)	-0.35	0.98
C	0.00	62	1.77	-0.16	-9.58(.000)	-0.56	1.09
D	0.00	94	2.68	-0.22	-13.42(.000)	-0.68	0.76

=====

Item 3

-----

item:3 (lc3q28)  
Cases for this item 3506 Discrimination 0.43  
Item Threshold(s): -1.64 Weighted MNSQ 0.92  
Item Delta(s): -1.64

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.04	-2.27(.023)	-1.22	0.00
9	0.00	22	0.63	-0.12	-7.21(.000)	-1.00	1.05
A	0.00	189	5.39	-0.22	-13.44(.000)	-0.38	0.99
B	0.00	88	2.51	-0.23	-14.21(.000)	-0.83	0.83
C	1.00	3028	86.37	0.43	28.50(.000)	0.75	0.99
D	0.00	178	5.08	-0.24	-14.48(.000)	-0.41	0.88

=====

## Item 4

```

-----
item:4 (lc3q29)
Cases for this item  3504  Discrimination  0.48
Item Threshold(s):  -1.55  Weighted MNSQ  0.89
Item Delta(s):      -1.55
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.04	-2.27(.023)	-1.22	0.00
9	0.00	39	1.11	-0.14	-8.49(.000)	-0.68	1.27
A	0.00	364	10.39	-0.33	-20.85(.000)	-0.34	0.93
B	1.00	2992	85.39	0.48	32.30(.000)	0.76	0.97
C	0.00	57	1.63	-0.22	-13.51(.000)	-1.14	0.73
D	0.00	51	1.46	-0.20	-12.17(.000)	-0.99	0.83

## Item 5

```

-----
item:5 (lc3q30)
Cases for this item  3504  Discrimination  0.47
Item Threshold(s):  -1.55  Weighted MNSQ  0.89
Item Delta(s):      -1.55
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.06	-0.05	-3.04(.002)	-1.66	0.62
9	0.00	34	0.97	-0.13	-7.91(.000)	-0.86	1.12
A	0.00	182	5.19	-0.30	-18.90(.000)	-0.73	0.89
B	0.00	158	4.51	-0.23	-13.74(.000)	-0.43	0.88
C	1.00	2993	85.42	0.47	31.56(.000)	0.77	0.97
D	0.00	135	3.85	-0.19	-11.73(.000)	-0.40	0.94

## Item 6

```

-----
item:6 (lc3q31)
Cases for this item  3502  Discrimination  0.44
Item Threshold(s):  -1.34  Weighted MNSQ  0.95
Item Delta(s):      -1.33
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.11	-0.04	-2.43(.015)	-0.18	0.41
9	0.00	34	0.97	-0.15	-8.81(.000)	-1.02	1.08
A	0.00	208	5.94	-0.26	-15.91(.000)	-0.42	0.87
B	0.00	82	2.34	-0.21	-12.54(.000)	-0.65	0.89
C	1.00	2904	82.92	0.44	29.17(.000)	0.77	1.00
D	0.00	270	7.71	-0.22	-13.13(.000)	-0.12	0.84

## Item 7

```

-----
item:7 (lc3q32)
Cases for this item  3498  Discrimination  0.39
Item Threshold(s):  -0.85  Weighted MNSQ  1.02
Item Delta(s):      -0.85
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	38	1.09	-0.10	-5.92(.000)	-0.44	1.38
A	0.00	526	15.04	-0.25	-15.09(.000)	0.01	0.98
B	1.00	2669	76.30	0.39	25.02(.000)	0.79	0.99
C	0.00	176	5.03	-0.17	-10.10(.000)	-0.16	1.09
D	0.00	89	2.54	-0.19	-11.55(.000)	-0.54	1.07

## Item 8

```

-----
item:8 (lc3q33)
Cases for this item  3495  Discrimination  0.57
Item Threshold(s):  -0.80  Weighted MNSQ  0.87
Item Delta(s):      -0.80

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	16	0.46	-0.05	-3.16(.002)	-0.02	0.65
9	0.00	53	1.52	-0.16	-9.88(.000)	-0.98	0.99
A	0.00	348	9.96	-0.34	-21.20(.000)	-0.38	0.80
B	0.00	310	8.87	-0.24	-14.42(.000)	-0.14	0.81
C	0.00	129	3.69	-0.27	-16.76(.000)	-0.73	0.79
D	1.00	2639	75.51	0.57	40.64(.000)	0.89	0.94

## Item 9

```

-----
item:9 (lc3q34)
Cases for this item  3488  Discrimination  0.53
Item Threshold(s):  -0.28  Weighted MNSQ  0.94
Item Delta(s):      -0.28

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	3	0.09	-0.02	-1.47(.143)	-0.13	0.46
9	0.00	52	1.49	-0.13	-7.63(.000)	-0.53	0.90
A	0.00	706	20.24	-0.36	-22.69(.000)	-0.08	0.88
B	0.00	189	5.42	-0.22	-13.63(.000)	-0.31	0.95
C	1.00	2327	66.71	0.53	36.48(.000)	0.94	0.97
D	0.00	211	6.05	-0.15	-9.12(.000)	-0.04	0.80

## Item 10

```

-----
item:10 (lc3q35)
Cases for this item  3485  Discrimination  0.50
Item Threshold(s):  -0.13  Weighted MNSQ  0.96
Item Delta(s):      -0.13

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	4	0.11	-0.03	-1.62(.104)	-0.04	0.71
9	0.00	44	1.26	-0.14	-8.61(.000)	-0.67	1.04
A	0.00	322	9.24	-0.26	-15.59(.000)	-0.18	0.87
B	0.00	569	16.33	-0.28	-17.10(.000)	-0.01	0.92
C	0.00	316	9.07	-0.17	-9.89(.000)	0.05	0.92
D	1.00	2230	63.99	0.50	34.32(.000)	0.95	0.97

## Item 11

```

-----
item:11 (lc3q36)
Cases for this item  3478  Discrimination  0.47
Item Threshold(s):  -0.27  Weighted MNSQ  0.97
Item Delta(s):      -0.27

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	2	0.06	-0.02	-1.47(.143)	-0.51	0.99
9	0.00	40	1.15	-0.13	-7.78(.000)	-0.65	1.16
A	0.00	114	3.28	-0.24	-14.81(.000)	-0.64	0.70
B	0.00	215	6.18	-0.29	-17.65(.000)	-0.45	0.86
C	1.00	2321	66.73	0.47	31.69(.000)	0.90	0.97
D	0.00	786	22.60	-0.23	-13.91(.000)	0.18	0.94

## Item 12

```

-----
item:12 (lc3q37)
Cases for this item  3475  Discrimination  0.42
Item Threshold(s):  -0.23  Weighted MNSQ  1.04
Item Delta(s):      -0.23

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	1	0.03	-0.02	-1.12(.262)	-0.35	0.00
9	0.00	53	1.53	-0.11	-6.82(.000)	-0.31	1.03
A	0.00	529	15.22	-0.17	-9.89(.000)	0.26	0.98
B	0.00	156	4.49	-0.23	-14.17(.000)	-0.53	0.87
C	1.00	2291	65.93	0.42	27.16(.000)	0.87	1.00
D	0.00	445	12.81	-0.23	-13.79(.000)	0.02	0.91

## Item 13

```

-----
item:13 (lc3q38)
Cases for this item  3471  Discrimination  0.51
Item Threshold(s):   0.06  Weighted MNSQ  0.95
Item Delta(s):      0.06

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
9	0.00	60	1.73	-0.11	-6.44(.000)	-0.32	1.09
A	1.00	2095	60.36	0.51	34.73(.000)	0.99	0.96
B	0.00	354	10.20	-0.20	-12.29(.000)	0.01	0.89
C	0.00	299	8.61	-0.25	-15.13(.000)	-0.19	0.95
D	0.00	663	19.10	-0.26	-15.93(.000)	0.06	0.89

## Item 14

```

-----
item:14 (lc3q39)
Cases for this item  3468  Discrimination  0.32
Item Threshold(s):   0.33  Weighted MNSQ  1.15
Item Delta(s):      0.33

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
9	0.00	66	1.90	-0.08	-4.84(.000)	-0.10	1.10
A	1.00	1907	54.99	0.32	20.14(.000)	0.88	1.05
B	0.00	560	16.15	-0.16	-9.31(.000)	0.25	0.93
C	0.00	324	9.34	-0.11	-6.62(.000)	0.24	1.03
D	0.00	611	17.62	-0.16	-9.36(.000)	0.24	0.95

## Item 15

```

-----
item:15 (lc3q40)
Cases for this item  3462  Discrimination  0.48
Item Threshold(s):   0.34  Weighted MNSQ  0.99
Item Delta(s):      0.35

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	5	0.14	-0.06	-3.52(.000)	-0.98	0.90
9	0.00	55	1.59	-0.13	-7.96(.000)	-0.63	1.07
A	1.00	1893	54.68	0.48	32.42(.000)	1.02	1.00
B	0.00	315	9.10	-0.23	-14.19(.000)	-0.14	0.92
C	0.00	809	23.37	-0.17	-10.10(.000)	0.29	0.86
D	0.00	385	11.12	-0.26	-15.93(.000)	-0.14	0.78



## Item 16

```

-----
item:16 (lc3q41)
Cases for this item   3455   Discrimination   0.42
Item Threshold(s):    0.87   Weighted MNSQ   1.04
Item Delta(s):        0.86

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.09	-0.06	-3.60(.000)	-0.92	1.10
9	0.00	63	1.82	-0.12	-6.81(.000)	-0.28	1.04
A	0.00	1073	31.06	-0.14	-8.21(.000)	0.40	0.94
B	0.00	460	13.31	-0.21	-12.82(.000)	0.05	0.94
C	0.00	329	9.52	-0.20	-11.69(.000)	0.01	0.99
D	1.00	1527	44.20	0.42	27.56(.000)	1.05	1.00

## Item 17

```

-----
item:17 (lc3q42)
Cases for this item   3444   Discrimination   0.52
Item Threshold(s):    0.29   Weighted MNSQ   0.95
Item Delta(s):        0.29

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.06	-0.05	-2.89(.004)	-1.18	1.16
9	0.00	57	1.66	-0.12	-6.81(.000)	-0.27	1.08
A	1.00	1926	55.92	0.52	35.33(.000)	1.04	0.99
B	0.00	434	12.60	-0.18	-10.85(.000)	0.13	0.88
C	0.00	637	18.50	-0.28	-17.34(.000)	0.01	0.86
D	0.00	388	11.27	-0.22	-13.29(.000)	-0.00	0.84

## Item 18

```

-----
item:18 (lc3q43)
Cases for this item   3440   Discrimination   0.42
Item Threshold(s):    0.45   Weighted MNSQ   1.04
Item Delta(s):        0.45

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	91	2.65	-0.09	-5.21(.000)	-0.04	0.99
A	0.00	363	10.55	-0.20	-11.93(.000)	0.05	0.95
B	1.00	1810	52.62	0.42	27.35(.000)	0.99	0.99
C	0.00	377	10.96	-0.17	-10.31(.000)	0.12	0.91
D	0.00	799	23.23	-0.19	-11.54(.000)	0.23	0.99

## Item 19

```

-----
item:19 (lc3q44)
Cases for this item   3429   Discrimination   0.42
Item Threshold(s):    1.10   Weighted MNSQ   1.02
Item Delta(s):        1.10

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.05	-2.96(.003)	-2.00	0.00
9	0.00	63	1.84	-0.07	-4.40(.000)	-0.16	0.90
A	0.00	749	21.84	-0.22	-13.16(.000)	0.18	0.93
B	0.00	731	21.32	-0.15	-9.03(.000)	0.31	0.95
C	1.00	1354	39.49	0.42	27.38(.000)	1.13	1.04
D	0.00	531	15.49	-0.12	-7.02(.000)	0.30	0.88

## Item 20

```

-----
item:20 (lc3q45)
Cases for this item  3397  Discrimination  0.35
Item Threshold(s):  0.88  Weighted MNSQ  1.10
Item Delta(s):      0.88
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
9	0.00	44	1.30	-0.06	-3.67(.000)	-0.11	0.91
A	1.00	1498	44.10	0.35	21.53(.000)	0.97	1.05
B	0.00	553	16.28	-0.28	-16.85(.000)	0.02	0.91
C	0.00	234	6.89	-0.13	-7.49(.000)	0.16	1.08
D	0.00	1068	31.44	-0.06	-3.79(.000)	0.50	0.95

## Item 21

```

-----
item:21 (lc3q46)
Cases for this item  3379  Discrimination  0.41
Item Threshold(s):  0.85  Weighted MNSQ  1.06
Item Delta(s):      0.85
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	4	0.12	-0.03	-1.63(.103)	-0.16	0.31
9	0.00	50	1.48	-0.08	-4.38(.000)	0.01	1.11
A	0.00	306	9.06	-0.22	-12.93(.000)	-0.06	0.98
B	0.00	1048	31.02	-0.13	-7.63(.000)	0.40	0.97
C	0.00	459	13.58	-0.20	-12.00(.000)	0.13	0.90
D	1.00	1512	44.75	0.41	25.81(.000)	1.04	1.01

## Item 22

```

-----
item:22 (lc3q47)
Cases for this item  3368  Discrimination  0.35
Item Threshold(s):  1.41  Weighted MNSQ  1.08
Item Delta(s):      1.41
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	3	0.09	-0.04	-2.30(.022)	-1.01	1.03
9	0.00	73	2.17	-0.08	-4.51(.000)	-0.02	0.99
A	0.00	501	14.88	-0.27	-16.22(.000)	-0.01	0.82
B	1.00	1142	33.91	0.35	21.50(.000)	1.09	1.07
C	0.00	570	16.92	-0.10	-5.89(.000)	0.39	1.05
D	0.00	1079	32.04	-0.04	-2.28(.023)	0.54	0.94

## Item 23

```

-----
item:23 (lc3q48)
Cases for this item  3346  Discrimination  0.40
Item Threshold(s):  1.57  Weighted MNSQ  1.02
Item Delta(s):      1.57
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
9	0.00	47	1.40	-0.04	-2.28(.023)	0.22	1.03
A	0.00	1296	38.73	-0.23	-13.89(.000)	0.32	0.93
B	0.00	603	18.02	-0.05	-2.63(.008)	0.51	0.99
C	0.00	358	10.70	-0.17	-9.67(.000)	0.18	0.98
D	1.00	1042	31.14	0.40	25.51(.000)	1.19	1.05

## Item 24

```

-----
item:24 (lc3q49)
Cases for this item   3326   Discrimination   0.42
Item Threshold(s):   1.59   Weighted MNSQ   0.99
Item Delta(s):       1.59
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.02	-1.13(.261)	-0.35	0.00
9	0.00	42	1.26	-0.02	-1.32(.186)	0.45	1.02
A	0.00	635	19.09	-0.18	-10.66(.000)	0.26	0.94
B	1.00	1023	30.76	0.42	26.54(.000)	1.23	1.10
C	0.00	978	29.40	-0.16	-9.10(.000)	0.37	0.90
D	0.00	647	19.45	-0.12	-6.98(.000)	0.37	0.94

## Item 25

```

-----
item:25 (lc3q50)
Cases for this item   3308   Discrimination   0.30
Item Threshold(s):   1.88   Weighted MNSQ   1.08
Item Delta(s):       1.87
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.06	-0.07	-3.76(.000)	-1.92	0.12
9	0.00	55	1.66	-0.03	-1.54(.124)	0.25	0.88
A	0.00	957	28.93	-0.08	-4.83(.000)	0.50	0.89
B	0.00	255	7.71	-0.24	-14.33(.000)	-0.20	0.86
C	0.00	1179	35.64	-0.05	-3.12(.002)	0.53	1.00
D	1.00	860	26.00	0.30	18.36(.000)	1.13	1.15

## Item 26

```

-----
item:26 (lc3q51)
Cases for this item   3281   Discrimination   0.39
Item Threshold(s):   1.85   Weighted MNSQ   1.00
Item Delta(s):       1.85
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.18	-0.03	-1.93(.054)	-0.51	0.92
9	0.00	23	0.70	-0.04	-2.36(.018)	0.34	1.13
A	0.00	719	21.91	-0.25	-14.74(.000)	0.17	0.89
B	0.00	1118	34.07	-0.02	-0.92(.358)	0.59	1.00
C	1.00	865	26.36	0.39	24.37(.000)	1.27	1.06
D	0.00	550	16.76	-0.15	-8.83(.000)	0.25	0.89

-----

The following traditional statistics are only meaningful for complete designs and when the amount of missing data is minimal.  
In this analysis 1.95% of the data are missing.

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

```

-----
N                3512
Mean             15.46
Standard Deviation  4.92
Variance         24.21
Skewness         -0.21
Kurtosis         -0.41
Standard error of mean  0.08
Standard error of measurement  2.24
Coefficient Alpha  0.79
-----

```

## Appendix B.2 Year 3 Numeracy

=====  
 NAPLAN 2014, Calibration, Grade 3, numeracy  
 GENERALISED ITEM ANALYSIS  
 =====

Item 1  
 -----

item:1 (n3q01)  
 Cases for this item 3527 Discrimination 0.17  
 Item Threshold(s): -4.05 Weighted MNSQ 0.98  
 Item Delta(s): -4.05

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.02	-1.47(.143)	-2.71	0.00
9	0.00	7	0.20	-0.04	-2.59(.010)	-1.27	1.57
A	0.00	49	1.39	-0.10	-6.08(.000)	-0.87	1.33
B	0.00	17	0.48	-0.10	-6.06(.000)	-1.43	0.89
C	0.00	20	0.57	-0.08	-4.72(.000)	-1.16	1.72
D	1.00	3433	97.33	0.17	10.20(.000)	0.16	1.09

=====

Item 2  
 -----

item:2 (n3q02)  
 Cases for this item 3527 Discrimination 0.24  
 Item Threshold(s): -3.84 Weighted MNSQ 0.94  
 Item Delta(s): -3.84

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.04	-2.25(.025)	-3.22	0.00
9	0.00	8	0.23	-0.04	-2.08(.038)	-1.06	1.85
A	0.00	72	2.04	-0.21	-12.54(.000)	-1.56	1.07
B	1.00	3413	96.77	0.24	14.95(.000)	0.18	1.07
C	0.00	18	0.51	-0.07	-4.29(.000)	-1.09	1.26
D	0.00	15	0.43	-0.10	-5.98(.000)	-1.70	1.02

=====

Item 3  
 -----

item:3 (n3q03)  
 Cases for this item 3527 Discrimination 0.30  
 Item Threshold(s): -3.34 Weighted MNSQ 0.93  
 Item Delta(s): -3.35

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.06	-0.04	-2.63(.009)	-2.90	0.45
9	0.00	8	0.23	-0.05	-2.78(.005)	-1.45	1.45
A	1.00	3349	94.95	0.30	18.66(.000)	0.20	1.07
B	0.00	61	1.73	-0.14	-8.09(.000)	-0.93	1.04
C	0.00	24	0.68	-0.12	-7.34(.000)	-1.44	0.97
D	0.00	83	2.35	-0.23	-13.95(.000)	-1.45	0.87

=====

## Item 4

```

-----
item:4 (n3q04)
Cases for this item  3527  Discrimination  0.41
Item Threshold(s):  -2.60  Weighted MNSQ  0.88
Item Delta(s):      -2.60
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	16	0.45	-0.06	-3.80(.000)	-1.35	1.19
A	0.00	143	4.05	-0.27	-16.66(.000)	-1.23	0.85
B	1.00	3194	90.56	0.41	26.50(.000)	0.27	1.02
C	0.00	91	2.58	-0.19	-11.59(.000)	-1.20	1.07
D	0.00	83	2.35	-0.21	-12.51(.000)	-1.30	1.07

## Item 5

```

-----
item:5 (n3q05)
Cases for this item  3527  Discrimination  0.43
Item Threshold(s):  -2.70  Weighted MNSQ  0.85
Item Delta(s):      -2.70
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.11	-0.05	-2.73(.006)	-1.17	0.45
9	0.00	8	0.23	-0.09	-5.44(.000)	-2.00	0.79
A	0.00	123	3.49	-0.28	-17.06(.000)	-1.48	0.86
B	0.00	94	2.67	-0.20	-11.96(.000)	-1.10	0.87
C	1.00	3220	91.30	0.43	28.65(.000)	0.27	1.02
D	0.00	78	2.21	-0.23	-14.17(.000)	-1.51	0.74

## Item 6

```

-----
item:6 (n3q06)
Cases for this item  3527  Discrimination  0.42
Item Threshold(s):  -1.75  Weighted MNSQ  0.94
Item Delta(s):      -1.75
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.09	-0.03	-1.88(.060)	-1.26	1.03
9	0.00	27	0.77	-0.11	-6.70(.000)	-1.44	0.95
A	0.00	246	6.97	-0.20	-12.24(.000)	-0.66	1.11
B	0.00	246	6.97	-0.29	-17.86(.000)	-0.98	0.86
C	0.00	109	3.09	-0.15	-8.83(.000)	-0.84	1.37
D	1.00	2896	82.11	0.42	27.47(.000)	0.34	1.00

## Item 7

```

-----
item:7 (n3q07)
Cases for this item  3527  Discrimination  0.42
Item Threshold(s):  -1.52  Weighted MNSQ  0.98
Item Delta(s):      -1.53
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.17	-0.05	-3.18(.002)	-1.52	1.13
9	0.00	43	1.22	-0.11	-6.37(.000)	-1.03	1.05
A	0.00	117	3.32	-0.24	-14.69(.000)	-1.28	0.89
B	0.00	323	9.16	-0.17	-10.48(.000)	-0.44	1.09
C	0.00	247	7.00	-0.25	-15.57(.000)	-0.79	0.86
D	1.00	2791	79.13	0.42	27.70(.000)	0.35	1.02

## Item 8

```

-----
item:8 (n3q08)
Cases for this item  3527  Discrimination  0.36
Item Threshold(s):  -1.55  Weighted MNSQ  1.03
Item Delta(s):      -1.56
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	9	0.26	-0.06	-3.56(.000)	-1.28	0.79
A	0.00	307	8.70	-0.14	-8.69(.000)	-0.40	1.13
B	0.00	242	6.86	-0.23	-14.17(.000)	-0.81	0.97
C	1.00	2805	79.53	0.36	23.18(.000)	0.33	1.03
D	0.00	164	4.65	-0.21	-12.76(.000)	-0.87	1.10

## Item 9

```

-----
item:9 (n3q09)
Cases for this item  3527  Discrimination  0.51
Item Threshold(s):  -0.80  Weighted MNSQ  0.94
Item Delta(s):      -0.81
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	38	1.08	-0.06	-3.40(.001)	-0.57	1.18
A	0.00	356	10.09	-0.29	-17.94(.000)	-0.79	0.90
B	0.00	414	11.74	-0.21	-12.78(.000)	-0.49	0.89
C	0.00	177	5.02	-0.21	-12.60(.000)	-0.78	0.94
D	1.00	2388	67.71	0.51	35.61(.000)	0.50	0.99
E	0.00	154	4.37	-0.17	-10.16(.000)	-0.65	0.97

## Item 10

```

-----
item:10 (n3q10)
Cases for this item  3527  Discrimination  0.42
Item Threshold(s):  -0.91  Weighted MNSQ  1.04
Item Delta(s):      -0.90
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	0.01	0.38(.703)	0.06	0.00
9	0.00	19	0.54	-0.07	-4.04(.000)	-0.96	1.15
A	0.00	216	6.12	-0.17	-10.13(.000)	-0.53	0.94
B	0.00	766	21.72	-0.28	-17.45(.000)	-0.45	0.98
C	1.00	2448	69.41	0.42	27.35(.000)	0.42	1.02
D	0.00	77	2.18	-0.21	-13.04(.000)	-1.50	1.07

## Item 11

```

-----
item:11 (n3q11)
Cases for this item  3526  Discrimination  0.39
Item Threshold(s):  -1.08  Weighted MNSQ  1.05
Item Delta(s):      -1.08
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	14	0.40	-0.05	-2.87(.004)	-0.67	1.23
A	0.00	746	21.16	-0.27	-16.38(.000)	-0.41	1.04
B	1.00	2553	72.40	0.39	25.35(.000)	0.38	1.03
C	0.00	107	3.03	-0.15	-9.20(.000)	-0.70	0.83
D	0.00	43	1.22	-0.13	-7.77(.000)	-1.16	1.19
E	0.00	63	1.79	-0.18	-10.64(.000)	-1.28	1.03

## Item 12

```

-----
item:12 (n3ql2)
Cases for this item  3526  Discrimination  0.54
Item Threshold(s):  -0.64  Weighted MNSQ  0.91
Item Delta(s):      -0.64
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1083	30.71	-0.48	-32.32(.000)	-0.61	0.96
1	1.00	2283	64.75	0.54	38.07(.000)	0.54	0.96
9	0.00	160	4.54	-0.18	-10.82(.000)	-0.80	1.05

## Item 13

```

-----
item:13 (n3ql3)
Cases for this item  3524  Discrimination  0.43
Item Threshold(s):  -0.39  Weighted MNSQ  1.05
Item Delta(s):      -0.39
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	0.02	1.04(.300)	0.77	0.00
9	0.00	95	2.70	-0.11	-6.61(.000)	-0.61	1.00
A	0.00	599	17.00	-0.06	-3.63(.000)	-0.03	0.93
B	1.00	2115	60.02	0.43	28.04(.000)	0.50	1.03
C	0.00	531	15.07	-0.37	-23.73(.000)	-0.78	0.85
D	0.00	183	5.19	-0.16	-9.74(.000)	-0.61	1.06

## Item 14

```

-----
item:14 (n3ql4)
Cases for this item  3524  Discrimination  0.55
Item Threshold(s):  -0.43  Weighted MNSQ  0.91
Item Delta(s):      -0.43
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.04	-2.08(.037)	-2.79	0.00
9	0.00	35	0.99	-0.10	-6.12(.000)	-1.12	1.17
A	0.00	782	22.19	-0.37	-23.98(.000)	-0.61	0.92
B	0.00	138	3.92	-0.20	-12.26(.000)	-0.88	0.89
C	0.00	175	4.97	-0.11	-6.56(.000)	-0.32	0.99
D	1.00	2142	60.78	0.55	39.56(.000)	0.58	0.95
E	0.00	251	7.12	-0.16	-9.65(.000)	-0.44	1.00

## Item 15

```

-----
item:15 (n3ql5)
Cases for this item  3523  Discrimination  0.60
Item Threshold(s):   0.09  Weighted MNSQ  0.87
Item Delta(s):      0.10
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1713	48.62	-0.58	-42.69(.000)	-0.49	0.94
1	1.00	1779	50.50	0.60	44.48(.000)	0.74	0.91
9	0.00	31	0.88	-0.09	-5.10(.000)	-0.94	1.01

## Item 16

```

-----
item:16 (n3q16)
Cases for this item  3523  Discrimination  0.42
Item Threshold(s):  0.02  Weighted MNSQ  1.08
Item Delta(s):      0.02

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.11	-0.03	-1.92(.055)	-1.06	1.07
9	0.00	30	0.85	-0.07	-3.96(.000)	-0.94	1.14
A	0.00	1082	30.71	-0.25	-15.33(.000)	-0.23	0.98
B	1.00	1830	51.94	0.42	27.49(.000)	0.53	1.03
C	0.00	226	6.41	-0.20	-12.04(.000)	-0.68	1.05
D	0.00	351	9.96	-0.13	-7.74(.000)	-0.28	1.05

## Item 17

```

-----
item:17 (n3q17)
Cases for this item  3519  Discrimination  0.39
Item Threshold(s):  0.15  Weighted MNSQ  1.11
Item Delta(s):      0.15

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.03	-1.92(.055)	-2.30	0.00
9	0.00	38	1.08	-0.08	-4.74(.000)	-0.79	1.12
A	0.00	845	24.01	-0.17	-10.41(.000)	-0.19	0.96
B	0.00	606	17.22	-0.17	-10.30(.000)	-0.25	1.00
C	1.00	1740	49.45	0.39	24.76(.000)	0.53	1.06
D	0.00	289	8.21	-0.17	-9.96(.000)	-0.46	1.08

## Item 18

```

-----
item:18 (n3q18)
Cases for this item  3519  Discrimination  0.53
Item Threshold(s):  -0.23  Weighted MNSQ  0.93
Item Delta(s):      -0.24

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.14	-0.05	-3.05(.002)	-1.64	1.69
9	0.00	55	1.56	-0.08	-5.00(.000)	-0.66	1.14
A	1.00	2009	57.09	0.53	37.26(.000)	0.59	0.97
B	0.00	341	9.69	-0.26	-15.89(.000)	-0.69	0.94
C	0.00	583	16.57	-0.26	-15.74(.000)	-0.40	0.92
D	0.00	280	7.96	-0.13	-7.79(.000)	-0.33	0.97
E	0.00	246	6.99	-0.17	-10.32(.000)	-0.50	1.07

## Item 19

```

-----
item:19 (n3q19)
Cases for this item  3518  Discrimination  0.43
Item Threshold(s):  0.57  Weighted MNSQ  1.05
Item Delta(s):      0.57

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.14	-0.01	-0.89(.375)	-0.18	0.46
9	0.00	26	0.74	-0.08	-4.73(.000)	-0.89	1.25
A	1.00	1447	41.13	0.43	27.92(.000)	0.65	1.03
B	0.00	1362	38.72	-0.24	-14.48(.000)	-0.17	0.96
C	0.00	266	7.56	-0.07	-4.17(.000)	-0.15	1.17
D	0.00	412	11.71	-0.21	-12.86(.000)	-0.44	1.06



## Item 20

```

-----
item:20 (n3q20)
Cases for this item  3517  Discrimination  0.41
Item Threshold(s):  0.32  Weighted MNSQ  1.08
Item Delta(s):      0.32

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.06	-0.03	-1.90(.057)	-0.92	0.08
9	0.00	45	1.28	-0.09	-5.13(.000)	-0.75	1.24
A	0.00	551	15.67	-0.18	-10.90(.000)	-0.30	0.99
B	0.00	270	7.68	-0.18	-11.06(.000)	-0.51	0.94
C	1.00	1620	46.06	0.41	26.90(.000)	0.59	1.00
D	0.00	748	21.27	-0.14	-8.53(.000)	-0.16	1.07
E	0.00	281	7.99	-0.08	-4.98(.000)	-0.15	1.07

## Item 21

```

-----
item:21 (n3q21)
Cases for this item  3517  Discrimination  0.28
Item Threshold(s):  0.75  Weighted MNSQ  1.20
Item Delta(s):      0.75

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.11	-0.06	-3.31(.001)	-1.82	0.71
9	0.00	29	0.82	-0.08	-4.55(.000)	-0.76	1.18
A	1.00	1326	37.70	0.28	17.44(.000)	0.49	1.09
B	0.00	330	9.38	-0.21	-13.00(.000)	-0.54	1.04
C	0.00	1361	38.70	-0.05	-2.90(.004)	0.07	1.03
D	0.00	467	13.28	-0.12	-7.35(.000)	-0.17	1.04

## Item 22

```

-----
item:22 (n3q22)
Cases for this item  3515  Discrimination  0.49
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	0.06	-0.01	-0.36(.717)	-0.85	0.85
9	0.00	47	1.34	-0.10	-5.85(.000)	-0.83	1.28
A	0.00	447	12.72	-0.29	-17.90(.000)	-0.65	0.98
B	1.00	1307	37.18	0.49	32.99(.000)	0.77	1.04
C	0.00	493	14.03	-0.18	-11.12(.000)	-0.32	0.95
D	0.00	1219	34.68	-0.13	-7.95(.000)	-0.05	0.89

## Item 23

```

-----
item:23 (n3q23)
Cases for this item  3513  Discrimination  0.32
Item Threshold(s):  1.34  Weighted MNSQ  1.12
Item Delta(s):      1.34

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.06	-0.04	-2.13(.033)	-1.80	1.71
9	0.00	16	0.46	-0.06	-3.28(.001)	-0.86	1.37
A	0.00	2001	56.96	-0.14	-8.39(.000)	-0.00	1.06
B	0.00	345	9.82	-0.16	-9.75(.000)	-0.34	0.96
C	1.00	959	27.30	0.32	19.69(.000)	0.66	1.07
D	0.00	190	5.41	-0.08	-4.78(.000)	-0.22	1.00

## Item 24

```

-----
item:24 (n3q24)
Cases for this item  3512  Discrimination  0.48
Item Threshold(s):  1.02  Weighted MNSQ  0.98
Item Delta(s):      1.02

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.09	-0.05	-2.76(.006)	-2.02	1.27
9	0.00	68	1.94	-0.07	-4.44(.000)	-0.53	1.12
A	0.00	827	23.55	0.03	1.83(.068)	0.21	0.99
B	1.00	1151	32.77	0.48	32.03(.000)	0.82	1.00
C	0.00	572	16.29	-0.19	-11.24(.000)	-0.30	0.89
D	0.00	891	25.37	-0.36	-22.72(.000)	-0.50	0.93

## Item 25

```

-----
item:25 (n3q25)
Cases for this item  3505  Discrimination  0.52
Item Threshold(s):  1.21  Weighted MNSQ  0.93
Item Delta(s):      1.21

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2350	67.05	-0.44	-29.22(.000)	-0.17	1.00
1	1.00	1033	29.47	0.52	35.62(.000)	0.93	0.87
9	0.00	122	3.48	-0.15	-8.82(.000)	-0.77	1.18

## Item 26

```

-----
item:26 (n3q26)
Cases for this item  3503  Discrimination  0.37
Item Threshold(s):  1.29  Weighted MNSQ  1.06
Item Delta(s):      1.29

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	35	1.00	-0.03	-1.65(.099)	-0.20	1.12
9	0.00	38	1.08	-0.02	-0.96(.338)	-0.11	1.01
A	0.00	449	12.82	-0.05	-3.10(.002)	-0.01	1.06
B	0.00	214	6.11	-0.14	-8.61(.000)	-0.46	1.08
C	0.00	1781	50.84	-0.22	-13.44(.000)	-0.08	1.01
D	1.00	986	28.15	0.37	23.70(.000)	0.74	1.06

## Item 27

```

-----
item:27 (n3q27)
Cases for this item  3501  Discrimination  0.29
Item Threshold(s):  1.51  Weighted MNSQ  1.14
Item Delta(s):      1.51

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2579	73.66	-0.25	-15.35(.000)	-0.02	1.06
1	1.00	866	24.74	0.29	17.85(.000)	0.65	1.05
9	0.00	56	1.60	-0.11	-6.65(.000)	-0.87	1.17

## Item 28

```

-----
item:28 (n3q28)
Cases for this item   3496   Discrimination   0.48
Item Threshold(s):   1.78   Weighted MNSQ   0.93
Item Delta(s):       1.78
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2549	72.91	-0.38	-24.36(.000)	-0.09	1.00
1	1.00	725	20.74	0.48	32.46(.000)	1.10	0.90
9	0.00	222	6.35	-0.11	-6.29(.000)	-0.36	1.11

## Item 29

```

-----
item:29 (n3q29)
Cases for this item   3485   Discrimination   0.50
Item Threshold(s):   1.46   Weighted MNSQ   0.93
Item Delta(s):       1.46
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2442	70.07	-0.44	-29.03(.000)	-0.15	1.00
1	1.00	889	25.51	0.50	34.40(.000)	1.00	0.93
9	0.00	154	4.42	-0.08	-5.01(.000)	-0.33	0.98

## Item 30

```

-----
item:30 (n3q30)
Cases for this item   3476   Discrimination   0.43
Item Threshold(s):   1.41   Weighted MNSQ   0.98
Item Delta(s):       1.42
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	0.00	0.05(.961)	0.43	0.00
9	0.00	67	1.93	-0.07	-3.90(.000)	-0.43	1.14
A	0.00	158	4.55	-0.11	-6.24(.000)	-0.37	0.98
B	0.00	359	10.33	-0.04	-2.07(.038)	0.02	1.11
C	0.00	368	10.59	-0.19	-11.66(.000)	-0.45	0.95
D	1.00	911	26.21	0.43	27.98(.000)	0.86	1.08
E	0.00	1612	46.38	-0.17	-10.47(.000)	-0.04	0.95

## Item 31

```

-----
item:31 (n3q31)
Cases for this item   3467   Discrimination   0.30
Item Threshold(s):   1.90   Weighted MNSQ   1.07
Item Delta(s):       1.90
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	52	1.50	-0.04	-2.19(.028)	-0.23	0.97
A	0.00	1632	47.07	-0.16	-9.67(.000)	-0.03	1.03
B	0.00	530	15.29	-0.12	-7.18(.000)	-0.16	1.06
C	0.00	587	16.93	0.03	1.65(.099)	0.21	1.06
D	1.00	666	19.21	0.30	18.57(.000)	0.77	1.12

## Item 32

```

-----
item:32 (n3q32)
Cases for this item  3454  Discrimination  0.44
Item Threshold(s):  2.44  Weighted MNSQ  0.91
Item Delta(s):      2.43

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2906	84.13	-0.36	-23.00(.000)	-0.02	1.02
1	1.00	452	13.09	0.44	28.94(.000)	1.28	0.90
9	0.00	96	2.78	-0.10	-5.69(.000)	-0.52	1.12

## Item 33

```

-----
item:33 (n3q33)
Cases for this item  3421  Discrimination  0.47
Item Threshold(s):  2.55  Weighted MNSQ  0.87
Item Delta(s):      2.55

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2840	83.02	-0.37	-23.08(.000)	-0.01	1.01
1	1.00	411	12.01	0.47	31.48(.000)	1.43	0.81
9	0.00	170	4.97	-0.07	-4.38(.000)	-0.23	1.09

## Item 34

```

-----
item:34 (n3q34)
Cases for this item  3372  Discrimination  0.22
Item Threshold(s):  3.20  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	3017	89.47	-0.15	-9.01(.000)	0.10	1.07
1	1.00	243	7.21	0.22	12.97(.000)	0.95	1.19
9	0.00	112	3.32	-0.05	-3.02(.003)	-0.18	1.00

## Item 35

```

-----
item:35 (n3q35)
Cases for this item  3344  Discrimination  0.48
Item Threshold(s):  2.08  Weighted MNSQ  0.92
Item Delta(s):      2.08

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2739	81.91	-0.45	-29.42(.000)	-0.06	1.02
1	1.00	574	17.17	0.48	31.23(.000)	1.20	0.87
9	0.00	31	0.93	-0.05	-2.81(.005)	-0.32	1.09

-----  
The following traditional statistics are only meaningful for complete designs and when the amount of missing data is minimal.  
In this analysis 0.71% of the data are missing.

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

N	3527
Mean	17.68
Standard Deviation	6.09
Variance	37.14
Skewness	0.10
Kurtosis	-0.48
Standard error of mean	0.10
Standard error of measurement	2.32
Coefficient Alpha	0.86

=====

## Appendix B.3 Year 3 Reading

=====

NAPLAN 2014, Calibration, Grade 3, reading  
GENERALISED ITEM ANALYSIS

=====

Item 1

-----

item:1 (r3q01)  
Cases for this item 3530 Discrimination 0.34  
Item Threshold(s): -3.23 Weighted MNSQ 0.91  
Item Delta(s): -3.23

-----

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.02	-1.46(.143)	-0.82	0.00
9	0.00	16	0.45	-0.13	-7.82(.000)	-1.60	1.50
A	1.00	3387	95.95	0.34	21.67(.000)	0.70	1.18
B	0.00	61	1.73	-0.22	-13.53(.000)	-1.34	0.91
C	0.00	43	1.22	-0.19	-11.59(.000)	-1.39	0.80
D	0.00	22	0.62	-0.11	-6.41(.000)	-1.05	0.83

=====

Item 2

-----

item:2 (r3q02)  
Cases for this item 3530 Discrimination 0.35  
Item Threshold(s): -2.69 Weighted MNSQ 0.90  
Item Delta(s): -2.69

-----

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	13	0.37	-0.09	-5.48(.000)	-1.29	1.81
A	0.00	56	1.59	-0.23	-13.95(.000)	-1.38	0.77
B	0.00	114	3.23	-0.17	-10.15(.000)	-0.51	1.57
C	0.00	44	1.25	-0.19	-11.59(.000)	-1.44	0.94
D	1.00	3303	93.57	0.35	21.99(.000)	0.72	1.16

=====

Item 3

-----

item:3 (r3q03)  
Cases for this item 3529 Discrimination 0.46  
Item Threshold(s): -2.22 Weighted MNSQ 0.87  
Item Delta(s): -2.22

-----

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	22	0.62	-0.15	-8.75(.000)	-1.70	1.46
A	0.00	100	2.83	-0.25	-15.42(.000)	-1.11	0.93
B	1.00	3198	90.62	0.46	30.78(.000)	0.79	1.13
C	0.00	106	3.00	-0.24	-14.70(.000)	-0.96	1.11
D	0.00	103	2.92	-0.24	-14.52(.000)	-0.91	0.86

=====

## Item 4

```

-----
item:4 (r3q04)
Cases for this item  3528  Discrimination  0.48
Item Threshold(s):  -2.30  Weighted MNSQ  0.83
Item Delta(s):      -2.30
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.06	-0.02	-1.29(.196)	-0.21	0.24
9	0.00	16	0.45	-0.13	-8.07(.000)	-2.06	1.31
A	1.00	3217	91.18	0.48	32.53(.000)	0.79	1.12
B	0.00	86	2.44	-0.25	-15.13(.000)	-1.19	1.03
C	0.00	128	3.63	-0.28	-17.19(.000)	-1.01	0.81
D	0.00	79	2.24	-0.25	-15.15(.000)	-1.30	0.88

## Item 5

```

-----
item:5 (r3q05)
Cases for this item  3527  Discrimination  0.47
Item Threshold(s):  -2.17  Weighted MNSQ  0.87
Item Delta(s):      -2.17
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.04	-2.43(.015)	-1.56	0.00
9	0.00	14	0.40	-0.12	-7.01(.000)	-1.91	1.17
A	1.00	3185	90.30	0.47	31.30(.000)	0.80	1.13
B	0.00	124	3.52	-0.26	-15.92(.000)	-0.96	1.03
C	0.00	92	2.61	-0.24	-14.56(.000)	-1.05	0.73
D	0.00	111	3.15	-0.25	-15.56(.000)	-1.00	0.82

## Item 6

```

-----
item:6 (r3q06)
Cases for this item  3525  Discrimination  0.48
Item Threshold(s):  -1.52  Weighted MNSQ  0.87
Item Delta(s):      -1.51
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	532	15.09	-0.46	-30.82(.000)	-0.64	1.20
1	1.00	2969	84.23	0.48	32.85(.000)	0.86	1.08
9	0.00	24	0.68	-0.14	-8.43(.000)	-1.80	1.04

## Item 7

```

-----
item:7 (r3q07)
Cases for this item  3523  Discrimination  0.53
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
8	0.00	4	0.11	-0.04	-2.18(.029)	-0.50	1.07
9	0.00	25	0.71	-0.12	-7.32(.000)	-1.13	1.25
A	0.00	225	6.39	-0.30	-18.78(.000)	-0.64	0.97
B	0.00	102	2.90	-0.29	-18.18(.000)	-1.35	0.91
C	0.00	134	3.80	-0.26	-15.98(.000)	-0.89	0.92
D	1.00	3033	86.09	0.53	37.30(.000)	0.86	1.09

## Item 8

```

-----
item:8 (r3q08)
Cases for this item 3519 Discrimination 0.52
Item Threshold(s): -1.02 Weighted MNSQ 0.91
Item Delta(s): -1.02

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.01	-0.37(.711)	0.04	0.00
9	0.00	41	1.17	-0.09	-5.13(.000)	-0.54	1.30
A	0.00	120	3.41	-0.18	-11.05(.000)	-0.48	1.08
B	0.00	202	5.74	-0.30	-18.80(.000)	-0.73	0.96
C	1.00	2755	78.29	0.52	36.26(.000)	0.94	1.09
D	0.00	400	11.37	-0.32	-20.16(.000)	-0.41	1.05

## Item 9

```

-----
item:9 (r3q09)
Cases for this item 3519 Discrimination 0.46
Item Threshold(s): -2.09 Weighted MNSQ 0.89
Item Delta(s): -2.08

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.04	-2.44(.015)	-1.56	0.00
9	0.00	19	0.54	-0.10	-5.70(.000)	-0.97	1.40
A	1.00	3156	89.68	0.46	30.44(.000)	0.80	1.14
B	0.00	106	3.01	-0.24	-14.64(.000)	-0.89	1.00
C	0.00	123	3.50	-0.28	-17.46(.000)	-1.06	0.90
D	0.00	114	3.24	-0.22	-13.15(.000)	-0.76	0.88

## Item 10

```

-----
item:10 (r3q10)
Cases for this item 3517 Discrimination 0.56
Item Threshold(s): -0.05 Weighted MNSQ 0.92
Item Delta(s): -0.06

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.06	-0.02	-1.40(.161)	-0.01	2.19
9	0.00	55	1.56	-0.12	-7.23(.000)	-0.73	1.28
A	0.00	284	8.08	-0.25	-15.40(.000)	-0.34	1.08
B	0.00	613	17.43	-0.32	-19.74(.000)	-0.15	0.95
C	0.00	353	10.04	-0.23	-13.82(.000)	-0.13	1.05
D	1.00	2210	62.84	0.56	40.40(.000)	1.12	1.06

## Item 11

```

-----
item:11 (r3q11)
Cases for this item 3515 Discrimination 0.51
Item Threshold(s): -1.50 Weighted MNSQ 0.88
Item Delta(s): -1.50

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.04	-2.44(.015)	-1.56	0.00
9	0.00	41	1.17	-0.11	-6.33(.000)	-0.66	1.15
A	1.00	2959	84.18	0.51	35.42(.000)	0.88	1.10
B	0.00	148	4.21	-0.27	-16.37(.000)	-0.74	0.91
C	0.00	133	3.78	-0.26	-15.65(.000)	-0.81	1.01
D	0.00	233	6.63	-0.29	-18.17(.000)	-0.67	0.96



## Item 12

```

-----
item:12 (r3q12)
Cases for this item  3514  Discrimination  0.58
Item Threshold(s):  -0.10  Weighted MNSQ  0.90
Item Delta(s):      -0.10

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.06	-0.04	-2.38(.017)	-0.67	1.25
9	0.00	48	1.37	-0.10	-5.92(.000)	-0.60	1.38
A	0.00	421	11.98	-0.34	-21.57(.000)	-0.41	1.04
B	0.00	246	7.00	-0.22	-13.61(.000)	-0.34	0.97
C	0.00	561	15.96	-0.27	-16.60(.000)	-0.07	0.96
D	1.00	2236	63.63	0.58	42.30(.000)	1.13	1.04

## Item 13

```

-----
item:13 (r3q13)
Cases for this item  3513  Discrimination  0.52
Item Threshold(s):  -0.95  Weighted MNSQ  0.92
Item Delta(s):      -0.95

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	41	1.17	-0.12	-7.23(.000)	-0.94	1.17
A	0.00	261	7.43	-0.30	-18.55(.000)	-0.57	1.04
B	1.00	2717	77.34	0.52	35.92(.000)	0.95	1.10
C	0.00	342	9.74	-0.27	-16.90(.000)	-0.30	0.92
D	0.00	152	4.33	-0.22	-13.24(.000)	-0.52	0.94

## Item 14

```

-----
item:14 (r3q14)
Cases for this item  3508  Discrimination  0.42
Item Threshold(s):   0.43  Weighted MNSQ  1.12
Item Delta(s):       0.43

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.06	-0.00	-0.24(.812)	1.19	0.95
9	0.00	31	0.88	-0.11	-6.34(.000)	-0.90	1.34
A	0.00	274	7.81	-0.33	-20.93(.000)	-0.68	0.86
B	0.00	226	6.44	-0.29	-18.15(.000)	-0.55	1.01
C	0.00	1087	30.99	-0.08	-4.69(.000)	0.48	1.00
D	1.00	1888	53.82	0.42	27.18(.000)	1.08	1.14

## Item 15

```

-----
item:15 (r3q15)
Cases for this item  3501  Discrimination  0.49
Item Threshold(s):   0.52  Weighted MNSQ  1.01
Item Delta(s):       0.51

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	47	1.34	-0.11	-6.38(.000)	-0.58	1.44
A	0.00	1038	29.65	-0.39	-24.80(.000)	-0.06	0.97
B	0.00	323	9.23	-0.14	-8.34(.000)	0.15	1.21
C	1.00	1832	52.33	0.49	33.44(.000)	1.18	1.07
D	0.00	261	7.46	-0.06	-3.72(.000)	0.40	1.25

## Item 16

```

-----
item:16 (r3q16)
Cases for this item  3498  Discrimination  0.54
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
8	0.00	1	0.03	-0.04	-2.45(.014)	-1.56	0.00
9	0.00	42	1.20	-0.09	-5.37(.000)	-0.41	1.48
A	1.00	2271	64.92	0.54	38.33(.000)	1.09	1.07
B	0.00	484	13.84	-0.23	-13.80(.000)	0.02	1.02
C	0.00	236	6.75	-0.24	-14.73(.000)	-0.36	0.95
D	0.00	464	13.26	-0.32	-20.26(.000)	-0.31	1.04

## Item 17

```

-----
item:17 (r3q17)
Cases for this item  3497  Discrimination  0.50
Item Threshold(s):  -1.26  Weighted MNSQ  0.91
Item Delta(s):      -1.26
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.06	-0.02	-1.47(.141)	-0.86	2.64
9	0.00	16	0.46	-0.11	-6.41(.000)	-1.38	1.38
A	0.00	315	9.01	-0.27	-16.80(.000)	-0.35	1.13
B	0.00	145	4.15	-0.25	-15.44(.000)	-0.70	0.99
C	1.00	2851	81.53	0.50	34.39(.000)	0.91	1.09
D	0.00	168	4.80	-0.27	-16.85(.000)	-0.70	0.93

## Item 18

```

-----
item:18 (r3q18)
Cases for this item  3496  Discrimination  0.59
Item Threshold(s):  -0.85  Weighted MNSQ  0.85
Item Delta(s):      -0.85
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.09	-0.04	-2.65(.008)	-0.82	1.88
9	0.00	58	1.66	-0.12	-7.01(.000)	-0.51	1.28
A	1.00	2661	76.12	0.59	42.76(.000)	1.01	1.06
B	0.00	349	9.98	-0.35	-22.39(.000)	-0.54	0.88
C	0.00	175	5.01	-0.28	-17.12(.000)	-0.73	0.84
D	0.00	250	7.15	-0.26	-15.83(.000)	-0.42	0.98

## Item 19

```

-----
item:19 (r3q19)
Cases for this item  3493  Discrimination  0.47
Item Threshold(s):   0.23  Weighted MNSQ  1.04
Item Delta(s):       0.23
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.09	-0.02	-1.25(.212)	-0.40	2.15
9	0.00	41	1.17	-0.09	-5.44(.000)	-0.57	1.31
A	0.00	834	23.88	-0.19	-11.74(.000)	0.24	0.99
B	1.00	2019	57.80	0.47	31.77(.000)	1.11	1.10
C	0.00	286	8.19	-0.28	-17.07(.000)	-0.43	1.07
D	0.00	310	8.87	-0.23	-13.70(.000)	-0.21	1.11

## Item 20

```

-----
item:20 (r3q20)
Cases for this item  3489  Discrimination  0.26
Item Threshold(s):   2.48  Weighted MNSQ  1.10
Item Delta(s):       2.48

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.01	-0.52(.606)	0.21	0.00
9	0.00	104	2.98	-0.06	-3.44(.001)	0.12	1.32
A	0.00	779	22.33	-0.13	-7.83(.000)	0.37	1.20
B	0.00	1259	36.08	-0.08	-4.97(.000)	0.49	1.10
C	0.00	686	19.66	0.01	0.56(.575)	0.66	1.11
D	1.00	660	18.92	0.26	15.81(.000)	1.31	1.31

## Item 21

```

-----
item:21 (r3q21)
Cases for this item  3476  Discrimination  0.21
Item Threshold(s):   1.99  Weighted MNSQ  1.25
Item Delta(s):       1.99

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.04	-2.45(.014)	-1.56	0.00
9	0.00	42	1.21	-0.09	-5.36(.000)	-0.39	1.39
A	0.00	1463	42.09	0.08	4.98(.000)	0.75	1.18
B	1.00	901	25.92	0.21	12.59(.000)	1.08	1.20
C	0.00	539	15.51	-0.14	-8.50(.000)	0.25	1.13
D	0.00	530	15.25	-0.20	-11.85(.000)	0.09	1.06

## Item 22

```

-----
item:22 (r3q22)
Cases for this item  3475  Discrimination  0.55
Item Threshold(s):   0.55  Weighted MNSQ  0.94
Item Delta(s):       0.55

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	56	1.61	-0.08	-4.50(.000)	-0.17	1.34
A	0.00	765	22.01	-0.25	-15.52(.000)	0.09	1.01
B	0.00	480	13.81	-0.25	-15.31(.000)	-0.06	1.00
C	0.00	372	10.71	-0.23	-14.21(.000)	-0.08	1.01
D	1.00	1802	51.86	0.55	38.72(.000)	1.24	1.09

## Item 23

```

-----
item:23 (r3q23)
Cases for this item  3471  Discrimination  0.53
Item Threshold(s):   0.23  Weighted MNSQ  0.97
Item Delta(s):       0.23

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.12	-0.04	-2.35(.019)	-0.18	1.36
9	0.00	48	1.38	-0.09	-5.22(.000)	-0.34	1.41
A	0.00	414	11.93	-0.30	-18.81(.000)	-0.27	0.91
B	1.00	2011	57.94	0.53	36.77(.000)	1.16	1.09
C	0.00	317	9.13	-0.22	-13.50(.000)	-0.16	1.06
D	0.00	677	19.50	-0.22	-13.22(.000)	0.14	1.01

## Item 24

```

-----
item:24 (r3q24)
Cases for this item   3468   Discrimination   0.57
Item Threshold(s):   0.77   Weighted MNSQ   0.91
Item Delta(s):       0.77

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	1	0.03	-0.04	-2.46(.014)	-1.56	0.00
9	0.00	45	1.30	-0.09	-5.19(.000)	-0.31	1.31
A	0.00	648	18.69	-0.26	-15.71(.000)	0.06	0.96
B	0.00	633	18.25	-0.22	-13.29(.000)	0.10	1.08
C	1.00	1653	47.66	0.57	40.57(.000)	1.31	1.07
D	0.00	488	14.07	-0.25	-15.24(.000)	-0.03	0.97

## Item 25

```

-----
item:25 (r3q25)
Cases for this item   3464   Discrimination   0.55
Item Threshold(s):   0.44   Weighted MNSQ   0.94
Item Delta(s):       0.44

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
9	0.00	44	1.27	-0.10	-5.78(.000)	-0.55	1.28
A	0.00	817	23.59	-0.30	-18.56(.000)	0.04	1.00
B	0.00	385	11.11	-0.29	-17.76(.000)	-0.31	0.94
C	1.00	1873	54.07	0.55	39.10(.000)	1.23	1.06
D	0.00	345	9.96	-0.15	-9.21(.000)	0.11	1.03

## Item 26

```

-----
item:26 (r3q26)
Cases for this item   3456   Discrimination   0.50
Item Threshold(s):   1.05   Weighted MNSQ   0.98
Item Delta(s):       1.05

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
9	0.00	84	2.43	-0.07	-4.13(.000)	0.05	1.16
A	0.00	667	19.30	-0.31	-19.32(.000)	-0.08	0.89
B	0.00	842	24.36	-0.05	-3.17(.002)	0.52	1.12
C	0.00	399	11.55	-0.28	-17.20(.000)	-0.24	0.93
D	1.00	1464	42.36	0.50	33.91(.000)	1.34	1.06

## Item 27

```

-----
item:27 (r3q27)
Cases for this item   3439   Discrimination   0.48
Item Threshold(s):   0.55   Weighted MNSQ   1.02
Item Delta(s):       0.54

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
9	0.00	45	1.31	-0.08	-4.78(.000)	-0.28	1.19
A	0.00	382	11.11	-0.35	-21.76(.000)	-0.43	0.90
B	1.00	1791	52.08	0.48	32.29(.000)	1.19	1.15
C	0.00	253	7.36	-0.26	-15.67(.000)	-0.38	0.95
D	0.00	968	28.15	-0.12	-7.22(.000)	0.41	0.91

## Item 28

```

-----
item:28 (r3q28)
Cases for this item  3434  Discrimination  0.50
Item Threshold(s):  0.20  Weighted MNSQ  1.00
Item Delta(s):      0.20

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	2	0.06	-0.04	-2.11(.035)	-0.67	1.25
9	0.00	50	1.46	-0.10	-5.77(.000)	-0.36	1.07
A	0.00	643	18.72	-0.30	-18.13(.000)	-0.06	0.92
B	1.00	2015	58.68	0.50	34.13(.000)	1.14	1.07
C	0.00	251	7.31	-0.28	-16.88(.000)	-0.45	0.92
D	0.00	473	13.77	-0.14	-8.21(.000)	0.24	1.22

## Item 29

```

-----
item:29 (r3q29)
Cases for this item  3430  Discrimination  0.51
Item Threshold(s):  0.72  Weighted MNSQ  0.98
Item Delta(s):      0.72

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	9	0.26	-0.04	-2.43(.015)	0.02	1.07
9	0.00	29	0.85	-0.08	-4.75(.000)	-0.61	1.03
A	0.00	386	11.25	-0.21	-12.50(.000)	-0.00	1.21
B	0.00	1039	30.29	-0.22	-13.40(.000)	0.27	0.95
C	1.00	1674	48.80	0.51	34.89(.000)	1.25	1.10
D	0.00	293	8.54	-0.28	-16.98(.000)	-0.38	0.88

## Item 30

```

-----
item:30 (r3q30)
Cases for this item  3423  Discrimination  0.32
Item Threshold(s):  1.32  Weighted MNSQ  1.16
Item Delta(s):      1.32

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	3	0.09	-0.04	-2.19(.029)	-0.47	0.95
9	0.00	59	1.72	-0.08	-4.80(.000)	-0.27	1.34
A	0.00	926	27.05	-0.22	-13.04(.000)	0.24	1.02
B	0.00	472	13.79	-0.13	-7.91(.000)	0.25	1.26
C	1.00	1284	37.51	0.32	20.01(.000)	1.18	1.23
D	0.00	679	19.84	-0.01	-0.31(.756)	0.61	0.99

## Item 31

```

-----
item:31 (r3q31)
Cases for this item  3410  Discrimination  0.32
Item Threshold(s):  1.49  Weighted MNSQ  1.14
Item Delta(s):      1.49

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	1	0.03	-0.04	-2.47(.014)	-1.56	0.00
9	0.00	42	1.23	-0.05	-2.75(.006)	0.07	1.48
A	0.00	907	26.60	-0.06	-3.40(.001)	0.54	1.09
B	1.00	1173	34.40	0.32	19.66(.000)	1.20	1.25
C	0.00	517	15.16	-0.18	-10.73(.000)	0.16	1.08
D	0.00	770	22.58	-0.13	-7.78(.000)	0.36	1.06

## Item 32

```

-----
item:32 (r3q32)
Cases for this item  3403  Discrimination  0.44
Item Threshold(s):  2.59  Weighted MNSQ  0.93
Item Delta(s):      2.59
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2358	69.29	-0.16	-9.57(.000)	0.53	1.10
1	1.00	604	17.75	0.44	28.87(.000)	1.79	0.96
9	0.00	441	12.96	-0.28	-17.16(.000)	-0.20	1.04

## Item 33

```

-----
item:33 (r3q33)
Cases for this item  3353  Discrimination  0.51
Item Threshold(s):  0.79  Weighted MNSQ  0.99
Item Delta(s):      0.79
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.04	-2.47(.014)	-1.56	0.00
9	0.00	87	2.59	-0.05	-2.89(.004)	0.15	1.24
A	0.00	508	15.15	-0.27	-16.50(.000)	-0.06	1.17
B	0.00	664	19.80	-0.21	-12.42(.000)	0.18	1.02
C	1.00	1600	47.72	0.51	33.88(.000)	1.28	1.07
D	0.00	493	14.70	-0.17	-10.24(.000)	0.17	0.94

## Item 34

```

-----
item:34 (r3q34)
Cases for this item  3299  Discrimination  0.44
Item Threshold(s):  -0.48  Weighted MNSQ  1.05
Item Delta(s):      -0.47
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.06	-0.04	-2.41(.016)	-0.67	1.25
9	0.00	46	1.39	-0.06	-3.48(.001)	0.04	1.25
A	1.00	2339	70.90	0.44	28.29(.000)	1.00	1.12
B	0.00	257	7.79	-0.31	-18.52(.000)	-0.49	0.94
C	0.00	348	10.55	-0.24	-13.91(.000)	-0.09	1.09
D	0.00	307	9.31	-0.13	-7.58(.000)	0.17	1.10

## Item 35

```

-----
item:35 (r3q35)
Cases for this item  3283  Discrimination  0.05
Item Threshold(s):  3.38  Weighted MNSQ  1.15
Item Delta(s):      3.38
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.12	-0.07	-4.01(.000)	-1.76	1.02
9	0.00	27	0.82	-0.02	-0.88(.380)	0.36	1.08
A	0.00	2052	62.50	0.05	2.72(.007)	0.72	1.18
B	1.00	332	10.11	0.05	3.14(.002)	0.91	1.53
C	0.00	438	13.34	-0.10	-5.49(.000)	0.42	1.11
D	0.00	430	13.10	-0.01	-0.55(.582)	0.62	1.17

## Item 36

```

-----
item:36 (r3q36)
Cases for this item  3268  Discrimination  0.43
Item Threshold(s):  0.55  Weighted MNSQ  1.10
Item Delta(s):      0.54

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	7	0.21	-0.07	-4.02(.000)	-1.01	1.69
9	0.00	34	1.04	-0.01	-0.45(.652)	0.52	1.09
A	1.00	1718	52.57	0.43	26.90(.000)	1.15	1.11
B	0.00	724	22.15	-0.30	-17.74(.000)	0.05	0.93
C	0.00	508	15.54	-0.07	-3.98(.000)	0.46	1.25
D	0.00	277	8.48	-0.22	-12.69(.000)	-0.15	1.15

## Item 37

```

-----
item:37 (r3q37)
Cases for this item  3258  Discrimination  0.43
Item Threshold(s):  1.20  Weighted MNSQ  1.07
Item Delta(s):      1.20

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.09	-0.05	-2.91(.004)	-0.66	0.81
9	0.00	58	1.78	-0.02	-1.37(.169)	0.44	1.10
A	0.00	589	18.08	-0.13	-7.65(.000)	0.35	1.23
B	0.00	466	14.30	-0.28	-16.50(.000)	-0.10	0.92
C	0.00	838	25.72	-0.13	-7.27(.000)	0.42	1.05
D	1.00	1304	40.02	0.43	26.81(.000)	1.29	1.14

## Item 38

```

-----
item:38 (r3q38)
Cases for this item  3230  Discrimination  0.02
Item Threshold(s):  2.80  Weighted MNSQ  1.28
Item Delta(s):      2.79

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	8	0.25	-0.01	-0.33(.743)	0.50	0.69
A	0.00	2047	63.37	0.27	15.78(.000)	0.90	1.11
B	1.00	507	15.70	0.02	1.08(.280)	0.76	1.45
C	0.00	366	11.33	-0.26	-15.17(.000)	-0.12	1.08
D	0.00	302	9.35	-0.18	-10.68(.000)	0.03	1.04

```

-----
The following traditional statistics are only meaningful for complete
designs and when the amount of missing data is minimal.
In this analysis 2.11% of the data are missing.

```

```

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

```

```

N 3530
Mean 22.66
Standard Deviation 7.28
Variance 53.00
Skewness -0.32
Kurtosis -0.61
Standard error of mean 0.12
Standard error of measurement 2.56
Coefficient Alpha 0.88

```

## Appendix B.4 Year 3 Spelling

=====

NAPLAN 2014, Calibration, Grade 3, spelling  
GENERALISED ITEM ANALYSIS

=====

Item 1

-----

item:1 (lc3q01)  
Cases for this item 3537 Discrimination 0.40  
Item Threshold(s): -4.48 Weighted MNSQ 0.94  
Item Delta(s): -4.48

-----

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	4	0.11	-0.06	-3.32(.001)	-4.95	1.02
9	0.00	18	0.51	-0.11	-6.78(.000)	-4.81	2.03
A	0.00	98	2.77	-0.24	-14.68(.000)	-4.06	1.79
B	0.00	74	2.09	-0.19	-11.56(.000)	-3.64	1.82
C	1.00	3257	92.08	0.40	25.86(.000)	-0.14	1.97
D	0.00	86	2.43	-0.20	-12.24(.000)	-3.67	1.78

=====

Item 2

-----

item:2 (lc3q02)  
Cases for this item 3537 Discrimination 0.43  
Item Threshold(s): -3.98 Weighted MNSQ 1.00  
Item Delta(s): -3.98

-----

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	3	0.08	-0.04	-2.64(.008)	-4.58	1.46
9	0.00	26	0.74	-0.11	-6.73(.000)	-4.24	2.67
A	0.00	180	5.09	-0.27	-16.47(.000)	-3.12	1.80
B	0.00	122	3.45	-0.25	-15.49(.000)	-3.63	1.80
C	0.00	49	1.39	-0.16	-9.54(.000)	-3.83	1.70
D	1.00	3157	89.26	0.43	28.56(.000)	-0.07	1.95

=====

Item 3

-----

item:3 (lc3q03)  
Cases for this item 3536 Discrimination 0.55  
Item Threshold(s): -2.81 Weighted MNSQ 1.04  
Item Delta(s): -2.82

-----

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	9	0.25	-0.05	-2.77(.006)	-3.50	2.10
9	0.00	45	1.27	-0.10	-5.89(.000)	-2.90	2.77
A	0.00	87	2.46	-0.21	-12.72(.000)	-3.53	1.66
B	0.00	93	2.63	-0.21	-13.01(.000)	-3.47	1.70
C	1.00	2834	80.15	0.55	39.15(.000)	0.18	1.86
D	0.00	468	13.24	-0.41	-26.83(.000)	-2.65	1.49

=====

Item 4

-----

item:4 (lc3q04)  
Cases for this item 3536 Discrimination 0.62  
Item Threshold(s): -2.41 Weighted MNSQ 0.87  
Item Delta(s): -2.42

-----

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
0	0.00	782	22.12	-0.59	-43.49(.000)	-2.86	1.61
1	1.00	2691	76.10	0.62	46.66(.000)	0.34	1.74
9	0.00	63	1.78	-0.14	-8.28(.000)	-3.25	1.90

=====

Item 5

-----

item:5 (lc3q05)  
Cases for this item 3530 Discrimination 0.62  
Item Threshold(s): -2.02 Weighted MNSQ 0.98

-----



Item Delta(s): -2.02

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	948	26.86	-0.60	-44.08(.000)	-2.54	1.70
1	1.00	2531	71.70	0.62	46.60(.000)	0.42	1.75
9	0.00	51	1.44	-0.12	-6.98(.000)	-3.00	2.02

Item 6

item:6 (lc3q06)

Cases for this item 3528 Discrimination 0.69  
 Item Threshold(s): -0.52 Weighted MNSQ 0.94  
 Item Delta(s): -0.52

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1661	47.08	-0.67	-53.63(.000)	-1.87	1.74
1	1.00	1827	51.79	0.69	56.83(.000)	0.94	1.61
9	0.00	40	1.13	-0.10	-6.16(.000)	-2.92	1.92

Item 7

item:7 (lc3q07)

Cases for this item 3523 Discrimination 0.68  
 Item Threshold(s): -0.38 Weighted MNSQ 0.96  
 Item Delta(s): -0.38

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1713	48.62	-0.65	-51.03(.000)	-1.78	1.75
1	1.00	1758	49.90	0.68	55.54(.000)	0.98	1.61
9	0.00	52	1.48	-0.13	-7.83(.000)	-3.16	1.90

Item 8

item:8 (lc3q08)

Cases for this item 3521 Discrimination 0.66  
 Item Threshold(s): 0.12 Weighted MNSQ 1.00  
 Item Delta(s): 0.11

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1925	54.67	-0.63	-47.97(.000)	-1.57	1.81
1	1.00	1507	42.80	0.66	52.79(.000)	1.14	1.60
9	0.00	89	2.53	-0.10	-6.05(.000)	-1.96	2.07

Item 9

item:9 (lc3q09)

Cases for this item 3519 Discrimination 0.66  
 Item Threshold(s): 0.47 Weighted MNSQ 0.98  
 Item Delta(s): 0.47

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2118	60.19	-0.63	-48.66(.000)	-1.45	1.84
1	1.00	1330	37.79	0.66	52.56(.000)	1.30	1.56
9	0.00	71	2.02	-0.08	-4.69(.000)	-1.91	1.84

## Item 10

```

-----
item:10 (lc3ql0)
Cases for this item  3512  Discrimination  0.58
Item Threshold(s):  1.31  Weighted MNSQ  1.07
Item Delta(s):      1.31
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2408	68.56	-0.47	-31.92(.000)	-1.04	1.90
1	1.00	946	26.94	0.58	41.68(.000)	1.50	1.67
9	0.00	158	4.50	-0.17	-10.17(.000)	-2.33	1.94

## Item 11

```

-----
item:11 (lc3ql1)
Cases for this item  3497  Discrimination  0.63
Item Threshold(s):  1.27  Weighted MNSQ  0.95
Item Delta(s):      1.28
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2461	70.37	-0.58	-41.76(.000)	-1.14	1.85
1	1.00	960	27.45	0.63	47.93(.000)	1.64	1.55
9	0.00	76	2.17	-0.12	-7.19(.000)	-2.52	2.25

## Item 12

```

-----
item:12 (lc3ql2)
Cases for this item  3490  Discrimination  0.55
Item Threshold(s):  2.50  Weighted MNSQ  0.92
Item Delta(s):      2.50
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2884	82.64	-0.48	-32.29(.000)	-0.84	1.93
1	1.00	520	14.90	0.55	38.54(.000)	2.27	1.44
9	0.00	86	2.46	-0.08	-4.93(.000)	-1.76	2.36

## Item 13

```

-----
item:13 (lc3ql3)
Cases for this item  3483  Discrimination  0.49
Item Threshold(s):  2.91  Weighted MNSQ  0.96
Item Delta(s):      2.91
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2883	82.77	-0.32	-19.83(.000)	-0.68	1.97
1	1.00	411	11.80	0.49	33.15(.000)	2.37	1.49
9	0.00	189	5.43	-0.17	-9.96(.000)	-1.94	1.88

## Item 14

```

-----
item:14 (lc3ql4)
Cases for this item  3471  Discrimination  0.45
Item Threshold(s):  3.28  Weighted MNSQ  0.95
Item Delta(s):      3.28
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3012	86.78	-0.32	-19.74(.000)	-0.64	1.99
1	1.00	328	9.45	0.45	30.01(.000)	2.52	1.55
9	0.00	131	3.77	-0.13	-7.85(.000)	-1.85	1.96

## Item 15

```

-----
item:15 (lc3q15)
Cases for this item  3467  Discrimination  0.68
Item Threshold(s):  -1.48  Weighted MNSQ  0.87
Item Delta(s):      -1.48
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1091	31.47	-0.63	-47.16(.000)	-2.29	1.63
1	1.00	2284	65.88	0.68	54.78(.000)	0.65	1.62
9	0.00	92	2.65	-0.20	-12.21(.000)	-3.41	1.81

## Item 16

```

-----
item:16 (lc3q16)
Cases for this item  3439  Discrimination  0.62
Item Threshold(s):  -0.70  Weighted MNSQ  1.10
Item Delta(s):      -0.69
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1394	40.54	-0.57	-40.17(.000)	-1.72	1.81
1	1.00	1904	55.36	0.62	46.15(.000)	0.78	1.69
9	0.00	141	4.10	-0.15	-8.96(.000)	-2.11	1.94

## Item 17

```

-----
item:17 (lc3q17)
Cases for this item  3424  Discrimination  0.63
Item Threshold(s):  -0.13  Weighted MNSQ  1.09
Item Delta(s):      -0.12
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1630	47.61	-0.54	-37.76(.000)	-1.47	1.80
1	1.00	1619	47.28	0.63	47.41(.000)	1.01	1.62
9	0.00	175	5.11	-0.20	-11.78(.000)	-2.33	1.85

## Item 18

```

-----
item:18 (lc3q18)
Cases for this item  3390  Discrimination  0.61
Item Threshold(s):  -0.19  Weighted MNSQ  1.12
Item Delta(s):      -0.19
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1522	44.90	-0.51	-34.84(.000)	-1.44	1.79
1	1.00	1649	48.64	0.61	44.85(.000)	0.95	1.70
9	0.00	219	6.46	-0.20	-12.00(.000)	-1.97	1.88

## Item 19

```

-----
item:19 (lc3q19)
Cases for this item  3373  Discrimination  0.71
Item Threshold(s):  -0.26  Weighted MNSQ  0.89
Item Delta(s):      -0.26
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1598	47.38	-0.66	-51.29(.000)	-1.66	1.67
1	1.00	1679	49.78	0.71	57.96(.000)	1.10	1.53
9	0.00	96	2.85	-0.14	-7.99(.000)	-2.20	2.04

## Item 20

```

-----
item:20 (lc3q20)
Cases for this item  3346  Discrimination  0.67
Item Threshold(s):  -0.27  Weighted MNSQ  0.98
Item Delta(s):      -0.27
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1543	46.11	-0.61	-44.42(.000)	-1.56	1.74
1	1.00	1681	50.24	0.67	51.73(.000)	1.03	1.56
9	0.00	122	3.65	-0.16	-9.28(.000)	-2.07	2.09

## Item 21

```

-----
item:21 (lc3q21)
Cases for this item  3309  Discrimination  0.55
Item Threshold(s):   0.30  Weighted MNSQ  1.22
Item Delta(s):      0.30
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1763	53.28	-0.50	-33.51(.000)	-1.18	1.85
1	1.00	1399	42.28	0.55	37.93(.000)	1.03	1.74
9	0.00	147	4.44	-0.10	-5.83(.000)	-1.30	1.88

## Item 22

```

-----
item:22 (lc3q22)
Cases for this item  3266  Discrimination  0.67
Item Threshold(s):   0.53  Weighted MNSQ  0.95
Item Delta(s):      0.53
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1875	57.41	-0.61	-44.26(.000)	-1.26	1.73
1	1.00	1282	39.25	0.67	51.64(.000)	1.40	1.51
9	0.00	109	3.34	-0.14	-7.90(.000)	-1.85	1.76

## Item 23

```

-----
item:23 (lc3q23)
Cases for this item  3227  Discrimination  0.56
Item Threshold(s):   1.58  Weighted MNSQ  1.06
Item Delta(s):      1.58
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2199	68.14	-0.46	-29.15(.000)	-0.82	1.85
1	1.00	823	25.50	0.56	38.21(.000)	1.67	1.63
9	0.00	205	6.35	-0.13	-7.17(.000)	-1.26	1.93

## Item 24

```

-----
item:24 (lc3q24)
Cases for this item  3160  Discrimination  0.53
Item Threshold(s):   2.10  Weighted MNSQ  1.05
Item Delta(s):      2.10
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2401	75.98	-0.45	-28.58(.000)	-0.68	1.88
1	1.00	632	20.00	0.53	35.38(.000)	1.89	1.55
9	0.00	127	4.02	-0.10	-5.60(.000)	-1.06	2.06

Item 25

-----  
item:25 (lc3q25)Cases for this item 3119 Discrimination 0.44  
Item Threshold(s): 3.24 Weighted MNSQ 1.02  
Item Delta(s): 3.24-----  

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2708	86.82	-0.38	-23.20(.000)	-0.47	1.94
1	1.00	329	10.55	0.44	27.20(.000)	2.40	1.55
9	0.00	82	2.63	-0.03	-1.65(.099)	-0.57	2.09

  
=====-----  
The following traditional statistics are only meaningful for complete designs and when the amount of missing data is minimal.  
In this analysis 3.04% of the data are missing.

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

N	3537
Mean	11.29
Standard Deviation	6.43
Variance	41.34
Skewness	0.17
Kurtosis	-0.91
Standard error of mean	0.11
Standard error of measurement	1.87
Coefficient Alpha	0.92

  
=====

## Appendix B.5 Year 5 G&amp;P

=====  
 NAPLAN 2014, Calibration, Grade 5, GP  
 GENERALISED ITEM ANALYSIS  
 =====

Item 1  
 -----

item:1 (lc5q26)

Cases for this item 3478 Discrimination 0.29  
 Item Threshold(s): -2.77 Weighted MNSQ 0.95  
 Item Delta(s): -2.77

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	3	0.09	-0.07	-4.27(.000)	-1.20	0.41
A	0.00	138	3.97	-0.23	-14.17(.000)	-0.42	1.06
B	1.00	3308	95.11	0.29	17.85(.000)	0.73	1.02
C	0.00	19	0.55	-0.13	-7.46(.000)	-0.81	1.00
D	0.00	10	0.29	-0.10	-6.08(.000)	-1.09	0.62

Item 2  
 -----

item:2 (lc5q27)

Cases for this item 3478 Discrimination 0.36  
 Item Threshold(s): -2.19 Weighted MNSQ 0.94  
 Item Delta(s): -2.19

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.03	-1.68(.094)	-1.46	0.00
9	0.00	7	0.20	-0.07	-4.37(.000)	-0.53	1.36
A	0.00	117	3.36	-0.26	-16.11(.000)	-0.59	0.87
B	1.00	3197	91.92	0.36	22.64(.000)	0.77	1.01
C	0.00	49	1.41	-0.14	-8.29(.000)	-0.45	1.17
D	0.00	107	3.08	-0.17	-10.39(.000)	-0.22	0.86

Item 3  
 -----

item:3 (lc5q28)

Cases for this item 3478 Discrimination 0.34  
 Item Threshold(s): -1.86 Weighted MNSQ 0.97  
 Item Delta(s): -1.86

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	10	0.29	-0.09	-5.24(.000)	-1.09	0.75
A	0.00	259	7.45	-0.30	-18.82(.000)	-0.33	1.01
B	1.00	3110	89.42	0.34	21.26(.000)	0.78	1.00
C	0.00	78	2.24	-0.10	-5.75(.000)	0.09	1.17
D	0.00	21	0.60	-0.07	-4.13(.000)	-0.23	1.01

## Item 4

```

-----
item:4 (lc5q29)
Cases for this item  3475  Discrimination  0.44
Item Threshold(s):  -2.05  Weighted MNSQ  0.88
Item Delta(s):      -2.05

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	6	0.17	-0.06	-3.61(.000)	-0.59	0.92
9	0.00	16	0.46	-0.12	-7.03(.000)	-0.86	0.85
A	0.00	138	3.97	-0.29	-17.78(.000)	-0.65	0.85
B	0.00	123	3.54	-0.23	-13.90(.000)	-0.51	0.76
C	0.00	32	0.92	-0.18	-11.08(.000)	-1.03	0.80
D	1.00	3160	90.94	0.44	29.07(.000)	0.80	0.99

## Item 5

```

-----
item:5 (lc5q30)
Cases for this item  3473  Discrimination  0.42
Item Threshold(s):  -1.16  Weighted MNSQ  0.98
Item Delta(s):      -1.15

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
9	0.00	22	0.63	-0.10	-5.89(.000)	-0.53	1.14
A	0.00	347	9.99	-0.26	-16.13(.000)	-0.01	0.86
B	0.00	62	1.79	-0.20	-11.79(.000)	-0.73	0.91
C	1.00	2848	82.00	0.42	27.50(.000)	0.85	1.00
D	0.00	194	5.59	-0.22	-12.97(.000)	-0.12	0.92

## Item 6

```

-----
item:6 (lc5q31)
Cases for this item  3472  Discrimination  0.39
Item Threshold(s):  -1.66  Weighted MNSQ  0.96
Item Delta(s):      -1.66

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	14	0.40	-0.02	-1.21(.227)	0.43	0.64
9	0.00	14	0.40	-0.08	-4.93(.000)	-0.73	1.14
A	1.00	3044	87.67	0.39	24.73(.000)	0.81	1.00
B	0.00	96	2.76	-0.15	-9.05(.000)	-0.23	0.98
C	0.00	79	2.28	-0.18	-11.02(.000)	-0.49	0.89
D	0.00	225	6.48	-0.28	-17.03(.000)	-0.32	0.91

## Item 7

```

-----
item:7 (lc5q32)
Cases for this item  3472  Discrimination  0.47
Item Threshold(s):  -1.19  Weighted MNSQ  0.93
Item Delta(s):      -1.18

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
9	0.00	16	0.46	-0.09	-5.20(.000)	-0.55	1.01
A	1.00	2861	82.40	0.47	31.56(.000)	0.89	0.96
B	0.00	195	5.62	-0.21	-12.87(.000)	-0.18	0.86
C	0.00	120	3.46	-0.23	-14.07(.000)	-0.45	0.85
D	0.00	280	8.06	-0.30	-18.67(.000)	-0.34	0.93

## Item 8

```

-----
item:8 (lc5q33)
Cases for this item  3470  Discrimination  0.49
Item Threshold(s):  -0.70  Weighted MNSQ  0.94
Item Delta(s):      -0.70

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	1	0.03	-0.04	-2.33(.020)	-0.75	0.00
9	0.00	24	0.69	-0.09	-5.46(.000)	-0.55	1.17
A	0.00	382	11.01	-0.29	-17.86(.000)	-0.09	0.94
B	1.00	2623	75.59	0.49	33.05(.000)	0.93	0.96
C	0.00	254	7.32	-0.22	-13.24(.000)	-0.06	0.96
D	0.00	186	5.36	-0.24	-14.53(.000)	-0.24	0.89

## Item 9

```

-----
item:9 (lc5q34)
Cases for this item  3470  Discrimination  0.44
Item Threshold(s):  -0.52  Weighted MNSQ  1.01
Item Delta(s):      -0.52

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	1	0.03	-0.05	-2.76(.006)	-2.09	0.00
9	0.00	19	0.55	-0.12	-6.92(.000)	-0.87	1.18
A	0.00	629	18.13	-0.23	-14.16(.000)	0.17	0.88
B	0.00	164	4.73	-0.24	-14.44(.000)	-0.30	0.92
C	0.00	136	3.92	-0.23	-14.12(.000)	-0.40	0.83
D	1.00	2521	72.65	0.44	28.69(.000)	0.93	0.98

## Item 10

```

-----
item:10 (lc5q35)
Cases for this item  3468  Discrimination  0.50
Item Threshold(s):  -0.44  Weighted MNSQ  0.95
Item Delta(s):      -0.43

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	2	0.06	-0.02	-1.32(.186)	0.28	1.46
9	0.00	22	0.63	-0.11	-6.55(.000)	-0.57	1.04
A	1.00	2472	71.28	0.50	34.01(.000)	0.98	0.96
B	0.00	282	8.13	-0.28	-17.25(.000)	-0.24	0.87
C	0.00	453	13.06	-0.26	-16.02(.000)	0.06	0.90
D	0.00	237	6.83	-0.20	-12.32(.000)	-0.07	0.87

## Item 11

```

-----
item:11 (lc5q36)
Cases for this item  3468  Discrimination  0.41
Item Threshold(s):  -0.69  Weighted MNSQ  1.02
Item Delta(s):      -0.69

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
9	0.00	11	0.32	-0.07	-4.33(.000)	-0.65	1.16
A	0.00	231	6.66	-0.28	-17.41(.000)	-0.32	0.82
B	0.00	561	16.18	-0.22	-13.30(.000)	0.21	0.97
C	0.00	50	1.44	-0.16	-9.59(.000)	-0.63	0.91
D	1.00	2615	75.40	0.41	26.20(.000)	0.89	0.99



## Item 12

```

-----
item:12 (lc5q37)
Cases for this item  3466  Discrimination  0.51
Item Threshold(s):  0.17  Weighted MNSQ  0.97
Item Delta(s):      0.17

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	20	0.58	-0.09	-5.56(.000)	-0.53	0.94
A	0.00	955	27.55	-0.25	-14.88(.000)	0.28	0.84
B	0.00	187	5.40	-0.29	-17.52(.000)	-0.45	0.78
C	0.00	221	6.38	-0.29	-17.70(.000)	-0.35	0.76
D	1.00	2083	60.10	0.51	35.22(.000)	1.08	0.96

## Item 13

```

-----
item:13 (lc5q38)
Cases for this item  3466  Discrimination  0.50
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
9	0.00	33	0.95	-0.07	-3.85(.000)	0.01	1.07
A	0.00	314	9.06	-0.23	-13.76(.000)	0.03	0.86
B	1.00	2142	61.80	0.50	34.05(.000)	1.05	0.99
C	0.00	709	20.46	-0.31	-19.45(.000)	0.09	0.85
D	0.00	268	7.73	-0.17	-10.07(.000)	0.11	0.89

## Item 14

```

-----
item:14 (lc5q39)
Cases for this item  3465  Discrimination  0.54
Item Threshold(s):  0.21  Weighted MNSQ  0.94
Item Delta(s):      0.21

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	10	0.29	-0.03	-1.80(.072)	0.12	0.43
9	0.00	29	0.84	-0.08	-4.67(.000)	-0.26	1.06
A	0.00	936	27.01	-0.36	-22.69(.000)	0.13	0.83
B	0.00	220	6.35	-0.20	-12.26(.000)	-0.03	0.82
C	1.00	2059	59.42	0.54	38.20(.000)	1.10	0.97
D	0.00	211	6.09	-0.21	-12.33(.000)	-0.13	0.88

## Item 15

```

-----
item:15 (lc5q40)
Cases for this item  3464  Discrimination  0.51
Item Threshold(s):  0.05  Weighted MNSQ  0.97
Item Delta(s):      0.05

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.05	-2.76(.006)	-2.09	0.00
9	0.00	21	0.61	-0.09	-5.17(.000)	-0.65	1.10
A	0.00	365	10.54	-0.26	-16.01(.000)	-0.05	0.85
B	0.00	565	16.31	-0.24	-14.79(.000)	0.18	0.90
C	1.00	2167	62.56	0.51	34.56(.000)	1.05	0.96
D	0.00	345	9.96	-0.22	-13.47(.000)	0.04	0.91

## Item 16

```

-----
item:16 (lc5q41)
Cases for this item  3460  Discrimination  0.53
Item Threshold(s):  0.22  Weighted MNSQ  0.94
Item Delta(s):      0.22

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	80	2.31	-0.09	-5.02(.000)	0.18	0.88
9	0.00	31	0.90	-0.09	-5.31(.000)	-0.31	1.00
A	0.00	565	16.33	-0.32	-20.07(.000)	0.01	0.86
B	0.00	510	14.74	-0.19	-11.21(.000)	0.24	0.93
C	1.00	2048	59.19	0.53	36.82(.000)	1.09	0.94
D	0.00	226	6.53	-0.22	-13.12(.000)	-0.13	0.91

## Item 17

```

-----
item:17 (lc5q42)
Cases for this item  3456  Discrimination  0.54
Item Threshold(s):  0.66  Weighted MNSQ  0.94
Item Delta(s):      0.66

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	10	0.29	-0.04	-2.49(.013)	0.06	0.74
9	0.00	51	1.48	-0.09	-5.52(.000)	-0.15	0.97
A	0.00	227	6.57	-0.28	-17.19(.000)	-0.32	0.83
B	0.00	1067	30.87	-0.26	-15.53(.000)	0.33	0.84
C	0.00	360	10.42	-0.23	-13.73(.000)	0.07	0.94
D	1.00	1741	50.38	0.54	37.83(.000)	1.18	0.95

## Item 18

```

-----
item:18 (lc5q43)
Cases for this item  3453  Discrimination  0.47
Item Threshold(s):  0.70  Weighted MNSQ  1.01
Item Delta(s):      0.70

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	2	0.06	-0.02	-1.33(.184)	-0.03	0.35
9	0.00	48	1.39	-0.11	-6.30(.000)	-0.20	0.96
A	0.00	390	11.29	-0.24	-14.59(.000)	0.07	0.86
B	0.00	855	24.76	-0.20	-11.93(.000)	0.34	0.92
C	1.00	1716	49.70	0.47	31.08(.000)	1.13	0.99
D	0.00	442	12.80	-0.18	-10.46(.000)	0.23	0.93

## Item 19

```

-----
item:19 (lc5q44)
Cases for this item  3449  Discrimination  0.49
Item Threshold(s):  0.80  Weighted MNSQ  0.98
Item Delta(s):      0.81

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	1	0.03	-0.01	-0.83(.405)	0.21	0.00
9	0.00	23	0.67	-0.06	-3.67(.000)	-0.35	1.17
A	0.00	517	14.99	-0.26	-16.07(.000)	0.08	0.79
B	0.00	541	15.69	-0.23	-13.97(.000)	0.21	0.91
C	0.00	730	21.17	-0.15	-8.91(.000)	0.39	0.95
D	1.00	1637	47.46	0.49	33.06(.000)	1.17	0.98

## Item 20

```

-----
item:20 (lc5q45)
Cases for this item  3443  Discrimination  0.34
Item Threshold(s):  1.06  Weighted MNSQ  1.12
Item Delta(s):      1.06
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1	SD:l
9	0.00	51	1.48	-0.06	-3.58(.000)	0.10	1.11	
A	0.00	1293	37.55	-0.03	-1.74(.081)	0.62	0.89	
B	1.00	1458	42.35	0.34	21.42(.000)	1.10	1.04	
C	0.00	327	9.50	-0.26	-16.07(.000)	-0.11	0.89	
D	0.00	314	9.12	-0.24	-14.76(.000)	-0.03	0.92	

## Item 21

```

-----
item:21 (lc5q46)
Cases for this item  3434  Discrimination  0.50
Item Threshold(s):  0.63  Weighted MNSQ  0.99
Item Delta(s):      0.64
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1	SD:l
8	0.00	1	0.03	0.01	0.45(.650)	1.15	0.00	
9	0.00	28	0.82	-0.08	-4.75(.000)	-0.25	1.03	
A	0.00	682	19.86	-0.31	-19.41(.000)	0.09	0.85	
B	0.00	704	20.50	-0.18	-10.61(.000)	0.34	0.88	
C	0.00	267	7.78	-0.17	-9.82(.000)	0.20	1.08	
D	1.00	1752	51.02	0.50	33.61(.000)	1.15	0.96	

## Item 22

```

-----
item:22 (lc5q47)
Cases for this item  3431  Discrimination  0.43
Item Threshold(s):  1.34  Weighted MNSQ  1.02
Item Delta(s):      1.35
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1	SD:l
8	0.00	3	0.09	-0.04	-2.32(.020)	-0.40	0.52	
9	0.00	45	1.31	-0.04	-2.47(.014)	0.27	1.20	
A	0.00	837	24.40	-0.14	-8.41(.000)	0.44	0.94	
B	0.00	754	21.98	-0.21	-12.27(.000)	0.32	0.93	
C	0.00	526	15.33	-0.15	-8.74(.000)	0.36	0.96	
D	1.00	1266	36.90	0.43	27.50(.000)	1.22	0.99	

## Item 23

```

-----
item:23 (lc5q48)
Cases for this item  3419  Discrimination  0.29
Item Threshold(s):  1.77  Weighted MNSQ  1.12
Item Delta(s):      1.77
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1	SD:l
9	0.00	18	0.53	-0.04	-2.51(.012)	0.24	0.91	
A	1.00	999	29.22	0.29	17.81(.000)	1.13	1.08	
B	0.00	370	10.82	-0.22	-13.03(.000)	0.08	1.03	
C	0.00	1283	37.53	0.04	2.33(.020)	0.73	0.95	
D	0.00	749	21.91	-0.20	-11.69(.000)	0.34	0.90	

## Item 24

```

-----
item:24 (lc5q49)
Cases for this item   3409   Discrimination   0.47
Item Threshold(s):   1.56   Weighted MNSQ   0.95
Item Delta(s):       1.56
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
9	0.00	42	1.23	-0.05	-3.02(.003)	0.27	0.91
A	0.00	816	23.94	-0.22	-13.39(.000)	0.31	0.89
B	0.00	518	15.20	-0.24	-14.65(.000)	0.17	0.86
C	1.00	1122	32.91	0.47	31.02(.000)	1.33	1.03
D	0.00	911	26.72	-0.07	-4.23(.000)	0.55	0.90

## Item 25

```

-----
item:25 (lc5q50)
Cases for this item   3400   Discrimination   0.03
Item Threshold(s):   2.88   Weighted MNSQ   1.21
Item Delta(s):       2.88
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	2	0.06	-0.06	-3.32(.001)	-1.62	0.79
9	0.00	20	0.59	0.00	0.12(.907)	0.50	1.16
A	0.00	678	19.94	-0.06	-3.23(.001)	0.57	1.02
B	1.00	471	13.85	0.03	1.46(.144)	0.76	1.16
C	0.00	2040	60.00	0.11	6.72(.000)	0.78	1.00
D	0.00	189	5.56	-0.18	-10.71(.000)	0.01	0.96

## Item 26

```

-----
item:26 (lc5q51)
Cases for this item   3393   Discrimination   0.03
Item Threshold(s):   3.05   Weighted MNSQ   1.17
Item Delta(s):       3.04
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	2	0.06	-0.05	-2.86(.004)	-1.23	1.34
9	0.00	16	0.47	-0.02	-1.05(.296)	0.53	1.01
A	0.00	801	23.61	-0.22	-13.08(.000)	0.31	0.93
B	0.00	1244	36.66	0.13	7.63(.000)	0.85	1.04
C	0.00	916	27.00	0.05	2.82(.005)	0.77	0.95
D	1.00	414	12.20	0.03	2.03(.043)	0.79	1.28

```

-----
The following traditional statistics are only meaningful for complete
designs and when the amount of missing data is minimal.
In this analysis 0.68% of the data are missing.
-----

```

```

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

```

```

N                               3478
Mean                            15.85
Standard Deviation                4.69
Variance                         21.97
Skewness                         -0.27
Kurtosis                         -0.53
Standard error of mean            0.08
Standard error of measurement    2.07
Coefficient Alpha                  0.80
-----

```

## Appendix B.6 Year 5 Numeracy

```
=====
NAPLAN 2014, Calibration, Grade 5, numeracy
GENERALISED ITEM ANALYSIS
=====
```

```
Item 1
-----
```

```
item:1 (n5q01)
Cases for this item  3474  Discrimination  0.29
Item Threshold(s):  -3.01  Weighted MNSQ  0.96
Item Delta(s):      -3.01
```

```
-----
Label      Score      Count      % of tot  Pt Bis      t      (p)      PVIAvg:l  PVI  SD:l
-----
  9         0.00         10         0.29     -0.06     -3.44(.001) -0.69      0.76
  A         0.00         15         0.43     -0.11     -6.43(.000) -1.75      1.01
  B         0.00        131         3.77     -0.22    -13.22(.000) -0.89      1.03
  C         1.00       3263        93.93      0.29     17.65(.000)  0.28      1.04
  D         0.00         55         1.58     -0.13     -7.92(.000) -0.81      1.03
=====
```

```
Item 2
-----
```

```
item:2 (n5q02)
Cases for this item  3474  Discrimination  0.31
Item Threshold(s):  -2.80  Weighted MNSQ  0.93
Item Delta(s):      -2.79
```

```
-----
Label      Score      Count      % of tot  Pt Bis      t      (p)      PVIAvg:l  PVI  SD:l
-----
  8         0.00          2         0.06     -0.06     -3.57(.000) -3.14      0.80
  9         0.00         17         0.49     -0.11     -6.70(.000) -1.34      1.20
  A         0.00        101         2.91     -0.18    -10.53(.000) -0.91      1.09
  B         0.00         54         1.55     -0.20    -12.19(.000) -1.42      0.83
  C         0.00         79         2.27     -0.12     -7.10(.000) -0.65      1.27
  D         1.00       3221        92.72      0.31     19.54(.000)  0.30      1.02
=====
```

```
Item 3
-----
```

```
item:3 (n5q03)
Cases for this item  3474  Discrimination  0.39
Item Threshold(s):  -2.61  Weighted MNSQ  0.89
Item Delta(s):      -2.61
```

```
-----
Label      Score      Count      % of tot  Pt Bis      t      (p)      PVIAvg:l  PVI  SD:l
-----
  9         0.00         19         0.55     -0.10     -5.74(.000) -1.19      1.24
  A         0.00         68         1.96     -0.19    -11.54(.000) -1.09      0.86
  B         0.00        102         2.94     -0.20    -11.82(.000) -0.94      0.80
  C         0.00        106         3.05     -0.25    -15.20(.000) -1.27      0.85
  D         1.00       3179        91.51      0.39     25.28(.000)  0.33      1.02
=====
```

## Item 4

```

-----
item:4 (n5q04)
Cases for this item  3474  Discrimination  0.47
Item Threshold(s):  -2.09  Weighted MNSQ  0.87
Item Delta(s):      -2.08

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	0.00	0.10(.917)	-0.23	0.00
9	0.00	16	0.46	-0.06	-3.83(.000)	-0.59	1.01
A	0.00	125	3.60	-0.26	-15.87(.000)	-1.20	0.86
B	0.00	171	4.92	-0.25	-15.10(.000)	-0.85	0.81
C	0.00	72	2.07	-0.20	-12.34(.000)	-1.22	0.81
D	1.00	3025	87.08	0.47	31.08(.000)	0.39	0.99
E	0.00	64	1.84	-0.15	-9.24(.000)	-0.94	0.92

## Item 5

```

-----
item:5 (n5q05)
Cases for this item  3473  Discrimination  0.42
Item Threshold(s):  -1.74  Weighted MNSQ  0.94
Item Delta(s):      -1.74

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.12	-0.00	-0.08(.938)	-0.11	0.30
9	0.00	26	0.75	-0.11	-6.58(.000)	-1.19	1.13
A	0.00	81	2.33	-0.24	-14.72(.000)	-1.44	0.82
B	0.00	282	8.12	-0.18	-10.61(.000)	-0.38	0.94
C	0.00	185	5.33	-0.27	-16.67(.000)	-0.93	0.83
D	1.00	2895	83.36	0.42	27.12(.000)	0.39	1.00

## Item 6

```

-----
item:6 (n5q06)
Cases for this item  3472  Discrimination  0.28
Item Threshold(s):  -2.00  Weighted MNSQ  1.05
Item Delta(s):      -2.00

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	10	0.29	-0.05	-3.19(.001)	-0.89	1.14
A	0.00	364	10.48	-0.20	-11.90(.000)	-0.38	1.01
B	1.00	2996	86.29	0.28	17.13(.000)	0.32	1.04
C	0.00	64	1.84	-0.11	-6.35(.000)	-0.57	1.01
D	0.00	16	0.46	-0.13	-7.79(.000)	-1.72	0.96
E	0.00	22	0.63	-0.12	-6.85(.000)	-1.34	1.01

## Item 7

```

-----
item:7 (n5q07)
Cases for this item  3472  Discrimination  0.45
Item Threshold(s):  -1.48  Weighted MNSQ  0.94
Item Delta(s):      -1.48

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	21	0.60	-0.12	-7.00(.000)	-1.43	1.25
A	0.00	375	10.80	-0.20	-12.18(.000)	-0.39	0.82
B	1.00	2780	80.07	0.45	29.59(.000)	0.43	1.00
C	0.00	195	5.62	-0.35	-21.87(.000)	-1.22	0.78
D	0.00	101	2.91	-0.16	-9.65(.000)	-0.77	0.88

## Item 8

```

-----
item:8 (n5q08)
Cases for this item  3470  Discrimination  0.24
Item Threshold(s):  -2.16  Weighted MNSQ  1.08
Item Delta(s):      -2.15

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	2	0.06	-0.00	-0.26(.795)	-0.30	0.18
9	0.00	8	0.23	-0.11	-6.24(.000)	-2.09	1.31
A	0.00	46	1.33	-0.13	-7.64(.000)	-0.91	0.88
B	0.00	178	5.13	-0.14	-8.05(.000)	-0.42	0.94
C	1.00	3047	87.81	0.24	14.54(.000)	0.30	1.05
D	0.00	189	5.45	-0.13	-7.51(.000)	-0.36	1.00

## Item 9

```

-----
item:9 (n5q09)
Cases for this item  3470  Discrimination  0.42
Item Threshold(s):  -1.34  Weighted MNSQ  0.98
Item Delta(s):      -1.34

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
9	0.00	10	0.29	-0.11	-6.77(.000)	-1.88	1.06
A	0.00	491	14.15	-0.30	-18.45(.000)	-0.53	0.91
B	1.00	2711	78.13	0.42	27.56(.000)	0.44	1.01
C	0.00	79	2.28	-0.18	-10.87(.000)	-1.00	1.01
D	0.00	179	5.16	-0.17	-10.22(.000)	-0.54	0.81

## Item 10

```

-----
item:10 (n5q10)
Cases for this item  3469  Discrimination  0.53
Item Threshold(s):  -1.23  Weighted MNSQ  0.87
Item Delta(s):      -1.23

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
9	0.00	31	0.89	-0.08	-4.66(.000)	-0.73	1.20
A	0.00	407	11.73	-0.34	-21.51(.000)	-0.72	0.87
B	0.00	146	4.21	-0.17	-10.23(.000)	-0.59	0.84
C	0.00	230	6.63	-0.29	-18.17(.000)	-0.85	0.86
D	1.00	2655	76.54	0.53	37.02(.000)	0.50	0.96

## Item 11

```

-----
item:11 (n5q11)
Cases for this item  3469  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:l	PV1 SD:l
9	0.00	14	0.40	-0.12	-7.09(.000)	-1.76	1.24
A	0.00	402	11.59	-0.31	-18.91(.000)	-0.63	0.83
B	0.00	400	11.53	-0.28	-17.27(.000)	-0.54	0.81
C	1.00	2516	72.53	0.52	35.56(.000)	0.52	0.99
D	0.00	137	3.95	-0.18	-10.90(.000)	-0.70	0.89

## Item 12

```

-----
item:12 (n5ql2)
Cases for this item  3468  Discrimination  0.47
Item Threshold(s):  -1.16  Weighted MNSQ  0.94
Item Delta(s):      -1.15

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	5	0.14	-0.00	-0.29(.773)	0.04	0.45
9	0.00	19	0.55	-0.11	-6.80(.000)	-1.31	1.20
A	1.00	2613	75.35	0.47	30.97(.000)	0.48	0.98
B	0.00	507	14.62	-0.34	-21.22(.000)	-0.60	0.83
C	0.00	160	4.61	-0.11	-6.79(.000)	-0.30	1.05
D	0.00	164	4.73	-0.23	-13.72(.000)	-0.84	0.98

## Item 13

```

-----
item:13 (n5ql3)
Cases for this item  3468  Discrimination  0.44
Item Threshold(s):  -0.66  Weighted MNSQ  1.01
Item Delta(s):      -0.66

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	2	0.06	-0.03	-1.88(.060)	-1.13	1.47
9	0.00	28	0.81	-0.12	-7.32(.000)	-1.28	0.97
A	0.00	377	10.87	-0.17	-10.26(.000)	-0.31	0.87
B	1.00	2320	66.90	0.44	28.55(.000)	0.52	1.01
C	0.00	327	9.43	-0.25	-15.50(.000)	-0.59	0.82
D	0.00	414	11.94	-0.20	-12.19(.000)	-0.33	0.98

## Item 14

```

-----
item:14 (n5ql4)
Cases for this item  3467  Discrimination  0.40
Item Threshold(s):  -0.70  Weighted MNSQ  1.05
Item Delta(s):      -0.70

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	2	0.06	-0.03	-1.68(.093)	-1.10	0.58
9	0.00	40	1.15	-0.07	-3.93(.000)	-0.53	1.18
A	0.00	72	2.08	-0.16	-9.42(.000)	-0.96	0.87
B	0.00	404	11.65	-0.22	-13.02(.000)	-0.35	0.88
C	1.00	2350	67.78	0.40	25.48(.000)	0.49	1.02
D	0.00	599	17.28	-0.23	-13.75(.000)	-0.30	0.97

## Item 15

```

-----
item:15 (n5ql5)
Cases for this item  3467  Discrimination  0.54
Item Threshold(s):  -0.39  Weighted MNSQ  0.92
Item Delta(s):      -0.39

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	1	0.03	0.02	1.24(.214)	1.80	0.00
9	0.00	47	1.36	-0.12	-6.98(.000)	-1.03	1.04
A	1.00	2148	61.96	0.54	37.32(.000)	0.62	0.97
B	0.00	323	9.32	-0.33	-20.44(.000)	-0.78	0.82
C	0.00	403	11.62	-0.30	-18.84(.000)	-0.61	0.81
D	0.00	545	15.72	-0.15	-8.77(.000)	-0.11	0.85



## Item 16

```

-----
item:16 (n5q16)
Cases for this item  3467  Discrimination  0.39
Item Threshold(s):  -0.13  Weighted MNSQ  1.09
Item Delta(s):      -0.13

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.06	-0.04	-2.59(.010)	-1.22	0.13
9	0.00	15	0.43	-0.11	-6.76(.000)	-1.73	1.25
A	1.00	1973	56.91	0.39	24.62(.000)	0.55	1.00
B	0.00	760	21.92	-0.21	-12.44(.000)	-0.19	0.95
C	0.00	362	10.44	-0.13	-7.95(.000)	-0.19	1.01
D	0.00	355	10.24	-0.19	-11.09(.000)	-0.33	1.06

## Item 17

```

-----
item:17 (n5q17)
Cases for this item  3467  Discrimination  0.33
Item Threshold(s):  -0.38  Weighted MNSQ  1.12
Item Delta(s):      -0.38

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.09	-0.04	-2.22(.027)	-1.37	0.60
9	0.00	25	0.72	-0.10	-5.84(.000)	-1.21	1.13
A	0.00	350	10.10	-0.19	-11.41(.000)	-0.33	0.98
B	0.00	154	4.44	-0.21	-12.60(.000)	-0.80	0.96
C	1.00	2139	61.70	0.33	20.54(.000)	0.48	1.01
D	0.00	597	17.22	-0.06	-3.81(.000)	0.05	1.05
E	0.00	199	5.74	-0.11	-6.59(.000)	-0.21	0.92

## Item 18

```

-----
item:18 (n5q18)
Cases for this item  3467  Discrimination  0.36
Item Threshold(s):  -0.48  Weighted MNSQ  1.11
Item Delta(s):      -0.49

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.02	-1.33(.184)	-0.84	0.00
9	0.00	12	0.35	-0.09	-5.31(.000)	-1.43	1.51
A	1.00	2211	63.77	0.36	22.36(.000)	0.48	1.05
B	0.00	984	28.38	-0.27	-16.68(.000)	-0.22	0.92
C	0.00	73	2.11	-0.11	-6.28(.000)	-0.54	1.03
D	0.00	186	5.36	-0.12	-7.07(.000)	-0.28	1.07

## Item 19

```

-----
item:19 (n5q19)
Cases for this item  3467  Discrimination  0.36
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
9	0.00	11	0.32	-0.09	-5.03(.000)	-1.61	1.29
A	1.00	1969	56.79	0.36	22.79(.000)	0.53	1.04
B	0.00	105	3.03	-0.18	-10.83(.000)	-0.78	1.04
C	0.00	1116	32.19	-0.23	-14.05(.000)	-0.14	0.94
D	0.00	266	7.67	-0.13	-7.71(.000)	-0.22	0.94

## Item 20

```

-----
item:20 (n5q20)
Cases for this item  3465  Discrimination  0.34
Item Threshold(s):  0.41  Weighted MNSQ  1.12
Item Delta(s):      0.42
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
9	0.00	24	0.69	-0.08	-4.49(.000)	-0.77	1.41
A	0.00	310	8.95	-0.21	-12.61(.000)	-0.47	0.90
B	0.00	493	14.23	-0.23	-13.79(.000)	-0.36	0.86
C	0.00	1049	30.27	-0.05	-3.24(.001)	0.12	1.01
D	1.00	1589	45.86	0.34	21.52(.000)	0.60	1.03

## Item 21

```

-----
item:21 (n5q21)
Cases for this item  3465  Discrimination  0.44
Item Threshold(s):  -0.63  Weighted MNSQ  1.00
Item Delta(s):      -0.63
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
9	0.00	41	1.18	-0.10	-5.63(.000)	-0.70	1.20
A	0.00	409	11.80	-0.26	-16.03(.000)	-0.48	0.84
B	0.00	350	10.10	-0.27	-16.81(.000)	-0.59	0.90
C	1.00	2305	66.52	0.44	28.99(.000)	0.52	1.00
D	0.00	91	2.63	-0.12	-6.97(.000)	-0.52	0.75
E	0.00	269	7.76	-0.04	-2.62(.009)	0.06	1.05

## Item 22

```

-----
item:22 (n5q22)
Cases for this item  3463  Discrimination  0.40
Item Threshold(s):  0.28  Weighted MNSQ  1.07
Item Delta(s):      0.28
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
9	0.00	19	0.55	-0.10	-5.65(.000)	-1.15	1.30
A	0.00	1468	42.39	-0.27	-16.25(.000)	-0.10	0.98
B	0.00	167	4.82	-0.18	-10.71(.000)	-0.56	0.87
C	1.00	1685	48.66	0.40	25.49(.000)	0.62	1.01
D	0.00	124	3.58	-0.12	-6.94(.000)	-0.43	0.95

## Item 23

```

-----
item:23 (n5q23)
Cases for this item  3462  Discrimination  0.46
Item Threshold(s):  0.29  Weighted MNSQ  1.01
Item Delta(s):      0.29
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	19	0.55	-0.04	-2.26(.024)	-0.37	0.86
9	0.00	27	0.78	-0.08	-4.76(.000)	-0.75	1.19
A	0.00	401	11.58	-0.08	-4.81(.000)	-0.03	0.92
B	0.00	223	6.44	-0.10	-5.62(.000)	-0.18	1.04
C	0.00	1116	32.24	-0.36	-22.94(.000)	-0.30	0.94
D	1.00	1676	48.41	0.46	30.36(.000)	0.69	0.99

## Item 24

```

-----
item:24 (n5q24)
Cases for this item  3462  Discrimination  0.42
Item Threshold(s):  -0.30  Weighted MNSQ  1.05
Item Delta(s):      -0.30
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	16	0.46	-0.09	-5.03(.000)	-1.12	1.53
A	1.00	2087	60.28	0.42	26.92(.000)	0.55	1.02
B	0.00	278	8.03	-0.22	-13.44(.000)	-0.55	0.83
C	0.00	711	20.54	-0.16	-9.42(.000)	-0.09	0.93
D	0.00	370	10.69	-0.24	-14.39(.000)	-0.47	0.95

## Item 25

```

-----
item:25 (n5q25)
Cases for this item  3462  Discrimination  0.30
Item Threshold(s):   0.84  Weighted MNSQ  1.15
Item Delta(s):      0.84
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	17	0.49	-0.07	-4.19(.000)	-0.92	1.63
A	0.00	455	13.14	-0.02	-1.25(.213)	0.15	1.02
B	1.00	1298	37.49	0.30	18.63(.000)	0.60	1.10
C	0.00	209	6.04	-0.28	-17.02(.000)	-0.89	0.86
D	0.00	1483	42.84	-0.14	-8.14(.000)	0.06	0.92

## Item 26

```

-----
item:26 (n5q26)
Cases for this item  3460  Discrimination  0.48
Item Threshold(s):   0.63  Weighted MNSQ  0.97
Item Delta(s):      0.62
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.01	-0.47(.637)	-0.69	0.00
9	0.00	28	0.81	-0.07	-3.96(.000)	-0.68	1.35
A	0.00	430	12.43	-0.25	-14.99(.000)	-0.44	0.98
B	0.00	855	24.71	-0.22	-13.43(.000)	-0.16	0.91
C	0.00	701	20.26	-0.13	-7.96(.000)	-0.04	0.89
D	1.00	1445	41.76	0.48	32.33(.000)	0.77	1.01

## Item 27

```

-----
item:27 (n5q27)
Cases for this item  3458  Discrimination  0.50
Item Threshold(s):   0.84  Weighted MNSQ  0.95
Item Delta(s):      0.84
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1892	54.71	-0.43	-27.77(.000)	-0.17	0.93
1	1.00	1300	37.59	0.50	34.35(.000)	0.87	0.95
9	0.00	266	7.69	-0.12	-7.05(.000)	-0.23	1.08

## Item 28

```

-----
item:28 (n5q28)
Cases for this item  3458  Discrimination  0.39
Item Threshold(s):  1.44  Weighted MNSQ  1.02
Item Delta(s):      1.44
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	23	0.67	-0.10	-5.64(.000)	-0.95	1.31
A	0.00	1439	41.61	-0.29	-17.60(.000)	-0.13	0.89
B	0.00	195	5.64	-0.20	-11.72(.000)	-0.56	0.90
C	0.00	866	25.04	0.05	3.05(.002)	0.30	0.98
D	1.00	935	27.04	0.39	24.65(.000)	0.86	1.09

## Item 29

```

-----
item:29 (n5q29)
Cases for this item  3458  Discrimination  0.53
Item Threshold(s):  0.77  Weighted MNSQ  0.93
Item Delta(s):      0.77
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2039	58.96	-0.48	-32.53(.000)	-0.18	0.95
1	1.00	1350	39.04	0.53	36.67(.000)	0.86	0.91
9	0.00	69	2.00	-0.14	-8.50(.000)	-0.89	1.07

## Item 30

```

-----
item:30 (n5q30)
Cases for this item  3454  Discrimination  0.46
Item Threshold(s):  1.00  Weighted MNSQ  1.00
Item Delta(s):      1.00
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.01	-0.33(.740)	-0.27	0.00
9	0.00	15	0.43	-0.08	-4.85(.000)	-1.21	1.28
A	1.00	1197	34.66	0.46	30.19(.000)	0.85	0.94
B	0.00	259	7.50	-0.02	-1.27(.203)	0.13	1.02
C	0.00	83	2.40	-0.15	-9.22(.000)	-0.69	0.89
D	0.00	94	2.72	-0.19	-11.53(.000)	-0.99	0.99
E	0.00	1805	52.26	-0.30	-18.66(.000)	-0.07	0.95

## Item 31

```

-----
item:31 (n5q31)
Cases for this item  3454  Discrimination  0.39
Item Threshold(s):  1.30  Weighted MNSQ  1.04
Item Delta(s):      1.30
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2246	65.03	-0.33	-20.88(.000)	-0.03	0.95
1	1.00	1011	29.27	0.39	24.93(.000)	0.83	1.07
9	0.00	197	5.70	-0.08	-4.59(.000)	-0.12	1.14

## Item 32

```

-----
item:32 (n5q32)
Cases for this item  3452  Discrimination  0.44
Item Threshold(s):  1.16  Weighted MNSQ  0.99
Item Delta(s):      1.17
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	46	1.33	-0.06	-3.57(.000)	-0.39	1.19
A	0.00	969	28.07	-0.34	-21.01(.000)	-0.30	0.83
B	0.00	714	20.68	-0.06	-3.26(.001)	0.09	1.03
C	0.00	632	18.31	-0.07	-3.96(.000)	0.06	0.96
D	1.00	1091	31.60	0.44	29.17(.000)	0.88	1.02

## Item 33

```

-----
item:33 (n5q33)
Cases for this item  3452  Discrimination  0.33
Item Threshold(s):  1.60  Weighted MNSQ  1.07
Item Delta(s):      1.60
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	22	0.64	-0.09	-5.02(.000)	-0.97	1.51
A	1.00	845	24.48	0.33	20.30(.000)	0.81	1.13
B	0.00	974	28.22	-0.16	-9.25(.000)	-0.04	0.99
C	0.00	861	24.94	-0.12	-7.28(.000)	0.01	0.92
D	0.00	750	21.73	-0.03	-1.50(.135)	0.15	0.98

## Item 34

```

-----
item:34 (n5q34)
Cases for this item  3451  Discrimination  0.54
Item Threshold(s):  1.79  Weighted MNSQ  0.85
Item Delta(s):      1.79
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2566	74.36	-0.50	-33.49(.000)	-0.08	0.91
1	1.00	748	21.67	0.54	37.90(.000)	1.26	0.90
9	0.00	137	3.97	-0.04	-2.14(.033)	0.00	1.24

## Item 35

```

-----
item:35 (n5q35)
Cases for this item  3441  Discrimination  0.34
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
0	0.00	2741	79.66	-0.29	-17.66(.000)	0.07	1.00
1	1.00	612	17.79	0.34	21.25(.000)	0.96	1.05
9	0.00	88	2.56	-0.09	-5.30(.000)	-0.35	1.13

## Item 36

```

-----
item:36 (n5q36)
Cases for this item  3434  Discrimination  0.50
Item Threshold(s):  2.01  Weighted MNSQ  0.89
Item Delta(s):      2.01
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2530	73.68	-0.38	-24.01(.000)	-0.01	0.95
1	1.00	643	18.72	0.50	33.61(.000)	1.27	0.92
9	0.00	261	7.60	-0.10	-6.02(.000)	-0.14	0.99

## Item 37

```

-----
item:37 (n5q37)
Cases for this item  3428  Discrimination  0.44
Item Threshold(s):  2.42  Weighted MNSQ  0.92
Item Delta(s):      2.42
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2913	84.98	-0.40	-25.22(.000)	0.05	0.97
1	1.00	479	13.97	0.44	28.68(.000)	1.35	0.91
9	0.00	36	1.05	-0.11	-6.46(.000)	-0.81	1.16

## Item 38

```

-----
item:38 (n5q38)
Cases for this item  3424  Discrimination  0.43
Item Threshold(s):  2.24  Weighted MNSQ  0.93
Item Delta(s):      2.24
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2792	81.54	-0.37	-23.65(.000)	0.04	0.97
1	1.00	546	15.95	0.43	28.13(.000)	1.23	0.99
9	0.00	86	2.51	-0.08	-4.98(.000)	-0.36	1.06

## Item 39

```

-----
item:39 (n5q39)
Cases for this item  3397  Discrimination  0.47
Item Threshold(s):  2.45  Weighted MNSQ  0.89
Item Delta(s):      2.46
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2802	82.48	-0.38	-23.74(.000)	0.05	0.95
1	1.00	464	13.66	0.47	31.24(.000)	1.44	0.90
9	0.00	131	3.86	-0.10	-5.74(.000)	-0.24	1.01

Item 40

```

-----
item:40 (n5q40)
Cases for this item  3361  Discrimination  0.29
Item Threshold(s):  2.84  Weighted MNSQ  1.01
Item Delta(s):      2.83
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2960	88.07	-0.27	-15.93(.000)	0.13	1.00
1	1.00	344	10.24	0.29	17.35(.000)	1.11	1.17
9	0.00	57	1.70	-0.01	-0.45(.649)	0.28	1.11

```

=====
-----

```

The following traditional statistics are only meaningful for complete designs and when the amount of missing data is minimal.  
 In this analysis 0.48% of the data are missing.

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

```

N                      3474
Mean                   21.27
Standard Deviation     7.04
Variance               49.61
Skewness               -0.00
Kurtosis               -0.37
Standard error of mean 0.12
Standard error of measurement 2.51
Coefficient Alpha      0.87
=====

```

## Appendix B.7 Year 5 Reading

=====

NAPLAN 2014, Calibration, Grade 5, reading  
GENERALISED ITEM ANALYSIS

=====

## Item 1

-----

item:1 (r5q01)

Cases for this item 3478 Discrimination 0.32  
Item Threshold(s): -2.87 Weighted MNSQ 0.93  
Item Delta(s): -2.87

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	1	0.03	0.00	0.01(.990)	0.33	0.00
9	0.00	11	0.32	-0.05	-3.21(.001)	-0.41	0.76
A	1.00	3310	95.17	0.32	19.65(.000)	0.74	1.11
B	0.00	64	1.84	-0.17	-10.12(.000)	-0.61	1.25
C	0.00	41	1.18	-0.19	-11.25(.000)	-1.15	0.91
D	0.00	51	1.47	-0.18	-10.85(.000)	-0.95	1.14

=====

## Item 2

-----

item:2 (r5q02)

Cases for this item 3478 Discrimination 0.40  
Item Threshold(s): -1.92 Weighted MNSQ 0.93  
Item Delta(s): -1.92

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
9	0.00	10	0.29	-0.06	-3.74(.000)	-0.44	0.86
A	0.00	184	5.29	-0.21	-12.44(.000)	-0.22	1.15
B	1.00	3108	89.36	0.40	25.64(.000)	0.81	1.08
C	0.00	30	0.86	-0.18	-10.71(.000)	-1.57	1.04
D	0.00	146	4.20	-0.28	-17.42(.000)	-0.76	0.85

=====

## Item 3

-----

item:3 (r5q03)

Cases for this item 3476 Discrimination 0.44  
Item Threshold(s): -1.48 Weighted MNSQ 0.93  
Item Delta(s): -1.47

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
9	0.00	19	0.55	-0.09	-5.05(.000)	-0.53	0.98
A	0.00	274	7.88	-0.30	-18.50(.000)	-0.44	0.99
B	0.00	100	2.88	-0.19	-11.71(.000)	-0.55	1.11
C	1.00	2958	85.10	0.44	28.84(.000)	0.87	1.06
D	0.00	125	3.60	-0.20	-11.94(.000)	-0.42	1.10

=====

## Item 4

-----

item:4 (r5q04)

Cases for this item 3476 Discrimination 0.47  
Item Threshold(s): -1.06 Weighted MNSQ 0.95  
Item Delta(s): -1.07

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
9	0.00	13	0.37	-0.06	-3.66(.000)	-0.55	1.18
A	0.00	300	8.63	-0.28	-17.20(.000)	-0.28	0.94
B	1.00	2788	80.21	0.47	30.96(.000)	0.91	1.06
C	0.00	329	9.46	-0.27	-16.52(.000)	-0.22	0.98
D	0.00	46	1.32	-0.21	-12.58(.000)	-1.30	0.85

=====

## Item 5

-----

item:5 (r5q05)

Cases for this item 3475 Discrimination 0.32  
Item Threshold(s): -2.71 Weighted MNSQ 0.93



Item Delta(s): -2.71

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
9	0.00	5	0.14	-0.05	-3.03(.002)	-1.05	1.19
A	0.00	49	1.41	-0.21	-12.82(.000)	-1.24	0.93
B	1.00	3282	94.45	0.32	20.21(.000)	0.75	1.10
C	0.00	71	2.04	-0.19	-11.45(.000)	-0.79	1.14
D	0.00	68	1.96	-0.15	-8.74(.000)	-0.44	1.10

Item 6

item:6 (r5q06)

Cases for this item 3474 Discrimination 0.45  
 Item Threshold(s): 0.36 Weighted MNSQ 1.04  
 Item Delta(s): 0.36

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
9	0.00	18	0.52	-0.08	-4.63(.000)	-0.58	1.35
A	1.00	1956	56.30	0.45	29.93(.000)	1.11	1.06
B	0.00	108	3.11	-0.24	-14.72(.000)	-0.82	1.00
C	0.00	246	7.08	-0.25	-15.33(.000)	-0.34	1.01
D	0.00	1146	32.99	-0.24	-14.50(.000)	0.30	0.95

Item 7

item:7 (r5q07)

Cases for this item 3469 Discrimination 0.51  
 Item Threshold(s): -0.55 Weighted MNSQ 0.94  
 Item Delta(s): -0.55

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
9	0.00	9	0.26	-0.07	-4.19(.000)	-0.78	0.92
A	0.00	64	1.84	-0.21	-12.92(.000)	-0.92	0.99
B	0.00	54	1.56	-0.22	-13.19(.000)	-1.18	0.86
C	0.00	818	23.58	-0.39	-24.91(.000)	-0.07	0.92
D	1.00	2524	72.76	0.51	34.46(.000)	1.00	1.04

Item 8

item:8 (r5q08)

Cases for this item 3468 Discrimination 0.45  
 Item Threshold(s): -0.45 Weighted MNSQ 1.01  
 Item Delta(s): -0.46

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
9	0.00	18	0.52	-0.04	-2.62(.009)	-0.09	1.10
A	0.00	529	15.25	-0.41	-26.14(.000)	-0.32	0.91
B	0.00	231	6.66	-0.12	-6.94(.000)	0.21	1.19
C	1.00	2468	71.16	0.45	29.38(.000)	0.98	1.04
D	0.00	222	6.40	-0.10	-5.80(.000)	0.21	1.21

## Item 9

```

-----
item:9 (r5q09)
Cases for this item  3467  Discrimination  0.48
Item Threshold(s):  -1.74  Weighted MNSQ  0.86
Item Delta(s):      -1.74
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	13	0.37	-0.08	-4.89(.000)	-0.44	1.25
A	1.00	3046	87.86	0.48	32.48(.000)	0.87	1.05
B	0.00	156	4.50	-0.27	-16.26(.000)	-0.64	0.91
C	0.00	101	2.91	-0.24	-14.52(.000)	-0.78	0.87
D	0.00	151	4.36	-0.28	-17.21(.000)	-0.75	0.91

## Item 10

```

-----
item:10 (r5q10)
Cases for this item  3466  Discrimination  0.33
Item Threshold(s):  -2.48  Weighted MNSQ  0.93
Item Delta(s):      -2.48
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	8	0.23	-0.05	-2.77(.006)	-0.64	1.29
A	0.00	142	4.10	-0.21	-12.82(.000)	-0.34	1.25
B	0.00	39	1.13	-0.17	-10.27(.000)	-1.08	1.01
C	1.00	3234	93.31	0.33	20.67(.000)	0.77	1.10
D	0.00	43	1.24	-0.18	-10.96(.000)	-1.05	0.82

## Item 11

```

-----
item:11 (r5q11)
Cases for this item  3466  Discrimination  0.47
Item Threshold(s):  -2.23  Weighted MNSQ  0.83
Item Delta(s):      -2.23
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	11	0.32	-0.06	-3.50(.000)	-0.64	1.27
A	1.00	3180	91.75	0.47	31.29(.000)	0.83	1.05
B	0.00	130	3.75	-0.27	-16.72(.000)	-0.84	0.90
C	0.00	61	1.76	-0.25	-15.18(.000)	-1.32	0.76
D	0.00	84	2.42	-0.27	-16.30(.000)	-1.09	0.72

## Item 12

```

-----
item:12 (r5q12)
Cases for this item  3464  Discrimination  0.45
Item Threshold(s):  -0.69  Weighted MNSQ  0.99
Item Delta(s):      -0.69
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	15	0.43	-0.05	-2.68(.007)	0.04	1.41
A	0.00	614	17.73	-0.30	-18.69(.000)	-0.00	0.96
B	1.00	2595	74.91	0.45	29.57(.000)	0.95	1.06
C	0.00	116	3.35	-0.23	-13.96(.000)	-0.60	1.11
D	0.00	124	3.58	-0.19	-11.13(.000)	-0.37	1.10

## Item 13

```

-----
item:13 (r5ql3)
Cases for this item  3464  Discrimination  0.47
Item Threshold(s):  1.55  Weighted MNSQ  0.99
Item Delta(s):      1.55

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.04	-2.13(.033)	-1.75	0.00
9	0.00	12	0.35	-0.08	-4.62(.000)	-0.88	0.97
A	0.00	634	18.30	-0.16	-9.44(.000)	0.32	1.07
B	0.00	923	26.65	-0.25	-15.49(.000)	0.22	1.04
C	0.00	733	21.16	-0.10	-5.96(.000)	0.45	1.01
D	1.00	1161	33.52	0.47	31.03(.000)	1.39	1.02

## Item 14

```

-----
item:14 (r5ql4)
Cases for this item  3464  Discrimination  0.36
Item Threshold(s):  0.98  Weighted MNSQ  1.12
Item Delta(s):      0.98

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.02	-1.13(.257)	-0.56	0.00
9	0.00	13	0.38	-0.05	-3.04(.002)	-0.38	1.22
A	0.00	1174	33.89	-0.09	-5.19(.000)	0.54	1.02
B	1.00	1532	44.23	0.36	23.06(.000)	1.13	1.13
C	0.00	448	12.93	-0.19	-11.44(.000)	0.10	0.97
D	0.00	296	8.55	-0.26	-15.69(.000)	-0.19	1.00

## Item 15

```

-----
item:15 (r5ql5)
Cases for this item  3463  Discrimination  0.53
Item Threshold(s):  -0.66  Weighted MNSQ  0.91
Item Delta(s):      -0.67

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	9	0.26	-0.07	-3.87(.000)	-0.84	1.37
A	0.00	397	11.46	-0.29	-18.16(.000)	-0.20	0.95
B	0.00	281	8.11	-0.28	-16.85(.000)	-0.32	0.90
C	0.00	191	5.52	-0.26	-15.52(.000)	-0.43	0.97
D	1.00	2585	74.65	0.53	36.80(.000)	1.01	1.02

## Item 16

```

-----
item:16 (r5ql6)
Cases for this item  3463  Discrimination  0.45
Item Threshold(s):  -1.21  Weighted MNSQ  0.94
Item Delta(s):      -1.21

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.01	-0.57(.572)	0.36	0.00
9	0.00	16	0.46	-0.06	-3.78(.000)	-0.27	1.30
A	0.00	124	3.58	-0.25	-15.30(.000)	-0.70	0.79
B	1.00	2848	82.24	0.45	29.66(.000)	0.90	1.06
C	0.00	122	3.52	-0.22	-13.01(.000)	-0.53	0.96
D	0.00	352	10.16	-0.27	-16.35(.000)	-0.17	1.06

## Item 17

```

-----
item:17 (r5q17)
Cases for this item  3463  Discrimination  0.57
Item Threshold(s):  -0.72  Weighted MNSQ  0.85
Item Delta(s):      -0.71

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	1	0.03	-0.02	-1.28(.202)	-0.71	0.00
9	0.00	19	0.55	-0.09	-5.54(.000)	-0.78	1.05
A	0.00	286	8.26	-0.32	-20.17(.000)	-0.40	0.92
B	0.00	322	9.30	-0.27	-16.72(.000)	-0.24	1.04
C	1.00	2610	75.37	0.57	41.07(.000)	1.02	1.00
D	0.00	225	6.50	-0.29	-17.61(.000)	-0.46	0.78

## Item 18

```

-----
item:18 (r5q18)
Cases for this item  3460  Discrimination  0.51
Item Threshold(s):  -1.02  Weighted MNSQ  0.90
Item Delta(s):      -1.02

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
9	0.00	18	0.52	-0.08	-4.79(.000)	-0.75	1.23
A	0.00	361	10.43	-0.32	-20.00(.000)	-0.34	0.87
B	0.00	162	4.68	-0.31	-19.49(.000)	-0.82	0.80
C	1.00	2760	79.77	0.51	34.81(.000)	0.95	1.04
D	0.00	159	4.60	-0.16	-9.65(.000)	-0.08	0.99

## Item 19

```

-----
item:19 (r5q19)
Cases for this item  3459  Discrimination  0.43
Item Threshold(s):   2.27  Weighted MNSQ  0.98
Item Delta(s):       2.27

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
0	0.00	2474	71.52	-0.24	-14.22(.000)	0.50	1.01
1	1.00	761	22.00	0.43	27.68(.000)	1.60	0.99
9	0.00	224	6.48	-0.29	-17.54(.000)	-0.48	1.18

## Item 20

```

-----
item:20 (r5q20)
Cases for this item  3457  Discrimination  0.27
Item Threshold(s):   0.20  Weighted MNSQ  1.24
Item Delta(s):       0.19

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
9	0.00	55	1.59	-0.06	-3.76(.000)	0.16	1.16
A	1.00	2062	59.65	0.27	16.20(.000)	0.92	1.08
B	0.00	943	27.28	-0.11	-6.36(.000)	0.48	1.11
C	0.00	179	5.18	-0.19	-11.36(.000)	-0.21	1.22
D	0.00	218	6.31	-0.13	-7.90(.000)	0.15	1.18

## Item 21

```

-----
item:21 (r5q21)
Cases for this item  3455  Discrimination  0.42
Item Threshold(s):  -0.03  Weighted MNSQ  1.07
Item Delta(s):      -0.03

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	45	1.30	-0.06	-3.40(.001)	-0.01	1.07
A	0.00	347	10.04	-0.17	-10.05(.000)	0.14	0.97
B	0.00	603	17.45	-0.21	-12.40(.000)	0.20	0.96
C	0.00	256	7.41	-0.26	-15.66(.000)	-0.25	1.09
D	1.00	2204	63.79	0.42	27.39(.000)	1.02	1.09

## Item 22

```

-----
item:22 (r5q22)
Cases for this item  3453  Discrimination  0.40
Item Threshold(s):  -0.88  Weighted MNSQ  1.03
Item Delta(s):      -0.88

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	40	1.16	-0.07	-4.31(.000)	-0.13	0.98
A	0.00	204	5.91	-0.21	-12.91(.000)	-0.22	0.96
B	0.00	345	9.99	-0.24	-14.62(.000)	-0.11	0.95
C	1.00	2692	77.96	0.40	25.80(.000)	0.91	1.09
D	0.00	172	4.98	-0.16	-9.82(.000)	-0.09	1.09

## Item 23

```

-----
item:23 (r5q23)
Cases for this item  3453  Discrimination  0.50
Item Threshold(s):   1.18  Weighted MNSQ  0.96
Item Delta(s):       1.18

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	39	1.13	-0.04	-2.17(.030)	0.19	1.22
A	0.00	405	11.73	-0.21	-12.42(.000)	0.07	0.91
B	0.00	818	23.69	-0.20	-11.81(.000)	0.29	0.97
C	0.00	795	23.02	-0.21	-12.70(.000)	0.26	1.00
D	1.00	1396	40.43	0.50	33.52(.000)	1.34	1.07

## Item 24

```

-----
item:24 (r5q24)
Cases for this item  3452  Discrimination  0.40
Item Threshold(s):   2.59  Weighted MNSQ  0.96
Item Delta(s):       2.60

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2596	75.20	-0.19	-11.45(.000)	0.56	1.02
1	1.00	610	17.67	0.40	25.59(.000)	1.64	1.06
9	0.00	246	7.13	-0.27	-16.53(.000)	-0.39	1.13

## Item 25

```

-----
item:25 (r5q25)
Cases for this item  3446  Discrimination  0.47
Item Threshold(s):  -0.48  Weighted MNSQ  0.99
Item Delta(s):      -0.47

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	28	0.81	-0.05	-3.20(.001)	-0.10	0.90
A	1.00	2470	71.68	0.47	31.44(.000)	1.00	1.07
B	0.00	256	7.43	-0.27	-16.74(.000)	-0.39	1.01
C	0.00	522	15.15	-0.29	-17.49(.000)	-0.02	0.92
D	0.00	170	4.93	-0.15	-9.20(.000)	-0.03	0.84

## Item 26

```

-----
item:26 (r5q26)
Cases for this item  3443  Discrimination  0.39
Item Threshold(s):  1.68  Weighted MNSQ  1.04
Item Delta(s):      1.68

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	40	1.16	-0.06	-3.31(.001)	-0.01	0.94
A	1.00	1079	31.34	0.39	24.77(.000)	1.32	1.14
B	0.00	429	12.46	-0.31	-19.14(.000)	-0.19	0.89
C	0.00	347	10.08	-0.30	-18.37(.000)	-0.26	1.00
D	0.00	1548	44.96	0.04	2.12(.034)	0.71	0.93

## Item 27

```

-----
item:27 (r5q27)
Cases for this item  3442  Discrimination  0.36
Item Threshold(s):  0.31  Weighted MNSQ  1.14
Item Delta(s):      0.31

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	51	1.48	-0.07	-3.99(.000)	0.02	1.12
A	0.00	390	11.33	-0.19	-11.26(.000)	0.11	1.05
B	0.00	430	12.49	-0.22	-13.09(.000)	0.08	1.07
C	1.00	1979	57.50	0.36	22.50(.000)	1.02	1.11
D	0.00	592	17.20	-0.10	-5.79(.000)	0.43	1.01

## Item 28

```

-----
item:28 (r5q28)
Cases for this item  3441  Discrimination  0.53
Item Threshold(s):  0.03  Weighted MNSQ  0.95
Item Delta(s):      0.03

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	35	1.02	-0.06	-3.67(.000)	-0.12	1.05
A	1.00	2161	62.80	0.53	36.36(.000)	1.11	1.04
B	0.00	216	6.28	-0.30	-18.49(.000)	-0.50	0.85
C	0.00	757	22.00	-0.24	-14.42(.000)	0.21	0.93
D	0.00	272	7.90	-0.28	-17.35(.000)	-0.37	0.88

## Item 29

```

-----
item:29 (r5q29)
Cases for this item  3441  Discrimination  0.27
Item Threshold(s):  0.95  Weighted MNSQ  1.23
Item Delta(s):      0.95

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.06	-0.02	-1.21(.227)	0.04	0.43
9	0.00	18	0.52	-0.06	-3.58(.000)	-0.40	1.00
A	0.00	268	7.79	-0.26	-16.05(.000)	-0.26	1.03
B	0.00	828	24.06	-0.09	-5.59(.000)	0.50	1.09
C	1.00	1544	44.87	0.27	16.56(.000)	1.01	1.14
D	0.00	781	22.70	-0.05	-2.66(.008)	0.58	1.03

## Item 30

```

-----
item:30 (r5q30)
Cases for this item  3439  Discrimination  0.35
Item Threshold(s):  1.45  Weighted MNSQ  1.11
Item Delta(s):      1.45

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	8	0.23	0.02	1.21(.225)	1.13	0.65
9	0.00	46	1.34	-0.03	-1.99(.047)	0.37	1.29
A	0.00	1034	30.07	-0.02	-1.15(.249)	0.62	0.98
B	0.00	550	15.99	-0.18	-10.63(.000)	0.26	1.07
C	0.00	582	16.92	-0.24	-14.27(.000)	0.13	1.03
D	1.00	1219	35.45	0.35	21.69(.000)	1.20	1.16

## Item 31

```

-----
item:31 (r5q31)
Cases for this item  3436  Discrimination  0.34
Item Threshold(s):  1.98  Weighted MNSQ  1.05
Item Delta(s):      1.98

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	21	0.61	-0.05	-3.16(.002)	-0.20	1.12
A	0.00	727	21.16	-0.28	-17.04(.000)	0.10	0.87
B	0.00	709	20.63	-0.21	-12.27(.000)	0.24	0.99
C	0.00	1076	31.32	0.11	6.38(.000)	0.83	1.05
D	1.00	903	26.28	0.34	21.40(.000)	1.34	1.20

## Item 32

```

-----
item:32 (r5q32)
Cases for this item  3434  Discrimination  0.48
Item Threshold(s):  2.51  Weighted MNSQ  0.90
Item Delta(s):      2.51

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2680	78.04	-0.42	-27.21(.000)	0.43	1.04
1	1.00	646	18.81	0.48	31.98(.000)	1.80	0.90
9	0.00	108	3.15	-0.07	-4.34(.000)	0.17	1.00

## Item 33

```

-----
item:33 (r5q33)
Cases for this item  3394  Discrimination  0.61
Item Threshold(s):  0.74  Weighted MNSQ  0.86
Item Delta(s):      0.74
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	43	1.27	-0.05	-2.94(.003)	0.17	1.11
A	0.00	633	18.65	-0.33	-20.46(.000)	-0.04	0.88
B	0.00	348	10.25	-0.30	-18.34(.000)	-0.25	0.98
C	0.00	704	20.74	-0.19	-11.34(.000)	0.27	0.93
D	1.00	1666	49.09	0.61	44.45(.000)	1.35	0.96

## Item 34

```

-----
item:34 (r5q34)
Cases for this item  3380  Discrimination  0.53
Item Threshold(s):  0.41  Weighted MNSQ  0.95
Item Delta(s):      0.40
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	38	1.12	-0.05	-2.68(.007)	0.19	1.01
A	0.00	439	12.99	-0.21	-12.19(.000)	0.13	0.99
B	0.00	650	19.23	-0.30	-18.46(.000)	0.01	0.91
C	0.00	366	10.83	-0.23	-13.64(.000)	0.00	1.01
D	1.00	1887	55.83	0.53	36.51(.000)	1.20	1.03

## Item 35

```

-----
item:35 (r5q35)
Cases for this item  3374  Discrimination  0.42
Item Threshold(s):  1.30  Weighted MNSQ  1.04
Item Delta(s):      1.30
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.00	-0.01(.996)	0.41	0.00
9	0.00	36	1.07	-0.03	-1.69(.090)	0.33	1.05
A	0.00	768	22.76	-0.24	-14.29(.000)	0.23	1.00
B	0.00	1086	32.19	-0.11	-6.72(.000)	0.49	0.96
C	1.00	1297	38.44	0.42	26.49(.000)	1.27	1.13
D	0.00	186	5.51	-0.20	-11.67(.000)	-0.18	1.09

## Item 36

```

-----
item:36 (r5q36)
Cases for this item  3367  Discrimination  0.51
Item Threshold(s):  1.36  Weighted MNSQ  0.94
Item Delta(s):      1.36
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	11	0.33	-0.01	-0.82(.410)	0.25	1.02
A	0.00	1002	29.76	-0.37	-23.42(.000)	0.08	0.91
B	1.00	1252	37.18	0.51	34.02(.000)	1.43	1.05
C	0.00	603	17.91	-0.11	-6.28(.000)	0.41	1.03
D	0.00	499	14.82	-0.09	-5.12(.000)	0.43	0.98



## Item 37

```

-----
item:37 (r5q37)
Cases for this item   3362   Discrimination   0.53
Item Threshold(s):   0.30   Weighted MNSQ   0.95
Item Delta(s):       0.30
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	36	1.07	-0.05	-2.65(.008)	0.26	1.00
A	1.00	1944	57.82	0.53	35.81(.000)	1.17	1.03
B	0.00	341	10.14	-0.32	-19.58(.000)	-0.32	0.89
C	0.00	668	19.87	-0.30	-18.18(.000)	0.04	0.88
D	0.00	373	11.09	-0.12	-7.22(.000)	0.33	1.09

## Item 38

```

-----
item:38 (r5q38)
Cases for this item   3350   Discrimination   0.36
Item Threshold(s):   1.06   Weighted MNSQ   1.13
Item Delta(s):       1.06
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	8	0.24	-0.02	-1.13(.259)	0.23	0.93
A	0.00	475	14.18	-0.25	-14.67(.000)	0.04	1.01
B	1.00	1441	43.01	0.36	22.09(.000)	1.14	1.12
C	0.00	878	26.21	-0.18	-10.75(.000)	0.36	0.98
D	0.00	548	16.36	-0.03	-1.50(.134)	0.62	1.15

-----

The following traditional statistics are only meaningful for complete designs and when the amount of missing data is minimal.  
In this analysis 0.95% of the data are missing.

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

```

N                      3478
Mean                   22.91
Standard Deviation     7.07
Variance               50.02
Skewness               -0.26
Kurtosis               -0.47
Standard error of mean 0.12
Standard error of measurement 2.51
Coefficient Alpha       0.87
-----

```

## Appendix B.8 Year 5 Spelling

=====

NAPLAN 2014, Calibration, Grade 5, spelling  
GENERALISED ITEM ANALYSIS

=====

## Item 1

-----

item:1 (lc5q01)  
Cases for this item 3497 Discrimination 0.46  
Item Threshold(s): -3.84 Weighted MNSQ 0.93  
Item Delta(s): -3.84

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	286	8.18	-0.45	-29.49(.000)	-3.42	1.84
1	1.00	3196	91.39	0.46	30.44(.000)	0.27	1.84
9	0.00	15	0.43	-0.09	-5.52(.000)	-3.21	1.70

=====

## Item 2

-----

item:2 (lc5q02)  
Cases for this item 3497 Discrimination 0.59  
Item Threshold(s): -2.41 Weighted MNSQ 0.93  
Item Delta(s): -2.41

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	651	18.62	-0.58	-42.36(.000)	-2.60	1.80
1	1.00	2834	81.04	0.59	43.33(.000)	0.55	1.68
9	0.00	12	0.34	-0.09	-5.09(.000)	-2.92	2.07

=====

## Item 3

-----

item:3 (lc5q03)  
Cases for this item 3496 Discrimination 0.64  
Item Threshold(s): -1.82 Weighted MNSQ 0.94  
Item Delta(s): -1.82

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	853	24.40	-0.63	-47.41(.000)	-2.29	1.74
1	1.00	2622	75.00	0.64	49.10(.000)	0.71	1.63
9	0.00	21	0.60	-0.10	-6.12(.000)	-2.76	1.81

=====

## Item 4

-----

item:4 (lc5q04)  
Cases for this item 3494 Discrimination 0.61  
Item Threshold(s): -2.18 Weighted MNSQ 0.94  
Item Delta(s): -2.18

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	697	19.95	-0.57	-41.31(.000)	-2.41	1.81
1	1.00	2755	78.85	0.61	45.03(.000)	0.61	1.67
9	0.00	42	1.20	-0.17	-10.21(.000)	-3.40	1.42

=====

## Item 5

```

-----
item:5 (lc5q05)
Cases for this item  3491  Discrimination  0.67
Item Threshold(s):  -1.14  Weighted MNSQ  0.92
Item Delta(s):      -1.14
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1128	32.31	-0.65	-50.42(.000)	-1.90	1.75
1	1.00	2330	66.74	0.67	53.64(.000)	0.90	1.56
9	0.00	33	0.95	-0.14	-8.07(.000)	-3.17	1.68

## Item 6

```

-----
item:6 (lc5q06)
Cases for this item  3490  Discrimination  0.65
Item Threshold(s):  -0.57  Weighted MNSQ  1.02
Item Delta(s):      -0.57
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1394	39.94	-0.62	-46.63(.000)	-1.54	1.80
1	1.00	2052	58.80	0.65	50.32(.000)	1.04	1.55
9	0.00	44	1.26	-0.14	-8.40(.000)	-2.75	2.09

## Item 7

```

-----
item:7 (lc5q07)
Cases for this item  3487  Discrimination  0.62
Item Threshold(s):  -0.55  Weighted MNSQ  1.08
Item Delta(s):      -0.55
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1379	39.55	-0.58	-42.14(.000)	-1.45	1.82
1	1.00	2041	58.53	0.62	46.90(.000)	1.00	1.60
9	0.00	67	1.92	-0.16	-9.75(.000)	-2.68	1.94

## Item 8

```

-----
item:8 (lc5q08)
Cases for this item  3486  Discrimination  0.67
Item Threshold(s):  -0.41  Weighted MNSQ  0.97
Item Delta(s):      -0.40
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1479	42.43	-0.64	-49.24(.000)	-1.50	1.76
1	1.00	1969	56.48	0.67	52.72(.000)	1.12	1.51
9	0.00	38	1.09	-0.13	-7.85(.000)	-3.04	1.98

## Item 9

```

-----
item:9 (lc5q09)
Cases for this item  3485  Discrimination  0.59
Item Threshold(s):   0.61  Weighted MNSQ  1.11
Item Delta(s):      0.61
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2002	57.45	-0.55	-39.26(.000)	-0.95	1.86
1	1.00	1441	41.35	0.59	42.67(.000)	1.32	1.59
9	0.00	42	1.21	-0.13	-8.01(.000)	-2.77	2.14

## Item 10

```

-----
item:10 (lc5ql0)
Cases for this item  3484  Discrimination  0.59
Item Threshold(s):  1.08  Weighted MNSQ  1.05
Item Delta(s):      1.07
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2201	63.17	-0.52	-36.26(.000)	-0.80	1.86
1	1.00	1204	34.56	0.59	42.76(.000)	1.54	1.50
9	0.00	79	2.27	-0.18	-10.69(.000)	-2.58	1.81

## Item 11

```

-----
item:11 (lc5ql1)
Cases for this item  3481  Discrimination  0.62
Item Threshold(s):  1.03  Weighted MNSQ  0.99
Item Delta(s):      1.03
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2146	61.65	-0.53	-37.24(.000)	-0.84	1.80
1	1.00	1224	35.16	0.62	46.48(.000)	1.62	1.45
9	0.00	111	3.19	-0.20	-12.33(.000)	-2.49	1.85

## Item 12

```

-----
item:12 (lc5ql2)
Cases for this item  3469  Discrimination  0.52
Item Threshold(s):  2.25  Weighted MNSQ  0.99
Item Delta(s):      2.25
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2731	78.73	-0.48	-32.17(.000)	-0.50	1.88
1	1.00	690	19.89	0.52	35.71(.000)	2.04	1.49
9	0.00	48	1.38	-0.09	-5.47(.000)	-1.80	2.10

## Item 13

```

-----
item:13 (lc5ql3)
Cases for this item  3469  Discrimination  0.40
Item Threshold(s):  3.16  Weighted MNSQ  1.08
Item Delta(s):      3.17
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3025	87.20	-0.34	-21.14(.000)	-0.27	1.96
1	1.00	402	11.59	0.40	25.51(.000)	2.17	1.55
9	0.00	42	1.21	-0.13	-7.82(.000)	-2.62	1.59

## Item 14

```

-----
item:14 (lc5ql4)
Cases for this item  3466  Discrimination  0.36
Item Threshold(s):  -3.84  Weighted MNSQ  1.14
Item Delta(s):      -3.84
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	274	7.91	-0.34	-21.42(.000)	-2.62	2.35
1	1.00	3177	91.66	0.36	22.52(.000)	0.23	1.89
9	0.00	15	0.43	-0.10	-5.85(.000)	-3.26	1.86

## Item 15

```

-----
item:15 (lc5q15)
Cases for this item  3461  Discrimination  0.57
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	709	20.49	-0.55	-38.53(.000)	-2.20	1.88
1	1.00	2711	78.33	0.57	41.03(.000)	0.61	1.67
9	0.00	41	1.18	-0.13	-8.00(.000)	-2.73	1.89

## Item 16

```

-----
item:16 (lc5q16)
Cases for this item  3448  Discrimination  0.70
Item Threshold(s):  -0.97  Weighted MNSQ  0.86
Item Delta(s):      -0.97

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1135	32.92	-0.66	-51.13(.000)	-1.79	1.69
1	1.00	2241	64.99	0.70	57.51(.000)	1.00	1.50
9	0.00	72	2.09	-0.18	-10.49(.000)	-2.53	1.80

## Item 17

```

-----
item:17 (lc5q17)
Cases for this item  3438  Discrimination  0.67
Item Threshold(s):  -0.52  Weighted MNSQ  0.96
Item Delta(s):      -0.52

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1351	39.30	-0.63	-47.02(.000)	-1.47	1.74
1	1.00	2023	58.84	0.67	52.32(.000)	1.09	1.52
9	0.00	64	1.86	-0.16	-9.72(.000)	-2.44	1.81

## Item 18

```

-----
item:18 (lc5q18)
Cases for this item  3428  Discrimination  0.68
Item Threshold(s):  -0.41  Weighted MNSQ  0.94
Item Delta(s):      -0.41

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1381	40.29	-0.64	-48.64(.000)	-1.46	1.71
1	1.00	1966	57.35	0.68	53.70(.000)	1.15	1.48
9	0.00	81	2.36	-0.14	-8.13(.000)	-1.81	1.95

## Item 19

```

-----
item:19 (lc5q19)
Cases for this item  3420  Discrimination  0.61
Item Threshold(s):   0.20  Weighted MNSQ  1.08
Item Delta(s):      0.20

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1649	48.22	-0.56	-39.18(.000)	-1.06	1.81
1	1.00	1650	48.25	0.61	45.11(.000)	1.24	1.55
9	0.00	121	3.54	-0.15	-8.65(.000)	-1.50	1.88

## Item 20

```

-----
item:20 (lc5q20)
Cases for this item   3409   Discrimination   0.62
Item Threshold(s):    0.55   Weighted MNSQ   1.02
Item Delta(s):        0.56

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1824	53.51	-0.56	-38.96(.000)	-0.94	1.79
1	1.00	1463	42.92	0.62	46.34(.000)	1.40	1.51
9	0.00	122	3.58	-0.17	-9.83(.000)	-1.61	1.68

## Item 21

```

-----
item:21 (lc5q21)
Cases for this item   3396   Discrimination   0.62
Item Threshold(s):    0.98   Weighted MNSQ   1.00
Item Delta(s):        0.98

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2108	62.07	-0.59	-42.19(.000)	-0.82	1.80
1	1.00	1246	36.69	0.62	45.76(.000)	1.61	1.40
9	0.00	42	1.24	-0.12	-6.97(.000)	-2.14	1.87

## Item 22

```

-----
item:22 (lc5q22)
Cases for this item   3385   Discrimination   0.47
Item Threshold(s):    2.20   Weighted MNSQ   1.10
Item Delta(s):        2.20

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2489	73.53	-0.37	-23.13(.000)	-0.37	1.89
1	1.00	705	20.83	0.47	30.83(.000)	1.84	1.58
9	0.00	191	5.64	-0.12	-6.89(.000)	-0.87	1.75

## Item 23

```

-----
item:23 (lc5q23)
Cases for this item   3343   Discrimination   0.55
Item Threshold(s):    2.40   Weighted MNSQ   0.89
Item Delta(s):        2.40

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2574	77.00	-0.48	-31.90(.000)	-0.43	1.80
1	1.00	633	18.94	0.55	38.31(.000)	2.29	1.32
9	0.00	136	4.07	-0.07	-3.85(.000)	-0.48	1.91

## Item 24

```

-----
item:24 (lc5q24)
Cases for this item   3320   Discrimination   0.42
Item Threshold(s):    2.94   Weighted MNSQ   1.08
Item Delta(s):        2.94

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2728	82.17	-0.34	-21.03(.000)	-0.22	1.90
1	1.00	460	13.86	0.42	26.95(.000)	2.16	1.52
9	0.00	132	3.98	-0.08	-4.48(.000)	-0.68	1.84

Item 25

-----  
item:25 (1c5q25)Cases for this item 3272 Discrimination 0.41  
Item Threshold(s): 3.33 Weighted MNSQ 1.00  
Item Delta(s): 3.33  
-----

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2824	86.31	-0.34	-20.54(.000)	-0.16	1.89
1	1.00	359	10.97	0.41	25.49(.000)	2.41	1.59
9	0.00	89	2.72	-0.07	-3.90(.000)	-0.57	1.89

-----  
The following traditional statistics are only meaningful for complete designs and when the amount of missing data is minimal.  
In this analysis 1.50% of the data are missing.

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

N	3497
Mean	12.47
Standard Deviation	6.27
Variance	39.33
Skewness	-0.15
Kurtosis	-0.85
Standard error of mean	0.11
Standard error of measurement	1.83
Coefficient Alpha	0.91

## Appendix B.9 Year 7 G&amp;P

=====  
 NAPLAN 2014, Calibration, Grade 7, GP  
 GENERALISED ITEM ANALYSIS  
 =====

Item 1  
 -----

item:1 (lc7q31)  
 Cases for this item 3510 Discrimination 0.31  
 Item Threshold(s): -2.95 Weighted MNSQ 0.93  
 Item Delta(s): -2.95

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.05	-3.21(.001)	-2.46	0.00
9	0.00	2	0.06	-0.06	-3.60(.000)	-1.80	1.74
A	0.00	60	1.71	-0.22	-13.44(.000)	-0.81	0.79
B	1.00	3375	96.15	0.31	19.41(.000)	0.80	0.99
C	0.00	31	0.88	-0.14	-8.40(.000)	-0.50	0.86
D	0.00	41	1.17	-0.15	-8.75(.000)	-0.50	0.87

Item 2  
 -----

item:2 (lc7q32)  
 Cases for this item 3510 Discrimination 0.31  
 Item Threshold(s): -2.72 Weighted MNSQ 0.94  
 Item Delta(s): -2.72

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.05	-3.21(.001)	-2.46	0.00
9	0.00	3	0.09	-0.04	-2.63(.009)	-0.97	1.79
A	1.00	3344	95.27	0.31	19.15(.000)	0.80	0.99
B	0.00	132	3.76	-0.24	-14.77(.000)	-0.39	0.96
C	0.00	18	0.51	-0.14	-8.57(.000)	-1.10	0.57
D	0.00	12	0.34	-0.12	-6.97(.000)	-1.18	0.42

Item 3  
 -----

item:3 (lc7q33)  
 Cases for this item 3510 Discrimination 0.40  
 Item Threshold(s): -1.96 Weighted MNSQ 0.92  
 Item Delta(s): -1.96

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	7	0.20	-0.05	-2.69(.007)	-0.26	1.28
9	0.00	5	0.14	-0.06	-3.36(.001)	-0.98	1.45
A	1.00	3190	90.88	0.40	25.90(.000)	0.86	0.97
B	0.00	53	1.51	-0.16	-9.85(.000)	-0.51	0.89
C	0.00	62	1.77	-0.19	-11.42(.000)	-0.59	0.87
D	0.00	193	5.50	-0.29	-17.98(.000)	-0.35	0.84



## Item 4

```

-----
item:4 (lc7q34)
Cases for this item  3510  Discrimination  0.36
Item Threshold(s):  -1.88  Weighted MNSQ  0.95
Item Delta(s):      -1.88
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.05	-3.21(.001)	-2.46	0.00
9	0.00	4	0.11	-0.05	-3.00(.003)	-1.21	1.23
A	0.00	45	1.28	-0.16	-9.76(.000)	-0.57	1.04
B	1.00	3167	90.23	0.36	23.14(.000)	0.85	0.98
C	0.00	82	2.34	-0.21	-12.65(.000)	-0.49	0.90
D	0.00	211	6.01	-0.23	-14.24(.000)	-0.11	0.84

## Item 5

```

-----
item:5 (lc7q35)
Cases for this item  3510  Discrimination  0.50
Item Threshold(s):  -1.42  Weighted MNSQ  0.87
Item Delta(s):      -1.42
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.05	-3.21(.001)	-2.46	0.00
9	0.00	20	0.57	-0.12	-7.06(.000)	-0.86	1.15
A	0.00	94	2.68	-0.21	-13.01(.000)	-0.46	0.74
B	1.00	3017	85.95	0.50	34.37(.000)	0.92	0.95
C	0.00	211	6.01	-0.31	-18.99(.000)	-0.37	0.74
D	0.00	167	4.76	-0.27	-16.57(.000)	-0.30	0.70

## Item 6

```

-----
item:6 (lc7q36)
Cases for this item  3509  Discrimination  0.25
Item Threshold(s):  -1.18  Weighted MNSQ  1.11
Item Delta(s):      -1.18
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.06	-0.05	-3.01(.003)	-0.89	2.22
9	0.00	15	0.43	-0.11	-6.66(.000)	-1.09	1.17
A	1.00	2920	83.21	0.25	15.27(.000)	0.84	1.01
B	0.00	29	0.83	-0.14	-8.28(.000)	-0.61	0.70
C	0.00	500	14.25	-0.16	-9.67(.000)	0.36	0.91
D	0.00	43	1.23	-0.14	-8.65(.000)	-0.38	0.76

## Item 7

```

-----
item:7 (lc7q37)
Cases for this item  3509  Discrimination  0.49
Item Threshold(s):  -0.83  Weighted MNSQ  0.92
Item Delta(s):      -0.83
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.09	-0.04	-2.49(.013)	-0.34	0.67
9	0.00	20	0.57	-0.10	-6.10(.000)	-0.75	1.20
A	0.00	326	9.29	-0.34	-21.24(.000)	-0.23	0.82
B	1.00	2758	78.60	0.49	33.73(.000)	0.98	0.95
C	0.00	162	4.62	-0.23	-14.02(.000)	-0.18	0.69
D	0.00	240	6.84	-0.19	-11.40(.000)	0.07	0.81

## Item 8

```

-----
item:8 (lc7q38)
Cases for this item  3509  Discrimination  0.53
Item Threshold(s):  -0.64  Weighted MNSQ  0.90
Item Delta(s):      -0.64
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	17	0.48	-0.11	-6.49(.000)	-0.93	1.14
A	0.00	647	18.44	-0.36	-23.14(.000)	0.05	0.77
B	0.00	95	2.71	-0.26	-15.77(.000)	-0.67	0.75
C	0.00	94	2.68	-0.23	-14.08(.000)	-0.49	0.79
D	1.00	2656	75.69	0.53	37.13(.000)	1.01	0.93

## Item 9

```

-----
item:9 (lc7q39)
Cases for this item  3509  Discrimination  0.45
Item Threshold(s):  -0.63  Weighted MNSQ  0.98
Item Delta(s):      -0.63
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.05	-3.21(.001)	-2.46	0.00
9	0.00	23	0.66	-0.11	-6.35(.000)	-0.73	1.19
A	1.00	2652	75.58	0.45	29.68(.000)	0.98	0.95
B	0.00	239	6.81	-0.28	-17.60(.000)	-0.24	0.91
C	0.00	186	5.30	-0.28	-17.08(.000)	-0.29	0.72
D	0.00	408	11.63	-0.15	-9.18(.000)	0.34	0.82

## Item 10

```

-----
item:10 (lc7q40)
Cases for this item  3507  Discrimination  0.51
Item Threshold(s):  -0.27  Weighted MNSQ  0.94
Item Delta(s):      -0.27
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.03	-1.63(.102)	-0.79	0.00
9	0.00	25	0.71	-0.10	-5.95(.000)	-0.58	1.22
A	0.00	472	13.46	-0.29	-18.02(.000)	0.07	0.76
B	1.00	2440	69.58	0.51	34.99(.000)	1.05	0.95
C	0.00	470	13.40	-0.25	-15.06(.000)	0.17	0.80
D	0.00	99	2.82	-0.25	-15.44(.000)	-0.61	0.85

## Item 11

```

-----
item:11 (lc7q41)
Cases for this item  3504  Discrimination  0.52
Item Threshold(s):  -0.22  Weighted MNSQ  0.93
Item Delta(s):      -0.22
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.06	-0.02	-0.92(.358)	0.14	0.20
9	0.00	35	1.00	-0.11	-6.47(.000)	-0.31	1.42
A	0.00	774	22.09	-0.38	-24.27(.000)	0.09	0.83
B	0.00	143	4.08	-0.21	-12.77(.000)	-0.21	0.86
C	1.00	2405	68.64	0.52	35.91(.000)	1.06	0.93
D	0.00	145	4.14	-0.15	-9.11(.000)	0.05	0.80

## Item 12

```

-----
item:12 (lc7q42)
Cases for this item  3504  Discrimination  0.53
Item Threshold(s):  -0.53  Weighted MNSQ  0.91
Item Delta(s):      -0.53

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	6	0.17	-0.05	-2.96(.003)	-0.21	0.49
9	0.00	27	0.77	-0.11	-6.37(.000)	-0.54	1.22
A	0.00	391	11.16	-0.36	-23.08(.000)	-0.20	0.79
B	0.00	392	11.19	-0.23	-13.99(.000)	0.16	0.85
C	1.00	2592	73.97	0.53	37.44(.000)	1.03	0.92
D	0.00	96	2.74	-0.22	-13.48(.000)	-0.47	0.67

## Item 13

```

-----
item:13 (lc7q43)
Cases for this item  3504  Discrimination  0.56
Item Threshold(s):  -0.28  Weighted MNSQ  0.89
Item Delta(s):      -0.28

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	4	0.11	-0.05	-2.78(.005)	-0.44	1.42
9	0.00	20	0.57	-0.07	-4.34(.000)	-0.31	1.18
A	0.00	148	4.22	-0.28	-17.09(.000)	-0.43	0.79
B	0.00	689	19.66	-0.35	-22.12(.000)	0.09	0.78
C	0.00	199	5.68	-0.23	-13.91(.000)	-0.12	0.84
D	1.00	2444	69.75	0.56	39.51(.000)	1.08	0.92

## Item 14

```

-----
item:14 (lc7q44)
Cases for this item  3501  Discrimination  0.43
Item Threshold(s):  0.08   Weighted MNSQ  1.03
Item Delta(s):      0.08

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	1	0.03	-0.05	-3.22(.001)	-2.46	0.00
9	0.00	20	0.57	-0.06	-3.70(.000)	-0.07	1.05
A	0.00	114	3.26	-0.19	-11.35(.000)	-0.20	0.88
B	1.00	2211	63.15	0.43	28.08(.000)	1.05	0.97
C	0.00	963	27.51	-0.24	-14.89(.000)	0.36	0.87
D	0.00	192	5.48	-0.26	-15.81(.000)	-0.16	0.88

## Item 15

```

-----
item:15 (lc7q45)
Cases for this item  3501  Discrimination  0.40
Item Threshold(s):  0.34   Weighted MNSQ  1.07
Item Delta(s):      0.34

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	1	0.03	-0.05	-3.22(.001)	-2.46	0.00
9	0.00	18	0.51	-0.10	-6.20(.000)	-0.57	0.87
A	1.00	2029	57.95	0.40	25.77(.000)	1.06	0.99
B	0.00	364	10.40	-0.17	-10.50(.000)	0.29	1.03
C	0.00	746	21.31	-0.17	-10.32(.000)	0.43	0.87
D	0.00	343	9.80	-0.22	-13.27(.000)	0.12	0.78

## Item 16

```

-----
item:16 (lc7q46)
Cases for this item  3498  Discrimination  0.33
Item Threshold(s):  0.65  Weighted MNSQ  1.13
Item Delta(s):      0.65
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.05	-3.22(.001)	-2.46	0.00
9	0.00	86	2.46	-0.05	-2.73(.006)	0.41	0.93
A	0.00	647	18.50	-0.14	-8.51(.000)	0.47	0.91
B	0.00	435	12.44	-0.13	-8.00(.000)	0.43	0.98
C	0.00	517	14.78	-0.16	-9.87(.000)	0.36	0.89
D	1.00	1812	51.80	0.33	20.84(.000)	1.05	1.02

## Item 17

```

-----
item:17 (lc7q47)
Cases for this item  3494  Discrimination  0.44
Item Threshold(s):  0.48  Weighted MNSQ  1.03
Item Delta(s):      0.48
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.05	-3.23(.001)	-2.46	0.00
9	0.00	11	0.31	-0.08	-4.69(.000)	-0.55	0.53
A	0.00	616	17.63	-0.13	-8.05(.000)	0.48	0.85
B	0.00	406	11.62	-0.17	-10.49(.000)	0.32	1.03
C	0.00	530	15.17	-0.29	-18.24(.000)	0.13	0.87
D	1.00	1930	55.24	0.44	28.92(.000)	1.10	0.96

## Item 18

```

-----
item:18 (lc7q48)
Cases for this item  3494  Discrimination  0.47
Item Threshold(s):  0.49  Weighted MNSQ  0.99
Item Delta(s):      0.49
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.05	-3.23(.001)	-2.46	0.00
9	0.00	29	0.83	-0.06	-3.26(.001)	0.14	0.91
A	0.00	297	8.50	-0.27	-16.49(.000)	0.01	0.87
B	0.00	927	26.53	-0.23	-13.82(.000)	0.39	0.84
C	0.00	317	9.07	-0.19	-11.29(.000)	0.18	0.96
D	1.00	1923	55.04	0.47	31.73(.000)	1.13	0.96

## Item 19

```

-----
item:19 (lc7q49)
Cases for this item  3493  Discrimination  0.49
Item Threshold(s):  0.95  Weighted MNSQ  0.97
Item Delta(s):      0.94
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.05	-3.23(.001)	-2.46	0.00
9	0.00	55	1.57	-0.10	-5.93(.000)	0.03	0.70
A	1.00	1601	45.83	0.49	32.81(.000)	1.24	0.98
B	0.00	414	11.85	-0.29	-18.22(.000)	0.01	0.82
C	0.00	677	19.38	-0.25	-14.97(.000)	0.30	0.82
D	0.00	745	21.33	-0.09	-5.25(.000)	0.55	0.85

## Item 20

```

-----
item:20 (lc7q50)
Cases for this item   3492   Discrimination   0.48
Item Threshold(s):    0.80   Weighted MNSQ   0.99
Item Delta(s):        0.80

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	1	0.03	-0.05	-3.23(.001)	-2.46	0.00
9	0.00	27	0.77	-0.09	-5.45(.000)	-0.15	0.81
A	0.00	650	18.61	-0.20	-11.89(.000)	0.34	0.87
B	0.00	665	19.04	-0.24	-14.71(.000)	0.30	0.90
C	0.00	446	12.77	-0.17	-10.37(.000)	0.30	0.92
D	1.00	1703	48.77	0.48	32.04(.000)	1.21	0.94

## Item 21

```

-----
item:21 (lc7q51)
Cases for this item   3491   Discrimination   0.45
Item Threshold(s):    0.84   Weighted MNSQ   1.01
Item Delta(s):        0.84

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	1	0.03	-0.05	-3.23(.001)	-2.46	0.00
9	0.00	14	0.40	-0.04	-2.55(.011)	-0.07	1.17
A	1.00	1675	47.98	0.45	29.66(.000)	1.18	0.97
B	0.00	259	7.42	-0.24	-14.83(.000)	-0.06	0.91
C	0.00	1105	31.65	-0.16	-9.57(.000)	0.52	0.86
D	0.00	437	12.52	-0.25	-15.18(.000)	0.18	0.85

## Item 22

```

-----
item:22 (lc7q52)
Cases for this item   3482   Discrimination   0.43
Item Threshold(s):    1.07   Weighted MNSQ   1.03
Item Delta(s):        1.07

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	1	0.03	-0.05	-3.24(.001)	-2.46	0.00
9	0.00	29	0.83	-0.05	-3.09(.002)	0.20	0.88
A	0.00	745	21.40	-0.01	-0.35(.724)	0.72	0.93
B	0.00	706	20.28	-0.31	-18.97(.000)	0.19	0.88
C	0.00	495	14.22	-0.24	-14.35(.000)	0.20	0.86
D	1.00	1506	43.25	0.43	28.21(.000)	1.22	0.94

## Item 23

```

-----
item:23 (lc7q53)
Cases for this item   3478   Discrimination   0.29
Item Threshold(s):    1.05   Weighted MNSQ   1.16
Item Delta(s):        1.05

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	4	0.12	-0.05	-2.81(.005)	-0.67	1.26
9	0.00	15	0.43	-0.05	-2.97(.003)	0.15	0.77
A	0.00	473	13.60	-0.20	-12.07(.000)	0.31	0.99
B	0.00	627	18.03	-0.15	-8.67(.000)	0.47	0.95
C	1.00	1519	43.67	0.29	18.03(.000)	1.06	1.02
D	0.00	840	24.15	-0.04	-2.13(.033)	0.67	0.90

## Item 24

```

-----
item:24 (lc7q54)
Cases for this item  3476  Discrimination  0.45
Item Threshold(s):  1.03  Weighted MNSQ  1.01
Item Delta(s):      1.03
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	2	0.06	-0.03	-1.64(.102)	-0.56	2.68
9	0.00	35	1.01	-0.03	-1.87(.062)	0.47	1.05
A	0.00	648	18.64	-0.19	-11.53(.000)	0.38	0.86
B	0.00	611	17.58	-0.17	-10.06(.000)	0.39	0.90
C	1.00	1533	44.10	0.45	29.33(.000)	1.22	0.98
D	0.00	647	18.61	-0.20	-12.14(.000)	0.37	0.91

## Item 25

```

-----
item:25 (lc7q55)
Cases for this item  3470  Discrimination  0.41
Item Threshold(s):  1.10  Weighted MNSQ  1.04
Item Delta(s):      1.10
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	1	0.03	-0.05	-3.24(.001)	-2.46	0.00
9	0.00	22	0.63	-0.02	-1.30(.193)	0.45	0.84
A	0.00	889	25.62	-0.10	-5.86(.000)	0.59	0.92
B	0.00	401	11.56	-0.21	-12.79(.000)	0.22	0.86
C	0.00	675	19.45	-0.23	-13.94(.000)	0.30	0.86
D	1.00	1482	42.71	0.41	26.81(.000)	1.21	0.99

## Item 26

```

-----
item:26 (lc7q56)
Cases for this item  3464  Discrimination  0.34
Item Threshold(s):  1.50  Weighted MNSQ  1.08
Item Delta(s):      1.50
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	5	0.14	-0.04	-2.11(.035)	0.07	1.51
9	0.00	26	0.75	-0.06	-3.50(.000)	0.08	0.91
A	0.00	597	17.23	-0.16	-9.83(.000)	0.42	0.92
B	0.00	385	11.11	-0.24	-14.25(.000)	0.16	0.95
C	1.00	1214	35.05	0.34	21.56(.000)	1.20	1.05
D	0.00	1237	35.71	-0.04	-2.64(.008)	0.68	0.86

## Item 27

```

-----
item:27 (lc7q57)
Cases for this item  3459  Discrimination  0.46
Item Threshold(s):  1.71  Weighted MNSQ  0.95
Item Delta(s):      1.71
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	1	0.03	-0.06	-3.24(.001)	-2.46	0.00
9	0.00	17	0.49	-0.04	-2.31(.021)	0.22	1.08
A	0.00	376	10.87	-0.20	-11.96(.000)	0.26	0.85
B	0.00	1527	44.15	-0.18	-10.66(.000)	0.54	0.86
C	0.00	462	13.36	-0.18	-10.62(.000)	0.34	0.96
D	1.00	1076	31.11	0.46	30.79(.000)	1.42	0.97

Item 28

-----  
item:28 (1c7q58)

Cases for this item 3454 Discrimination -0.03

Item Threshold(s): 3.41 Weighted MNSQ 1.17

Item Delta(s): 3.40  
-----

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.06	-3.25(.001)	-2.46	0.00
9	0.00	13	0.38	0.01	0.35(.728)	0.75	0.56
A	0.00	2483	71.89	0.28	17.38(.000)	0.91	0.96
B	1.00	328	9.50	-0.03	-1.50(.134)	0.75	1.24
C	0.00	180	5.21	-0.26	-15.85(.000)	-0.23	0.82
D	0.00	449	13.00	-0.18	-10.94(.000)	0.33	0.89

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

In this analysis 0.44% of the data are missing.

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

N	3510
Mean	17.30
Standard Deviation	5.08
Variance	25.81
Skewness	-0.23
Kurtosis	-0.55
Standard error of mean	0.09
Standard error of measurement	2.17
Coefficient Alpha	0.82

## Appendix B.10 Year 7 Numeracy

```
=====
NAPLAN 2014, Calibration, Grade 7, numeracy
GENERALISED ITEM ANALYSIS
=====
```

```
Item 1
-----
```

```
item:1 (n7CAq01)
Cases for this item  3481  Discrimination  0.41
Item Threshold(s):  -2.73  Weighted MNSQ  0.88
Item Delta(s):      -2.72
```

```
-----
Label      Score      Count      % of tot  Pt Bis      t      (p)      PVIAvg:l  PVI  SD:l
-----
  9         0.00         12         0.34     -0.07     -4.18(.000) -1.70     1.87
  A         1.00        3118        89.57     0.41     26.23(.000)  0.10     1.18
  B         0.00         217         6.23     -0.28    -17.35(.000) -1.30     0.65
  C         0.00          74         2.13     -0.21    -12.43(.000) -1.76     0.83
  D         0.00          60         1.72     -0.17    -10.15(.000) -1.62     0.97
=====
```

```
Item 2
-----
```

```
item:2 (n7CAq02)
Cases for this item  3481  Discrimination  0.46
Item Threshold(s):  -2.06  Weighted MNSQ  0.87
Item Delta(s):      -2.06
```

```
-----
Label      Score      Count      % of tot  Pt Bis      t      (p)      PVIAvg:l  PVI  SD:l
-----
  8         0.00          1         0.03     -0.04     -2.47(.014) -4.58     0.00
  9         0.00         29         0.83     -0.10     -5.91(.000) -1.48     1.27
  A         1.00        2883        82.82     0.46     30.45(.000)  0.18     1.15
  B         0.00         294         8.45     -0.25    -14.95(.000) -1.03     0.96
  C         0.00         200         5.75     -0.29    -17.55(.000) -1.40     0.79
  D         0.00          74         2.13     -0.20    -11.93(.000) -1.63     0.71
=====
```

```
Item 3
-----
```

```
item:3 (n7CAq03)
Cases for this item  3481  Discrimination  0.35
Item Threshold(s):  -2.58  Weighted MNSQ  0.95
Item Delta(s):      -2.58
```

```
-----
Label      Score      Count      % of tot  Pt Bis      t      (p)      PVIAvg:l  PVI  SD:l
-----
  9         0.00         11         0.32     -0.06     -3.35(.001) -1.65     1.87
  A         0.00         182         5.23     -0.28    -17.26(.000) -1.49     0.88
  B         0.00         190         5.46     -0.18    -10.97(.000) -0.95     0.86
  C         1.00        3075        88.34     0.35     21.84(.000)  0.09     1.19
  D         0.00          23         0.66     -0.05     -3.07(.002) -0.81     1.34
=====
```



## Item 4

```

-----
item:4 (n7CAq04)
Cases for this item  3480  Discrimination  0.35
Item Threshold(s):  -1.66  Weighted MNSQ  1.04
Item Delta(s):      -1.66
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	2	0.06	-0.03	-1.49(.137)	-1.25	1.09
9	0.00	13	0.37	-0.05	-2.91(.004)	-1.23	1.95
A	0.00	380	10.92	-0.17	-10.21(.000)	-0.63	1.10
B	1.00	2697	77.50	0.35	22.12(.000)	0.16	1.20
C	0.00	340	9.77	-0.25	-15.02(.000)	-0.92	0.98
D	0.00	48	1.38	-0.14	-8.45(.000)	-1.47	0.91

## Item 5

```

-----
item:5 (n7CAq05)
Cases for this item  3480  Discrimination  0.44
Item Threshold(s):  -1.41  Weighted MNSQ  0.98
Item Delta(s):      -1.42
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
9	0.00	24	0.69	-0.12	-6.83(.000)	-1.92	1.35
A	0.00	263	7.56	-0.23	-13.86(.000)	-0.97	0.94
B	1.00	2568	73.79	0.44	28.68(.000)	0.24	1.18
C	0.00	514	14.77	-0.25	-15.44(.000)	-0.76	0.95
D	0.00	111	3.19	-0.18	-11.08(.000)	-1.29	0.97

## Item 6

```

-----
item:6 (n7CAq06)
Cases for this item  3480  Discrimination  0.27
Item Threshold(s):  -1.30  Weighted MNSQ  1.18
Item Delta(s):      -1.30
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	320	9.20	-0.12	-7.25(.000)	-0.53	1.04
9	0.00	36	1.03	-0.06	-3.40(.001)	-0.83	1.41
A	1.00	2503	71.93	0.27	16.85(.000)	0.14	1.24
B	0.00	364	10.46	-0.12	-6.86(.000)	-0.46	1.05
C	0.00	155	4.45	-0.10	-5.93(.000)	-0.60	1.08
D	0.00	102	2.93	-0.16	-9.33(.000)	-1.19	1.11

## Item 7

```

-----
item:7 (n7CAq07)
Cases for this item  3480  Discrimination  0.44
Item Threshold(s):  -1.16  Weighted MNSQ  1.00
Item Delta(s):      -1.16
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
9	0.00	32	0.92	-0.08	-4.71(.000)	-1.21	1.41
A	0.00	470	13.51	-0.22	-13.15(.000)	-0.72	0.92
B	0.00	273	7.84	-0.22	-13.04(.000)	-0.94	0.85
C	1.00	2419	69.51	0.44	29.24(.000)	0.29	1.20
D	0.00	286	8.22	-0.23	-14.24(.000)	-1.00	0.91

## Item 8

```

-----
item:8 (n7CAq08)
Cases for this item  3480  Discrimination  0.47
Item Threshold(s):  -0.68  Weighted MNSQ  1.00
Item Delta(s):      -0.68
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1	SD:l
9	0.00	45	1.29	-0.08	-4.47(.000)	-0.92	1.41	
A	0.00	631	18.13	-0.26	-16.01(.000)	-0.71	0.90	
B	0.00	484	13.91	-0.24	-14.70(.000)	-0.78	0.96	
C	1.00	2123	61.01	0.47	31.56(.000)	0.38	1.20	
D	0.00	197	5.66	-0.16	-9.55(.000)	-0.84	0.99	

## Item 9

```

-----
item:9 (n7CAq09)
Cases for this item  3480  Discrimination  0.55
Item Threshold(s):  -0.84  Weighted MNSQ  0.89
Item Delta(s):      -0.83
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1	SD:l
8	0.00	2	0.06	-0.05	-3.07(.002)	-3.22	0.26	
9	0.00	11	0.32	-0.10	-5.66(.000)	-2.45	1.73	
A	1.00	2221	63.82	0.55	39.12(.000)	0.43	1.14	
B	0.00	480	13.79	-0.23	-14.08(.000)	-0.76	0.85	
C	0.00	266	7.64	-0.28	-17.03(.000)	-1.18	0.83	
D	0.00	500	14.37	-0.30	-18.54(.000)	-0.91	0.89	

## Item 10

```

-----
item:10 (n7CAq10)
Cases for this item  3480  Discrimination  0.38
Item Threshold(s):  -0.79  Weighted MNSQ  1.10
Item Delta(s):      -0.79
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1	SD:l
9	0.00	15	0.43	-0.06	-3.71(.000)	-1.64	1.80	
A	0.00	453	13.02	-0.19	-11.68(.000)	-0.66	1.06	
B	1.00	2193	63.02	0.38	24.28(.000)	0.28	1.22	
C	0.00	305	8.76	-0.26	-15.82(.000)	-1.02	0.95	
D	0.00	514	14.77	-0.12	-6.87(.000)	-0.40	0.98	

## Item 11

```

-----
item:11 (n7CAq11)
Cases for this item  3480  Discrimination  0.39
Item Threshold(s):  -0.66  Weighted MNSQ  1.10
Item Delta(s):      -0.65
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1	SD:l
9	0.00	81	2.33	-0.08	-4.50(.000)	-0.76	1.29	
A	1.00	2105	60.49	0.39	25.27(.000)	0.32	1.24	
B	0.00	555	15.95	-0.23	-13.83(.000)	-0.69	0.97	
C	0.00	542	15.57	-0.27	-16.44(.000)	-0.80	0.83	
D	0.00	197	5.66	-0.00	-0.04(.971)	-0.10	1.07	

## Item 12

```

-----
item:12 (n7CAq12)
Cases for this item  3479  Discrimination  0.37
Item Threshold(s):  -0.81  Weighted MNSQ  1.11
Item Delta(s):      -0.82
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	6	0.17	-0.04	-2.36(.018)	-1.16	1.02
9	0.00	23	0.66	-0.07	-3.94(.000)	-1.21	1.72
A	0.00	790	22.71	-0.21	-12.94(.000)	-0.53	1.05
B	0.00	152	4.37	-0.20	-12.10(.000)	-1.19	0.96
C	0.00	299	8.59	-0.14	-8.08(.000)	-0.58	1.10
D	1.00	2209	63.50	0.37	23.16(.000)	0.26	1.20

## Item 13

```

-----
item:13 (n7CAq13)
Cases for this item  3479  Discrimination  0.50
Item Threshold(s):  -0.26  Weighted MNSQ  0.98
Item Delta(s):      -0.25
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	3	0.09	0.02	1.04(.300)	0.37	0.62
9	0.00	64	1.84	-0.07	-4.14(.000)	-0.80	1.33
A	0.00	284	8.16	-0.26	-16.16(.000)	-1.09	0.93
B	0.00	734	21.10	-0.26	-15.91(.000)	-0.66	0.88
C	1.00	1839	52.86	0.50	34.21(.000)	0.50	1.21
D	0.00	555	15.95	-0.17	-10.28(.000)	-0.54	0.91

## Item 14

```

-----
item:14 (n7CAq14)
Cases for this item  3479  Discrimination  0.49
Item Threshold(s):  0.00  Weighted MNSQ  1.00
Item Delta(s):      -0.00
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
9	0.00	38	1.09	-0.06	-3.77(.000)	-0.95	1.36
A	0.00	670	19.26	-0.36	-22.86(.000)	-0.93	0.90
B	0.00	406	11.67	-0.18	-10.54(.000)	-0.60	0.95
C	1.00	1668	47.94	0.49	32.95(.000)	0.54	1.18
D	0.00	472	13.57	-0.07	-4.08(.000)	-0.30	1.08
E	0.00	225	6.47	-0.06	-3.45(.001)	-0.35	0.98

## Item 15

```

-----
item:15 (n7CAq15)
Cases for this item  3479  Discrimination  0.44
Item Threshold(s):  -0.03  Weighted MNSQ  1.06
Item Delta(s):      -0.03
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	1	0.03	-0.01	-0.82(.414)	-0.75	0.00
9	0.00	68	1.95	-0.05	-2.74(.006)	-0.58	1.39
A	0.00	386	11.10	-0.09	-5.13(.000)	-0.36	0.98
B	0.00	328	9.43	-0.29	-17.61(.000)	-1.14	0.83
C	1.00	1691	48.61	0.44	29.08(.000)	0.48	1.25
D	0.00	852	24.49	-0.16	-9.37(.000)	-0.39	0.94
E	0.00	153	4.40	-0.18	-10.56(.000)	-1.01	0.80

## Item 16

```

-----
item:16 (n7CAq16)
Cases for this item  3479  Discrimination  0.54
Item Threshold(s):  0.33  Weighted MNSQ  0.93
Item Delta(s):      0.32

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	82	2.36	-0.08	-4.58(.000)	-0.79	1.17
A	0.00	403	11.58	-0.24	-14.29(.000)	-0.83	0.85
B	0.00	753	21.64	-0.20	-12.26(.000)	-0.52	0.97
C	0.00	614	17.65	-0.20	-11.83(.000)	-0.57	0.95
D	1.00	1453	41.76	0.54	38.00(.000)	0.70	1.18
E	0.00	174	5.00	-0.10	-5.76(.000)	-0.58	1.05

## Item 17

```

-----
item:17 (n7CAq17)
Cases for this item  3479  Discrimination  0.46
Item Threshold(s):  0.28  Weighted MNSQ  1.03
Item Delta(s):      0.28

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.02	-0.97(.330)	-1.23	0.00
9	0.00	34	0.98	-0.09	-5.42(.000)	-1.42	1.47
A	0.00	374	10.75	-0.31	-19.15(.000)	-1.10	0.82
B	1.00	1482	42.60	0.46	30.77(.000)	0.58	1.27
C	0.00	465	13.37	-0.13	-7.74(.000)	-0.46	0.99
D	0.00	1123	32.28	-0.17	-10.17(.000)	-0.36	0.92

## Item 18

```

-----
item:18 (n7CAq18)
Cases for this item  3479  Discrimination  0.52
Item Threshold(s):  0.15  Weighted MNSQ  0.98
Item Delta(s):      0.15

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	21	0.60	-0.04	-2.36(.018)	-0.98	1.91
A	1.00	1569	45.10	0.52	35.46(.000)	0.60	1.17
B	0.00	327	9.40	-0.11	-6.42(.000)	-0.44	0.96
C	0.00	811	23.31	-0.34	-21.33(.000)	-0.76	0.99
D	0.00	751	21.59	-0.19	-11.38(.000)	-0.50	1.00

## Item 19

```

-----
item:19 (n7CAq19)
Cases for this item  3479  Discrimination  0.46
Item Threshold(s):  0.53  Weighted MNSQ  1.03
Item Delta(s):      0.53

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	17	0.49	-0.08	-4.52(.000)	-1.77	1.68
A	0.00	838	24.09	-0.18	-11.07(.000)	-0.47	0.96
B	1.00	1323	38.03	0.46	30.20(.000)	0.64	1.24
C	0.00	1049	30.15	-0.17	-10.03(.000)	-0.37	1.02
D	0.00	172	4.94	-0.19	-11.39(.000)	-1.02	0.99
E	0.00	80	2.30	-0.13	-7.53(.000)	-0.94	1.10

## Item 20

```

-----
item:20 (n7CAq20)
Cases for this item  3478  Discrimination  0.44
Item Threshold(s):  0.47  Weighted MNSQ  1.07
Item Delta(s):      0.47

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
9	0.00	34	0.98	-0.00	-0.14(.887)	-0.30	1.34
A	0.00	270	7.76	-0.26	-16.01(.000)	-1.16	0.96
B	0.00	1221	35.11	-0.19	-11.28(.000)	-0.37	1.07
C	0.00	593	17.05	-0.15	-8.80(.000)	-0.44	0.93
D	1.00	1360	39.10	0.44	29.03(.000)	0.60	1.22

## Item 21

```

-----
item:21 (n7CAq21)
Cases for this item  3476  Discrimination  0.51
Item Threshold(s):  0.51  Weighted MNSQ  0.97
Item Delta(s):      0.51

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
9	0.00	68	1.96	-0.06	-3.37(.001)	-0.65	1.19
A	1.00	1335	38.41	0.51	35.12(.000)	0.72	1.19
B	0.00	433	12.46	-0.16	-9.86(.000)	-0.61	1.10
C	0.00	705	20.28	-0.25	-14.93(.000)	-0.62	0.98
D	0.00	935	26.90	-0.20	-11.91(.000)	-0.46	0.94

## Item 22

```

-----
item:22 (n7CAq22)
Cases for this item  3474  Discrimination  0.35
Item Threshold(s):  0.43  Weighted MNSQ  1.17
Item Delta(s):      0.43

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	2	0.06	0.00	0.23(.816)	0.26	1.23
9	0.00	47	1.35	-0.06	-3.46(.001)	-0.84	1.18
A	0.00	275	7.92	-0.15	-9.10(.000)	-0.67	1.02
B	0.00	883	25.42	-0.23	-13.85(.000)	-0.52	1.03
C	0.00	883	25.42	-0.06	-3.45(.001)	-0.19	1.13
D	1.00	1384	39.84	0.35	22.25(.000)	0.46	1.27

## Item 23

```

-----
item:23 (n7CAq23)
Cases for this item  3471  Discrimination  0.50
Item Threshold(s):  1.18  Weighted MNSQ  0.97
Item Delta(s):      1.18

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
0	0.00	2431	70.04	-0.44	-28.96(.000)	-0.41	1.05
1	1.00	940	27.08	0.50	33.64(.000)	0.92	1.17
9	0.00	100	2.88	-0.11	-6.46(.000)	-0.85	0.96

## Item 24

```

-----
item:24 (n7CAq24)
Cases for this item  3466  Discrimination  0.44
Item Threshold(s):  1.09  Weighted MNSQ  1.02
Item Delta(s):      1.09
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	0.00	0.05(.964)	-0.79	0.00
9	0.00	121	3.49	-0.03	-1.87(.061)	-0.36	0.99
A	0.00	321	9.26	-0.17	-9.97(.000)	-0.68	0.97
B	0.00	1124	32.43	-0.18	-10.94(.000)	-0.38	1.04
C	0.00	815	23.51	-0.15	-8.99(.000)	-0.37	0.98
D	1.00	986	28.45	0.44	29.24(.000)	0.80	1.30
E	0.00	98	2.83	0.02	1.10(.269)	0.04	1.43

## Item 25

```

-----
item:25 (n7CAq25)
Cases for this item  3460  Discrimination  0.53
Item Threshold(s):  1.52  Weighted MNSQ  0.91
Item Delta(s):      1.52
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2459	71.07	-0.40	-25.82(.000)	-0.37	1.07
1	1.00	770	22.25	0.53	36.82(.000)	1.15	1.06
9	0.00	231	6.68	-0.15	-9.16(.000)	-0.78	0.84

## Item 26

```

-----
item:26 (n7CAq26)
Cases for this item  3455  Discrimination  0.56
Item Threshold(s):  1.36  Weighted MNSQ  0.87
Item Delta(s):      1.36
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2452	70.97	-0.50	-33.81(.000)	-0.43	1.03
1	1.00	846	24.49	0.56	40.17(.000)	1.12	1.08
9	0.00	157	4.54	-0.08	-4.62(.000)	-0.57	1.07

## Item 27

```

-----
item:27 (n7CAq27)
Cases for this item  3442  Discrimination  0.53
Item Threshold(s):  1.78  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	2472	71.82	-0.47	-31.05(.000)	-0.41	1.03
1	1.00	651	18.91	0.53	37.02(.000)	1.31	1.12
9	0.00	319	9.27	0.01	0.30(.766)	-0.09	1.04

## Item 28

```

-----
item:28 (n7CAq28)
Cases for this item  3414  Discrimination  0.51
Item Threshold(s):  1.89  Weighted MNSQ  0.88
Item Delta(s):      1.89
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2566	75.16	-0.42	-26.73(.000)	-0.34	1.06
1	1.00	602	17.63	0.51	34.62(.000)	1.29	1.16
9	0.00	246	7.21	-0.06	-3.29(.001)	-0.36	1.03

## Item 29

```

-----
item:29 (n7CAq29)
Cases for this item  3389  Discrimination  0.43
Item Threshold(s):  2.48  Weighted MNSQ  0.95
Item Delta(s):      2.48
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2641	77.93	-0.27	-16.16(.000)	-0.22	1.12
1	1.00	401	11.83	0.43	28.10(.000)	1.43	1.16
9	0.00	347	10.24	-0.10	-5.68(.000)	-0.45	1.01

## Item 30

```

-----
item:30 (n7CAq30)
Cases for this item  3367  Discrimination  0.35
Item Threshold(s):  2.65  Weighted MNSQ  1.00
Item Delta(s):      2.65
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2636	78.29	-0.24	-14.40(.000)	-0.20	1.15
1	1.00	352	10.45	0.35	22.02(.000)	1.26	1.32
9	0.00	379	11.26	-0.03	-1.70(.090)	-0.19	1.02

## Item 31

```

-----
item:31 (n7CAq31)
Cases for this item  3330  Discrimination  0.41
Item Threshold(s):  2.88  Weighted MNSQ  0.90
Item Delta(s):      2.88
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2673	80.27	-0.24	-14.21(.000)	-0.19	1.12
1	1.00	293	8.80	0.41	25.58(.000)	1.65	1.35
9	0.00	364	10.93	-0.06	-3.64(.000)	-0.31	1.00

## Item 32

```

-----
item:32 (n7CAq32)
Cases for this item  3291  Discrimination  0.37
Item Threshold(s):  2.79  Weighted MNSQ  0.93
Item Delta(s):      2.79

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	2	0.06	-0.02	-1.10(.271)	-0.95	0.48
9	0.00	43	1.31	0.01	0.46(.643)	-0.11	1.10
A	0.00	719	21.85	-0.14	-8.19(.000)	-0.39	1.09
B	0.00	1705	51.81	-0.12	-7.17(.000)	-0.19	1.05
C	0.00	512	15.56	0.03	1.76(.079)	0.02	1.22
D	1.00	310	9.42	0.37	23.02(.000)	1.46	1.53

## Item 33

```

-----
item:33 (n7NCq01)
Cases for this item  3467  Discrimination  0.35
Item Threshold(s):  -1.87  Weighted MNSQ  1.04
Item Delta(s):      -1.87

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
9	0.00	17	0.49	-0.11	-6.64(.000)	-2.24	1.57
A	0.00	126	3.63	-0.15	-8.77(.000)	-0.96	0.92
B	1.00	2790	80.47	0.35	21.96(.000)	0.15	1.21
C	0.00	272	7.85	-0.19	-11.43(.000)	-0.84	1.03
D	0.00	262	7.56	-0.20	-11.78(.000)	-0.85	0.82

## Item 34

```

-----
item:34 (n7NCq02)
Cases for this item  3467  Discrimination  0.37
Item Threshold(s):  -2.26  Weighted MNSQ  0.98
Item Delta(s):      -2.25

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	1	0.03	-0.02	-1.14(.255)	-1.28	0.00
9	0.00	15	0.43	-0.11	-6.80(.000)	-2.50	1.50
A	0.00	334	9.63	-0.28	-16.98(.000)	-1.07	0.84
B	1.00	2952	85.15	0.37	23.39(.000)	0.13	1.20
C	0.00	139	4.01	-0.18	-10.75(.000)	-1.06	0.84
D	0.00	26	0.75	-0.07	-4.41(.000)	-1.06	0.84

## Item 35

```

-----
item:35 (n7NCq03)
Cases for this item  3467  Discrimination  0.37
Item Threshold(s):  -1.64  Weighted MNSQ  1.03
Item Delta(s):      -1.64

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
9	0.00	17	0.49	-0.11	-6.53(.000)	-2.29	1.71
A	0.00	297	8.57	-0.16	-9.37(.000)	-0.64	1.00
B	1.00	2681	77.33	0.37	23.58(.000)	0.18	1.20
C	0.00	201	5.80	-0.24	-14.74(.000)	-1.17	0.81
D	0.00	271	7.82	-0.18	-10.51(.000)	-0.78	1.01



## Item 36

```

-----
item:36 (n7NCq04)
Cases for this item  3466  Discrimination  0.39
Item Threshold(s):  -1.81  Weighted MNSQ  1.00
Item Delta(s):      -1.81

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	1	0.03	-0.02	-1.06(.288)	-1.17	0.00
9	0.00	28	0.81	-0.11	-6.45(.000)	-1.76	1.52
A	0.00	39	1.13	-0.14	-8.21(.000)	-1.55	0.71
B	0.00	323	9.32	-0.27	-16.18(.000)	-1.00	0.91
C	1.00	2763	79.72	0.39	24.79(.000)	0.17	1.20
D	0.00	312	9.00	-0.19	-11.39(.000)	-0.74	0.90

## Item 37

```

-----
item:37 (n7NCq05)
Cases for this item  3466  Discrimination  0.37
Item Threshold(s):  -1.63  Weighted MNSQ  1.02
Item Delta(s):      -1.63

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	3	0.09	-0.04	-2.13(.033)	-1.41	0.88
9	0.00	16	0.46	-0.11	-6.75(.000)	-2.41	1.55
A	1.00	2674	77.15	0.37	23.75(.000)	0.18	1.19
B	0.00	273	7.88	-0.17	-10.22(.000)	-0.76	1.10
C	0.00	191	5.51	-0.13	-7.81(.000)	-0.69	0.96
D	0.00	309	8.92	-0.25	-15.42(.000)	-0.99	0.87

## Item 38

```

-----
item:38 (n7NCq06)
Cases for this item  3466  Discrimination  0.46
Item Threshold(s):  -1.47  Weighted MNSQ  0.94
Item Delta(s):      -1.47

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	3	0.09	-0.01	-0.43(.669)	-0.08	0.38
9	0.00	25	0.72	-0.11	-6.54(.000)	-1.95	1.52
A	1.00	2592	74.78	0.46	30.62(.000)	0.26	1.17
B	0.00	213	6.15	-0.30	-18.58(.000)	-1.44	0.72
C	0.00	177	5.11	-0.27	-16.43(.000)	-1.38	0.62
D	0.00	456	13.16	-0.18	-10.50(.000)	-0.60	0.88

## Item 39

```

-----
item:39 (n7NCq07)
Cases for this item  3466  Discrimination  0.52
Item Threshold(s):  -1.49  Weighted MNSQ  0.87
Item Delta(s):      -1.50

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	4	0.12	-0.01	-0.82(.411)	-0.51	1.11
9	0.00	49	1.41	-0.12	-7.10(.000)	-1.44	1.29
A	0.00	107	3.09	-0.22	-13.01(.000)	-1.51	0.68
B	0.00	318	9.17	-0.22	-13.43(.000)	-0.85	0.83
C	0.00	383	11.05	-0.35	-21.96(.000)	-1.21	0.73
D	1.00	2605	75.16	0.52	36.07(.000)	0.30	1.14

## Item 40

-----  
 item:40 (n7NCq08)  
 Cases for this item 3465 Discrimination 0.45  
 Item Threshold(s): -0.87 Weighted MNSQ 1.01  
 Item Delta(s): -0.87  
 -----

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	1	0.03	-0.01	-0.64(.524)	-0.44	0.00
9	0.00	25	0.72	-0.11	-6.28(.000)	-1.76	1.55
A	0.00	203	5.86	-0.14	-8.57(.000)	-0.73	0.99
B	0.00	312	9.00	-0.28	-16.89(.000)	-1.05	0.86
C	0.00	688	19.86	-0.23	-13.92(.000)	-0.60	0.99
D	1.00	2236	64.53	0.45	29.40(.000)	0.33	1.18

## Item 41

-----  
 item:41 (n7NCq09)  
 Cases for this item 3465 Discrimination 0.43  
 Item Threshold(s): -1.33 Weighted MNSQ 0.99  
 Item Delta(s): -1.33  
 -----

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
9	0.00	32	0.92	-0.13	-7.85(.000)	-1.95	1.39
A	0.00	298	8.60	-0.22	-13.24(.000)	-0.89	0.90
B	0.00	266	7.68	-0.30	-18.61(.000)	-1.27	0.75
C	1.00	2515	72.58	0.43	28.22(.000)	0.26	1.18
D	0.00	73	2.11	-0.16	-9.44(.000)	-1.33	0.76
E	0.00	281	8.11	-0.06	-3.38(.001)	-0.27	0.89

## Item 42

-----  
 item:42 (n7NCq10)  
 Cases for this item 3465 Discrimination 0.40  
 Item Threshold(s): -0.85 Weighted MNSQ 1.06  
 Item Delta(s): -0.85  
 -----

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	2	0.06	-0.02	-1.39(.164)	-0.83	0.46
9	0.00	25	0.72	-0.12	-7.27(.000)	-1.90	1.47
A	1.00	2225	64.21	0.40	25.99(.000)	0.29	1.20
B	0.00	410	11.83	-0.13	-7.67(.000)	-0.49	1.09
C	0.00	726	20.95	-0.30	-18.52(.000)	-0.71	0.96
D	0.00	77	2.22	-0.13	-7.58(.000)	-1.08	0.97

## Item 43

-----  
 item:43 (n7NCq11)  
 Cases for this item 3465 Discrimination 0.51  
 Item Threshold(s): -1.29 Weighted MNSQ 0.91  
 Item Delta(s): -1.29  
 -----

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
9	0.00	27	0.78	-0.12	-7.33(.000)	-1.96	1.26
A	0.00	224	6.46	-0.20	-11.75(.000)	-0.92	0.88
B	0.00	617	17.81	-0.36	-22.84(.000)	-0.96	0.79
C	1.00	2492	71.92	0.51	35.10(.000)	0.32	1.16
D	0.00	105	3.03	-0.19	-11.44(.000)	-1.33	0.79

## Item 44

```

-----
item:44 (n7NCq12)
Cases for this item  3464  Discrimination  0.61
Item Threshold(s):  -0.60  Weighted MNSQ  0.82
Item Delta(s):      -0.60
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.01	-0.83(.409)	-0.51	0.00
9	0.00	33	0.95	-0.11	-6.42(.000)	-1.57	1.47
A	0.00	396	11.43	-0.21	-12.83(.000)	-0.72	0.83
B	0.00	456	13.16	-0.34	-21.28(.000)	-1.07	0.74
C	1.00	2067	59.67	0.61	45.75(.000)	0.53	1.11
D	0.00	511	14.75	-0.30	-18.73(.000)	-0.92	0.81

## Item 45

```

-----
item:45 (n7NCq13)
Cases for this item  3464  Discrimination  0.25
Item Threshold(s):  -0.63  Weighted MNSQ  1.26
Item Delta(s):      -0.62
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	45	1.30	-0.12	-7.08(.000)	-1.45	1.17
A	0.00	1010	29.16	-0.02	-1.04(.297)	-0.10	1.10
B	1.00	2079	60.02	0.25	15.33(.000)	0.20	1.22
C	0.00	269	7.77	-0.30	-18.55(.000)	-1.28	0.67
D	0.00	61	1.76	-0.16	-9.72(.000)	-1.49	0.65

## Item 46

```

-----
item:46 (n7NCq14)
Cases for this item  3463  Discrimination  0.36
Item Threshold(s):  -0.82  Weighted MNSQ  1.12
Item Delta(s):      -0.82
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.06	-0.02	-1.04(.300)	-0.47	0.05
9	0.00	28	0.81	-0.08	-5.00(.000)	-1.43	1.77
A	0.00	119	3.44	-0.18	-10.67(.000)	-1.14	1.02
B	0.00	834	24.08	-0.25	-15.26(.000)	-0.57	1.01
C	1.00	2205	63.67	0.36	22.93(.000)	0.27	1.22
D	0.00	275	7.94	-0.10	-5.85(.000)	-0.48	0.99

## Item 47

```

-----
item:47 (n7NCq15)
Cases for this item  3462  Discrimination  0.44
Item Threshold(s):  -0.43  Weighted MNSQ  1.05
Item Delta(s):      -0.43
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	29	0.84	-0.12	-6.88(.000)	-1.65	1.33
A	0.00	243	7.02	-0.20	-12.08(.000)	-0.90	0.93
B	0.00	233	6.73	-0.27	-16.57(.000)	-1.22	0.87
C	1.00	1950	56.33	0.44	29.08(.000)	0.40	1.19
D	0.00	1007	29.09	-0.20	-11.87(.000)	-0.42	0.98

## Item 48

-----  
 item:48 (n7NCq16)  
 Cases for this item 3462 Discrimination 0.59  
 Item Threshold(s): -0.41 Weighted MNSQ 0.86  
 Item Delta(s): -0.41  
 -----

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
9	0.00	17	0.49	-0.13	-7.46(.000)	-2.28	1.18
A	0.00	528	15.25	-0.22	-13.18(.000)	-0.67	0.83
B	0.00	615	17.76	-0.38	-23.97(.000)	-1.00	0.78
C	0.00	366	10.57	-0.21	-12.34(.000)	-0.76	0.90
D	1.00	1936	55.92	0.59	43.40(.000)	0.57	1.12

## Item 49

-----  
 item:49 (n7NCq17)  
 Cases for this item 3462 Discrimination 0.55  
 Item Threshold(s): -0.02 Weighted MNSQ 0.93  
 Item Delta(s): -0.02  
 -----

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	2	0.06	0.02	1.40(.162)	1.23	0.83
9	0.00	30	0.87	-0.13	-7.44(.000)	-1.74	1.22
A	0.00	146	4.22	-0.13	-7.59(.000)	-0.77	0.93
B	0.00	295	8.52	-0.24	-14.53(.000)	-0.96	0.86
C	0.00	1311	37.87	-0.35	-22.26(.000)	-0.60	0.90
D	1.00	1678	48.47	0.55	38.84(.000)	0.62	1.16

## Item 50

-----  
 item:50 (n7NCq18)  
 Cases for this item 3462 Discrimination 0.41  
 Item Threshold(s): -0.29 Weighted MNSQ 1.09  
 Item Delta(s): -0.29  
 -----

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	5	0.14	-0.04	-2.55(.011)	-1.57	0.58
9	0.00	23	0.66	-0.11	-6.79(.000)	-1.85	1.33
A	0.00	229	6.61	-0.18	-11.05(.000)	-0.89	1.04
B	0.00	167	4.82	-0.15	-8.88(.000)	-0.83	1.15
C	0.00	307	8.87	-0.06	-3.82(.000)	-0.25	1.22
D	1.00	1856	53.61	0.41	26.11(.000)	0.38	1.17
E	0.00	875	25.27	-0.22	-13.18(.000)	-0.48	1.02

## Item 51

-----  
 item:51 (n7NCq19)  
 Cases for this item 3461 Discrimination 0.38  
 Item Threshold(s): -0.03 Weighted MNSQ 1.14  
 Item Delta(s): -0.03  
 -----

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	3	0.09	-0.03	-1.62(.106)	-1.41	1.05
9	0.00	20	0.58	-0.12	-7.25(.000)	-2.07	1.29
A	0.00	458	13.23	-0.09	-5.09(.000)	-0.34	1.02
B	1.00	1686	48.71	0.38	24.10(.000)	0.42	1.25
C	0.00	180	5.20	-0.26	-16.02(.000)	-1.37	0.75
D	0.00	1114	32.19	-0.20	-11.79(.000)	-0.40	0.97

## Item 52

```

-----
item:52 (n7NCq20)
Cases for this item  3460  Discrimination  0.31
Item Threshold(s):  -0.23  Weighted MNSQ  1.21
Item Delta(s):      -0.23
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.06	-0.02	-1.34(.181)	-1.52	1.56
9	0.00	19	0.55	-0.10	-5.95(.000)	-1.98	1.51
A	0.00	974	28.15	-0.09	-5.08(.000)	-0.23	1.08
B	0.00	348	10.06	-0.29	-18.14(.000)	-1.09	0.87
C	1.00	1821	52.63	0.31	19.38(.000)	0.31	1.23
D	0.00	296	8.55	-0.08	-4.42(.000)	-0.34	1.07

## Item 53

```

-----
item:53 (n7NCq21)
Cases for this item  3459  Discrimination  0.49
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
0	0.00	1871	54.09	-0.41	-26.63(.000)	-0.50	0.99
1	1.00	1339	38.71	0.49	32.80(.000)	0.68	1.20
9	0.00	249	7.20	-0.12	-7.27(.000)	-0.62	1.08

## Item 54

```

-----
item:54 (n7NCq22)
Cases for this item  3458  Discrimination  0.44
Item Threshold(s):   0.57  Weighted MNSQ  1.05
Item Delta(s):      0.57
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.02	-1.01(.315)	-2.06	0.00
9	0.00	17	0.49	-0.11	-6.38(.000)	-2.18	1.35
A	1.00	1293	37.39	0.44	29.05(.000)	0.63	1.23
B	0.00	777	22.47	-0.19	-11.34(.000)	-0.47	1.10
C	0.00	783	22.64	-0.25	-15.43(.000)	-0.60	0.93
D	0.00	587	16.98	-0.06	-3.33(.001)	-0.21	1.00

## Item 55

```

-----
item:55 (n7NCq23)
Cases for this item  3457  Discrimination  0.51
Item Threshold(s):   0.41  Weighted MNSQ  0.98
Item Delta(s):      0.41
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1911	55.28	-0.44	-28.88(.000)	-0.52	1.04
1	1.00	1396	40.38	0.51	34.97(.000)	0.69	1.12
9	0.00	150	4.34	-0.16	-9.23(.000)	-1.01	0.98

## Item 56

```

-----
item:56 (n7NCq24)
Cases for this item  3455  Discrimination  0.53
Item Threshold(s):  0.49  Weighted MNSQ  0.95
Item Delta(s):      0.49
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	1	0.03	-0.01	-0.83(.407)	-0.51	0.00
9	0.00	14	0.41	-0.09	-5.48(.000)	-2.00	1.83
A	0.00	291	8.42	-0.18	-10.51(.000)	-0.73	0.86
B	1.00	1344	38.90	0.53	36.33(.000)	0.73	1.23
C	0.00	601	17.40	-0.20	-12.14(.000)	-0.56	1.04
D	0.00	1204	34.85	-0.26	-15.92(.000)	-0.48	0.87

## Item 57

```

-----
item:57 (n7NCq25)
Cases for this item  3455  Discrimination  0.52
Item Threshold(s):  0.84  Weighted MNSQ  0.96
Item Delta(s):      0.84
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
0	0.00	2227	64.46	-0.45	-29.86(.000)	-0.45	1.03
1	1.00	1133	32.79	0.52	35.62(.000)	0.83	1.14
9	0.00	95	2.75	-0.16	-9.65(.000)	-1.26	0.90

## Item 58

```

-----
item:58 (n7NCq26)
Cases for this item  3452  Discrimination  0.61
Item Threshold(s):  0.93  Weighted MNSQ  0.84
Item Delta(s):      0.93
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
0	0.00	2191	63.47	-0.52	-35.64(.000)	-0.52	0.96
1	1.00	1079	31.26	0.61	45.06(.000)	1.03	1.07
9	0.00	182	5.27	-0.14	-8.60(.000)	-0.83	0.89

## Item 59

```

-----
item:59 (n7NCq27)
Cases for this item  3448  Discrimination  0.47
Item Threshold(s):  2.09  Weighted MNSQ  0.91
Item Delta(s):      2.08
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	3	0.09	-0.02	-0.98(.325)	-0.95	1.64
9	0.00	30	0.87	-0.05	-2.78(.005)	-0.81	1.23
A	0.00	212	6.15	-0.11	-6.38(.000)	-0.58	1.08
B	0.00	2434	70.59	-0.23	-13.95(.000)	-0.23	1.04
C	0.00	201	5.83	-0.15	-9.10(.000)	-0.74	1.04
D	1.00	535	15.52	0.47	31.01(.000)	1.29	1.23
E	0.00	33	0.96	0.03	1.82(.069)	0.22	1.16

## Item 60

-----  
 item:60 (n7NCq28)  
 Cases for this item 3445 Discrimination 0.45  
 Item Threshold(s): 1.59 Weighted MNSQ 0.97  
 Item Delta(s): 1.60  
 -----

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.06	0.02	1.06(.289)	0.76	1.34
9	0.00	120	3.48	-0.04	-2.24(.025)	-0.33	0.97
A	0.00	690	20.03	-0.21	-12.41(.000)	-0.54	0.99
B	0.00	1082	31.41	-0.20	-11.83(.000)	-0.39	0.96
C	0.00	710	20.61	-0.02	-1.16(.247)	-0.11	1.14
D	1.00	734	21.31	0.45	29.71(.000)	1.02	1.26
E	0.00	107	3.11	0.02	1.40(.161)	0.07	1.27

## Item 61

-----  
 item:61 (n7NCq29)  
 Cases for this item 3437 Discrimination 0.58  
 Item Threshold(s): 1.63 Weighted MNSQ 0.83  
 Item Delta(s): 1.63  
 -----

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2460	71.57	-0.45	-29.27(.000)	-0.38	1.02
1	1.00	718	20.89	0.58	41.32(.000)	1.31	1.04
9	0.00	259	7.54	-0.12	-7.32(.000)	-0.60	0.85

## Item 62

-----  
 item:62 (n7NCq30)  
 Cases for this item 3434 Discrimination 0.40  
 Item Threshold(s): 1.25 Weighted MNSQ 1.04  
 Item Delta(s): 1.25  
 -----

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	32	0.93	0.01	0.65(.513)	0.09	1.01
A	0.00	783	22.80	0.01	0.52(.604)	-0.03	1.02
B	0.00	463	13.48	-0.09	-5.51(.000)	-0.33	0.93
C	1.00	899	26.18	0.40	25.83(.000)	0.77	1.34
D	0.00	365	10.63	-0.02	-1.37(.172)	-0.14	1.04
E	0.00	892	25.98	-0.33	-20.21(.000)	-0.70	1.00

## Item 63

-----  
 item:63 (n7NCq31)  
 Cases for this item 3432 Discrimination 0.39  
 Item Threshold(s): 1.66 Weighted MNSQ 1.04  
 Item Delta(s): 1.66  
 -----

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2613	76.14	-0.35	-21.63(.000)	-0.28	1.09
1	1.00	703	20.48	0.39	25.12(.000)	0.90	1.27
9	0.00	116	3.38	-0.06	-3.69(.000)	-0.53	1.06

Item 64

-----  
item:64 (n7NCq32)Cases for this item 3373 Discrimination 0.51  
Item Threshold(s): 2.65 Weighted MNSQ 0.82  
Item Delta(s): 2.65-----  

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2814	83.43	-0.33	-20.15(.000)	-0.21	1.07
1	1.00	354	10.50	0.51	34.88(.000)	1.82	0.94
9	0.00	205	6.08	-0.15	-8.82(.000)	-0.75	0.80

----------  
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	3485
Mean	31.36
Standard Deviation	12.74
Variance	162.26
Skewness	0.25
Kurtosis	-0.61
Standard error of mean	0.22
Standard error of measurement	3.24
Coefficient Alpha	0.94

-----



## Appendix B.11 Year 7 Reading

```
=====
NAPLAN 2014, Calibration, Grade 7, reading
GENERALISED ITEM ANALYSIS
=====
```

```
Item 1
-----
```

```
item:1 (r7q01)
Cases for this item 3529 Discrimination 0.40
Item Threshold(s): -2.03 Weighted MNSQ 0.90
Item Delta(s): -2.03
```

```
-----
Label      Score      Count      % of tot  Pt Bis      t      (p)      PVIAvg:1  PVI  SD:1
-----
  8         0.00         3         0.09     -0.07     -4.22(.000) -2.16     0.56
  9         0.00         5         0.14     -0.04     -2.09(.037) -0.42     1.01
  A         0.00        177         5.02     -0.24    -14.40(.000) -0.63     0.85
  B         1.00       3127        88.61     0.40     26.02(.000)  0.52     0.96
  C         0.00        108         3.06     -0.24    -14.61(.000) -0.91     0.83
  D         0.00        109         3.09     -0.18    -11.00(.000) -0.56     0.97
=====
```

```
Item 2
-----
```

```
item:2 (r7q02)
Cases for this item 3529 Discrimination 0.38
Item Threshold(s): -2.46 Weighted MNSQ 0.89
Item Delta(s): -2.46
```

```
-----
Label      Score      Count      % of tot  Pt Bis      t      (p)      PVIAvg:1  PVI  SD:1
-----
  8         0.00         1         0.03     -0.05     -2.76(.006) -2.32     0.00
  9         0.00        12         0.34     -0.08     -4.77(.000) -0.81     0.84
  A         0.00        147         4.17     -0.23    -14.16(.000) -0.67     0.83
  B         0.00         92         2.61     -0.24    -14.68(.000) -1.04     0.76
  C         1.00       3247        92.01     0.38     24.62(.000)  0.49     0.97
  D         0.00         30         0.85     -0.15     -9.04(.000) -1.19     0.73
=====
```

```
Item 3
-----
```

```
item:3 (r7q03)
Cases for this item 3529 Discrimination 0.31
Item Threshold(s): -3.31 Weighted MNSQ 0.91
Item Delta(s): -3.31
```

```
-----
Label      Score      Count      % of tot  Pt Bis      t      (p)      PVIAvg:1  PVI  SD:1
-----
  8         0.00         1         0.03     -0.05     -2.76(.006) -2.32     0.00
  9         0.00         4         0.11     -0.04     -2.10(.036) -0.62     1.29
  A         0.00         43         1.22     -0.16     -9.51(.000) -0.94     0.61
  B         0.00         38         1.08     -0.16     -9.36(.000) -0.98     0.77
  C         1.00       3396        96.23     0.31     19.64(.000)  0.44     0.99
  D         0.00         47         1.33     -0.21    -12.96(.000) -1.41     0.64
=====
```

## Item 4

```

-----
item:4 (r7q04)
Cases for this item  3529  Discrimination  0.46
Item Threshold(s):  -1.10  Weighted MNSQ  0.94
Item Delta(s):      -1.10

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.05	-2.76(.006)	-2.32	0.00
9	0.00	10	0.28	-0.07	-4.26(.000)	-1.02	1.55
A	0.00	335	9.49	-0.31	-19.09(.000)	-0.51	0.83
B	1.00	2736	77.53	0.46	30.42(.000)	0.62	0.95
C	0.00	299	8.47	-0.24	-14.40(.000)	-0.39	0.85
D	0.00	148	4.19	-0.15	-9.10(.000)	-0.32	0.79

## Item 5

```

-----
item:5 (r7q05)
Cases for this item  3526  Discrimination  0.33
Item Threshold(s):  -2.36  Weighted MNSQ  0.93
Item Delta(s):      -2.36

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	4	0.11	-0.08	-4.76(.000)	-2.19	0.80
A	1.00	3220	91.32	0.33	20.56(.000)	0.48	0.97
B	0.00	214	6.07	-0.20	-11.98(.000)	-0.35	0.95
C	0.00	60	1.70	-0.22	-13.53(.000)	-1.25	0.68
D	0.00	28	0.79	-0.15	-9.09(.000)	-1.20	0.70

## Item 6

```

-----
item:6 (r7q06)
Cases for this item  3526  Discrimination  0.31
Item Threshold(s):  -1.17  Weighted MNSQ  1.05
Item Delta(s):      -1.17

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.06	-0.06	-3.58(.000)	-2.40	0.11
9	0.00	4	0.11	-0.08	-4.96(.000)	-2.38	0.62
A	0.00	564	16.00	-0.25	-15.26(.000)	-0.17	0.99
B	1.00	2768	78.50	0.31	19.68(.000)	0.54	0.97
C	0.00	77	2.18	-0.14	-8.21(.000)	-0.47	0.90
D	0.00	111	3.15	-0.08	-4.70(.000)	-0.01	1.05

## Item 7

```

-----
item:7 (r7q07)
Cases for this item  3526  Discrimination  0.44
Item Threshold(s):  -1.28  Weighted MNSQ  0.94
Item Delta(s):      -1.28

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.05	-2.77(.006)	-2.32	0.00
9	0.00	16	0.45	-0.05	-2.85(.004)	-0.36	1.45
A	1.00	2825	80.12	0.44	28.87(.000)	0.60	0.95
B	0.00	96	2.72	-0.22	-13.07(.000)	-0.82	0.78
C	0.00	386	10.95	-0.25	-15.48(.000)	-0.31	0.82
D	0.00	202	5.73	-0.24	-14.95(.000)	-0.59	0.75

## Item 8

```

-----
item:8 (r7q08)
Cases for this item 3525 Discrimination 0.40
Item Threshold(s): -2.20 Weighted MNSQ 0.89
Item Delta(s): -2.20

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.17	-0.02	-1.19(.235)	-0.27	1.08
9	0.00	10	0.28	-0.08	-4.83(.000)	-1.33	1.53
A	0.00	121	3.43	-0.24	-14.84(.000)	-0.88	0.79
B	0.00	120	3.40	-0.16	-9.77(.000)	-0.44	0.94
C	1.00	3174	90.04	0.40	25.86(.000)	0.51	0.95
D	0.00	94	2.67	-0.25	-15.55(.000)	-1.06	0.68

## Item 9

```

-----
item:9 (r7q09)
Cases for this item 3525 Discrimination 0.45
Item Threshold(s): -0.95 Weighted MNSQ 0.95
Item Delta(s): -0.95

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.06	-0.03	-1.58(.115)	-0.80	2.16
9	0.00	30	0.85	-0.08	-4.50(.000)	-0.43	1.06
A	0.00	260	7.38	-0.20	-12.19(.000)	-0.29	0.85
B	0.00	306	8.68	-0.20	-12.10(.000)	-0.23	0.93
C	0.00	277	7.86	-0.29	-17.96(.000)	-0.54	0.80
D	1.00	2650	75.18	0.45	29.89(.000)	0.63	0.95

## Item 10

```

-----
item:10 (r7q10)
Cases for this item 3522 Discrimination 0.47
Item Threshold(s): -1.93 Weighted MNSQ 0.85
Item Delta(s): -1.93

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.06	-0.05	-2.95(.003)	-1.55	1.10
9	0.00	32	0.91	-0.09	-5.30(.000)	-0.54	1.03
A	0.00	169	4.80	-0.26	-16.30(.000)	-0.71	0.79
B	1.00	3090	87.73	0.47	31.66(.000)	0.55	0.94
C	0.00	155	4.40	-0.28	-16.99(.000)	-0.83	0.68
D	0.00	74	2.10	-0.22	-13.46(.000)	-1.04	0.66

## Item 11

```

-----
item:11 (r7q11)
Cases for this item 3522 Discrimination 0.53
Item Threshold(s): -0.10 Weighted MNSQ 0.92
Item Delta(s): -0.10

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.06	-0.05	-2.95(.003)	-1.55	1.10
9	0.00	31	0.88	-0.10	-6.21(.000)	-0.76	0.92
A	0.00	686	19.48	-0.27	-16.60(.000)	-0.16	0.82
B	1.00	2112	59.97	0.53	36.81(.000)	0.80	0.92
C	0.00	411	11.67	-0.27	-16.50(.000)	-0.29	0.80
D	0.00	280	7.95	-0.20	-12.25(.000)	-0.26	0.85

## Item 12

```

-----
item:12 (r7q12)
Cases for this item  3521  Discrimination  0.33
Item Threshold(s):  1.55  Weighted MNSQ  1.05
Item Delta(s):      1.54

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.05	-2.77(.006)	-2.32	0.00
9	0.00	22	0.62	-0.08	-4.75(.000)	-0.66	1.15
A	0.00	544	15.45	-0.12	-7.39(.000)	0.10	1.01
B	1.00	980	27.83	0.33	20.42(.000)	0.92	1.08
C	0.00	989	28.09	-0.14	-8.24(.000)	0.15	0.87
D	0.00	985	27.98	-0.07	-4.28(.000)	0.29	0.89

## Item 13

```

-----
item:13 (r7q13)
Cases for this item  3521  Discrimination  0.24
Item Threshold(s):  -0.33  Weighted MNSQ  1.19
Item Delta(s):      -0.33

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	14	0.40	-0.10	-6.12(.000)	-1.42	1.37
A	1.00	2267	64.39	0.24	14.64(.000)	0.56	0.96
B	0.00	871	24.74	-0.10	-6.15(.000)	0.22	1.05
C	0.00	109	3.10	-0.16	-9.77(.000)	-0.48	0.96
D	0.00	260	7.38	-0.14	-8.15(.000)	-0.09	0.92

## Item 14

```

-----
item:14 (r7q14)
Cases for this item  3516  Discrimination  0.41
Item Threshold(s):  -0.76  Weighted MNSQ  1.01
Item Delta(s):      -0.76

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.01	-0.60(.546)	-0.36	0.00
9	0.00	27	0.77	-0.08	-4.82(.000)	-0.62	1.09
A	0.00	231	6.57	-0.20	-11.91(.000)	-0.33	0.87
B	0.00	522	14.85	-0.23	-14.26(.000)	-0.13	0.82
C	0.00	197	5.60	-0.19	-11.27(.000)	-0.35	0.98
D	1.00	2538	72.18	0.41	26.38(.000)	0.63	0.96

## Item 15

```

-----
item:15 (r7q15)
Cases for this item  3516  Discrimination  0.41
Item Threshold(s):  -1.75  Weighted MNSQ  0.93
Item Delta(s):      -1.75

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	22	0.63	-0.09	-5.18(.000)	-0.75	1.07
A	0.00	130	3.70	-0.20	-12.19(.000)	-0.61	0.78
B	0.00	213	6.06	-0.26	-15.85(.000)	-0.56	0.79
C	1.00	3023	85.98	0.41	26.50(.000)	0.55	0.96
D	0.00	128	3.64	-0.19	-11.35(.000)	-0.48	0.85

## Item 16

```

-----
item:16 (r7q16)
Cases for this item  3516  Discrimination  0.55
Item Threshold(s):  -0.05  Weighted MNSQ  0.89
Item Delta(s):      -0.05
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	0.00	0.19(.846)	0.61	0.00
9	0.00	27	0.77	-0.10	-5.75(.000)	-0.82	0.99
A	0.00	290	8.25	-0.22	-13.66(.000)	-0.35	0.77
B	0.00	524	14.90	-0.25	-15.35(.000)	-0.18	0.82
C	0.00	597	16.98	-0.30	-18.60(.000)	-0.23	0.82
D	1.00	2077	59.07	0.55	39.33(.000)	0.84	0.89

## Item 17

```

-----
item:17 (r7q17)
Cases for this item  3516  Discrimination  0.51
Item Threshold(s):   1.13  Weighted MNSQ  0.91
Item Delta(s):      1.14
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2037	57.94	-0.34	-21.75(.000)	0.11	0.84
1	1.00	1237	35.18	0.51	35.39(.000)	1.07	0.90
9	0.00	242	6.88	-0.30	-18.31(.000)	-0.67	0.86

## Item 18

```

-----
item:18 (r7q18)
Cases for this item  3514  Discrimination  0.45
Item Threshold(s):  -1.51  Weighted MNSQ  0.91
Item Delta(s):     -1.51
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	51	1.45	-0.08	-4.72(.000)	-0.27	1.03
A	1.00	2923	83.18	0.45	30.05(.000)	0.58	0.95
B	0.00	185	5.26	-0.30	-18.64(.000)	-0.78	0.69
C	0.00	291	8.28	-0.26	-16.08(.000)	-0.45	0.78
D	0.00	64	1.82	-0.15	-9.18(.000)	-0.59	0.64

## Item 19

```

-----
item:19 (r7q19)
Cases for this item  3512  Discrimination  0.52
Item Threshold(s):   0.59  Weighted MNSQ  0.92
Item Delta(s):      0.58
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	56	1.59	-0.08	-4.52(.000)	-0.22	0.99
A	1.00	1620	46.13	0.52	36.06(.000)	0.94	0.91
B	0.00	236	6.72	-0.33	-20.55(.000)	-0.78	0.70
C	0.00	216	6.15	-0.28	-16.98(.000)	-0.58	0.76
D	0.00	1384	39.41	-0.21	-12.57(.000)	0.13	0.79

## Item 20

```

-----
item:20 (r7q20)
Cases for this item  3510  Discrimination  0.41
Item Threshold(s):  -0.52  Weighted MNSQ  1.01
Item Delta(s):      -0.52

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	55	1.57	-0.07	-4.05(.000)	-0.18	1.02
A	0.00	267	7.61	-0.20	-11.97(.000)	-0.30	0.87
B	0.00	355	10.11	-0.23	-13.95(.000)	-0.26	0.91
C	1.00	2389	68.06	0.41	26.68(.000)	0.67	0.96
D	0.00	444	12.65	-0.18	-11.12(.000)	-0.06	0.84

## Item 21

```

-----
item:21 (r7q21)
Cases for this item  3509  Discrimination  0.50
Item Threshold(s):  -1.22  Weighted MNSQ  0.88
Item Delta(s):      -1.22

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	19	0.54	-0.08	-4.92(.000)	-0.82	1.12
A	1.00	2785	79.37	0.50	34.17(.000)	0.63	0.93
B	0.00	103	2.94	-0.25	-15.53(.000)	-0.95	0.59
C	0.00	491	13.99	-0.32	-19.84(.000)	-0.34	0.74
D	0.00	111	3.16	-0.25	-15.07(.000)	-0.93	0.76

## Item 22

```

-----
item:22 (r7q22)
Cases for this item  3508  Discrimination  0.26
Item Threshold(s):   0.32  Weighted MNSQ  1.20
Item Delta(s):       0.32

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.01	-0.49(.623)	-0.40	0.00
9	0.00	13	0.37	-0.08	-4.46(.000)	-0.98	1.41
A	0.00	135	3.85	-0.24	-14.72(.000)	-0.74	0.83
B	0.00	747	21.29	-0.11	-6.50(.000)	0.20	0.93
C	1.00	1806	51.48	0.26	15.72(.000)	0.63	0.99
D	0.00	806	22.98	-0.08	-4.58(.000)	0.26	0.94

## Item 23

```

-----
item:23 (r7q23)
Cases for this item  3508  Discrimination  0.45
Item Threshold(s):   0.52  Weighted MNSQ  1.00
Item Delta(s):       0.52

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	17	0.48	0.02	0.90(.366)	0.56	0.98
9	0.00	40	1.14	-0.08	-4.53(.000)	-0.28	1.17
A	0.00	840	23.95	-0.15	-8.76(.000)	0.13	0.82
B	0.00	443	12.63	-0.22	-13.16(.000)	-0.14	0.83
C	0.00	506	14.42	-0.23	-14.11(.000)	-0.13	0.88
D	1.00	1662	47.38	0.45	29.55(.000)	0.85	0.98

## Item 24

```

-----
item:24 (r7q24)
Cases for this item  3508  Discrimination  0.51
Item Threshold(s):  0.50  Weighted MNSQ  0.93
Item Delta(s):      0.50

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	2	0.06	-0.00	-0.29(.771)	0.26	1.62
9	0.00	28	0.80	-0.08	-4.68(.000)	-0.59	1.29
A	0.00	410	11.69	-0.34	-21.25(.000)	-0.46	0.70
B	0.00	362	10.32	-0.23	-14.14(.000)	-0.26	0.79
C	0.00	1025	29.22	-0.15	-8.89(.000)	0.17	0.83
D	1.00	1681	47.92	0.51	34.93(.000)	0.90	0.93

## Item 25

```

-----
item:25 (r7q25)
Cases for this item  3507  Discrimination  0.48
Item Threshold(s):  -0.26  Weighted MNSQ  0.96
Item Delta(s):      -0.26

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
9	0.00	35	1.00	-0.05	-2.98(.003)	-0.12	1.20
A	0.00	118	3.36	-0.24	-14.59(.000)	-0.82	0.79
B	0.00	839	23.92	-0.31	-19.35(.000)	-0.12	0.80
C	1.00	2214	63.13	0.48	32.58(.000)	0.74	0.94
D	0.00	301	8.58	-0.19	-11.17(.000)	-0.16	0.89

## Item 26

```

-----
item:26 (r7q26)
Cases for this item  3505  Discrimination  0.49
Item Threshold(s):  -1.16  Weighted MNSQ  0.89
Item Delta(s):      -1.16

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
9	0.00	31	0.88	-0.05	-2.71(.007)	-0.05	1.26
A	1.00	2756	78.63	0.49	33.48(.000)	0.63	0.93
B	0.00	305	8.70	-0.33	-20.70(.000)	-0.59	0.75
C	0.00	229	6.53	-0.21	-12.83(.000)	-0.33	0.84
D	0.00	184	5.25	-0.23	-14.22(.000)	-0.57	0.74

## Item 27

```

-----
item:27 (r7q27)
Cases for this item  3505  Discrimination  0.48
Item Threshold(s):  -1.41  Weighted MNSQ  0.88
Item Delta(s):      -1.41

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
9	0.00	27	0.77	-0.05	-3.01(.003)	-0.14	1.29
A	0.00	211	6.02	-0.26	-16.17(.000)	-0.61	0.75
B	0.00	293	8.36	-0.28	-17.25(.000)	-0.49	0.79
C	1.00	2874	82.00	0.48	32.39(.000)	0.61	0.92
D	0.00	100	2.85	-0.24	-14.61(.000)	-0.91	0.66

## Item 28

```

-----
item:28 (r7q28)
Cases for this item  3505  Discrimination  0.27
Item Threshold(s):  1.51  Weighted MNSQ  1.12
Item Delta(s):      1.51
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	40	1.14	-0.06	-3.35(.001)	-0.09	1.20
A	1.00	1000	28.53	0.27	16.70(.000)	0.80	1.05
B	0.00	194	5.53	-0.24	-14.82(.000)	-0.55	0.91
C	0.00	1478	42.17	-0.03	-1.62(.106)	0.36	0.90
D	0.00	793	22.62	-0.11	-6.78(.000)	0.21	0.94

## Item 29

```

-----
item:29 (r7q29)
Cases for this item  3505  Discrimination  0.44
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
9	0.00	18	0.51	-0.10	-5.65(.000)	-0.90	1.11
A	0.00	1634	46.62	-0.21	-12.54(.000)	0.17	0.84
B	0.00	397	11.33	-0.11	-6.31(.000)	0.13	1.01
C	0.00	388	11.07	-0.19	-11.41(.000)	-0.12	0.93
D	1.00	1068	30.47	0.44	29.11(.000)	1.05	0.97

## Item 30

```

-----
item:30 (r7q30)
Cases for this item  3505  Discrimination  0.35
Item Threshold(s):  1.23  Weighted MNSQ  1.07
Item Delta(s):      1.24
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	59	1.68	-0.09	-5.11(.000)	-0.32	1.01
A	0.00	194	5.53	-0.15	-9.23(.000)	-0.25	0.94
B	0.00	932	26.59	-0.03	-1.88(.060)	0.35	0.98
C	0.00	1151	32.84	-0.22	-13.42(.000)	0.09	0.83
D	1.00	1169	33.35	0.35	21.99(.000)	0.88	1.01

## Item 31

```

-----
item:31 (r7q31)
Cases for this item  3504  Discrimination  0.45
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	30	0.86	-0.09	-5.51(.000)	-0.59	0.97
A	0.00	542	15.47	-0.17	-10.46(.000)	0.01	0.93
B	0.00	1038	29.62	-0.19	-11.26(.000)	0.11	0.83
C	1.00	1388	39.61	0.45	30.03(.000)	0.93	0.99
D	0.00	506	14.44	-0.18	-11.05(.000)	-0.02	0.81



## Item 32

```

-----
item:32 (r7q32)
Cases for this item  3503  Discrimination  0.25
Item Threshold(s):  1.73  Weighted MNSQ  1.12
Item Delta(s):      1.73
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	39	1.11	-0.09	-5.64(.000)	-0.58	1.03
A	0.00	554	15.82	-0.04	-2.33(.020)	0.30	1.08
B	0.00	1092	31.17	-0.20	-12.18(.000)	0.12	0.83
C	0.00	948	27.06	0.02	1.43(.152)	0.44	1.01
D	1.00	870	24.84	0.25	15.11(.000)	0.80	1.04

## Item 33

```

-----
item:33 (r7q33)
Cases for this item  3496  Discrimination  0.41
Item Threshold(s):  0.54  Weighted MNSQ  1.04
Item Delta(s):      0.54
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1786	51.09	-0.36	-22.97(.000)	0.06	0.89
1	1.00	1648	47.14	0.41	26.41(.000)	0.81	0.96
9	0.00	62	1.77	-0.17	-10.25(.000)	-0.92	0.98

## Item 34

```

-----
item:34 (r7q34)
Cases for this item  3492  Discrimination  0.44
Item Threshold(s):  -0.23  Weighted MNSQ  1.00
Item Delta(s):      -0.24
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	35	1.00	-0.11	-6.35(.000)	-0.81	0.90
A	0.00	458	13.12	-0.13	-7.98(.000)	0.08	0.87
B	1.00	2194	62.83	0.44	28.72(.000)	0.71	0.97
C	0.00	391	11.20	-0.34	-21.63(.000)	-0.47	0.71
D	0.00	414	11.86	-0.15	-8.70(.000)	0.02	0.80

## Item 35

```

-----
item:35 (r7q35)
Cases for this item  3487  Discrimination  0.28
Item Threshold(s):  0.70  Weighted MNSQ  1.16
Item Delta(s):      0.70
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.06	-0.04	-2.40(.016)	-0.95	0.93
9	0.00	90	2.58	-0.07	-3.94(.000)	-0.07	0.94
A	0.00	536	15.37	-0.06	-3.56(.000)	0.25	0.93
B	0.00	857	24.58	-0.10	-6.14(.000)	0.23	0.91
C	0.00	474	13.59	-0.17	-10.26(.000)	0.02	0.95
D	1.00	1528	43.82	0.28	16.89(.000)	0.70	1.03

## Item 36

```

-----
item:36 (r7q36)
Cases for this item  3483  Discrimination  0.36
Item Threshold(s):  0.84  Weighted MNSQ  1.07
Item Delta(s):      0.85
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
9	0.00	26	0.75	-0.07	-4.38(.000)	-0.60	1.04
A	0.00	936	26.87	-0.11	-6.39(.000)	0.21	0.85
B	0.00	421	12.09	-0.21	-12.39(.000)	-0.10	0.86
C	1.00	1428	41.00	0.36	22.73(.000)	0.82	1.04
D	0.00	672	19.29	-0.14	-8.41(.000)	0.13	0.88

## Item 37

```

-----
item:37 (r7q37)
Cases for this item  3479  Discrimination  0.41
Item Threshold(s):  0.48  Weighted MNSQ  1.03
Item Delta(s):      0.49
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	2	0.06	-0.00	-0.14(.891)	0.55	0.98
9	0.00	45	1.29	-0.08	-4.51(.000)	-0.27	1.13
A	0.00	290	8.34	-0.09	-5.28(.000)	0.12	1.05
B	1.00	1679	48.26	0.41	26.88(.000)	0.81	0.99
C	0.00	598	17.19	-0.25	-14.91(.000)	-0.09	0.86
D	0.00	865	24.86	-0.19	-11.32(.000)	0.08	0.77

## Item 38

```

-----
item:38 (r7q38)
Cases for this item  3475  Discrimination  0.18
Item Threshold(s):  4.72  Weighted MNSQ  1.02
Item Delta(s):      4.72
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
0	0.00	2914	83.86	0.15	9.18(.000)	0.47	0.98
1	1.00	75	2.16	0.18	10.91(.000)	1.68	0.87
9	0.00	486	13.99	-0.24	-14.54(.000)	-0.17	0.92

## Item 39

```

-----
item:39 (r7q39)
Cases for this item  3463  Discrimination  0.43
Item Threshold(s):  1.96  Weighted MNSQ  0.95
Item Delta(s):      1.96
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
0	0.00	2292	66.19	-0.16	-9.35(.000)	0.30	0.91
1	1.00	747	21.57	0.43	28.42(.000)	1.20	0.86
9	0.00	424	12.24	-0.32	-19.83(.000)	-0.40	0.81

## Item 40

```

-----
item:40 (r7q40)
Cases for this item   3448   Discrimination   0.40
Item Threshold(s):    0.77   Weighted MNSQ   1.05
Item Delta(s):        0.77

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.03	-1.53(.127)	-1.50	0.00
9	0.00	39	1.13	-0.09	-5.08(.000)	-0.52	1.06
A	0.00	539	15.63	-0.14	-8.23(.000)	0.09	0.97
B	0.00	724	21.00	-0.17	-9.88(.000)	0.10	1.00
C	0.00	675	19.58	-0.17	-10.38(.000)	0.08	0.87
D	1.00	1470	42.63	0.40	25.44(.000)	0.86	0.90

## Item 41

```

-----
item:41 (r7q41)
Cases for this item   3439   Discrimination   0.41
Item Threshold(s):    0.92   Weighted MNSQ   1.03
Item Delta(s):        0.92

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	52	1.51	-0.08	-4.51(.000)	-0.23	0.88
A	0.00	629	18.29	-0.15	-9.13(.000)	0.10	0.93
B	0.00	592	17.21	-0.15	-8.98(.000)	0.08	0.91
C	0.00	802	23.32	-0.17	-10.16(.000)	0.12	0.89
D	1.00	1364	39.66	0.41	25.98(.000)	0.89	0.96

## Item 42

```

-----
item:42 (r7q42)
Cases for this item   3427   Discrimination   0.45
Item Threshold(s):    0.74   Weighted MNSQ   0.99
Item Delta(s):        0.74

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.00	-0.22(.830)	0.66	0.00
9	0.00	58	1.69	-0.08	-4.60(.000)	-0.21	0.98
A	1.00	1483	43.27	0.45	29.49(.000)	0.92	0.97
B	0.00	799	23.31	-0.13	-7.81(.000)	0.16	0.86
C	0.00	816	23.81	-0.22	-13.16(.000)	0.03	0.83
D	0.00	270	7.88	-0.24	-14.17(.000)	-0.34	0.78

## Item 43

```

-----
item:43 (r7q43)
Cases for this item   3425   Discrimination   0.40
Item Threshold(s):    0.59   Weighted MNSQ   1.03
Item Delta(s):        0.60

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.06	-0.02	-1.12(.264)	-0.02	0.06
9	0.00	37	1.08	-0.08	-4.64(.000)	-0.41	0.94
A	0.00	1053	30.74	-0.13	-7.45(.000)	0.22	0.84
B	1.00	1583	46.22	0.40	25.87(.000)	0.84	1.00
C	0.00	515	15.04	-0.20	-12.20(.000)	-0.05	0.88
D	0.00	235	6.86	-0.24	-14.72(.000)	-0.40	0.72

## Item 44

```

-----
item:44 (r7q44)
Cases for this item  3424  Discrimination  0.52
Item Threshold(s):  -0.66  Weighted MNSQ  0.90
Item Delta(s):      -0.66
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.06	-0.02	-1.28(.201)	-0.11	0.06
9	0.00	31	0.91	-0.08	-4.67(.000)	-0.56	0.89
A	0.00	254	7.42	-0.28	-17.05(.000)	-0.53	0.68
B	0.00	353	10.31	-0.27	-16.60(.000)	-0.33	0.82
C	1.00	2427	70.88	0.52	35.56(.000)	0.73	0.91
D	0.00	357	10.43	-0.23	-14.10(.000)	-0.24	0.80

## Item 45

```

-----
item:45 (r7q45)
Cases for this item  3413  Discrimination  0.37
Item Threshold(s):   0.59  Weighted MNSQ  1.06
Item Delta(s):      0.59
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.09	-0.04	-2.07(.039)	-0.52	0.64
9	0.00	30	0.88	-0.04	-2.41(.016)	-0.16	1.05
A	0.00	271	7.94	-0.28	-17.01(.000)	-0.48	0.80
B	1.00	1582	46.35	0.37	23.59(.000)	0.80	1.01
C	0.00	473	13.86	-0.28	-16.75(.000)	-0.22	0.78
D	0.00	1054	30.88	-0.02	-1.39(.165)	0.38	0.82

## Item 46

```

-----
item:46 (r7q46)
Cases for this item  3396  Discrimination  0.43
Item Threshold(s):   0.56  Weighted MNSQ  1.01
Item Delta(s):      0.56
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	36	1.06	-0.05	-2.71(.007)	-0.22	1.01
A	0.00	426	12.54	-0.14	-8.30(.000)	0.06	0.84
B	0.00	864	25.44	-0.22	-13.02(.000)	0.06	0.86
C	1.00	1595	46.97	0.43	27.79(.000)	0.85	1.00
D	0.00	475	13.99	-0.20	-11.72(.000)	-0.03	0.82

## Item 47

```

-----
item:47 (r7q47)
Cases for this item  3385  Discrimination  0.38
Item Threshold(s):   0.52  Weighted MNSQ  1.07
Item Delta(s):      0.52
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.06	-0.00	-0.15(.880)	0.29	0.82
9	0.00	41	1.21	-0.04	-2.52(.012)	-0.01	1.17
A	1.00	1623	47.95	0.38	23.65(.000)	0.80	1.02
B	0.00	485	14.33	-0.25	-14.84(.000)	-0.15	0.86
C	0.00	729	21.54	-0.15	-9.06(.000)	0.13	0.84
D	0.00	505	14.92	-0.09	-5.48(.000)	0.19	0.85

## Item 48

```

-----
item:48 (r7q48)
Cases for this item  3377  Discrimination  0.32
Item Threshold(s):  1.48  Weighted MNSQ  1.07
Item Delta(s):      1.48
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	22	0.65	-0.05	-2.77(.006)	-0.23	1.30
A	0.00	540	15.99	-0.06	-3.42(.001)	0.31	0.99
B	0.00	726	21.50	-0.08	-4.49(.000)	0.30	0.94
C	0.00	1098	32.51	-0.18	-10.92(.000)	0.15	0.83
D	1.00	991	29.35	0.32	19.30(.000)	0.88	1.09

## Item 49

```

-----
item:49 (r7q49)
Cases for this item  3377  Discrimination  0.28
Item Threshold(s):  1.73  Weighted MNSQ  1.10
Item Delta(s):      1.73
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1867	55.29	-0.04	-2.05(.041)	0.39	0.96
1	1.00	851	25.20	0.28	17.05(.000)	0.88	0.99
9	0.00	659	19.51	-0.26	-15.93(.000)	-0.09	0.92

## Item 50

```

-----
item:50 (r7q50)
Cases for this item  3327  Discrimination  0.44
Item Threshold(s):  0.21  Weighted MNSQ  1.01
Item Delta(s):      0.21
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.02	-0.97(.334)	-0.06	0.00
9	0.00	11	0.33	-0.01	-0.50(.620)	0.27	0.95
A	1.00	1806	54.28	0.44	28.19(.000)	0.80	0.94
B	0.00	651	19.57	-0.29	-17.15(.000)	-0.11	0.92
C	0.00	346	10.40	-0.27	-16.14(.000)	-0.31	0.76
D	0.00	512	15.39	-0.06	-3.62(.000)	0.28	0.90

-----

The following traditional statistics are only meaningful for complete designs and when the amount of missing data is minimal.  
In this analysis 1.21% of the data are missing.

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

```

-----
N                      3529
Mean                   28.23
Standard Deviation     8.85
Variance               78.24
Skewness               -0.09
Kurtosis               -0.62
Standard error of mean 0.15
Standard error of measurement 2.96
Coefficient Alpha      0.89
-----

```

## Appendix B.12 Year 7 Spelling

=====

NAPLAN 2014, Calibration, Grade 7, spelling  
GENERALISED ITEM ANALYSIS

=====

Item 1

-----

item:1 (lc7q01)  
Cases for this item 3520 Discrimination 0.55  
Item Threshold(s): -3.06 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	427	12.13	-0.52	-36.17(.000)	-2.83	1.60
1	1.00	3061	86.96	0.55	39.03(.000)	0.26	1.58
9	0.00	32	0.91	-0.16	-9.58(.000)	-3.33	1.21

=====

Item 2

-----

item:2 (lc7q02)  
Cases for this item 3520 Discrimination 0.39  
Item Threshold(s): -2.97 Weighted MNSQ 1.27  
Item Delta(s): -2.97

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	463	13.15	-0.37	-23.67(.000)	-1.99	1.97
1	1.00	3034	86.19	0.39	25.10(.000)	0.15	1.70
9	0.00	23	0.65	-0.11	-6.83(.000)	-2.93	1.47

=====

Item 3

-----

item:3 (lc7q03)  
Cases for this item 3520 Discrimination 0.50  
Item Threshold(s): -2.68 Weighted MNSQ 1.04  
Item Delta(s): -2.68

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	528	15.00	-0.47	-31.84(.000)	-2.28	1.77
1	1.00	2950	83.81	0.50	34.70(.000)	0.27	1.61
9	0.00	42	1.19	-0.16	-9.48(.000)	-3.03	1.72

=====

Item 4

-----

item:4 (lc7q04)  
Cases for this item 3516 Discrimination 0.59  
Item Threshold(s): -2.46 Weighted MNSQ 0.87  
Item Delta(s): -2.46

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	619	17.61	-0.58	-41.69(.000)	-2.48	1.56
1	1.00	2878	81.85	0.59	43.54(.000)	0.38	1.52
9	0.00	19	0.54	-0.12	-7.36(.000)	-3.37	1.39

=====

## Item 5

```

-----
item:5 (lc7q05)
Cases for this item  3516  Discrimination  0.63
Item Threshold(s):  -1.82  Weighted MNSQ  0.91
Item Delta(s):      -1.82

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	845	24.03	-0.61	-45.33(.000)	-2.11	1.59
1	1.00	2636	74.97	0.63	48.13(.000)	0.52	1.47
9	0.00	35	1.00	-0.14	-8.14(.000)	-2.67	1.57

## Item 6

```

-----
item:6 (lc7q06)
Cases for this item  3515  Discrimination  0.63
Item Threshold(s):  -1.77  Weighted MNSQ  0.90
Item Delta(s):      -1.76

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	860	24.47	-0.60	-44.54(.000)	-2.05	1.63
1	1.00	2612	74.31	0.63	48.28(.000)	0.53	1.46
9	0.00	43	1.22	-0.16	-9.66(.000)	-2.95	1.34

## Item 7

```

-----
item:7 (lc7q07)
Cases for this item  3515  Discrimination  0.63
Item Threshold(s):  -1.32  Weighted MNSQ  0.95
Item Delta(s):      -1.32

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1011	28.76	-0.59	-43.25(.000)	-1.81	1.63
1	1.00	2413	68.65	0.63	48.66(.000)	0.62	1.45
9	0.00	91	2.59	-0.17	-10.45(.000)	-2.13	1.64

## Item 8

```

-----
item:8 (lc7q08)
Cases for this item  3513  Discrimination  0.57
Item Threshold(s):  -1.30  Weighted MNSQ  1.08
Item Delta(s):      -1.31

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1056	30.06	-0.53	-37.40(.000)	-1.62	1.71
1	1.00	2405	68.46	0.57	41.33(.000)	0.56	1.50
9	0.00	52	1.48	-0.17	-10.51(.000)	-2.96	1.52

## Item 9

```

-----
item:9 (lc7q09)
Cases for this item  3510  Discrimination  0.68
Item Threshold(s):  -0.94  Weighted MNSQ  0.87
Item Delta(s):      -0.94

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1167	33.25	-0.61	-45.81(.000)	-1.70	1.57
1	1.00	2222	63.30	0.68	54.70(.000)	0.79	1.37
9	0.00	121	3.45	-0.21	-12.88(.000)	-2.15	1.40

## Item 10

```

-----
item:10 (lc7q10)
Cases for this item  3509  Discrimination  0.58
Item Threshold(s):  -0.12  Weighted MNSQ  1.08
Item Delta(s):      -0.12
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1656	47.19	-0.53	-37.36(.000)	-1.14	1.71
1	1.00	1780	50.73	0.58	42.15(.000)	0.88	1.42
9	0.00	73	2.08	-0.16	-9.90(.000)	-2.33	1.67

## Item 11

```

-----
item:11 (lc7q11)
Cases for this item  3509  Discrimination  0.66
Item Threshold(s):  -0.34  Weighted MNSQ  0.92
Item Delta(s):      -0.35
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1523	43.40	-0.62	-46.72(.000)	-1.39	1.64
1	1.00	1906	54.32	0.66	52.64(.000)	0.93	1.33
9	0.00	80	2.28	-0.16	-9.64(.000)	-2.00	1.51

## Item 12

```

-----
item:12 (lc7q12)
Cases for this item  3503  Discrimination  0.62
Item Threshold(s):   0.85  Weighted MNSQ  0.93
Item Delta(s):       0.85
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2185	62.38	-0.56	-40.52(.000)	-0.91	1.63
1	1.00	1243	35.48	0.62	46.30(.000)	1.34	1.32
9	0.00	75	2.14	-0.15	-8.73(.000)	-1.90	1.63

## Item 13

```

-----
item:13 (lc7q13)
Cases for this item  3500  Discrimination  0.57
Item Threshold(s):   0.95  Weighted MNSQ  1.00
Item Delta(s):       0.94
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2185	62.43	-0.50	-33.75(.000)	-0.79	1.66
1	1.00	1194	34.11	0.57	41.48(.000)	1.26	1.38
9	0.00	121	3.46	-0.18	-10.59(.000)	-1.97	1.79

## Item 14

```

-----
item:14 (lc7q14)
Cases for this item  3496  Discrimination  0.45
Item Threshold(s):   2.64  Weighted MNSQ  0.95
Item Delta(s):       2.64
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2773	79.32	-0.26	-15.79(.000)	-0.36	1.70
1	1.00	475	13.59	0.45	30.00(.000)	1.95	1.35
9	0.00	248	7.09	-0.20	-11.87(.000)	-1.49	1.72



## Item 15

```

-----
item:15 (lc7q15)
Cases for this item  3496  Discrimination  0.39
Item Threshold(s):  2.78  Weighted MNSQ  1.05
Item Delta(s):      2.78

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2886	82.55	-0.25	-15.29(.000)	-0.33	1.75
1	1.00	434	12.41	0.39	24.78(.000)	1.72	1.47
9	0.00	176	5.03	-0.15	-8.87(.000)	-1.30	1.86

## Item 16

```

-----
item:16 (lc7q16)
Cases for this item  3494  Discrimination  0.51
Item Threshold(s):  -2.74  Weighted MNSQ  1.01
Item Delta(s):      -2.74

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	448	12.82	-0.45	-29.89(.000)	-2.33	1.74
1	1.00	2961	84.75	0.51	35.09(.000)	0.28	1.59
9	0.00	85	2.43	-0.21	-12.81(.000)	-2.63	1.30

## Item 17

```

-----
item:17 (lc7q17)
Cases for this item  3478  Discrimination  0.60
Item Threshold(s):  -1.60  Weighted MNSQ  0.95
Item Delta(s):      -1.61

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	879	25.27	-0.57	-40.55(.000)	-1.83	1.65
1	1.00	2538	72.97	0.60	44.50(.000)	0.55	1.47
9	0.00	61	1.75	-0.16	-9.68(.000)	-2.41	1.41

## Item 18

```

-----
item:18 (lc7q18)
Cases for this item  3474  Discrimination  0.58
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
0	0.00	1132	32.58	-0.52	-35.81(.000)	-1.42	1.69
1	1.00	2204	63.44	0.58	42.35(.000)	0.68	1.46
9	0.00	138	3.97	-0.19	-11.58(.000)	-1.82	1.35

## Item 19

```

-----
item:19 (lc7q19)
Cases for this item  3462  Discrimination  0.65
Item Threshold(s):  -0.75  Weighted MNSQ  0.93
Item Delta(s):      -0.75

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1224	35.36	-0.57	-41.30(.000)	-1.43	1.60
1	1.00	2120	61.24	0.65	49.71(.000)	0.80	1.39
9	0.00	118	3.41	-0.22	-13.21(.000)	-2.23	1.33

## Item 20

```

-----
item:20 (lc7q20)
Cases for this item  3453  Discrimination  0.62
Item Threshold(s):  0.12  Weighted MNSQ  0.99
Item Delta(s):      0.12
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1747	50.59	-0.57	-40.96(.000)	-1.06	1.64
1	1.00	1643	47.58	0.62	45.94(.000)	1.03	1.34
9	0.00	63	1.82	-0.16	-9.67(.000)	-2.27	1.30

## Item 21

```

-----
item:21 (lc7q21)
Cases for this item  3447  Discrimination  0.62
Item Threshold(s):  0.88  Weighted MNSQ  0.91
Item Delta(s):      0.88
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1948	56.51	-0.49	-33.30(.000)	-0.83	1.61
1	1.00	1228	35.63	0.62	46.75(.000)	1.37	1.27
9	0.00	271	7.86	-0.20	-11.96(.000)	-1.30	1.49

## Item 22

```

-----
item:22 (lc7q22)
Cases for this item  3415  Discrimination  0.54
Item Threshold(s):  1.05  Weighted MNSQ  1.04
Item Delta(s):      1.06
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2098	61.43	-0.46	-30.34(.000)	-0.68	1.65
1	1.00	1133	33.18	0.54	37.33(.000)	1.24	1.45
9	0.00	184	5.39	-0.13	-7.62(.000)	-0.97	1.68

## Item 23

```

-----
item:23 (lc7q23)
Cases for this item  3408  Discrimination  0.55
Item Threshold(s):  0.39  Weighted MNSQ  1.10
Item Delta(s):      0.39
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1693	49.68	-0.44	-28.55(.000)	-0.82	1.69
1	1.00	1487	43.63	0.55	38.28(.000)	1.03	1.42
9	0.00	228	6.69	-0.21	-12.49(.000)	-1.40	1.38

## Item 24

```

-----
item:24 (lc7q24)
Cases for this item  3395  Discrimination  0.59
Item Threshold(s):  1.40  Weighted MNSQ  0.91
Item Delta(s):      1.40
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2238	65.92	-0.52	-35.41(.000)	-0.68	1.63
1	1.00	962	28.34	0.59	42.31(.000)	1.55	1.28
9	0.00	195	5.74	-0.08	-4.68(.000)	-0.62	1.47

## Item 25

```

-----
item:25 (lc7q25)
Cases for this item  3391  Discrimination  0.49
Item Threshold(s):  1.55  Weighted MNSQ  1.08
Item Delta(s):      1.55
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2317	68.33	-0.41	-25.84(.000)	-0.52	1.71
1	1.00	890	26.25	0.49	33.05(.000)	1.38	1.38
9	0.00	184	5.43	-0.13	-7.38(.000)	-0.96	1.40

## Item 26

```

-----
item:26 (lc7q26)
Cases for this item  3364  Discrimination  0.51
Item Threshold(s):  1.35  Weighted MNSQ  1.07
Item Delta(s):      1.35
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2142	63.67	-0.40	-25.44(.000)	-0.56	1.68
1	1.00	983	29.22	0.51	34.16(.000)	1.33	1.40
9	0.00	239	7.10	-0.15	-8.59(.000)	-0.92	1.60

## Item 27

```

-----
item:27 (lc7q27)
Cases for this item  3342  Discrimination  0.38
Item Threshold(s):  2.01  Weighted MNSQ  1.20
Item Delta(s):      2.01
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2433	72.80	-0.28	-17.08(.000)	-0.33	1.75
1	1.00	695	20.80	0.38	23.64(.000)	1.27	1.55
9	0.00	214	6.40	-0.11	-6.54(.000)	-0.68	1.50

## Item 28

```

-----
item:28 (lc7q28)
Cases for this item  3322  Discrimination  0.42
Item Threshold(s):  2.42  Weighted MNSQ  1.06
Item Delta(s):      2.43
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2613	78.66	-0.32	-19.77(.000)	-0.31	1.71
1	1.00	541	16.29	0.42	26.89(.000)	1.64	1.40
9	0.00	168	5.06	-0.11	-6.12(.000)	-0.77	1.81

## Item 29

```

-----
item:29 (lc7q29)
Cases for this item  3294  Discrimination  0.41
Item Threshold(s):  3.06  Weighted MNSQ  0.96
Item Delta(s):      3.06
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2756	83.67	-0.30	-17.98(.000)	-0.23	1.70
1	1.00	355	10.78	0.41	26.10(.000)	2.10	1.37
9	0.00	183	5.56	-0.08	-4.49(.000)	-0.56	1.53

Item 30

-----

item:30 (1c7q30)

Cases for this item 3246 Discrimination 0.35

Item Threshold(s): 3.33 Weighted MNSQ 1.00

Item Delta(s): 3.33

```
-----
```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2837	87.40	-0.27	-16.10(.000)	-0.17	1.73
1	1.00	293	9.03	0.35	21.45(.000)	2.02	1.47
9	0.00	116	3.57	-0.06	-3.31(.001)	-0.46	1.56

```
=====
```

```
-----
```

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

In this analysis 1.85% of the data are missing.

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

```
-----
```

N	3520
Mean	14.68
Standard Deviation	7.05
Variance	49.65
Skewness	-0.18
Kurtosis	-0.69
Standard error of mean	0.12
Standard error of measurement	2.04
Coefficient Alpha	0.92

```
=====
```

## Appendix B.13 Year 9 G&amp;P

```
=====
NAPLAN 2014, Calibration, Grade 9, GP
GENERALISED ITEM ANALYSIS
=====
```

```
Item 1
-----
```

```
item:1 (lc9q31)
Cases for this item 3597 Discrimination 0.32
Item Threshold(s): -2.84 Weighted MNSQ 0.94
Item Delta(s): -2.84
```

```
-----
Label      Score      Count      % of tot  Pt Bis      t      (p)      PVIAvg:1  PVI  SD:1
-----
```

Label	Score	Count	% of tot	Pt Bis	t	(p)	PVIAvg:1	PVI	SD:1
8	0.00	21	0.58	-0.12	-7.21	(.000)	-0.87	0.71	
9	0.00	10	0.28	-0.14	-8.61	(.000)	-2.15	1.03	
A	0.00	19	0.53	-0.15	-9.36	(.000)	-1.34	0.77	
B	0.00	88	2.45	-0.19	-11.42	(.000)	-0.45	1.06	
C	0.00	38	1.06	-0.13	-7.62	(.000)	-0.49	1.06	
D	1.00	3421	95.11	0.32	20.42	(.000)	0.63	0.95	

```
-----
```

```
Item 2
-----
```

```
item:2 (lc9q32)
Cases for this item 3597 Discrimination 0.42
Item Threshold(s): -2.27 Weighted MNSQ 0.90
Item Delta(s): -2.27
```

```
-----
Label      Score      Count      % of tot  Pt Bis      t      (p)      PVIAvg:1  PVI  SD:1
-----
```

Label	Score	Count	% of tot	Pt Bis	t	(p)	PVIAvg:1	PVI	SD:1
8	0.00	5	0.14	-0.02	-1.19	(.235)	0.12	0.88	
9	0.00	13	0.36	-0.17	-10.18	(.000)	-2.24	1.07	
A	0.00	45	1.25	-0.19	-11.29	(.000)	-0.91	0.67	
B	0.00	206	5.73	-0.33	-20.90	(.000)	-0.60	0.82	
C	0.00	21	0.58	-0.10	-6.16	(.000)	-0.63	0.78	
D	1.00	3307	91.94	0.42	28.12	(.000)	0.68	0.93	

```
-----
```

```
Item 3
-----
```

```
item:3 (lc9q33)
Cases for this item 3597 Discrimination 0.33
Item Threshold(s): -2.16 Weighted MNSQ 0.96
Item Delta(s): -2.16
```

```
-----
Label      Score      Count      % of tot  Pt Bis      t      (p)      PVIAvg:1  PVI  SD:1
-----
```

Label	Score	Count	% of tot	Pt Bis	t	(p)	PVIAvg:1	PVI	SD:1
9	0.00	22	0.61	-0.17	-10.21	(.000)	-1.58	1.39	
A	0.00	107	2.97	-0.25	-15.48	(.000)	-0.68	0.77	
B	1.00	3280	91.19	0.33	20.79	(.000)	0.66	0.94	
C	0.00	80	2.22	-0.21	-12.82	(.000)	-0.73	0.95	
D	0.00	108	3.00	-0.04	-2.29	(.022)	0.40	0.97	

```
-----
```

## Item 4

```

-----
item:4 (lc9q34)
Cases for this item  3596  Discrimination  0.47
Item Threshold(s):  -1.53  Weighted MNSQ  0.91
Item Delta(s):      -1.53

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	10	0.28	-0.09	-5.45(.000)	-0.97	0.50
9	0.00	19	0.53	-0.17	-10.31(.000)	-1.78	1.35
A	0.00	166	4.62	-0.29	-17.95(.000)	-0.59	0.84
B	1.00	3074	85.48	0.47	31.84(.000)	0.75	0.91
C	0.00	111	3.09	-0.22	-13.80(.000)	-0.60	0.68
D	0.00	216	6.01	-0.21	-12.69(.000)	-0.16	0.79

## Item 5

```

-----
item:5 (lc9q35)
Cases for this item  3596  Discrimination  0.42
Item Threshold(s):  -1.21  Weighted MNSQ  0.97
Item Delta(s):      -1.21

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
9	0.00	30	0.83	-0.19	-11.69(.000)	-1.54	1.33
A	0.00	58	1.61	-0.16	-9.44(.000)	-0.63	0.99
B	0.00	367	10.21	-0.29	-18.04(.000)	-0.16	0.85
C	1.00	2939	81.73	0.42	27.71(.000)	0.75	0.92
D	0.00	202	5.62	-0.16	-10.00(.000)	-0.05	0.99

## Item 6

```

-----
item:6 (lc9q36)
Cases for this item  3595  Discrimination  0.44
Item Threshold(s):  -1.18  Weighted MNSQ  0.96
Item Delta(s):      -1.18

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	1	0.03	-0.01	-0.34(.736)	0.43	0.00
9	0.00	31	0.86	-0.21	-13.10(.000)	-1.61	1.20
A	1.00	2923	81.31	0.44	29.16(.000)	0.76	0.92
B	0.00	147	4.09	-0.24	-14.87(.000)	-0.42	0.89
C	0.00	119	3.31	-0.26	-16.40(.000)	-0.74	0.71
D	0.00	374	10.40	-0.18	-11.15(.000)	0.09	0.83

## Item 7

```

-----
item:7 (lc9q37)
Cases for this item  3595  Discrimination  0.50
Item Threshold(s):  -1.17  Weighted MNSQ  0.90
Item Delta(s):      -1.17

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	1	0.03	-0.04	-2.67(.008)	-2.26	0.00
9	0.00	35	0.97	-0.21	-12.64(.000)	-1.55	1.17
A	0.00	242	6.73	-0.29	-18.29(.000)	-0.36	0.75
B	1.00	2918	81.17	0.50	34.50(.000)	0.78	0.91
C	0.00	349	9.71	-0.28	-17.23(.000)	-0.16	0.79
D	0.00	50	1.39	-0.16	-9.92(.000)	-0.59	0.79

## Item 8

```

-----
item:8 (lc9q38)
Cases for this item  3594  Discrimination  0.45
Item Threshold(s):  -0.49  Weighted MNSQ  0.99
Item Delta(s):      -0.49

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.01	-0.78(.437)	0.04	0.00
9	0.00	34	0.95	-0.21	-12.76(.000)	-1.49	1.26
A	0.00	104	2.89	-0.20	-12.28(.000)	-0.47	0.80
B	1.00	2544	70.78	0.45	29.90(.000)	0.83	0.90
C	0.00	754	20.98	-0.25	-15.23(.000)	0.13	0.88
D	0.00	157	4.37	-0.24	-14.69(.000)	-0.42	0.86

## Item 9

```

-----
item:9 (lc9q39)
Cases for this item  3592  Discrimination  0.30
Item Threshold(s):  -0.62  Weighted MNSQ  1.11
Item Delta(s):      -0.61

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.06	-0.05	-3.09(.002)	-1.48	1.10
9	0.00	32	0.89	-0.20	-12.24(.000)	-1.61	1.29
A	1.00	2618	72.88	0.30	19.09(.000)	0.74	0.95
B	0.00	156	4.34	-0.24	-14.78(.000)	-0.40	0.87
C	0.00	721	20.07	-0.11	-6.85(.000)	0.35	0.89
D	0.00	63	1.75	-0.16	-9.55(.000)	-0.41	0.87

## Item 10

```

-----
item:10 (lc9q40)
Cases for this item  3591  Discrimination  0.46
Item Threshold(s):  0.04  Weighted MNSQ  1.00
Item Delta(s):      0.04

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.02	-0.92(.357)	-0.82	0.00
9	0.00	26	0.72	-0.21	-12.78(.000)	-1.92	1.08
A	1.00	2186	60.87	0.46	31.43(.000)	0.90	0.90
B	0.00	376	10.47	-0.19	-11.34(.000)	0.07	0.93
C	0.00	713	19.86	-0.25	-15.15(.000)	0.16	0.86
D	0.00	289	8.05	-0.20	-12.15(.000)	-0.05	0.86

## Item 11

```

-----
item:11 (lc9q41)
Cases for this item  3591  Discrimination  0.56
Item Threshold(s):  0.13  Weighted MNSQ  0.90
Item Delta(s):      0.13

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	34	0.95	-0.18	-10.90(.000)	-1.25	1.51
A	0.00	1048	29.18	-0.36	-23.14(.000)	0.09	0.77
B	0.00	175	4.87	-0.27	-16.98(.000)	-0.49	0.79
C	1.00	2124	59.15	0.56	40.48(.000)	0.98	0.88
D	0.00	210	5.85	-0.15	-9.13(.000)	-0.00	0.83

## Item 12

```

-----
item:12 (lc9q42)
Cases for this item 3590 Discrimination 0.49
Item Threshold(s): 0.05 Weighted MNSQ 0.97
Item Delta(s): 0.06
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	3	0.08	-0.03	-2.08(.038)	-0.04	0.47
9	0.00	48	1.34	-0.18	-11.18(.000)	-0.88	1.33
A	0.00	424	11.81	-0.19	-11.77(.000)	0.10	0.86
B	0.00	308	8.58	-0.25	-15.40(.000)	-0.13	0.85
C	0.00	631	17.58	-0.23	-13.98(.000)	0.12	0.85
D	1.00	2176	60.61	0.49	33.88(.000)	0.93	0.90

## Item 13

```

-----
item:13 (lc9q43)
Cases for this item 3586 Discrimination 0.49
Item Threshold(s): -0.49 Weighted MNSQ 0.95
Item Delta(s): -0.49
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	2	0.06	-0.02	-1.17(.242)	-0.24	0.71
9	0.00	40	1.12	-0.18	-10.78(.000)	-1.00	1.46
A	0.00	85	2.37	-0.21	-13.11(.000)	-0.61	0.76
B	0.00	686	19.13	-0.34	-22.00(.000)	-0.09	0.83
C	1.00	2543	70.91	0.49	33.74(.000)	0.86	0.89
D	0.00	230	6.41	-0.15	-8.82(.000)	0.05	0.90

## Item 14

```

-----
item:14 (lc9q44)
Cases for this item 3585 Discrimination 0.51
Item Threshold(s): -0.15 Weighted MNSQ 0.95
Item Delta(s): -0.15
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	1	0.03	-0.03	-1.51(.130)	-0.55	0.00
9	0.00	50	1.39	-0.17	-10.56(.000)	-0.83	1.37
A	0.00	210	5.86	-0.26	-15.87(.000)	-0.32	0.90
B	0.00	779	21.73	-0.28	-17.23(.000)	0.11	0.79
C	0.00	230	6.42	-0.20	-12.21(.000)	-0.11	0.82
D	1.00	2315	64.57	0.51	35.52(.000)	0.91	0.90

## Item 15

```

-----
item:15 (lc9q45)
Cases for this item 3583 Discrimination 0.47
Item Threshold(s): -0.16 Weighted MNSQ 0.99
Item Delta(s): -0.17
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	2	0.06	-0.03	-1.87(.062)	-0.29	0.37
9	0.00	26	0.73	-0.16	-9.71(.000)	-1.33	1.52
A	1.00	2329	65.00	0.47	31.86(.000)	0.88	0.91
B	0.00	173	4.83	-0.19	-11.85(.000)	-0.17	0.87
C	0.00	650	18.14	-0.27	-16.47(.000)	0.08	0.86
D	0.00	403	11.25	-0.21	-12.76(.000)	0.07	0.86



## Item 16

```

-----
item:16 (lc9q46)
Cases for this item  3582  Discrimination  0.38
Item Threshold(s):  0.67  Weighted MNSQ  1.08
Item Delta(s):      0.68
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	19	0.53	-0.16	-9.98(.000)	-1.68	1.43
A	1.00	1722	48.07	0.38	24.45(.000)	0.93	0.93
B	0.00	387	10.80	-0.19	-11.27(.000)	0.08	0.90
C	0.00	542	15.13	-0.25	-15.23(.000)	0.07	0.86
D	0.00	912	25.46	-0.07	-4.30(.000)	0.46	0.91

## Item 17

```

-----
item:17 (lc9q47)
Cases for this item  3582  Discrimination  0.45
Item Threshold(s):  0.02  Weighted MNSQ  1.01
Item Delta(s):      0.02
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	5	0.14	-0.02	-1.38(.167)	0.13	0.45
9	0.00	39	1.09	-0.13	-7.76(.000)	-0.71	1.54
A	0.00	401	11.19	-0.20	-12.04(.000)	0.08	0.82
B	0.00	263	7.34	-0.15	-8.98(.000)	0.08	0.82
C	0.00	678	18.93	-0.27	-16.48(.000)	0.08	0.91
D	1.00	2196	61.31	0.45	30.15(.000)	0.90	0.91

## Item 18

```

-----
item:18 (lc9q48)
Cases for this item  3581  Discrimination  0.55
Item Threshold(s):  0.26  Weighted MNSQ  0.91
Item Delta(s):      0.26
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.08	-0.04	-2.18(.029)	-0.37	0.93
9	0.00	32	0.89	-0.16	-9.68(.000)	-1.13	1.37
A	0.00	698	19.49	-0.23	-13.91(.000)	0.15	0.80
B	0.00	196	5.47	-0.20	-12.44(.000)	-0.19	0.89
C	0.00	622	17.37	-0.32	-20.15(.000)	-0.03	0.76
D	1.00	2030	56.69	0.55	39.50(.000)	1.01	0.88

## Item 19

```

-----
item:19 (lc9q49)
Cases for this item  3580  Discrimination  0.38
Item Threshold(s):  0.64  Weighted MNSQ  1.08
Item Delta(s):      0.64
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.08	-0.02	-1.17(.244)	0.36	1.15
9	0.00	28	0.78	-0.16	-9.46(.000)	-1.13	1.34
A	0.00	818	22.85	-0.02	-1.02(.307)	0.53	0.89
B	0.00	620	17.32	-0.26	-15.95(.000)	0.10	0.88
C	0.00	362	10.11	-0.24	-14.48(.000)	-0.06	0.86
D	1.00	1749	48.85	0.38	24.57(.000)	0.93	0.93

## Item 20

```

-----
item:20 (lc9q50)
Cases for this item  3579  Discrimination  0.35
Item Threshold(s):  0.75  Weighted MNSQ  1.10
Item Delta(s):      0.75

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	2	0.06	-0.03	-2.01(.044)	-0.48	0.10
9	0.00	22	0.61	-0.13	-7.73(.000)	-1.09	1.43
A	0.00	336	9.39	-0.22	-13.57(.000)	-0.04	0.94
B	0.00	686	19.17	-0.09	-5.65(.000)	0.43	0.91
C	1.00	1666	46.55	0.35	22.58(.000)	0.92	0.96
D	0.00	867	24.22	-0.15	-9.01(.000)	0.32	0.84

## Item 21

```

-----
item:21 (lc9q51)
Cases for this item  3575  Discrimination  0.43
Item Threshold(s):  0.99  Weighted MNSQ  1.02
Item Delta(s):      1.00

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	1	0.03	-0.03	-1.52(.129)	-0.55	0.00
9	0.00	26	0.73	-0.16	-9.66(.000)	-1.23	1.49
A	0.00	849	23.75	-0.16	-9.52(.000)	0.32	0.85
B	1.00	1487	41.59	0.43	28.21(.000)	1.03	0.92
C	0.00	998	27.92	-0.19	-11.71(.000)	0.32	0.92
D	0.00	214	5.99	-0.18	-11.09(.000)	-0.08	0.86

## Item 22

```

-----
item:22 (lc9q52)
Cases for this item  3572  Discrimination  0.39
Item Threshold(s):  0.99  Weighted MNSQ  1.05
Item Delta(s):      0.99

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	1	0.03	-0.03	-1.53(.127)	-0.55	0.00
9	0.00	27	0.76	-0.16	-9.74(.000)	-1.15	1.35
A	0.00	882	24.69	-0.18	-10.67(.000)	0.31	0.82
B	1.00	1487	41.63	0.39	25.15(.000)	1.00	0.98
C	0.00	608	17.02	-0.11	-6.73(.000)	0.35	0.95
D	0.00	567	15.87	-0.16	-9.77(.000)	0.24	0.83

## Item 23

```

-----
item:23 (lc9q53)
Cases for this item  3571  Discrimination  0.43
Item Threshold(s):  0.53  Weighted MNSQ  1.02
Item Delta(s):      0.53

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	7	0.20	-0.05	-3.23(.001)	-0.33	0.52
9	0.00	21	0.59	-0.15	-8.98(.000)	-1.42	1.43
A	0.00	637	17.84	-0.23	-14.21(.000)	0.13	0.91
B	0.00	668	18.71	-0.14	-8.51(.000)	0.32	0.89
C	1.00	1828	51.19	0.43	28.80(.000)	0.96	0.92
D	0.00	410	11.48	-0.19	-11.40(.000)	0.13	0.82

## Item 24

```

-----
item:24 (lc9q54)
Cases for this item  3568  Discrimination  0.28
Item Threshold(s):  1.41  Weighted MNSQ  1.13
Item Delta(s):      1.42
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	3	0.08	-0.03	-2.08(.037)	-0.19	0.31
9	0.00	80	2.24	-0.09	-5.41(.000)	0.08	1.30
A	1.00	1193	33.44	0.28	17.45(.000)	0.96	0.95
B	0.00	862	24.16	-0.11	-6.81(.000)	0.39	0.94
C	0.00	819	22.95	-0.17	-10.12(.000)	0.30	0.96
D	0.00	611	17.12	0.00	0.13(.899)	0.57	0.90

## Item 25

```

-----
item:25 (lc9q55)
Cases for this item  3566  Discrimination  0.56
Item Threshold(s):  0.89  Weighted MNSQ  0.89
Item Delta(s):      0.89
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	1	0.03	-0.03	-1.53(.126)	-0.55	0.00
9	0.00	27	0.76	-0.14	-8.15(.000)	-0.93	1.31
A	0.00	266	7.46	-0.20	-12.31(.000)	-0.03	0.76
B	0.00	1320	37.02	-0.32	-20.27(.000)	0.20	0.78
C	0.00	393	11.02	-0.18	-11.16(.000)	0.10	0.96
D	1.00	1559	43.72	0.56	40.40(.000)	1.16	0.87

## Item 26

```

-----
item:26 (lc9q56)
Cases for this item  3564  Discrimination  0.32
Item Threshold(s):  1.23  Weighted MNSQ  1.11
Item Delta(s):      1.24
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	1	0.03	-0.03	-1.53(.126)	-0.55	0.00
9	0.00	43	1.21	-0.12	-6.93(.000)	-0.38	1.47
A	1.00	1314	36.87	0.32	19.87(.000)	0.96	0.99
B	0.00	211	5.92	-0.22	-13.48(.000)	-0.19	0.93
C	0.00	1780	49.94	-0.09	-5.56(.000)	0.49	0.87
D	0.00	215	6.03	-0.17	-10.42(.000)	-0.03	0.83

## Item 27

```

-----
item:27 (lc9q57)
Cases for this item  3558  Discrimination  0.40
Item Threshold(s):  1.90  Weighted MNSQ  0.99
Item Delta(s):      1.90
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	2	0.06	-0.00	-0.08(.933)	0.91	2.06
9	0.00	19	0.53	-0.07	-3.90(.000)	-0.33	1.33
A	0.00	776	21.81	-0.25	-15.67(.000)	0.16	0.86
B	0.00	555	15.60	-0.05	-3.07(.002)	0.47	1.03
C	0.00	1313	36.90	-0.09	-5.40(.000)	0.47	0.85
D	1.00	893	25.10	0.40	25.75(.000)	1.23	0.93

Item 28

```

-----
item:28 (1c9q58)
Cases for this item  3545  Discrimination  0.03
Item Threshold(s):  3.73  Weighted MNSQ  1.10
Item Delta(s):      3.73
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.06	-0.00	-0.09(.929)	0.91	2.06
9	0.00	37	1.04	-0.06	-3.31(.001)	0.01	1.36
A	0.00	485	13.68	0.05	2.88(.004)	0.71	1.05
B	0.00	1722	48.58	-0.11	-6.43(.000)	0.48	0.92
C	0.00	1082	30.52	0.08	4.70(.000)	0.71	0.96
D	1.00	217	6.12	0.03	1.62(.106)	0.71	1.21

```

-----
The following traditional statistics are only meaningful for complete
designs and when the amount of missing data is minimal.
In this analysis 0.41% of the data are missing.

```

```

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

```

```

N 3597
Mean 16.73
Standard Deviation 5.15
Variance 26.55
Skewness -0.32
Kurtosis -0.39
Standard error of mean 0.09
Standard error of measurement 2.19
Coefficient Alpha 0.82
-----

```

## Appendix B.14 Year 9 Numeracy

=====

NAPLAN 2014, Calibration, Grade 9, numeracy  
GENERALISED ITEM ANALYSIS

=====

## Item 1

-----

item:1 (n9CAq01)  
Cases for this item 3508 Discrimination 0.38  
Item Threshold(s): -3.19 Weighted MNSQ 0.85  
Item Delta(s): -3.18

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.02	-1.14(.255)	-1.05	0.00
9	0.00	9	0.26	-0.08	-4.84(.000)	-2.03	1.31
A	1.00	3285	93.64	0.38	24.61(.000)	0.14	1.13
B	0.00	118	3.36	-0.26	-15.95(.000)	-1.58	0.67
C	0.00	37	1.05	-0.16	-9.72(.000)	-1.82	0.67
D	0.00	58	1.65	-0.20	-12.21(.000)	-1.72	0.54

=====

## Item 2

-----

item:2 (n9CAq02)  
Cases for this item 3508 Discrimination 0.34  
Item Threshold(s): -2.89 Weighted MNSQ 0.91  
Item Delta(s): -2.89

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.03	-1.96(.050)	-2.82	0.00
9	0.00	23	0.66	-0.08	-4.86(.000)	-1.13	1.12
A	0.00	85	2.42	-0.19	-11.26(.000)	-1.30	1.04
B	1.00	3221	91.82	0.34	21.57(.000)	0.14	1.14
C	0.00	132	3.76	-0.21	-12.88(.000)	-1.21	0.81
D	0.00	46	1.31	-0.15	-9.19(.000)	-1.54	0.78

=====

## Item 3

-----

item:3 (n9CAq03)  
Cases for this item 3508 Discrimination 0.38  
Item Threshold(s): -2.49 Weighted MNSQ 0.89  
Item Delta(s): -2.49

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	19	0.54	-0.09	-5.34(.000)	-1.51	1.38
A	1.00	3111	88.68	0.38	24.55(.000)	0.18	1.12
B	0.00	198	5.64	-0.21	-12.46(.000)	-0.93	1.02
C	0.00	126	3.59	-0.24	-14.63(.000)	-1.44	0.85
D	0.00	54	1.54	-0.18	-11.04(.000)	-1.63	0.67

=====

## Item 4

```

-----
item:4 (n9CAq04)
Cases for this item  3508  Discrimination  0.43
Item Threshold(s):  -1.67  Weighted MNSQ  0.95
Item Delta(s):      -1.67
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
9	0.00	20	0.57	-0.11	-6.55(.000)	-1.75	1.01
A	0.00	121	3.45	-0.13	-7.68(.000)	-0.77	1.00
B	1.00	2784	79.36	0.43	28.47(.000)	0.27	1.13
C	0.00	301	8.58	-0.27	-16.47(.000)	-1.00	0.85
D	0.00	282	8.04	-0.25	-15.44(.000)	-0.91	0.82

## Item 5

```

-----
item:5 (n9CAq05)
Cases for this item  3507  Discrimination  0.30
Item Threshold(s):  -1.27  Weighted MNSQ  1.13
Item Delta(s):      -1.27
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	323	9.21	-0.16	-9.36(.000)	-0.52	0.93
9	0.00	43	1.23	-0.07	-4.29(.000)	-0.85	1.41
A	1.00	2573	73.37	0.30	18.77(.000)	0.23	1.18
B	0.00	354	10.09	-0.12	-6.92(.000)	-0.36	1.05
C	0.00	124	3.54	-0.15	-8.79(.000)	-0.85	0.94
D	0.00	90	2.57	-0.12	-6.94(.000)	-0.77	1.07

## Item 6

```

-----
item:6 (n9CAq06)
Cases for this item  3507  Discrimination  0.45
Item Threshold(s):  -1.13  Weighted MNSQ  0.97
Item Delta(s):      -1.13
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
9	0.00	18	0.51	-0.06	-3.27(.001)	-1.04	1.52
A	0.00	175	4.99	-0.20	-11.80(.000)	-0.97	0.86
B	0.00	659	18.79	-0.28	-17.35(.000)	-0.63	0.95
C	1.00	2494	71.11	0.45	29.92(.000)	0.35	1.12
D	0.00	161	4.59	-0.23	-13.98(.000)	-1.15	0.82

## Item 7

```

-----
item:7 (n9CAq07)
Cases for this item  3507  Discrimination  0.46
Item Threshold(s):  -1.66  Weighted MNSQ  0.91
Item Delta(s):      -1.65
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	51	1.45	-0.14	-8.34(.000)	-1.24	0.74
9	0.00	25	0.71	-0.05	-3.11(.002)	-0.88	1.04
A	0.00	90	2.57	-0.18	-11.03(.000)	-1.21	0.85
B	1.00	2777	79.18	0.46	30.76(.000)	0.29	1.12
C	0.00	526	15.00	-0.35	-22.27(.000)	-0.94	0.83
D	0.00	38	1.08	-0.11	-6.56(.000)	-1.14	1.02

## Item 8

```

-----
item:8 (n9CAq08)
Cases for this item  3506  Discrimination  0.54
Item Threshold(s):  -0.62  Weighted MNSQ  0.91
Item Delta(s):      -0.62

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	2	0.06	-0.03	-1.90(.057)	-1.20	0.75
9	0.00	34	0.97	-0.08	-4.67(.000)	-0.99	1.07
A	0.00	653	18.63	-0.37	-23.51(.000)	-0.84	0.81
B	0.00	495	14.12	-0.25	-14.98(.000)	-0.65	0.90
C	1.00	2174	62.01	0.54	38.18(.000)	0.50	1.10
D	0.00	148	4.22	-0.13	-7.55(.000)	-0.63	1.00

## Item 9

```

-----
item:9 (n9CAq09)
Cases for this item  3506  Discrimination  0.33
Item Threshold(s):  -0.81  Weighted MNSQ  1.14
Item Delta(s):      -0.81

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
9	0.00	36	1.03	-0.08	-4.57(.000)	-0.88	1.13
A	0.00	491	14.00	-0.12	-6.88(.000)	-0.30	0.94
B	0.00	380	10.84	-0.28	-17.58(.000)	-0.89	0.80
C	1.00	2297	65.52	0.33	20.83(.000)	0.30	1.19
D	0.00	302	8.61	-0.08	-4.54(.000)	-0.29	1.14

## Item 10

```

-----
item:10 (n9CAq10)
Cases for this item  3505  Discrimination  0.22
Item Threshold(s):  -1.23  Weighted MNSQ  1.21
Item Delta(s):      -1.24

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
9	0.00	31	0.88	-0.06	-3.33(.001)	-0.72	1.50
A	0.00	359	10.24	-0.17	-10.14(.000)	-0.54	0.96
B	1.00	2556	72.92	0.22	13.42(.000)	0.18	1.18
C	0.00	322	9.19	-0.10	-5.86(.000)	-0.35	1.11
D	0.00	237	6.76	-0.05	-3.15(.002)	-0.22	1.25

## Item 11

```

-----
item:11 (n9CAq11)
Cases for this item  3504  Discrimination  0.46
Item Threshold(s):  -1.08  Weighted MNSQ  0.97
Item Delta(s):      -1.08

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	2	0.06	-0.03	-1.70(.089)	-1.05	0.74
9	0.00	20	0.57	-0.07	-4.15(.000)	-1.17	1.53
A	0.00	198	5.65	-0.18	-10.92(.000)	-0.80	0.92
B	0.00	435	12.41	-0.34	-21.18(.000)	-0.97	0.81
C	1.00	2462	70.26	0.46	30.55(.000)	0.36	1.12
D	0.00	387	11.04	-0.16	-9.71(.000)	-0.49	0.97

## Item 12

```

-----
item:12 (n9CAq12)
Cases for this item  3504  Discrimination  0.43
Item Threshold(s):  -0.98  Weighted MNSQ  1.02
Item Delta(s):      -0.97
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	55	1.57	-0.08	-4.96(.000)	-0.86	1.09
A	1.00	2400	68.49	0.43	27.91(.000)	0.35	1.16
B	0.00	451	12.87	-0.23	-14.25(.000)	-0.65	0.86
C	0.00	365	10.42	-0.30	-18.61(.000)	-0.97	0.82
D	0.00	233	6.65	-0.07	-4.23(.000)	-0.30	0.89

## Item 13

```

-----
item:13 (n9CAq13)
Cases for this item  3503  Discrimination  0.44
Item Threshold(s):  -0.63  Weighted MNSQ  1.03
Item Delta(s):      -0.62
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	19	0.54	-0.07	-4.43(.000)	-1.31	1.08
A	0.00	371	10.59	-0.30	-18.34(.000)	-0.95	0.93
B	0.00	282	8.05	-0.17	-10.47(.000)	-0.66	1.00
C	1.00	2177	62.15	0.44	28.61(.000)	0.41	1.13
D	0.00	413	11.79	-0.14	-8.38(.000)	-0.40	0.96
E	0.00	241	6.88	-0.09	-5.14(.000)	-0.34	0.91

## Item 14

```

-----
item:14 (n9CAq14)
Cases for this item  3503  Discrimination  0.53
Item Threshold(s):  -0.59  Weighted MNSQ  0.93
Item Delta(s):      -0.59
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.02	-1.38(.166)	-1.84	0.00
9	0.00	27	0.77	-0.09	-5.07(.000)	-1.08	1.33
A	0.00	363	10.36	-0.15	-8.71(.000)	-0.44	0.87
B	0.00	204	5.82	-0.27	-16.57(.000)	-1.20	0.79
C	1.00	2157	61.58	0.53	36.62(.000)	0.49	1.12
D	0.00	669	19.10	-0.30	-18.29(.000)	-0.66	0.76
E	0.00	82	2.34	-0.16	-9.72(.000)	-1.21	1.01

## Item 15

```

-----
item:15 (n9CAq15)
Cases for this item  3502  Discrimination  0.54
Item Threshold(s):  -0.27  Weighted MNSQ  0.94
Item Delta(s):      -0.27
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.03	-1.89(.059)	-2.15	0.00
9	0.00	69	1.97	-0.09	-5.25(.000)	-0.76	1.06
A	0.00	512	14.62	-0.22	-13.20(.000)	-0.55	0.87
B	0.00	275	7.85	-0.24	-14.61(.000)	-0.87	0.86
C	0.00	705	20.13	-0.28	-17.18(.000)	-0.60	0.90
D	1.00	1940	55.40	0.54	37.49(.000)	0.56	1.12



## Item 16

```

-----
item:16 (n9CAq16)
Cases for this item  3501  Discrimination  0.49
Item Threshold(s):  -0.05  Weighted MNSQ  0.99
Item Delta(s):      -0.04

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	17	0.49	-0.08	-4.56(.000)	-1.34	1.13
A	0.00	467	13.34	-0.22	-13.14(.000)	-0.60	0.93
B	1.00	1784	50.96	0.49	33.38(.000)	0.56	1.13
C	0.00	1008	28.79	-0.23	-14.29(.000)	-0.38	0.92
D	0.00	151	4.31	-0.22	-13.04(.000)	-1.13	0.91
E	0.00	74	2.11	-0.11	-6.83(.000)	-0.86	1.08

## Item 17

```

-----
item:17 (n9CAq17)
Cases for this item  3501  Discrimination  0.55
Item Threshold(s):  -0.02  Weighted MNSQ  0.92
Item Delta(s):      -0.02

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	45	1.29	-0.08	-4.79(.000)	-0.87	0.93
A	0.00	218	6.23	-0.24	-14.34(.000)	-1.02	0.98
B	0.00	995	28.42	-0.28	-17.42(.000)	-0.47	0.94
C	0.00	475	13.57	-0.23	-14.30(.000)	-0.64	0.82
D	1.00	1768	50.50	0.55	38.74(.000)	0.63	1.09

## Item 18

```

-----
item:18 (n9CAq18)
Cases for this item  3498  Discrimination  0.42
Item Threshold(s):  -0.18  Weighted MNSQ  1.08
Item Delta(s):      -0.18

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	0.01	0.87(.385)	0.67	0.00
9	0.00	59	1.69	-0.04	-2.23(.026)	-0.48	1.03
A	1.00	1879	53.72	0.42	27.01(.000)	0.47	1.21
B	0.00	730	20.87	-0.24	-14.56(.000)	-0.51	0.89
C	0.00	578	16.52	-0.23	-13.72(.000)	-0.54	0.90
D	0.00	251	7.18	-0.08	-4.94(.000)	-0.32	1.03

## Item 19

```

-----
item:19 (n9CAq19)
Cases for this item  3496  Discrimination  0.50
Item Threshold(s):  0.70  Weighted MNSQ  0.96
Item Delta(s):      0.70

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	0.02	1.20(.229)	0.87	0.00
9	0.00	33	0.94	-0.06	-3.39(.001)	-0.70	1.39
A	0.00	894	25.57	-0.11	-6.82(.000)	-0.21	0.92
B	1.00	1291	36.93	0.50	34.55(.000)	0.77	1.16
C	0.00	423	12.10	-0.16	-9.76(.000)	-0.46	1.03
D	0.00	854	24.43	-0.31	-19.60(.000)	-0.58	0.91

## Item 20

```

-----
item:20 (n9CAq20)
Cases for this item   3496   Discrimination   0.66
Item Threshold(s):    0.92   Weighted MNSQ   0.77
Item Delta(s):        0.93
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1719	49.17	-0.41	-26.84(.000)	-0.46	0.91
1	1.00	1149	32.87	0.66	52.05(.000)	1.10	0.95
9	0.00	628	17.96	-0.27	-16.59(.000)	-0.63	0.87

## Item 21

```

-----
item:21 (n9CAq21)
Cases for this item   3491   Discrimination   0.35
Item Threshold(s):    0.96   Weighted MNSQ   1.13
Item Delta(s):        0.96
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.02	-1.15(.251)	-1.05	0.00
9	0.00	26	0.74	-0.08	-4.59(.000)	-1.08	1.03
A	1.00	1129	32.34	0.35	21.90(.000)	0.61	1.26
B	0.00	457	13.09	-0.25	-15.14(.000)	-0.71	0.89
C	0.00	1163	33.31	-0.22	-13.17(.000)	-0.32	0.98
D	0.00	402	11.52	-0.04	-2.22(.026)	-0.09	0.92
E	0.00	313	8.97	0.15	8.93(.000)	0.54	1.09

## Item 22

```

-----
item:22 (n9CAq22)
Cases for this item   3490   Discrimination   0.61
Item Threshold(s):    0.71   Weighted MNSQ   0.84
Item Delta(s):        0.71
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1601	45.87	-0.39	-24.86(.000)	-0.45	0.97
1	1.00	1281	36.70	0.61	45.49(.000)	0.93	1.01
9	0.00	608	17.42	-0.27	-16.29(.000)	-0.62	0.85

## Item 23

```

-----
item:23 (n9CAq23)
Cases for this item   3483   Discrimination   0.45
Item Threshold(s):    0.89   Weighted MNSQ   1.03
Item Delta(s):        0.89
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1925	55.27	-0.28	-16.93(.000)	-0.25	1.06
1	1.00	1166	33.48	0.45	29.76(.000)	0.75	1.11
9	0.00	392	11.25	-0.24	-14.49(.000)	-0.71	0.88

## Item 24

```

-----
item:24 (n9CAq24)
Cases for this item  3481  Discrimination  0.46
Item Threshold(s):  0.88  Weighted MNSQ  1.01
Item Delta(s):      0.87

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	3	0.09	-0.02	-1.16(.244)	-0.84	0.98
9	0.00	77	2.21	-0.06	-3.58(.000)	-0.47	1.08
A	0.00	680	19.53	-0.11	-6.81(.000)	-0.24	1.01
B	0.00	770	22.12	-0.27	-16.39(.000)	-0.54	0.92
C	0.00	773	22.21	-0.12	-7.41(.000)	-0.24	1.03
D	1.00	1178	33.84	0.46	30.60(.000)	0.77	1.18

## Item 25

```

-----
item:25 (n9CAq25)
Cases for this item  3476  Discrimination  0.49
Item Threshold(s):  1.36  Weighted MNSQ  0.96
Item Delta(s):      1.36

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
0	0.00	1617	46.52	-0.25	-15.00(.000)	-0.27	1.05
1	1.00	899	25.86	0.49	32.80(.000)	0.99	1.12
9	0.00	960	27.62	-0.20	-12.10(.000)	-0.36	0.94

## Item 26

```

-----
item:26 (n9CAq26)
Cases for this item  3459  Discrimination  0.57
Item Threshold(s):  1.80  Weighted MNSQ  0.82
Item Delta(s):      1.81

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
0	0.00	2178	62.97	-0.37	-23.48(.000)	-0.29	1.00
1	1.00	683	19.75	0.57	41.00(.000)	1.38	0.95
9	0.00	598	17.29	-0.13	-7.62(.000)	-0.31	0.94

## Item 27

```

-----
item:27 (n9CAq27)
Cases for this item  3453  Discrimination  0.48
Item Threshold(s):  1.90  Weighted MNSQ  0.92
Item Delta(s):      1.90

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
0	0.00	2264	65.57	-0.26	-15.90(.000)	-0.18	1.05
1	1.00	642	18.59	0.48	32.25(.000)	1.22	1.09
9	0.00	547	15.84	-0.17	-10.30(.000)	-0.44	0.93

## Item 28

-----  
 item:28 (n9CAq28)  
 Cases for this item 3433 Discrimination 0.31  
 Item Threshold(s): 2.02 Weighted MNSQ 1.08  
 Item Delta(s): 2.02  
 -----

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.06	0.01	0.86(.388)	0.60	0.48
9	0.00	122	3.55	-0.01	-0.32(.751)	-0.05	1.14
A	1.00	589	17.16	0.31	18.89(.000)	0.85	1.36
B	0.00	791	23.04	-0.16	-9.70(.000)	-0.30	1.10
C	0.00	818	23.83	-0.13	-7.83(.000)	-0.23	1.05
D	0.00	566	16.49	-0.06	-3.35(.001)	-0.11	0.97
E	0.00	545	15.88	0.09	5.05(.000)	0.25	1.08

## Item 29

-----  
 item:29 (n9CAq29)  
 Cases for this item 3423 Discrimination 0.43  
 Item Threshold(s): 2.28 Weighted MNSQ 0.95  
 Item Delta(s): 2.29  
 -----

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2483	72.54	-0.29	-17.85(.000)	-0.17	1.04
1	1.00	491	14.34	0.43	27.59(.000)	1.28	1.17
9	0.00	449	13.12	-0.06	-3.34(.001)	-0.14	1.14

## Item 30

-----  
 item:30 (n9CAq30)  
 Cases for this item 3401 Discrimination 0.45  
 Item Threshold(s): 2.32 Weighted MNSQ 0.88  
 Item Delta(s): 2.32  
 -----

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.06	0.02	0.98(.328)	1.15	1.64
9	0.00	88	2.59	0.03	1.77(.077)	0.13	1.01
A	0.00	694	20.41	-0.16	-9.18(.000)	-0.31	1.00
B	0.00	1558	45.81	-0.21	-12.47(.000)	-0.23	0.97
C	0.00	583	17.14	0.01	0.86(.389)	0.05	1.11
D	1.00	476	14.00	0.45	29.38(.000)	1.39	1.26

## Item 31

-----  
 item:31 (n9CAq31)  
 Cases for this item 3366 Discrimination 0.46  
 Item Threshold(s): 2.93 Weighted MNSQ 0.88  
 Item Delta(s): 2.93  
 -----

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2321	68.95	-0.23	-13.44(.000)	-0.14	1.07
1	1.00	300	8.91	0.46	29.64(.000)	1.82	0.97
9	0.00	745	22.13	-0.06	-3.53(.000)	-0.10	1.04

## Item 32

```

-----
item:32 (n9CAq32)
Cases for this item  3315  Discrimination  0.26
Item Threshold(s):  2.68  Weighted MNSQ  1.04
Item Delta(s):      2.68
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	2	0.06	-0.00	-0.14(.890)	0.09	1.99
9	0.00	22	0.66	0.00	0.08(.938)	-0.00	1.02
A	0.00	1059	31.95	-0.10	-5.58(.000)	-0.12	1.02
B	0.00	1335	40.27	0.04	2.18(.030)	0.08	1.10
C	0.00	539	16.26	-0.15	-8.74(.000)	-0.35	1.13
D	1.00	358	10.80	0.26	15.73(.000)	1.01	1.52

## Item 33

```

-----
item:33 (n9NCq01)
Cases for this item  3502  Discrimination  0.34
Item Threshold(s):  -3.05  Weighted MNSQ  0.91
Item Delta(s):      -3.06
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
9	0.00	14	0.40	-0.10	-6.02(.000)	-1.79	0.84
A	0.00	104	2.97	-0.24	-14.32(.000)	-1.55	0.74
B	0.00	26	0.74	-0.13	-7.62(.000)	-1.67	0.38
C	0.00	103	2.94	-0.17	-10.16(.000)	-0.98	0.83
D	1.00	3255	92.95	0.34	21.07(.000)	0.13	1.15

## Item 34

```

-----
item:34 (n9NCq02)
Cases for this item  3502  Discrimination  0.36
Item Threshold(s):  -2.02  Weighted MNSQ  0.99
Item Delta(s):      -2.01
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	1	0.03	-0.01	-0.55(.583)	-0.31	0.00
9	0.00	9	0.26	-0.06	-3.36(.001)	-1.35	0.83
A	0.00	109	3.11	-0.18	-10.81(.000)	-1.08	0.75
B	1.00	2935	83.81	0.36	23.09(.000)	0.20	1.15
C	0.00	236	6.74	-0.17	-10.37(.000)	-0.71	1.05
D	0.00	212	6.05	-0.24	-14.41(.000)	-1.01	0.82

## Item 35

```

-----
item:35 (n9NCq03)
Cases for this item  3502  Discrimination  0.44
Item Threshold(s):  -1.22  Weighted MNSQ  0.98
Item Delta(s):      -1.22
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	1	0.03	-0.02	-1.44(.151)	-1.57	0.00
9	0.00	16	0.46	-0.08	-4.46(.000)	-1.31	1.23
A	0.00	137	3.91	-0.19	-11.43(.000)	-1.04	0.82
B	0.00	732	20.90	-0.33	-20.53(.000)	-0.68	0.95
C	1.00	2543	72.62	0.44	29.12(.000)	0.32	1.13
D	0.00	73	2.08	-0.15	-8.97(.000)	-1.09	0.80

## Item 36

```

-----
item:36 (n9NCq04)
Cases for this item  3502  Discrimination  0.43
Item Threshold(s):  -1.59  Weighted MNSQ  0.96
Item Delta(s):      -1.58
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.06	-0.03	-1.62(.106)	-1.37	0.42
9	0.00	27	0.77	-0.08	-4.54(.000)	-1.06	1.25
A	0.00	269	7.68	-0.30	-18.69(.000)	-1.14	0.81
B	1.00	2740	78.24	0.43	27.85(.000)	0.28	1.14
C	0.00	149	4.25	-0.20	-12.38(.000)	-1.08	0.74
D	0.00	315	8.99	-0.16	-9.82(.000)	-0.57	0.87

## Item 37

```

-----
item:37 (n9NCq05)
Cases for this item  3502  Discrimination  0.48
Item Threshold(s):  -1.38  Weighted MNSQ  0.92
Item Delta(s):      -1.38
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.02	-1.38(.167)	-1.35	0.00
9	0.00	18	0.51	-0.07	-4.45(.000)	-1.24	1.07
A	0.00	386	11.02	-0.26	-15.98(.000)	-0.83	0.84
B	0.00	286	8.17	-0.25	-15.32(.000)	-0.91	0.93
C	0.00	180	5.14	-0.24	-14.37(.000)	-1.07	0.78
D	1.00	2631	75.13	0.48	32.52(.000)	0.33	1.11

## Item 38

```

-----
item:38 (n9NCq06)
Cases for this item  3502  Discrimination  0.30
Item Threshold(s):  -0.90  Weighted MNSQ  1.16
Item Delta(s):      -0.90
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	22	0.63	-0.10	-5.82(.000)	-1.43	1.05
A	0.00	937	26.76	-0.15	-8.73(.000)	-0.26	0.99
B	1.00	2350	67.10	0.30	18.82(.000)	0.26	1.18
C	0.00	143	4.08	-0.26	-15.77(.000)	-1.31	0.65
D	0.00	50	1.43	-0.16	-9.66(.000)	-1.52	0.73

## Item 39

```

-----
item:39 (n9NCq07)
Cases for this item  3500  Discrimination  0.48
Item Threshold(s):  -1.38  Weighted MNSQ  0.91
Item Delta(s):      -1.37
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	0.01	0.45(.651)	0.67	0.00
9	0.00	42	1.20	-0.10	-5.94(.000)	-1.02	1.01
A	1.00	2628	75.09	0.48	32.75(.000)	0.34	1.11
B	0.00	626	17.89	-0.36	-22.62(.000)	-0.82	0.84
C	0.00	92	2.63	-0.20	-12.13(.000)	-1.39	0.74
D	0.00	111	3.17	-0.17	-10.18(.000)	-1.01	0.89

## Item 40

```

-----
item:40 (n9NCq08)
Cases for this item  3500  Discrimination  0.48
Item Threshold(s):  -1.33  Weighted MNSQ  0.92
Item Delta(s):      -1.32
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	2	0.06	-0.05	-2.74(.006)	-2.71	0.00
9	0.00	12	0.34	-0.07	-4.11(.000)	-1.30	0.84
A	1.00	2602	74.34	0.48	32.68(.000)	0.34	1.11
B	0.00	618	17.66	-0.33	-20.76(.000)	-0.78	0.87
C	0.00	235	6.71	-0.27	-16.76(.000)	-1.10	0.81
D	0.00	31	0.89	-0.12	-7.32(.000)	-1.39	0.57

## Item 41

```

-----
item:41 (n9NCq09)
Cases for this item  3500  Discrimination  0.51
Item Threshold(s):  -0.99  Weighted MNSQ  0.92
Item Delta(s):      -0.99
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	1	0.03	-0.02	-1.30(.193)	-1.24	0.00
9	0.00	33	0.94	-0.09	-5.31(.000)	-1.11	1.14
A	0.00	309	8.83	-0.20	-12.32(.000)	-0.73	0.86
B	0.00	652	18.63	-0.36	-23.05(.000)	-0.83	0.82
C	1.00	2407	68.77	0.51	35.30(.000)	0.42	1.11
D	0.00	98	2.80	-0.18	-10.67(.000)	-1.12	0.81

## Item 42

```

-----
item:42 (n9NCq10)
Cases for this item  3500  Discrimination  0.38
Item Threshold(s):  -1.13  Weighted MNSQ  1.05
Item Delta(s):      -1.13
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	1	0.03	-0.02	-1.14(.253)	-1.05	0.00
9	0.00	11	0.31	-0.08	-4.48(.000)	-1.53	0.57
A	0.00	91	2.60	-0.17	-10.23(.000)	-1.15	0.96
B	0.00	692	19.77	-0.27	-16.57(.000)	-0.57	0.98
C	1.00	2489	71.11	0.38	24.50(.000)	0.30	1.15
D	0.00	216	6.17	-0.14	-8.52(.000)	-0.61	0.96

## Item 43

```

-----
item:43 (n9NCq11)
Cases for this item  3499  Discrimination  0.44
Item Threshold(s):  -0.96  Weighted MNSQ  0.99
Item Delta(s):      -0.96
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	1	0.03	-0.01	-0.80(.423)	-0.79	0.00
9	0.00	12	0.34	-0.07	-4.03(.000)	-1.43	0.65
A	0.00	170	4.86	-0.19	-11.33(.000)	-0.94	0.96
B	0.00	183	5.23	-0.26	-16.07(.000)	-1.26	0.77
C	1.00	2388	68.25	0.44	29.12(.000)	0.37	1.12
D	0.00	745	21.29	-0.25	-15.31(.000)	-0.52	0.94

## Item 44

```

-----
item:44 (n9NCq12)
Cases for this item  3498  Discrimination  0.39
Item Threshold(s):  -0.74  Weighted MNSQ  1.07
Item Delta(s):      -0.74
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.04	-2.14(.032)	-2.71	0.00
9	0.00	15	0.43	-0.05	-3.18(.002)	-0.96	1.25
A	0.00	146	4.17	-0.17	-10.40(.000)	-0.92	0.92
B	0.00	141	4.03	-0.16	-9.67(.000)	-0.88	1.03
C	0.00	358	10.23	-0.09	-5.23(.000)	-0.26	1.08
D	1.00	2253	64.41	0.39	24.69(.000)	0.35	1.14
E	0.00	584	16.70	-0.23	-14.23(.000)	-0.56	0.98

## Item 45

```

-----
item:45 (n9NCq13)
Cases for this item  3498  Discrimination  0.37
Item Threshold(s):  -0.71  Weighted MNSQ  1.09
Item Delta(s):      -0.71
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	6	0.17	-0.04	-2.57(.010)	-1.38	1.08
9	0.00	18	0.51	-0.06	-3.38(.001)	-0.84	1.08
A	0.00	418	11.95	-0.13	-7.54(.000)	-0.34	1.04
B	1.00	2233	63.84	0.37	23.86(.000)	0.34	1.17
C	0.00	611	17.47	-0.21	-12.43(.000)	-0.49	0.93
D	0.00	212	6.06	-0.23	-13.96(.000)	-0.98	0.93

## Item 46

```

-----
item:46 (n9NCq14)
Cases for this item  3498  Discrimination  0.44
Item Threshold(s):  -0.60  Weighted MNSQ  1.02
Item Delta(s):      -0.60
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	26	0.74	-0.06	-3.51(.000)	-0.67	1.30
A	0.00	183	5.23	-0.24	-14.75(.000)	-1.12	0.70
B	0.00	441	12.61	-0.33	-20.55(.000)	-0.93	0.72
C	0.00	687	19.64	-0.12	-6.96(.000)	-0.24	1.08
D	1.00	2161	61.78	0.44	29.08(.000)	0.41	1.13

## Item 47

```

-----
item:47 (n9NCq15)
Cases for this item  3498  Discrimination  0.34
Item Threshold(s):  -0.78  Weighted MNSQ  1.12
Item Delta(s):      -0.78
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.06	-0.02	-1.02(.310)	-1.09	0.49
9	0.00	35	1.00	-0.06	-3.53(.000)	-0.74	1.04
A	0.00	160	4.57	-0.24	-14.33(.000)	-1.19	0.84
B	0.00	359	10.26	-0.31	-19.57(.000)	-1.02	0.84
C	1.00	2279	65.15	0.34	21.27(.000)	0.31	1.15
D	0.00	663	18.95	-0.03	-1.57(.117)	-0.04	0.99



## Item 48

```

-----
item:48 (n9NCq16)
Cases for this item  3496  Discrimination  0.44
Item Threshold(s):  -0.52  Weighted MNSQ  1.03
Item Delta(s):      -0.51
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	1	0.03	-0.01	-0.72(.472)	-0.99	0.00
9	0.00	21	0.60	-0.04	-2.46(.014)	-0.61	0.96
A	0.00	127	3.63	-0.09	-5.44(.000)	-0.50	1.11
B	1.00	2101	60.10	0.44	29.26(.000)	0.43	1.17
C	0.00	841	24.06	-0.23	-14.17(.000)	-0.43	0.89
D	0.00	405	11.58	-0.30	-18.81(.000)	-0.91	0.80

## Item 49

```

-----
item:49 (n9NCq17)
Cases for this item  3496  Discrimination  0.43
Item Threshold(s):  -0.47  Weighted MNSQ  1.05
Item Delta(s):      -0.47
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	6	0.17	-0.02	-0.94(.345)	-0.44	0.58
9	0.00	25	0.72	-0.04	-2.54(.011)	-0.54	1.21
A	1.00	2071	59.24	0.43	28.04(.000)	0.43	1.15
B	0.00	862	24.66	-0.21	-12.50(.000)	-0.37	0.95
C	0.00	342	9.78	-0.24	-14.42(.000)	-0.80	0.97
D	0.00	190	5.43	-0.21	-12.45(.000)	-0.93	0.91

## Item 50

```

-----
item:50 (n9NCq18)
Cases for this item  3496  Discrimination  0.47
Item Threshold(s):  0.10  Weighted MNSQ  1.02
Item Delta(s):      0.10
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	3	0.09	-0.03	-1.49(.137)	-1.20	0.64
9	0.00	18	0.51	-0.06	-3.61(.000)	-0.94	0.64
A	1.00	1684	48.17	0.47	31.29(.000)	0.57	1.16
B	0.00	494	14.13	-0.32	-19.96(.000)	-0.87	0.88
C	0.00	139	3.98	-0.23	-13.84(.000)	-1.26	0.70
D	0.00	1158	33.12	-0.15	-9.24(.000)	-0.21	0.92

## Item 51

```

-----
item:51 (n9NCq19)
Cases for this item  3496  Discrimination  0.53
Item Threshold(s):  0.47  Weighted MNSQ  0.93
Item Delta(s):      0.47
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	1	0.03	-0.03	-1.72(.085)	-2.34	0.00
9	0.00	5	0.14	-0.05	-2.70(.007)	-1.28	1.18
A	0.00	273	7.81	-0.17	-10.25(.000)	-0.62	0.88
B	1.00	1437	41.10	0.53	37.13(.000)	0.75	1.15
C	0.00	515	14.73	-0.21	-12.87(.000)	-0.57	1.01
D	0.00	1265	36.18	-0.29	-17.75(.000)	-0.41	0.87

## Item 52

```

-----
item:52 (n9NCq20)
Cases for this item  3496  Discrimination  0.43
Item Threshold(s):  0.23  Weighted MNSQ  1.06
Item Delta(s):      0.24
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.09	-0.02	-1.47(.141)	-1.14	1.18
9	0.00	7	0.20	-0.05	-3.20(.001)	-1.54	1.09
A	0.00	366	10.47	-0.27	-16.73(.000)	-0.86	0.84
B	0.00	1165	33.32	-0.28	-16.99(.000)	-0.43	0.95
C	1.00	1593	45.57	0.43	28.00(.000)	0.56	1.14
D	0.00	362	10.35	0.01	0.68(.495)	0.06	1.19

## Item 53

```

-----
item:53 (n9NCq21)
Cases for this item  3495  Discrimination  0.32
Item Threshold(s):  0.13  Weighted MNSQ  1.19
Item Delta(s):      0.13
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	19	0.54	-0.05	-2.98(.003)	-0.71	1.23
A	0.00	378	10.82	-0.10	-5.98(.000)	-0.32	1.04
B	0.00	1369	39.17	-0.22	-13.63(.000)	-0.29	1.02
C	1.00	1663	47.58	0.32	20.22(.000)	0.41	1.21
D	0.00	66	1.89	-0.12	-7.43(.000)	-1.02	1.07

## Item 54

```

-----
item:54 (n9NCq22)
Cases for this item  3492  Discrimination  0.41
Item Threshold(s):  0.55  Weighted MNSQ  1.07
Item Delta(s):      0.55
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.06	0.01	0.63(.530)	0.52	0.46
9	0.00	19	0.54	-0.07	-4.22(.000)	-1.05	0.87
A	0.00	256	7.33	-0.06	-3.47(.001)	-0.21	1.16
B	1.00	1387	39.72	0.41	26.94(.000)	0.62	1.20
C	0.00	325	9.31	-0.20	-11.96(.000)	-0.68	0.94
D	0.00	1503	43.04	-0.25	-15.42(.000)	-0.31	0.97

## Item 55

```

-----
item:55 (n9NCq23)
Cases for this item  3492  Discrimination  0.22
Item Threshold(s):  0.54  Weighted MNSQ  1.32
Item Delta(s):      0.54
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.06	-0.02	-1.38(.169)	-0.85	0.25
9	0.00	19	0.54	-0.07	-3.98(.000)	-0.94	0.91
A	1.00	1392	39.86	0.22	13.58(.000)	0.35	1.16
B	0.00	701	20.07	-0.23	-13.97(.000)	-0.51	1.06
C	0.00	662	18.96	-0.02	-0.89(.373)	0.00	1.26
D	0.00	716	20.50	-0.02	-0.89(.373)	-0.02	1.06

## Item 56

```

-----
item:56 (n9NCq24)
Cases for this item  3492  Discrimination  0.51
Item Threshold(s):  1.01  Weighted MNSQ  0.94
Item Delta(s):      1.01
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	3	0.09	-0.02	-1.06(.291)	-0.55	0.14
9	0.00	68	1.95	-0.09	-5.06(.000)	-0.64	0.90
A	0.00	173	4.95	-0.14	-8.60(.000)	-0.69	0.84
B	0.00	1069	30.61	-0.36	-22.49(.000)	-0.57	0.93
C	0.00	1078	30.87	-0.06	-3.77(.000)	-0.10	0.96
D	1.00	1101	31.53	0.51	35.04(.000)	0.90	1.15

## Item 57

```

-----
item:57 (n9NCq25)
Cases for this item  3491  Discrimination  0.59
Item Threshold(s):  0.73  Weighted MNSQ  0.87
Item Delta(s):      0.73
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
0	0.00	1928	55.23	-0.43	-28.11(.000)	-0.41	0.95
1	1.00	1268	36.32	0.59	42.63(.000)	0.91	1.03
9	0.00	295	8.45	-0.24	-14.84(.000)	-0.88	0.87

## Item 58

```

-----
item:58 (n9NCq26)
Cases for this item  3487  Discrimination  0.29
Item Threshold(s):  1.28  Weighted MNSQ  1.18
Item Delta(s):      1.28
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	1	0.03	-0.02	-1.39(.163)	-1.49	0.00
9	0.00	13	0.37	-0.05	-3.15(.002)	-1.05	1.04
A	0.00	185	5.31	-0.18	-11.02(.000)	-0.81	0.91
B	0.00	852	24.43	-0.12	-7.32(.000)	-0.19	1.18
C	1.00	945	27.10	0.29	17.85(.000)	0.57	1.28
D	0.00	1199	34.38	-0.02	-1.21(.225)	-0.03	1.00
E	0.00	292	8.37	-0.08	-4.54(.000)	-0.21	1.00

## Item 59

```

-----
item:59 (n9NCq27)
Cases for this item  3485  Discrimination  0.47
Item Threshold(s):  1.02  Weighted MNSQ  0.97
Item Delta(s):      1.03
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
9	0.00	107	3.07	-0.03	-1.88(.060)	-0.20	1.12
A	0.00	489	14.03	-0.21	-12.42(.000)	-0.53	0.91
B	0.00	889	25.51	-0.25	-15.33(.000)	-0.45	0.91
C	0.00	765	21.95	-0.10	-5.78(.000)	-0.19	0.98
D	1.00	1088	31.22	0.47	31.76(.000)	0.83	1.21
E	0.00	147	4.22	0.04	2.17(.030)	0.19	1.11

## Item 60

```

-----
item:60 (n9NCq28)
Cases for this item  3479  Discrimination  0.43
Item Threshold(s):  1.85  Weighted MNSQ  0.99
Item Delta(s):      1.85
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2586	74.33	-0.30	-18.32(.000)	-0.17	1.05
1	1.00	665	19.11	0.43	27.84(.000)	1.06	1.17
9	0.00	228	6.55	-0.15	-9.23(.000)	-0.63	0.97

## Item 61

```

-----
item:61 (n9NCq29)
Cases for this item  3398  Discrimination  0.56
Item Threshold(s):  1.91  Weighted MNSQ  0.83
Item Delta(s):      1.92
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2537	74.66	-0.40	-25.77(.000)	-0.21	0.99
1	1.00	633	18.63	0.56	39.70(.000)	1.41	0.96
9	0.00	228	6.71	-0.17	-10.24(.000)	-0.63	0.82

## Item 62

```

-----
item:62 (n9NCq30)
Cases for this item  3369  Discrimination  0.55
Item Threshold(s):  1.88  Weighted MNSQ  0.84
Item Delta(s):      1.88
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2393	71.03	-0.45	-29.47(.000)	-0.26	0.99
1	1.00	644	19.12	0.55	38.62(.000)	1.39	1.02
9	0.00	332	9.85	-0.04	-2.43(.015)	-0.08	0.89

## Item 63

```

-----
item:63 (n9NCq31)
Cases for this item  3335  Discrimination  0.39
Item Threshold(s):  3.23  Weighted MNSQ  0.92
Item Delta(s):      3.24
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3034	90.97	-0.29	-17.49(.000)	-0.03	1.08
1	1.00	237	7.11	0.39	24.81(.000)	1.80	0.99
9	0.00	64	1.92	-0.13	-7.80(.000)	-0.97	0.76

Item 64

```

-----
item:64 (n9NCq32)
Cases for this item  3300  Discrimination  0.18
Item Threshold(s):  3.16  Weighted MNSQ  1.09
Item Delta(s):      3.16
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2808	85.09	-0.11	-6.60(.000)	0.03	1.12
1	1.00	251	7.61	0.18	10.41(.000)	0.84	1.52
9	0.00	241	7.30	-0.03	-1.47(.142)	-0.02	1.07

```

-----
The following traditional statistics are only meaningful for complete
designs and when the amount of missing data is minimal.
In this analysis 1.14% of the data are missing.
-----

```

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

```

-----
N                3519
Mean             32.52
Standard Deviation 12.00
Variance         144.01
Skewness         0.20
Kurtosis         -0.65
Standard error of mean 0.20
Standard error of measurement 3.24
Coefficient Alpha 0.93
-----

```

## Appendix B.15 Year 9 Reading

```
=====
NAPLAN 2014, Calibration, Grade 9, reading
GENERALISED ITEM ANALYSIS
=====
```

```
Item 1
-----
```

```
item:1 (r9q01)
```

```
Cases for this item 3558 Discrimination 0.45
Item Threshold(s): -2.00 Weighted MNSQ 0.88
Item Delta(s): -2.00
```

```
-----
Label      Score      Count      % of tot  Pt Bis      t      (p)      PVIAvg:1  PVI  SD:1
-----
  8         0.00         5         0.14     -0.10     -5.94(.000) -2.35      0.30
  9         0.00         5         0.14     -0.06     -3.48(.001) -1.31      1.42
  A         0.00        181         5.09     -0.28    -17.26(.000) -0.73      0.96
  B         0.00         97         2.73     -0.21    -12.97(.000) -0.75      0.90
  C         0.00        113         3.18     -0.23    -14.03(.000) -0.82      0.86
  D         1.00       3157        88.73      0.45     29.91(.000)  0.62      0.98
-----
```

```
Item 2
-----
```

```
item:2 (r9q02)
```

```
Cases for this item 3558 Discrimination 0.38
Item Threshold(s): -3.09 Weighted MNSQ 0.87
Item Delta(s): -3.09
```

```
-----
Label      Score      Count      % of tot  Pt Bis      t      (p)      PVIAvg:1  PVI  SD:1
-----
  8         0.00         3         0.08     -0.07     -4.28(.000) -2.19      0.27
  9         0.00         7         0.20     -0.07     -4.04(.000) -1.31      1.75
  A         0.00         62         1.74     -0.23    -14.26(.000) -1.32      0.81
  B         1.00       3398        95.50      0.38     24.67(.000)  0.55      1.00
  C         0.00         29         0.82     -0.16     -9.83(.000) -1.43      0.80
  D         0.00         59         1.66     -0.23    -13.95(.000) -1.33      0.78
-----
```

```
Item 3
-----
```

```
item:3 (r9q03)
```

```
Cases for this item 3557 Discrimination 0.39
Item Threshold(s): -2.00 Weighted MNSQ 0.92
Item Delta(s): -2.00
```

```
-----
Label      Score      Count      % of tot  Pt Bis      t      (p)      PVIAvg:1  PVI  SD:1
-----
  8         0.00         4         0.11     -0.08     -4.61(.000) -2.00      0.43
  9         0.00         8         0.22     -0.08     -5.07(.000) -1.71      1.19
  A         0.00        166         4.67     -0.18    -11.02(.000) -0.34      1.07
  B         0.00         79         2.22     -0.25    -15.39(.000) -1.20      0.83
  C         1.00       3156        88.73      0.39     25.18(.000)  0.60      0.99
  D         0.00        144         4.05     -0.21    -12.77(.000) -0.50      1.04
-----
```

## Item 4

```

-----
item:4 (r9q04)
Cases for this item 3556 Discrimination 0.54
Item Threshold(s): -0.20 Weighted MNSQ 0.91
Item Delta(s): -0.20

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.11	-0.07	-4.20(.000)	-1.93	0.56
9	0.00	22	0.62	-0.08	-4.79(.000)	-0.60	1.19
A	0.00	428	12.04	-0.24	-14.74(.000)	-0.20	0.92
B	0.00	650	18.28	-0.35	-22.19(.000)	-0.28	0.85
C	1.00	2249	63.25	0.54	37.78(.000)	0.88	0.94
D	0.00	203	5.71	-0.16	-9.50(.000)	-0.17	0.87

## Item 5

```

-----
item:5 (r9q05)
Cases for this item 3555 Discrimination 0.40
Item Threshold(s): -0.99 Weighted MNSQ 1.01
Item Delta(s): -0.99

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.08	-0.07	-4.30(.000)	-2.19	0.27
9	0.00	14	0.39	-0.05	-3.18(.002)	-0.42	1.20
A	1.00	2732	76.85	0.40	26.32(.000)	0.69	0.99
B	0.00	339	9.54	-0.24	-14.73(.000)	-0.29	1.08
C	0.00	223	6.27	-0.21	-12.82(.000)	-0.34	0.93
D	0.00	244	6.86	-0.17	-10.40(.000)	-0.15	0.89

## Item 6

```

-----
item:6 (r9q06)
Cases for this item 3555 Discrimination 0.38
Item Threshold(s): -2.45 Weighted MNSQ 0.92
Item Delta(s): -2.45

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.08	-0.05	-3.26(.001)	-1.88	0.66
9	0.00	4	0.11	-0.03	-1.83(.067)	-0.66	2.08
A	1.00	3279	92.24	0.38	24.15(.000)	0.58	1.01
B	0.00	138	3.88	-0.23	-14.11(.000)	-0.68	1.07
C	0.00	50	1.41	-0.21	-12.92(.000)	-1.36	0.76
D	0.00	81	2.28	-0.19	-11.57(.000)	-0.74	0.71

## Item 7

```

-----
item:7 (r9q07)
Cases for this item 3555 Discrimination 0.49
Item Threshold(s): -1.59 Weighted MNSQ 0.88
Item Delta(s): -1.59

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	4	0.11	-0.07	-4.23(.000)	-1.88	0.66
9	0.00	15	0.42	-0.08	-4.81(.000)	-0.80	1.06
A	0.00	243	6.84	-0.31	-19.66(.000)	-0.67	0.85
B	1.00	3010	84.67	0.49	33.89(.000)	0.68	0.97
C	0.00	150	4.22	-0.26	-15.77(.000)	-0.81	0.81
D	0.00	133	3.74	-0.21	-12.86(.000)	-0.59	0.77

## Item 8

```

-----
item:8 (r9q08)
Cases for this item 3553 Discrimination 0.49
Item Threshold(s): -2.23 Weighted MNSQ 0.83
Item Delta(s): -2.23

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	3	0.08	-0.07	-4.29(.000)	-2.19	0.27
9	0.00	13	0.37	-0.07	-4.28(.000)	-0.73	1.07
A	0.00	89	2.50	-0.25	-15.53(.000)	-1.12	0.76
B	0.00	130	3.66	-0.29	-17.87(.000)	-0.98	0.75
C	1.00	3221	90.66	0.49	33.36(.000)	0.63	0.97
D	0.00	97	2.73	-0.26	-16.07(.000)	-1.08	0.76

## Item 9

```

-----
item:9 (r9q09)
Cases for this item 3553 Discrimination 0.23
Item Threshold(s): 3.05 Weighted MNSQ 1.01
Item Delta(s): 3.05

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	2	0.06	-0.06	-3.46(.001)	-2.23	0.36
9	0.00	3	0.08	-0.07	-4.30(.000)	-2.30	0.96
A	0.00	94	2.65	-0.19	-11.36(.000)	-0.69	1.17
B	0.00	38	1.07	-0.15	-9.30(.000)	-0.99	0.94
C	1.00	359	10.10	0.23	13.97(.000)	1.22	1.23
D	0.00	3057	86.04	-0.06	-3.35(.001)	0.44	0.98

## Item 10

```

-----
item:10 (r9q10)
Cases for this item 3552 Discrimination 0.37
Item Threshold(s): 1.42 Weighted MNSQ 1.04
Item Delta(s): 1.42

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	2	0.06	-0.06	-3.84(.000)	-2.48	0.00
9	0.00	29	0.82	-0.09	-5.42(.000)	-0.46	1.38
A	0.00	683	19.23	-0.25	-15.36(.000)	-0.03	0.98
B	1.00	1120	31.53	0.37	23.60(.000)	1.02	1.04
C	0.00	559	15.74	-0.22	-13.30(.000)	-0.05	0.91
D	0.00	1159	32.63	0.03	2.06(.039)	0.51	0.92

## Item 11

```

-----
item:11 (r9q11)
Cases for this item 3549 Discrimination 0.41
Item Threshold(s): -0.26 Weighted MNSQ 1.03
Item Delta(s): -0.26

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	3	0.08	-0.06	-3.33(.001)	-1.64	1.46
9	0.00	11	0.31	-0.08	-5.02(.000)	-1.35	1.34
A	0.00	78	2.20	-0.17	-10.46(.000)	-0.68	0.90
B	1.00	2288	64.47	0.41	26.99(.000)	0.77	0.98
C	0.00	673	18.96	-0.23	-13.82(.000)	0.01	0.94
D	0.00	496	13.98	-0.22	-13.62(.000)	-0.07	1.05



## Item 12

```

-----
item:12 (r9q12)
Cases for this item  3548  Discrimination  0.31
Item Threshold(s):  -0.45  Weighted MNSQ  1.13
Item Delta(s):      -0.45

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	2	0.06	-0.04	-2.65(.008)	-1.72	1.08
9	0.00	26	0.73	-0.06	-3.43(.001)	-0.24	1.21
A	0.00	328	9.24	-0.15	-8.86(.000)	0.03	1.18
B	1.00	2412	67.98	0.31	19.11(.000)	0.68	1.00
C	0.00	195	5.50	-0.22	-13.64(.000)	-0.44	0.91
D	0.00	585	16.49	-0.12	-6.96(.000)	0.20	1.01

## Item 13

```

-----
item:13 (r9q13)
Cases for this item  3547  Discrimination  0.46
Item Threshold(s):  -1.38  Weighted MNSQ  0.92
Item Delta(s):      -1.37

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	1	0.03	-0.05	-2.74(.006)	-2.48	0.00
9	0.00	17	0.48	-0.10	-5.80(.000)	-0.88	1.12
A	0.00	176	4.96	-0.24	-15.02(.000)	-0.57	0.89
B	0.00	236	6.65	-0.31	-19.15(.000)	-0.68	0.88
C	1.00	2915	82.18	0.46	31.10(.000)	0.69	0.97
D	0.00	202	5.69	-0.17	-10.51(.000)	-0.26	0.94

## Item 14

```

-----
item:14 (r9q14)
Cases for this item  3546  Discrimination  0.48
Item Threshold(s):  -0.74  Weighted MNSQ  0.95
Item Delta(s):      -0.74

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	2	0.06	-0.05	-2.71(.007)	-1.52	1.37
9	0.00	14	0.39	-0.08	-4.62(.000)	-0.68	1.06
A	1.00	2589	73.01	0.48	32.15(.000)	0.76	0.96
B	0.00	693	19.54	-0.28	-17.55(.000)	-0.08	0.88
C	0.00	128	3.61	-0.29	-17.98(.000)	-1.02	0.77
D	0.00	120	3.38	-0.22	-13.12(.000)	-0.72	0.87

## Item 15

```

-----
item:15 (r9q15)
Cases for this item  3546  Discrimination  0.45
Item Threshold(s):  -0.01  Weighted MNSQ  1.00
Item Delta(s):      -0.01

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	2	0.06	-0.04	-2.66(.008)	-1.72	1.08
9	0.00	17	0.48	-0.06	-3.39(.001)	-0.41	1.37
A	0.00	117	3.30	-0.22	-13.13(.000)	-0.59	0.79
B	0.00	526	14.83	-0.14	-8.28(.000)	0.14	0.94
C	0.00	767	21.63	-0.31	-19.72(.000)	-0.14	0.88
D	1.00	2117	59.70	0.45	30.19(.000)	0.85	0.99

## Item 16

```

-----
item:16 (r9q16)
Cases for this item  3546  Discrimination  0.40
Item Threshold(s):  0.56  Weighted MNSQ  1.05
Item Delta(s):      0.56
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.06	-0.05	-2.79(.005)	-1.48	1.43
9	0.00	11	0.31	-0.03	-1.86(.063)	-0.18	0.81
A	0.00	1051	29.64	-0.29	-18.35(.000)	0.02	0.93
B	1.00	1708	48.17	0.40	26.19(.000)	0.90	0.98
C	0.00	157	4.43	-0.20	-12.05(.000)	-0.47	0.94
D	0.00	617	17.40	-0.06	-3.63(.000)	0.34	1.02

## Item 17

```

-----
item:17 (r9q17)
Cases for this item  3546  Discrimination  0.57
Item Threshold(s):  -0.26  Weighted MNSQ  0.87
Item Delta(s):      -0.26
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1081	30.49	-0.44	-29.00(.000)	-0.18	0.87
1	1.00	2286	64.47	0.57	41.74(.000)	0.90	0.89
9	0.00	179	5.05	-0.33	-21.10(.000)	-1.01	0.84

## Item 18

```

-----
item:18 (r9q18)
Cases for this item  3542  Discrimination  0.51
Item Threshold(s):  0.14  Weighted MNSQ  0.94
Item Delta(s):      0.14
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1496	42.24	-0.48	-32.94(.000)	-0.08	0.94
1	1.00	2010	56.75	0.51	35.54(.000)	0.92	0.92
9	0.00	36	1.02	-0.15	-8.90(.000)	-1.03	1.08

## Item 19

```

-----
item:19 (r9q19)
Cases for this item  3540  Discrimination  0.45
Item Threshold(s):  -0.83  Weighted MNSQ  0.97
Item Delta(s):      -0.83
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.08	-0.06	-3.45(.001)	-1.80	0.78
9	0.00	17	0.48	-0.07	-3.94(.000)	-0.64	1.29
A	0.00	507	14.32	-0.23	-14.12(.000)	-0.10	0.91
B	0.00	204	5.76	-0.30	-18.98(.000)	-0.74	0.80
C	1.00	2637	74.49	0.45	29.90(.000)	0.74	0.97
D	0.00	172	4.86	-0.18	-10.61(.000)	-0.22	0.91

## Item 20

```

-----
item:20 (r9q20)
Cases for this item  3539  Discrimination  0.43
Item Threshold(s):  -1.25  Weighted MNSQ  0.96
Item Delta(s):      -1.25

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.06	-0.06	-3.51(.000)	-2.23	0.36
9	0.00	7	0.20	-0.06	-3.42(.001)	-1.04	1.53
A	0.00	233	6.58	-0.19	-11.64(.000)	-0.25	0.96
B	0.00	135	3.81	-0.26	-15.73(.000)	-0.76	0.89
C	0.00	305	8.62	-0.24	-14.71(.000)	-0.30	0.87
D	1.00	2857	80.73	0.43	27.98(.000)	0.69	0.98

## Item 21

```

-----
item:21 (r9q21)
Cases for this item  3539  Discrimination  0.38
Item Threshold(s):   0.20  Weighted MNSQ  1.08
Item Delta(s):      0.20

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	16	0.45	0.00	0.11(.916)	0.36	1.24
9	0.00	33	0.93	-0.07	-3.97(.000)	-0.21	1.36
A	0.00	473	13.37	-0.24	-14.83(.000)	-0.15	0.91
B	1.00	1969	55.64	0.38	24.43(.000)	0.82	0.97
C	0.00	372	10.51	-0.25	-15.58(.000)	-0.22	0.98
D	0.00	676	19.10	-0.06	-3.40(.001)	0.34	0.97

## Item 22

```

-----
item:22 (r9q22)
Cases for this item  3539  Discrimination  0.53
Item Threshold(s):  -0.77  Weighted MNSQ  0.89
Item Delta(s):      -0.77

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.06	-0.06	-3.51(.000)	-2.23	0.36
9	0.00	17	0.48	-0.06	-3.28(.001)	-0.20	1.45
A	0.00	295	8.34	-0.32	-19.82(.000)	-0.52	0.71
B	0.00	406	11.47	-0.28	-17.36(.000)	-0.28	0.88
C	1.00	2605	73.61	0.53	37.32(.000)	0.79	0.95
D	0.00	214	6.05	-0.22	-13.38(.000)	-0.37	0.94

## Item 23

```

-----
item:23 (r9q23)
Cases for this item  3538  Discrimination  0.52
Item Threshold(s):   0.41  Weighted MNSQ  0.93
Item Delta(s):      0.41

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.03	-1.54(.123)	-0.77	0.00
9	0.00	17	0.48	-0.08	-4.87(.000)	-0.76	1.06
A	1.00	1815	51.30	0.52	35.87(.000)	0.98	0.98
B	0.00	592	16.73	-0.15	-9.09(.000)	0.14	0.88
C	0.00	402	11.36	-0.30	-18.51(.000)	-0.35	0.82
D	0.00	711	20.10	-0.25	-15.55(.000)	-0.02	0.81

## Item 24

```

-----
item:24 (r9q24)
Cases for this item  3537  Discrimination  0.47
Item Threshold(s):  -0.69  Weighted MNSQ  0.95
Item Delta(s):      -0.69
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
9	0.00	20	0.57	-0.08	-4.61(.000)	-0.59	1.05
A	0.00	80	2.26	-0.23	-13.82(.000)	-0.95	0.63
B	0.00	693	19.59	-0.34	-21.43(.000)	-0.19	0.91
C	1.00	2554	72.21	0.47	32.08(.000)	0.77	0.96
D	0.00	190	5.37	-0.17	-10.36(.000)	-0.27	0.99

## Item 25

```

-----
item:25 (r9q25)
Cases for this item  3533  Discrimination  0.48
Item Threshold(s):  -1.59  Weighted MNSQ  0.87
Item Delta(s):      -1.59
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.02	-1.43(.151)	-1.51	0.00
9	0.00	21	0.59	-0.09	-5.18(.000)	-0.68	0.96
A	1.00	2999	84.89	0.48	32.91(.000)	0.68	0.96
B	0.00	190	5.38	-0.29	-17.67(.000)	-0.70	0.85
C	0.00	190	5.38	-0.23	-13.90(.000)	-0.49	0.89
D	0.00	132	3.74	-0.27	-16.51(.000)	-0.83	0.68

## Item 26

```

-----
item:26 (r9q26)
Cases for this item  3533  Discrimination  0.45
Item Threshold(s):  -1.98  Weighted MNSQ  0.88
Item Delta(s):      -1.97
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.05	-2.76(.006)	-2.48	0.00
9	0.00	11	0.31	-0.08	-4.89(.000)	-0.91	1.02
A	0.00	152	4.30	-0.28	-17.17(.000)	-0.82	0.81
B	0.00	173	4.90	-0.26	-16.06(.000)	-0.64	0.87
C	1.00	3136	88.76	0.45	29.89(.000)	0.64	0.97
D	0.00	60	1.70	-0.19	-11.22(.000)	-0.89	0.77

## Item 27

```

-----
item:27 (r9q27)
Cases for this item  3533  Discrimination  0.34
Item Threshold(s):  1.20  Weighted MNSQ  1.08
Item Delta(s):      1.21
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.06	-0.05	-2.73(.006)	-1.31	0.76
9	0.00	27	0.76	-0.05	-2.85(.004)	-0.04	1.07
A	1.00	1259	35.64	0.34	21.32(.000)	0.95	1.02
B	0.00	153	4.33	-0.23	-14.36(.000)	-0.63	0.97
C	0.00	1417	40.11	-0.13	-7.68(.000)	0.32	0.93
D	0.00	675	19.11	-0.12	-6.99(.000)	0.24	1.01

## Item 28

```

-----
item:28 (r9q28)
Cases for this item  3533  Discrimination  0.54
Item Threshold(s):  0.64  Weighted MNSQ  0.91
Item Delta(s):      0.64
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	2	0.06	-0.00	-0.00(.996)	0.38	2.20
9	0.00	21	0.59	-0.09	-5.21(.000)	-0.80	1.21
A	0.00	1192	33.74	-0.34	-21.24(.000)	0.02	0.83
B	0.00	380	10.76	-0.14	-8.39(.000)	0.10	0.99
C	0.00	288	8.15	-0.22	-13.16(.000)	-0.23	0.98
D	1.00	1650	46.70	0.54	37.90(.000)	1.04	0.93

## Item 29

```

-----
item:29 (r9q29)
Cases for this item  3529  Discrimination  0.43
Item Threshold(s):  0.79  Weighted MNSQ  1.02
Item Delta(s):      0.79
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
9	0.00	36	1.02	-0.09	-5.42(.000)	-0.47	0.99
A	0.00	186	5.27	-0.21	-13.07(.000)	-0.39	0.86
B	0.00	930	26.35	-0.07	-4.07(.000)	0.36	0.94
C	0.00	833	23.60	-0.29	-18.23(.000)	-0.04	0.87
D	1.00	1544	43.75	0.43	28.06(.000)	0.97	1.00

## Item 30

```

-----
item:30 (r9q30)
Cases for this item  3528  Discrimination  0.51
Item Threshold(s):  0.49  Weighted MNSQ  0.94
Item Delta(s):      0.49
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	1	0.03	-0.05	-2.76(.006)	-2.48	0.00
9	0.00	17	0.48	-0.08	-5.02(.000)	-0.68	1.02
A	0.00	375	10.63	-0.16	-9.74(.000)	-0.01	0.97
B	0.00	930	26.36	-0.26	-16.02(.000)	0.06	0.86
C	1.00	1756	49.77	0.51	35.31(.000)	0.99	0.94
D	0.00	449	12.73	-0.25	-15.53(.000)	-0.18	0.91

## Item 31

```

-----
item:31 (r9q31)
Cases for this item  3528  Discrimination  0.29
Item Threshold(s):  1.52  Weighted MNSQ  1.12
Item Delta(s):      1.52
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	1	0.03	-0.05	-2.76(.006)	-2.48	0.00
9	0.00	38	1.08	-0.05	-3.09(.002)	-0.14	1.18
A	0.00	610	17.29	-0.01	-0.55(.580)	0.46	1.08
B	0.00	880	24.94	-0.29	-17.99(.000)	-0.01	0.87
C	0.00	944	26.76	0.01	0.51(.610)	0.49	1.02
D	1.00	1055	29.90	0.29	17.78(.000)	0.92	1.01

## Item 32

```

-----
item:32 (r9q32)
Cases for this item  3525  Discrimination  0.43
Item Threshold(s):  0.16  Weighted MNSQ  1.03
Item Delta(s):      0.17
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1495	42.41	-0.41	-26.55(.000)	0.02	0.92
1	1.00	1989	56.43	0.43	28.05(.000)	0.86	0.99
9	0.00	41	1.16	-0.09	-5.59(.000)	-0.36	1.37

## Item 33

```

-----
item:33 (r9q33)
Cases for this item  3522  Discrimination  0.45
Item Threshold(s):  -0.48  Weighted MNSQ  0.99
Item Delta(s):      -0.47
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.09	-0.04	-2.31(.021)	-0.93	1.35
9	0.00	27	0.77	-0.07	-4.34(.000)	-0.24	1.12
A	0.00	431	12.24	-0.19	-11.69(.000)	-0.01	0.87
B	1.00	2419	68.68	0.45	29.83(.000)	0.78	0.98
C	0.00	243	6.90	-0.33	-20.47(.000)	-0.66	0.81
D	0.00	399	11.33	-0.17	-10.42(.000)	-0.01	0.89

## Item 34

```

-----
item:34 (r9q34)
Cases for this item  3521  Discrimination  0.38
Item Threshold(s):  0.29  Weighted MNSQ  1.08
Item Delta(s):      0.29
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.06	-0.04	-2.36(.019)	-1.19	1.83
9	0.00	36	1.02	-0.04	-2.61(.009)	0.12	1.14
A	0.00	469	13.32	-0.11	-6.80(.000)	0.21	0.98
B	0.00	726	20.62	-0.20	-12.33(.000)	0.11	0.90
C	0.00	388	11.02	-0.20	-11.91(.000)	-0.09	1.03
D	1.00	1900	53.96	0.38	24.17(.000)	0.83	1.00

## Item 35

```

-----
item:35 (r9q35)
Cases for this item  3521  Discrimination  0.51
Item Threshold(s):  0.09  Weighted MNSQ  0.95
Item Delta(s):      0.10
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.06	-0.05	-3.14(.002)	-1.90	0.83
9	0.00	15	0.43	-0.10	-5.78(.000)	-1.02	0.87
A	0.00	625	17.75	-0.22	-13.47(.000)	-0.01	0.87
B	0.00	331	9.40	-0.27	-16.65(.000)	-0.31	0.85
C	1.00	2038	57.88	0.51	34.86(.000)	0.92	0.97
D	0.00	510	14.48	-0.22	-13.68(.000)	-0.05	0.81

## Item 36

```

-----
item:36 (r9q36)
Cases for this item  3520  Discrimination  0.51
Item Threshold(s):  -0.16  Weighted MNSQ  0.94
Item Delta(s):      -0.15
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.06	-0.05	-2.75(.006)	-1.52	1.37
9	0.00	29	0.82	-0.07	-3.87(.000)	-0.29	1.02
A	0.00	267	7.59	-0.13	-7.56(.000)	0.06	0.94
B	1.00	2209	62.76	0.51	34.82(.000)	0.87	0.95
C	0.00	440	12.50	-0.28	-17.51(.000)	-0.26	0.88
D	0.00	573	16.28	-0.30	-18.64(.000)	-0.18	0.80

## Item 37

```

-----
item:37 (r9q37)
Cases for this item  3518  Discrimination  0.32
Item Threshold(s):   3.45  Weighted MNSQ  0.96
Item Delta(s):      3.45
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2714	77.15	0.06	3.82(.000)	0.52	0.99
1	1.00	257	7.31	0.32	19.77(.000)	1.65	0.78
9	0.00	547	15.55	-0.30	-18.76(.000)	-0.22	0.91

## Item 38

```

-----
item:38 (r9q38)
Cases for this item  3514  Discrimination  0.30
Item Threshold(s):   1.74  Weighted MNSQ  1.08
Item Delta(s):      1.74
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	1	0.03	-0.05	-2.77(.006)	-2.48	0.00
9	0.00	17	0.48	-0.08	-4.83(.000)	-0.72	1.05
A	0.00	2309	65.71	-0.06	-3.76(.000)	0.43	0.93
B	0.00	158	4.50	-0.27	-16.44(.000)	-0.67	0.80
C	0.00	105	2.99	-0.24	-14.36(.000)	-0.80	0.91
D	1.00	924	26.29	0.30	18.62(.000)	1.00	1.05

## Item 39

```

-----
item:39 (r9q39)
Cases for this item  3512  Discrimination  0.40
Item Threshold(s):   0.51  Weighted MNSQ  1.05
Item Delta(s):      0.51
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.06	-0.05	-3.07(.002)	-1.62	1.22
9	0.00	33	0.94	-0.04	-2.16(.031)	0.08	1.28
A	1.00	1744	49.66	0.40	26.04(.000)	0.89	0.97
B	0.00	594	16.91	-0.26	-16.05(.000)	-0.06	0.96
C	0.00	191	5.44	-0.27	-16.43(.000)	-0.60	0.95
D	0.00	948	26.99	-0.09	-5.06(.000)	0.34	0.89

## Item 40

```

-----
item:40 (r9q40)
Cases for this item  3506  Discrimination  0.48
Item Threshold(s):  0.41  Weighted MNSQ  0.97
Item Delta(s):      0.40
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1	SD:l
8	0.00	4	0.11	-0.04	-2.40(.017)	-0.97	1.13	
9	0.00	32	0.91	-0.05	-2.83(.005)	-0.01	1.03	
A	0.00	251	7.16	-0.27	-16.87(.000)	-0.47	0.84	
B	1.00	1814	51.74	0.48	32.68(.000)	0.96	0.97	
C	0.00	1006	28.69	-0.31	-19.14(.000)	0.01	0.84	
D	0.00	399	11.38	-0.08	-4.82(.000)	0.26	0.95	

## Item 41

```

-----
item:41 (r9q41)
Cases for this item  3505  Discrimination  0.46
Item Threshold(s):  -0.45  Weighted MNSQ  0.98
Item Delta(s):      -0.46
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1	SD:l
8	0.00	1	0.03	-0.05	-2.77(.006)	-2.48	0.00	
9	0.00	15	0.43	-0.07	-4.31(.000)	-0.64	1.01	
A	1.00	2399	68.45	0.46	30.91(.000)	0.80	0.96	
B	0.00	546	15.58	-0.28	-17.54(.000)	-0.14	0.85	
C	0.00	266	7.59	-0.19	-11.32(.000)	-0.18	1.05	
D	0.00	278	7.93	-0.21	-12.73(.000)	-0.21	0.87	

## Item 42

```

-----
item:42 (r9q42)
Cases for this item  3503  Discrimination  0.51
Item Threshold(s):  0.66  Weighted MNSQ  0.93
Item Delta(s):      0.65
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1	SD:l
8	0.00	2	0.06	-0.04	-2.52(.012)	-1.83	0.93	
9	0.00	13	0.37	-0.04	-2.14(.033)	-0.24	1.18	
A	0.00	806	23.01	-0.24	-14.63(.000)	0.06	0.81	
B	0.00	527	15.04	-0.30	-18.31(.000)	-0.21	0.82	
C	1.00	1635	46.67	0.51	35.36(.000)	1.04	0.95	
D	0.00	520	14.84	-0.13	-7.71(.000)	0.17	1.01	

## Item 43

```

-----
item:43 (r9q43)
Cases for this item  3501  Discrimination  0.27
Item Threshold(s):  0.84  Weighted MNSQ  1.18
Item Delta(s):      0.84
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1	SD:l
9	0.00	46	1.31	-0.05	-2.90(.004)	0.02	1.01	
A	0.00	514	14.68	-0.17	-10.07(.000)	0.11	1.06	
B	1.00	1503	42.93	0.27	16.57(.000)	0.80	1.01	
C	0.00	904	25.82	-0.16	-9.45(.000)	0.22	0.97	
D	0.00	534	15.25	0.00	0.09(.931)	0.50	1.05	



## Item 44

```

-----
item:44 (r9q44)
Cases for this item  3496  Discrimination  0.27
Item Threshold(s):  0.59  Weighted MNSQ  1.19
Item Delta(s):      0.59
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	2	0.06	-0.03	-1.58(.115)	-0.29	0.67
9	0.00	18	0.51	-0.06	-3.36(.001)	-0.29	1.10
A	1.00	1675	47.91	0.27	16.48(.000)	0.78	1.00
B	0.00	480	13.73	-0.28	-17.40(.000)	-0.20	0.88
C	0.00	832	23.80	-0.07	-4.39(.000)	0.34	1.04
D	0.00	489	13.99	-0.00	-0.13(.893)	0.49	1.00

## Item 45

```

-----
item:45 (r9q45)
Cases for this item  3494  Discrimination  0.46
Item Threshold(s):  0.16  Weighted MNSQ  0.99
Item Delta(s):      0.17
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	3	0.09	-0.04	-2.64(.008)	-0.97	1.64
9	0.00	29	0.83	-0.04	-2.39(.017)	0.04	1.00
A	0.00	697	19.95	-0.20	-12.06(.000)	0.10	0.93
B	0.00	338	9.67	-0.30	-18.83(.000)	-0.39	0.83
C	0.00	450	12.88	-0.16	-9.80(.000)	0.07	0.95
D	1.00	1977	56.58	0.46	30.86(.000)	0.89	0.96

## Item 46

```

-----
item:46 (r9q46)
Cases for this item  3484  Discrimination  0.28
Item Threshold(s):  0.55  Weighted MNSQ  1.17
Item Delta(s):      0.56
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	1	0.03	-0.05	-2.78(.005)	-2.48	0.00
9	0.00	20	0.57	-0.02	-1.41(.160)	0.19	0.81
A	0.00	535	15.36	-0.17	-10.27(.000)	0.09	0.95
B	1.00	1696	48.68	0.28	17.35(.000)	0.79	1.05
C	0.00	464	13.32	-0.20	-12.08(.000)	-0.00	0.94
D	0.00	768	22.04	-0.02	-1.20(.231)	0.44	0.96

## Item 47

```

-----
item:47 (r9q47)
Cases for this item  3480  Discrimination  0.24
Item Threshold(s):  1.23  Weighted MNSQ  1.19
Item Delta(s):      1.24
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
8	0.00	7	0.20	-0.01	-0.79(.430)	-0.06	1.29
9	0.00	37	1.06	-0.02	-1.24(.215)	0.27	1.09
A	1.00	1228	35.29	0.24	14.27(.000)	0.80	1.01
B	0.00	992	28.51	-0.09	-5.17(.000)	0.37	1.02
C	0.00	806	23.16	-0.12	-7.20(.000)	0.27	0.99
D	0.00	410	11.78	-0.06	-3.50(.000)	0.36	1.14

## Item 48

```

-----
item:48 (r9q48)
Cases for this item   3464   Discrimination   0.42
Item Threshold(s):    0.81   Weighted MNSQ   1.02
Item Delta(s):        0.81
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	2	0.06	-0.03	-1.75(.081)	-1.01	2.08
9	0.00	46	1.33	-0.01	-0.44(.659)	0.37	1.04
A	1.00	1510	43.59	0.42	27.10(.000)	0.98	1.02
B	0.00	683	19.72	-0.21	-12.35(.000)	0.08	0.91
C	0.00	660	19.05	-0.23	-13.96(.000)	0.03	0.84
D	0.00	563	16.25	-0.09	-5.37(.000)	0.29	0.94

## Item 49

```

-----
item:49 (r9q49)
Cases for this item   3459   Discrimination   0.35
Item Threshold(s):    1.81   Weighted MNSQ   1.01
Item Delta(s):        1.81
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.09	-0.04	-2.40(.017)	-1.11	1.48
9	0.00	40	1.16	-0.02	-1.07(.285)	0.31	0.87
A	0.00	1133	32.76	-0.23	-13.95(.000)	0.15	0.84
B	0.00	624	18.04	-0.10	-6.10(.000)	0.28	0.98
C	0.00	785	22.69	-0.00	-0.14(.886)	0.50	1.01
D	1.00	874	25.27	0.35	21.99(.000)	1.12	1.10

## Item 50

```

-----
item:50 (r9q50)
Cases for this item   3455   Discrimination   0.23
Item Threshold(s):    2.05   Weighted MNSQ   1.08
Item Delta(s):        2.06
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
8	0.00	3	0.09	-0.04	-2.33(.020)	-0.93	1.48
9	0.00	6	0.17	-0.05	-2.67(.008)	-0.53	1.21
A	0.00	1009	29.20	-0.04	-2.35(.019)	0.41	0.89
B	1.00	744	21.53	0.23	14.07(.000)	0.99	1.20
C	0.00	548	15.86	-0.02	-1.14(.256)	0.46	1.07
D	0.00	1145	33.14	-0.14	-8.50(.000)	0.28	0.95

-----

The following traditional statistics are only meaningful for complete designs and when the amount of missing data is minimal.  
In this analysis 0.86% of the data are missing.

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

```

-----
N                3558
Mean             28.90
Standard Deviation  9.21
Variance         84.90
Skewness         -0.27
Kurtosis         -0.60
Standard error of mean  0.15
Standard error of measurement  2.94
Coefficient Alpha  0.90
-----

```

## Appendix B.16 Year 9 Spelling

```
=====
NAPLAN 2014, Calibration, Grade 9, spelling
GENERALISED ITEM ANALYSIS
=====
```

```
Item 1
-----
```

```
item:1 (lc9q01)
Cases for this item 3597 Discrimination 0.38
Item Threshold(s): -4.37 Weighted MNSQ 0.93
Item Delta(s): -4.37
```

```
-----
Label      Score      Count      % of tot  Pt Bis      t (p)      PVI Avg:1  PVI SD:1
-----
0          0.00       142        3.95     -0.37     -24.06(.000) -3.29      1.95
1          1.00      3451       95.94     0.38     24.65(.000)  0.48      1.72
9          0.00         4         0.11     -0.08     -4.53(.000) -3.91      0.36
=====
```

```
Item 2
-----
```

```
item:2 (lc9q02)
Cases for this item 3597 Discrimination 0.50
Item Threshold(s): -3.28 Weighted MNSQ 0.86
Item Delta(s): -3.28
```

```
-----
Label      Score      Count      % of tot  Pt Bis      t (p)      PVI Avg:1  PVI SD:1
-----
0          0.00       268        7.45     -0.47     -32.29(.000) -2.87      1.75
1          1.00      3298       91.69     0.50     34.40(.000)  0.61      1.61
9          0.00        31         0.86     -0.14     -8.42(.000) -2.57      1.71
=====
```

```
Item 3
-----
```

```
item:3 (lc9q03)
Cases for this item 3591 Discrimination 0.56
Item Threshold(s): -2.48 Weighted MNSQ 0.87
Item Delta(s): -2.48
```

```
-----
Label      Score      Count      % of tot  Pt Bis      t (p)      PVI Avg:1  PVI SD:1
-----
0          0.00       446       12.42     -0.54     -37.96(.000) -2.27      1.69
1          1.00      3111       86.63     0.56     40.71(.000)  0.74      1.54
9          0.00        34         0.95     -0.15     -9.23(.000) -2.90      1.51
=====
```

```
Item 4
-----
```

```
item:4 (lc9q04)
Cases for this item 3585 Discrimination 0.59
Item Threshold(s): -2.39 Weighted MNSQ 0.82
Item Delta(s): -2.39
```

```
-----
Label      Score      Count      % of tot  Pt Bis      t (p)      PVI Avg:1  PVI SD:1
-----
0          0.00       459       12.80     -0.55     -39.69(.000) -2.25      1.66
1          1.00      3083       86.00     0.59     43.22(.000)  0.77      1.51
9          0.00        43         1.20     -0.17     -10.33(.000) -2.85      1.69
=====
```

## Item 5

```

-----
item:5 (lc9q05)
Cases for this item  3583  Discrimination  0.62
Item Threshold(s):  -1.70  Weighted MNSQ  0.87
Item Delta(s):      -1.70

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	617	17.22	-0.55	-39.73(.000)	-1.79	1.64
1	1.00	2854	79.65	0.62	47.46(.000)	0.90	1.47
9	0.00	112	3.13	-0.24	-14.63(.000)	-2.25	1.56

## Item 6

```

-----
item:6 (lc9q06)
Cases for this item  3583  Discrimination  0.53
Item Threshold(s):  -0.85  Weighted MNSQ  1.17
Item Delta(s):      -0.85

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1045	29.17	-0.49	-33.94(.000)	-1.03	1.72
1	1.00	2482	69.27	0.53	37.36(.000)	0.97	1.55
9	0.00	56	1.56	-0.16	-9.83(.000)	-2.13	1.85

## Item 7

```

-----
item:7 (lc9q07)
Cases for this item  3581  Discrimination  0.57
Item Threshold(s):  -0.47  Weighted MNSQ  1.08
Item Delta(s):      -0.47

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1198	33.45	-0.51	-35.69(.000)	-0.94	1.70
1	1.00	2287	63.86	0.57	41.92(.000)	1.11	1.45
9	0.00	96	2.68	-0.21	-12.86(.000)	-2.12	1.79

## Item 8

```

-----
item:8 (lc9q08)
Cases for this item  3580  Discrimination  0.63
Item Threshold(s):  -0.91  Weighted MNSQ  0.93
Item Delta(s):      -0.91

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	971	27.12	-0.57	-41.79(.000)	-1.31	1.69
1	1.00	2511	70.14	0.63	48.86(.000)	1.07	1.40
9	0.00	98	2.74	-0.21	-13.09(.000)	-2.06	1.49

## Item 9

```

-----
item:9 (lc9q09)
Cases for this item  3579  Discrimination  0.59
Item Threshold(s):   0.23  Weighted MNSQ  1.05
Item Delta(s):      0.23

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1495	41.77	-0.47	-31.97(.000)	-0.62	1.68
1	1.00	1897	53.00	0.59	43.25(.000)	1.31	1.41
9	0.00	187	5.22	-0.27	-16.73(.000)	-1.81	1.62

## Item 10

```

-----
item:10 (lc9ql0)
Cases for this item  3575  Discrimination  0.59
Item Threshold(s):  0.41  Weighted MNSQ  1.03
Item Delta(s):      0.41

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1570	43.92	-0.47	-32.14(.000)	-0.58	1.65
1	1.00	1792	50.13	0.59	44.19(.000)	1.38	1.41
9	0.00	213	5.96	-0.26	-16.28(.000)	-1.58	1.63

## Item 11

```

-----
item:11 (lc9ql1)
Cases for this item  3574  Discrimination  0.55
Item Threshold(s):  0.52  Weighted MNSQ  1.12
Item Delta(s):      0.52

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1741	48.71	-0.47	-32.25(.000)	-0.49	1.72
1	1.00	1727	48.32	0.55	39.07(.000)	1.33	1.42
9	0.00	106	2.97	-0.21	-13.02(.000)	-1.96	1.61

## Item 12

```

-----
item:12 (lc9ql2)
Cases for this item  3569  Discrimination  0.59
Item Threshold(s):  1.87  Weighted MNSQ  0.88
Item Delta(s):      1.86

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2343	65.65	-0.43	-28.71(.000)	-0.20	1.63
1	1.00	989	27.71	0.59	43.39(.000)	2.03	1.24
9	0.00	237	6.64	-0.23	-14.13(.000)	-1.21	1.51

## Item 13

```

-----
item:13 (lc9ql3)
Cases for this item  3568  Discrimination  0.44
Item Threshold(s):  2.51  Weighted MNSQ  1.08
Item Delta(s):      2.51

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2631	73.74	-0.29	-18.15(.000)	0.04	1.74
1	1.00	701	19.65	0.44	28.94(.000)	1.93	1.42
9	0.00	236	6.61	-0.18	-11.07(.000)	-0.90	1.65

## Item 14

```

-----
item:14 (lc9ql4)
Cases for this item  3561  Discrimination  0.53
Item Threshold(s):  2.40  Weighted MNSQ  0.92
Item Delta(s):      2.40

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2340	65.71	-0.31	-19.20(.000)	-0.03	1.67
1	1.00	744	20.89	0.53	37.47(.000)	2.18	1.23
9	0.00	477	13.40	-0.21	-12.68(.000)	-0.58	1.68

## Item 15

```

-----
item:15 (lc9q15)
Cases for this item  3554  Discrimination  0.34
Item Threshold(s):  3.24  Weighted MNSQ  1.13
Item Delta(s):      3.25
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2573	72.40	-0.01	-0.52(.603)	0.35	1.75
1	1.00	444	12.49	0.34	21.65(.000)	1.97	1.50
9	0.00	537	15.11	-0.30	-19.04(.000)	-0.88	1.53

## Item 16

```

-----
item:16 (lc9q16)
Cases for this item  3550  Discrimination  0.39
Item Threshold(s):  3.81  Weighted MNSQ  0.94
Item Delta(s):      3.81
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	3084	86.87	-0.19	-11.78(.000)	0.23	1.71
1	1.00	300	8.45	0.39	25.41(.000)	2.71	1.16
9	0.00	166	4.68	-0.21	-12.57(.000)	-1.34	1.72

## Item 17

```

-----
item:17 (lc9q17)
Cases for this item  3550  Discrimination  0.47
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	251	7.07	-0.39	-25.21(.000)	-2.26	1.90
1	1.00	3207	90.34	0.47	31.90(.000)	0.65	1.60
9	0.00	92	2.59	-0.25	-15.31(.000)	-2.46	1.67

## Item 18

```

-----
item:18 (lc9q18)
Cases for this item  3530  Discrimination  0.45
Item Threshold(s):  -3.06  Weighted MNSQ  0.98
Item Delta(s):      -3.06
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	249	7.05	-0.40	-25.74(.000)	-2.21	1.88
1	1.00	3220	91.22	0.45	30.03(.000)	0.64	1.61
9	0.00	61	1.73	-0.20	-12.05(.000)	-2.45	1.62

## Item 19

```

-----
item:19 (lc9q19)
Cases for this item  3518  Discrimination  0.62
Item Threshold(s):  -1.20  Weighted MNSQ  0.91
Item Delta(s):      -1.20
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	770	21.89	-0.54	-37.76(.000)	-1.31	1.59
1	1.00	2632	74.82	0.62	46.69(.000)	1.02	1.42
9	0.00	116	3.30	-0.26	-15.97(.000)	-2.21	1.50

## Item 20

```

-----
item:20 (lc9q20)
Cases for this item   3506   Discrimination   0.63
Item Threshold(s):   -0.89   Weighted MNSQ   0.91
Item Delta(s):       -0.89

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	774	22.08	-0.50	-34.17(.000)	-1.17	1.57
1	1.00	2486	70.91	0.63	48.30(.000)	1.10	1.41
9	0.00	246	7.02	-0.31	-19.46(.000)	-1.57	1.46

## Item 21

```

-----
item:21 (lc9q21)
Cases for this item   3495   Discrimination   0.63
Item Threshold(s):   -0.79   Weighted MNSQ   0.91
Item Delta(s):       -0.79

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	966	27.64	-0.57	-40.51(.000)	-1.11	1.57
1	1.00	2438	69.76	0.63	48.19(.000)	1.12	1.39
9	0.00	91	2.60	-0.24	-14.30(.000)	-2.09	1.40

## Item 22

```

-----
item:22 (lc9q22)
Cases for this item   3482   Discrimination   0.59
Item Threshold(s):   -0.48   Weighted MNSQ   1.02
Item Delta(s):       -0.48

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1083	31.10	-0.52	-36.13(.000)	-0.88	1.60
1	1.00	2278	65.42	0.59	42.93(.000)	1.16	1.42
9	0.00	121	3.48	-0.21	-12.54(.000)	-1.50	1.46

## Item 23

```

-----
item:23 (lc9q23)
Cases for this item   3470   Discrimination   0.50
Item Threshold(s):    0.08   Weighted MNSQ   1.19
Item Delta(s):       0.08

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1196	34.47	-0.37	-23.65(.000)	-0.40	1.73
1	1.00	1972	56.83	0.50	34.05(.000)	1.17	1.46
9	0.00	302	8.70	-0.25	-15.28(.000)	-0.96	1.51

## Item 24

```

-----
item:24 (lc9q24)
Cases for this item   3442   Discrimination   0.56
Item Threshold(s):   -0.25   Weighted MNSQ   1.07
Item Delta(s):       -0.25

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1014	29.46	-0.46	-30.51(.000)	-0.73	1.65
1	1.00	2146	62.35	0.56	39.59(.000)	1.19	1.42
9	0.00	282	8.19	-0.22	-13.31(.000)	-0.78	1.49

## Item 25

```

-----
item:25 (lc9q25)
Cases for this item  3437  Discrimination  0.64
Item Threshold(s):  0.44  Weighted MNSQ  0.93
Item Delta(s):      0.44

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1569	45.65	-0.59	-42.31(.000)	-0.58	1.53
1	1.00	1763	51.29	0.64	48.53(.000)	1.49	1.30
9	0.00	105	3.05	-0.16	-9.39(.000)	-1.04	1.58

## Item 26

```

-----
item:26 (lc9q26)
Cases for this item  3429  Discrimination  0.61
Item Threshold(s):  1.32  Weighted MNSQ  0.92
Item Delta(s):      1.32

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1962	57.22	-0.49	-32.65(.000)	-0.24	1.52
1	1.00	1265	36.89	0.61	44.85(.000)	1.80	1.28
9	0.00	202	5.89	-0.22	-13.36(.000)	-0.95	1.44

## Item 27

```

-----
item:27 (lc9q27)
Cases for this item  3380  Discrimination  0.51
Item Threshold(s):  1.71  Weighted MNSQ  1.06
Item Delta(s):      1.71

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2039	60.33	-0.39	-24.92(.000)	-0.04	1.61
1	1.00	1058	31.30	0.51	34.80(.000)	1.76	1.34
9	0.00	283	8.37	-0.16	-9.67(.000)	-0.37	1.58

## Item 28

```

-----
item:28 (lc9q28)
Cases for this item  3329  Discrimination  0.45
Item Threshold(s):  2.23  Weighted MNSQ  1.10
Item Delta(s):      2.23

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2195	65.94	-0.33	-20.18(.000)	0.12	1.66
1	1.00	810	24.33	0.45	29.02(.000)	1.86	1.37
9	0.00	324	9.73	-0.12	-7.12(.000)	-0.05	1.39

## Item 29

```

-----
item:29 (lc9q29)
Cases for this item  3259  Discrimination  0.49
Item Threshold(s):  1.63  Weighted MNSQ  1.09
Item Delta(s):      1.63

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	1961	60.17	-0.40	-24.59(.000)	0.01	1.60
1	1.00	1084	33.26	0.49	32.00(.000)	1.71	1.42
9	0.00	214	6.57	-0.15	-8.56(.000)	-0.37	1.46



Item 30

-----

item:30 (1c9q30)

Cases for this item 3135 Discrimination 0.40

Item Threshold(s): 3.70 Weighted MNSQ 0.94

Item Delta(s): 3.70

```
-----
```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	2537	80.93	-0.21	-12.31(.000)	0.41	1.63
1	1.00	318	10.14	0.40	24.44(.000)	2.66	1.25
9	0.00	280	8.93	-0.13	-7.21(.000)	-0.03	1.50

```
-----
```

```
-----
```

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

In this analysis 2.52% of the data are missing.

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

```
-----
```

N	3597
Mean	16.42
Standard Deviation	6.71
Variance	45.07
Skewness	-0.38
Kurtosis	-0.42
Standard error of mean	0.11
Standard error of measurement	2.11
Coefficient Alpha	0.90

```
-----
```

## Appendix B.17 Year 3, 5, 7, 9 Writing

```
=====
NAPLAN 2014, Calibration, All Grades, Writing
GENERALISED ITEM ANALYSIS
=====
```

```
Item 1
-----
```

```
item:1 (WQ01_Audience)
Cases for this item 14010 Discrimination 0.92
Item Threshold(s): -11.35 -5.66 -1.71 2.30 5.72 9.01 Weighted MNSQ 0.78
Item Delta(s): -11.35 -5.65 -1.71 2.32 5.72 8.97
-----
```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	60	0.43	-0.20	-24.14(.000)	_BIG_	2.09
1	1.00	831	5.93	-0.48	-64.67(.000)	-6.36	1.82
2	2.00	3345	23.88	-0.47	-63.54(.000)	-2.78	1.51
3	3.00	5659	40.39	-0.00	-0.12(.901)	0.27	1.48
4	4.00	3065	21.88	0.46	61.71(.000)	3.24	1.43
5	5.00	899	6.42	0.45	59.56(.000)	6.05	1.41
6	6.00	151	1.08	0.26	32.34(.000)	8.82	1.34

```
Item 2
-----
```

```
item:2 (WQ02_Text_Structure)
Cases for this item 14010 Discrimination 0.88
Item Threshold(s): -6.96 -2.50 1.98 6.77 Weighted MNSQ 0.95
Item Delta(s): -6.95 -2.50 1.97 6.76
-----
```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	485	3.46	-0.39	-50.75(.000)	-6.91	2.83
1	1.00	2809	20.05	-0.53	-73.87(.000)	-3.52	1.81
2	2.00	6180	44.11	-0.10	-11.52(.000)	-0.12	1.70
3	3.00	3896	27.81	0.54	75.30(.000)	3.22	1.72
4	4.00	640	4.57	0.44	57.79(.000)	7.01	1.73

```
Item 3
-----
```

```
item:3 (WQ03_Ideas)
Cases for this item 14010 Discrimination 0.88
Item Threshold(s): -8.93 -5.33 -1.16 4.29 8.98 Weighted MNSQ 0.92
Item Delta(s): -8.90 -5.34 -1.16 4.30 8.97
-----
```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	185	1.32	-0.33	-41.88(.000)	-9.54	1.85
1	1.00	864	6.17	-0.40	-50.96(.000)	-5.16	2.04
2	2.00	3960	28.27	-0.46	-61.89(.000)	-2.39	1.69
3	3.00	6935	49.50	0.24	29.48(.000)	1.12	1.78
4	4.00	1896	13.53	0.56	79.54(.000)	5.01	1.60
5	5.00	170	1.21	0.28	34.00(.000)	8.76	1.32

## Item 4

```

-----
item:4 (WQ04_Persuasive_devices)
Cases for this item 14010 Discrimination 0.88
Item Threshold(s): -6.86 -2.26 2.26 6.83 Weighted MNSQ 0.95
Item Delta(s): -6.85 -2.26 2.26 6.82
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
0	0.00	512	3.65	-0.41	-52.88(.000)	-6.97	2.68
1	1.00	3063	21.86	-0.52	-72.56(.000)	-3.28	1.86
2	2.00	6264	44.71	-0.06	-7.50(.000)	0.03	1.70
3	3.00	3554	25.37	0.54	76.26(.000)	3.42	1.70
4	4.00	617	4.40	0.43	56.45(.000)	7.02	1.80

## Item 5

```

-----
item:5 (WQ05_Vocabulary)
Cases for this item 14010 Discrimination 0.86
Item Threshold(s): -9.17 -6.56 0.81 4.66 8.71 Weighted MNSQ 0.97
Item Delta(s): -9.10 -6.64 0.83 4.66 8.69
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
0	0.00	157	1.12	-0.32	-39.41(.000)	-9.84	1.79
1	1.00	452	3.23	-0.34	-43.08(.000)	-6.23	1.64
2	2.00	7196	51.36	-0.52	-72.96(.000)	-1.57	2.08
3	3.00	4476	31.95	0.34	43.40(.000)	2.01	1.69
4	4.00	1533	10.94	0.52	71.68(.000)	5.25	1.57
5	5.00	196	1.40	0.29	35.48(.000)	8.44	1.54

## Item 6

```

-----
item:6 (WQ06_Cohesion)
Cases for this item 14010 Discrimination 0.85
Item Threshold(s): -9.05 -4.55 2.48 7.87 Weighted MNSQ 0.92
Item Delta(s): -9.04 -4.55 2.48 7.87
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
0	0.00	182	1.30	-0.33	-41.46(.000)	-9.56	1.76
1	1.00	1356	9.68	-0.47	-62.96(.000)	-4.80	1.87
2	2.00	8536	60.93	-0.28	-34.79(.000)	-0.55	2.05
3	3.00	3586	25.60	0.59	86.82(.000)	3.69	1.79
4	4.00	350	2.50	0.36	45.27(.000)	7.80	1.62

## Item 7

```

-----
item:7 (WQ07_Paragraphing)
Cases for this item 14010 Discrimination 0.83
Item Threshold(s): -3.29 1.19 6.24 Weighted MNSQ 1.10
Item Delta(s): -3.27 1.18 6.24
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:l	PV1 SD:l
0	0.00	2487	17.75	-0.61	-92.14(.000)	-4.41	2.44
1	1.00	5910	42.18	-0.22	-26.43(.000)	-0.64	1.88
2	2.00	4766	34.02	0.50	68.59(.000)	2.65	2.00
3	3.00	847	6.05	0.44	57.96(.000)	6.06	2.23

## Item 8

```

-----
item:8 (WQ08_Sentance_Structure)
Cases for this item 14010 Discrimination 0.88
Item Threshold(s): -8.42 -5.17 -0.63 3.20 6.66 10.38 Weighted MNSQ 1.07
Item Delta(s): -8.38 -5.20 -0.61 3.20 6.66 10.36
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	228	1.63	-0.35	-44.75(.000)	-9.06	1.93
1	1.00	907	6.47	-0.40	-52.06(.000)	-5.10	1.73
2	2.00	4571	32.63	-0.43	-55.95(.000)	-1.95	1.84
3	3.00	5238	37.39	0.15	17.67(.000)	0.93	1.73
4	4.00	2423	17.29	0.48	64.88(.000)	3.85	1.62
5	5.00	586	4.18	0.40	51.73(.000)	6.69	1.71
6	6.00	57	0.41	0.17	20.35(.000)	9.31	1.62

## Item 9

```

-----
item:9 (WQ09_Punctuation)
Cases for this item 14010 Discrimination 0.81
Item Threshold(s): -8.12 -4.46 -0.05 4.82 9.05 Weighted MNSQ 1.41
Item Delta(s): -8.09 -4.47 -0.06 4.83 9.03
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	268	1.91	-0.35	-44.86(.000)	-8.37	2.48
1	1.00	1286	9.18	-0.43	-56.61(.000)	-4.53	1.91
2	2.00	5018	35.82	-0.32	-40.05(.000)	-1.27	2.11
3	3.00	5790	41.33	0.33	41.09(.000)	1.59	2.18
4	4.00	1490	10.64	0.46	61.13(.000)	4.76	2.16
5	5.00	158	1.13	0.23	27.44(.000)	7.45	2.16

## Item 10

```

-----
item:10 (WQ10_Spelling)
Cases for this item 14010 Discrimination 0.87
Item Threshold(s): -9.43 -6.21 -2.63 0.99 4.64 8.93 Weighted MNSQ 1.23
Item Delta(s): -9.39 -6.23 -2.62 0.99 4.63 8.91
-----

```

Label	Score	Count	% of tot	Pt Bis	t (p)	PV1Avg:1	PV1 SD:1
0	0.00	145	1.03	-0.30	-37.87(.000)	-9.91	1.64
1	1.00	529	3.78	-0.37	-47.27(.000)	-6.23	1.49
2	2.00	2458	17.54	-0.44	-58.42(.000)	-3.21	1.64
3	3.00	4994	35.65	-0.14	-17.09(.000)	-0.42	1.82
4	4.00	4148	29.61	0.34	42.99(.000)	2.09	1.90
5	5.00	1564	11.16	0.49	67.25(.000)	4.98	1.94
6	6.00	172	1.23	0.24	29.79(.000)	7.71	2.06

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 14010
Mean 24.43
Standard Deviation 7.86
Variance 61.76
Skewness -0.07
Kurtosis 0.35
Standard error of mean 0.07
Standard error of measurement 1.55
Coefficient Alpha 0.96
-----

```

## APPENDIX C. ITEM CALIBRATION RESULTS

---

### C.1 Year 3 G&P Item Calibration Results

Item Label	Delta Centered	Error	Discrimination	Facility	MnSQ	CI L	CI H	T	Slope
lc3q26	-2.703	0.038	0.38	94.31	0.9	0.88	1.12	-1.7	1.10
lc3q27	-2.146	0.035	0.38	90.86	0.93	0.91	1.09	-1.5	1.07
lc3q28	-1.639	0.033	0.43	86.37	0.92	0.93	1.07	-2.4	1.09
lc3q29	-1.546	0.033	0.48	85.39	0.89	0.94	1.06	-3.6	1.14
lc3q30	-1.549	0.033	0.47	85.42	0.89	0.94	1.06	-3.5	1.14
lc3q31	-1.332	0.032	0.44	82.92	0.95	0.94	1.06	-1.8	1.08
lc3q32	-0.849	0.031	0.39	76.30	1.02	0.96	1.04	1.1	0.94
lc3q33	-0.796	0.030	0.57	75.51	0.87	0.96	1.04	-6.4	1.27
lc3q34	-0.277	0.029	0.53	66.71	0.94	0.97	1.03	-3.8	1.20
lc3q35	-0.131	0.029	0.50	63.99	0.96	0.97	1.03	-2.6	1.15
lc3q36	-0.274	0.029	0.47	66.73	0.97	0.97	1.03	-1.5	1.08
lc3q37	-0.230	0.029	0.42	65.93	1.04	0.97	1.03	2.1	0.92
lc3q38	0.062	0.029	0.51	60.36	0.95	0.97	1.03	-3.1	1.16
lc3q39	0.330	0.028	0.32	54.99	1.15	0.97	1.03	9.7	0.53
lc3q40	0.347	0.028	0.48	54.68	0.99	0.97	1.03	-1.0	1.07
lc3q41	0.864	0.029	0.42	44.2	1.04	0.97	1.03	2.9	0.87
lc3q42	0.289	0.029	0.52	55.92	0.95	0.97	1.03	-3.5	1.19
lc3q43	0.453	0.028	0.42	52.62	1.04	0.97	1.03	2.9	0.84
lc3q44	1.104	0.029	0.42	39.49	1.02	0.97	1.03	1.4	0.91
lc3q45	0.879	0.029	0.35	44.10	1.10	0.97	1.03	6.9	0.60
lc3q46	0.850	0.029	0.41	44.75	1.06	0.97	1.03	3.9	0.81
lc3q47	1.409	0.029	0.35	33.91	1.08	0.97	1.03	4.6	0.74
lc3q48	1.567	0.030	0.40	31.14	1.02	0.96	1.04	1.2	0.92
lc3q49	1.591	0.030	0.42	30.76	0.99	0.96	1.04	-0.4	0.97
lc3q50	1.874	0.031	0.30	26.00	1.08	0.96	1.04	3.6	0.77
lc3q51	1.853	0.152	0.39	26.36	1.00	0.96	1.04	0.1	0.93

## C.2 Year 3 Numeracy Item Calibration Results

Item Label	Delta Centered	Error	Discrimination	Facility	MnSQ	CI L	CI H	T	Slope
n3q01	-4.051	0.045	0.17	97.33	0.98	0.82	1.18	-0.2	0.99
n3q02	-3.842	0.044	0.24	96.77	0.94	0.84	1.16	-0.7	1.05
n3q03	-3.346	0.042	0.30	94.95	0.93	0.87	1.13	-1.0	1.06
n3q04	-2.604	0.039	0.41	90.56	0.88	0.92	1.08	-2.9	1.12
n3q05	-2.704	0.039	0.43	91.30	0.85	0.91	1.09	-3.4	1.16
n3q06	-1.754	0.034	0.42	82.11	0.94	0.95	1.05	-2.1	1.06
n3q07	-1.527	0.034	0.42	79.13	0.98	0.95	1.05	-0.9	1.03
n3q08	-1.556	0.034	0.36	79.53	1.03	0.95	1.05	1.1	0.94
n3q09	-0.806	0.031	0.51	67.71	0.94	0.96	1.04	-3.6	1.16
n3q10	-0.904	0.031	0.42	69.41	1.04	0.96	1.04	2.3	0.93
n3q11	-1.081	0.032	0.39	72.40	1.05	0.96	1.04	2.5	0.90
n3q12	-0.642	0.031	0.54	64.75	0.91	0.97	1.03	-5.4	1.23
n3q13	-0.389	0.030	0.43	60.02	1.05	0.97	1.03	3.4	0.87
n3q14	-0.429	0.030	0.55	60.78	0.91	0.97	1.03	-5.7	1.25
n3q15	0.095	0.030	0.60	50.50	0.87	0.97	1.03	-9.1	1.41
n3q16	0.022	0.030	0.42	51.94	1.08	0.97	1.03	5.1	0.80
n3q17	0.149	0.030	0.39	49.45	1.11	0.97	1.03	7.1	0.68
n3q18	-0.237	0.030	0.53	57.09	0.93	0.97	1.03	-4.3	1.19
n3q19	0.571	0.030	0.43	41.13	1.05	0.97	1.03	3.2	0.84
n3q20	0.320	0.030	0.41	46.06	1.08	0.97	1.03	5.0	0.78
n3q21	0.750	0.031	0.28	37.70	1.20	0.97	1.03	11.7	0.45
n3q22	0.779	0.031	0.49	37.18	0.97	0.97	1.03	-1.9	1.04
n3q23	1.340	0.032	0.32	27.30	1.12	0.96	1.04	5.8	0.73
n3q24	1.02	0.031	0.48	32.77	0.98	0.97	1.03	-1.2	1.04
n3q25	1.212	0.032	0.52	29.47	0.93	0.96	1.04	-3.5	1.15
n3q26	1.291	0.032	0.37	28.15	1.06	0.96	1.04	3.1	0.83
n3q27	1.505	0.033	0.29	24.74	1.14	0.96	1.04	6.3	0.72
n3q28	1.782	0.034	0.48	20.74	0.93	0.95	1.05	-3.1	1.12
n3q29	1.459	0.032	0.50	25.51	0.93	0.96	1.04	-3.6	1.14
n3q30	1.415	0.032	0.43	26.21	0.98	0.96	1.04	-0.8	0.98
n3q31	1.899	0.034	0.3	19.21	1.07	0.95	1.05	2.8	0.83
n3q32	2.435	0.037	0.44	13.09	0.91	0.93	1.07	-2.5	1.11
n3q33	2.554	0.037	0.47	12.01	0.87	0.93	1.07	-3.6	1.15
n3q34	3.195	0.041	0.22	7.210	1.04	0.90	1.10	0.8	0.93
n3q35	2.077	0.198	0.48	17.17	0.92	0.94	1.06	-3.0	1.12

## C.3 Year 3 Reading Item Calibration Results

Item Label	Delta Centered	Error	Discrimination	Facility	MnSQ	CI L	CI H	T	Slope
r3q01	-3.226	0.045	0.34	95.95	0.91	0.86	1.14	-1.3	1.08
r3q02	-2.686	0.043	0.35	93.57	0.90	0.89	1.11	-1.8	1.05
r3q03	-2.218	0.040	0.46	90.62	0.87	0.92	1.08	-3.3	1.12
r3q04	-2.296	0.041	0.48	91.18	0.83	0.91	1.09	-4.0	1.16
r3q05	-2.175	0.040	0.47	90.30	0.87	0.92	1.08	-3.3	1.14
r3q06	-1.513	0.037	0.48	84.23	0.87	0.94	1.06	-4.3	1.10
r3q07	-1.688	0.037	0.53	86.09	0.83	0.94	1.06	-5.6	1.19
r3q08	-1.023	0.034	0.52	78.29	0.91	0.95	1.05	-3.9	1.14
r3q09	-2.084	0.040	0.46	89.68	0.89	0.92	1.08	-2.9	1.12
r3q10	-0.057	0.032	0.56	62.84	0.92	0.97	1.03	-4.4	1.18
r3q11	-1.496	0.037	0.51	84.18	0.88	0.94	1.06	-4.3	1.16
r3q12	-0.099	0.032	0.58	63.63	0.90	0.96	1.04	-5.9	1.23
r3q13	-0.949	0.034	0.52	77.34	0.92	0.95	1.05	-3.3	1.13
r3q14	0.433	0.031	0.42	53.82	1.12	0.97	1.03	7.1	0.73
r3q15	0.515	0.031	0.49	52.33	1.01	0.97	1.03	0.8	0.96
r3q16	-0.162	0.032	0.54	64.92	0.95	0.96	1.04	-2.8	1.12
r3q17	-1.255	0.036	0.50	81.53	0.91	0.95	1.05	-3.5	1.12
r3q18	-0.852	0.034	0.59	76.12	0.85	0.95	1.05	-6.7	1.25
r3q19	0.230	0.031	0.47	57.80	1.04	0.97	1.03	2.3	0.92
r3q20	2.484	0.035	0.26	18.92	1.10	0.95	1.05	3.5	0.77
r3q21	1.989	0.033	0.21	25.92	1.25	0.96	1.04	10.9	0.48
r3q22	0.548	0.031	0.55	51.86	0.94	0.97	1.03	-3.6	1.15
r3q23	0.229	0.031	0.53	57.94	0.97	0.97	1.03	-1.7	1.08
r3q24	0.768	0.031	0.57	47.66	0.91	0.97	1.03	-5.8	1.22
r3q25	0.436	0.031	0.55	54.07	0.94	0.97	1.03	-3.6	1.16
r3q26	1.050	0.031	0.50	42.36	0.98	0.97	1.03	-1.0	1.05
r3q27	0.545	0.031	0.48	52.08	1.02	0.97	1.03	1.5	0.96
r3q28	0.199	0.032	0.50	58.68	1.00	0.97	1.03	-0.2	1.00
r3q29	0.717	0.031	0.51	48.80	0.98	0.97	1.03	-1.1	1.05
r3q30	1.317	0.032	0.32	37.51	1.16	0.97	1.03	8.9	0.57
r3q31	1.494	0.032	0.32	34.40	1.14	0.97	1.03	7.7	0.61
r3q32	2.594	0.036	0.44	17.75	0.93	0.95	1.05	-2.7	1.12
r3q33	0.789	0.032	0.51	47.72	0.99	0.97	1.03	-0.4	1.03
r3q34	-0.474	0.033	0.44	70.90	1.05	0.96	1.04	2.3	0.91
r3q35	3.376	0.040	0.05	10.11	1.15	0.92	1.08	3.5	0.69
r3q36	0.543	0.032	0.43	52.57	1.10	0.97	1.03	6.0	0.74
r3q37	1.203	0.032	0.43	40.02	1.07	0.97	1.03	3.9	0.81
r3q38	2.794	0.211	0.02	15.70	1.28	0.94	1.06	8.2	0.46

### C.4 Year 3 Spelling Item Calibration Results

Item Label	Delta Centered	Error	Discrimination	Facility	MnSQ	CI L	CI H	T	Slope
lc3q01	-4.481	0.051	0.40	92.08	0.94	0.91	1.09	-1.2	1.00
lc3q02	-3.976	0.048	0.43	89.26	1.00	0.92	1.08	0.1	0.92
lc3q03	-2.816	0.043	0.55	80.15	1.04	0.94	1.06	1.2	0.93
lc3q04	-2.416	0.041	0.62	76.10	0.87	0.94	1.06	-4.7	1.15
lc3q05	-2.016	0.040	0.62	71.70	0.98	0.95	1.05	-0.9	1.02
lc3q06	-0.517	0.038	0.69	51.79	0.94	0.96	1.04	-2.7	1.12
lc3q07	-0.381	0.037	0.68	49.90	0.96	0.96	1.04	-1.6	1.08
lc3q08	0.115	0.038	0.66	42.80	1.00	0.96	1.04	0.1	1.03
lc3q09	0.472	0.038	0.66	37.79	0.98	0.96	1.04	-1.0	1.06
lc3q10	1.310	0.040	0.58	26.94	1.07	0.95	1.05	2.7	0.87
lc3q11	1.276	0.040	0.63	27.45	0.95	0.95	1.05	-2.0	1.07
lc3q12	2.501	0.045	0.55	14.90	0.92	0.93	1.07	-2.3	1.08
lc3q13	2.909	0.047	0.49	11.80	0.96	0.92	1.08	-0.9	1.02
lc3q14	3.278	0.049	0.45	9.45	0.95	0.91	1.09	-1.2	1.03
lc3q15	-1.484	0.039	0.68	65.88	0.87	0.95	1.05	-5.5	1.20
lc3q16	-0.692	0.038	0.62	55.36	1.10	0.96	1.04	4.5	0.84
lc3q17	-0.124	0.038	0.63	47.28	1.09	0.96	1.04	3.8	0.90
lc3q18	-0.191	0.038	0.61	48.64	1.12	0.96	1.04	5.1	0.82
lc3q19	-0.256	0.038	0.71	49.78	0.89	0.96	1.04	-5.3	1.23
lc3q20	-0.267	0.038	0.67	50.24	0.98	0.96	1.04	-1.0	1.07
lc3q21	0.300	0.038	0.55	42.28	1.22	0.96	1.04	9.4	0.60
lc3q22	0.527	0.039	0.67	39.25	0.95	0.96	1.04	-2.4	1.13
lc3q23	1.582	0.041	0.56	25.50	1.06	0.95	1.05	2.3	0.90
lc3q24	2.104	0.043	0.53	20.00	1.05	0.94	1.06	1.5	0.93
lc3q25	3.244	0.202	0.44	10.55	1.02	0.92	1.08	0.5	0.96



**C.5 Year 5 G&P Item Calibration Results**

<b>Item Label</b>	<b>Delta Centered</b>	<b>Error</b>	<b>Discrimination</b>	<b>Facility</b>	<b>MnSQ</b>	<b>CI L</b>	<b>CI H</b>	<b>T</b>	<b>Slope</b>
lc5q26	-2.769	0.046	0.29	95.11	0.95	0.87	1.13	-0.7	1.04
lc5q27	-2.189	0.042	0.36	91.92	0.94	0.91	1.09	-1.2	1.05
lc5q28	-1.860	0.040	0.34	89.42	0.97	0.92	1.08	-0.8	1.01
lc5q29	-2.048	0.041	0.44	90.94	0.88	0.91	1.09	-2.7	1.13
lc5q30	-1.154	0.036	0.42	82.00	0.98	0.95	1.05	-0.8	1.05
lc5q31	-1.662	0.039	0.39	87.67	0.96	0.93	1.07	-1.1	1.05
lc5q32	-1.185	0.036	0.47	82.40	0.93	0.95	1.05	-2.7	1.13
lc5q33	-0.7000	0.034	0.49	75.59	0.94	0.96	1.04	-2.6	1.12
lc5q34	-0.517	0.033	0.44	72.65	1.01	0.96	1.04	0.5	1.00
lc5q35	-0.434	0.033	0.50	71.28	0.95	0.96	1.04	-2.7	1.13
lc5q36	-0.686	0.034	0.41	75.40	1.02	0.96	1.04	1.1	0.97
lc5q37	0.174	0.032	0.51	60.10	0.97	0.97	1.03	-2.2	1.14
lc5q38	0.086	0.032	0.5	61.80	0.97	0.97	1.03	-1.7	1.11
lc5q39	0.208	0.032	0.54	59.42	0.94	0.97	1.03	-4.2	1.23
lc5q40	0.047	0.032	0.51	62.56	0.97	0.97	1.03	-2.0	1.12
lc5q41	0.222	0.032	0.53	59.19	0.94	0.97	1.03	-3.7	1.18
lc5q42	0.662	0.031	0.54	50.38	0.94	0.97	1.03	-4.3	1.23
lc5q43	0.696	0.031	0.47	49.70	1.01	0.97	1.03	0.9	0.99
lc5q44	0.807	0.031	0.49	47.46	0.98	0.97	1.03	-1.1	1.07
lc5q45	1.064	0.032	0.34	42.35	1.12	0.97	1.03	7.7	0.63
lc5q46	0.636	0.031	0.50	51.02	0.99	0.97	1.03	-0.9	1.08
lc5q47	1.346	0.032	0.43	36.90	1.02	0.97	1.03	1.3	0.91
lc5q48	1.770	0.033	0.29	29.22	1.12	0.96	1.04	6.0	0.68
lc5q49	1.563	0.033	0.47	32.91	0.95	0.97	1.03	-2.9	1.08
lc5q50	2.879	0.038	0.03	13.85	1.21	0.93	1.07	6.0	0.56
lc5q51	3.044	0.175	0.03	12.20	1.17	0.93	1.07	4.4	0.64

## C.6 Year 5 Numeracy Item Calibration Results

Item Label	Delta Centered	Error	Discrimination	Facility	MnSQ	CI L	CI H	T	Slope
n5q01	-3.006	0.047	0.29	93.93	0.96	0.89	1.11	-0.7	1.02
n5q02	-2.794	0.045	0.31	92.72	0.93	0.90	1.1	-1.3	1.04
n5q03	-2.610	0.044	0.39	91.51	0.89	0.91	1.09	-2.3	1.10
n5q04	-2.083	0.04	0.47	87.08	0.87	0.93	1.07	-3.9	1.15
n5q05	-1.741	0.038	0.42	83.36	0.94	0.94	1.06	-2.1	1.08
n5q06	-2.003	0.040	0.28	86.29	1.05	0.93	1.07	1.5	0.92
n5q07	-1.482	0.037	0.45	80.07	0.94	0.95	1.05	-2.2	1.09
n5q08	-2.153	0.041	0.24	87.81	1.08	0.93	1.07	2.2	0.90
n5q09	-1.341	0.036	0.42	78.13	0.98	0.95	1.05	-0.8	1.04
n5q10	-1.233	0.035	0.53	76.54	0.87	0.96	1.04	-6.2	1.24
n5q11	-0.980	0.034	0.52	72.53	0.91	0.96	1.04	-4.6	1.2
n5q12	-1.154	0.035	0.47	75.35	0.94	0.96	1.04	-2.9	1.11
n5q13	-0.656	0.033	0.44	66.90	1.01	0.97	1.03	0.4	1.00
n5q14	-0.704	0.033	0.40	67.78	1.05	0.97	1.03	2.6	0.91
n5q15	-0.391	0.033	0.54	61.96	0.92	0.97	1.03	-5.5	1.26
n5q16	-0.133	0.032	0.39	56.91	1.09	0.97	1.03	5.6	0.75
n5q17	-0.378	0.033	0.33	61.7	1.12	0.97	1.03	7.4	0.64
n5q18	-0.487	0.033	0.36	63.77	1.11	0.97	1.03	6.5	0.73
n5q19	-0.128	0.032	0.36	56.79	1.11	0.97	1.03	7.2	0.67
n5q20	0.417	0.032	0.34	45.86	1.12	0.97	1.03	8.0	0.60
n5q21	-0.633	0.033	0.44	66.52	1.00	0.97	1.03	-0.1	1.01
n5q22	0.278	0.032	0.40	48.66	1.07	0.97	1.03	4.9	0.77
n5q23	0.291	0.032	0.46	48.41	1.01	0.97	1.03	0.5	0.98
n5q24	-0.303	0.032	0.42	60.28	1.05	0.97	1.03	3.1	0.89
n5q25	0.845	0.033	0.30	37.49	1.15	0.97	1.03	9.1	0.56
n5q26	0.625	0.032	0.48	41.76	0.97	0.97	1.03	-1.7	1.06
n5q27	0.841	0.033	0.50	37.59	0.95	0.97	1.03	-3.3	1.14
n5q28	1.436	0.035	0.39	27.04	1.02	0.96	1.04	1.0	0.91
n5q29	0.765	0.033	0.53	39.04	0.93	0.97	1.03	-4.5	1.20
n5q30	0.998	0.033	0.46	34.66	1.00	0.97	1.03	-0.1	1.00
n5q31	1.302	0.034	0.39	29.27	1.04	0.96	1.04	1.9	0.90
n5q32	1.168	0.034	0.44	31.60	0.99	0.96	1.04	-0.6	1.00
n5q33	1.599	0.035	0.33	24.48	1.07	0.96	1.04	3.0	0.83
n5q34	1.789	0.036	0.54	21.67	0.85	0.95	1.05	-6.3	1.22
n5q35	2.082	0.038	0.34	17.79	1.02	0.94	1.06	0.9	0.93
n5q36	2.009	0.037	0.50	18.72	0.89	0.95	1.05	-4.3	1.16
n5q37	2.420	0.040	0.44	13.97	0.92	0.93	1.07	-2.4	1.10
n5q38	2.241	0.039	0.43	15.95	0.93	0.94	1.06	-2.2	1.08
n5q39	2.455	0.040	0.47	13.66	0.89	0.93	1.07	-3.4	1.14
n5q40	2.834	0.225	0.29	10.24	1.01	0.92	1.08	0.2	0.96

## C.7 Year 5 Reading Item Calibration Results

Item Label	Delta Centered	Error	Discrimination	Facility	MnSQ	CI L	CI H	T	Slope
r5q01	-2.870	0.035	0.32	95.17	0.93	0.87	1.13	-1.0	1.05
r5q02	-1.922	0.033	0.4	89.36	0.93	0.92	1.08	-1.9	1.06
r5q03	-1.474	0.031	0.44	85.10	0.93	0.94	1.06	-2.2	1.07
r5q04	-1.066	0.030	0.47	80.21	0.95	0.95	1.05	-2.0	1.08
r5q05	-2.709	0.035	0.32	94.45	0.93	0.88	1.12	-1.1	1.05
r5q06	0.355	0.027	0.45	56.30	1.04	0.97	1.03	2.6	0.91
r5q07	-0.554	0.029	0.51	72.76	0.94	0.96	1.04	-2.8	1.11
r5q08	-0.455	0.029	0.45	71.16	1.01	0.96	1.04	0.3	0.98
r5q09	-1.740	0.032	0.48	87.86	0.86	0.93	1.07	-3.9	1.15
r5q10	-2.479	0.034	0.33	93.31	0.93	0.89	1.11	-1.2	1.05
r5q11	-2.227	0.034	0.47	91.75	0.83	0.91	1.09	-3.9	1.17
r5q12	-0.686	0.029	0.45	74.91	0.99	0.96	1.04	-0.4	1.02
r5q13	1.547	0.028	0.47	33.52	0.99	0.97	1.03	-0.6	1.01
r5q14	0.977	0.027	0.36	44.23	1.12	0.97	1.03	7.7	0.63
r5q15	-0.668	0.029	0.53	74.65	0.91	0.96	1.04	-4.4	1.18
r5q16	-1.214	0.030	0.45	82.24	0.94	0.94	1.06	-2.2	1.07
r5q17	-0.715	0.029	0.57	75.37	0.85	0.96	1.04	-6.9	1.26
r5q18	-1.019	0.030	0.51	79.77	0.9	0.95	1.05	-3.8	1.16
r5q19	2.265	0.030	0.43	22.00	0.98	0.95	1.05	-0.9	1.03
r5q20	0.192	0.028	0.27	59.65	1.24	0.97	1.03	13.9	0.32
r5q21	-0.027	0.028	0.42	63.79	1.07	0.97	1.03	3.8	0.87
r5q22	-0.884	0.030	0.40	77.96	1.03	0.95	1.05	1.4	0.97
r5q23	1.178	0.028	0.50	40.43	0.96	0.97	1.03	-2.7	1.09
r5q24	2.595	0.031	0.40	17.67	0.96	0.95	1.05	-1.3	1.03
r5q25	-0.474	0.029	0.47	71.68	0.99	0.96	1.04	-0.4	1.05
r5q26	1.678	0.028	0.39	31.34	1.04	0.96	1.04	2.2	0.86
r5q27	0.309	0.028	0.36	57.50	1.14	0.97	1.03	8.7	0.62
r5q28	0.030	0.028	0.53	62.80	0.95	0.97	1.03	-3.1	1.15
r5q29	0.951	0.027	0.27	44.87	1.23	0.97	1.03	14.2	0.30
r5q30	1.448	0.028	0.35	35.45	1.11	0.97	1.03	6.1	0.70
r5q31	1.985	0.029	0.34	26.28	1.05	0.96	1.04	2.6	0.83
r5q32	2.507	0.030	0.48	18.81	0.90	0.95	1.05	-3.9	1.15
r5q33	0.743	0.028	0.61	49.09	0.86	0.97	1.03	-9.6	1.42
r5q34	0.403	0.028	0.53	55.83	0.95	0.97	1.03	-3.4	1.17
r5q35	1.296	0.028	0.42	38.44	1.04	0.97	1.03	2.5	0.84
r5q36	1.362	0.028	0.51	37.18	0.94	0.97	1.03	-3.9	1.12
r5q37	0.302	0.028	0.53	57.82	0.95	0.97	1.03	-2.9	1.15
r5q38	1.059	0.180	0.36	43.01	1.13	0.97	1.03	7.9	0.61

**C.8 Year 5 Spelling Item Calibration Results**

<b>Item Label</b>	<b>Delta Centered</b>	<b>Error</b>	<b>Discrimination</b>	<b>Facility</b>	<b>MnSQ</b>	<b>CI L</b>	<b>CI H</b>	<b>T</b>	<b>Slope</b>
lc5q01	-3.845	0.049	0.46	91.39	0.93	0.91	1.09	-1.6	0.96
lc5q02	-2.410	0.042	0.59	81.04	0.93	0.94	1.06	-2.1	1.04
lc5q03	-1.823	0.040	0.64	75.00	0.94	0.94	1.06	-2.3	1.09
lc5q04	-2.181	0.041	0.61	78.85	0.94	0.94	1.06	-2	1.05
lc5q05	-1.143	0.038	0.67	66.74	0.92	0.95	1.05	-3.3	1.12
lc5q06	-0.568	0.037	0.65	58.80	1.02	0.96	1.04	0.7	1.00
lc5q07	-0.547	0.037	0.62	58.53	1.08	0.96	1.04	3.4	0.91
lc5q08	-0.405	0.037	0.67	56.48	0.97	0.96	1.04	-1.2	1.08
lc5q09	0.607	0.036	0.59	41.35	1.11	0.96	1.04	4.9	0.83
lc5q10	1.074	0.037	0.59	34.56	1.05	0.96	1.04	2.3	0.93
lc5q11	1.034	0.037	0.62	35.16	0.99	0.96	1.04	-0.7	1.06
lc5q12	2.248	0.041	0.52	19.89	0.99	0.95	1.05	-0.2	1.01
lc5q13	3.166	0.045	0.40	11.59	1.08	0.93	1.07	2.1	0.90
lc5q14	-3.839	0.049	0.36	91.66	1.14	0.91	1.09	2.8	0.67
lc5q15	-2.082	0.041	0.57	78.33	1.01	0.94	1.06	0.5	0.95
lc5q16	-0.965	0.038	0.70	64.99	0.86	0.95	1.05	-6.3	1.24
lc5q17	-0.521	0.037	0.67	58.84	0.96	0.96	1.04	-1.9	1.10
lc5q18	-0.410	0.037	0.68	57.35	0.94	0.96	1.04	-2.8	1.14
lc5q19	0.199	0.036	0.61	48.25	1.08	0.96	1.04	3.6	0.91
lc5q20	0.557	0.037	0.62	42.92	1.02	0.96	1.04	1.1	1.00
lc5q21	0.983	0.037	0.62	36.69	1.00	0.96	1.04	-0.2	1.05
lc5q22	2.205	0.041	0.47	20.83	1.10	0.95	1.05	3.7	0.84
lc5q23	2.397	0.041	0.55	18.94	0.89	0.94	1.06	-4.0	1.16
lc5q24	2.941	0.044	0.42	13.86	1.08	0.93	1.07	2.2	0.91
lc5q25	3.329	0.196	0.41	10.97	1.00	0.92	1.08	0.0	0.99

**C.9 Year 7 G&P Item Calibration Results**

<b>Item Label</b>	<b>Delta Centered</b>	<b>Error</b>	<b>Discrimination</b>	<b>Facility</b>	<b>MnSQ</b>	<b>CI L</b>	<b>CI H</b>	<b>T</b>	<b>Slope</b>
lc7q31	-2.948	0.051	0.31	96.15	0.93	0.85	1.15	-0.9	1.08
lc7q32	-2.720	0.049	0.31	95.27	0.94	0.87	1.13	-0.9	1.06
lc7q33	-1.962	0.043	0.40	90.88	0.92	0.91	1.09	-1.9	1.10
lc7q34	-1.878	0.043	0.36	90.23	0.95	0.92	1.08	-1.1	1.05
lc7q35	-1.418	0.039	0.5	85.95	0.87	0.94	1.06	-4.1	1.18
lc7q36	-1.178	0.038	0.25	83.21	1.11	0.94	1.06	3.7	0.84
lc7q37	-0.831	0.036	0.49	78.60	0.92	0.95	1.05	-3.4	1.16
lc7q38	-0.638	0.035	0.53	75.69	0.90	0.96	1.04	-4.8	1.21
lc7q39	-0.631	0.035	0.45	75.58	0.98	0.96	1.04	-1.0	1.06
lc7q40	-0.270	0.034	0.51	69.58	0.94	0.96	1.04	-3.3	1.16
lc7q41	-0.217	0.033	0.52	68.64	0.93	0.96	1.04	-4.2	1.19
lc7q42	-0.528	0.035	0.53	73.97	0.91	0.96	1.04	-4.7	1.22
lc7q43	-0.279	0.034	0.56	69.75	0.89	0.96	1.04	-5.9	1.27
lc7q44	0.079	0.033	0.43	63.15	1.03	0.97	1.03	1.9	0.94
lc7q45	0.343	0.032	0.40	57.95	1.07	0.97	1.03	4.5	0.81
lc7q46	0.648	0.032	0.33	51.80	1.13	0.97	1.03	8.7	0.57
lc7q47	0.481	0.032	0.44	55.24	1.03	0.97	1.03	1.9	0.92
lc7q48	0.491	0.032	0.47	55.04	0.99	0.97	1.03	-0.7	1.04
lc7q49	0.942	0.032	0.49	45.83	0.97	0.97	1.03	-1.8	1.09
lc7q50	0.799	0.032	0.48	48.77	0.99	0.97	1.03	-0.9	1.04
lc7q51	0.838	0.032	0.45	47.98	1.01	0.97	1.03	1.0	0.96
lc7q52	1.073	0.032	0.43	43.25	1.03	0.97	1.03	1.7	0.9
lc7q53	1.054	0.032	0.29	43.67	1.16	0.97	1.03	10.5	0.48
lc7q54	1.033	0.032	0.45	44.10	1.01	0.97	1.03	0.6	0.97
lc7q55	1.104	0.032	0.41	42.71	1.04	0.97	1.03	2.5	0.87
lc7q56	1.498	0.033	0.34	35.05	1.08	0.97	1.03	4.6	0.75
lc7q57	1.713	0.034	0.46	31.11	0.95	0.97	1.03	-2.8	1.08
lc7q58	3.402	0.186	-0.03	9.50	1.17	0.91	1.09	3.7	0.64

**C.10 Year 7 Numeracy Item Calibration Results**

<b>Item Label</b>	<b>Delta Centered</b>	<b>Error</b>	<b>Discrimination</b>	<b>Facility</b>	<b>MnSQ</b>	<b>CI L</b>	<b>CI H</b>	<b>T</b>	<b>Slope</b>
n7CAq01	-2.723	0.043	0.41	89.57	0.88	0.92	1.08	-3.1	1.13
n7CAq02	-2.060	0.038	0.46	82.82	0.87	0.95	1.05	-4.8	1.16
n7CAq03	-2.581	0.042	0.35	88.34	0.95	0.93	1.07	-1.5	1.05
n7CAq04	-1.66	0.036	0.35	77.50	1.04	0.96	1.04	1.8	0.91
n7CAq05	-1.415	0.035	0.44	73.79	0.98	0.96	1.04	-1.1	1.04
n7CAq06	-1.299	0.035	0.27	71.93	1.18	0.96	1.04	8.6	0.64
n7CAq07	-1.155	0.034	0.44	69.51	1.00	0.96	1.04	0.2	1.02
n7CAq08	-0.682	0.033	0.47	61.01	1.00	0.97	1.03	0.3	1.02
n7CAq09	-0.834	0.033	0.55	63.82	0.89	0.97	1.03	-7.1	1.29
n7CAq10	-0.790	0.033	0.38	63.02	1.10	0.97	1.03	6.0	0.74
n7CAq11	-0.654	0.033	0.39	60.49	1.10	0.97	1.03	6.2	0.77
n7CAq12	-0.816	0.033	0.37	63.50	1.11	0.97	1.03	6.4	0.70
n7CAq13	-0.255	0.033	0.50	52.86	0.98	0.97	1.03	-1.2	1.07
n7CAq14	0.000	0.033	0.49	47.94	1.00	0.97	1.03	0.3	0.98
n7CAq15	-0.035	0.033	0.44	48.61	1.06	0.97	1.03	3.8	0.84
n7CAq16	0.325	0.033	0.54	41.76	0.93	0.97	1.03	-4.0	1.15
n7CAq17	0.280	0.033	0.46	42.60	1.03	0.97	1.03	1.8	0.91
n7CAq18	0.148	0.033	0.52	45.10	0.98	0.97	1.03	-1.5	1.07
n7CAq19	0.528	0.033	0.46	38.03	1.03	0.97	1.03	1.8	0.89
n7CAq20	0.469	0.033	0.44	39.10	1.07	0.97	1.03	3.7	0.86
n7CAq21	0.508	0.033	0.51	38.41	0.97	0.97	1.03	-1.9	1.05
n7CAq22	0.430	0.033	0.35	39.84	1.17	0.97	1.03	9.5	0.58
n7CAq23	1.182	0.035	0.5	27.08	0.97	0.96	1.04	-1.5	1.04
n7CAq24	1.095	0.035	0.44	28.45	1.02	0.96	1.04	0.8	0.94
n7CAq25	1.518	0.037	0.53	22.25	0.91	0.95	1.05	-3.6	1.12
n7CAq26	1.360	0.036	0.56	24.49	0.87	0.95	1.05	-5.8	1.18
n7CAq27	1.782	0.038	0.53	18.91	0.86	0.95	1.05	-5.1	1.15
n7CAq28	1.893	0.039	0.51	17.63	0.88	0.94	1.06	-4.2	1.12
n7CAq29	2.476	0.043	0.43	11.83	0.95	0.92	1.08	-1.4	1.05
n7CAq30	2.649	0.044	0.35	10.45	1.00	0.92	1.08	0.0	0.98
n7CAq31	2.880	0.045	0.41	8.80	0.90	0.91	1.09	-2.1	1.07
n7CAq32	2.792	0.045	0.37	9.42	0.93	0.91	1.09	-1.6	1.03

(table continues)

**C.10 (continued)**

<b>Item Label</b>	<b>Delta Centered</b>	<b>Error</b>	<b>Discrimination</b>	<b>Facility</b>	<b>MnSQ</b>	<b>CI L</b>	<b>CI H</b>	<b>T</b>	<b>Slope</b>
n7NCq01	-1.868	0.037	0.35	80.47	1.04	0.95	1.05	1.4	0.96
n7NCq02	-2.255	0.039	0.37	85.15	0.98	0.94	1.06	-0.7	1.04
n7NCq03	-1.642	0.036	0.37	77.33	1.03	0.96	1.04	1.2	0.96
n7NCq04	-1.810	0.037	0.39	79.72	1.00	0.95	1.05	0.0	1.01
n7NCq05	-1.628	0.036	0.37	77.15	1.02	0.96	1.04	1.0	0.96
n7NCq06	-1.471	0.035	0.46	74.78	0.94	0.96	1.04	-2.8	1.11
n7NCq07	-1.496	0.035	0.52	75.16	0.87	0.96	1.04	-6.6	1.25
n7NCq08	-0.866	0.033	0.45	64.53	1.01	0.97	1.03	0.8	0.98
n7NCq09	-1.332	0.035	0.43	72.58	0.99	0.96	1.04	-0.7	1.04
n7NCq10	-0.848	0.033	0.40	64.21	1.06	0.97	1.03	3.7	0.84
n7NCq11	-1.291	0.035	0.51	71.92	0.91	0.96	1.04	-4.9	1.21
n7NCq12	-0.603	0.033	0.61	59.67	0.82	0.97	1.03	-11.8	1.46
n7NCq13	-0.622	0.033	0.25	60.02	1.26	0.97	1.03	14.8	0.28
n7NCq14	-0.817	0.033	0.36	63.67	1.12	0.97	1.03	6.7	0.72
n7NCq15	-0.426	0.033	0.44	56.33	1.05	0.97	1.03	2.9	0.88
n7NCq16	-0.405	0.033	0.59	55.92	0.86	0.97	1.03	-9.5	1.39
n7NCq17	-0.020	0.033	0.55	48.47	0.93	0.97	1.03	-4.7	1.20
n7NCq18	-0.285	0.033	0.41	53.61	1.09	0.97	1.03	5.8	0.73
n7NCq19	-0.032	0.033	0.38	48.71	1.14	0.97	1.03	8.4	0.63
n7NCq20	-0.234	0.033	0.31	52.63	1.21	0.97	1.03	12.4	0.40
n7NCq21	0.499	0.033	0.49	38.71	1.00	0.97	1.03	-0.1	0.99
n7NCq22	0.572	0.034	0.44	37.39	1.05	0.97	1.03	3.0	0.86
n7NCq23	0.409	0.033	0.51	40.38	0.98	0.97	1.03	-1.3	1.05
n7NCq24	0.489	0.033	0.53	38.90	0.95	0.97	1.03	-3.2	1.10
n7NCq25	0.835	0.034	0.52	32.79	0.96	0.96	1.04	-2.2	1.07
n7NCq26	0.927	0.035	0.61	31.26	0.84	0.96	1.04	-8.8	1.29
n7NCq27	2.083	0.040	0.47	15.52	0.91	0.94	1.06	-2.8	1.07
n7NCq28	1.596	0.037	0.45	21.31	0.97	0.95	1.05	-1.3	1.00
n7NCq29	1.628	0.038	0.58	20.89	0.83	0.95	1.05	-6.8	1.21
n7NCq30	1.251	0.036	0.40	26.18	1.04	0.96	1.04	2.0	0.87
n7NCq31	1.659	0.038	0.39	20.48	1.04	0.95	1.05	1.6	0.90
n7NCq32	2.650	0.283	0.51	10.50	0.82	0.92	1.08	-4.5	1.17

## C.11 Year 7 Reading Item Calibration Results

Item Label	Delta Centered	Error	Discrimination	Facility	MnSQ	CI L	CI H	T	Slope
r7q01	-2.031	0.032	0.40	88.61	0.90	0.93	1.07	-2.8	1.09
r7q02	-2.463	0.033	0.38	92.01	0.89	0.91	1.09	-2.3	1.10
r7q03	-3.313	0.035	0.31	96.23	0.91	0.85	1.15	-1.2	1.08
r7q04	-1.104	0.029	0.46	77.53	0.94	0.96	1.04	-2.8	1.11
r7q05	-2.362	0.033	0.33	91.32	0.93	0.91	1.09	-1.6	1.05
r7q06	-1.168	0.029	0.31	78.5	1.05	0.95	1.05	2.2	0.89
r7q07	-1.283	0.029	0.44	80.12	0.94	0.95	1.05	-2.5	1.09
r7q08	-2.195	0.032	0.40	90.04	0.89	0.92	1.08	-2.8	1.10
r7q09	-0.948	0.028	0.45	75.18	0.95	0.96	1.04	-2.3	1.09
r7q10	-1.932	0.031	0.47	87.73	0.85	0.93	1.07	-4.3	1.16
r7q11	-0.103	0.027	0.53	59.97	0.92	0.97	1.03	-5.5	1.25
r7q12	1.545	0.028	0.33	27.83	1.05	0.96	1.04	2.7	0.83
r7q13	-0.330	0.027	0.24	64.39	1.19	0.97	1.03	10.9	0.49
r7q14	-0.759	0.028	0.41	72.18	1.01	0.96	1.04	0.4	1.00
r7q15	-1.753	0.031	0.41	85.98	0.93	0.94	1.06	-2.2	1.09
r7q16	-0.055	0.027	0.55	59.07	0.89	0.97	1.03	-7.8	1.34
r7q17	1.135	0.027	0.51	35.18	0.91	0.97	1.03	-5.5	1.22
r7q18	-1.507	0.030	0.45	83.18	0.91	0.94	1.06	-3.3	1.14
r7q19	0.583	0.027	0.52	46.13	0.92	0.97	1.03	-5.7	1.25
r7q20	-0.522	0.028	0.41	68.06	1.01	0.97	1.03	0.8	0.99
r7q21	-1.217	0.029	0.50	79.37	0.88	0.95	1.05	-4.9	1.19
r7q22	0.322	0.027	0.26	51.48	1.20	0.97	1.03	13.1	0.36
r7q23	0.523	0.027	0.45	47.38	1.00	0.97	1.03	-0.1	1.00
r7q24	0.496	0.027	0.51	47.92	0.93	0.97	1.03	-4.9	1.21
r7q25	-0.258	0.027	0.48	63.13	0.96	0.97	1.03	-2.8	1.13
r7q26	-1.164	0.029	0.49	78.63	0.89	0.95	1.05	-4.6	1.18
r7q27	-1.410	0.030	0.48	82.00	0.88	0.95	1.05	-4.5	1.17
r7q28	1.508	0.028	0.27	28.53	1.12	0.96	1.04	6.0	0.71
r7q29	1.397	0.028	0.44	30.47	0.96	0.96	1.04	-2.3	1.05
r7q30	1.237	0.027	0.35	33.35	1.07	0.97	1.03	3.8	0.81
r7q31	0.910	0.027	0.45	39.61	0.97	0.97	1.03	-1.8	1.04
r7q32	1.734	0.029	0.25	24.84	1.12	0.96	1.04	5.7	0.72
r7q33	0.538	0.027	0.41	47.14	1.04	0.97	1.03	2.8	0.88
r7q34	-0.237	0.027	0.44	62.83	1.00	0.97	1.03	0.0	1.02
r7q35	0.704	0.027	0.28	43.82	1.16	0.97	1.03	10.9	0.48
r7q36	0.845	0.027	0.36	41.00	1.07	0.97	1.03	4.5	0.77
r7q37	0.487	0.027	0.41	48.26	1.03	0.97	1.03	1.9	0.91
r7q38	4.715	0.037	0.18	2.16	1.02	0.78	1.22	0.2	1.02
r7q39	1.959	0.029	0.43	21.57	0.95	0.95	1.05	-2.1	1.08
r7q40	0.771	0.027	0.40	42.63	1.05	0.97	1.03	3.0	0.85
r7q41	0.921	0.027	0.41	39.66	1.03	0.97	1.03	2.1	0.91
r7q42	0.742	0.027	0.45	43.27	0.99	0.97	1.03	-0.8	1.03
r7q43	0.597	0.027	0.40	46.22	1.03	0.97	1.03	2.4	0.88
r7q44	-0.659	0.028	0.52	70.88	0.90	0.96	1.04	-5.7	1.23
r7q45	0.593	0.027	0.37	46.35	1.06	0.97	1.03	4.4	0.79
r7q46	0.564	0.027	0.43	46.97	1.01	0.97	1.03	0.7	0.97
r7q47	0.517	0.027	0.38	47.95	1.07	0.97	1.03	4.8	0.80
r7q48	1.482	0.028	0.32	29.35	1.07	0.96	1.04	3.6	0.81
r7q49	1.731	0.029	0.28	25.20	1.10	0.96	1.04	4.7	0.78
r7q50	0.214	0.201	0.44	54.28	1.01	0.97	1.03	0.4	0.98



**C.12 Year 7 Spelling Item Calibration Results**

<b>Item Label</b>	<b>Delta Centered</b>	<b>Error</b>	<b>Discrimination</b>	<b>Facility</b>	<b>MnSQ</b>	<b>CI L</b>	<b>CI H</b>	<b>T</b>	<b>Slope</b>
lc7q01	-3.065	0.046	0.55	86.96	0.84	0.93	1.07	-4.4	1.09
lc7q02	-2.966	0.045	0.39	86.19	1.27	0.93	1.07	6.6	0.62
lc7q03	-2.679	0.044	0.50	83.81	1.04	0.93	1.07	1.1	0.89
lc7q04	-2.462	0.043	0.59	81.85	0.87	0.94	1.06	-4.2	1.11
lc7q05	-1.821	0.040	0.63	74.97	0.91	0.95	1.05	-3.5	1.11
lc7q06	-1.764	0.040	0.63	74.31	0.90	0.95	1.05	-4	1.12
lc7q07	-1.323	0.038	0.63	68.65	0.95	0.95	1.05	-2.2	1.09
lc7q08	-1.306	0.038	0.57	68.46	1.08	0.95	1.05	3.1	0.89
lc7q09	-0.938	0.037	0.68	63.30	0.87	0.96	1.04	-5.9	1.22
lc7q10	-0.120	0.036	0.58	50.73	1.08	0.96	1.04	4.1	0.87
lc7q11	-0.347	0.036	0.66	54.32	0.92	0.96	1.04	-4.2	1.19
lc7q12	0.852	0.037	0.62	35.48	0.93	0.96	1.04	-3.5	1.16
lc7q13	0.945	0.037	0.57	34.11	1.00	0.96	1.04	0.0	1.02
lc7q14	2.643	0.044	0.45	13.59	0.95	0.93	1.07	-1.5	1.06
lc7q15	2.781	0.045	0.39	12.41	1.05	0.93	1.07	1.5	0.92
lc7q16	-2.741	0.044	0.51	84.75	1.01	0.93	1.07	0.3	0.96
lc7q17	-1.605	0.039	0.60	72.97	0.95	0.95	1.05	-1.8	1.05
lc7q18	-0.908	0.037	0.58	63.44	1.06	0.96	1.04	2.8	0.92
lc7q19	-0.751	0.037	0.65	61.24	0.93	0.96	1.04	-3.1	1.13
lc7q20	0.119	0.036	0.62	47.58	0.99	0.96	1.04	-0.4	1.06
lc7q21	0.877	0.037	0.62	35.63	0.91	0.96	1.04	-4.3	1.20
lc7q22	1.057	0.037	0.54	33.18	1.04	0.96	1.04	1.7	0.93
lc7q23	0.392	0.036	0.55	43.63	1.10	0.96	1.04	5.1	0.84
lc7q24	1.401	0.038	0.59	28.34	0.91	0.96	1.04	-4.2	1.17
lc7q25	1.554	0.039	0.49	26.25	1.08	0.95	1.05	3.3	0.90
lc7q26	1.351	0.038	0.51	29.22	1.07	0.96	1.04	3.0	0.90
lc7q27	2.006	0.041	0.38	20.8	1.20	0.95	1.05	7.0	0.69
lc7q28	2.425	0.043	0.42	16.29	1.06	0.94	1.06	1.9	0.93
lc7q29	3.065	0.047	0.41	10.78	0.96	0.92	1.08	-1.0	1.05
lc7q30	3.330	0.215	0.35	9.03	1.00	0.91	1.09	0.1	0.98

**C.13 Year 9 G&P Item Calibration Results**

<b>Item Label</b>	<b>Delta Centered</b>	<b>Error</b>	<b>Discrimination</b>	<b>Facility</b>	<b>MnSQ</b>	<b>CI L</b>	<b>CI H</b>	<b>T</b>	<b>Slope</b>
lc9q31	-2.844	0.054	0.32	95.11	0.94	0.87	1.13	-0.9	1.05
lc9q32	-2.266	0.048	0.42	91.94	0.9	0.91	1.09	-2.2	1.11
lc9q33	-2.159	0.047	0.33	91.19	0.96	0.91	1.09	-0.8	1.02
lc9q34	-1.527	0.041	0.47	85.48	0.91	0.94	1.06	-2.7	1.12
lc9q35	-1.212	0.039	0.42	81.73	0.97	0.95	1.05	-1.1	1.05
lc9q36	-1.180	0.039	0.44	81.31	0.96	0.95	1.05	-1.7	1.06
lc9q37	-1.169	0.039	0.50	81.17	0.90	0.95	1.05	-3.8	1.15
lc9q38	-0.492	0.035	0.45	70.78	0.99	0.96	1.04	-0.4	1.03
lc9q39	-0.614	0.036	0.30	72.88	1.11	0.96	1.04	5.2	0.75
lc9q40	0.042	0.033	0.46	60.87	1.00	0.97	1.03	-0.2	1.04
lc9q41	0.129	0.033	0.56	59.15	0.90	0.97	1.03	-6.7	1.32
lc9q42	0.056	0.033	0.49	60.61	0.97	0.97	1.03	-2.1	1.12
lc9q43	-0.494	0.035	0.49	70.91	0.95	0.96	1.04	-2.7	1.12
lc9q44	-0.146	0.034	0.51	64.57	0.95	0.97	1.03	-3.1	1.17
lc9q45	-0.167	0.034	0.47	65.00	0.99	0.97	1.03	-0.8	1.06
lc9q46	0.676	0.033	0.38	48.07	1.08	0.97	1.03	5.7	0.75
lc9q47	0.025	0.033	0.45	61.31	1.01	0.97	1.03	0.6	1.01
lc9q48	0.256	0.033	0.55	56.69	0.91	0.97	1.03	-6.3	1.30
lc9q49	0.639	0.033	0.38	48.85	1.08	0.97	1.03	5.4	0.75
lc9q50	0.751	0.033	0.35	46.55	1.10	0.97	1.03	6.9	0.68
lc9q51	0.995	0.033	0.43	41.59	1.02	0.97	1.03	1.3	0.94
lc9q52	0.995	0.033	0.39	41.63	1.05	0.97	1.03	3.3	0.83
lc9q53	0.528	0.033	0.43	51.19	1.02	0.97	1.03	1.8	0.93
lc9q54	1.418	0.034	0.28	33.44	1.13	0.97	1.03	7.9	0.61
lc9q55	0.893	0.033	0.56	43.72	0.89	0.97	1.03	-8.1	1.36
lc9q56	1.237	0.034	0.32	36.87	1.11	0.97	1.03	6.7	0.68
lc9q57	1.899	0.036	0.40	25.10	0.99	0.96	1.04	-0.6	1.01
lc9q58	3.734	0.191	0.03	6.12	1.10	0.89	1.11	1.6	0.81

## C.14 Year 9 Numeracy Item Calibration Results

Item Label	Delta Centered	Error	Discrimination	Facility	MnSQ	CI L	CI H	T	Slope
n9CAq01	-3.185	0.050	0.38	93.64	0.85	0.89	1.11	-2.8	1.14
n9CAq02	-2.888	0.048	0.34	91.82	0.91	0.91	1.09	-1.9	1.08
n9CAq03	-2.489	0.044	0.38	88.68	0.89	0.93	1.07	-2.9	1.10
n9CAq04	-1.668	0.038	0.43	79.36	0.95	0.95	1.05	-2.2	1.09
n9CAq05	-1.267	0.036	0.30	73.37	1.13	0.96	1.04	6.2	0.74
n9CAq06	-1.130	0.036	0.45	71.11	0.97	0.96	1.04	-1.6	1.07
n9CAq07	-1.654	0.038	0.46	79.18	0.91	0.95	1.05	-3.7	1.15
n9CAq08	-0.619	0.034	0.54	62.01	0.91	0.97	1.03	-6.1	1.26
n9CAq09	-0.809	0.035	0.33	65.52	1.14	0.97	1.03	8.1	0.68
n9CAq10	-1.238	0.036	0.22	72.92	1.21	0.96	1.04	10.0	0.56
n9CAq11	-1.077	0.035	0.46	70.26	0.97	0.96	1.04	-1.4	1.07
n9CAq12	-0.975	0.035	0.43	68.49	1.02	0.97	1.03	1.4	0.98
n9CAq13	-0.625	0.034	0.44	62.15	1.03	0.97	1.03	1.7	0.94
n9CAq14	-0.594	0.034	0.53	61.58	0.93	0.97	1.03	-4.7	1.20
n9CAq15	-0.271	0.034	0.54	55.40	0.94	0.97	1.03	-4.3	1.20
n9CAq16	-0.043	0.034	0.49	50.96	0.99	0.97	1.03	-0.9	1.02
n9CAq17	-0.020	0.034	0.55	50.50	0.92	0.97	1.03	-5.1	1.22
n9CAq18	-0.183	0.034	0.42	53.72	1.08	0.97	1.03	4.8	0.79
n9CAq19	0.696	0.035	0.50	36.93	0.96	0.97	1.03	-2.3	1.05
n9CAq20	0.925	0.035	0.66	32.87	0.77	0.96	1.04	-13.3	1.44
n9CAq21	0.958	0.035	0.35	32.34	1.13	0.96	1.04	6.5	0.70
n9CAq22	0.710	0.035	0.61	36.70	0.84	0.97	1.03	-9.5	1.33
n9CAq23	0.894	0.035	0.45	33.48	1.03	0.96	1.04	1.7	0.93
n9CAq24	0.874	0.035	0.46	33.84	1.01	0.96	1.04	0.3	0.95
n9CAq25	1.363	0.037	0.49	25.86	0.96	0.96	1.04	-2.0	1.06
n9CAq26	1.807	0.039	0.57	19.75	0.82	0.95	1.05	-7.2	1.22
n9CAq27	1.900	0.040	0.48	18.59	0.92	0.95	1.05	-3.1	1.09
n9CAq28	2.023	0.041	0.31	17.16	1.08	0.94	1.06	2.6	0.84
n9CAq29	2.285	0.043	0.43	14.34	0.95	0.93	1.07	-1.6	1.05
n9CAq30	2.319	0.043	0.45	14.00	0.88	0.93	1.07	-3.6	1.09
n9CAq31	2.928	0.048	0.46	8.91	0.88	0.91	1.09	-2.8	1.14
n9CAq32	2.679	0.046	0.26	10.80	1.04	0.92	1.08	1.1	0.89

(table continues)

## C.14 (continued)

Item Label	Delta Centered	Error	Discrimination	Facility	MnSQ	CI L	CI H	T	Slope
n9NCq01	-3.058	0.049	0.34	92.95	0.91	0.90	1.10	-1.8	1.09
n9NCq02	-2.012	0.040	0.36	83.81	0.99	0.94	1.06	-0.3	1.03
n9NCq03	-1.218	0.036	0.44	72.62	0.98	0.96	1.04	-1.1	1.05
n9NCq04	-1.585	0.038	0.43	78.24	0.96	0.95	1.05	-1.5	1.08
n9NCq05	-1.376	0.037	0.48	75.13	0.92	0.96	1.04	-4.0	1.16
n9NCq06	-0.896	0.035	0.30	67.10	1.16	0.97	1.03	8.9	0.62
n9NCq07	-1.372	0.037	0.48	75.09	0.91	0.96	1.04	-4.3	1.17
n9NCq08	-1.324	0.036	0.48	74.34	0.92	0.96	1.04	-3.8	1.15
n9NCq09	-0.989	0.035	0.51	68.77	0.92	0.97	1.03	-4.7	1.20
n9NCq10	-1.126	0.036	0.38	71.11	1.05	0.96	1.04	2.7	0.90
n9NCq11	-0.959	0.035	0.44	68.25	0.99	0.97	1.03	-0.5	1.01
n9NCq12	-0.744	0.034	0.39	64.41	1.07	0.97	1.03	4.3	0.81
n9NCq13	-0.713	0.034	0.37	63.84	1.09	0.97	1.03	5.4	0.77
n9NCq14	-0.603	0.034	0.44	61.78	1.02	0.97	1.03	1.2	0.94
n9NCq15	-0.785	0.035	0.34	65.15	1.12	0.97	1.03	7.1	0.69
n9NCq16	-0.513	0.034	0.44	60.10	1.03	0.97	1.03	1.9	0.94
n9NCq17	-0.468	0.034	0.43	59.24	1.05	0.97	1.03	3.0	0.88
n9NCq18	0.102	0.034	0.47	48.17	1.02	0.97	1.03	1.1	0.95
n9NCq19	0.470	0.034	0.53	41.10	0.93	0.97	1.03	-4.2	1.14
n9NCq20	0.236	0.034	0.43	45.57	1.06	0.97	1.03	4.0	0.80
n9NCq21	0.132	0.034	0.32	47.58	1.19	0.97	1.03	11.3	0.47
n9NCq22	0.545	0.034	0.41	39.72	1.07	0.97	1.03	4.3	0.79
n9NCq23	0.538	0.034	0.22	39.86	1.32	0.97	1.03	17.2	0.23
n9NCq24	1.005	0.036	0.51	31.53	0.94	0.96	1.04	-3.0	1.08
n9NCq25	0.731	0.035	0.59	36.32	0.87	0.97	1.03	-7.5	1.27
n9NCq26	1.280	0.037	0.29	27.10	1.18	0.96	1.04	7.9	0.64
n9NCq27	1.026	0.036	0.47	31.22	0.97	0.96	1.04	-1.4	1.01
n9NCq28	1.851	0.040	0.43	19.11	0.99	0.95	1.05	-0.5	1.00
n9NCq29	1.917	0.040	0.56	18.63	0.83	0.95	1.05	-6.4	1.21
n9NCq30	1.884	0.040	0.55	19.12	0.84	0.95	1.05	-6.3	1.2
n9NCq31	3.236	0.050	0.39	7.11	0.92	0.89	1.11	-1.4	1.09
n9NCq32	3.160	0.298	0.18	7.61	1.09	0.90	1.10	1.7	0.86

## C.15 Year 9 Reading Item Calibration Results

Item Label	Delta Centered	Error	Discrimination	Facility	MnSQ	CI L	CI H	T	Slope
r9q01	-1.998	0.035	0.45	88.73	0.88	0.93	1.07	-3.3	1.12
r9q02	-3.086	0.039	0.38	95.50	0.87	0.86	1.14	-1.9	1.12
r9q03	-1.997	0.035	0.39	88.73	0.92	0.93	1.07	-2.1	1.06
r9q04	-0.200	0.029	0.54	63.25	0.91	0.97	1.03	-5.5	1.22
r9q05	-0.995	0.031	0.40	76.85	1.01	0.96	1.04	0.3	1.00
r9q06	-2.454	0.037	0.38	92.24	0.92	0.90	1.10	-1.7	1.08
r9q07	-1.591	0.033	0.49	84.67	0.88	0.94	1.06	-4.1	1.15
r9q08	-2.227	0.036	0.49	90.66	0.83	0.92	1.08	-4.2	1.17
r9q09	3.053	0.036	0.23	10.10	1.01	0.92	1.08	0.2	0.95
r9q10	1.420	0.030	0.37	31.53	1.04	0.97	1.03	2.2	0.87
r9q11	-0.260	0.029	0.41	64.47	1.03	0.97	1.03	1.9	0.92
r9q12	-0.451	0.030	0.31	67.98	1.13	0.96	1.04	7.2	0.69
r9q13	-1.373	0.033	0.46	82.18	0.92	0.95	1.05	-3.1	1.12
r9q14	-0.742	0.030	0.48	73.01	0.95	0.96	1.04	-2.5	1.10
r9q15	-0.010	0.029	0.45	59.7	1.00	0.97	1.03	0.2	1.00
r9q16	0.565	0.029	0.40	48.17	1.05	0.97	1.03	3.7	0.84
r9q17	-0.258	0.029	0.57	64.47	0.87	0.97	1.03	-8.5	1.33
r9q18	0.142	0.029	0.51	56.75	0.94	0.97	1.03	-4	1.18
r9q19	-0.828	0.031	0.45	74.49	0.97	0.96	1.04	-1.4	1.06
r9q20	-1.253	0.032	0.43	80.73	0.96	0.95	1.05	-1.6	1.06
r9q21	0.199	0.029	0.38	55.64	1.08	0.97	1.03	5.3	0.76
r9q22	-0.772	0.031	0.53	73.61	0.89	0.96	1.04	-5.6	1.21
r9q23	0.415	0.029	0.52	51.30	0.93	0.97	1.03	-4.6	1.21
r9q24	-0.686	0.030	0.47	72.21	0.95	0.96	1.04	-2.5	1.10
r9q25	-1.588	0.033	0.48	84.89	0.87	0.94	1.06	-4.3	1.16
r9q26	-1.974	0.035	0.45	88.76	0.88	0.93	1.07	-3.4	1.13
r9q27	1.205	0.029	0.34	35.64	1.08	0.97	1.03	5.2	0.75
r9q28	0.643	0.029	0.54	46.70	0.91	0.97	1.03	-6.6	1.28
r9q29	0.792	0.029	0.43	43.75	1.02	0.97	1.03	1.1	0.94
r9q30	0.494	0.029	0.51	49.77	0.94	0.97	1.03	-4.3	1.2
r9q31	1.522	0.030	0.29	29.90	1.12	0.96	1.04	6.6	0.71
r9q32	0.166	0.029	0.43	56.43	1.03	0.97	1.03	1.9	0.93
r9q33	-0.474	0.030	0.45	68.68	0.99	0.96	1.04	-0.6	1.04
r9q34	0.291	0.029	0.38	53.96	1.08	0.97	1.03	5.5	0.77
r9q35	0.095	0.029	0.51	57.88	0.95	0.97	1.03	-3.6	1.17
r9q36	-0.153	0.029	0.51	62.76	0.94	0.97	1.03	-3.5	1.17
r9q37	3.453	0.037	0.32	7.31	0.96	0.90	1.10	-0.8	1.06
r9q38	1.740	0.031	0.30	26.29	1.08	0.96	1.04	3.7	0.81
r9q39	0.505	0.029	0.40	49.66	1.05	0.97	1.03	3.6	0.85
r9q40	0.403	0.029	0.48	51.74	0.97	0.97	1.03	-2.2	1.11
r9q41	-0.457	0.030	0.46	68.45	0.98	0.96	1.04	-1.3	1.07
r9q42	0.653	0.029	0.51	46.67	0.93	0.97	1.03	-5.1	1.21
r9q43	0.839	0.029	0.27	42.93	1.18	0.97	1.03	11.6	0.44
r9q44	0.593	0.029	0.27	47.91	1.19	0.97	1.03	12.8	0.41
r9q45	0.166	0.029	0.46	56.58	0.99	0.97	1.03	-0.5	1.04
r9q46	0.558	0.029	0.28	48.68	1.17	0.97	1.03	11.5	0.46
r9q47	1.235	0.029	0.24	35.29	1.19	0.97	1.03	11.2	0.47
r9q48	0.813	0.029	0.42	43.59	1.02	0.97	1.03	1.1	0.93
r9q49	1.811	0.031	0.35	25.27	1.01	0.96	1.04	0.3	0.93
r9q50	2.057	0.216	0.23	21.53	1.08	0.95	1.05	3.3	0.79

## C.16 Year 9 Spelling Item Calibration Results

Item Label	Delta Centered	Error	Discrimination	Facility	MnSQ	CI L	CI H	T	Slope
lc9q01	-4.367	0.055	0.38	95.94	0.93	0.87	1.13	-1.1	0.91
lc9q02	-3.284	0.049	0.50	91.69	0.86	0.91	1.09	-3.1	1.05
lc9q03	-2.481	0.045	0.56	86.63	0.87	0.93	1.07	-3.5	1.07
lc9q04	-2.391	0.044	0.59	86.00	0.82	0.93	1.07	-5.1	1.14
lc9q05	-1.704	0.041	0.62	79.65	0.87	0.94	1.06	-4.4	1.14
lc9q06	-0.850	0.037	0.53	69.27	1.17	0.95	1.05	6.8	0.75
lc9q07	-0.470	0.036	0.57	63.86	1.08	0.96	1.04	3.8	0.89
lc9q08	-0.911	0.038	0.63	70.14	0.93	0.95	1.05	-2.9	1.10
lc9q09	0.229	0.035	0.59	53.00	1.05	0.96	1.04	2.5	0.93
lc9q10	0.410	0.035	0.59	50.13	1.03	0.96	1.04	1.4	0.97
lc9q11	0.522	0.035	0.55	48.32	1.12	0.96	1.04	6.1	0.78
lc9q12	1.864	0.037	0.59	27.71	0.88	0.96	1.04	-5.4	1.21
lc9q13	2.506	0.040	0.44	19.65	1.08	0.95	1.05	3.0	0.89
lc9q14	2.401	0.039	0.53	20.89	0.92	0.95	1.05	-3.2	1.15
lc9q15	3.245	0.044	0.34	12.49	1.13	0.93	1.07	3.5	0.83
lc9q16	3.812	0.048	0.39	8.45	0.94	0.91	1.09	-1.3	1.09
lc9q17	-2.963	0.048	0.47	90.34	0.97	0.91	1.09	-0.7	0.97
lc9q18	-3.065	0.049	0.45	91.22	0.98	0.91	1.09	-0.4	0.96
lc9q19	-1.200	0.039	0.62	74.82	0.91	0.95	1.05	-3.5	1.13
lc9q20	-0.887	0.038	0.63	70.91	0.91	0.95	1.05	-3.8	1.15
lc9q21	-0.792	0.037	0.63	69.76	0.91	0.95	1.05	-3.9	1.15
lc9q22	-0.479	0.037	0.59	65.42	1.02	0.96	1.04	1.0	0.99
lc9q23	0.081	0.036	0.50	56.83	1.19	0.96	1.04	8.9	0.67
lc9q24	-0.246	0.036	0.56	62.35	1.07	0.96	1.04	3.2	0.91
lc9q25	0.438	0.035	0.64	51.29	0.93	0.96	1.04	-4.0	1.20
lc9q26	1.320	0.036	0.61	36.89	0.92	0.96	1.04	-4.1	1.19
lc9q27	1.707	0.037	0.51	31.30	1.06	0.96	1.04	2.9	0.93
lc9q28	2.228	0.039	0.45	24.33	1.10	0.95	1.05	3.9	0.86
lc9q29	1.628	0.037	0.49	33.26	1.09	0.96	1.04	4.2	0.84
lc9q30	3.697	0.218	0.40	10.14	0.94	0.92	1.08	-1.3	1.08

**C.17 Years 3, 5, 7, and 9 Writing Item Calibration Results**

<b>Item Label</b>	<b>Delta_C entered</b>	<b>Error</b>	<b>Discrimination</b>	<b>MnSQ</b>	<b>CI L</b>	<b>CI H</b>	<b>T</b>	<b>Slope</b>
Audience	-0.282	0.012	0.92	0.78	0.98	1.02	-19.7	1.30
Text Structure	-0.180	0.012	0.88	0.95	0.98	1.02	-4.0	1.07
Ideas	-0.427	0.012	0.88	0.92	0.98	1.02	-6.2	1.14
Persuasive Devices	-0.007	0.012	0.88	0.95	0.98	1.02	-4.0	1.07
Vocabulary	-0.310	0.012	0.86	0.97	0.97	1.03	-2.5	1.12
Cohesion	-0.811	0.013	0.85	0.92	0.97	1.03	-6.4	1.11
Paragraphing	1.381	0.012	0.83	1.10	0.98	1.02	8.3	0.88
Sentence Structure	1.004	0.012	0.88	1.07	0.98	1.02	5.8	0.99
Punctuation	0.247	0.012	0.81	1.41	0.98	1.02	30.5	0.55
Spelling	-0.616	0.037	0.87	1.23	0.98	1.02	18.0	0.79

**(continued)**

**C.17 (continued)**

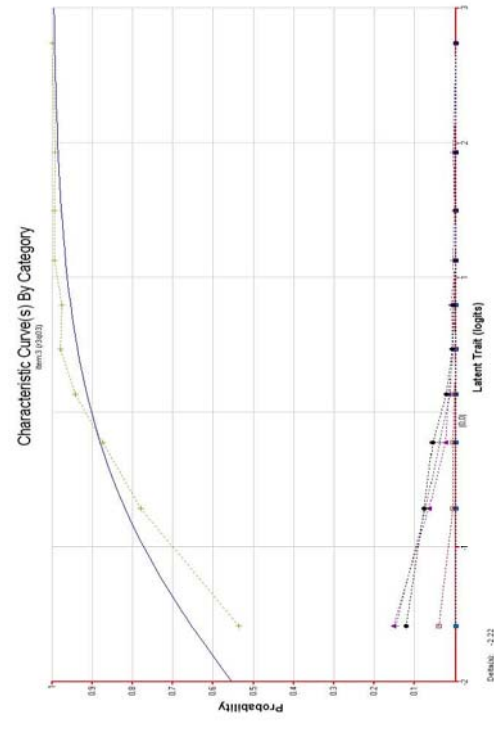
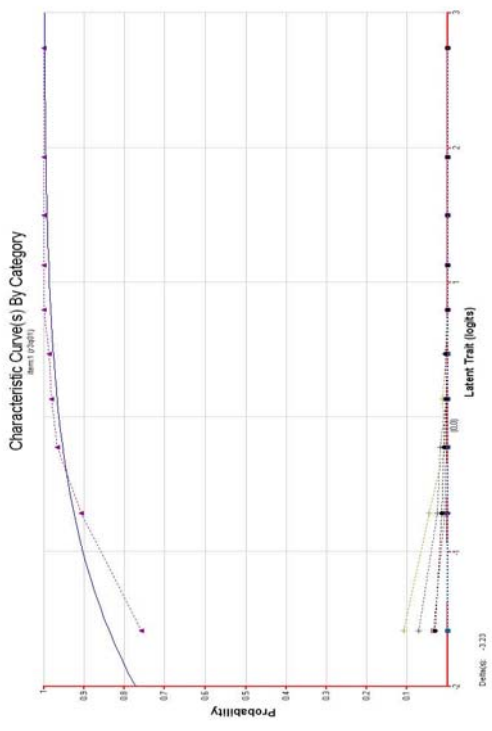
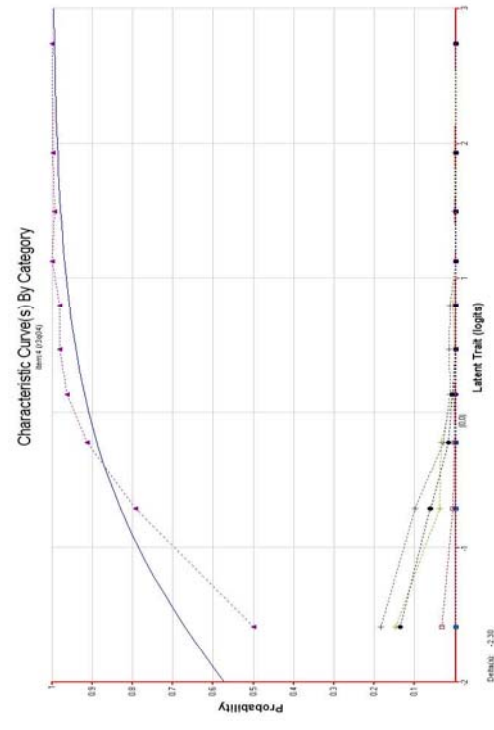
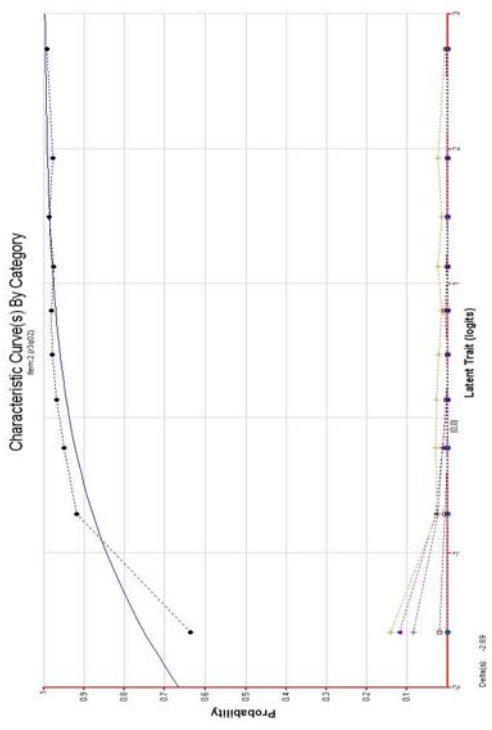
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	1		
	2	-11.066	0.091
	3	-5.366	0.046
	4	-1.428	0.028
	5	2.599	0.029
	6	6.005	0.044
Text Structure	0		
	1		
	2	-6.767	0.043
	3	-2.324	0.027
	4	2.150	0.026
	5	6.942*	
	6	9.256*	
Ideas	0		
	1		
	2	-8.469	0.076
	3	-4.913	0.043
	4	-0.738	0.027
	5	4.724	0.034
	6	9.396*	
Persuasive Devices	0		
	1		
	2	-6.840	0.043
	3	-2.250	0.027
	4	2.267	0.026
	5	6.822*	
	6	9.001*	
Vocabulary	0		
	1		
	2	-8.785	0.077
	3	-6.330	0.051
	4	1.143	0.026
	5	4.971	0.036
	6	9.001*	
Cohesion	0		
	1		
	2	-8.226	0.061
	3	-3.742	0.035
	4	3.291	0.027
	5	8.677*	
	6	9.001*	
Paragraphing	0		
	1		
	2	-4.656	0.028
	3	-0.201	0.024
	4	4.857*	
	5	9.354*	
	6	9.354*	
Sentence Structure	0		
	1		
	2	-9.382	0.089
	3	-6.209	0.044
	4	-1.618	0.027
	5	2.198	0.032
	6	5.657	0.055
Punctuation	0		
	1		
	2	-8.341	0.07
	3	-4.720	0.038
	4	-0.309	0.026
	5	4.582	0.037
	6	8.787*	
Spelling	0		
	1		
	2	-8.771	0.079
	3	-5.609	0.051
	4	-2.007	0.03
	5	1.610	0.027
	6	5.248	0.036
	6	9.531*	

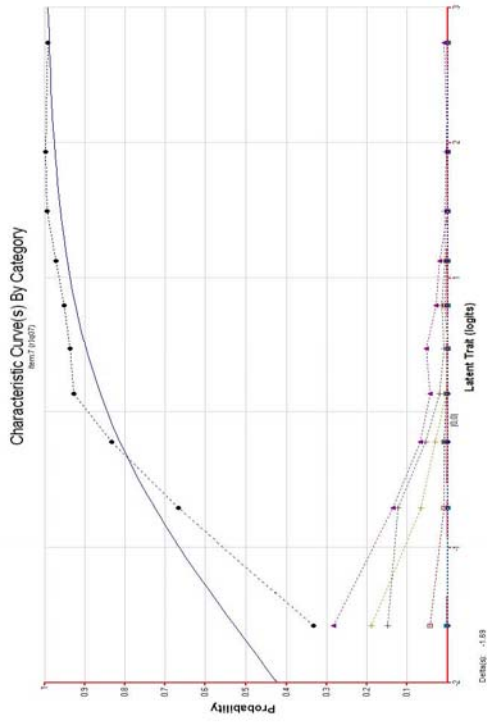
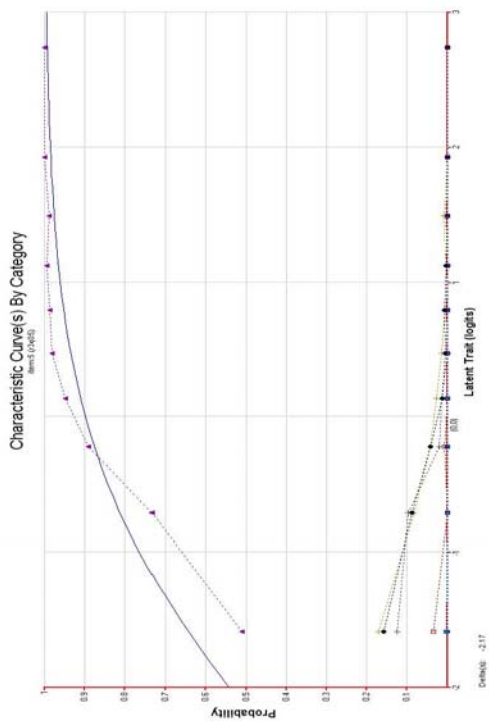
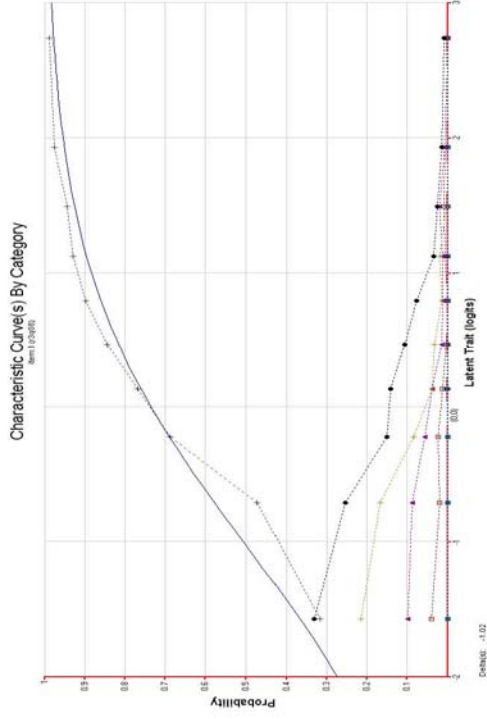
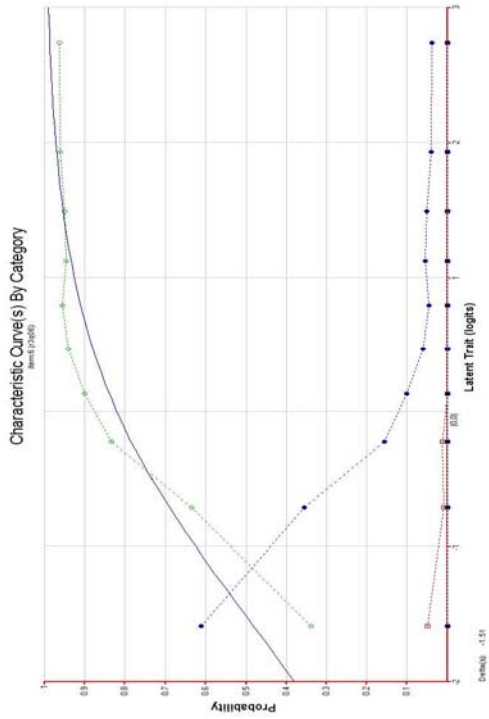
\*An asterisk next to a parameter estimate indicates that it is constrained

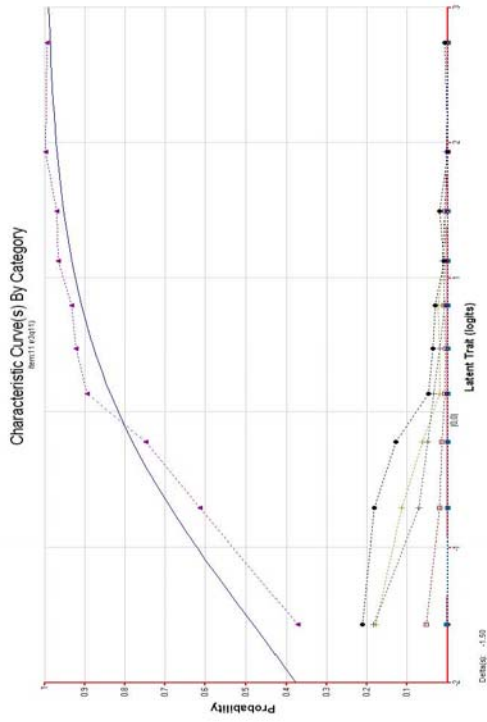
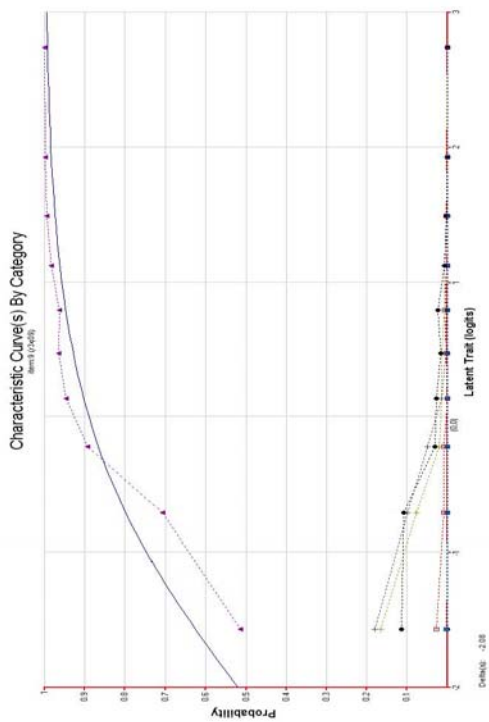
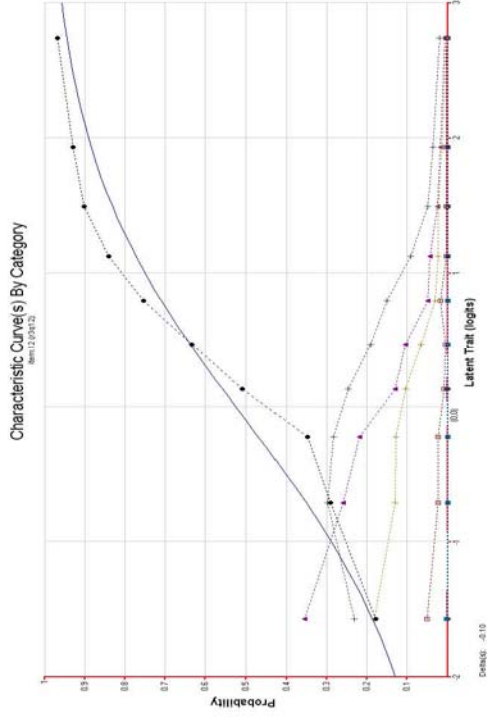
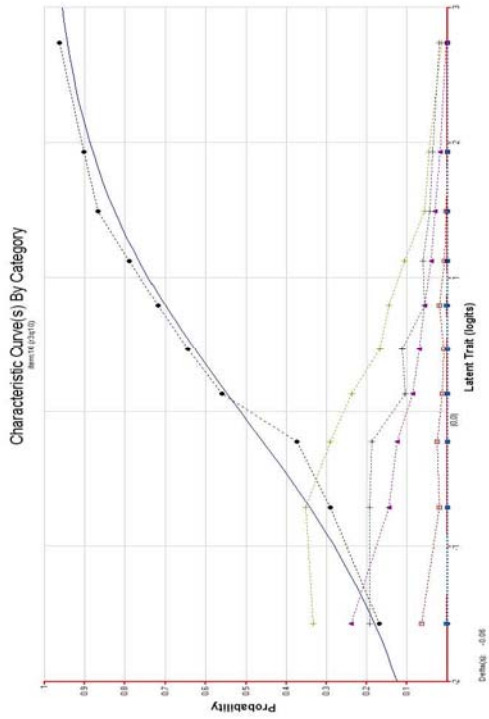


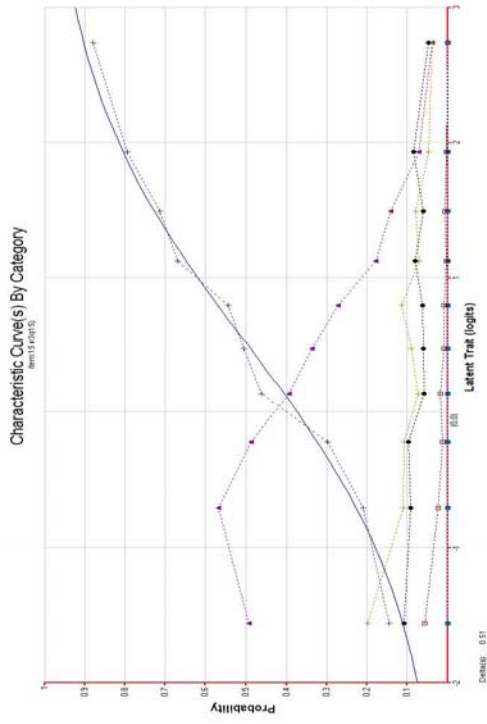
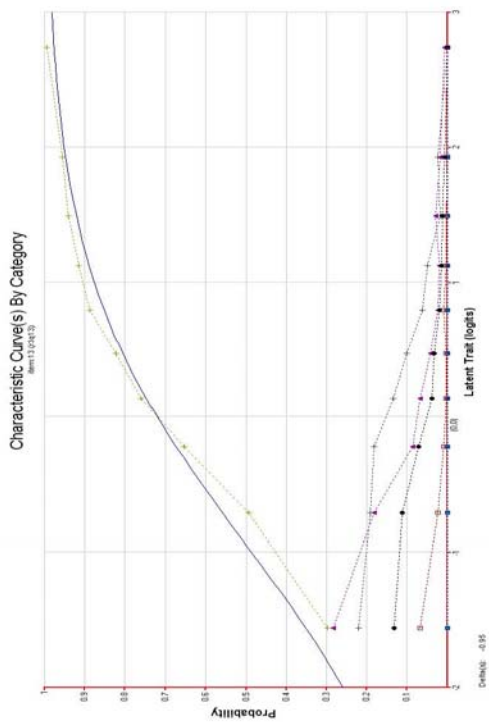
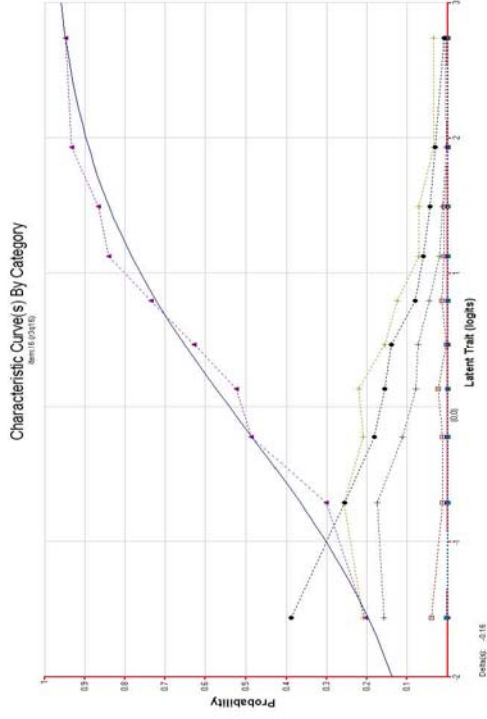
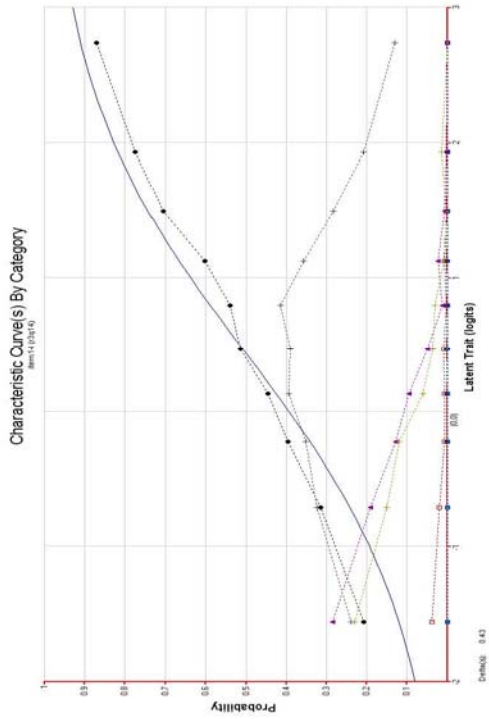
APPENDIX D. ICC PLOTS

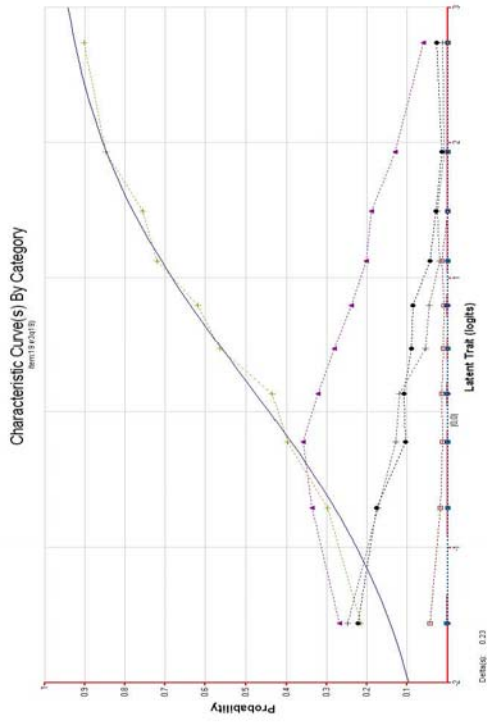
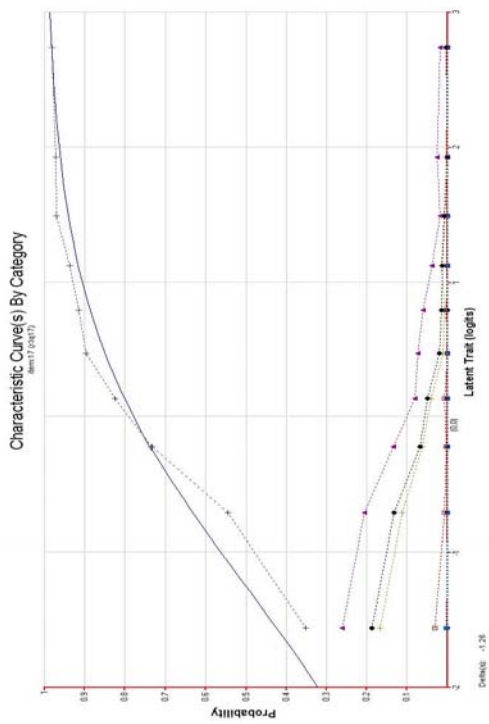
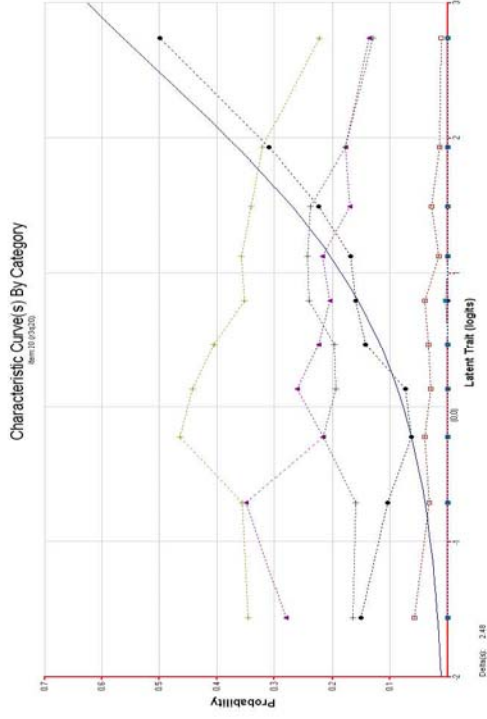
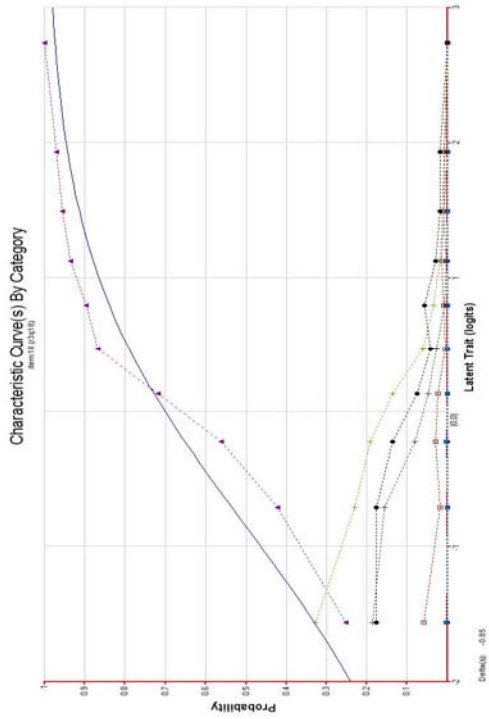
Year 3 Reading

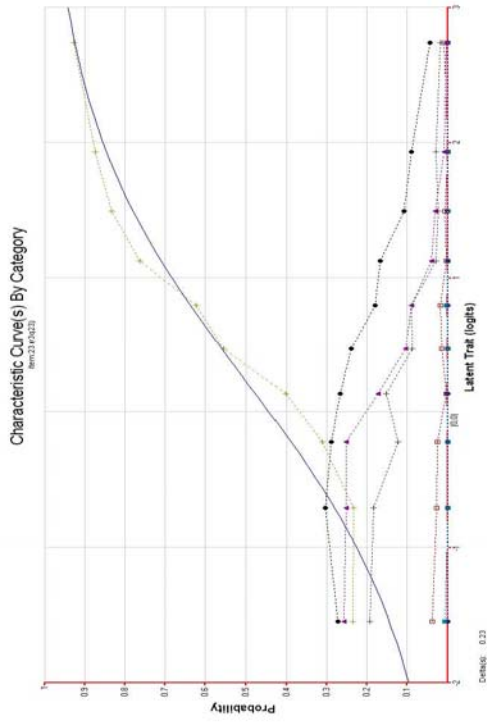
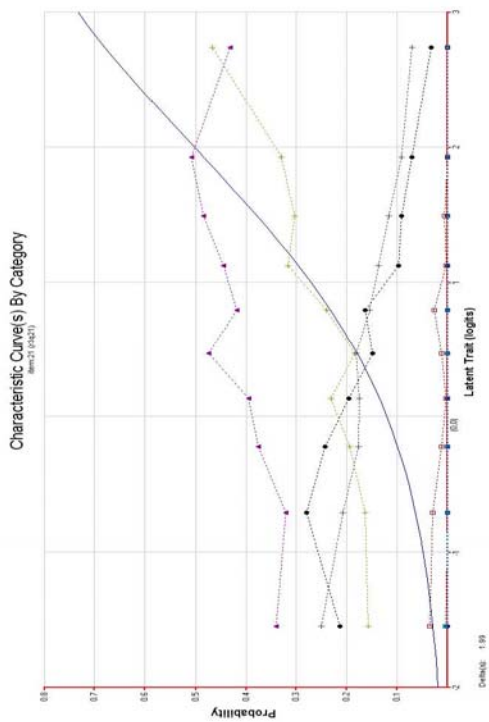
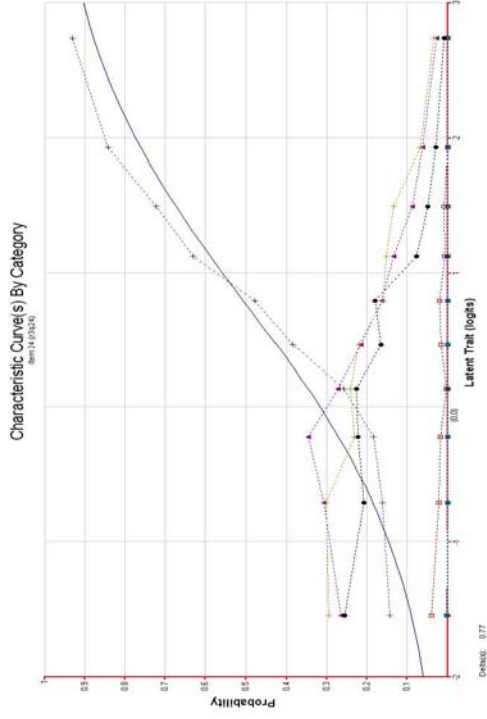
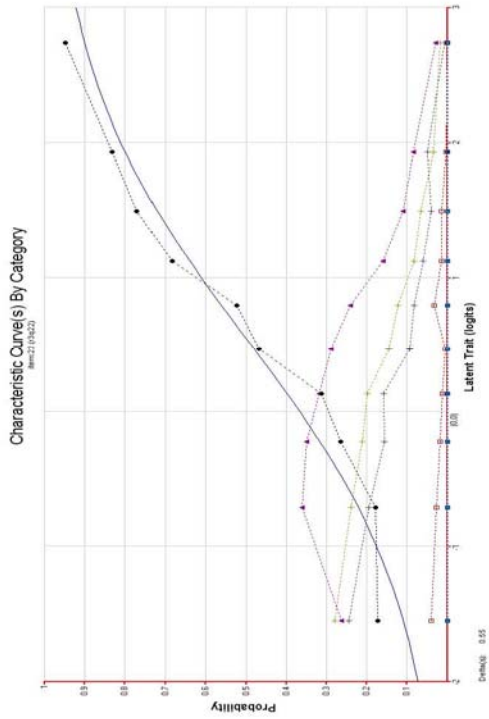


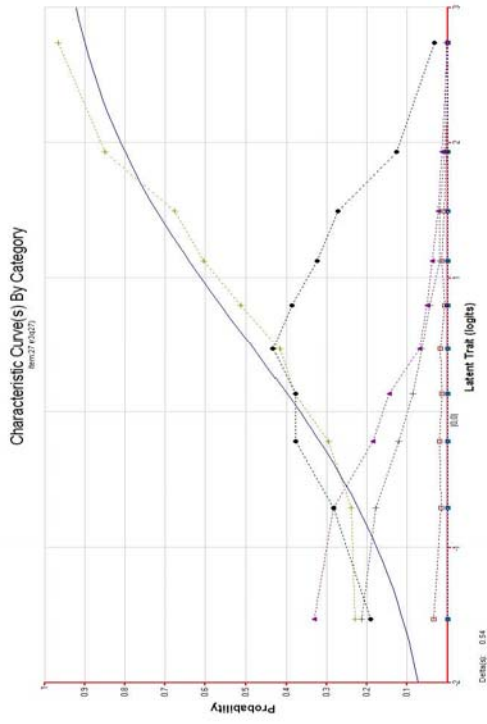
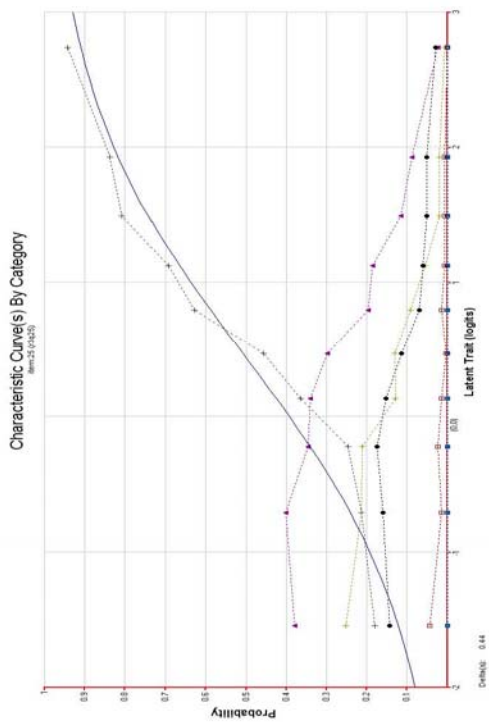
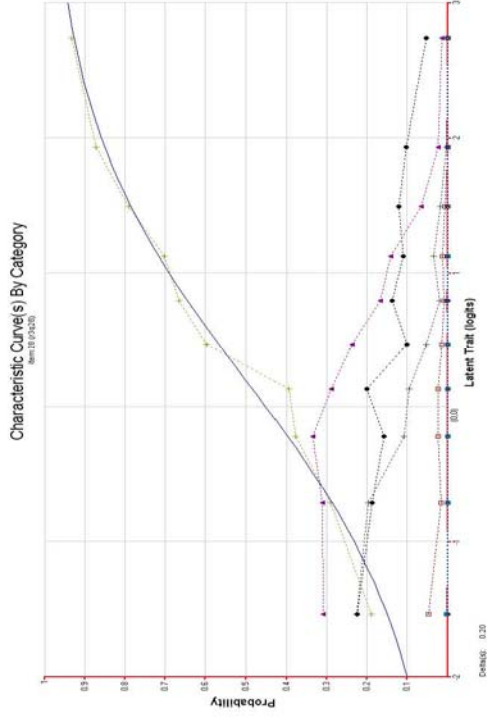
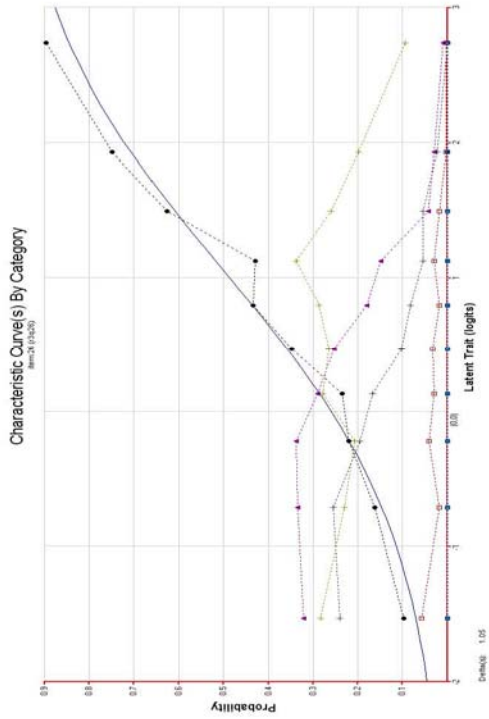


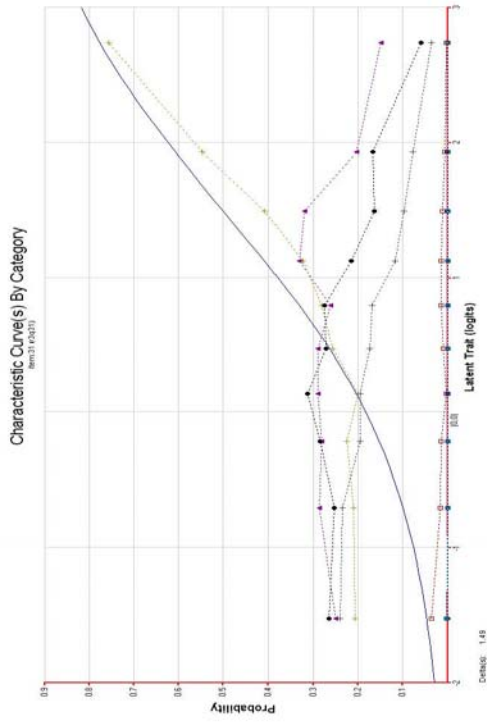
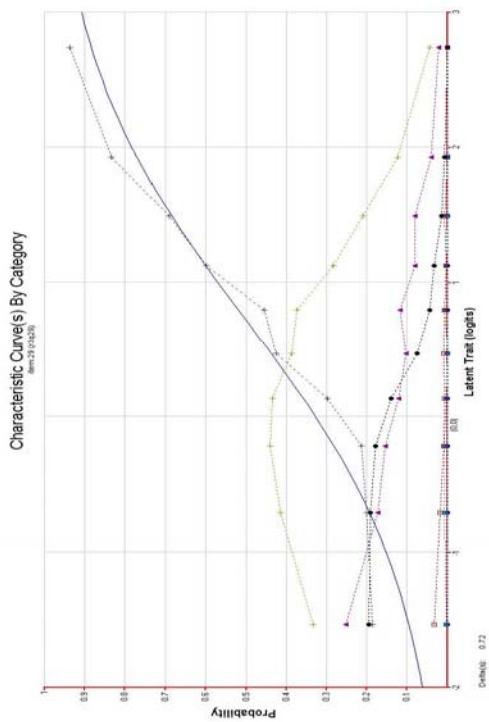
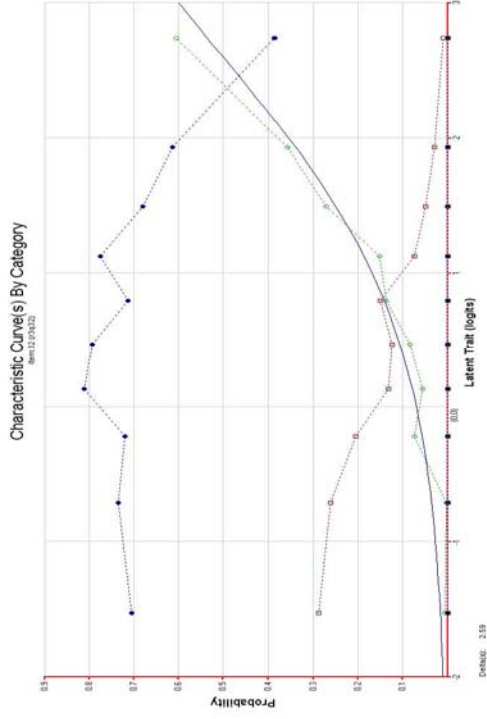
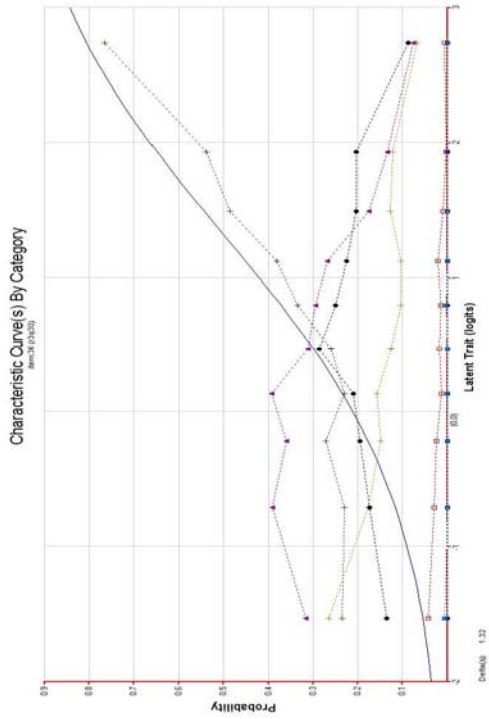




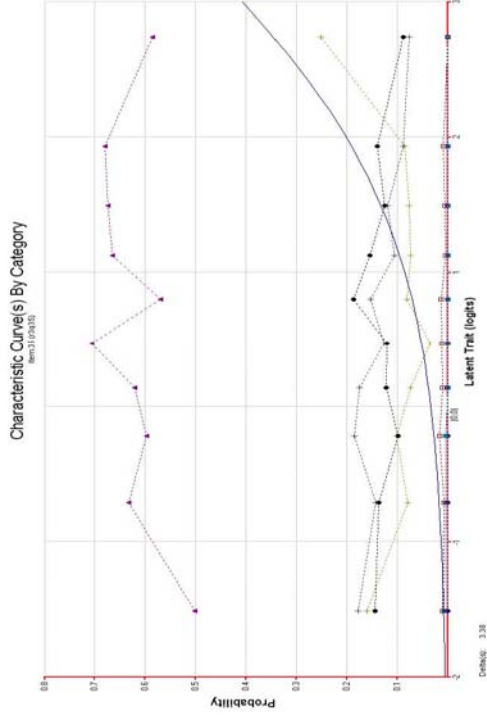
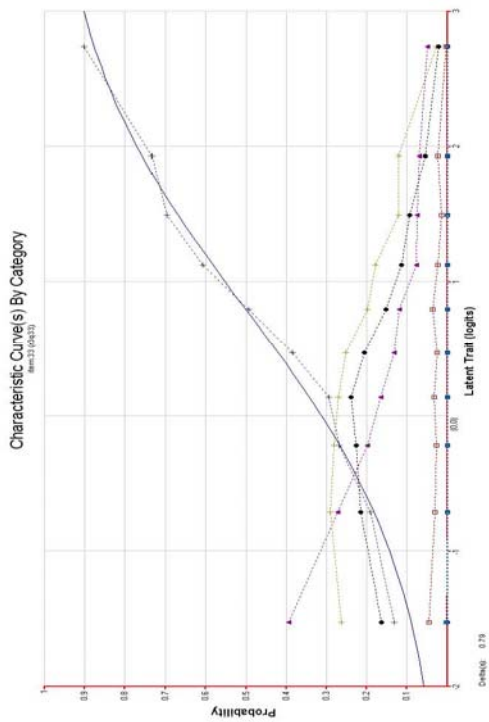
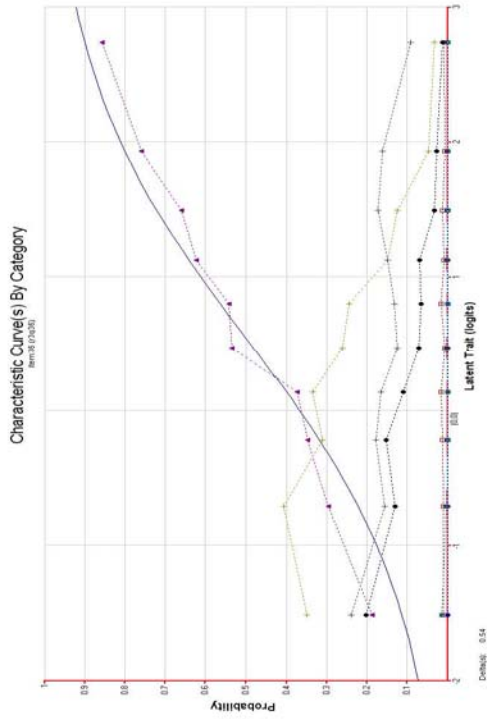
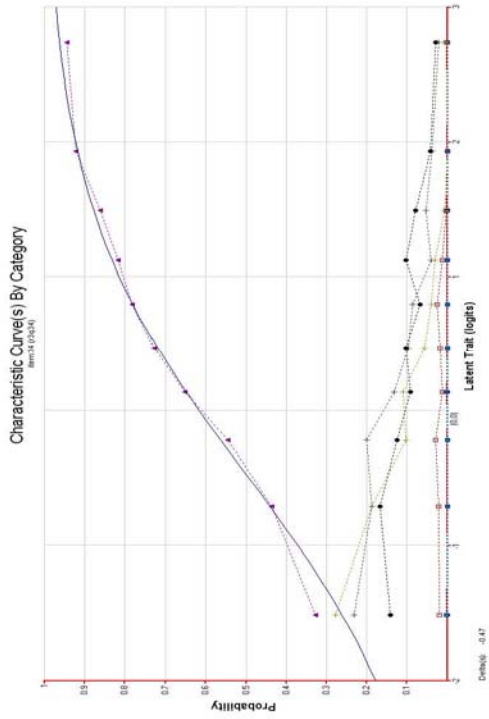


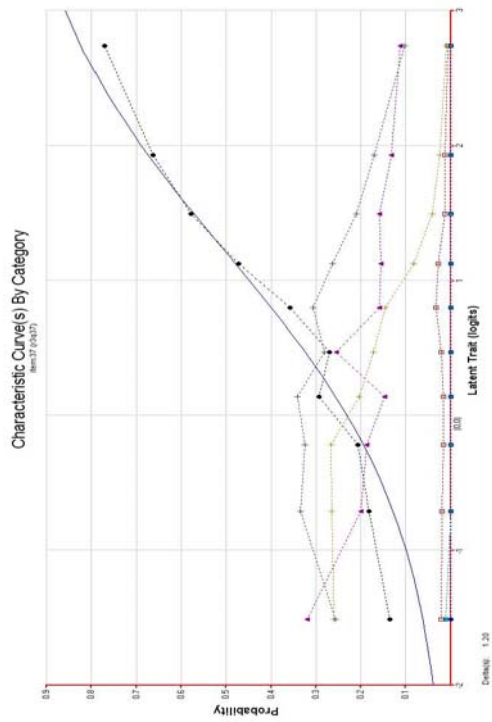
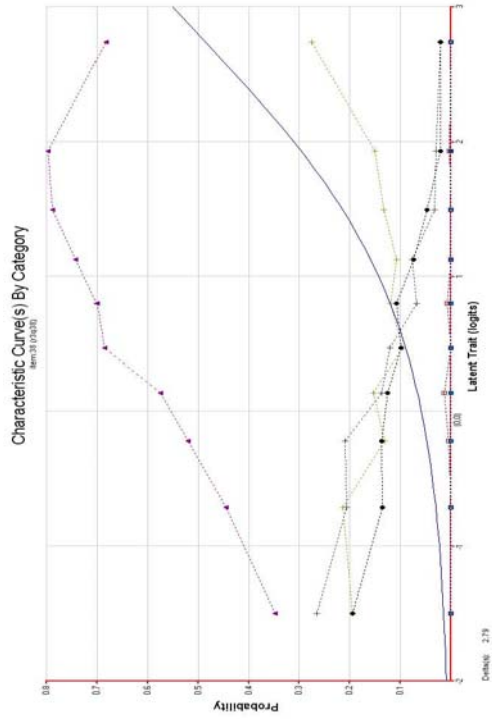




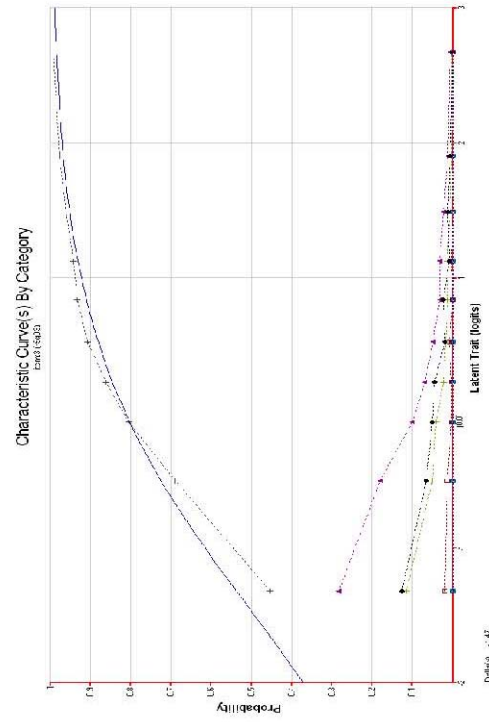
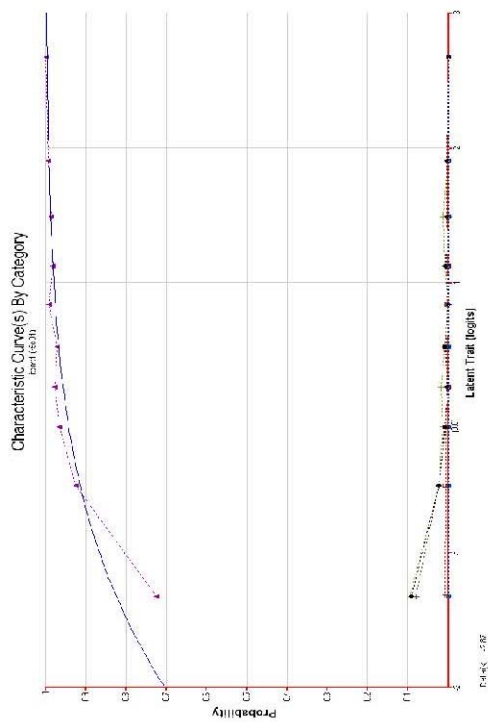
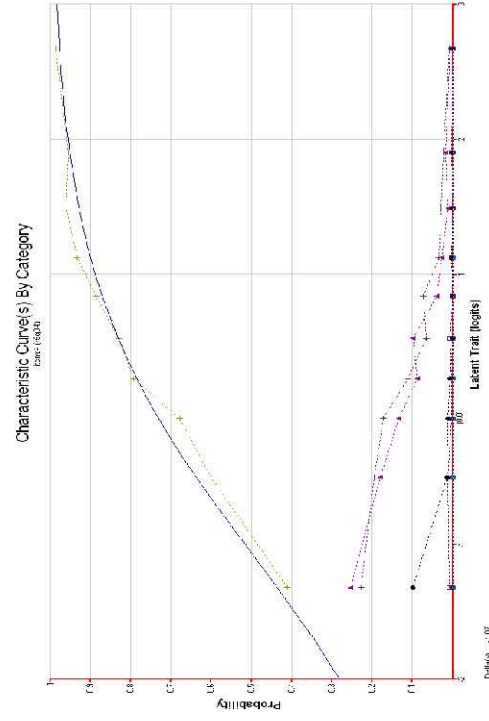
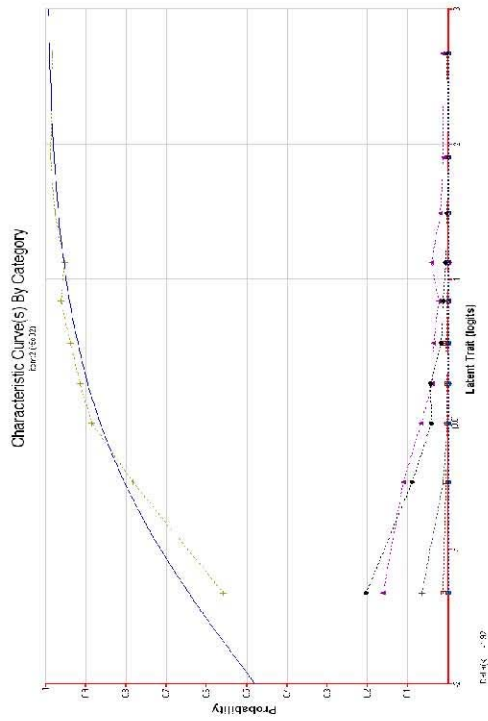


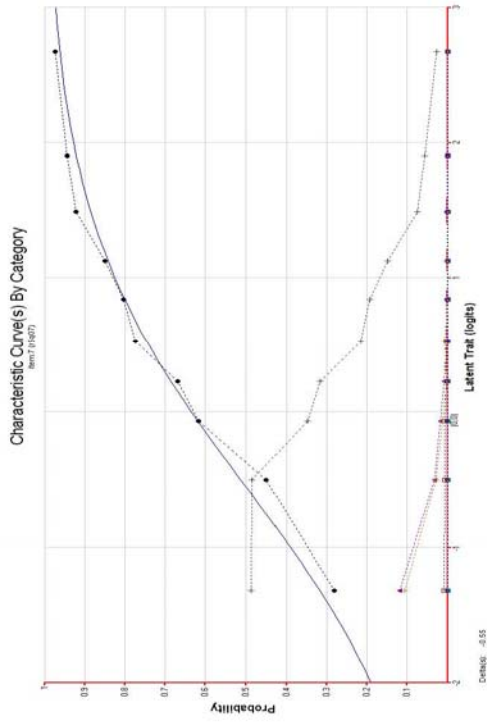
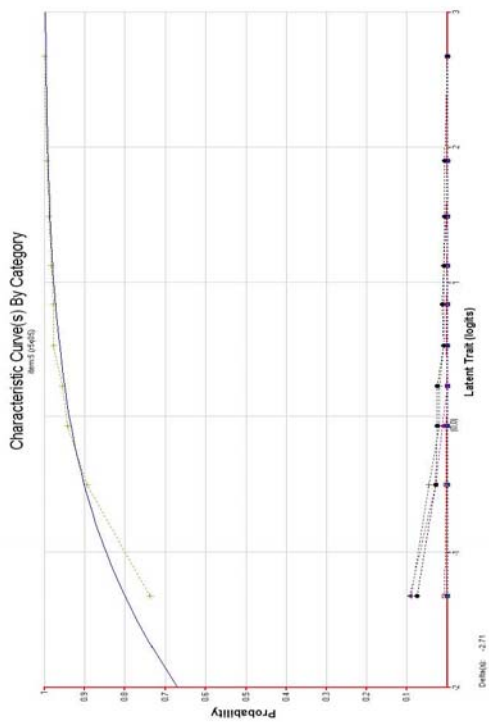
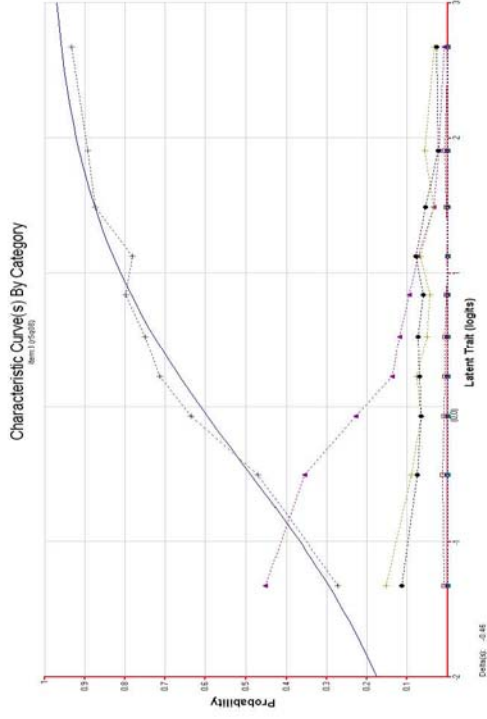
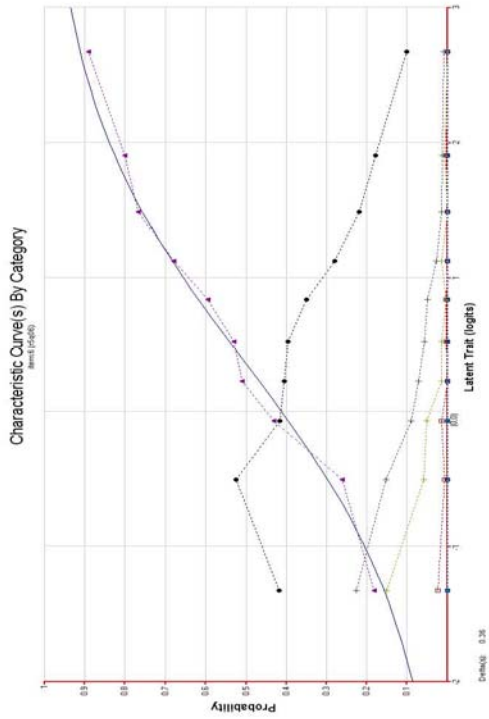


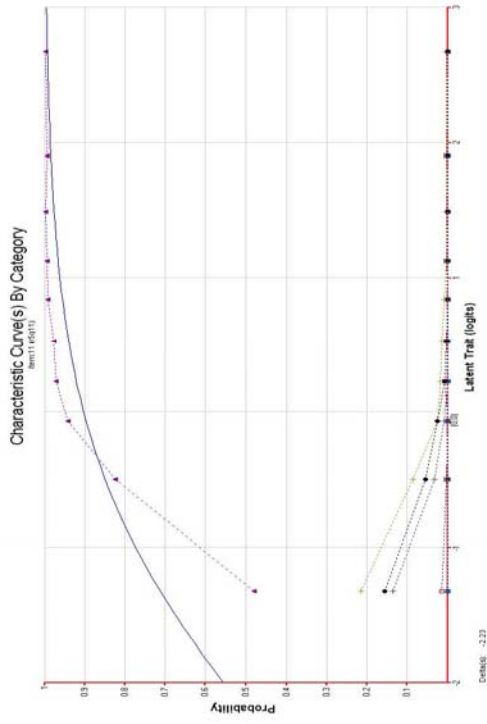
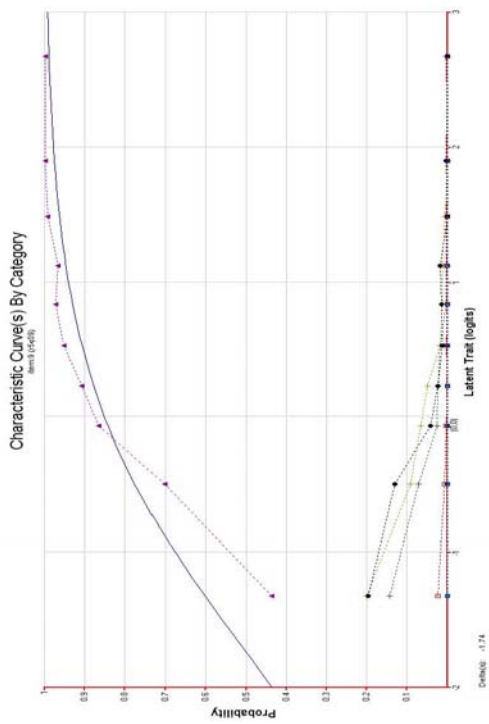
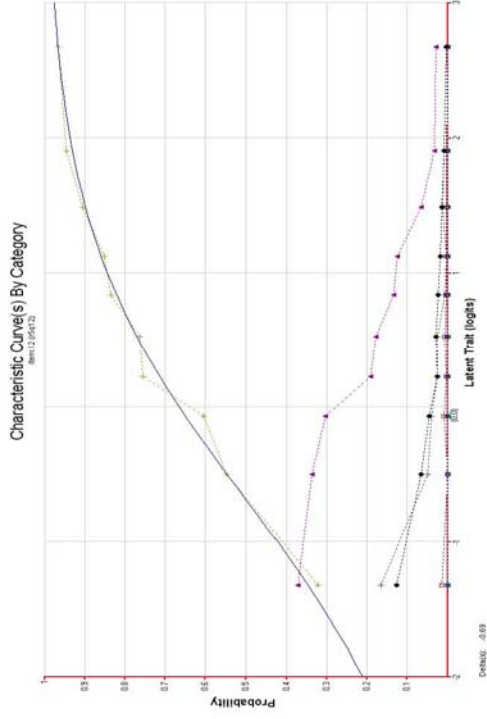
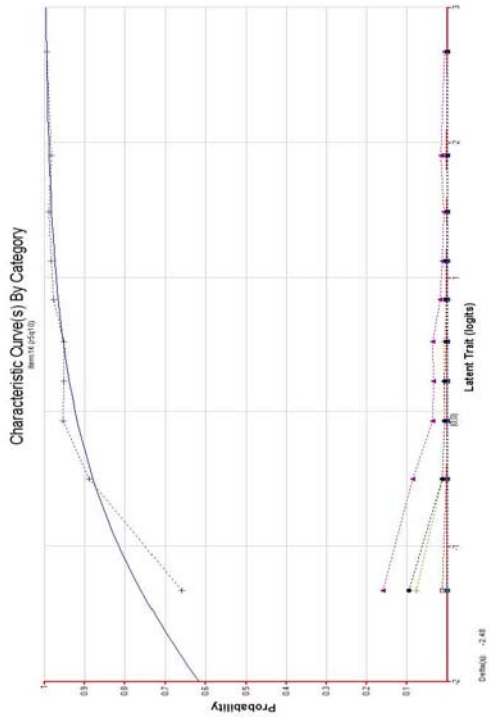


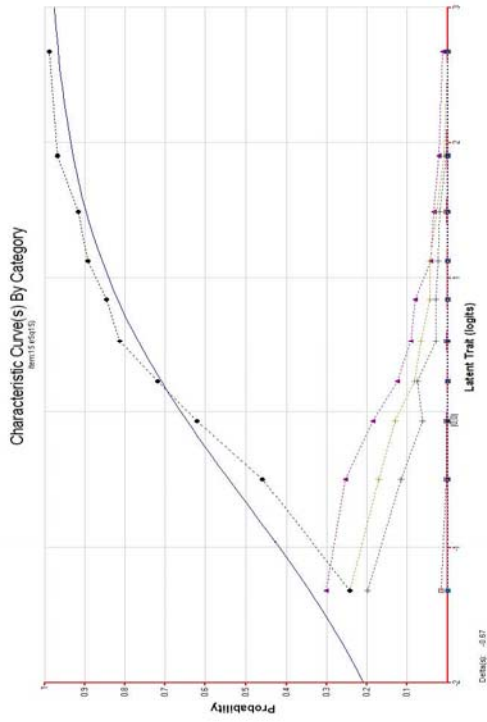
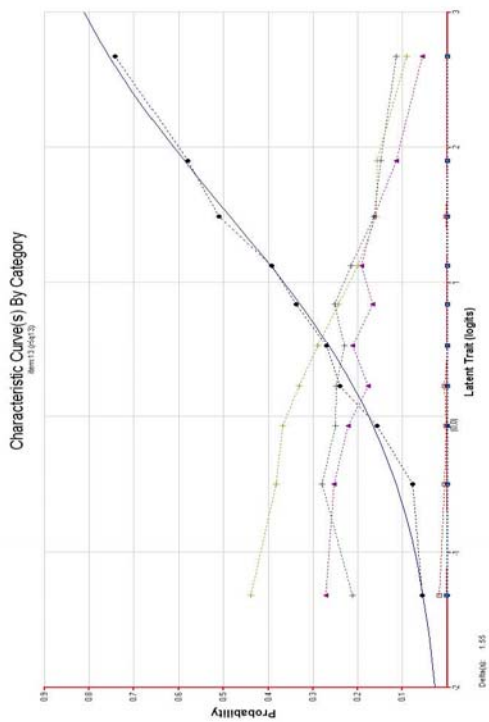
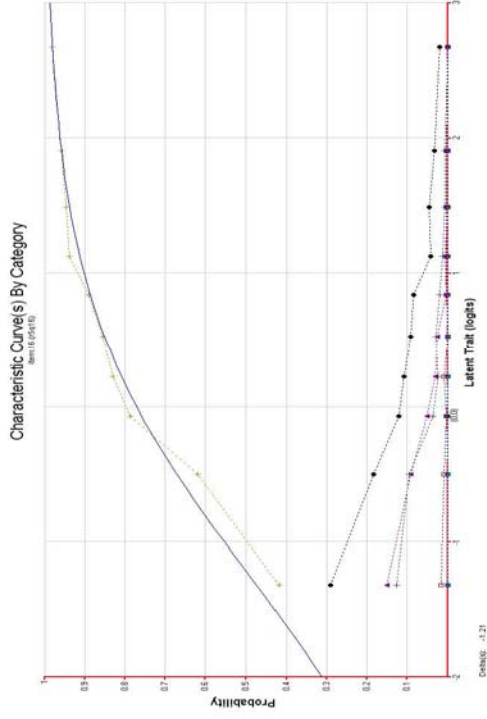
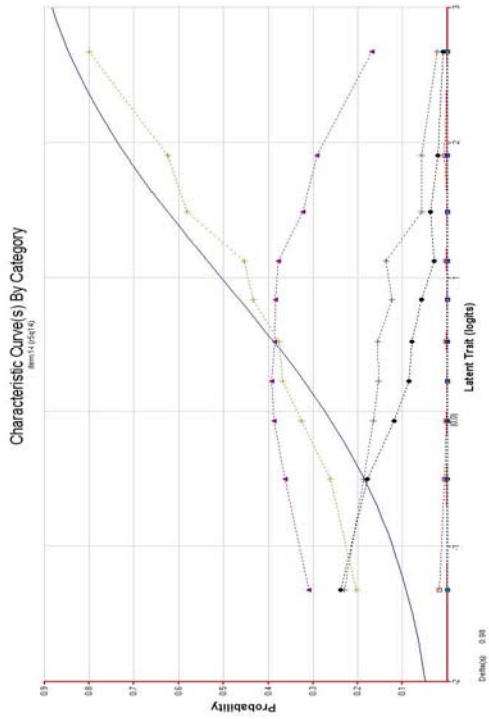


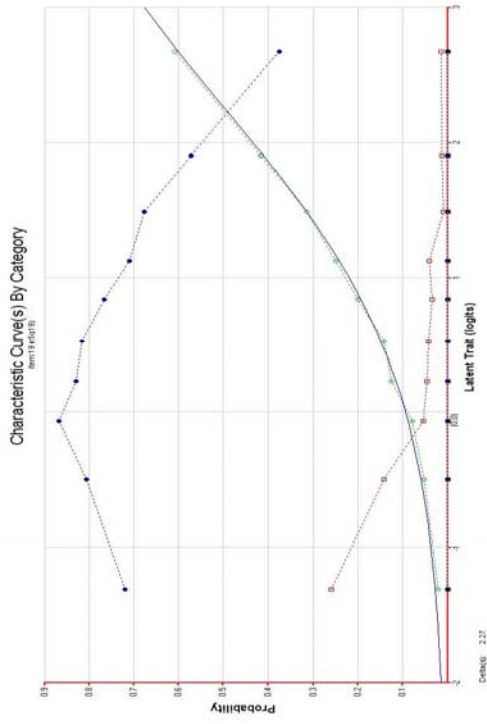
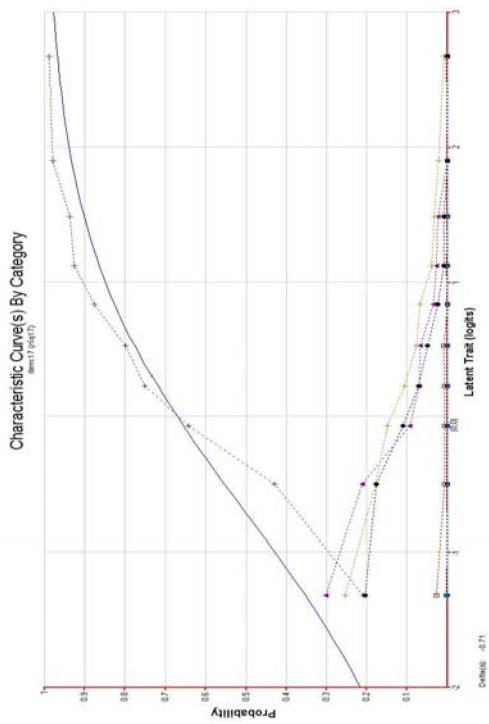
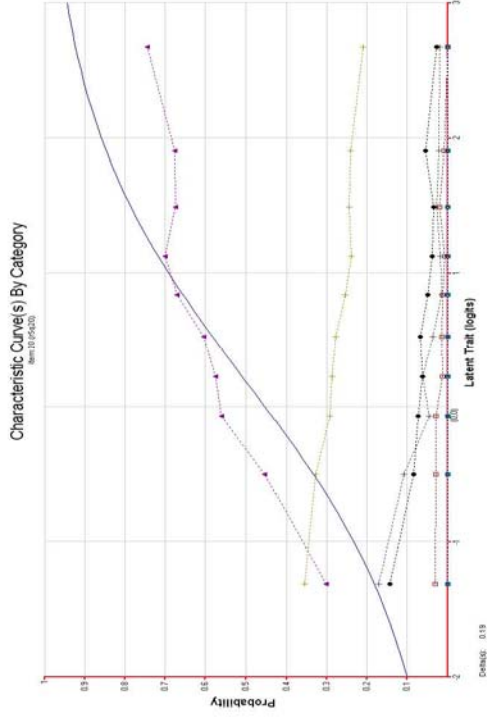
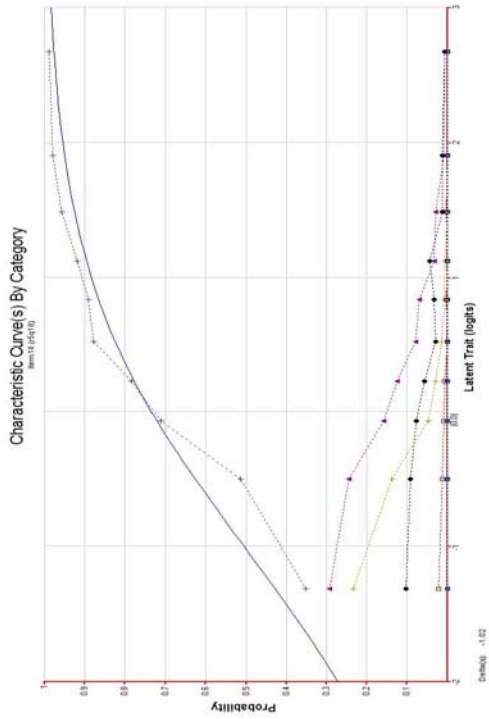
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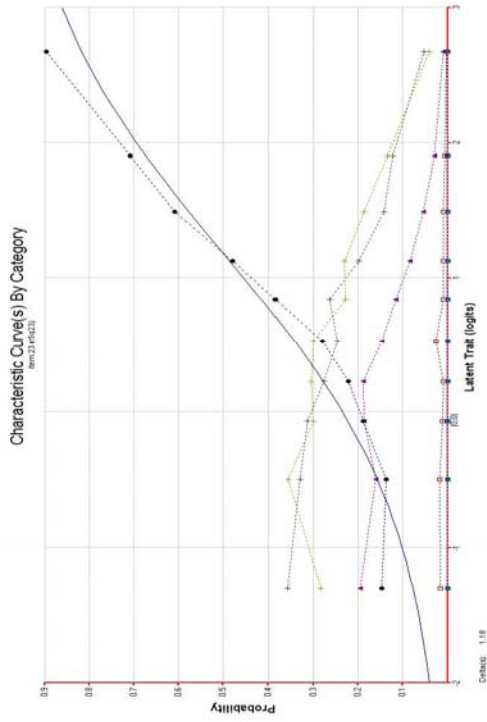
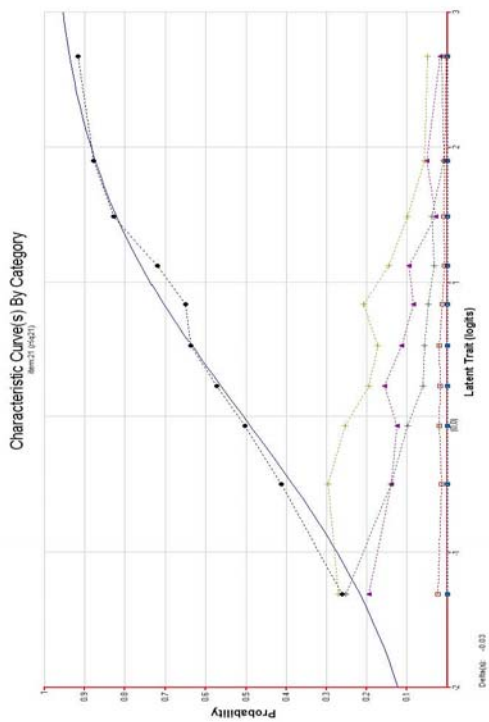
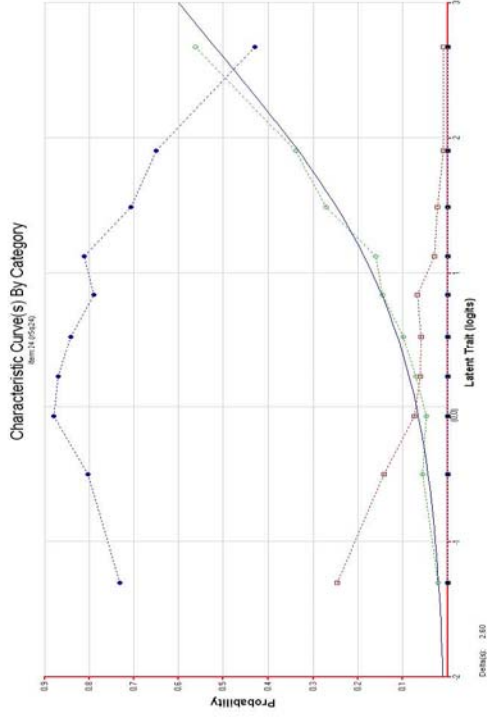
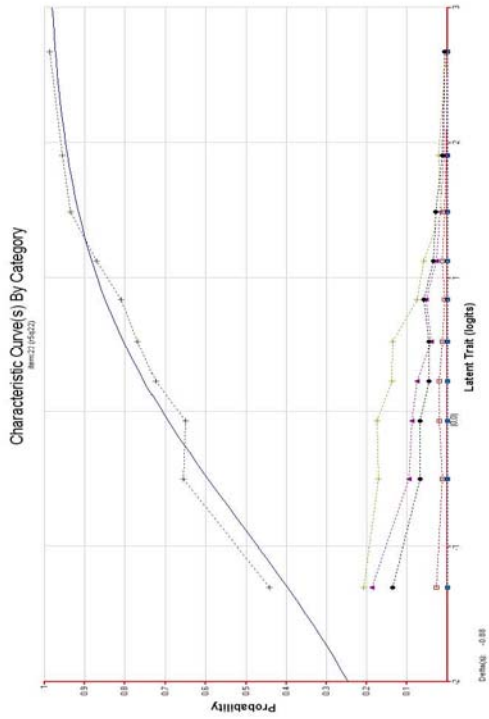




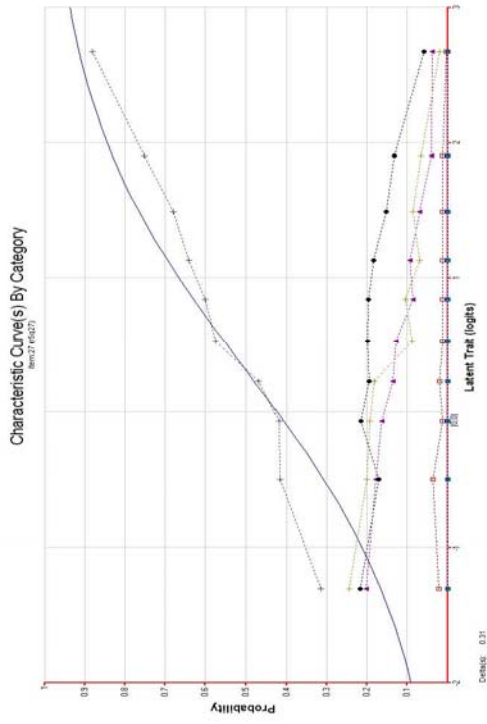
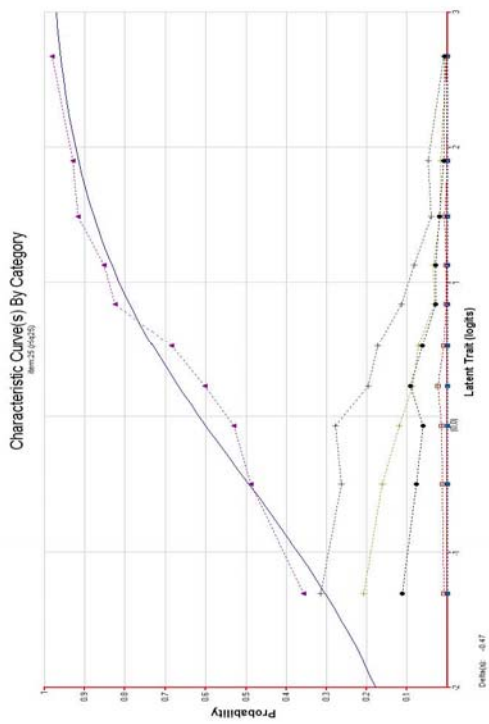
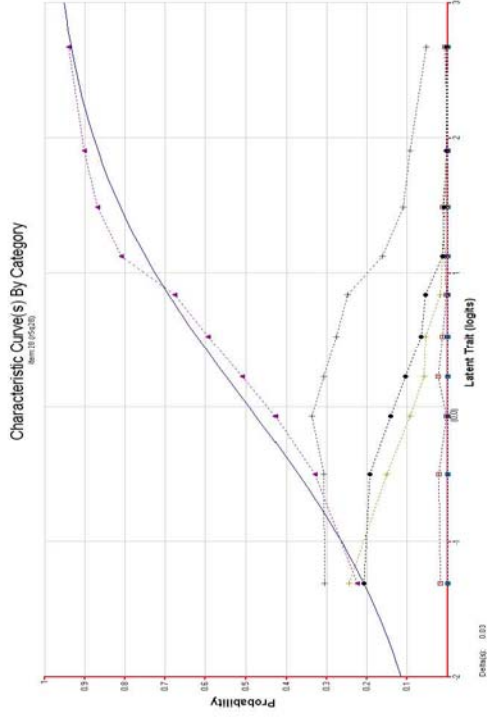
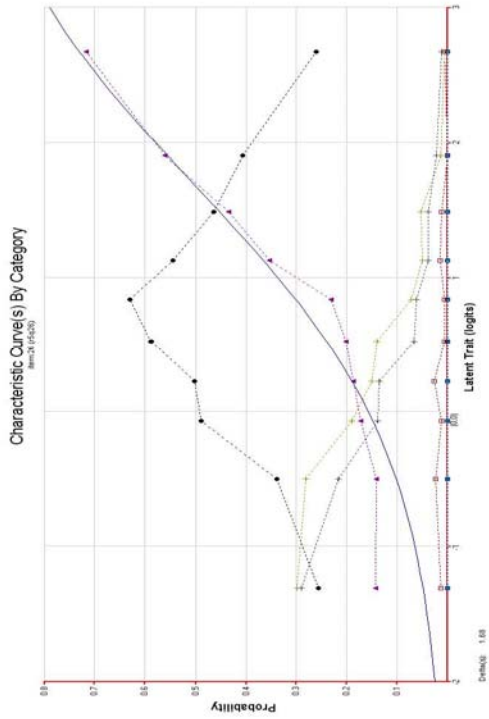


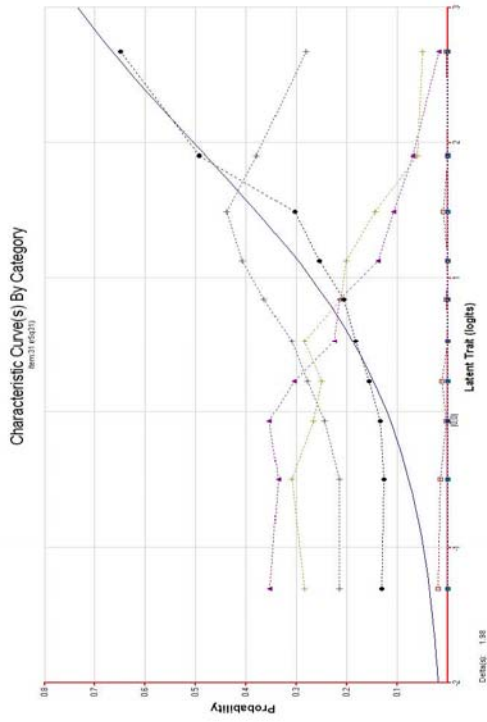
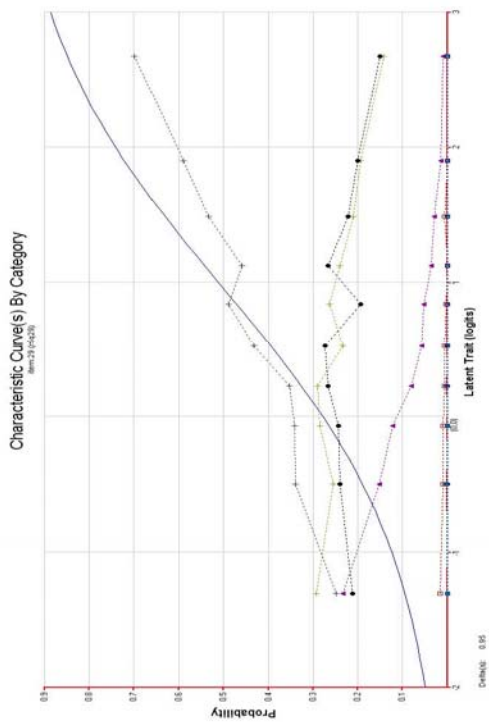
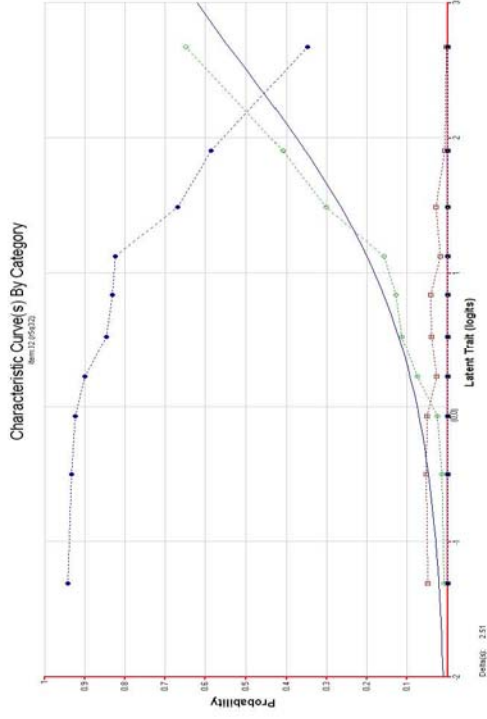
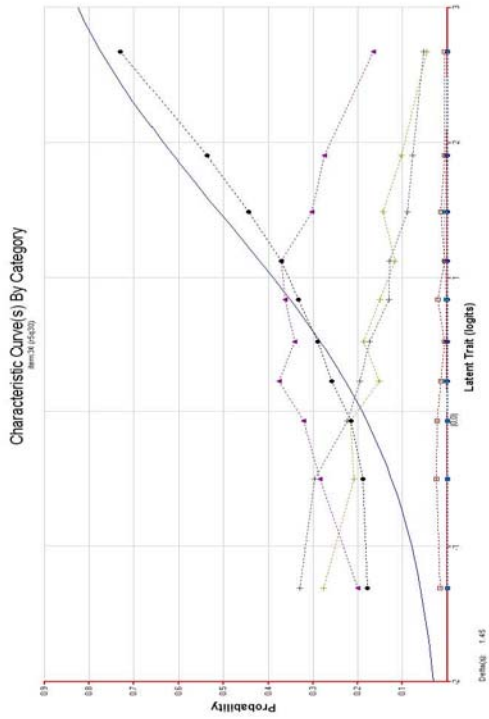


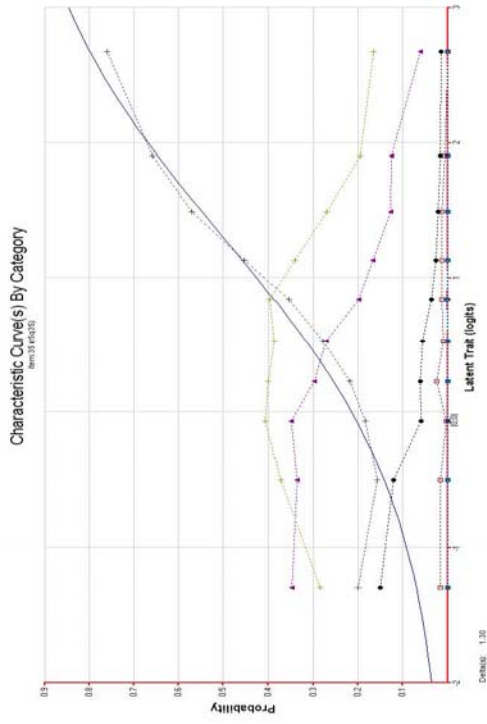
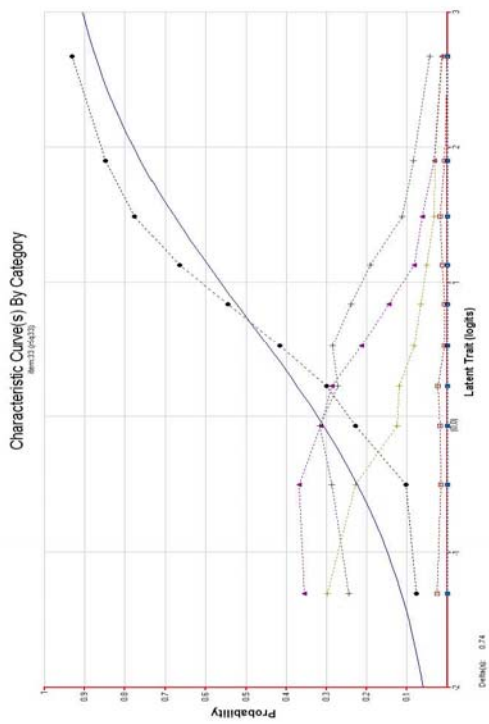
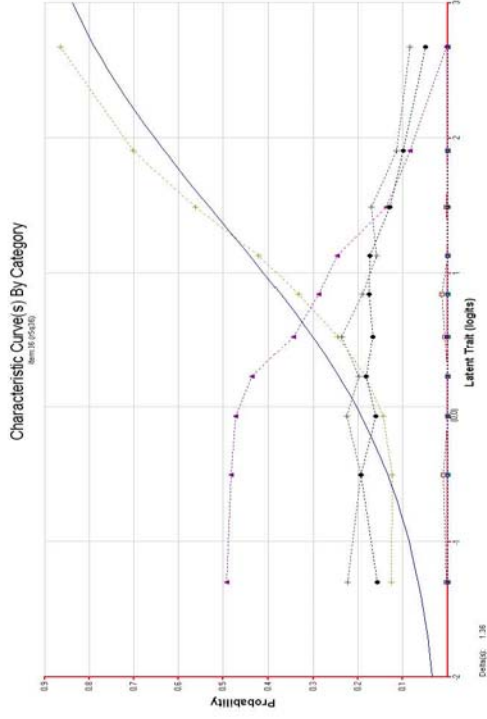
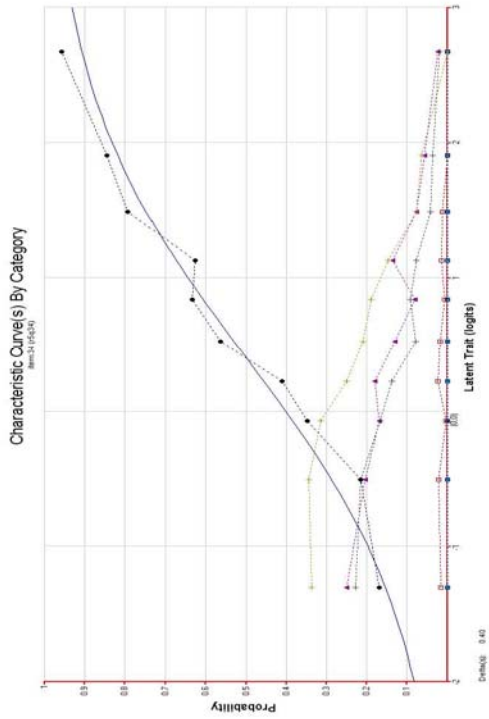


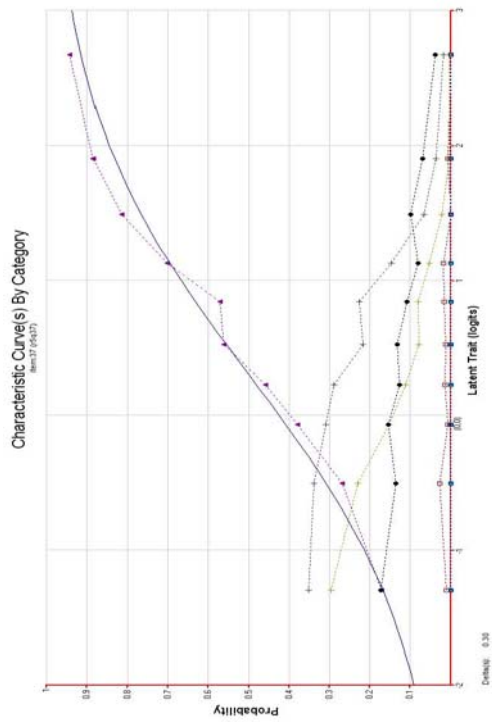
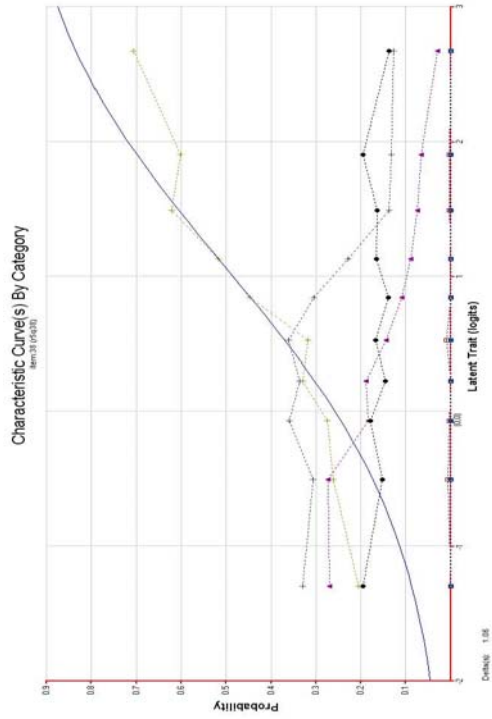




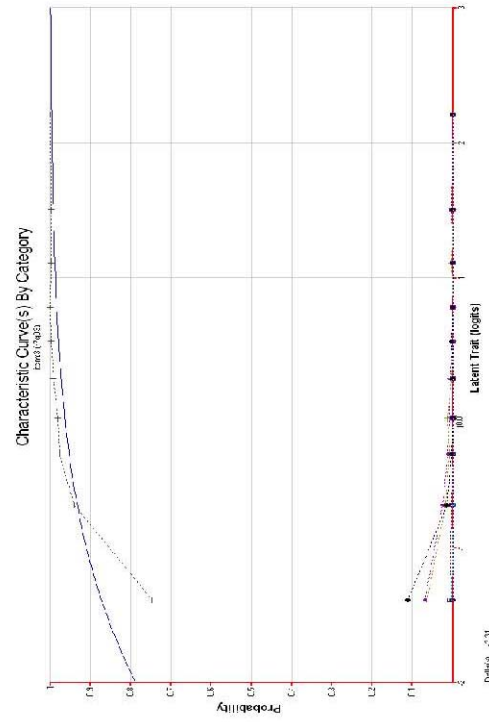
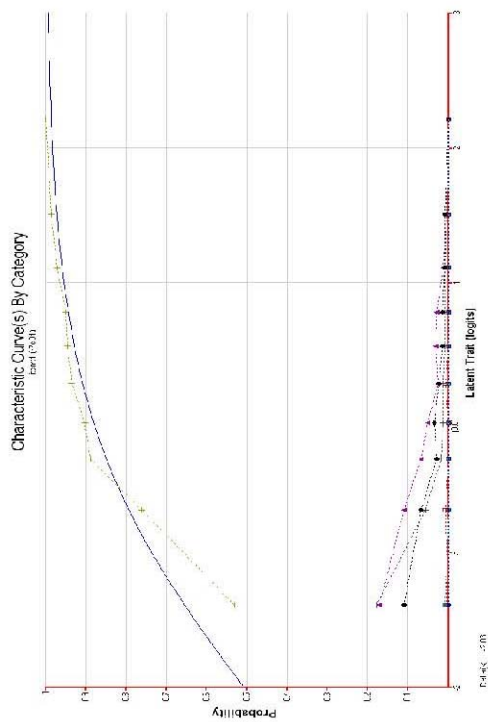
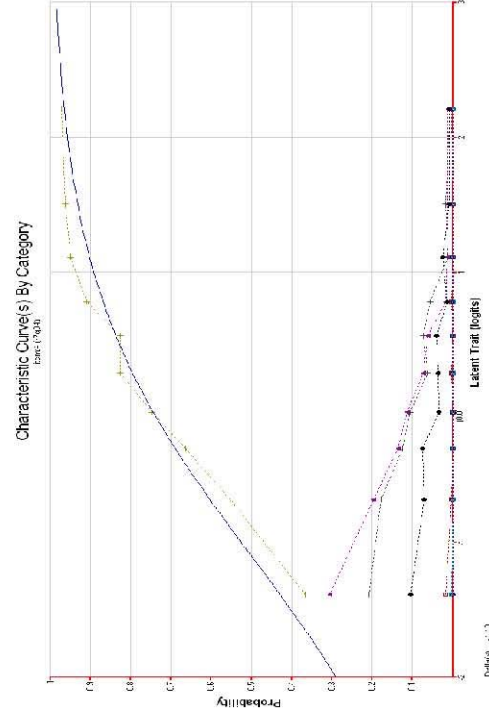
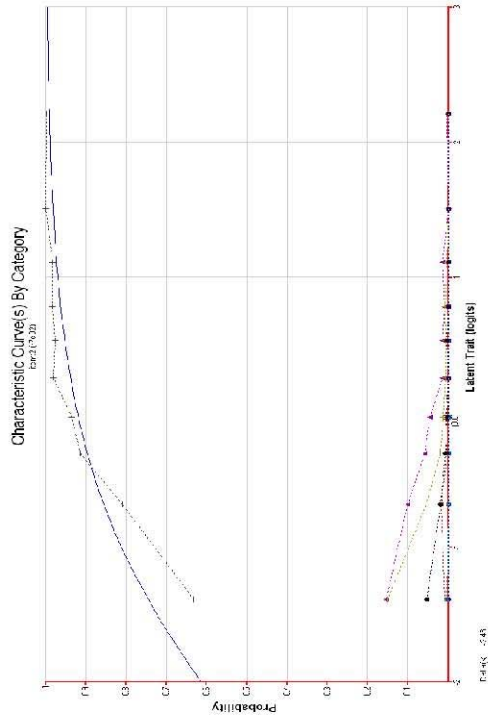


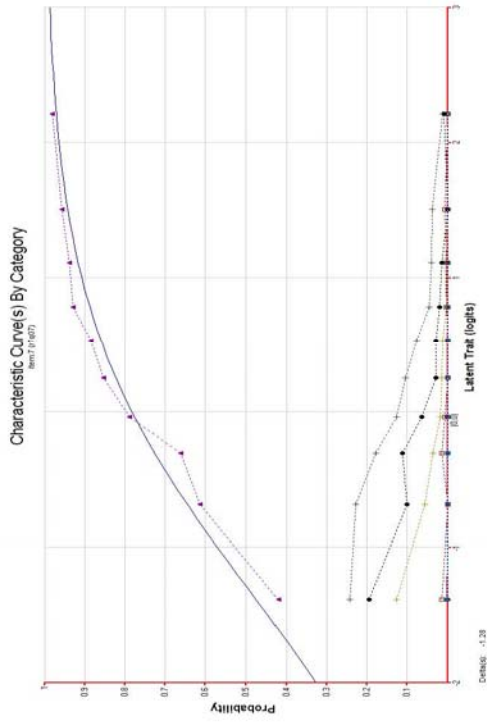
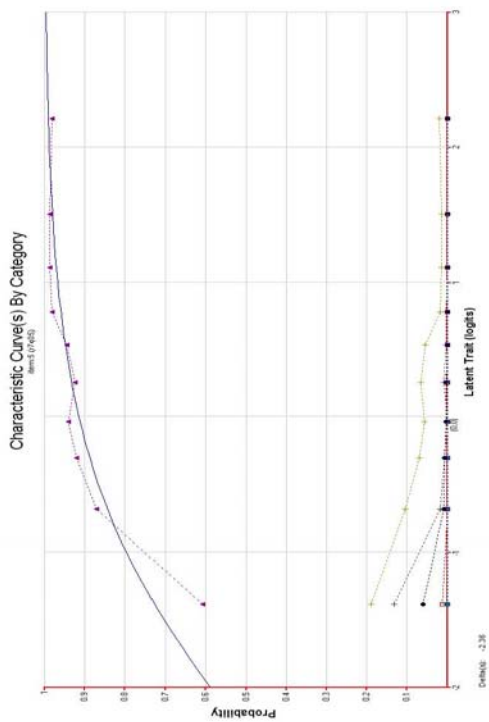
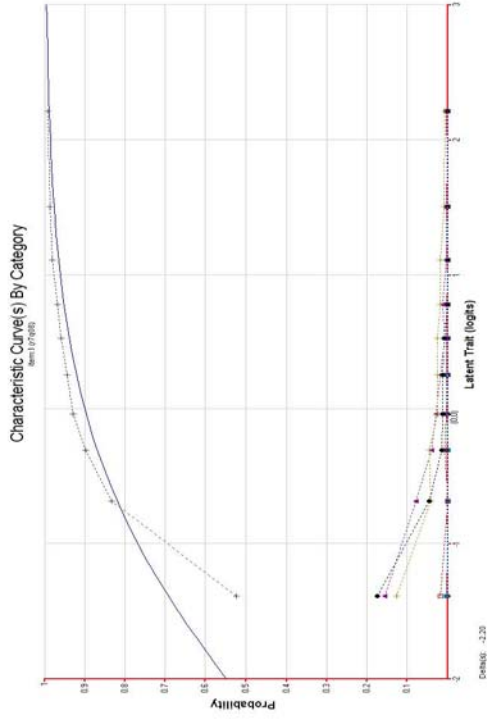
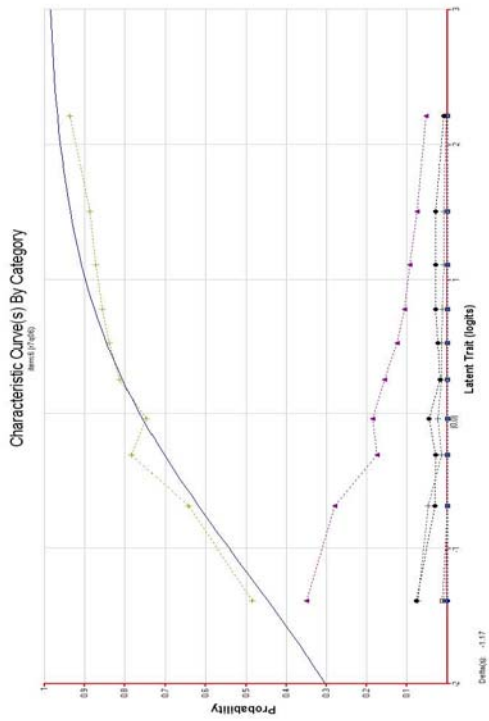


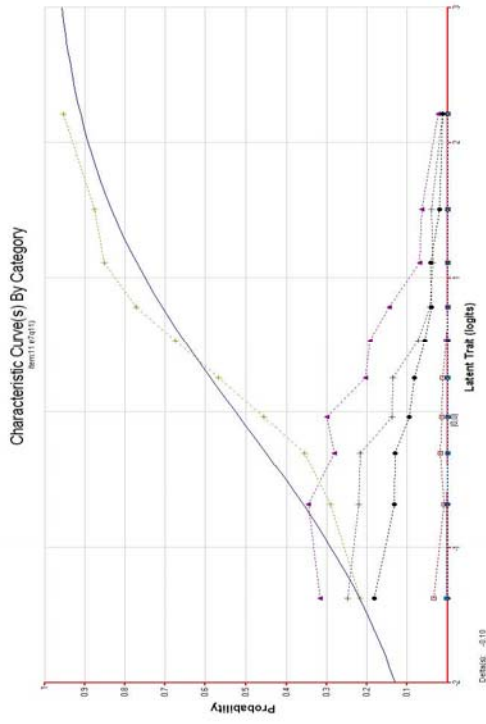
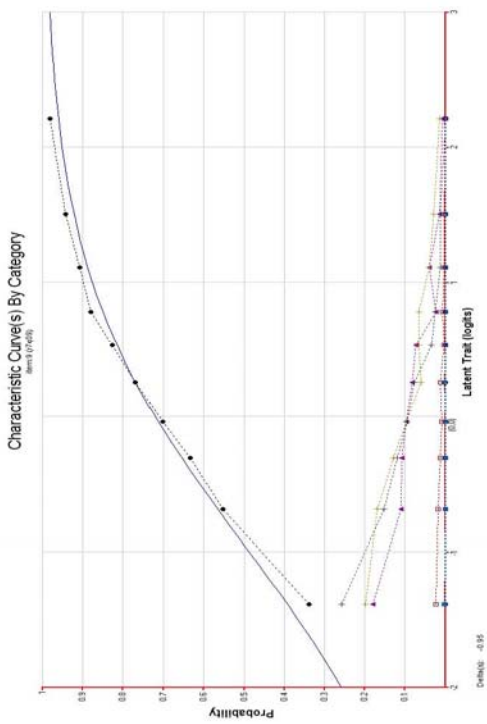
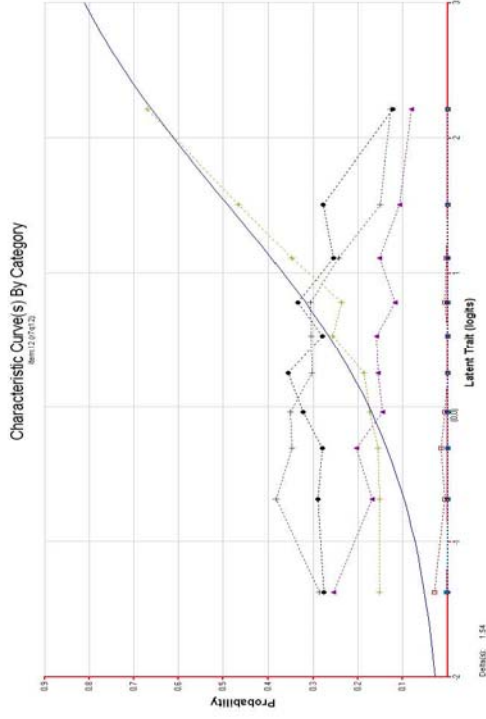
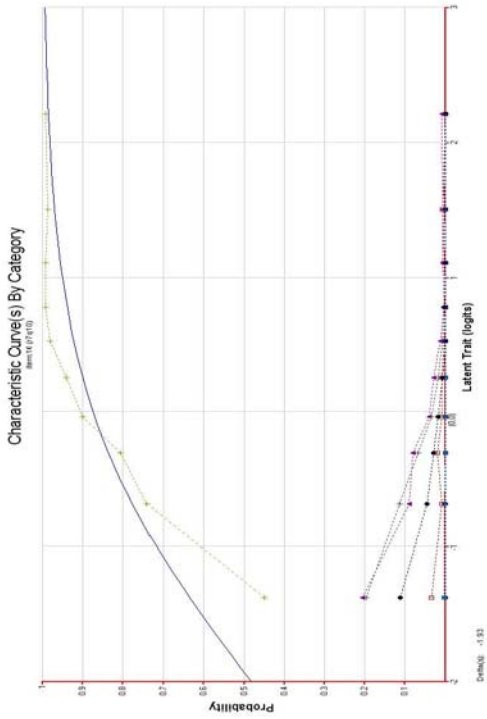


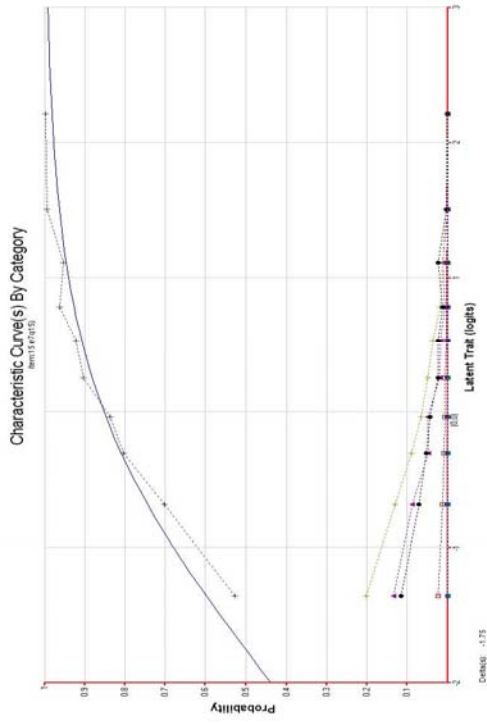
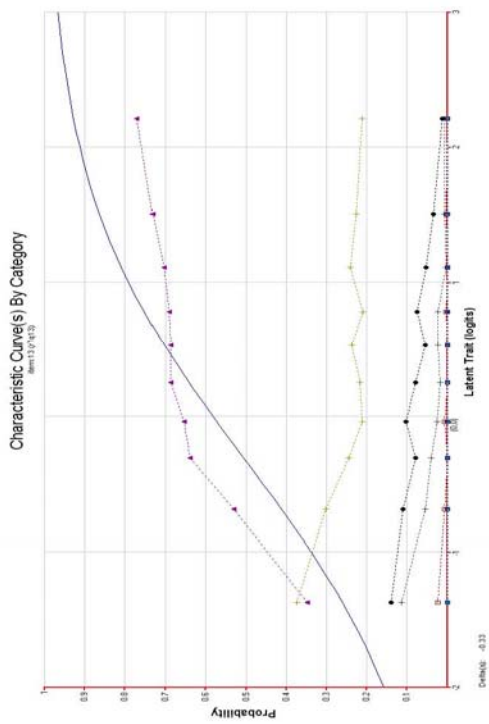
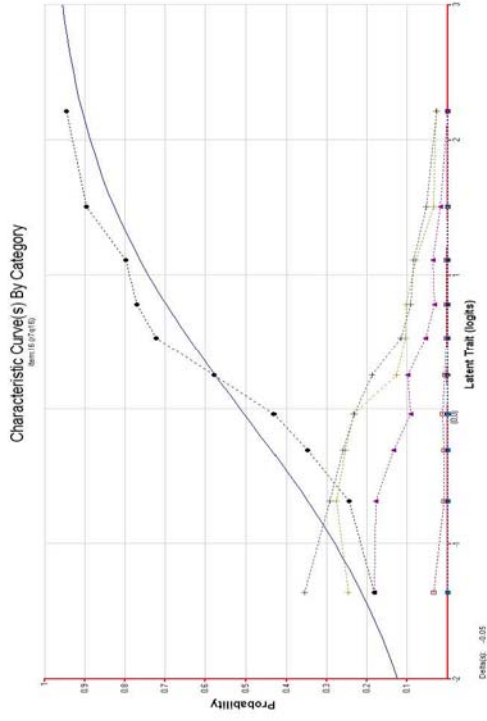
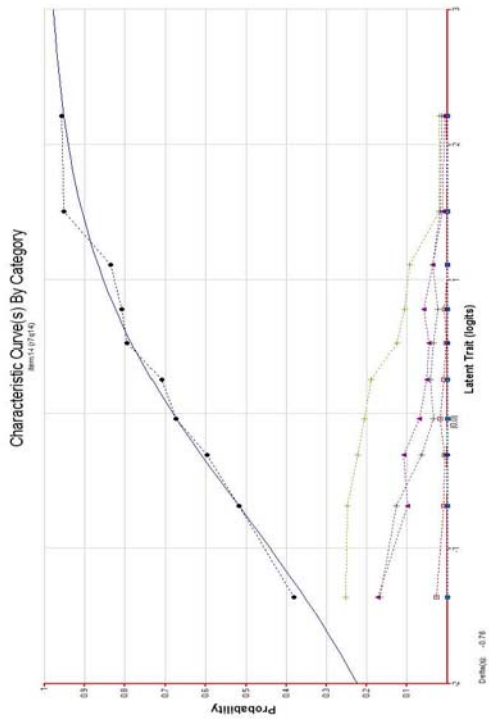


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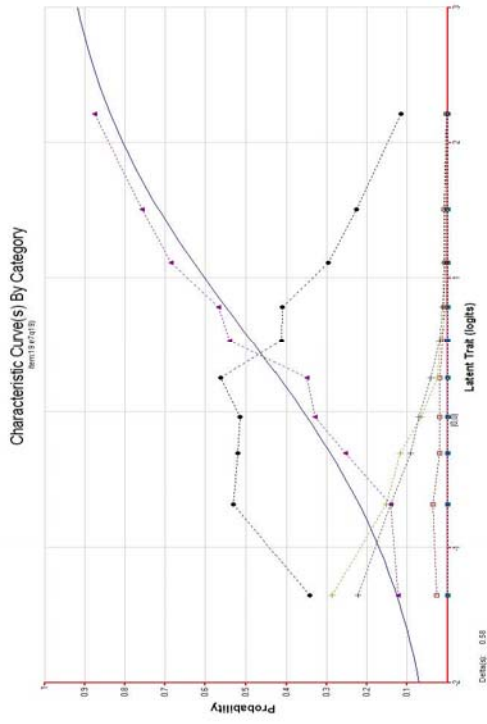
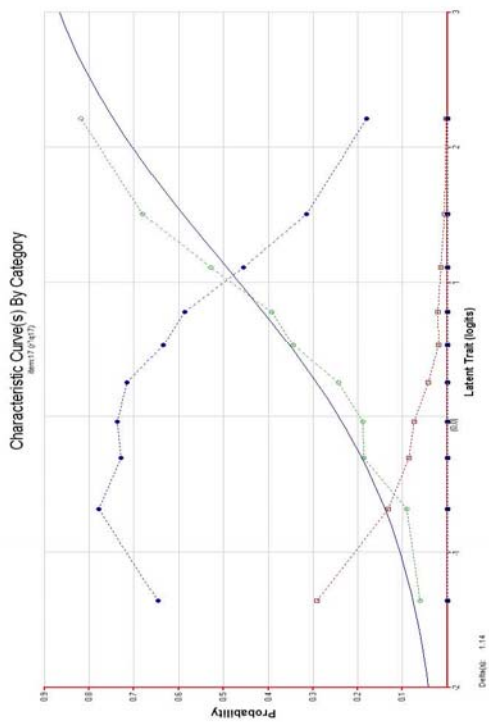
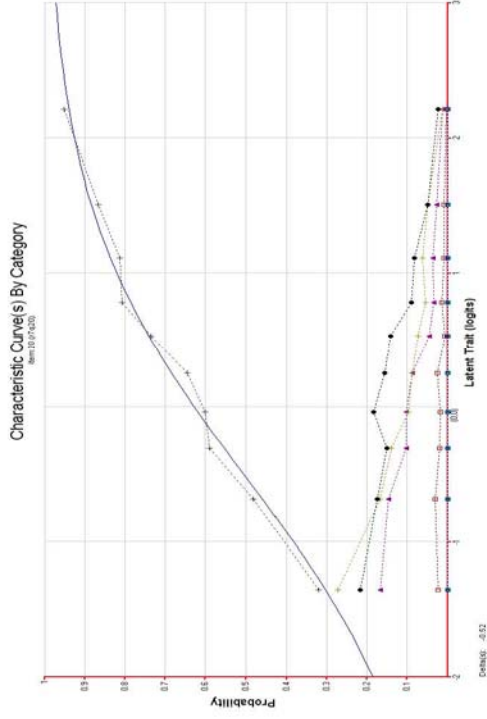
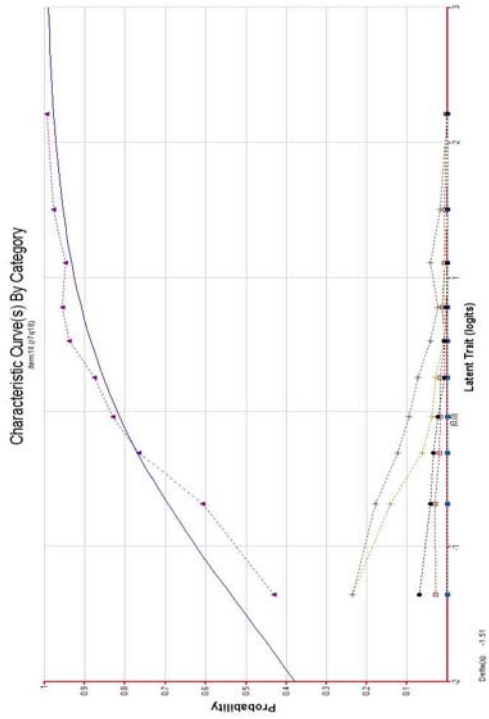


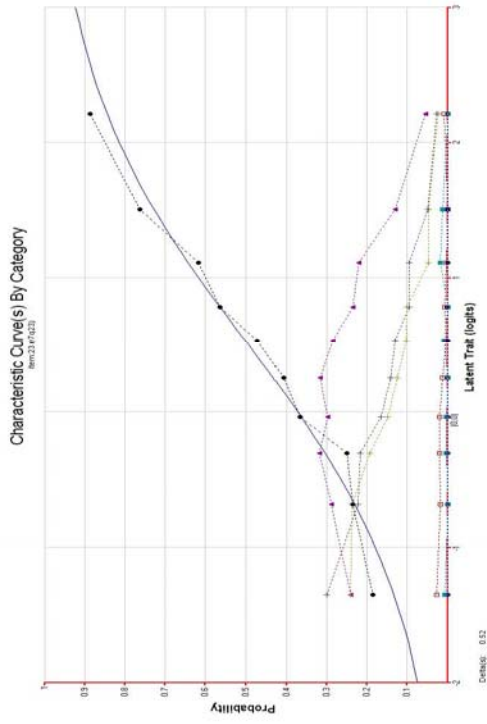
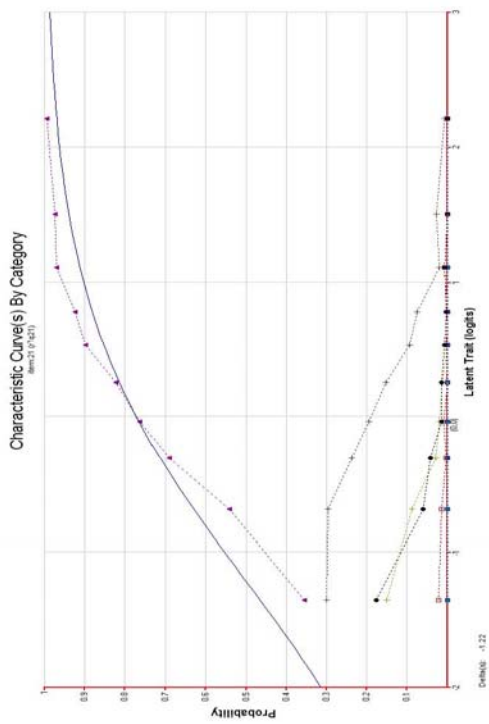
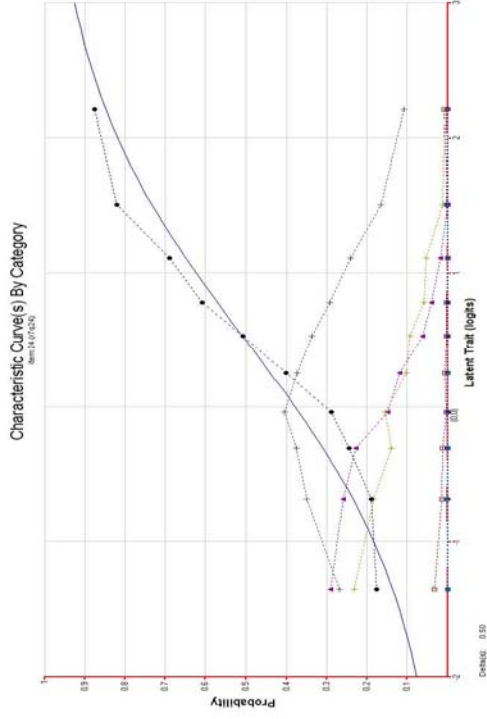
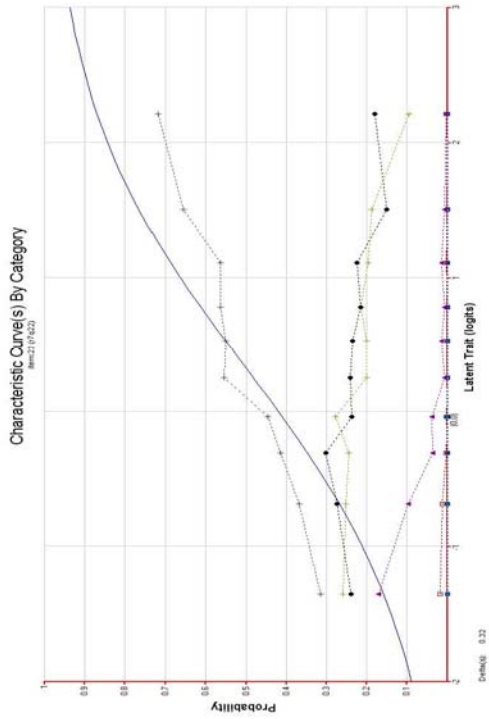


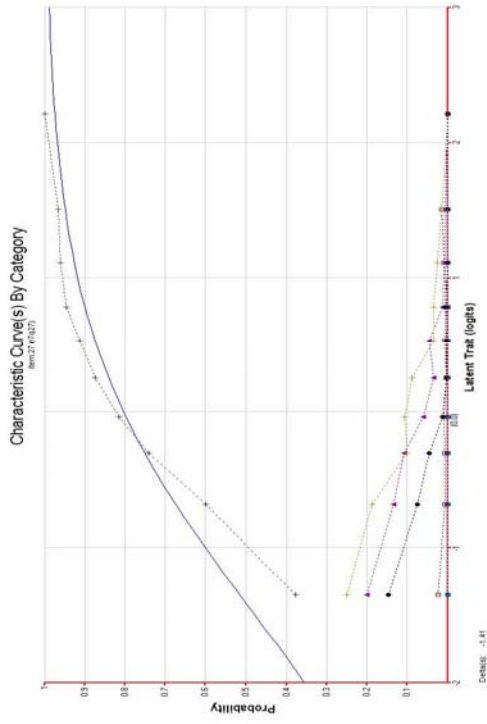
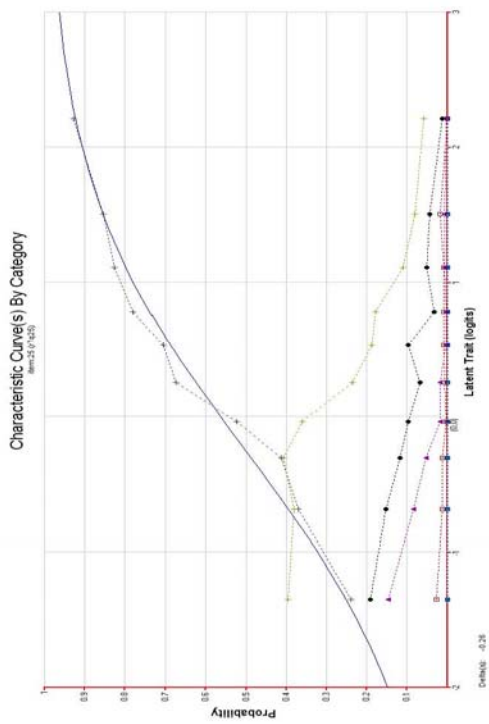
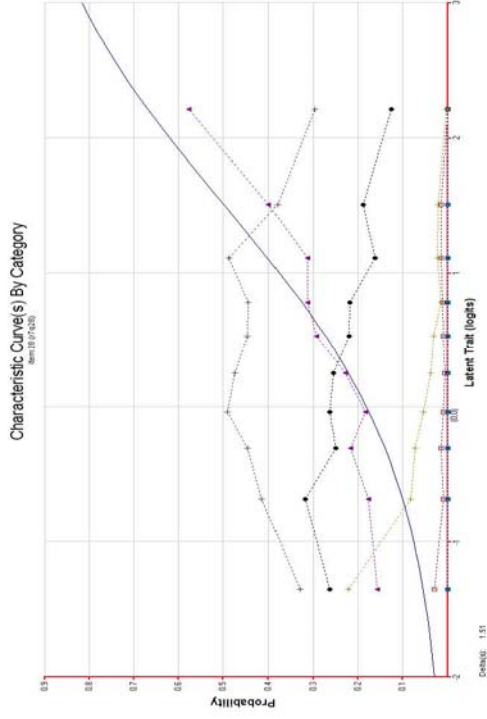
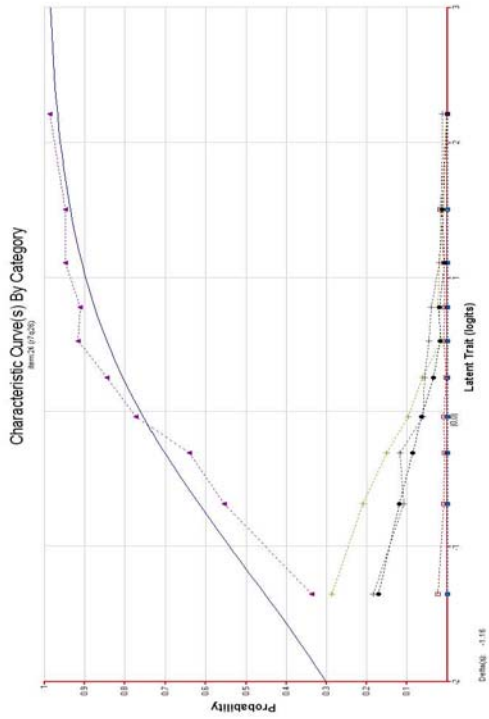


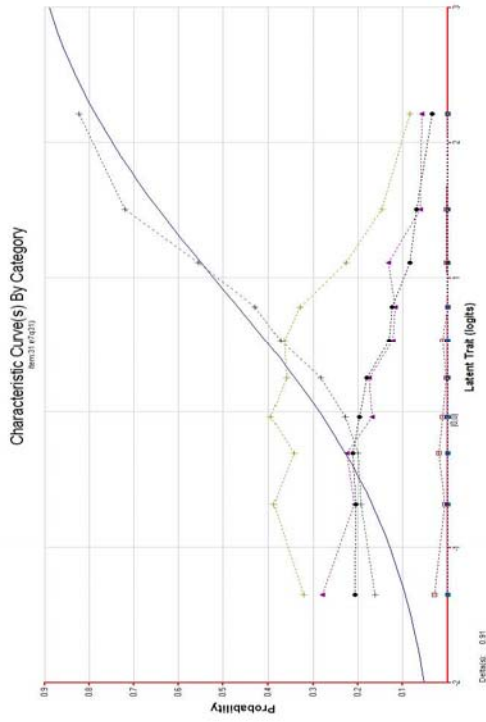
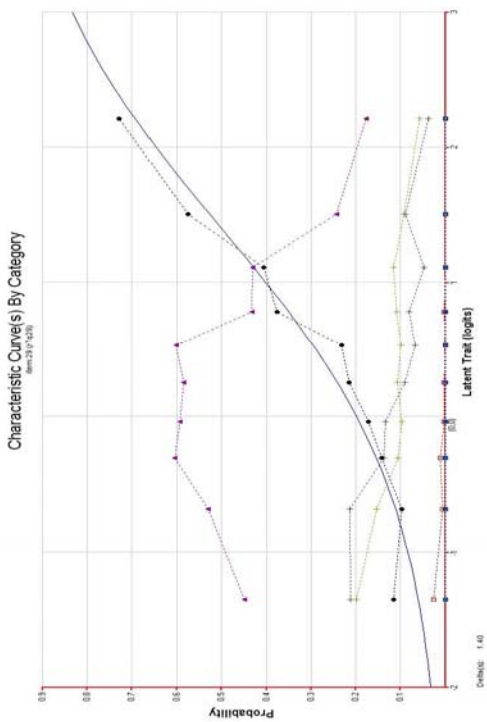
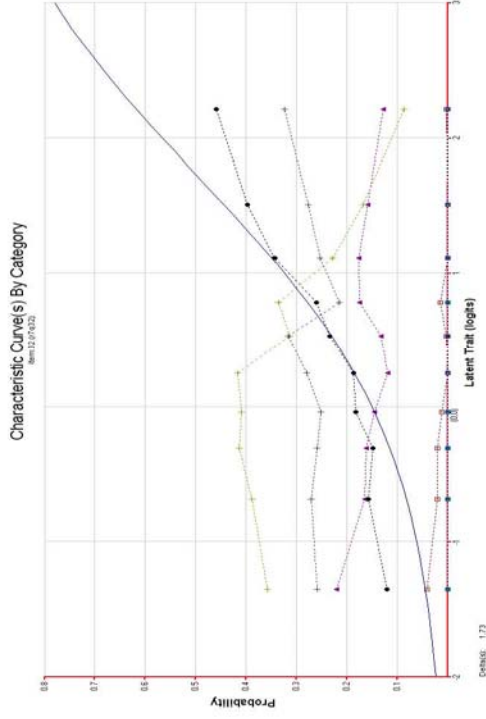
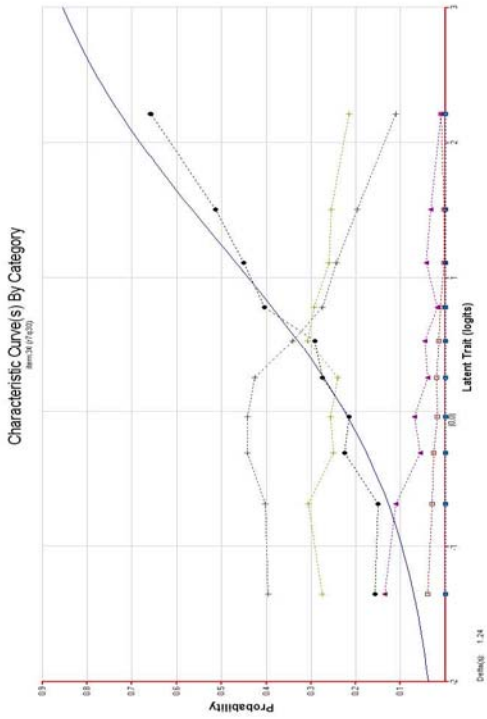


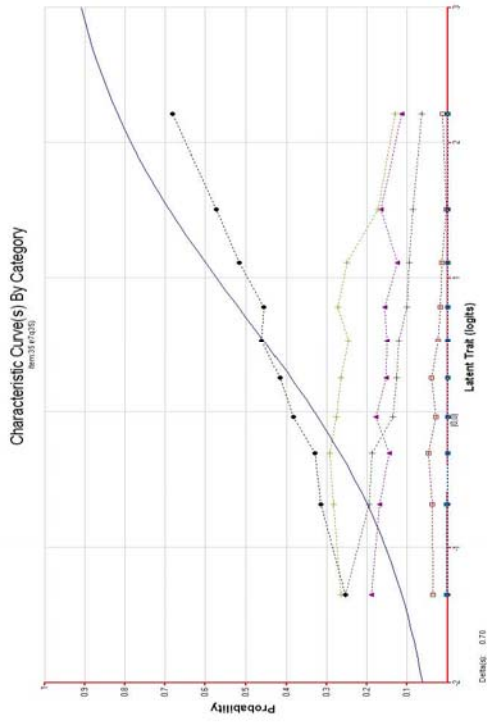
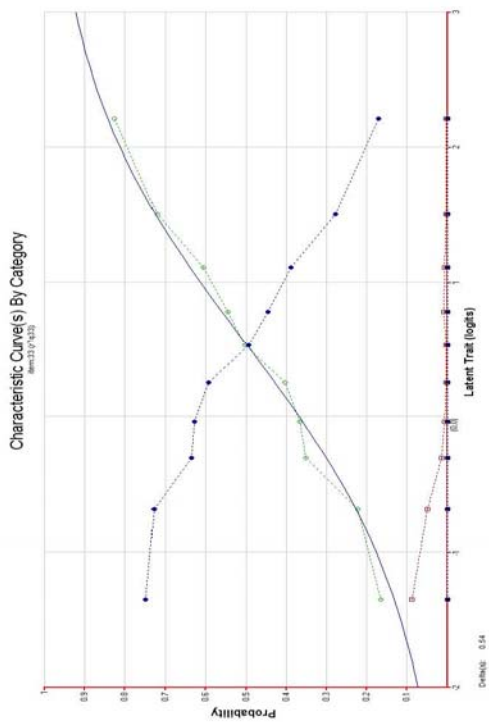
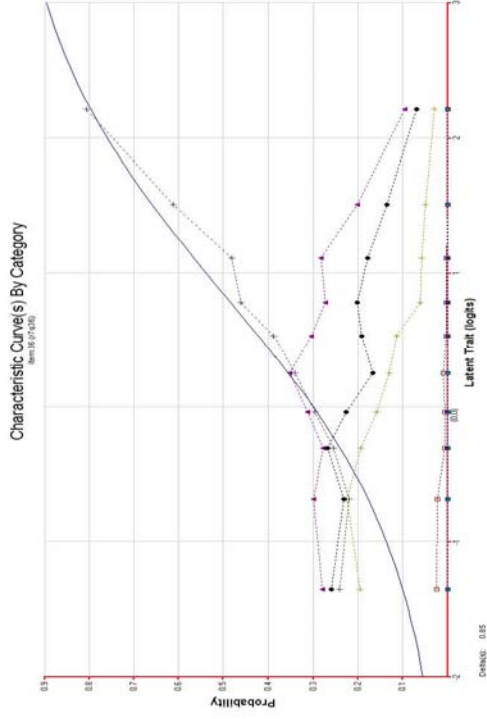
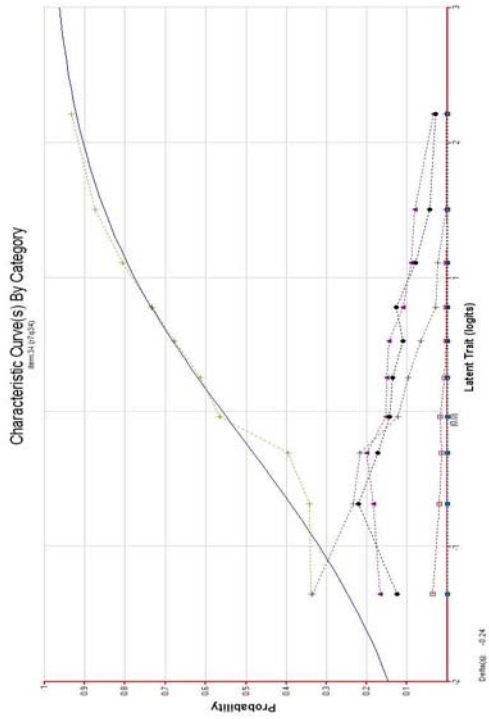


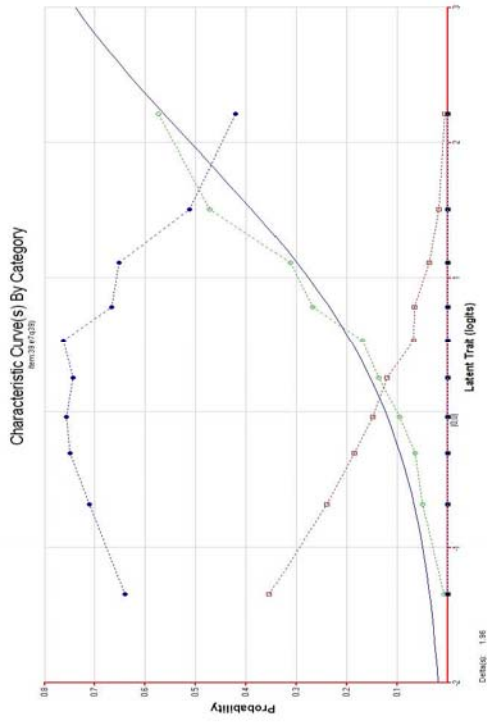
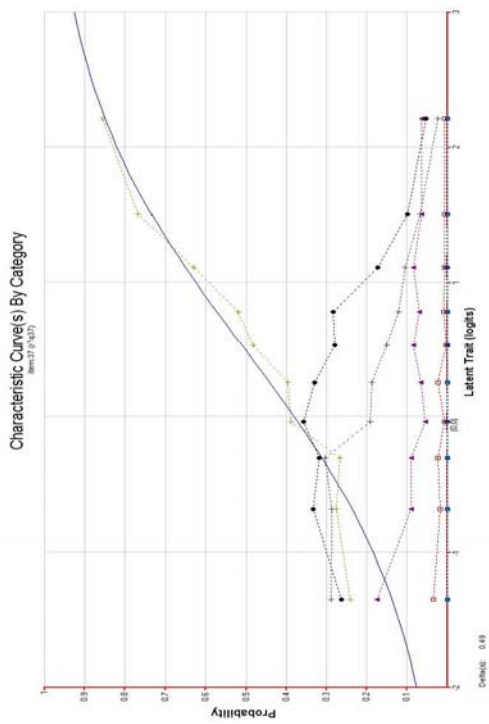
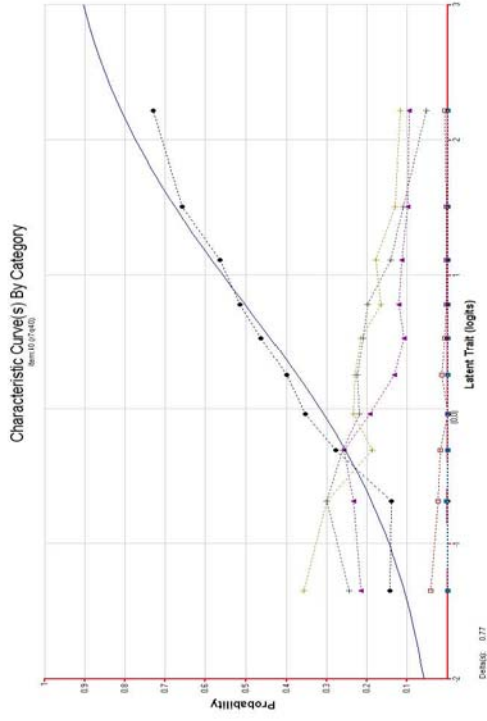
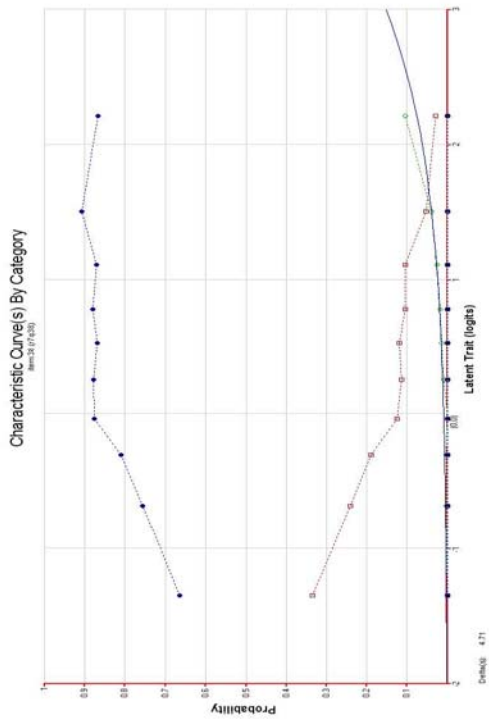


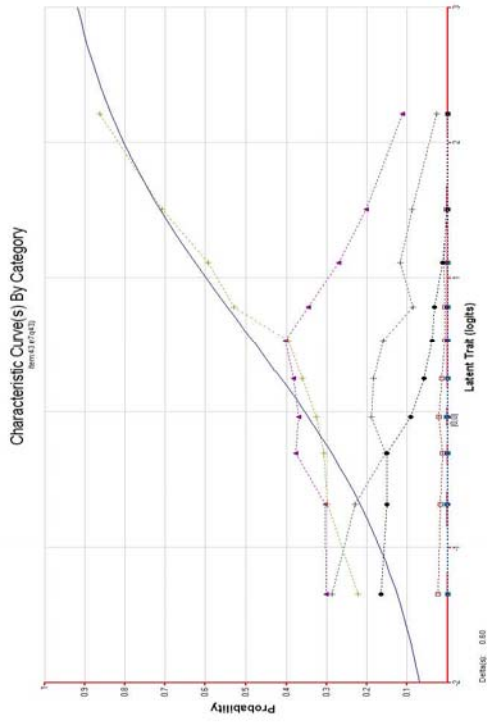
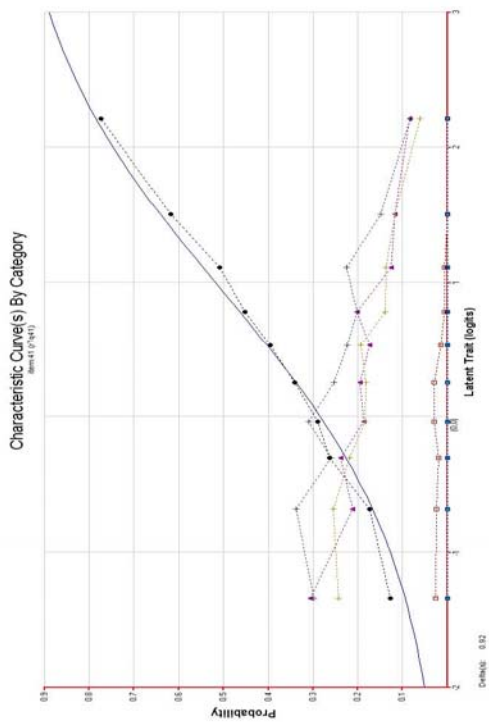
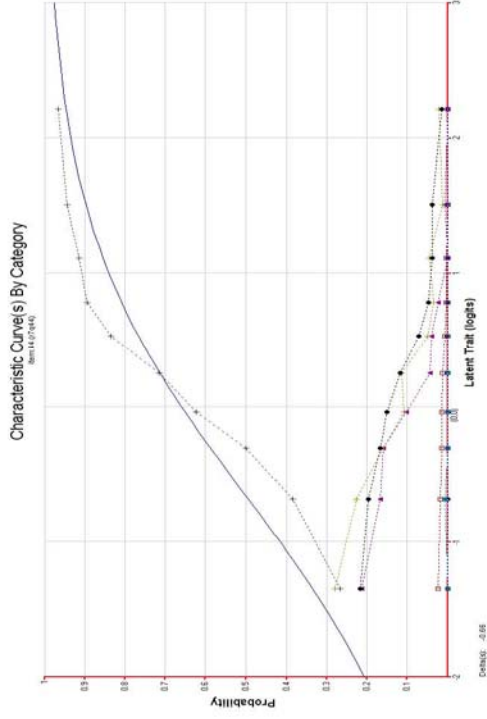
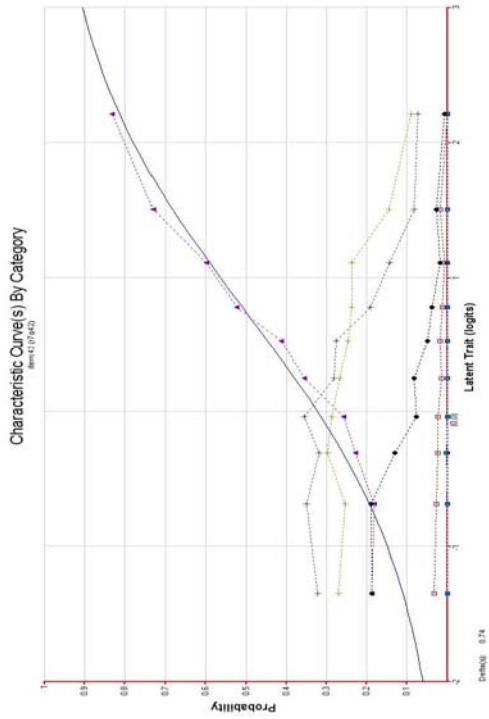


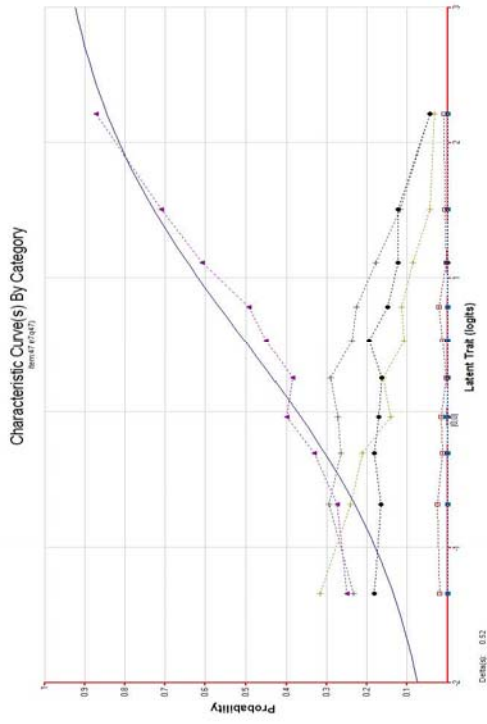
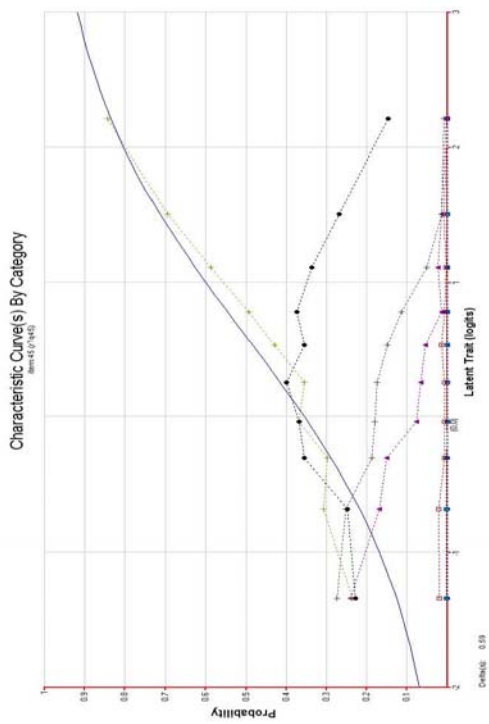
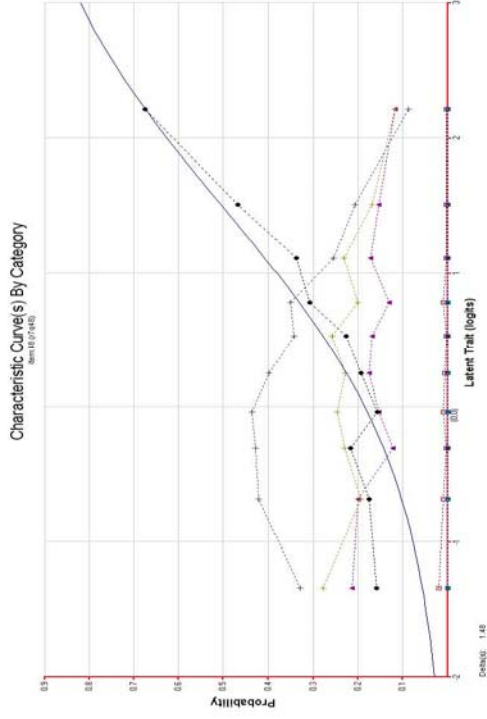
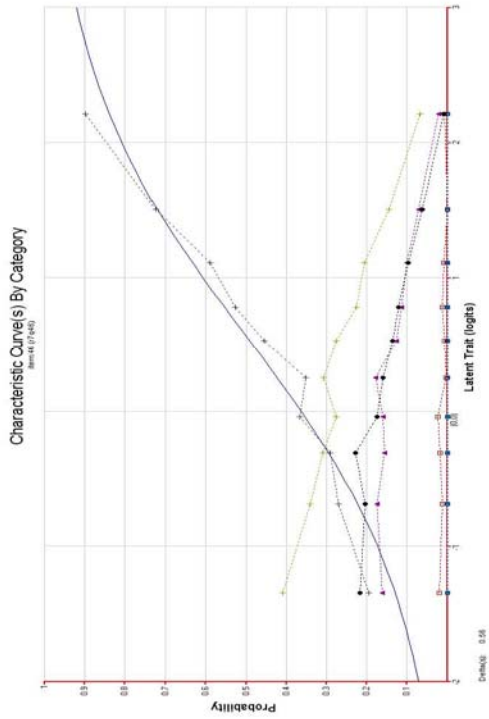




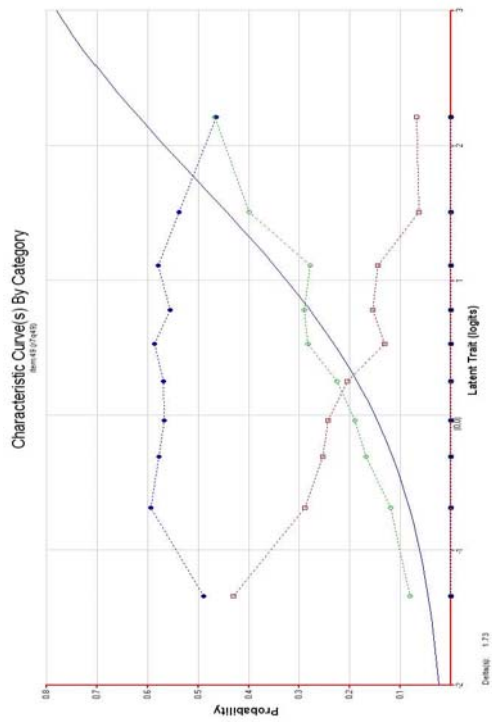
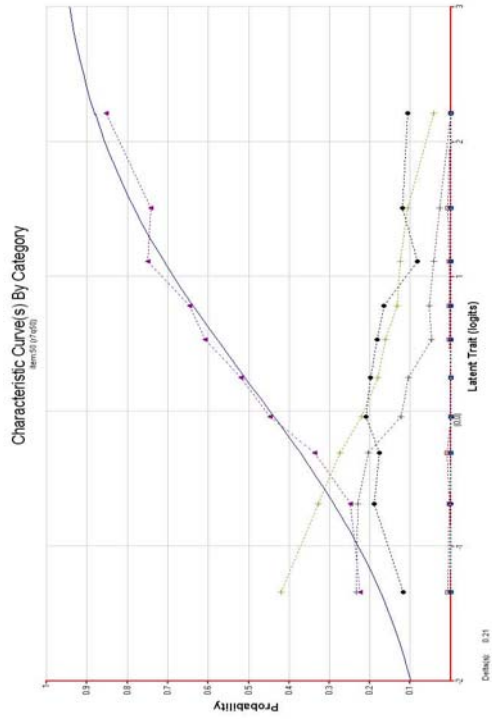




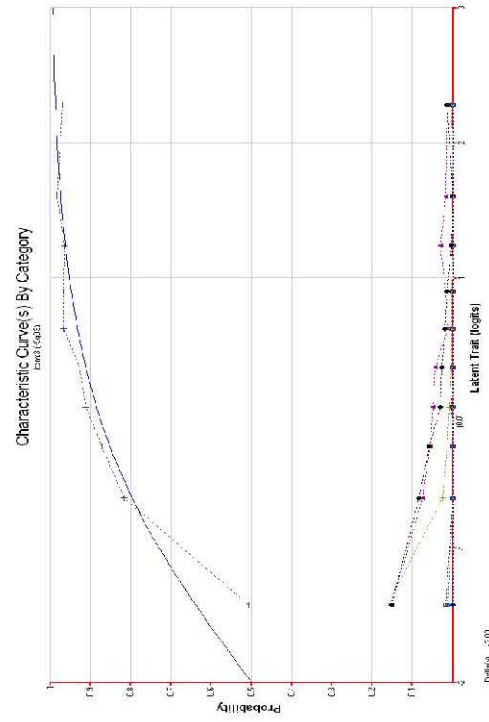
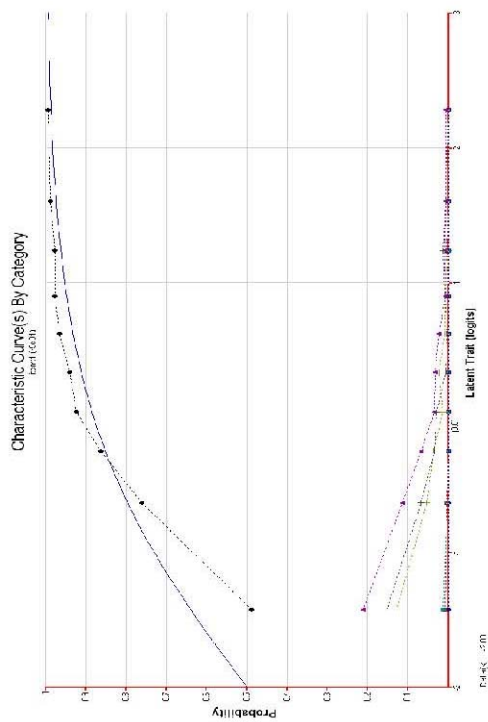
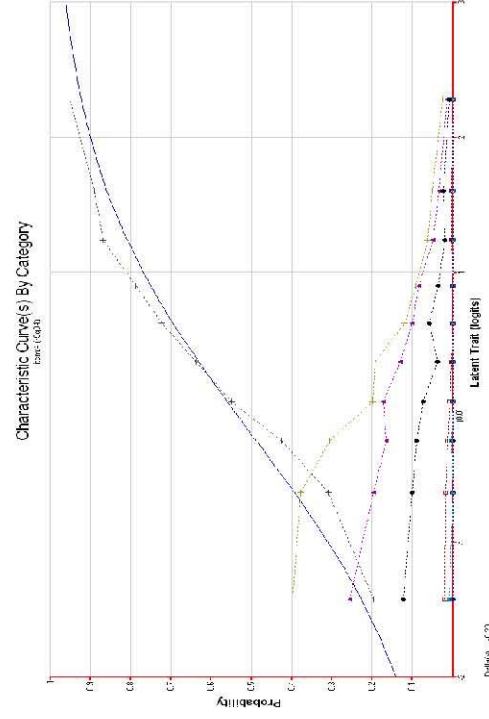
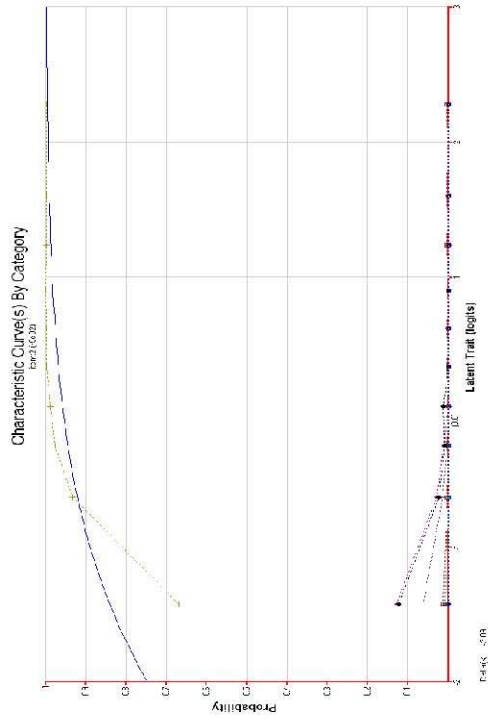


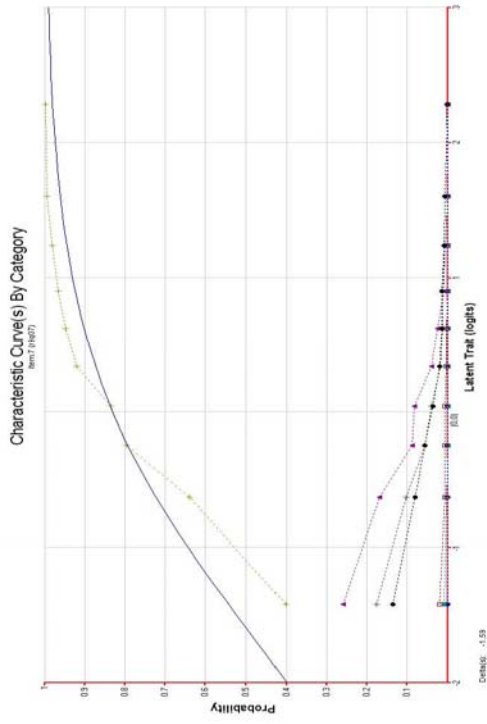
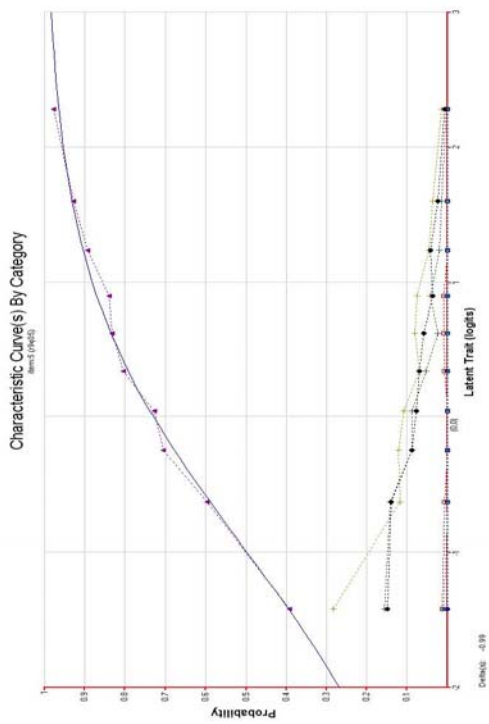
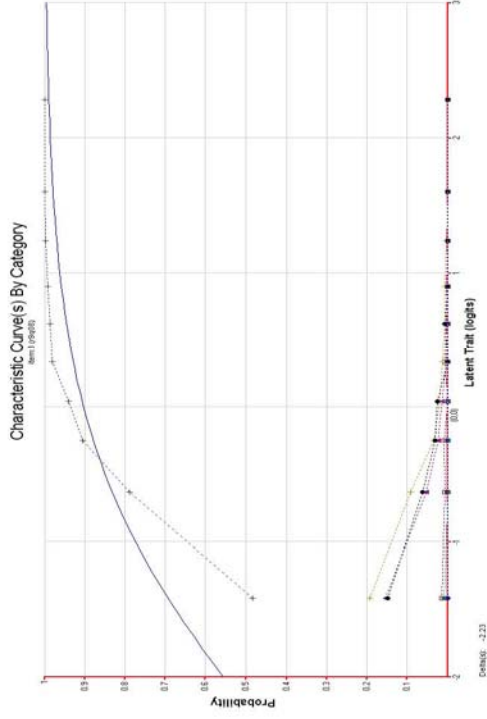
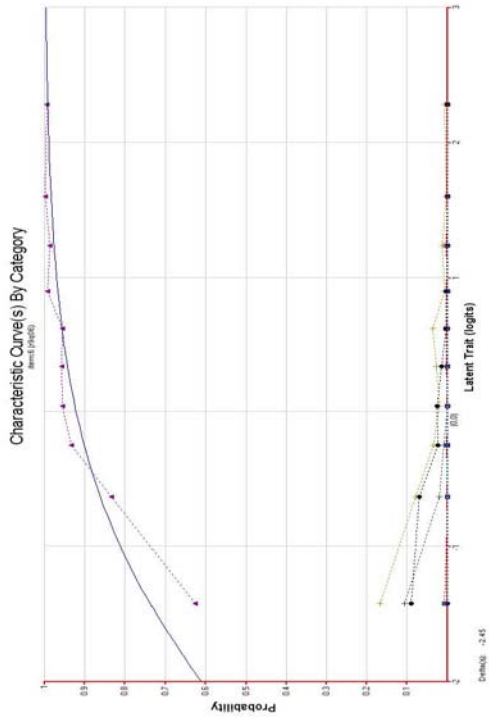


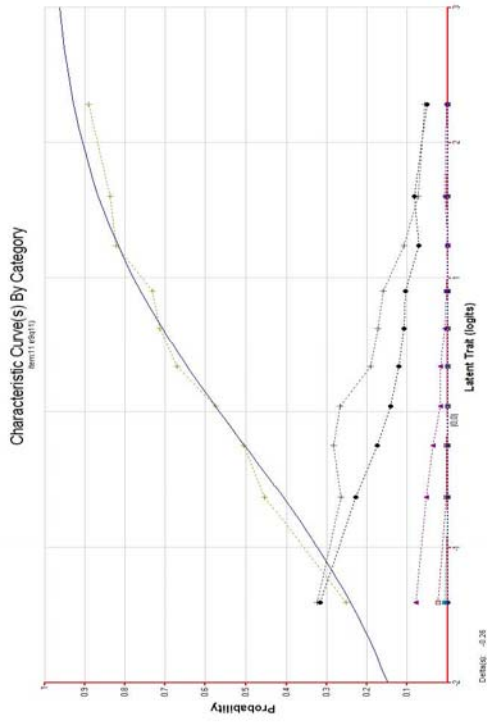
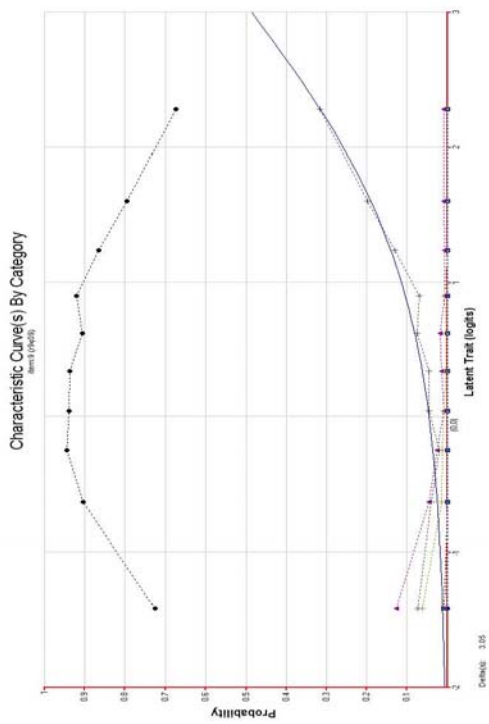
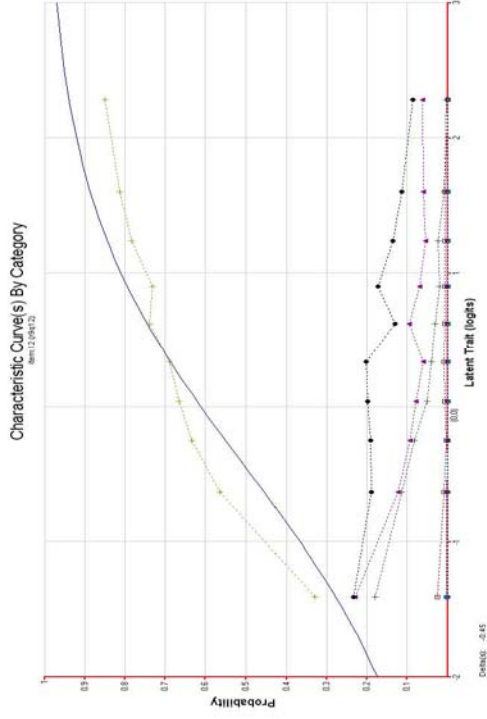
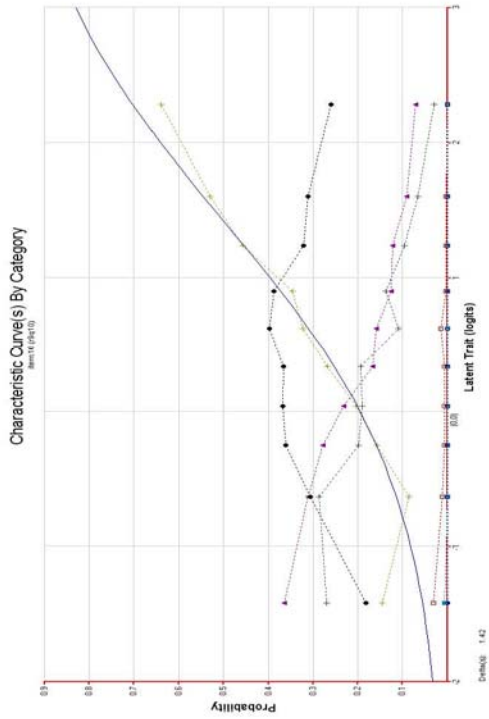


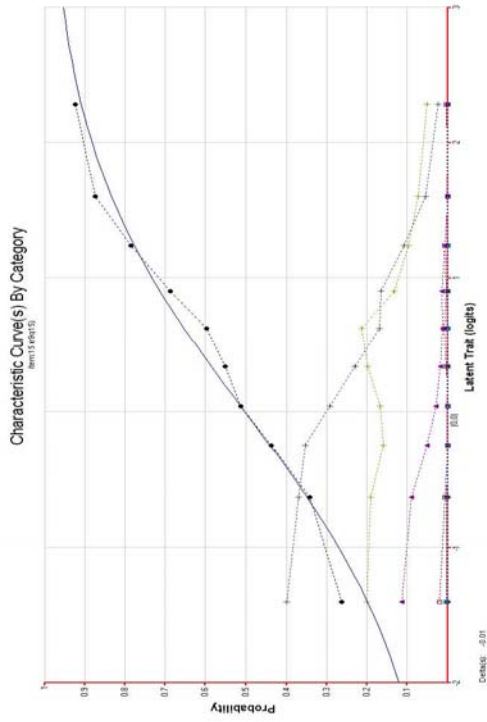
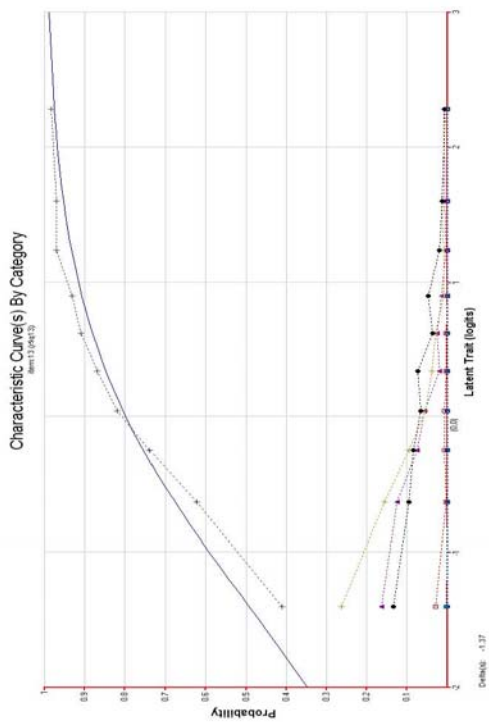
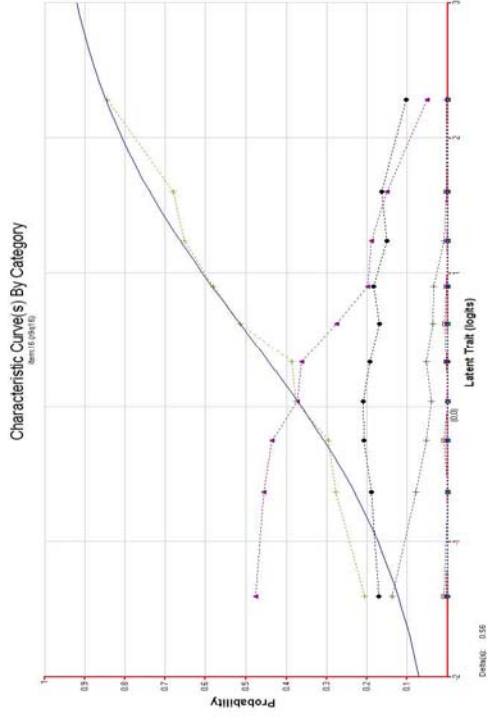
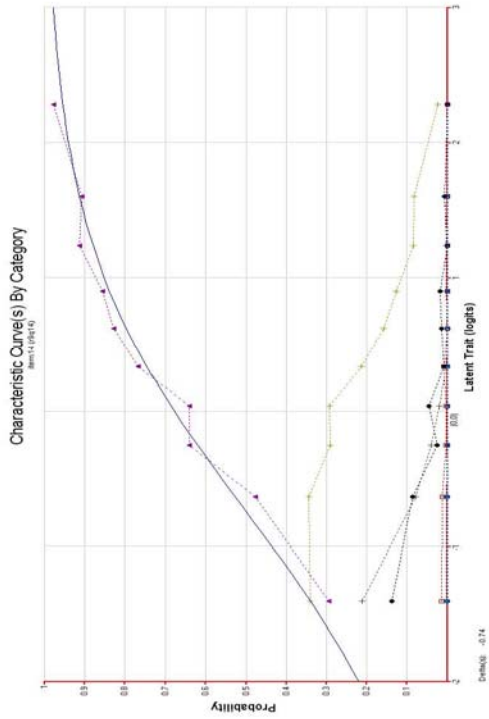


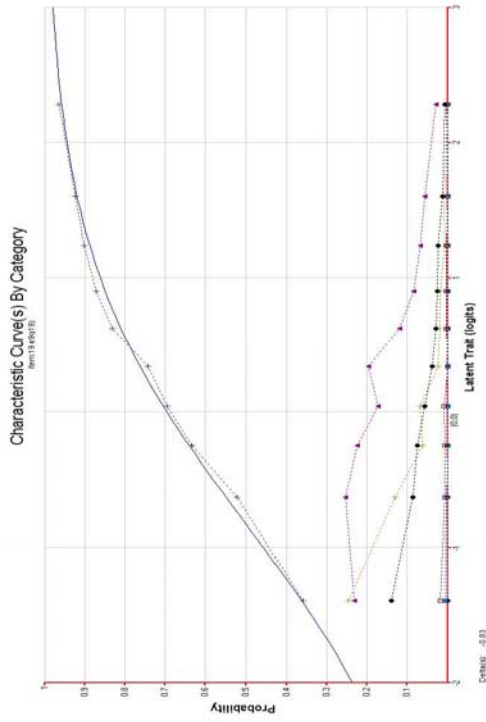
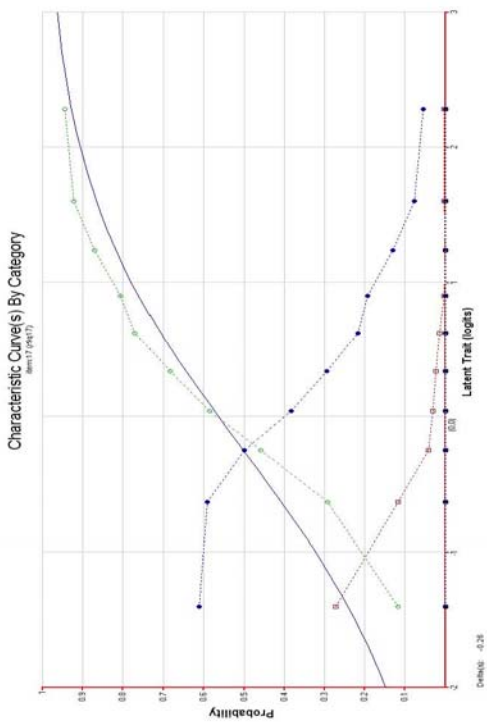
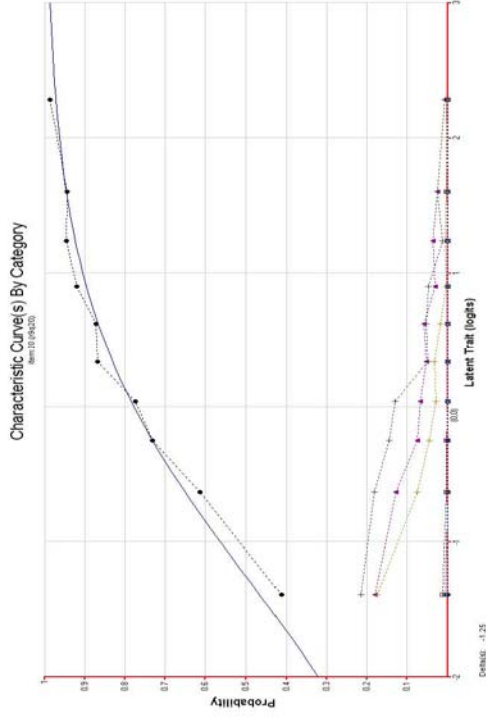
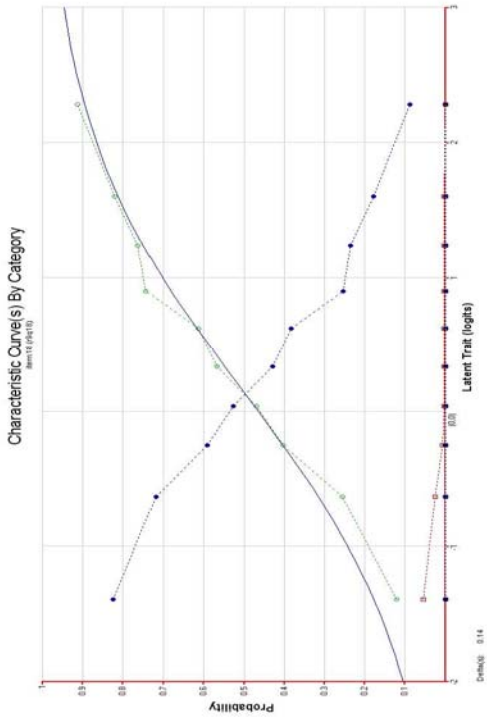
Year 9 Reading

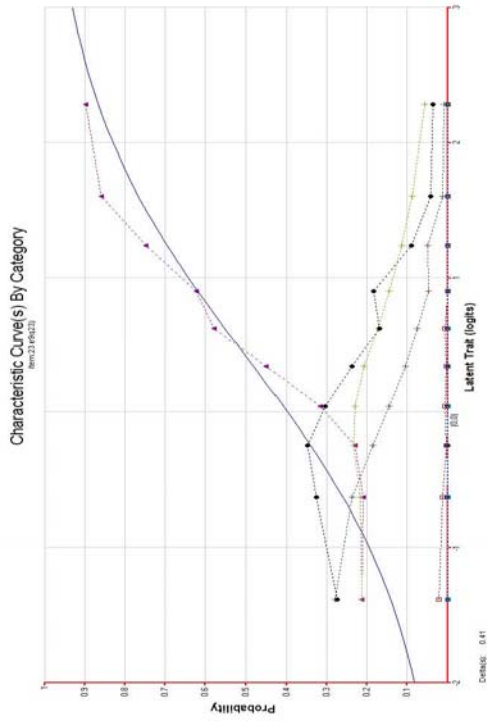
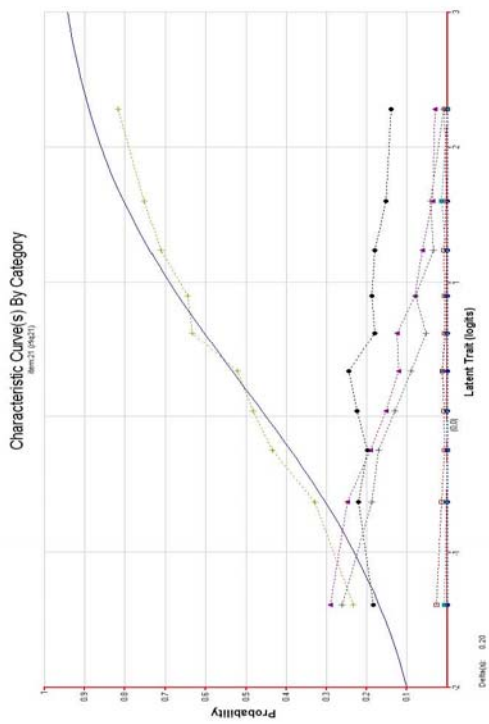
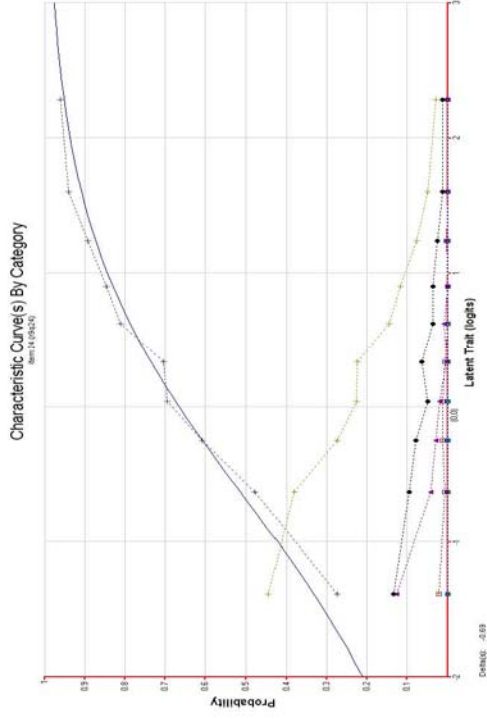
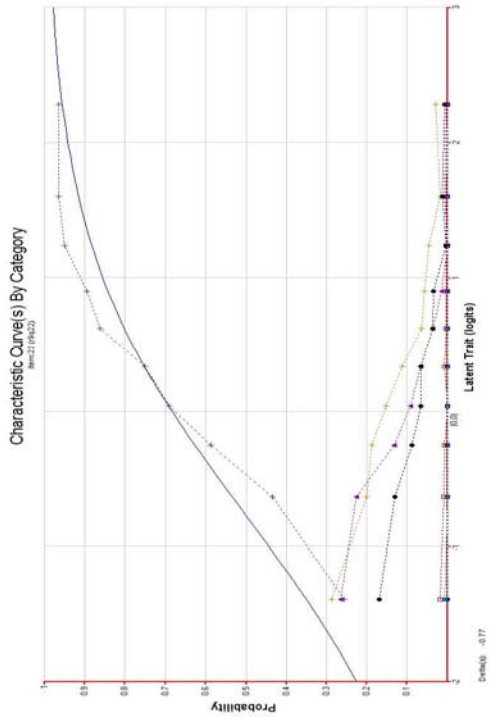


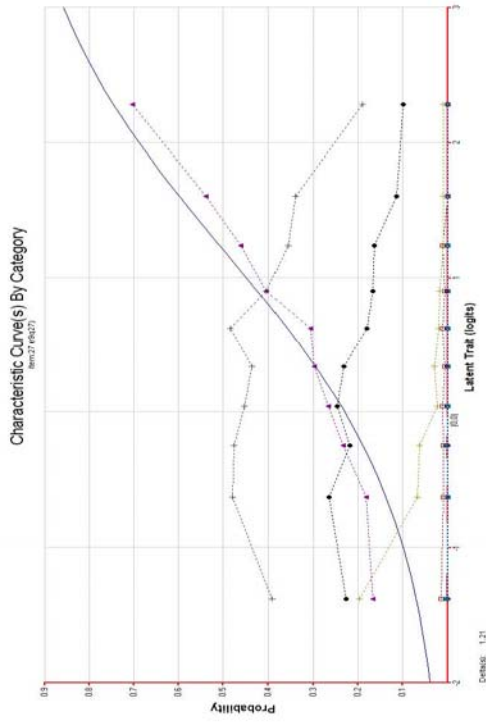
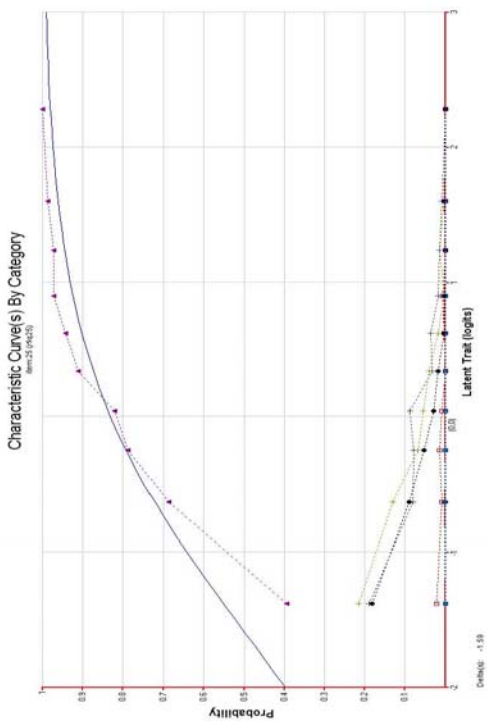
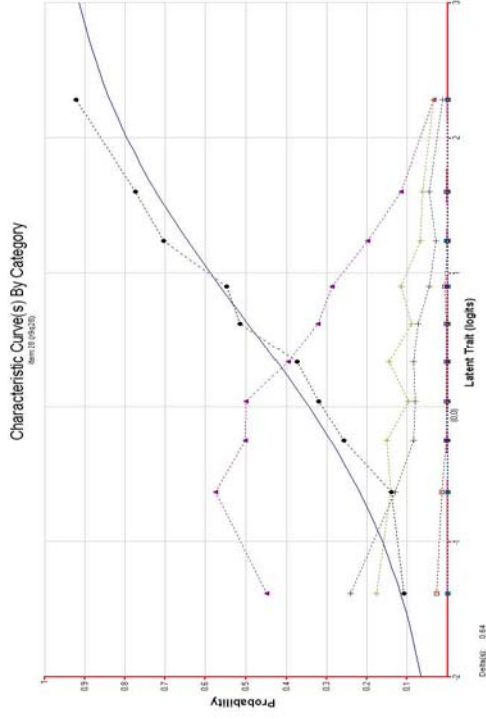
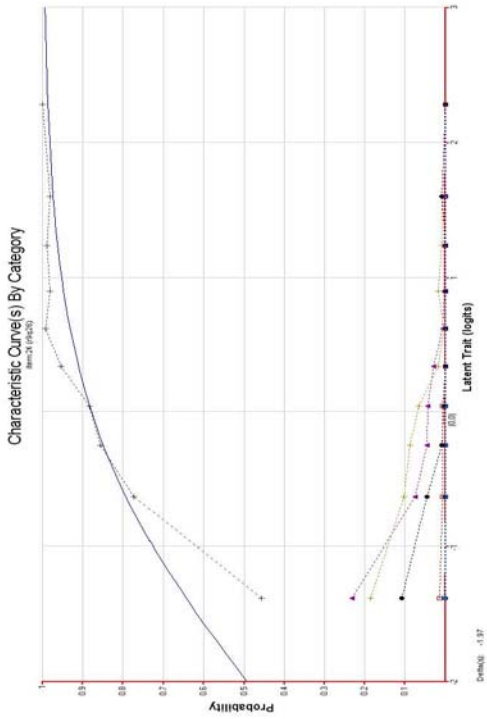




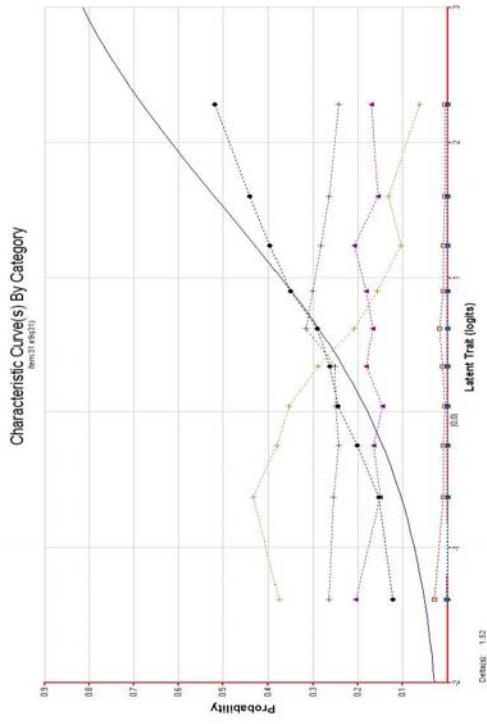
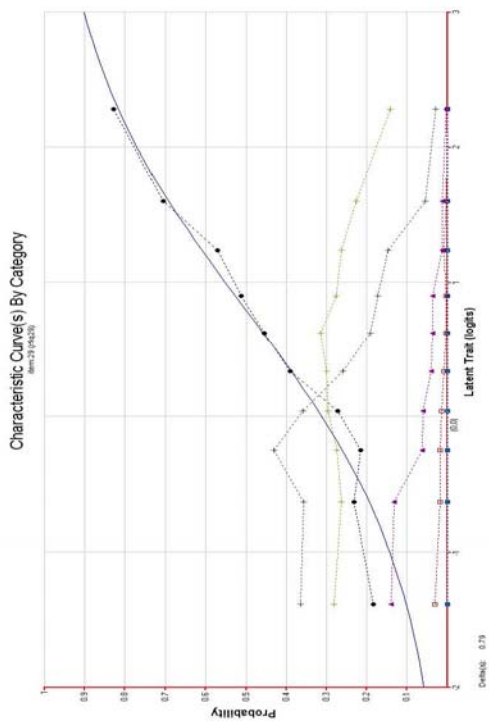
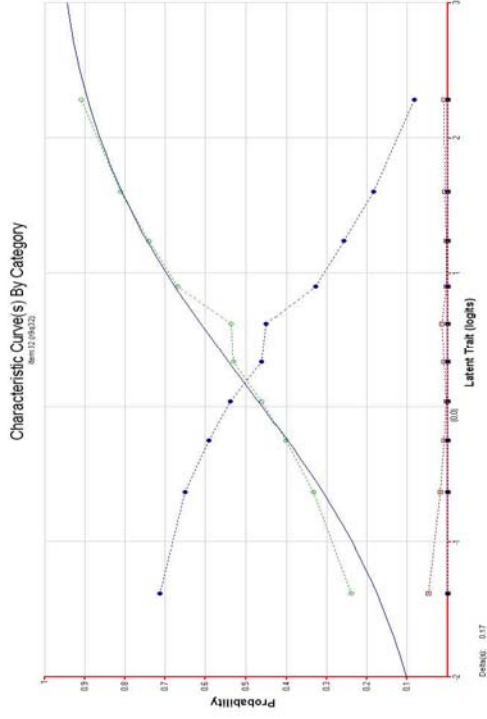
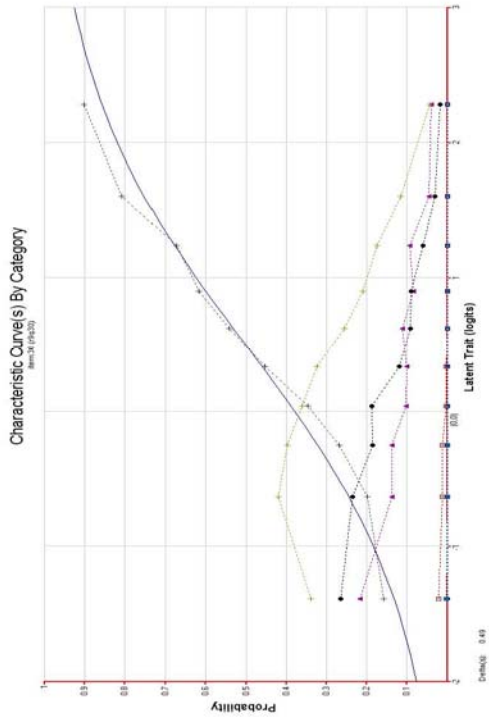


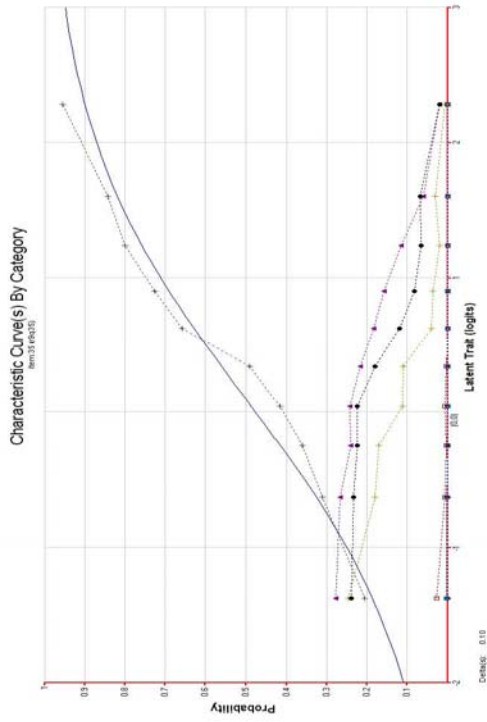
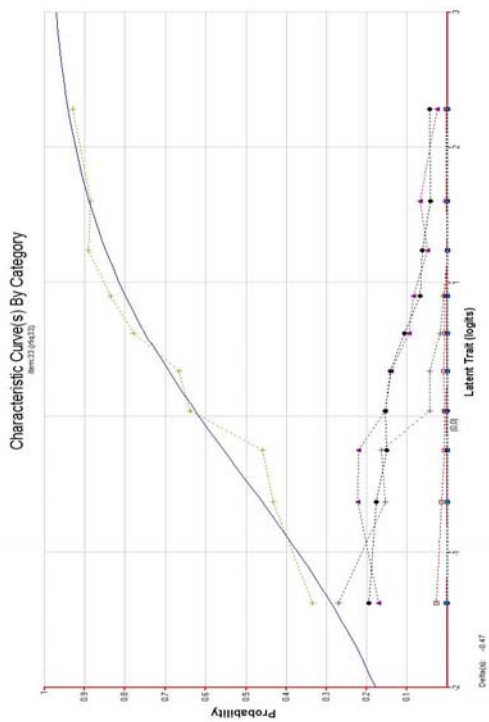
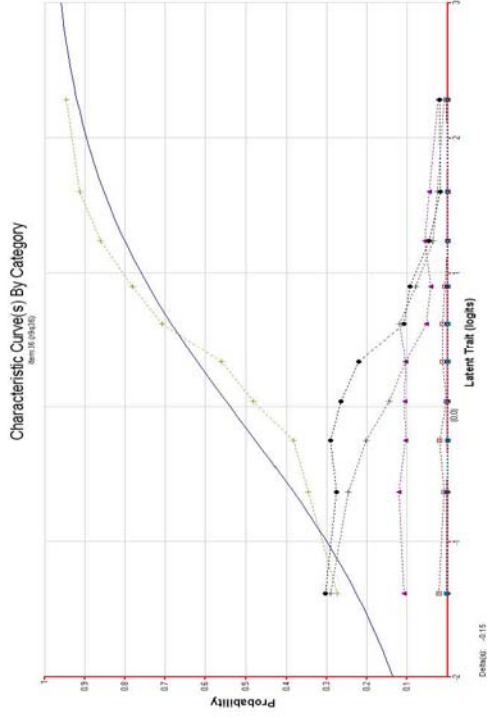
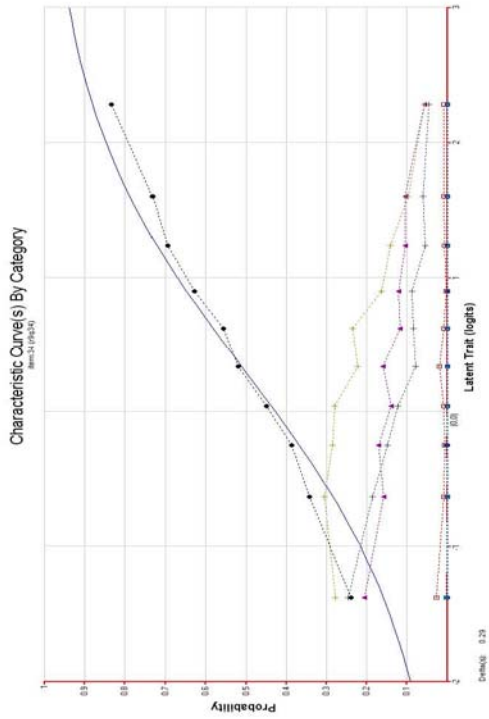


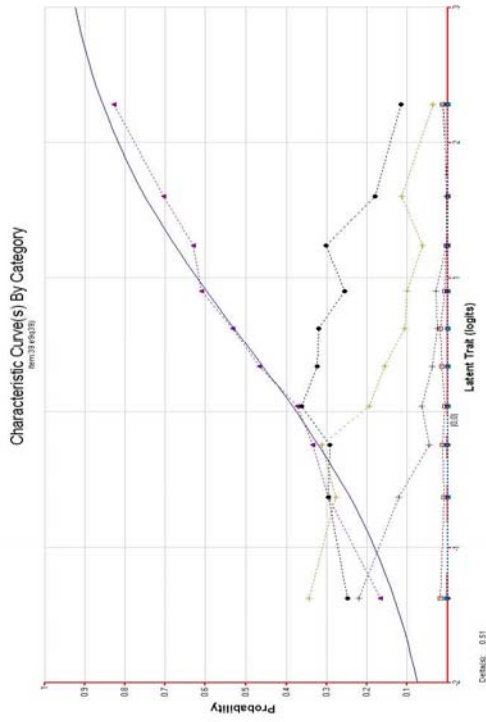
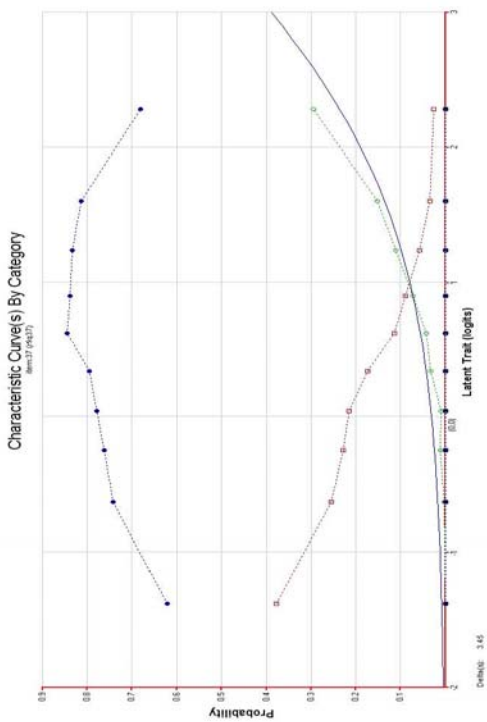
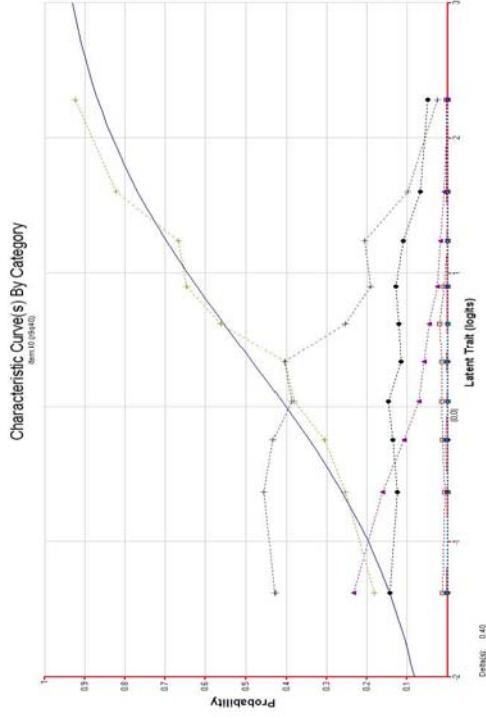
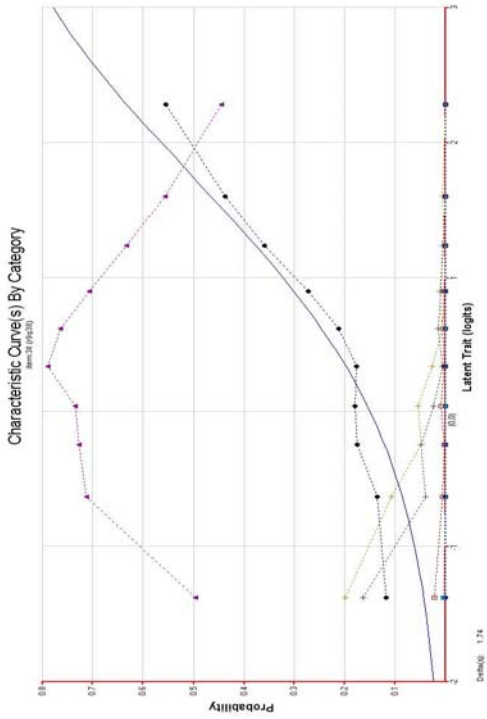


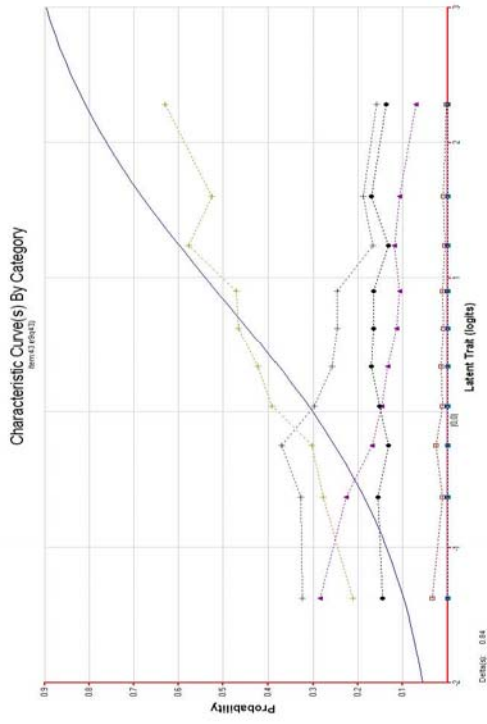
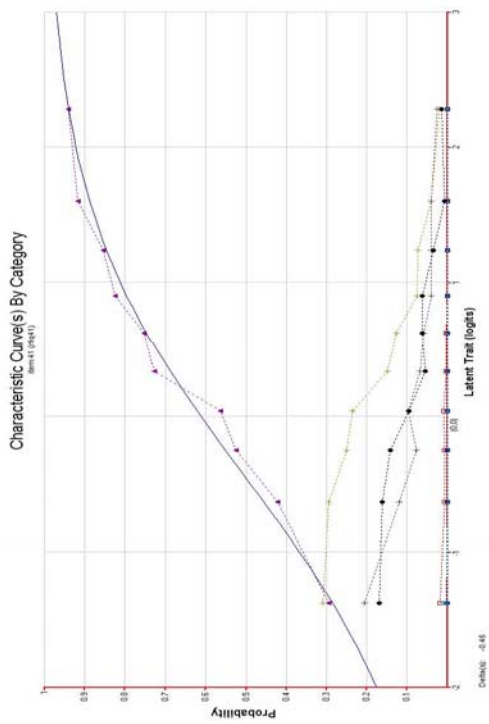
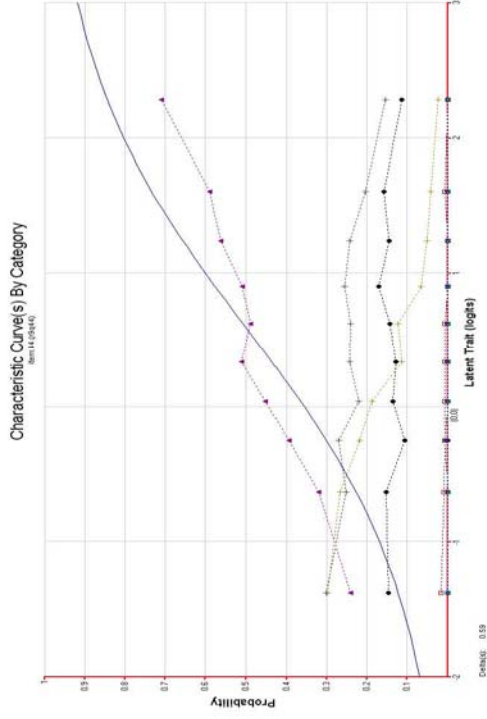
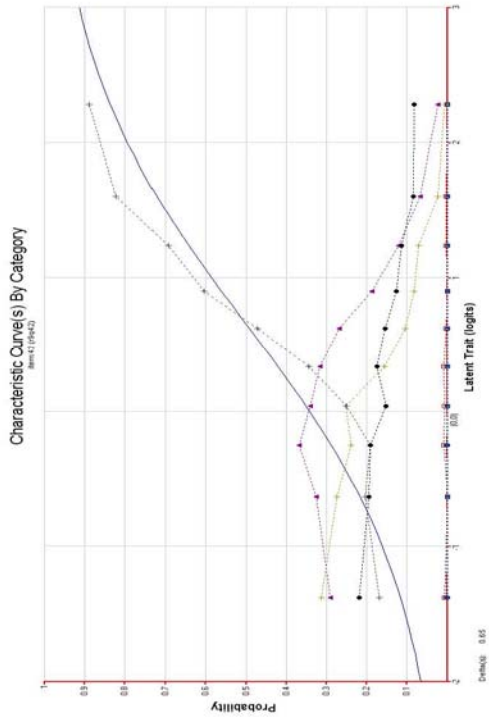


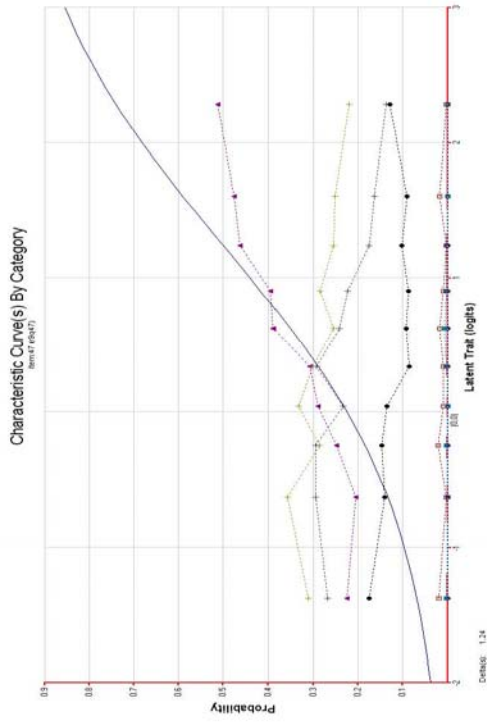
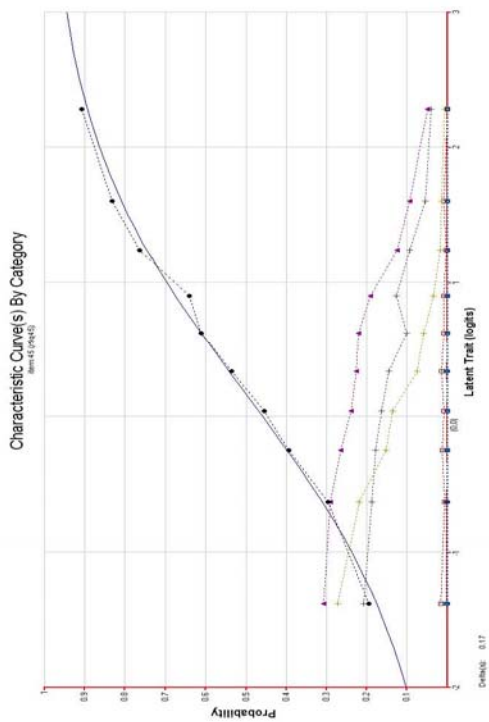
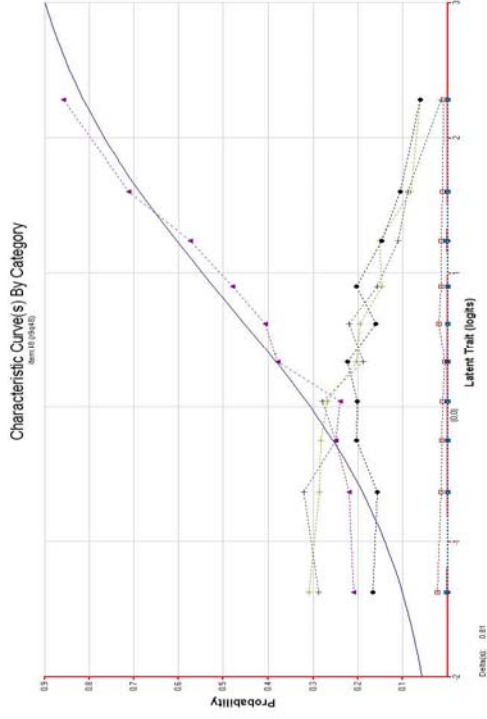
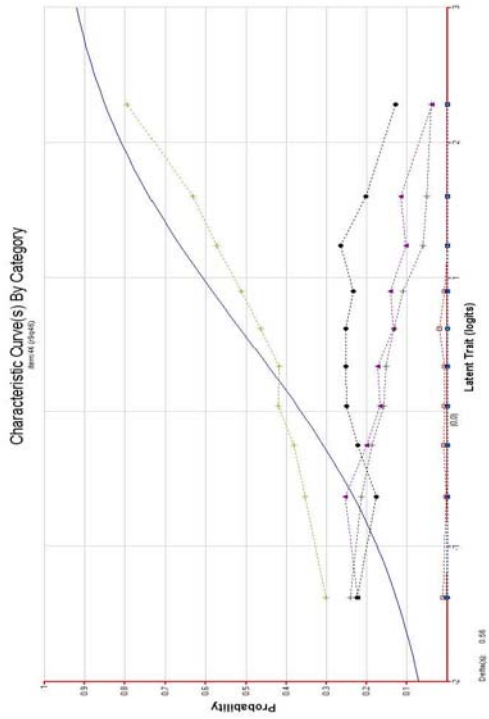


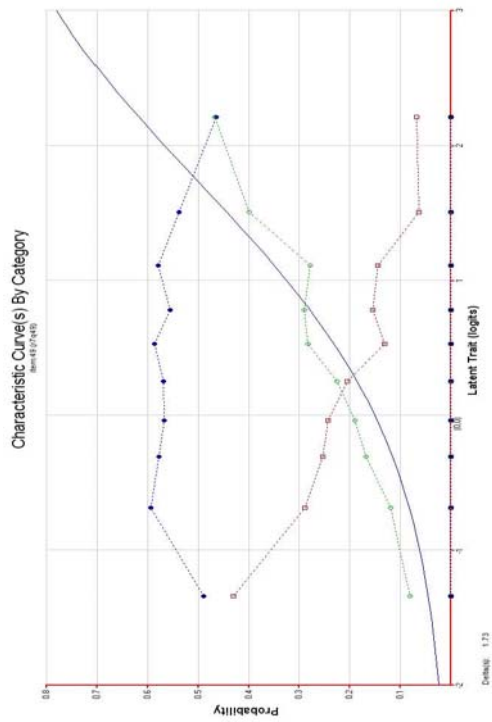
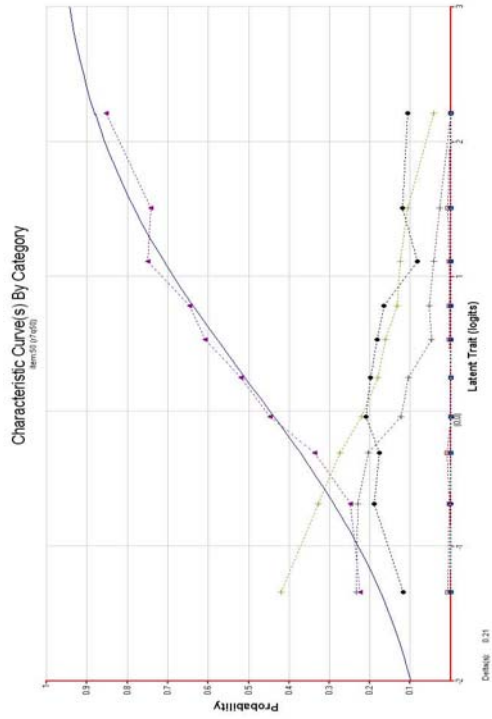




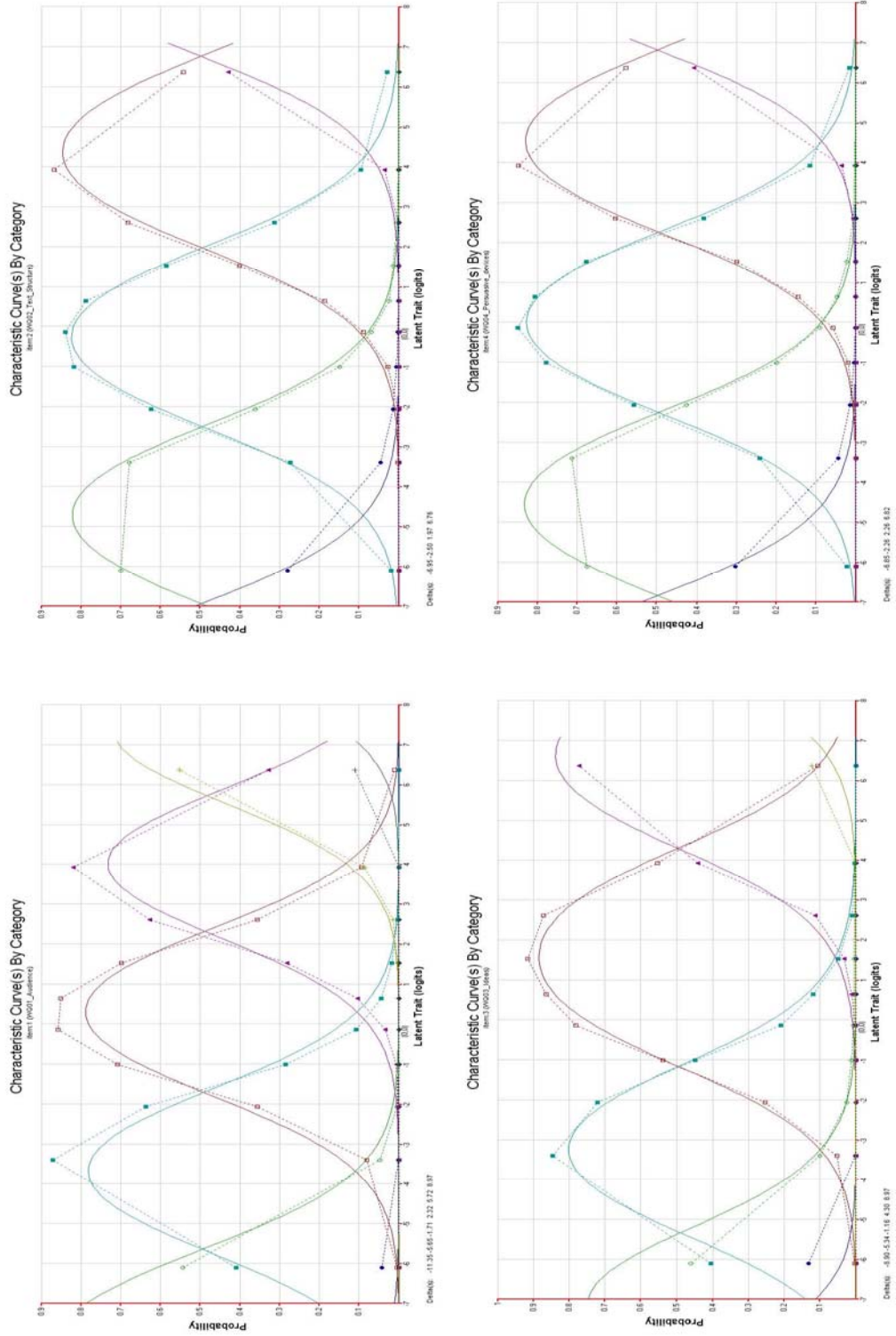


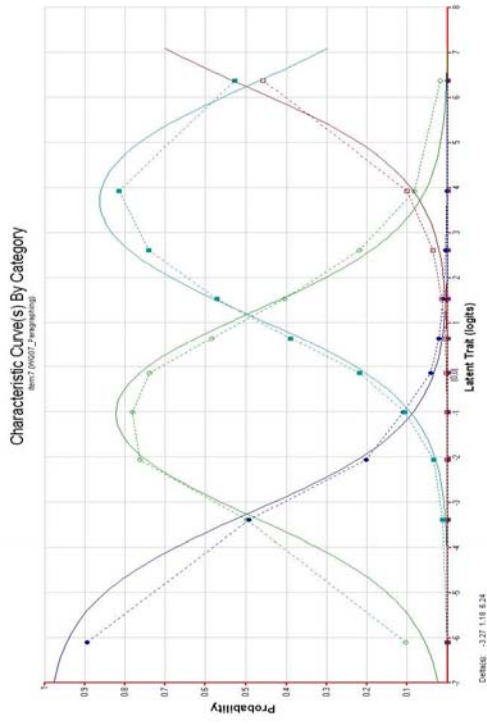
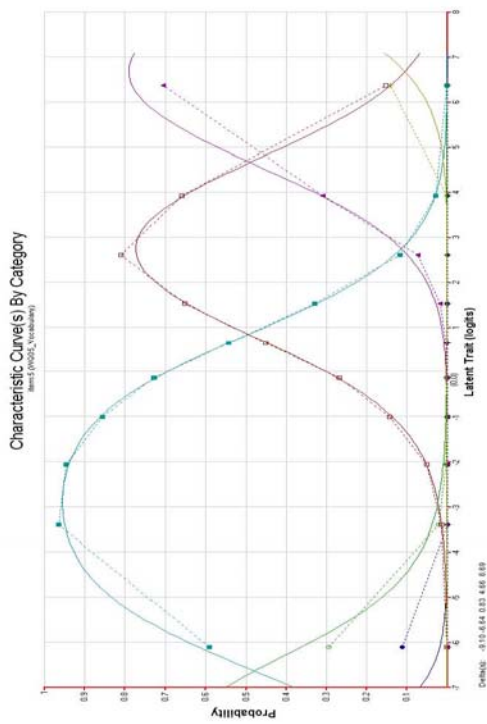
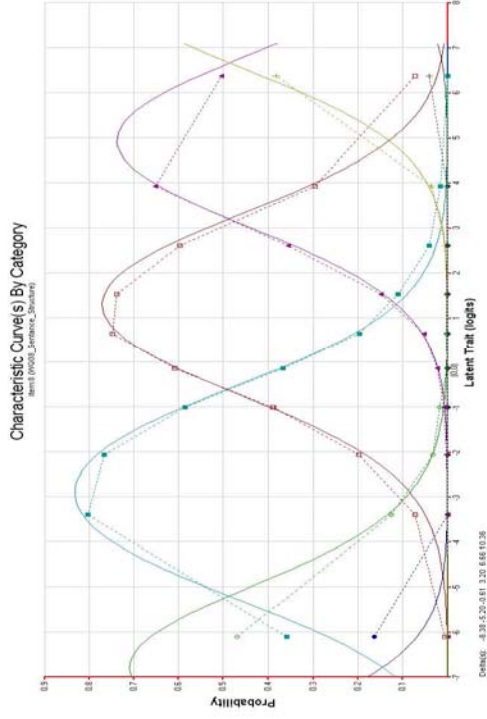
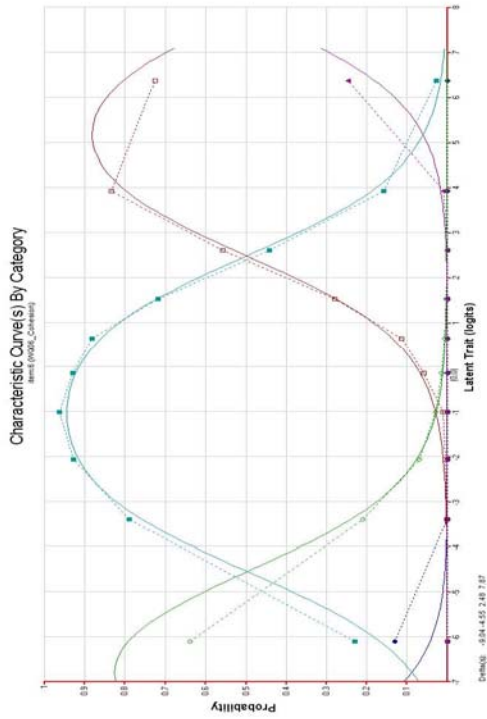




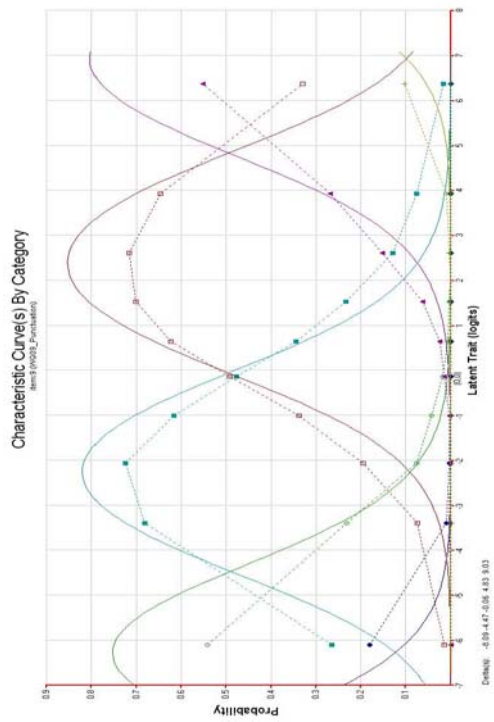
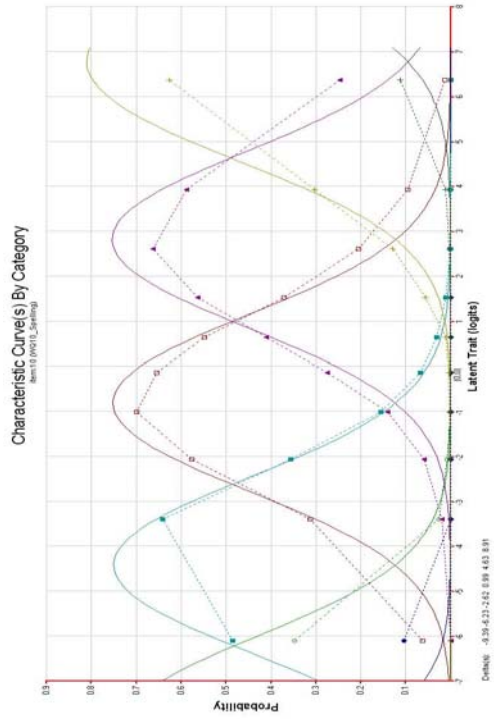


*Year 3, 5, 7 and 9 Writing*

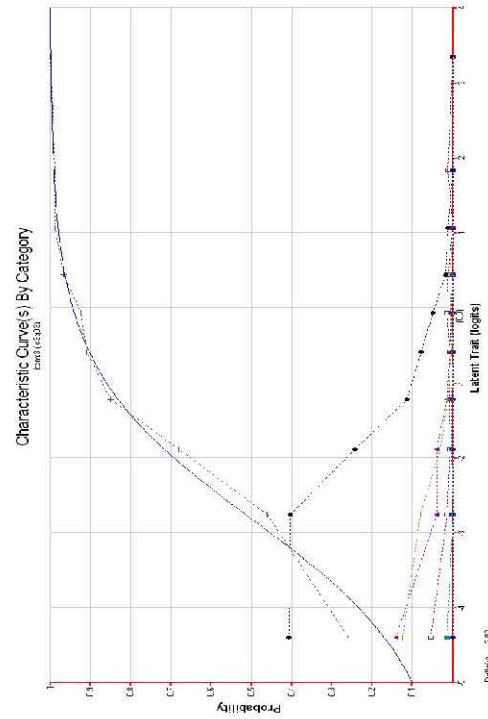
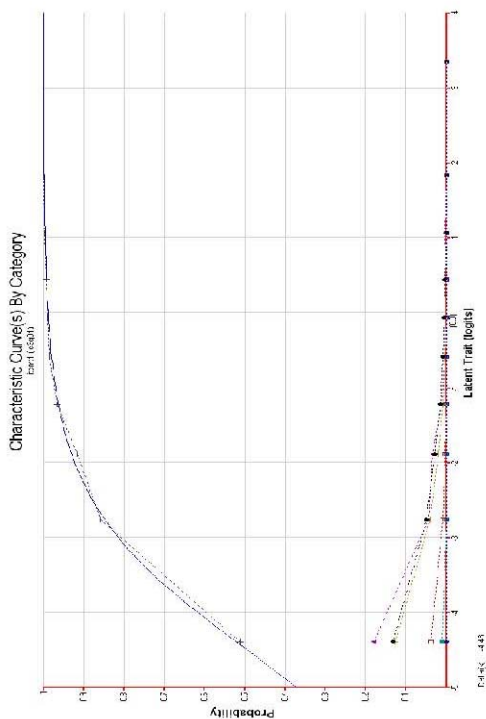
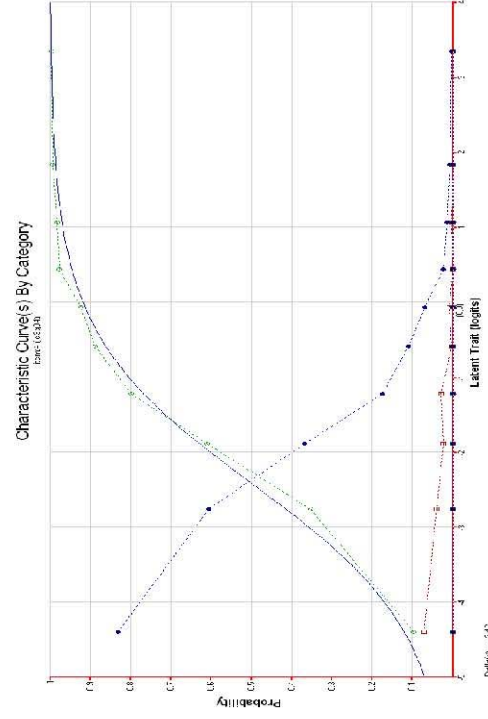
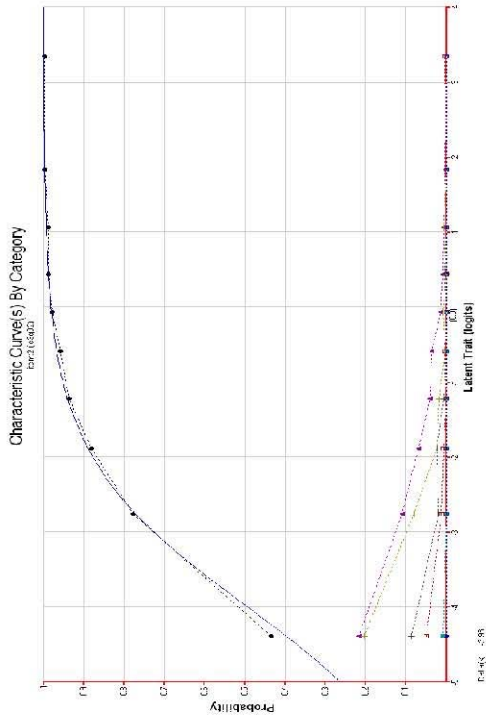


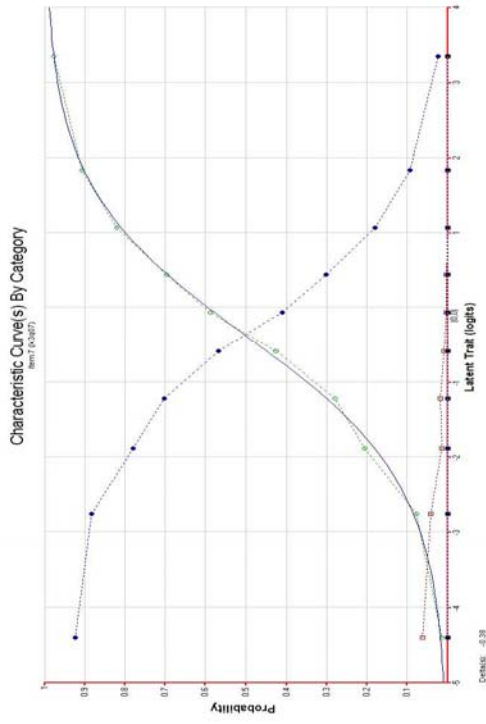
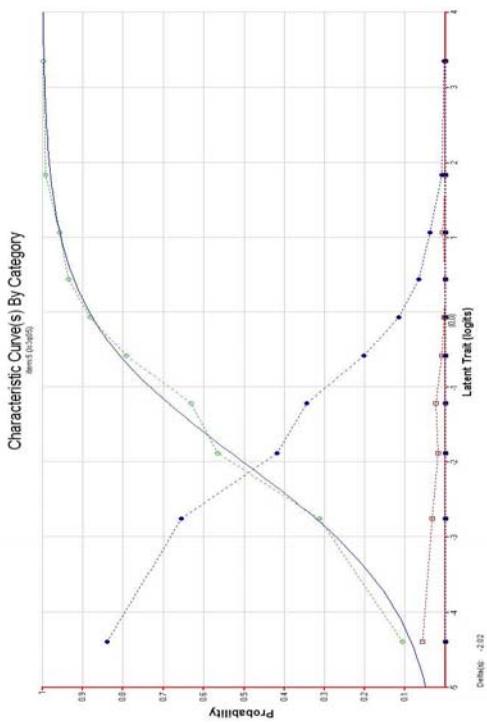
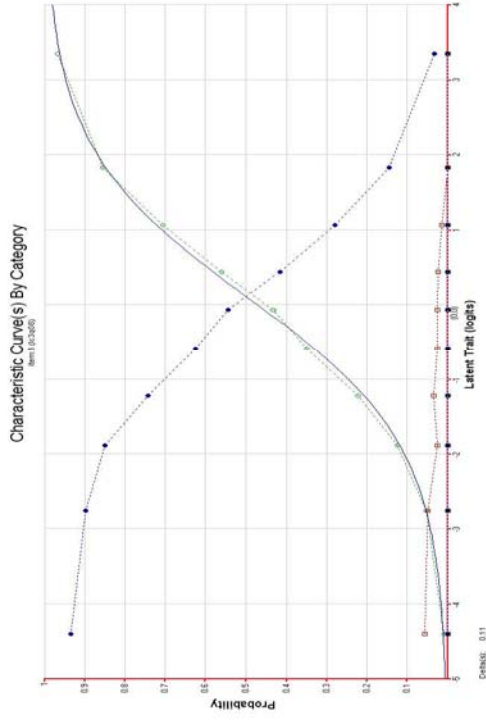
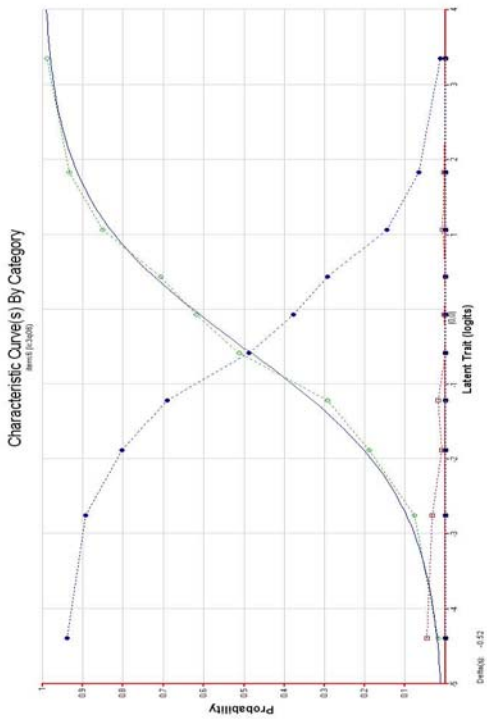


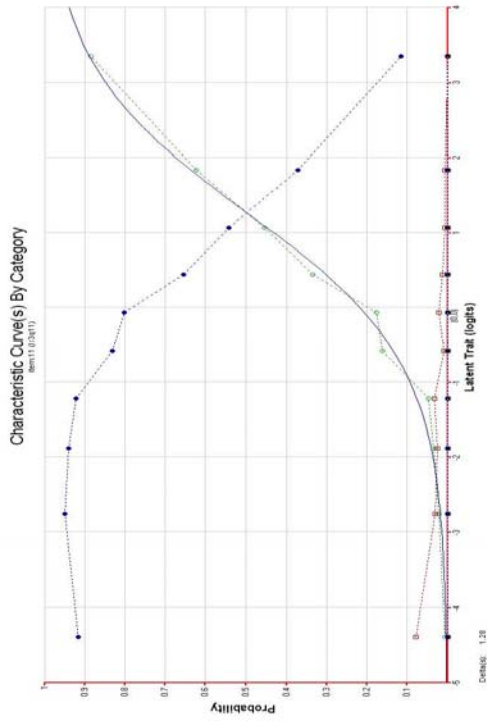
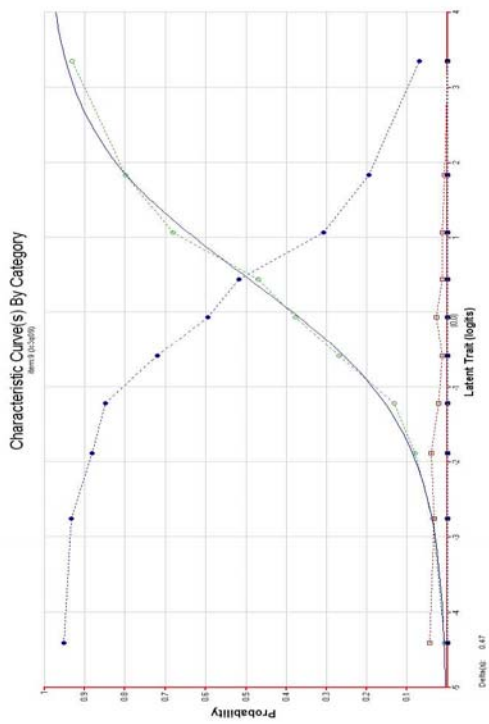
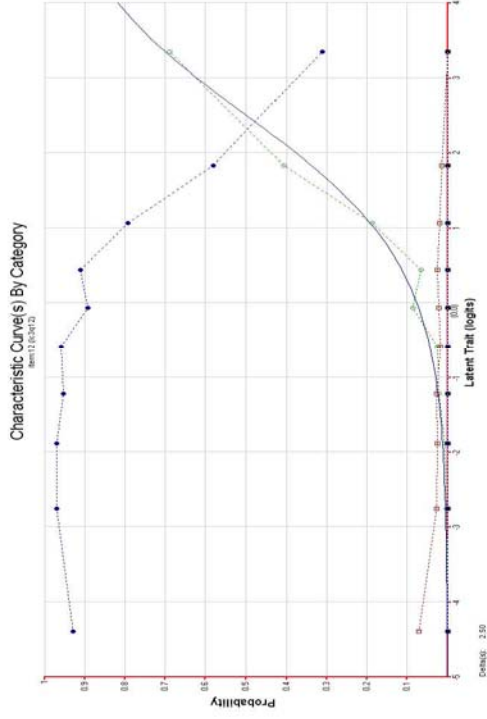
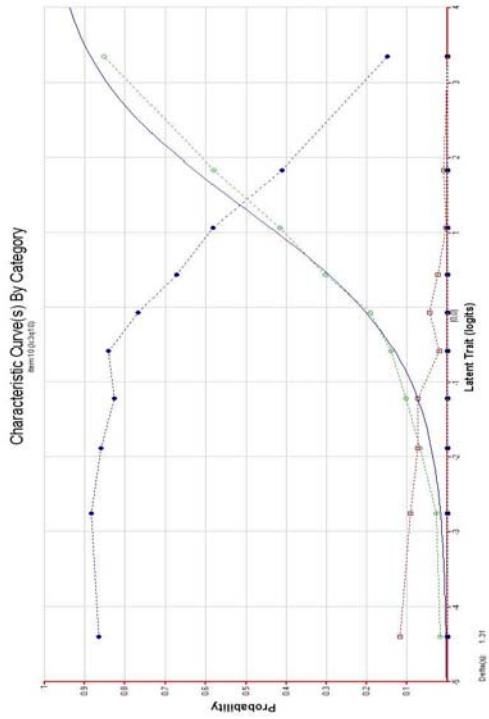


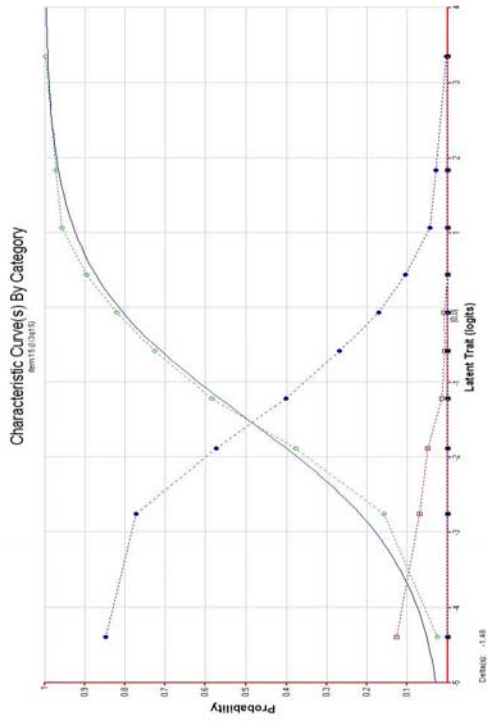
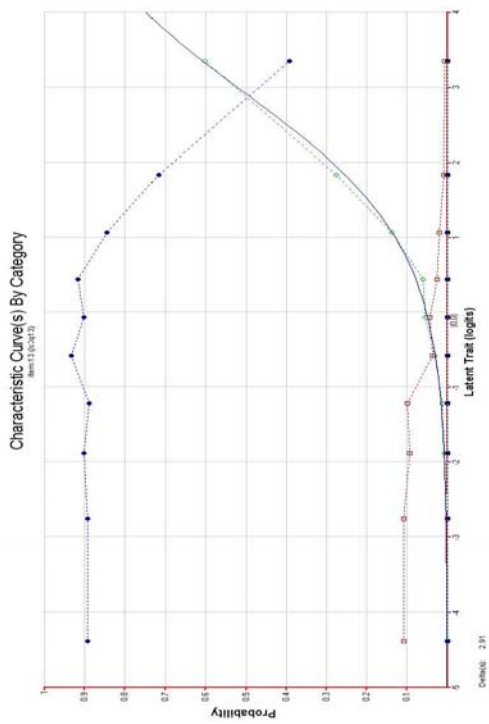
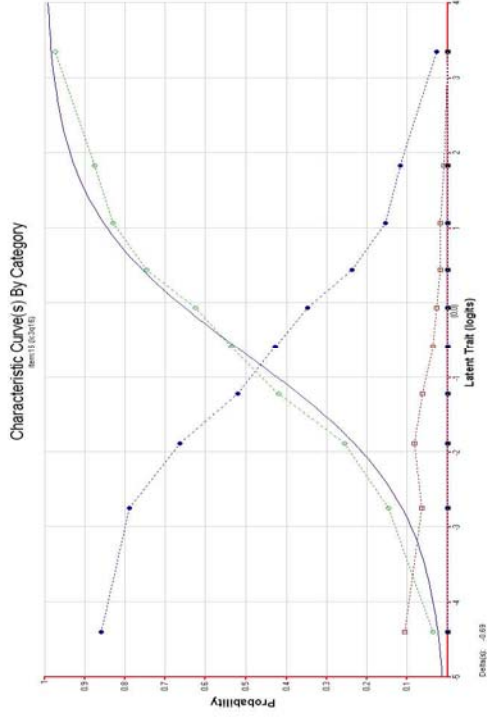
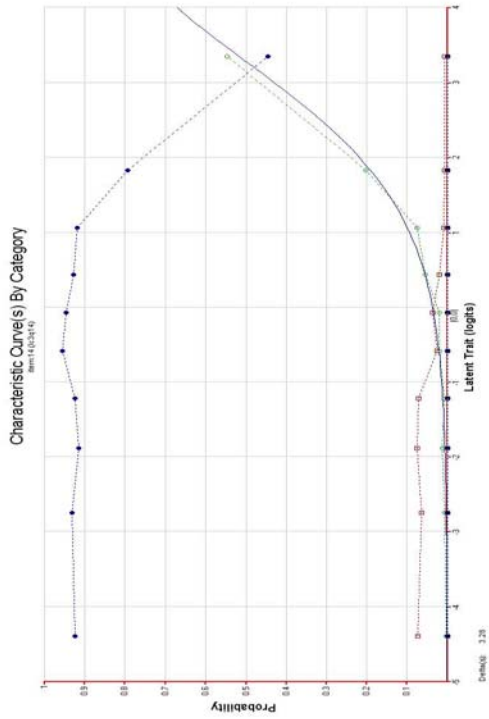


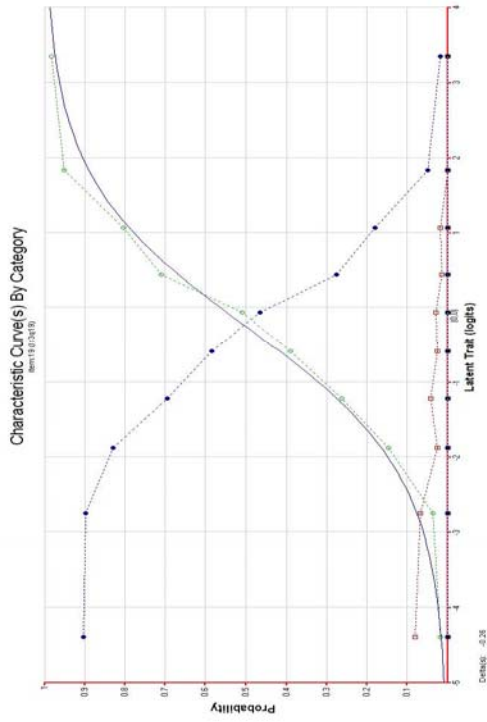
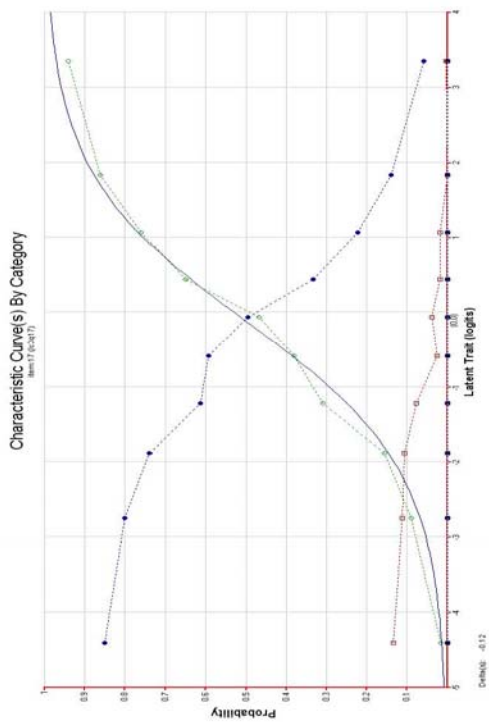
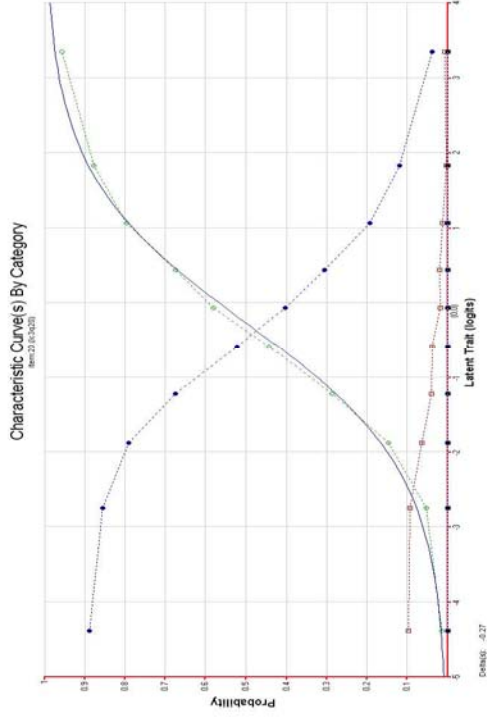
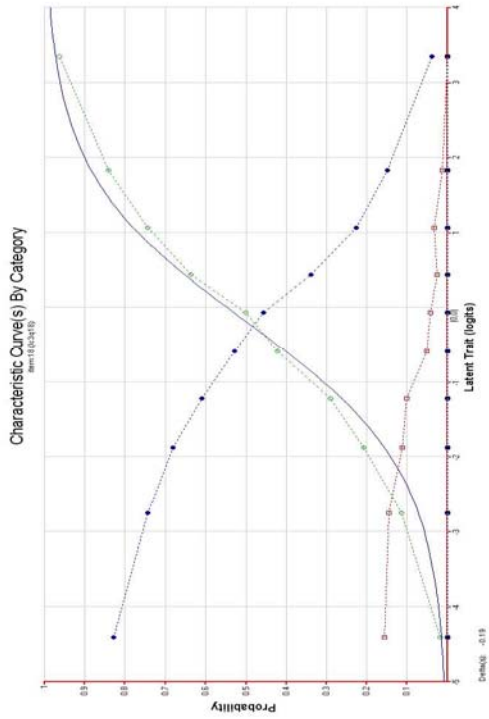
Year 3 Spelling

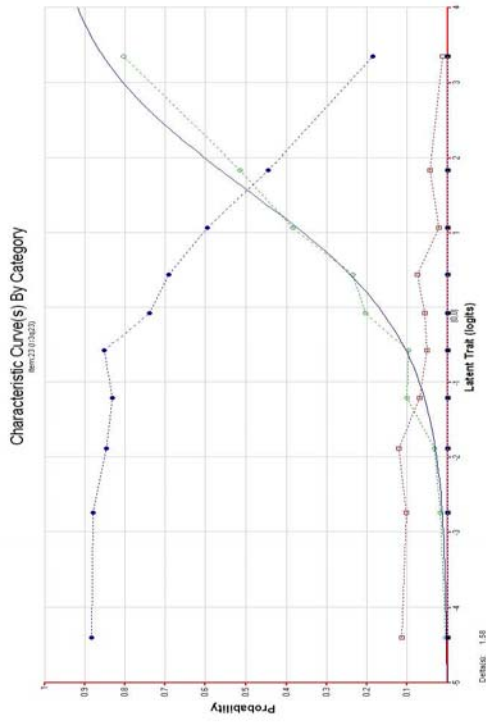
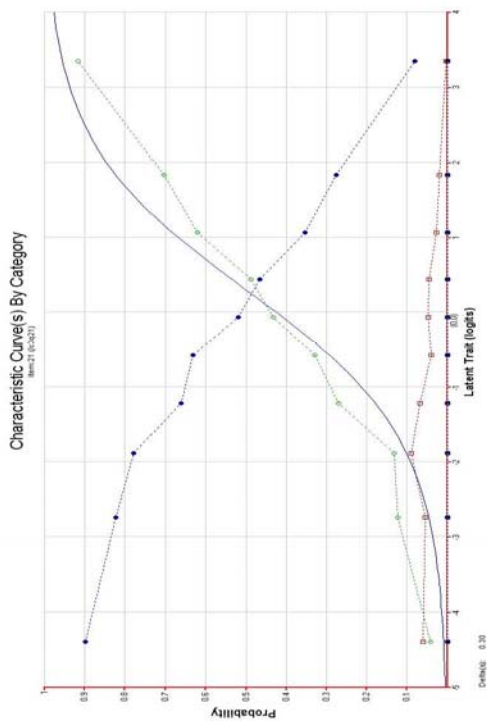
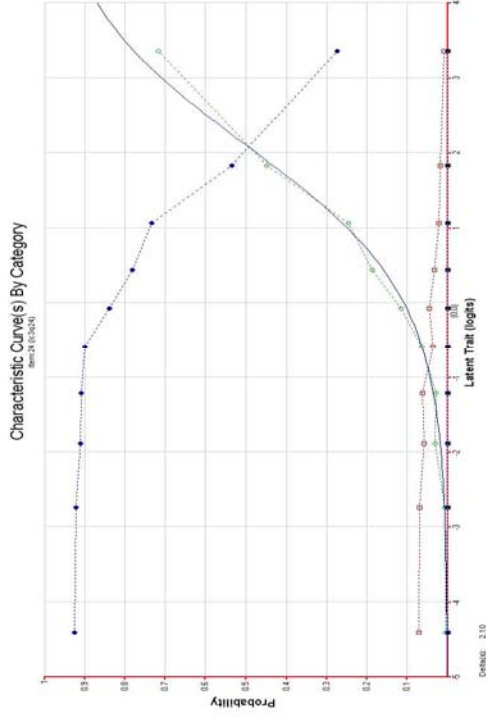
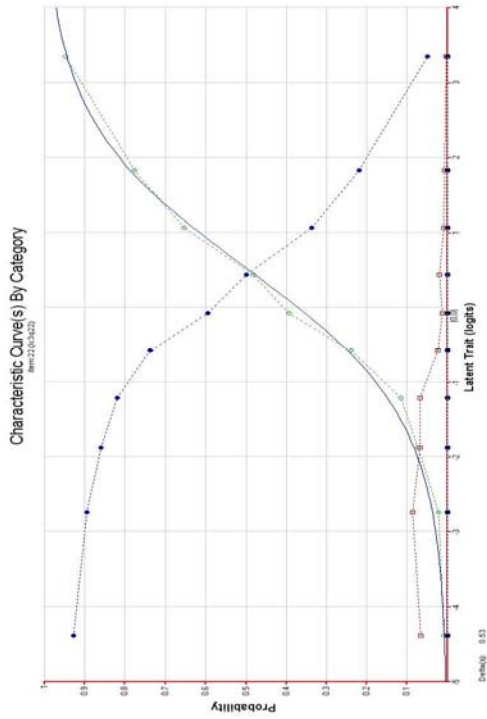


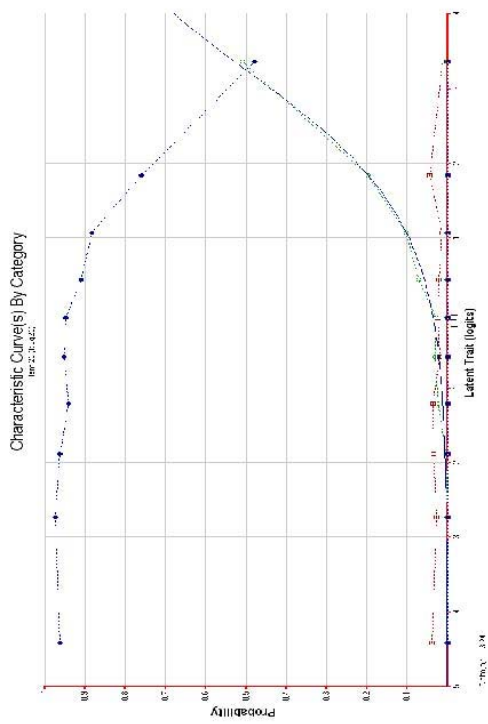






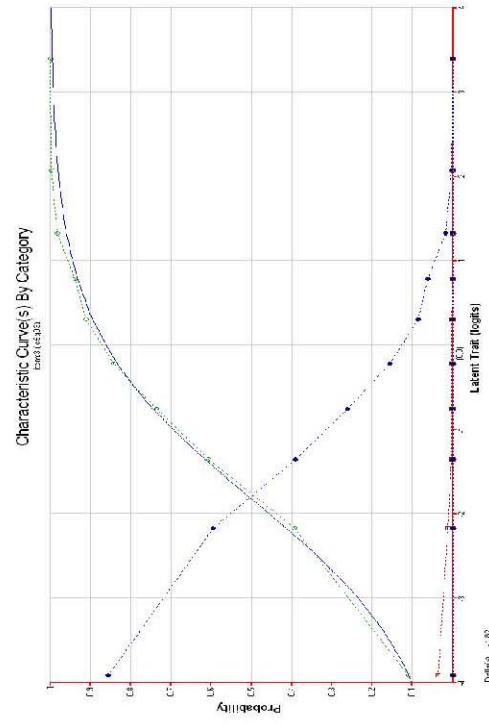
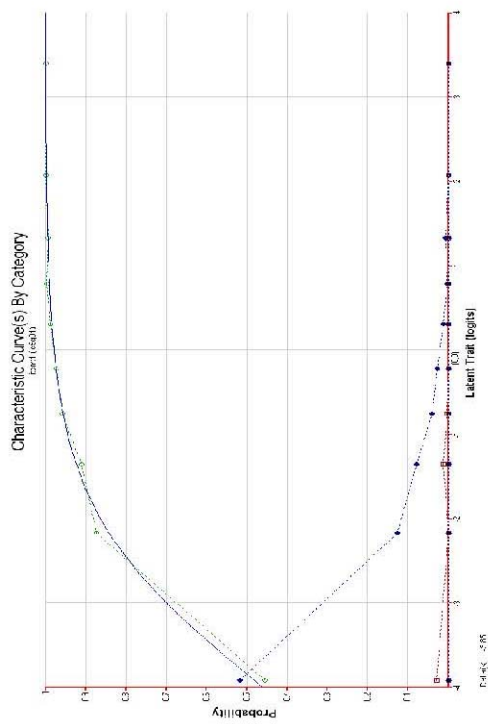
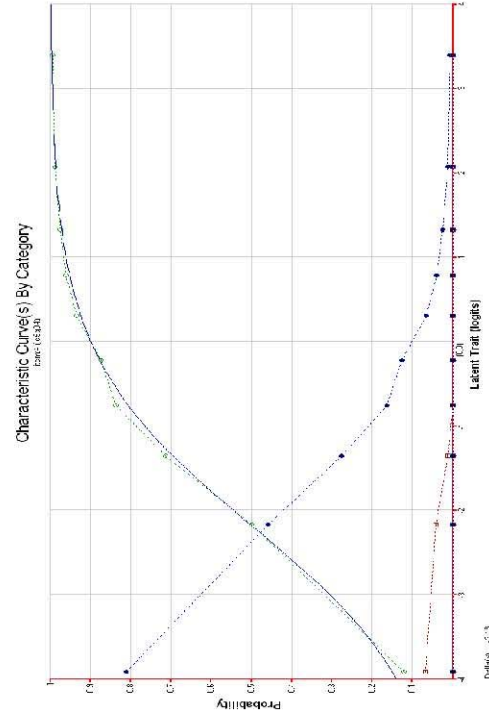
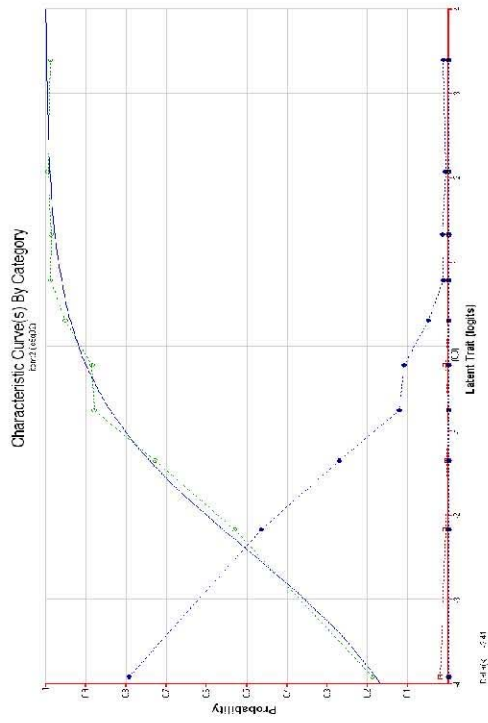


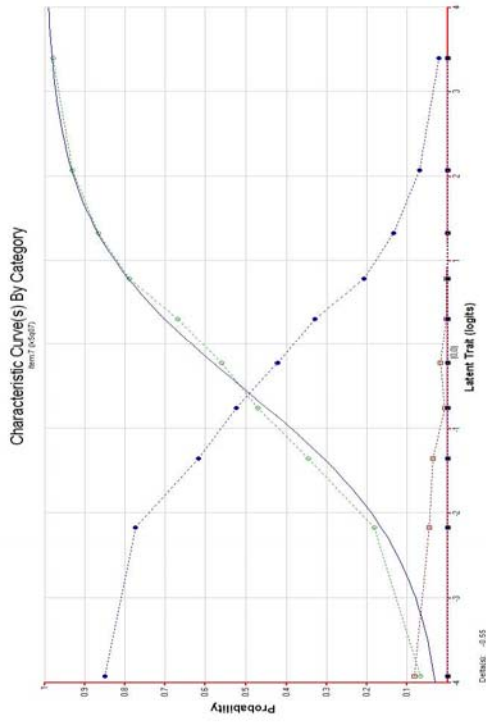
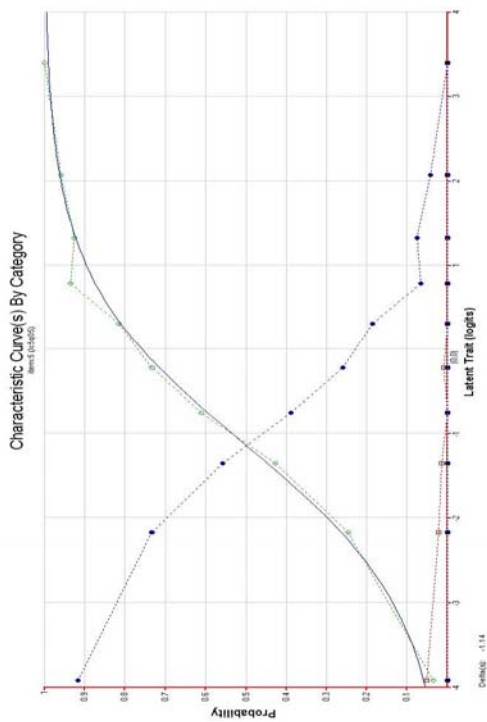
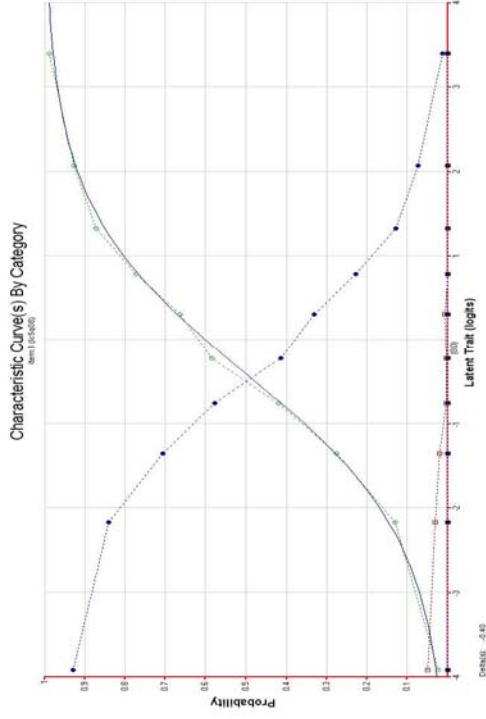
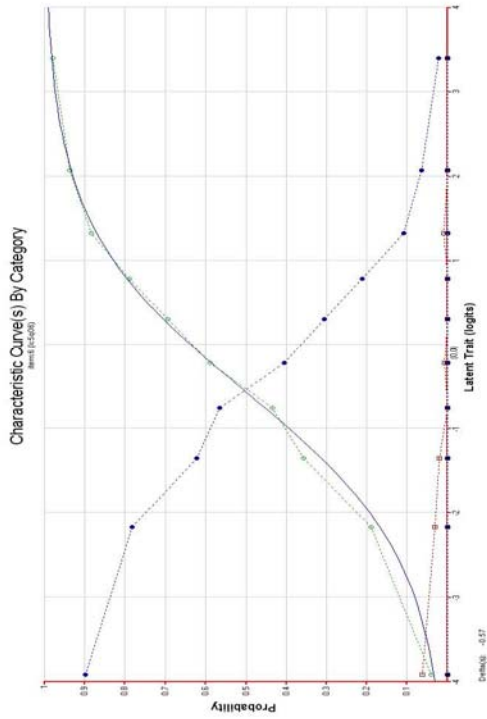


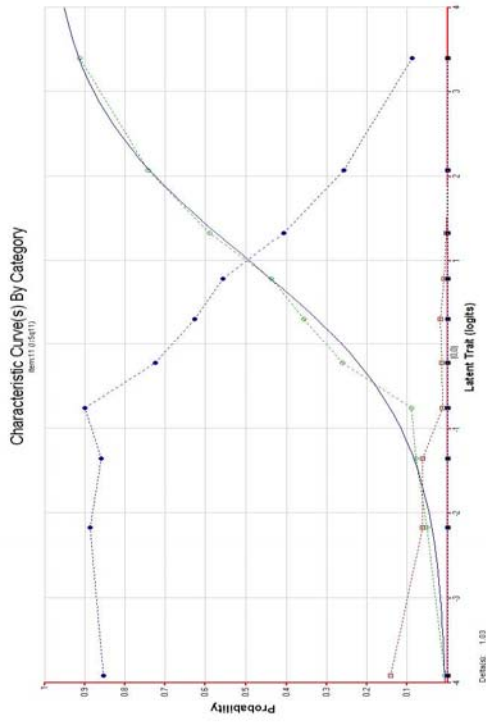
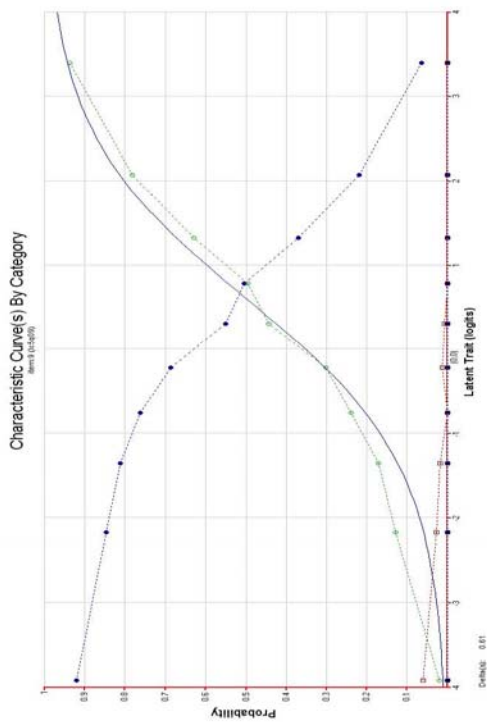
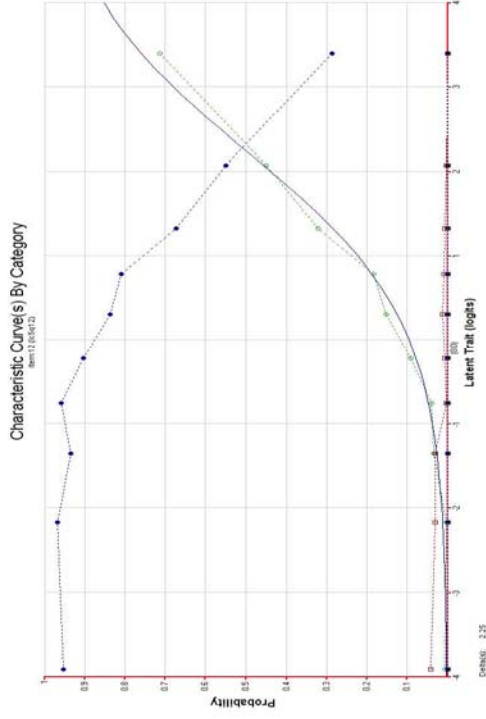
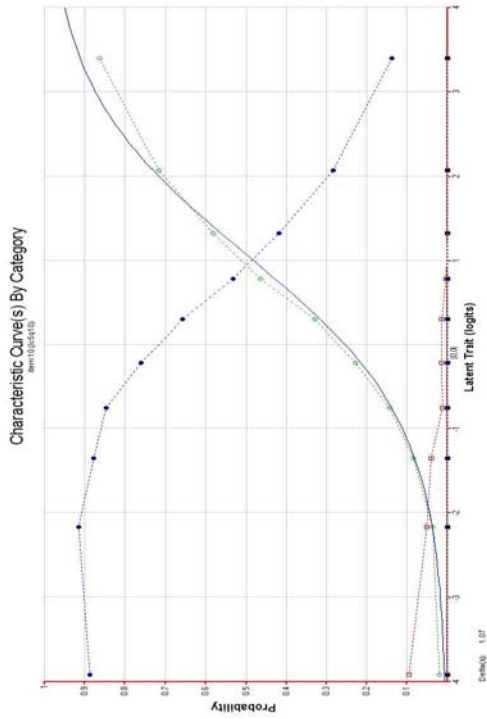


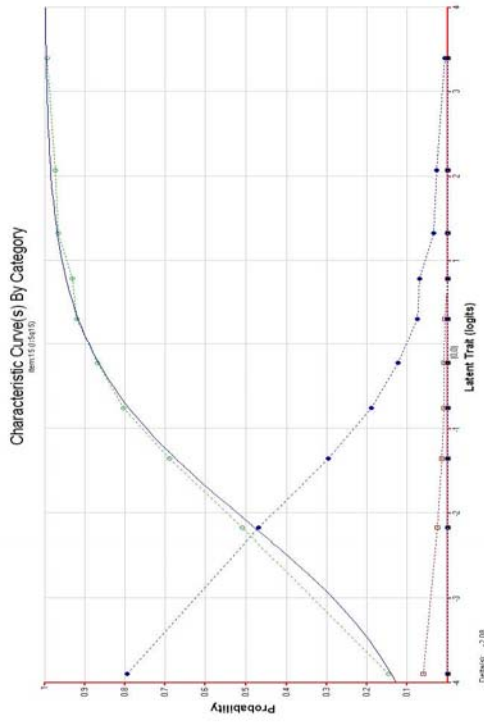
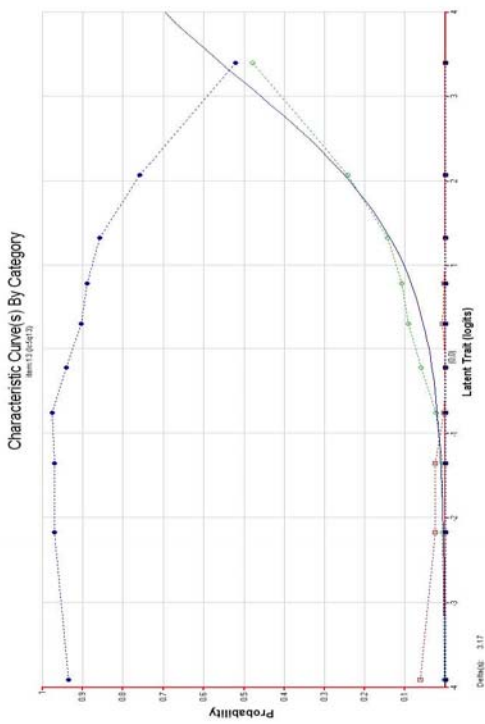
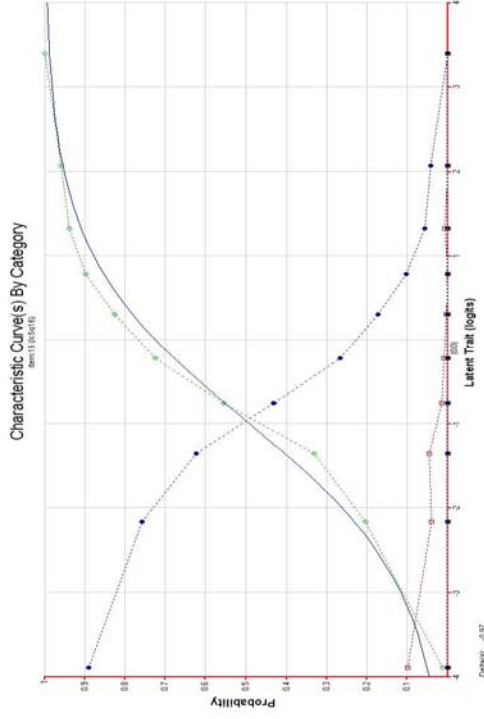
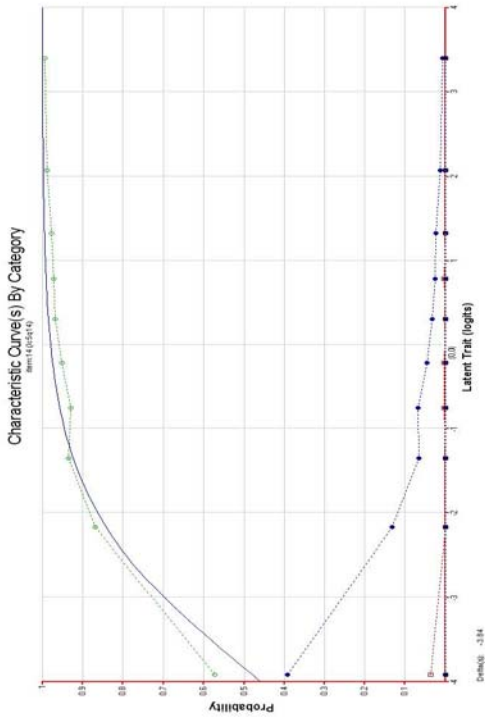


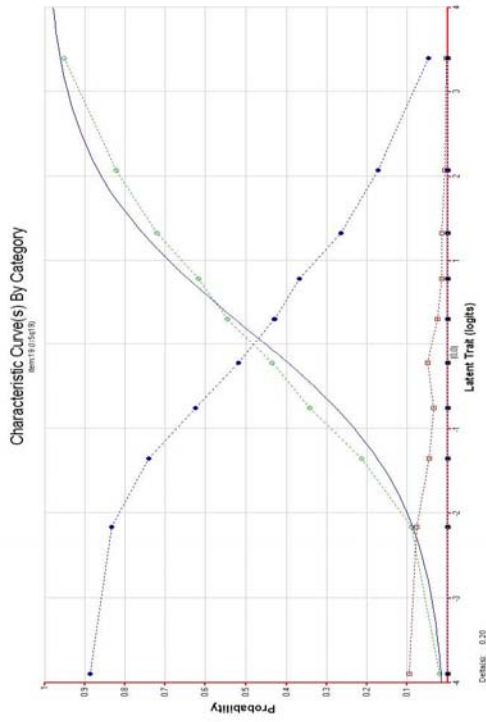
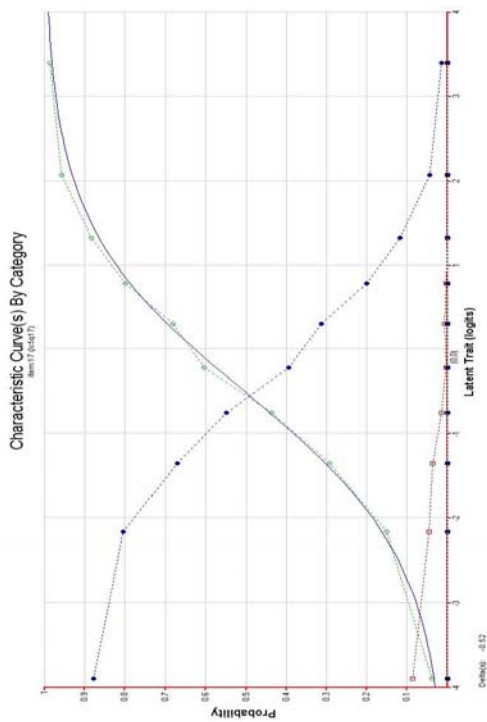
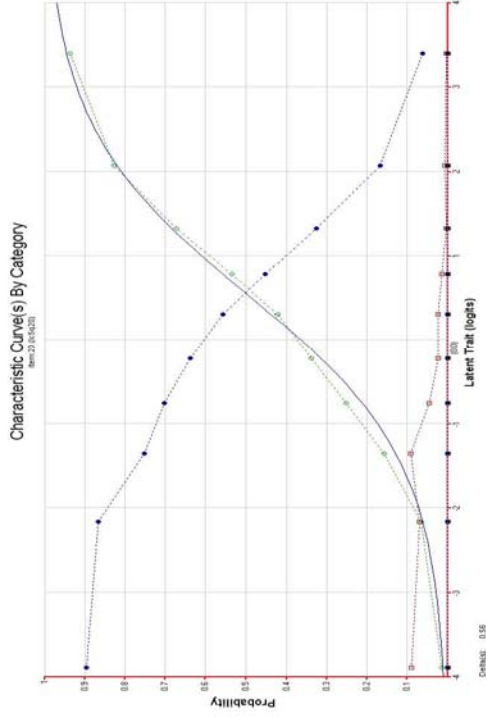
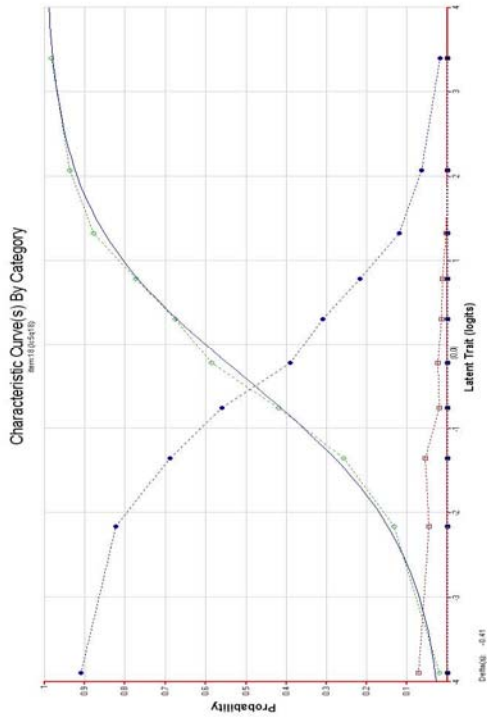
Year 5 Spelling

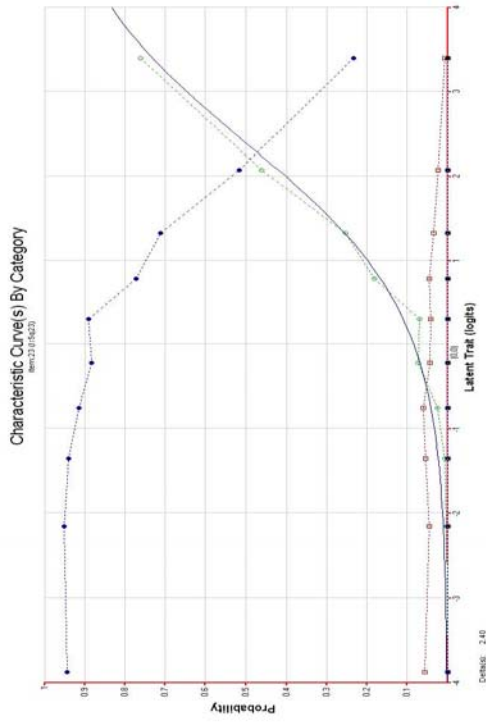
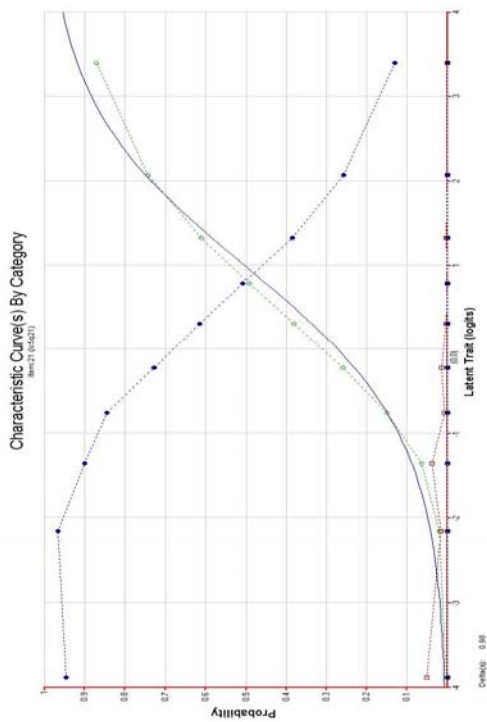
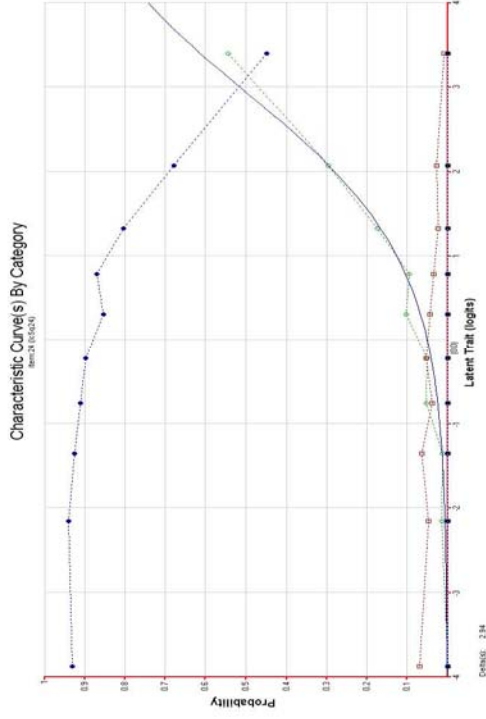
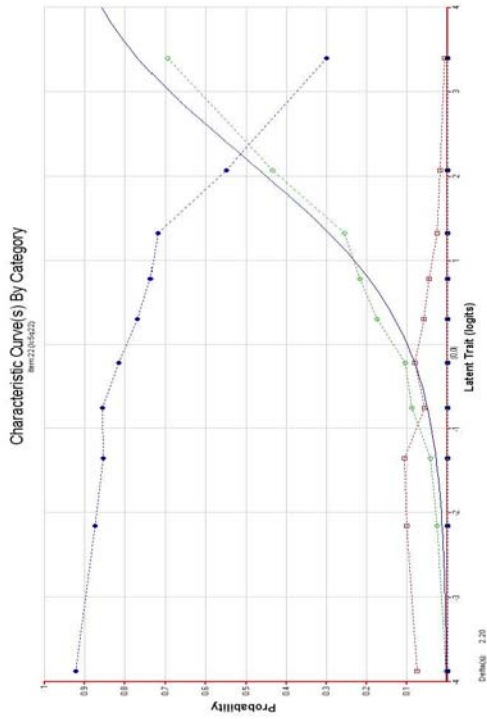


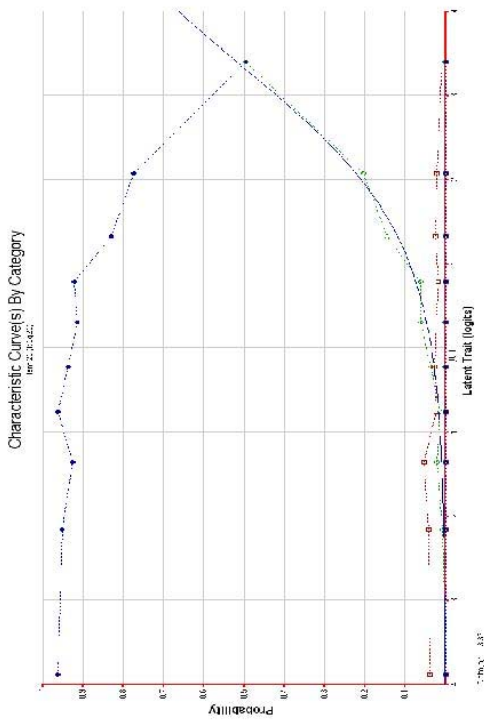




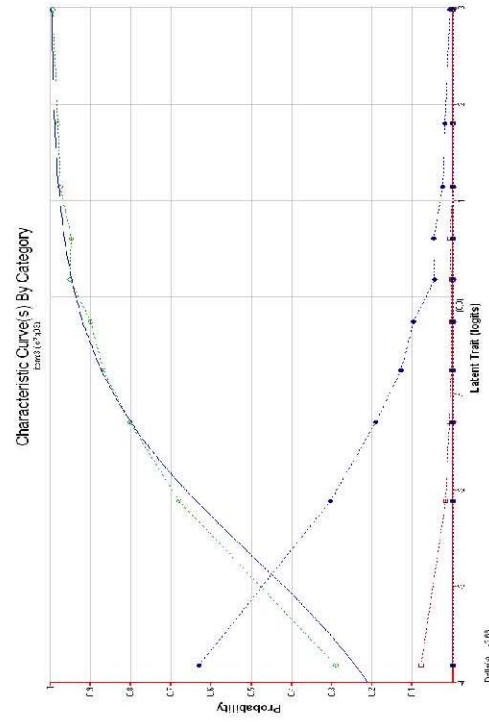
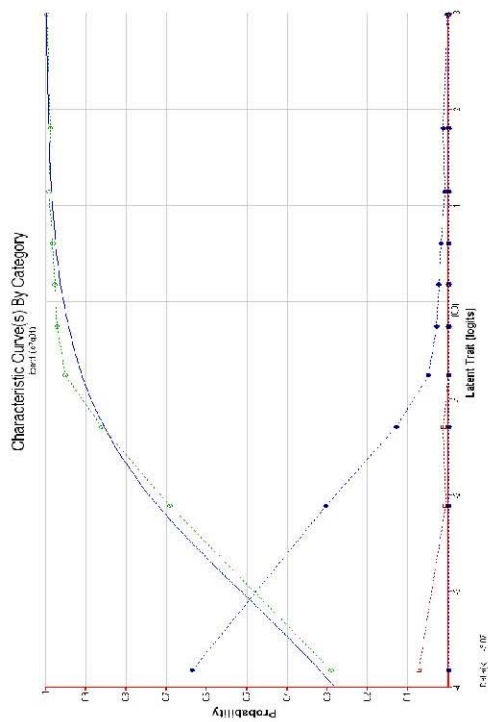
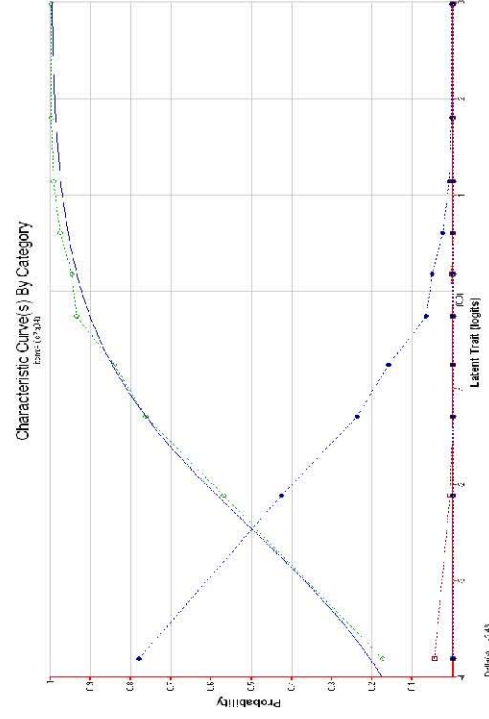
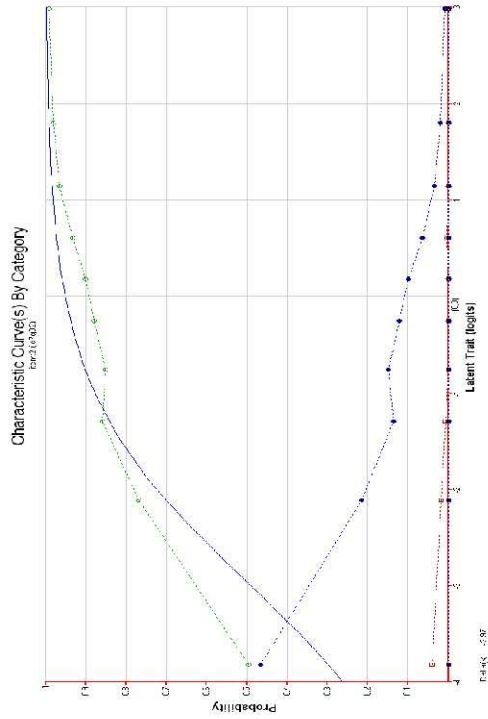




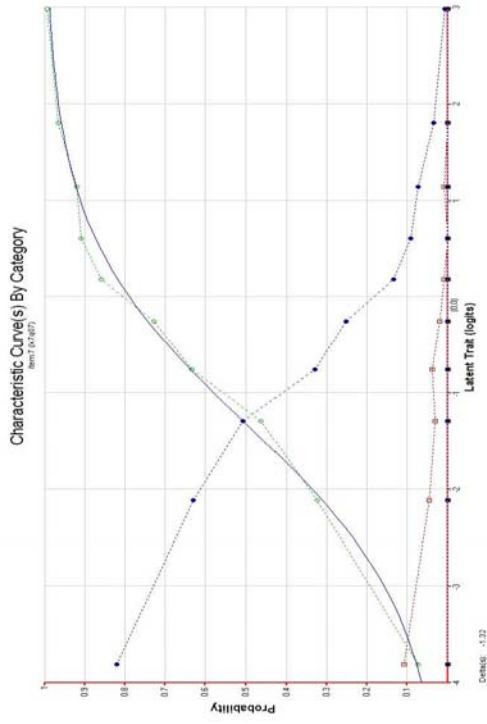
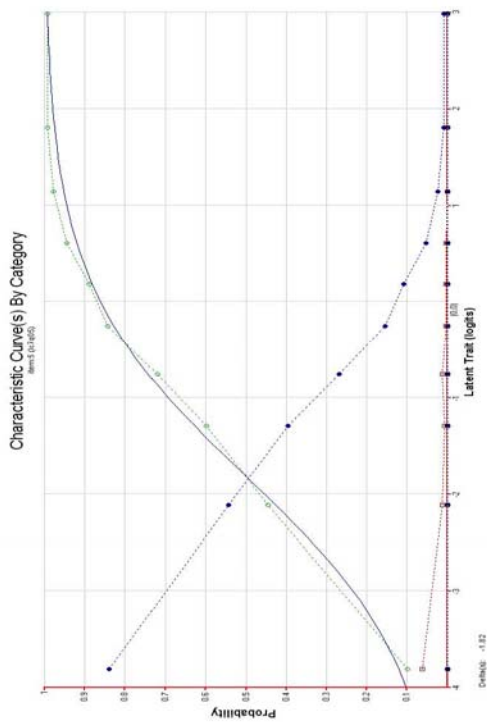
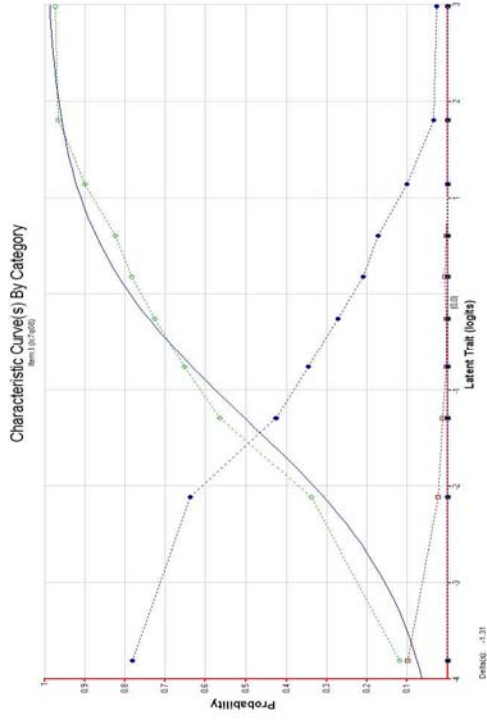
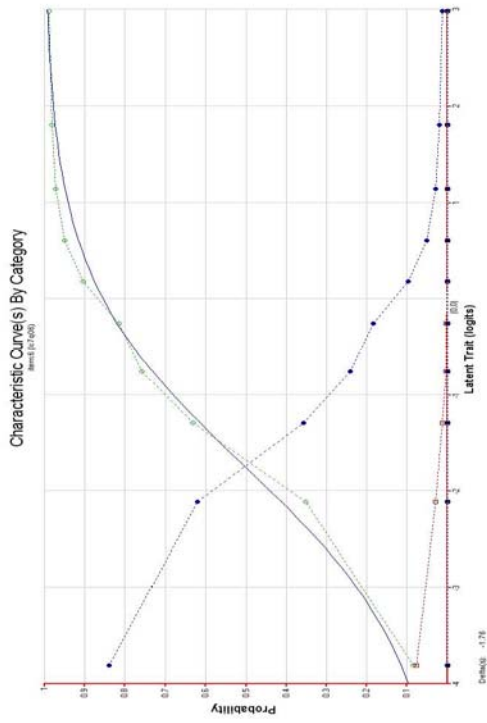


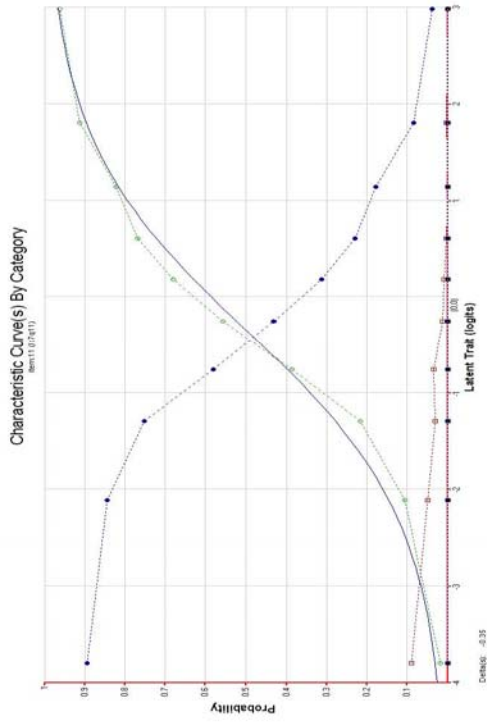
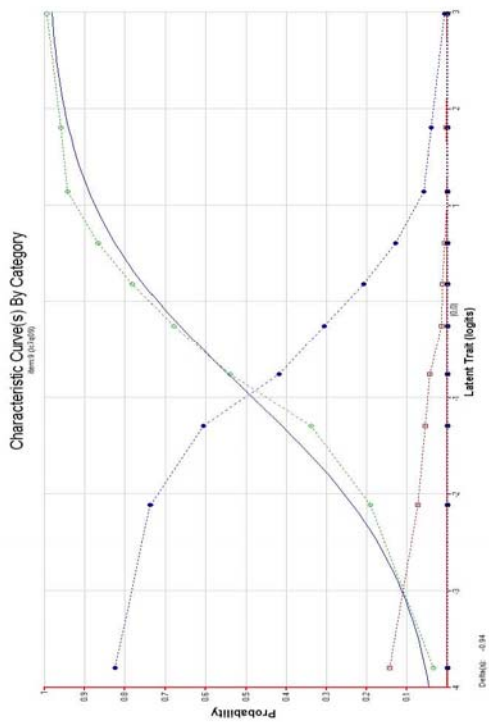
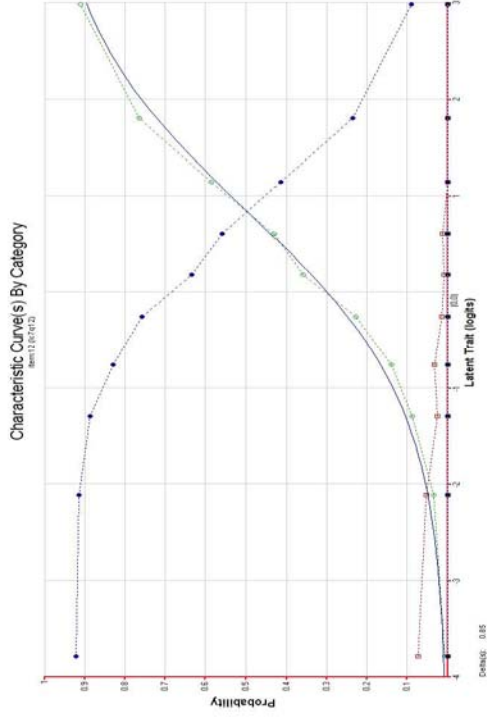
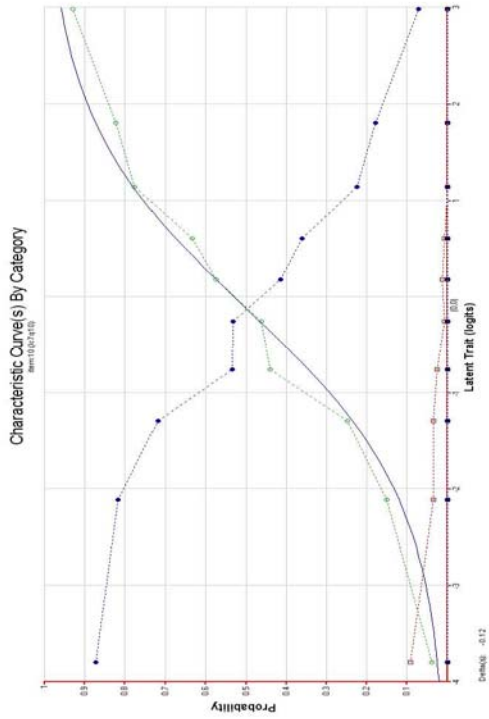


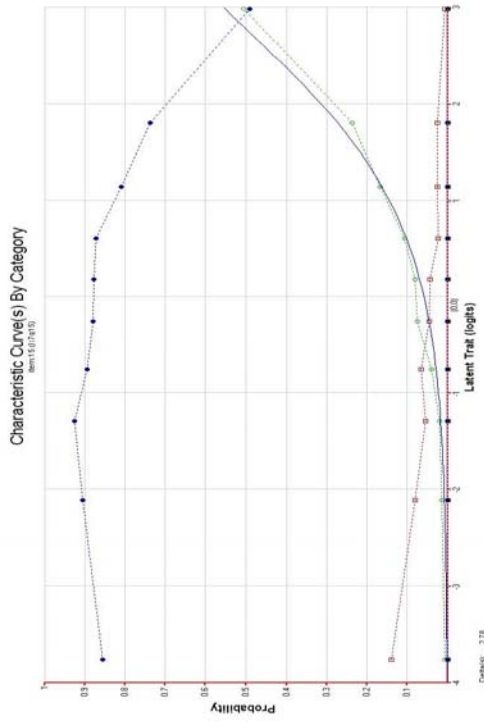
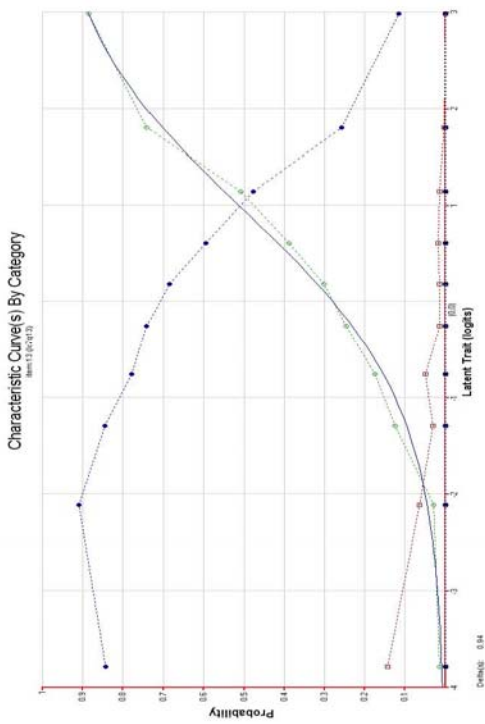
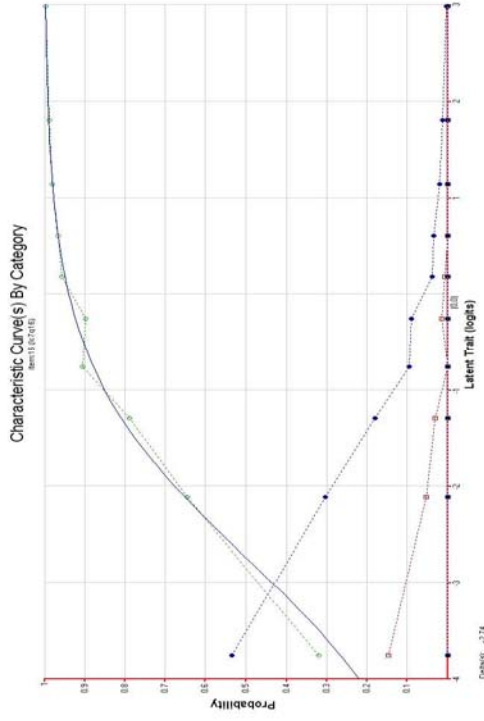
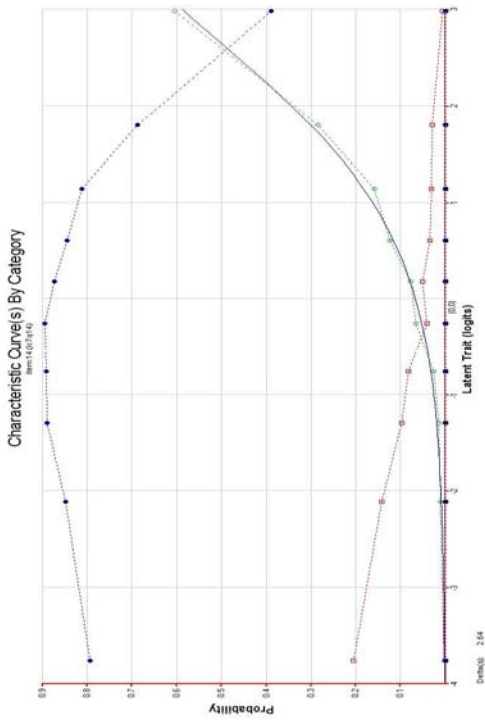
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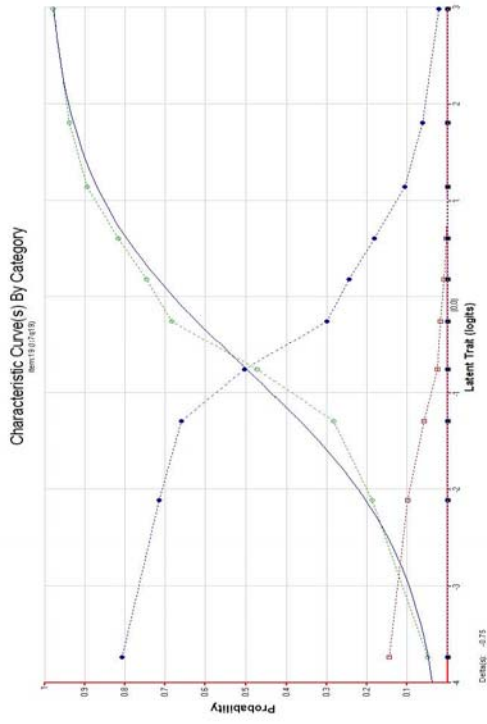
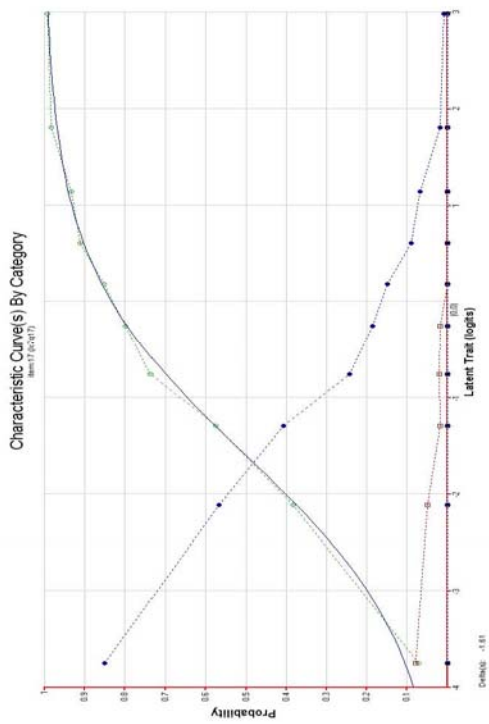
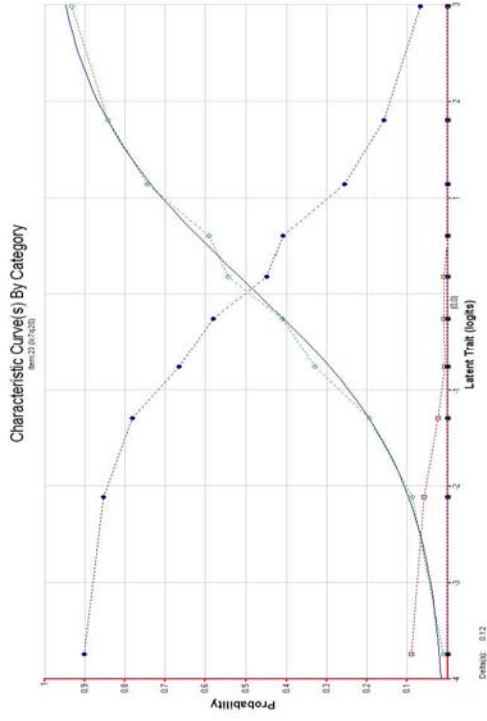
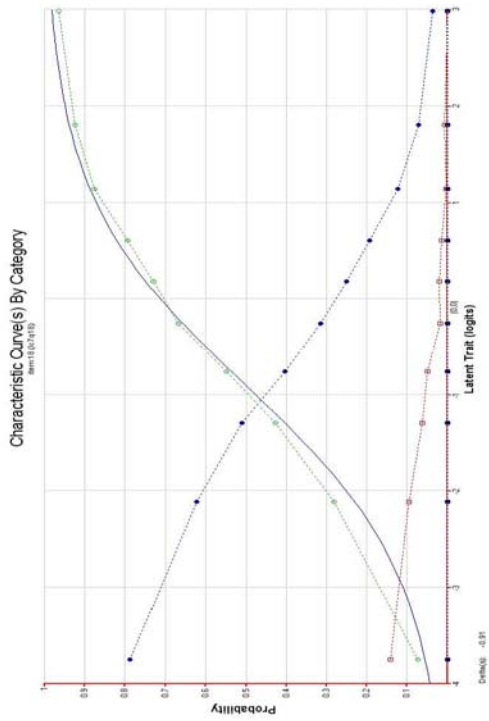


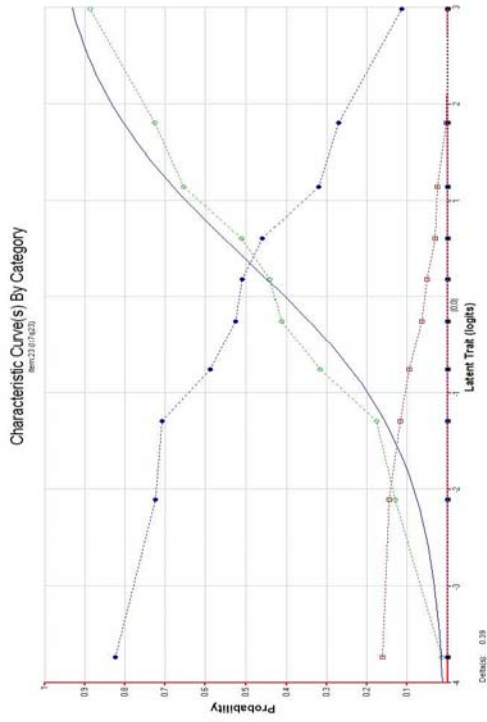
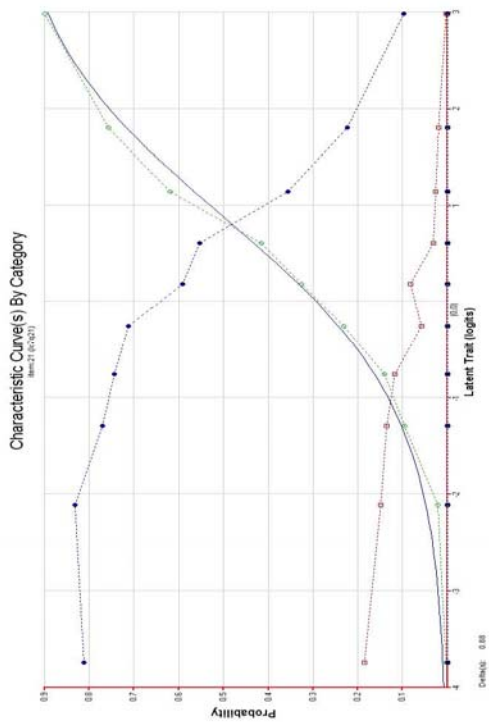
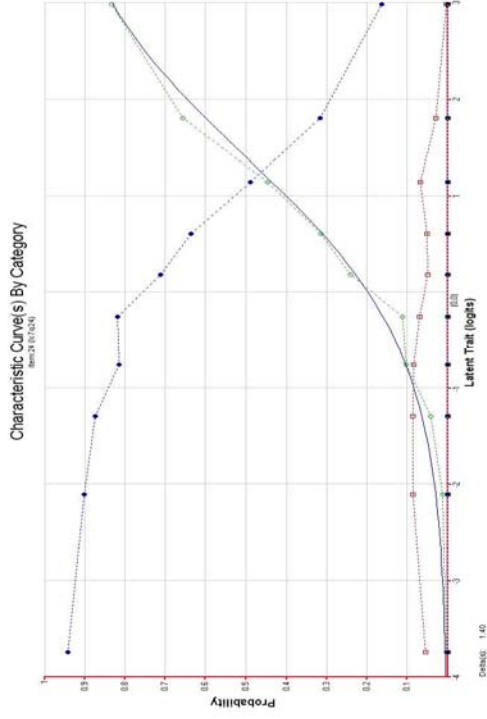
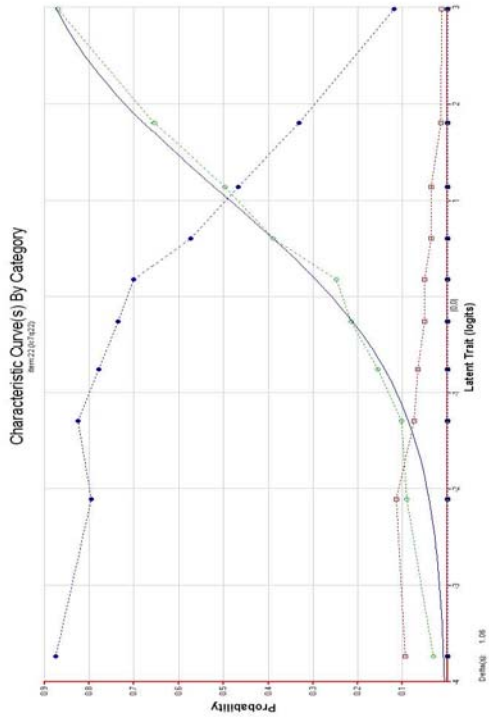


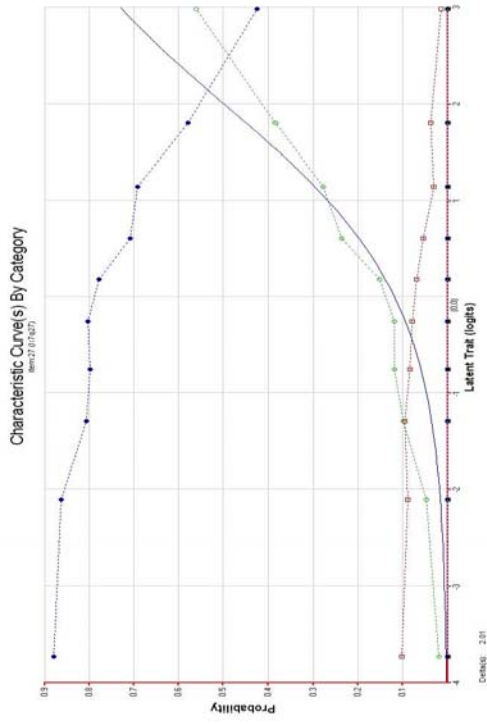
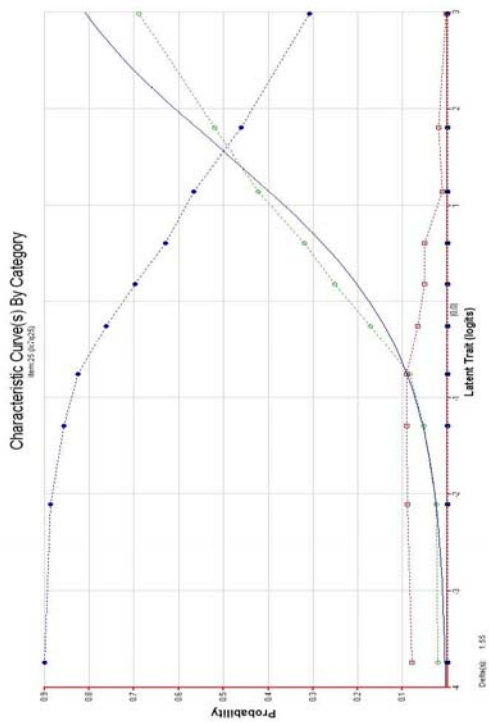
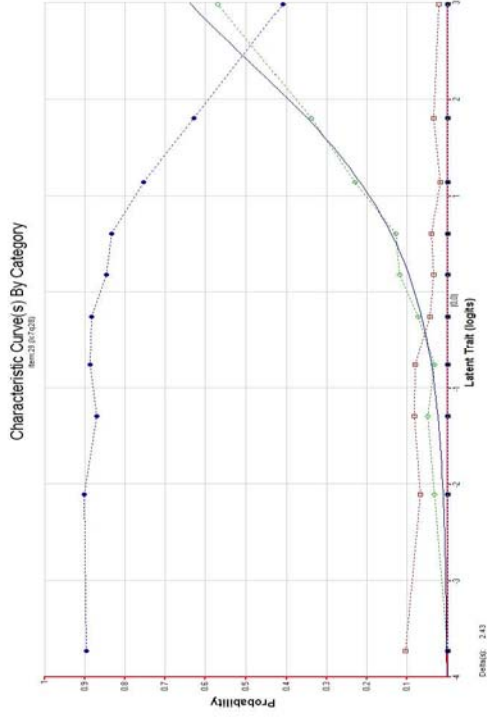
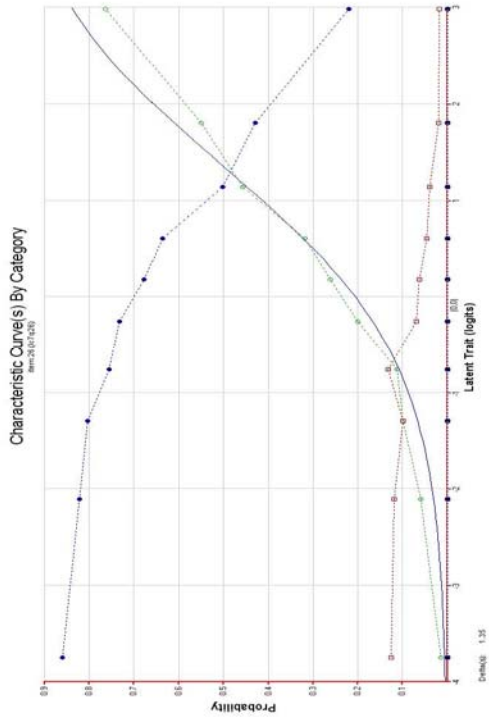


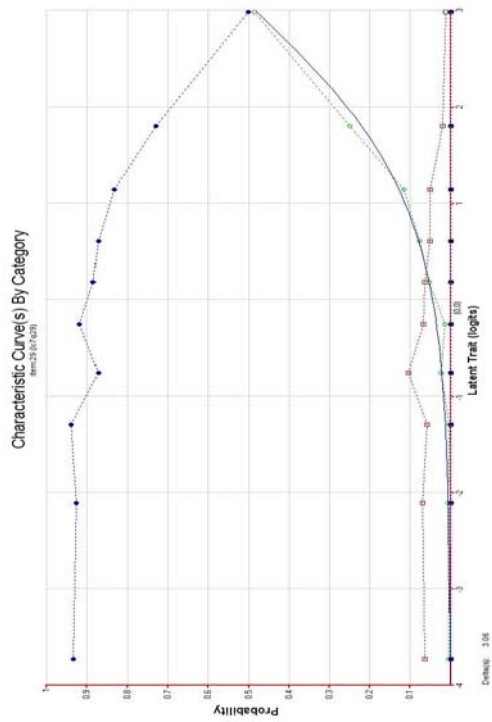
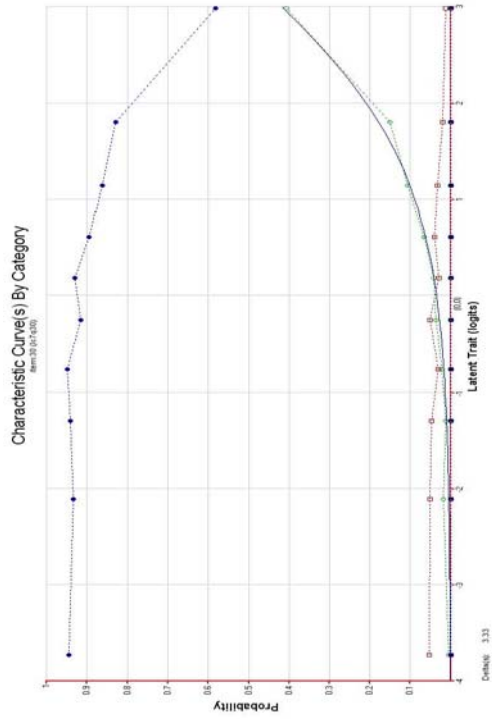




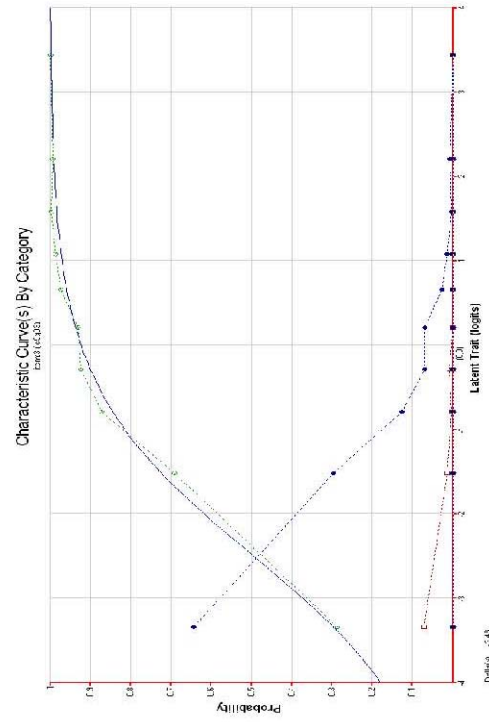
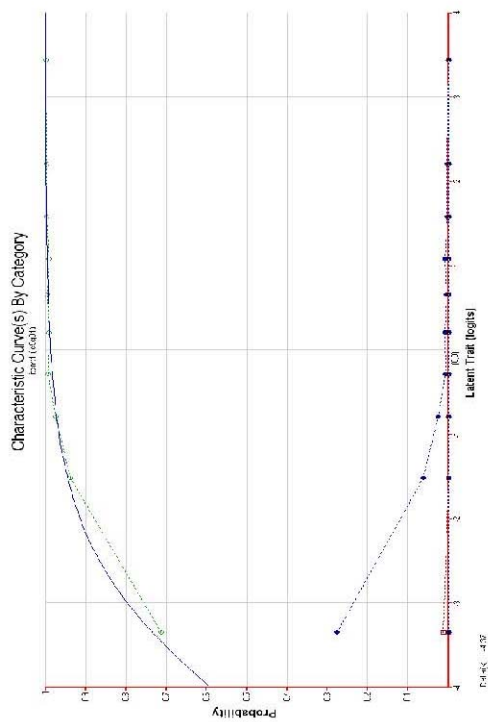
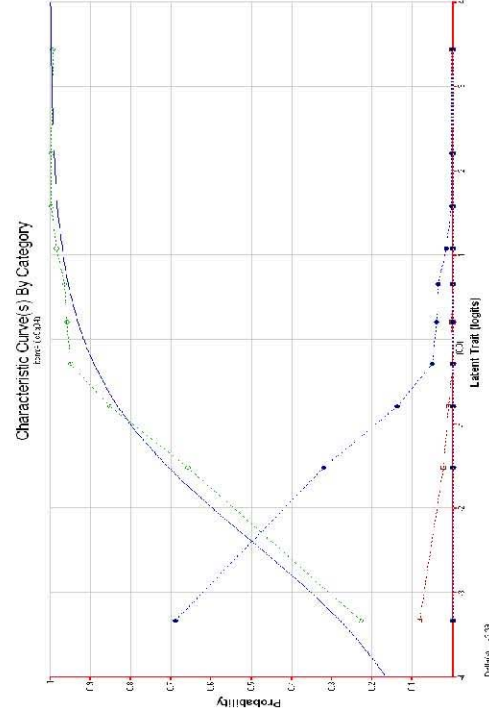
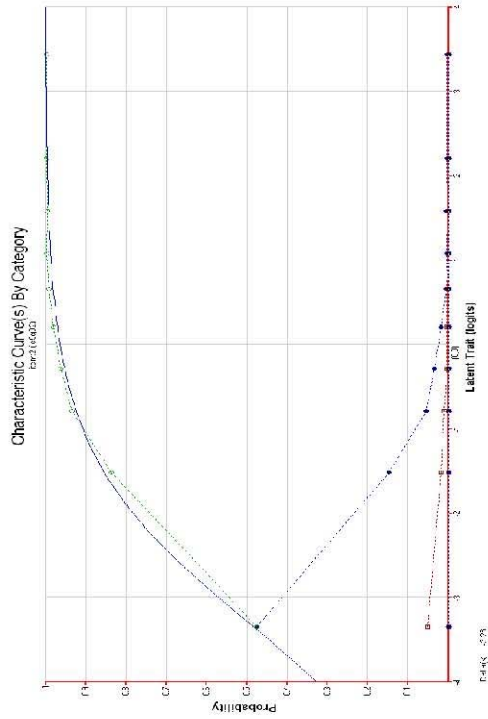




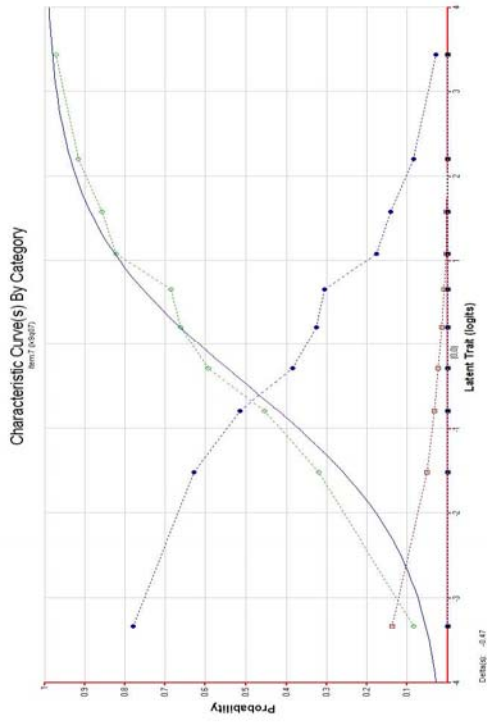
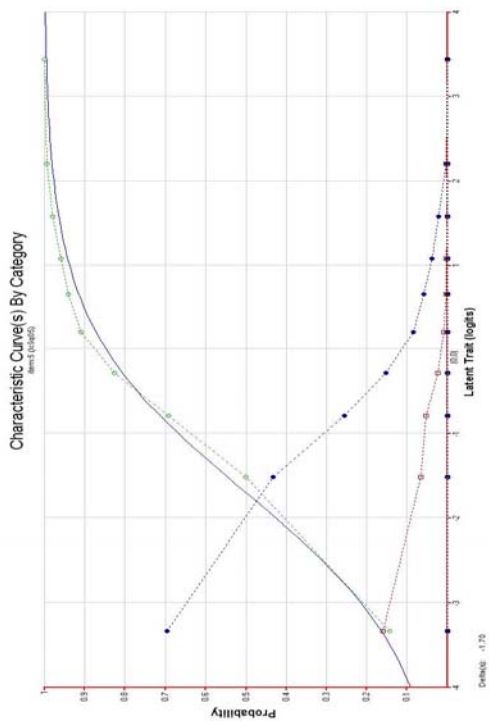
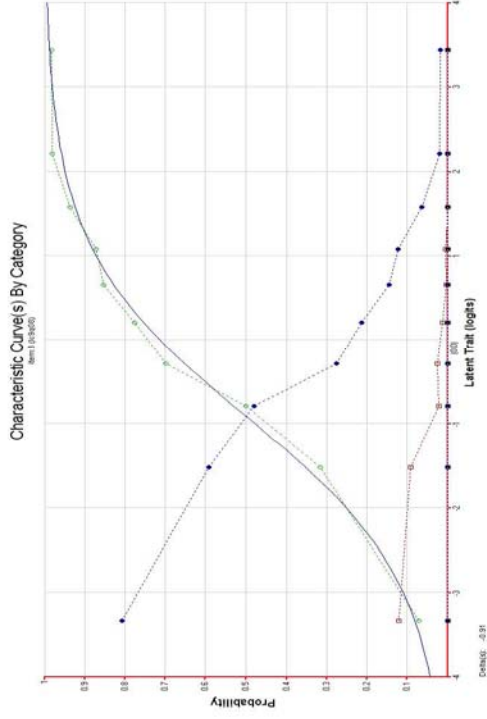
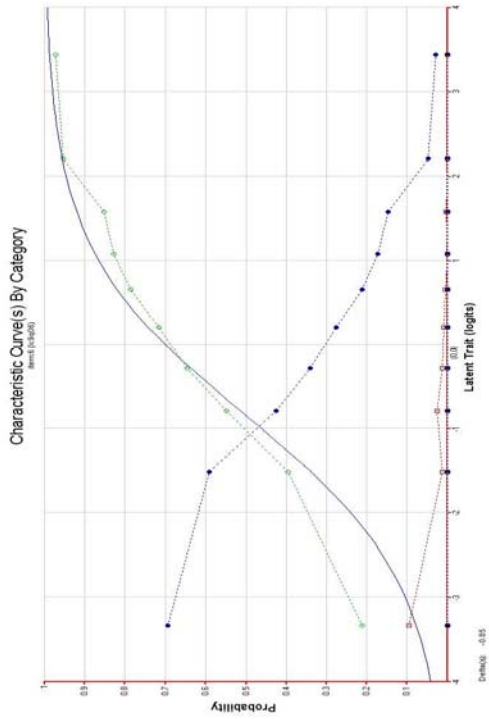


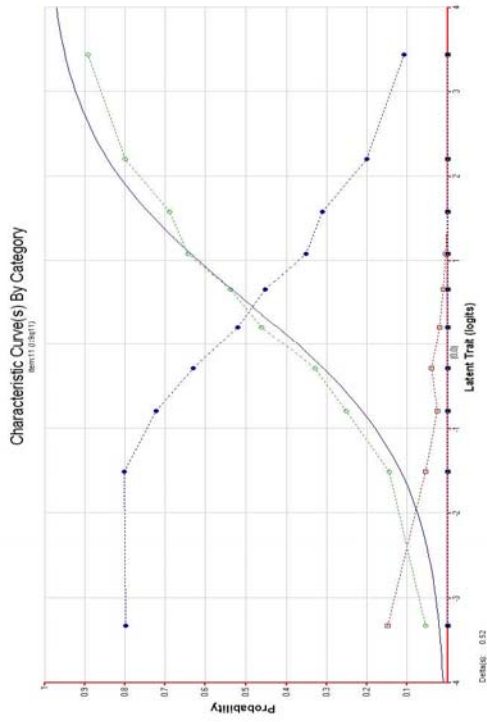
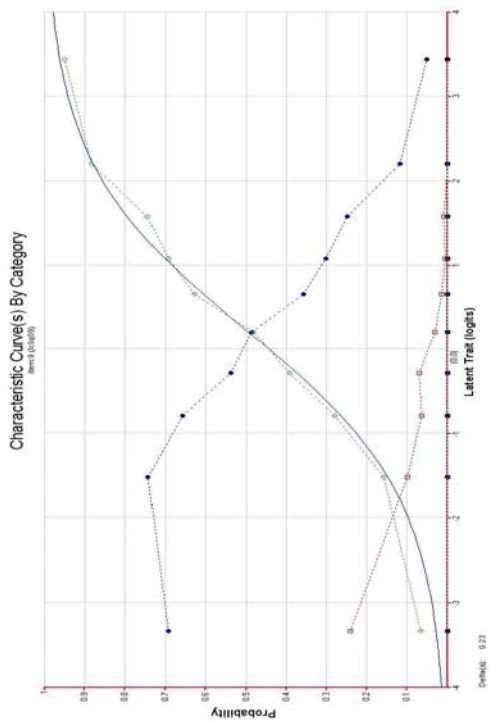
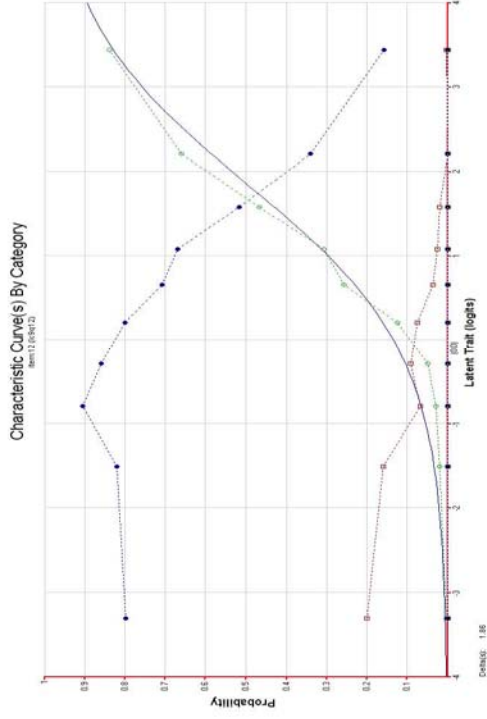
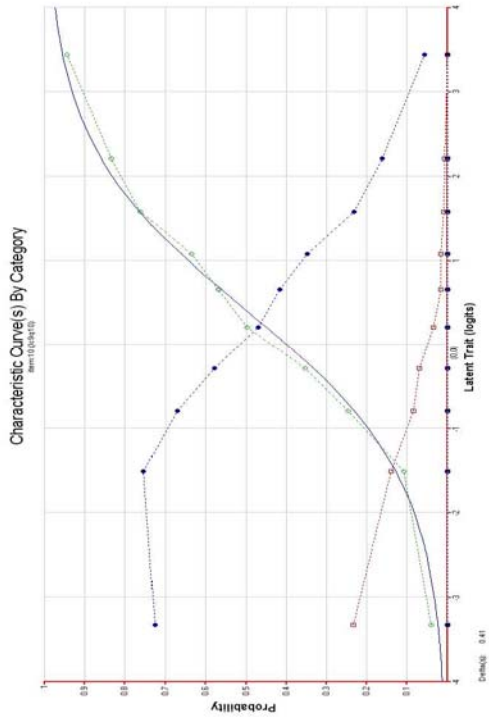


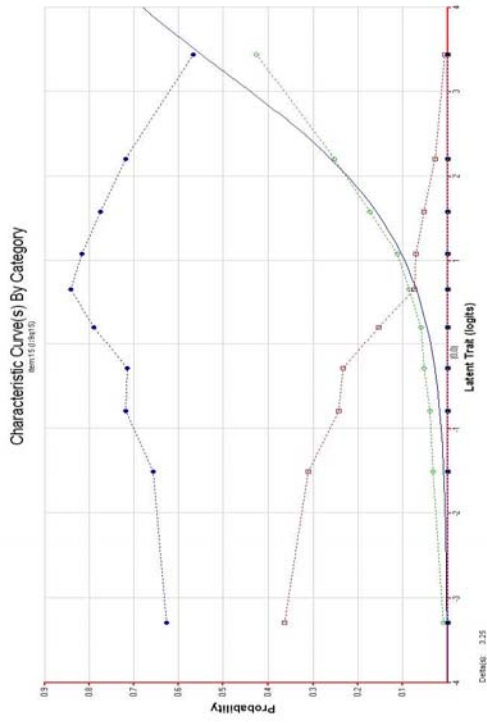
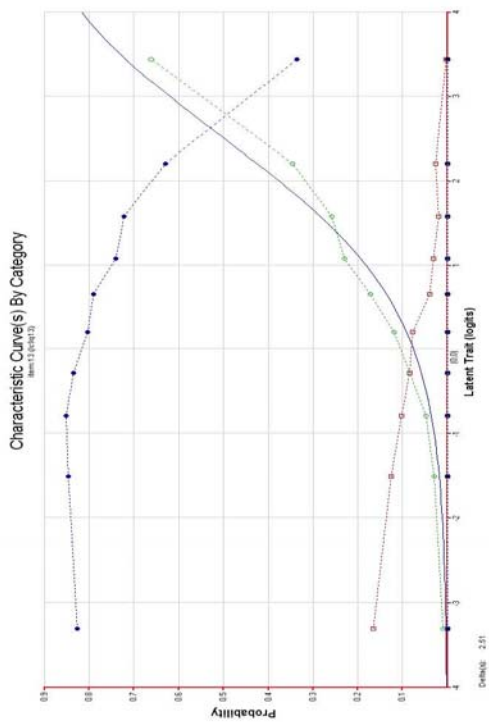
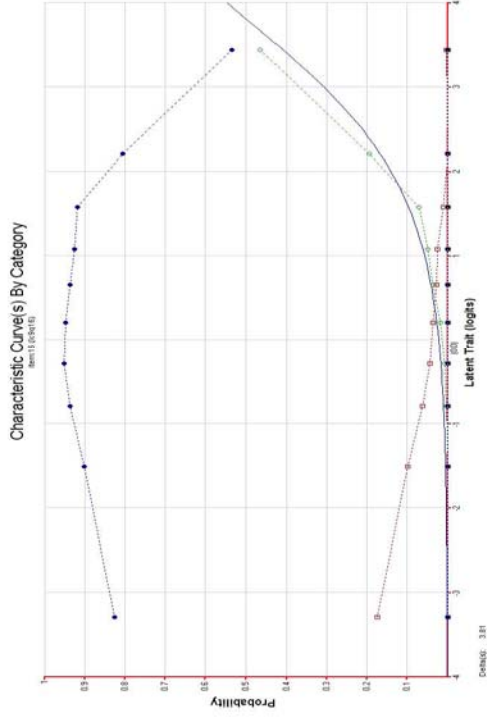
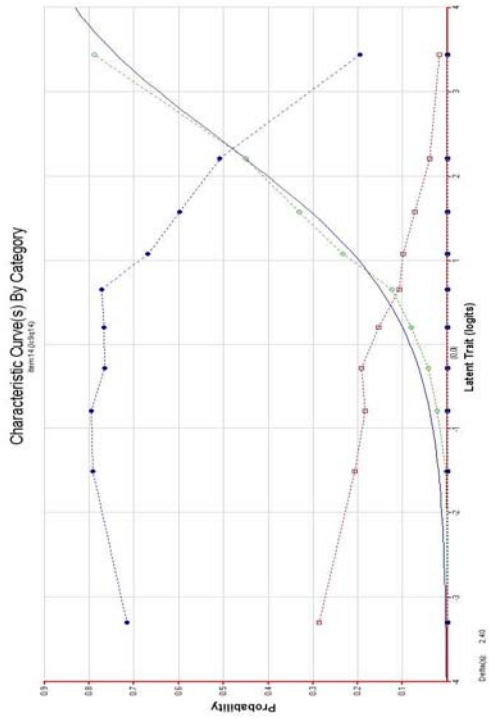
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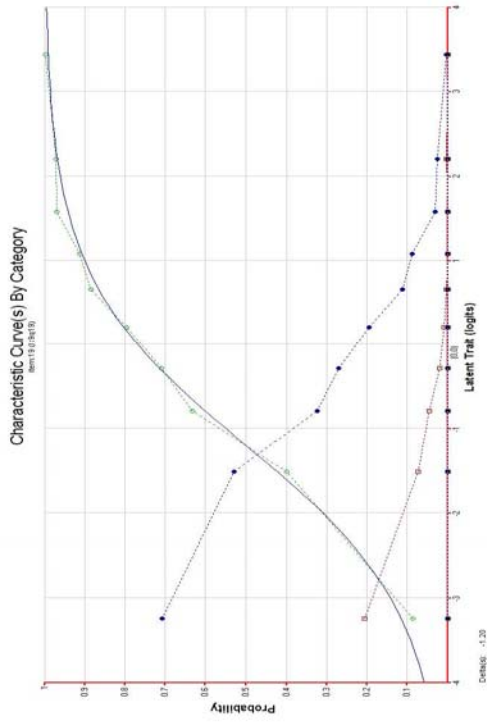
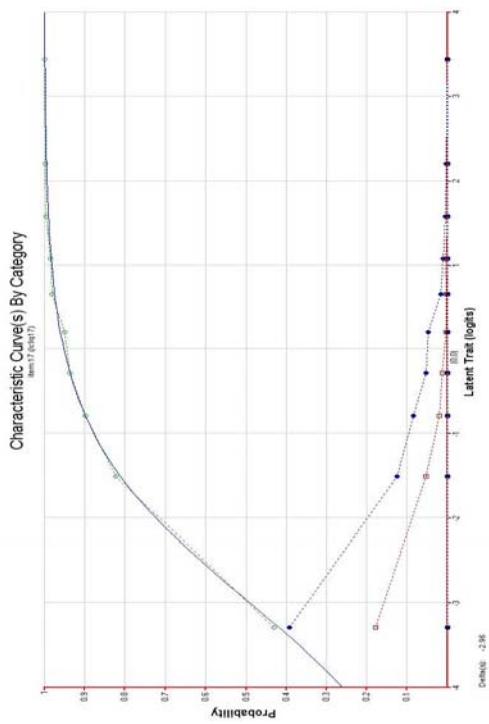
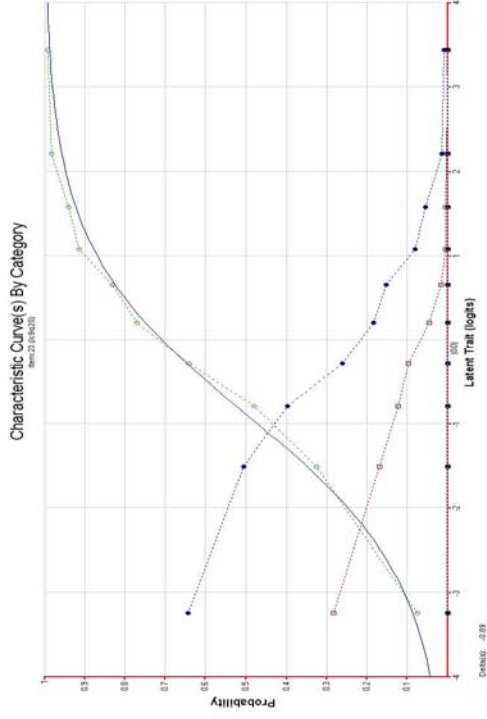
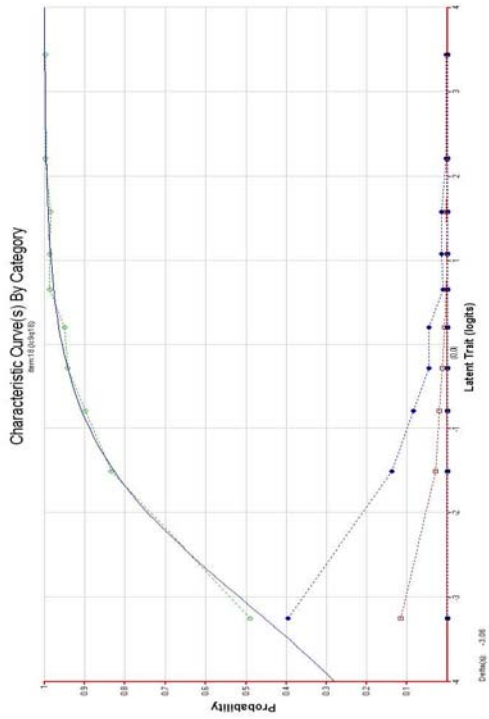


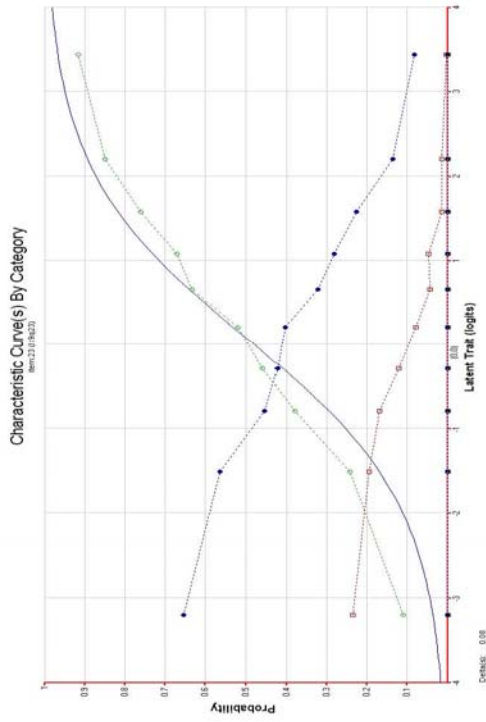
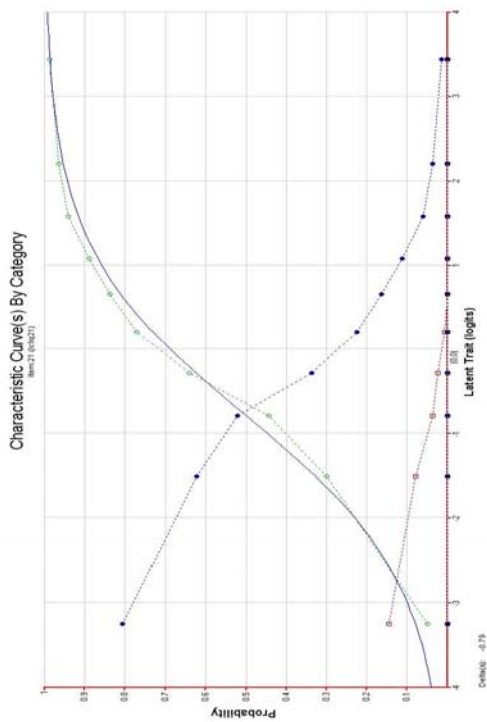
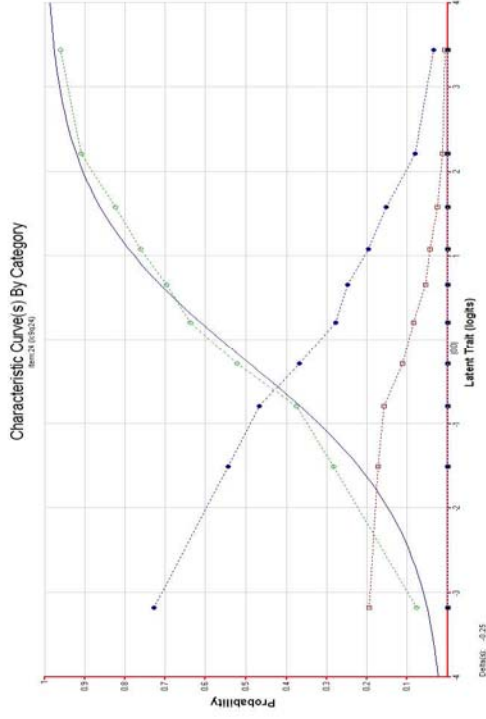
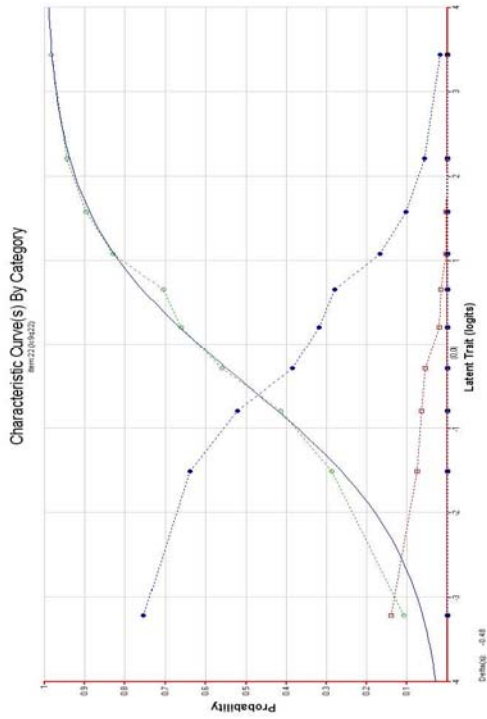


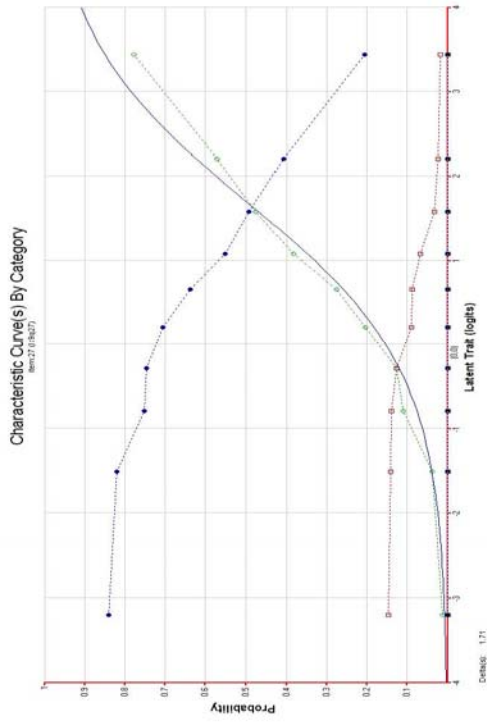
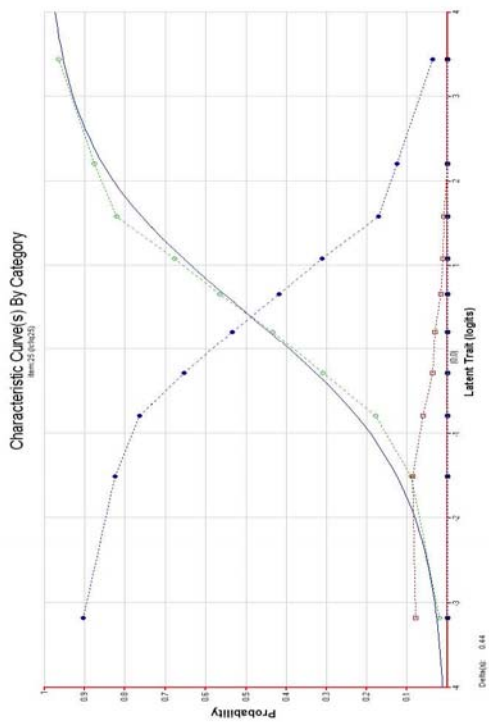
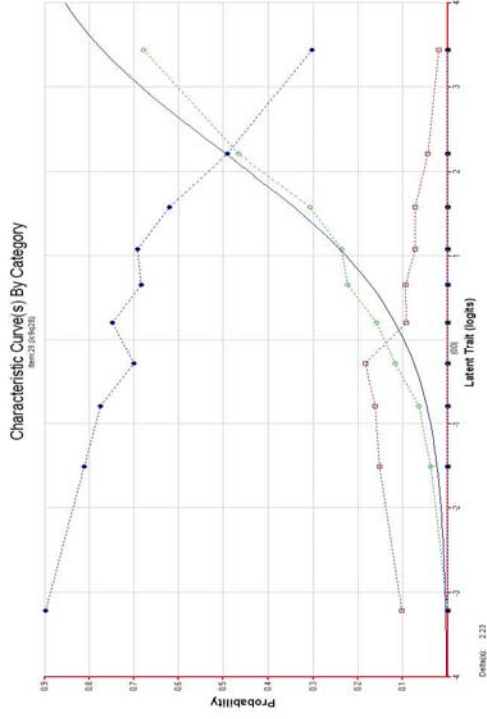
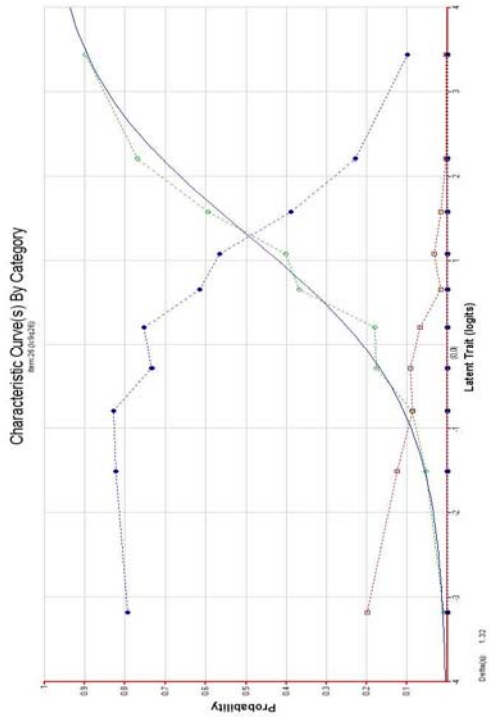


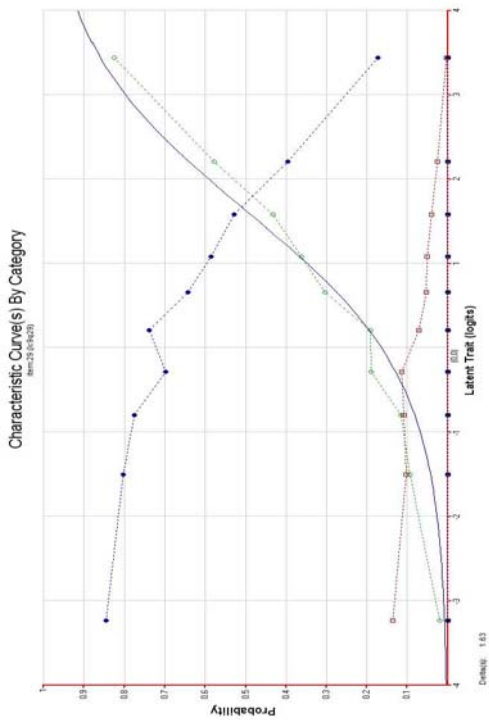
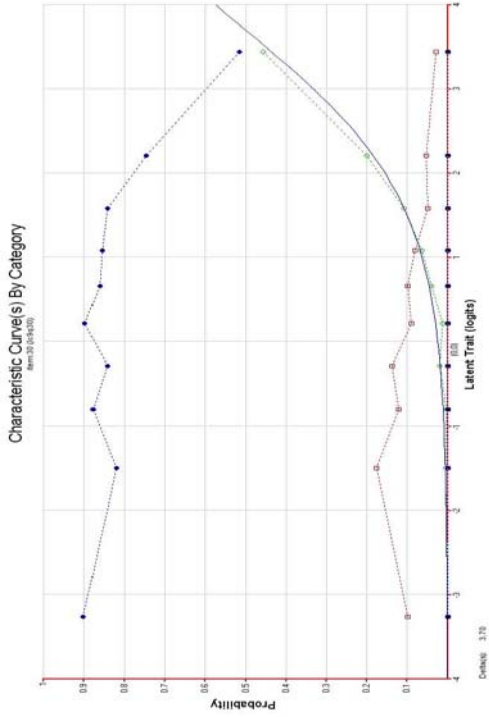




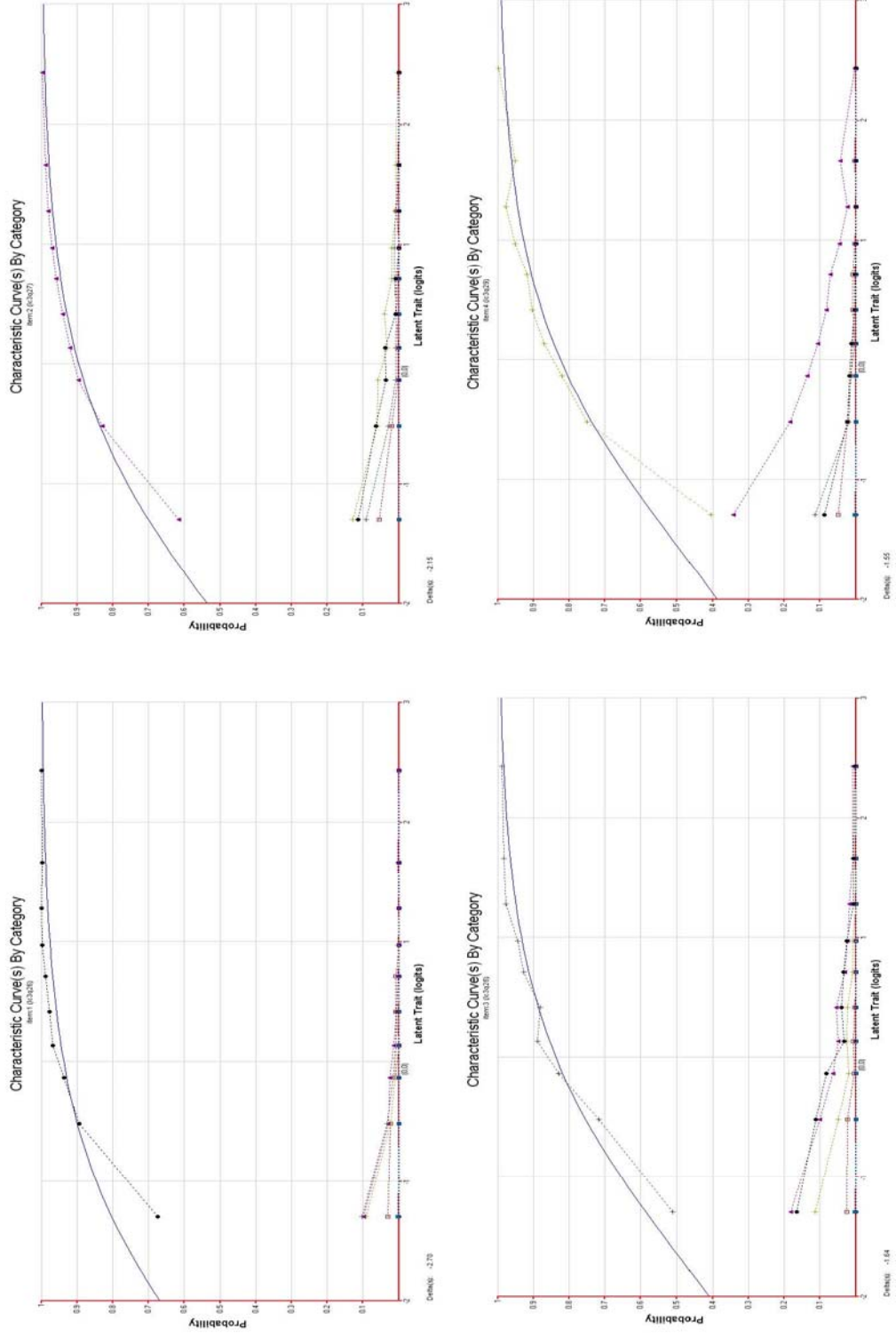




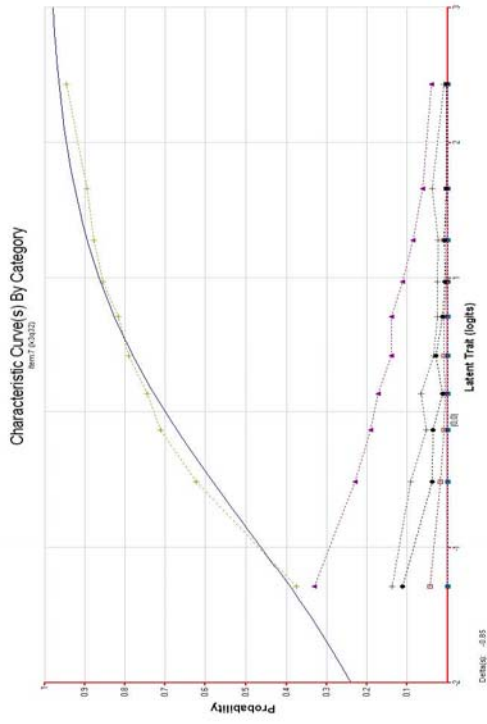
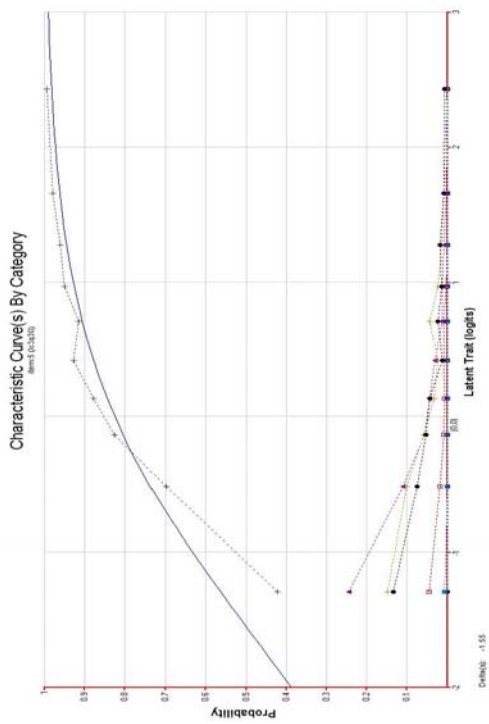
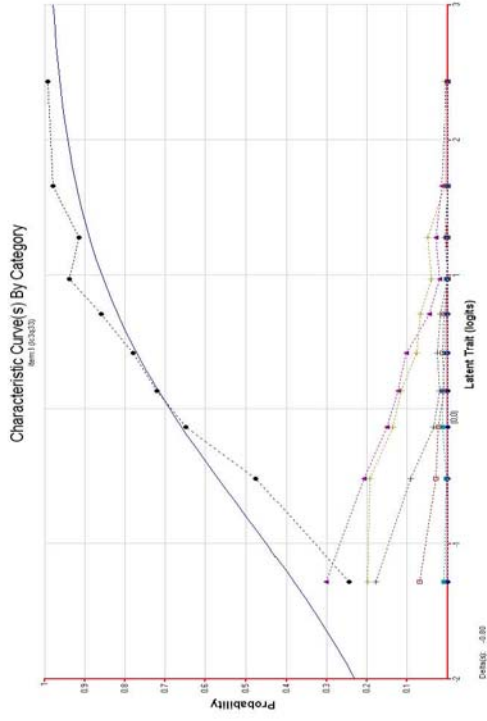
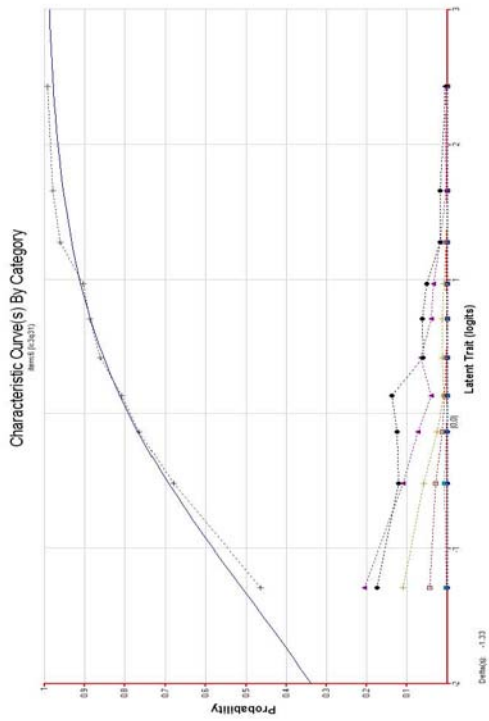


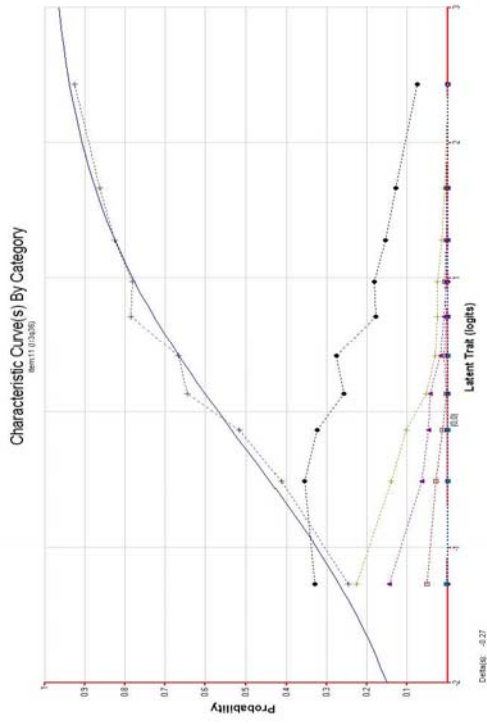
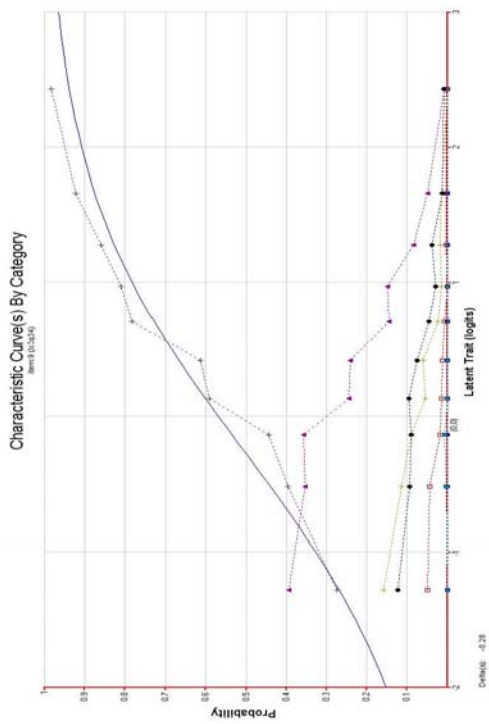
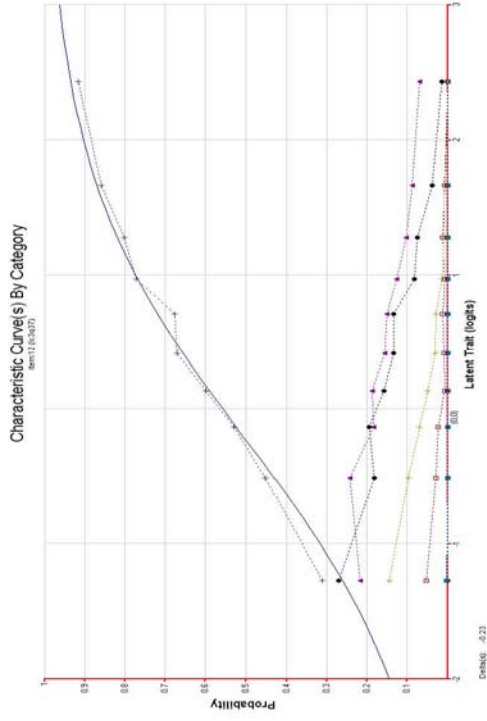
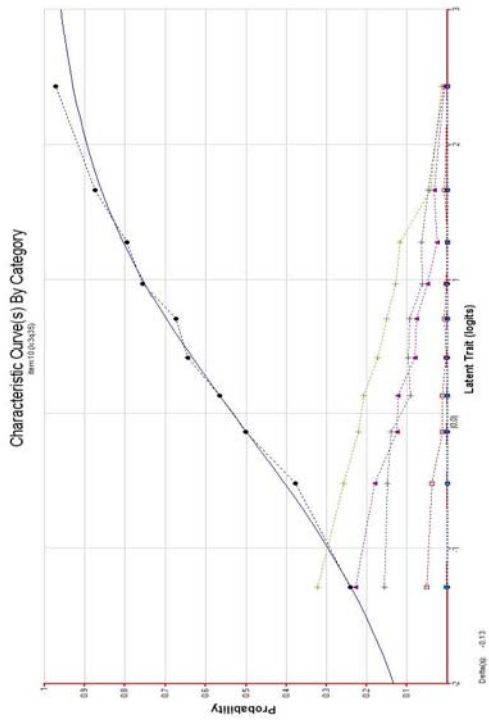


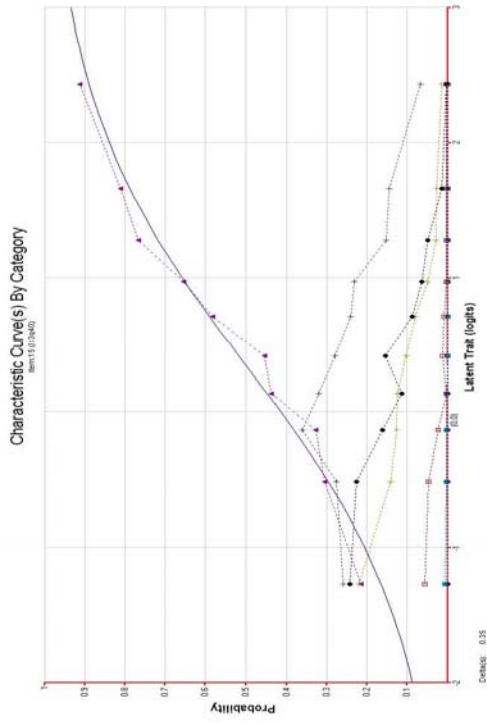
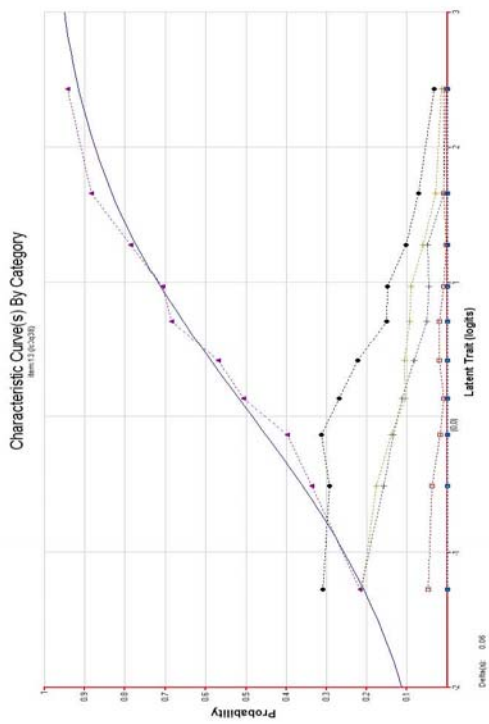
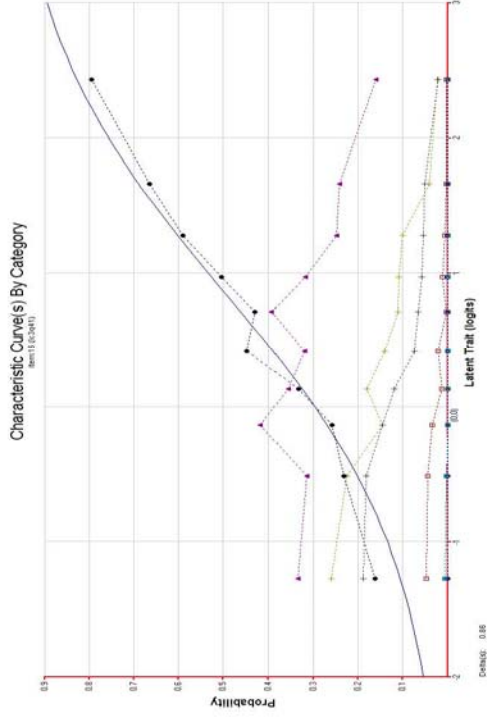
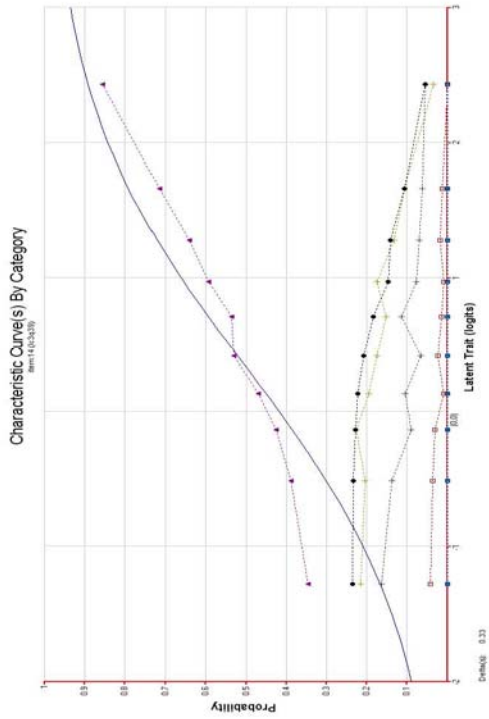
*Year 3 Grammar and Punctuation*

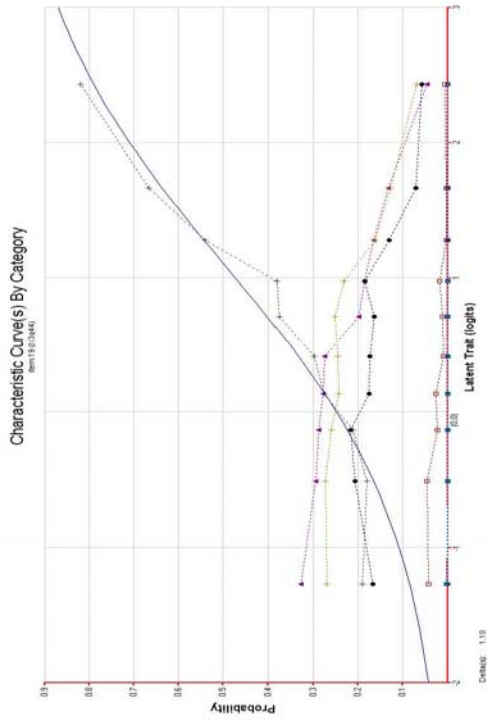
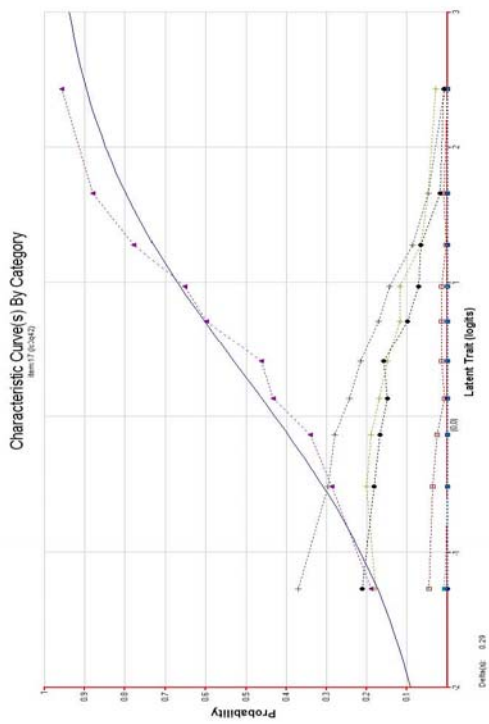
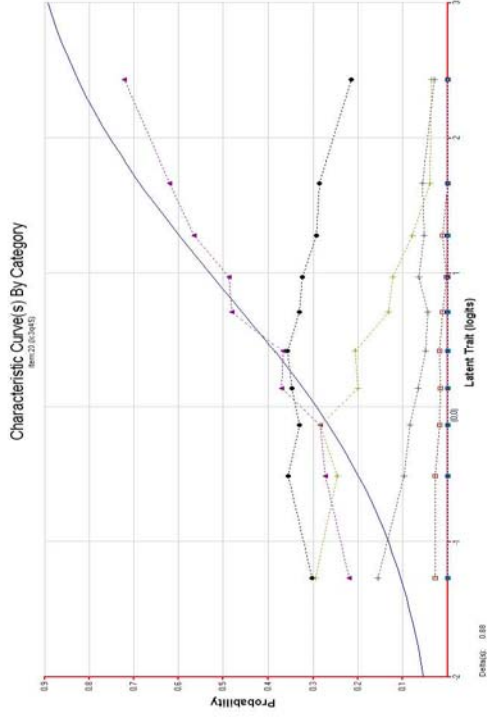
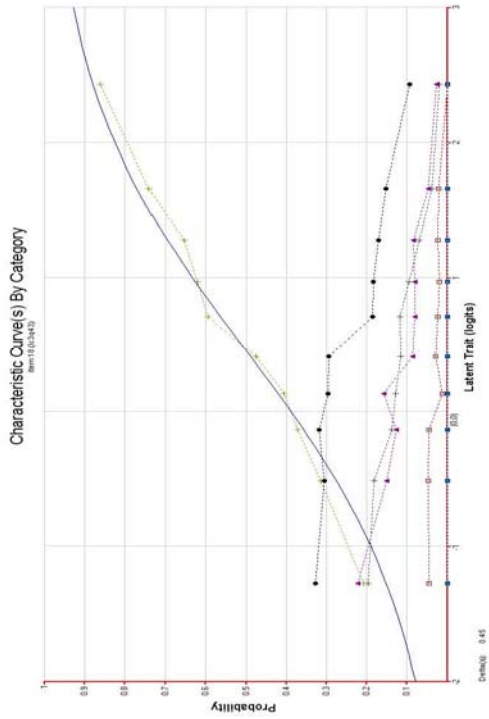


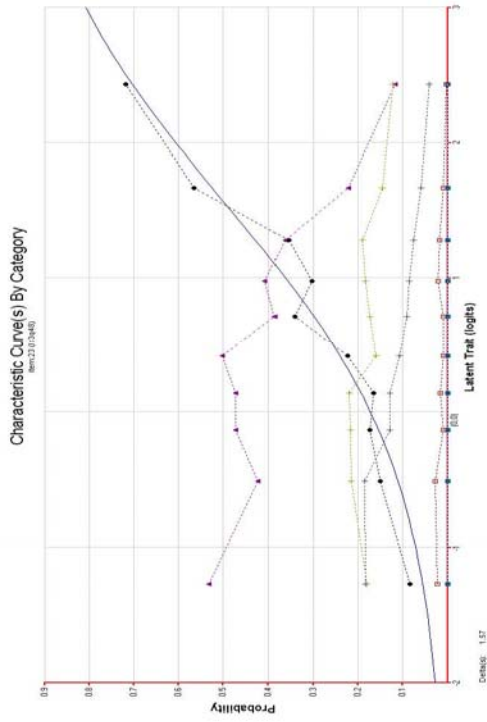
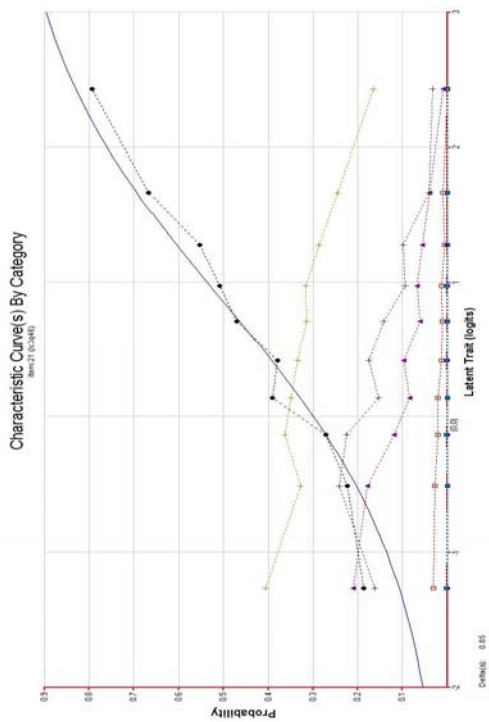
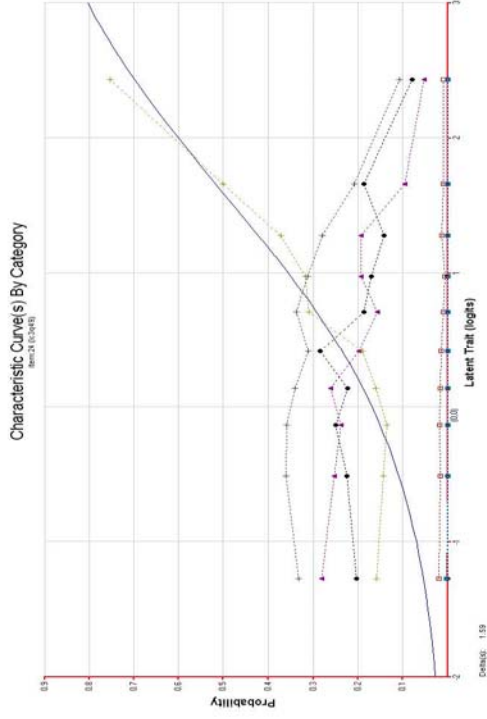
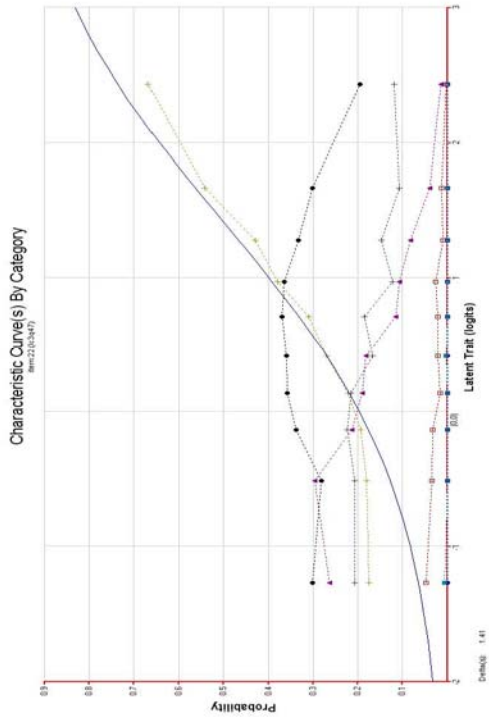


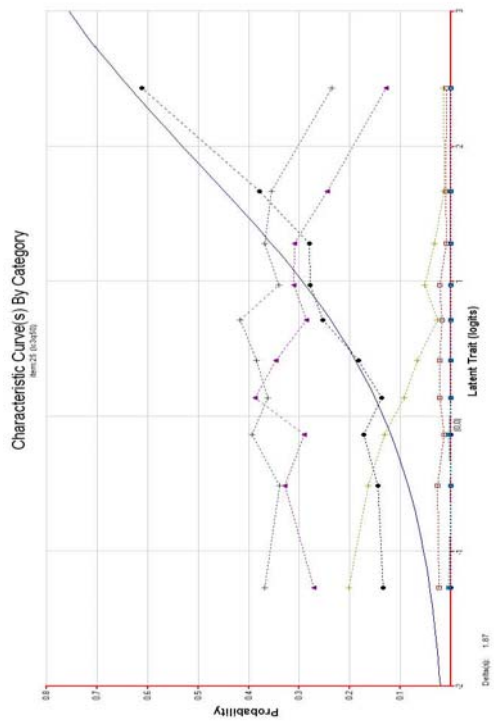
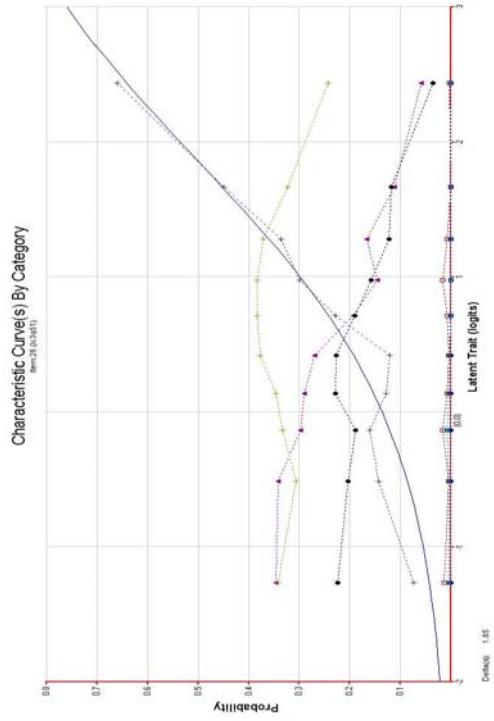




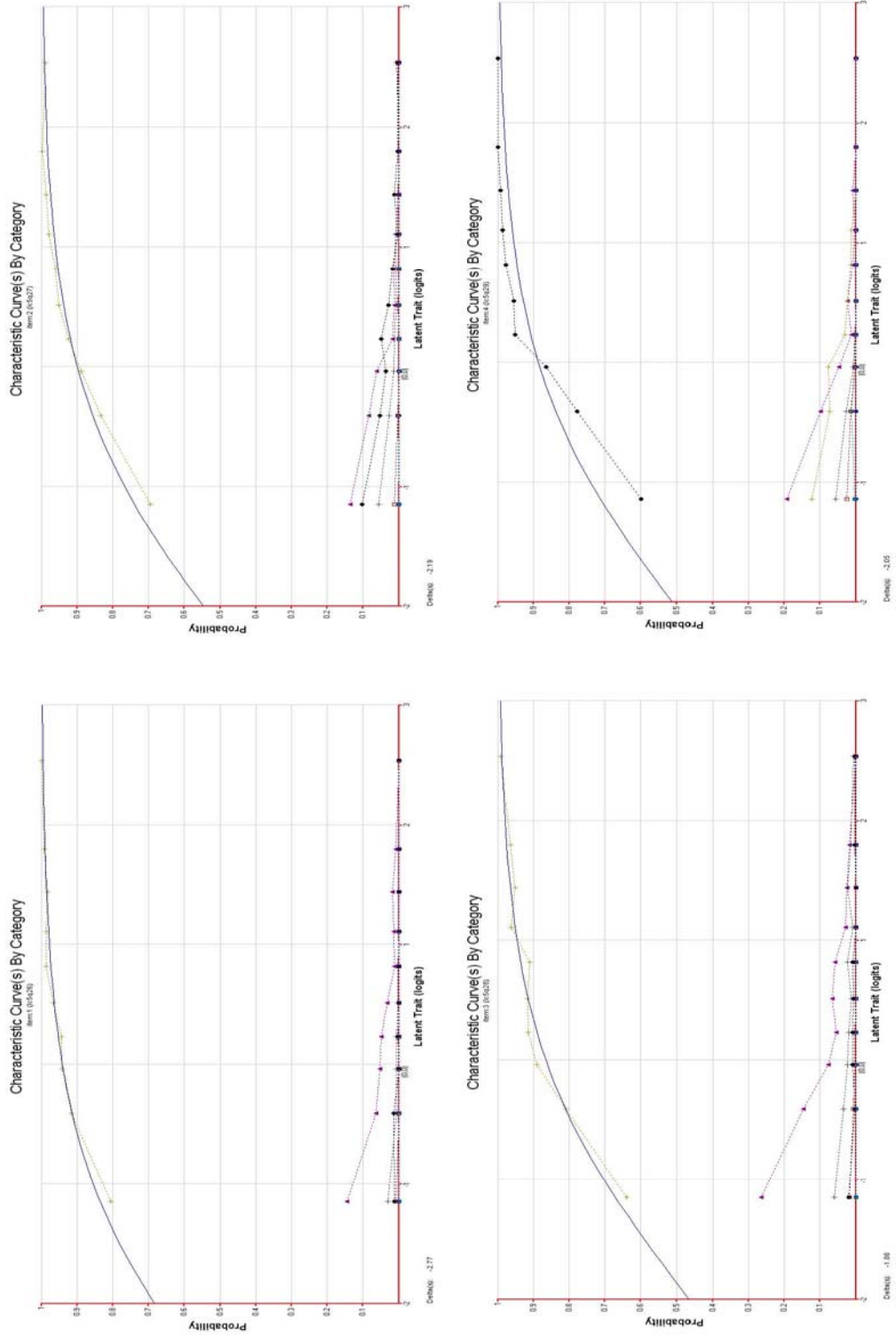


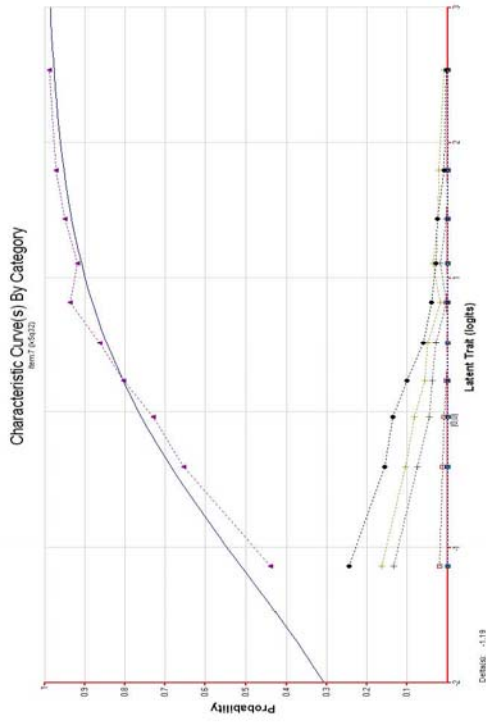
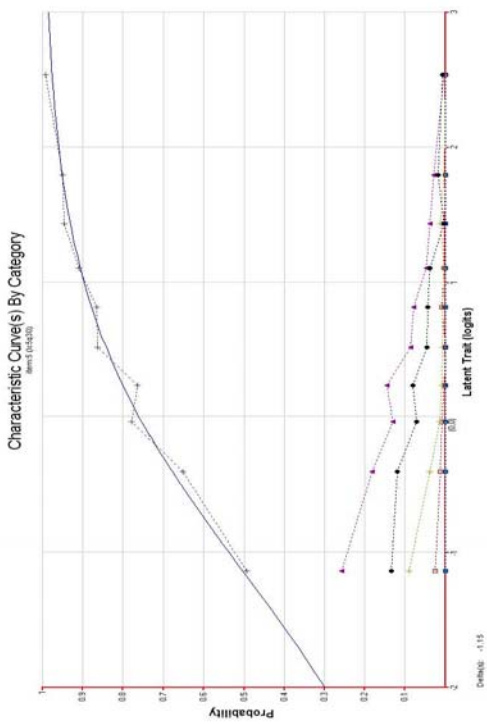
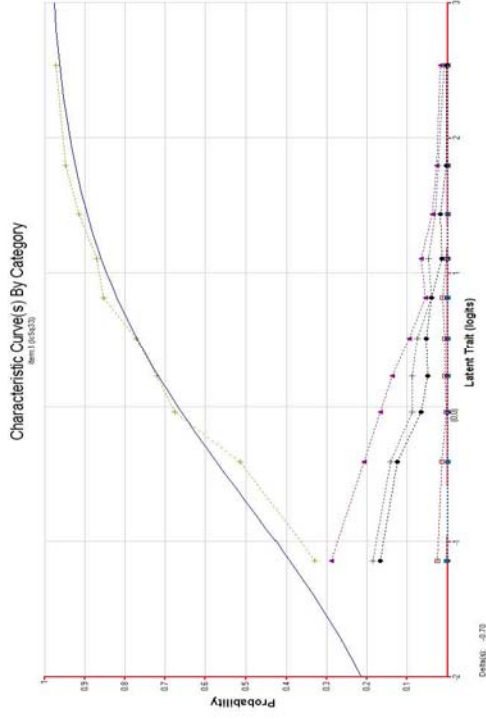
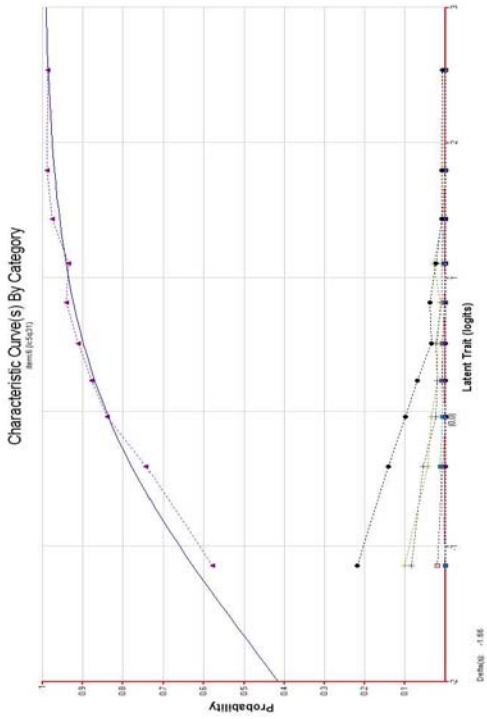




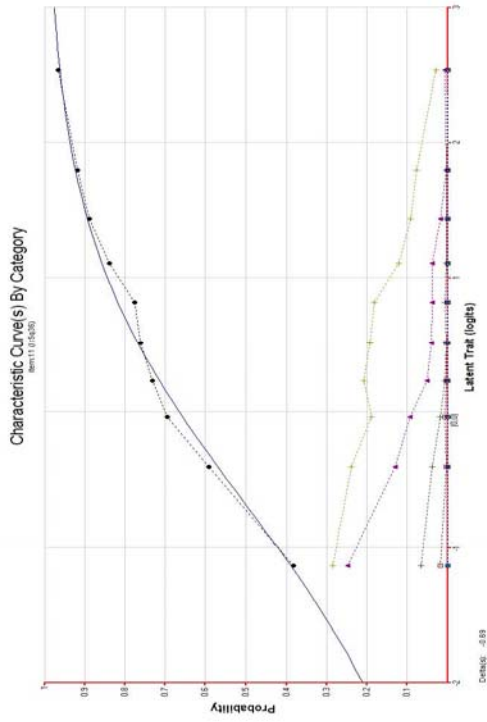
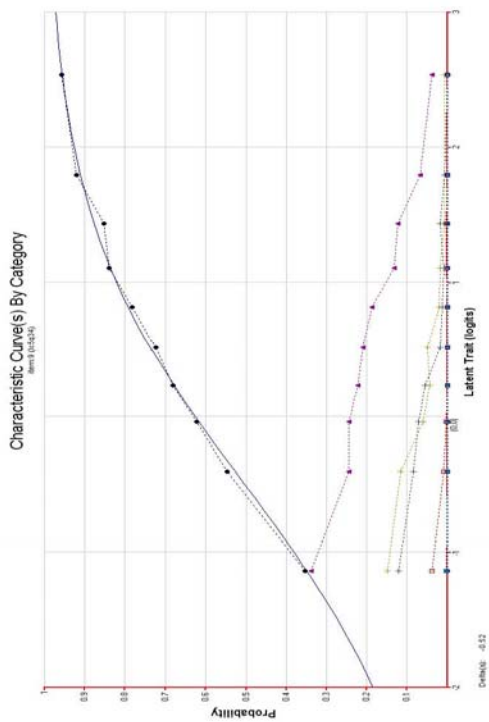
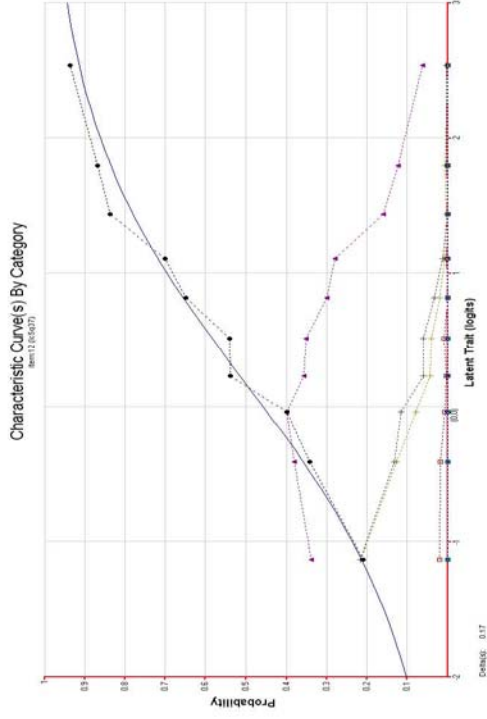
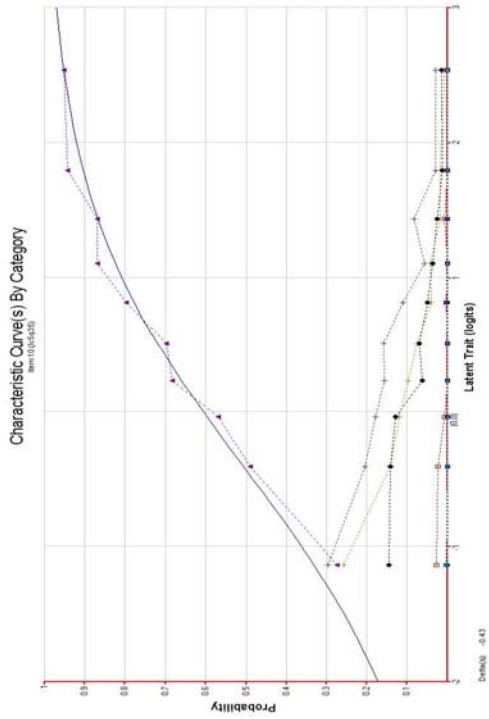


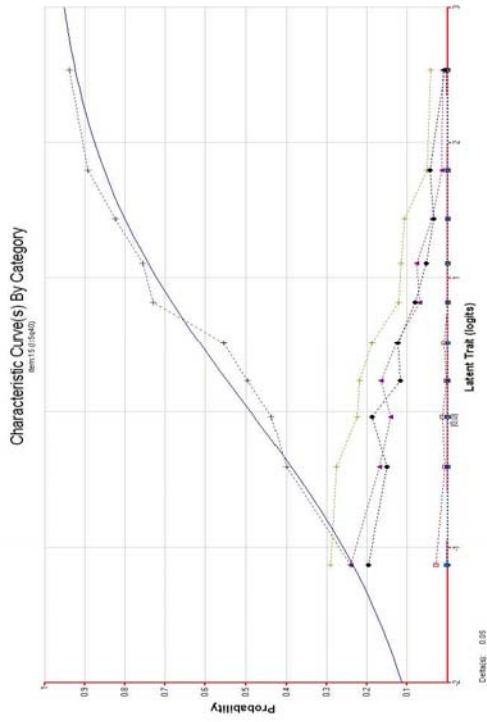
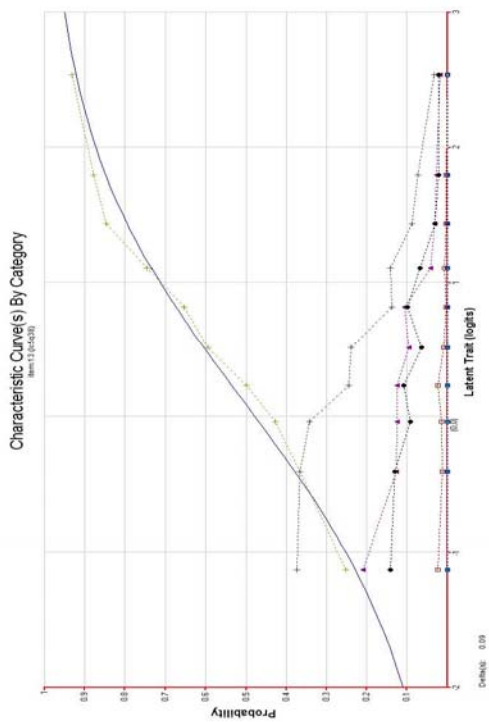
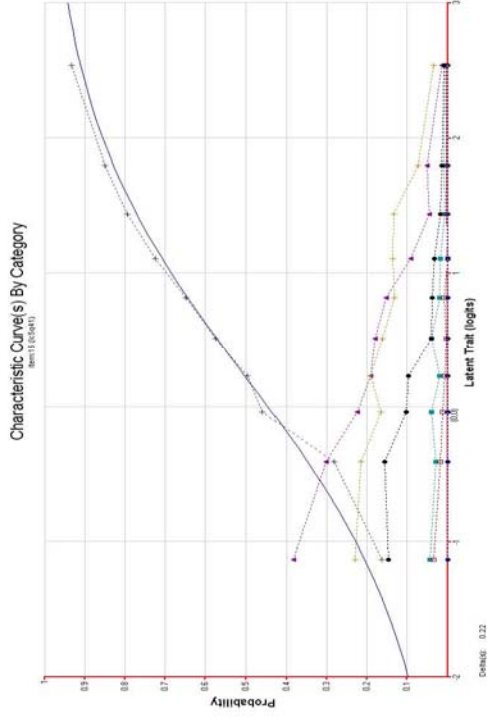
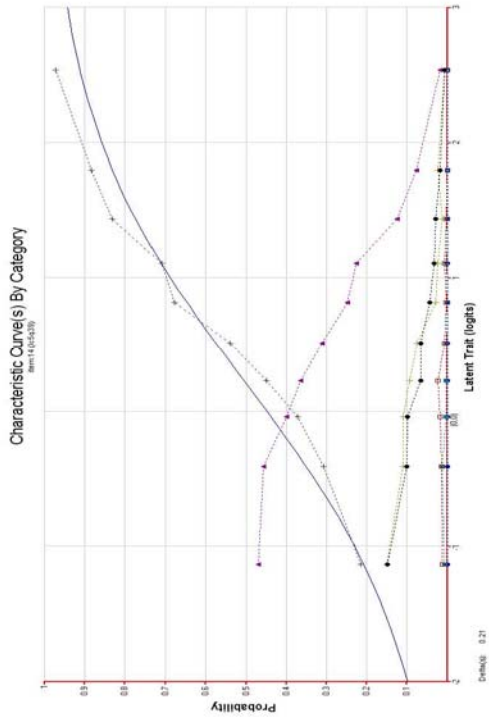
*Year 5 Grammar and Punctuation*

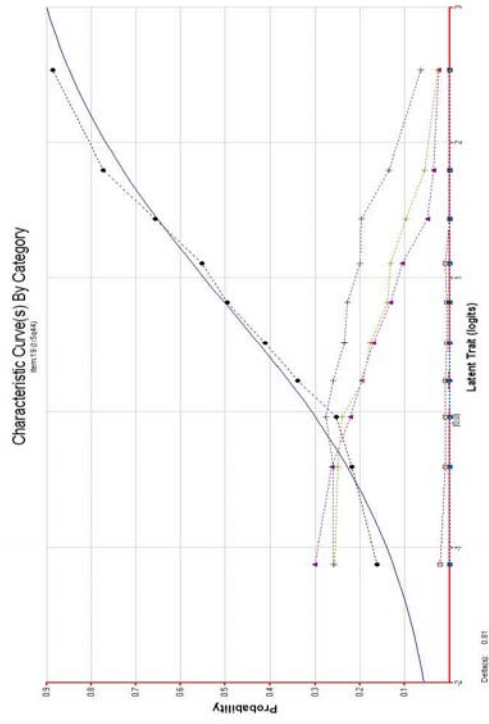
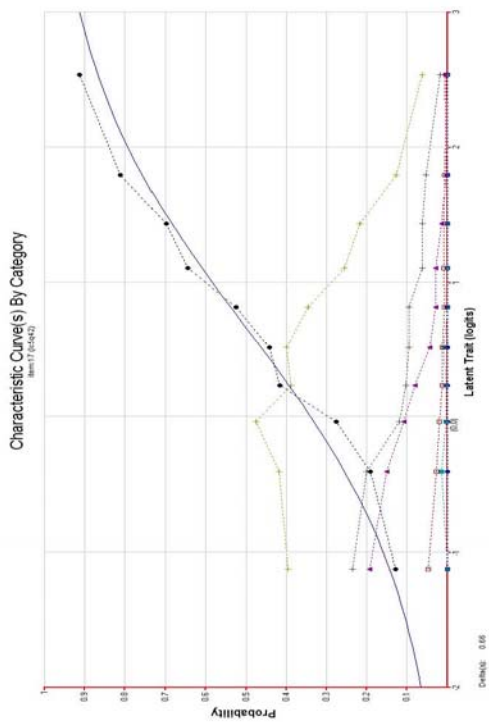
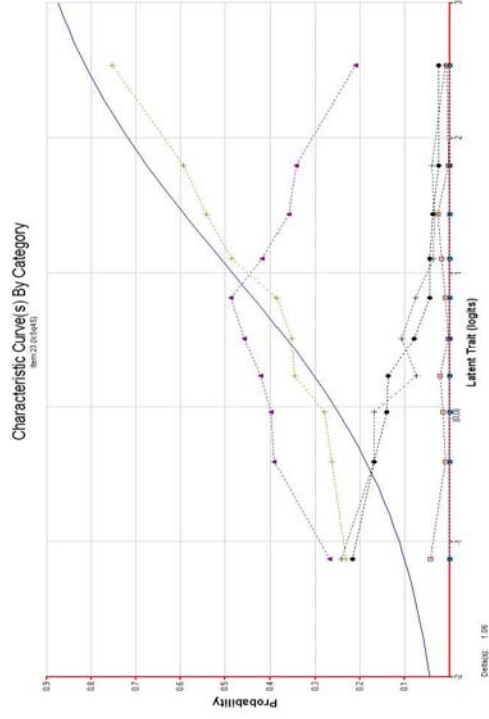
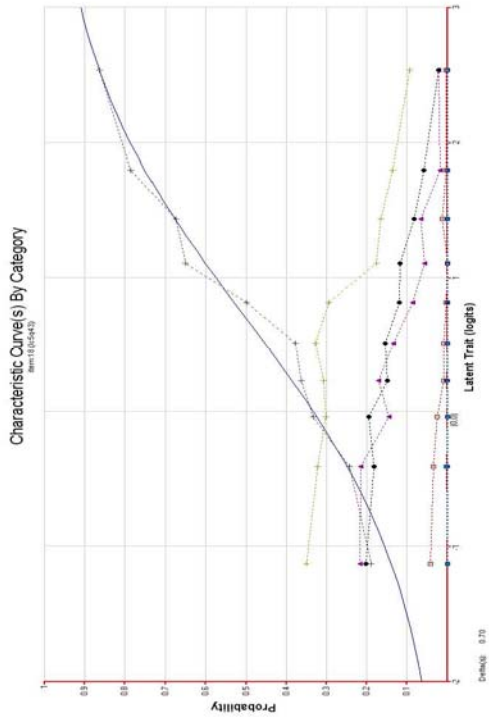


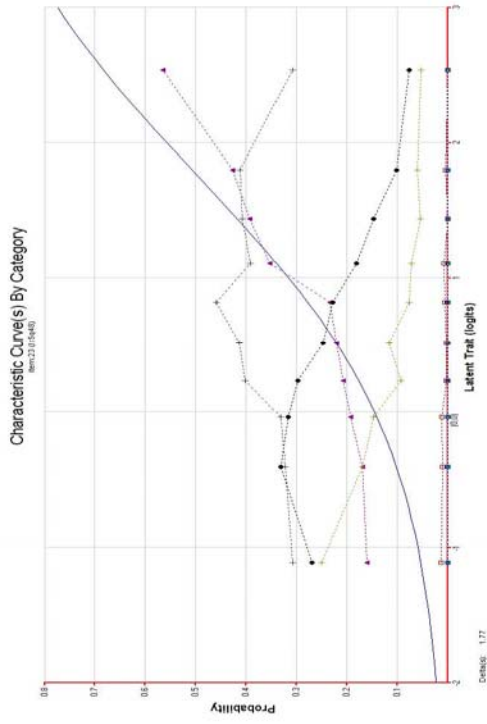
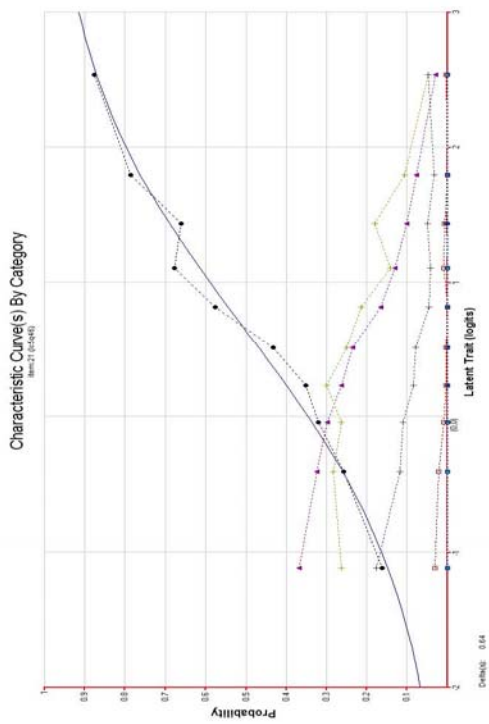
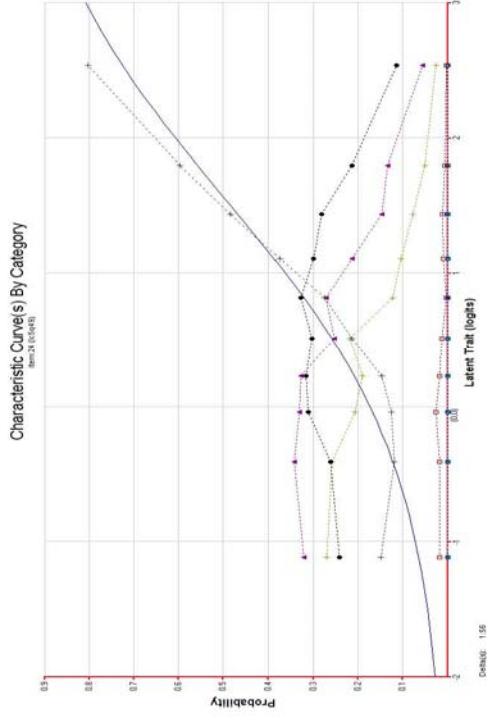
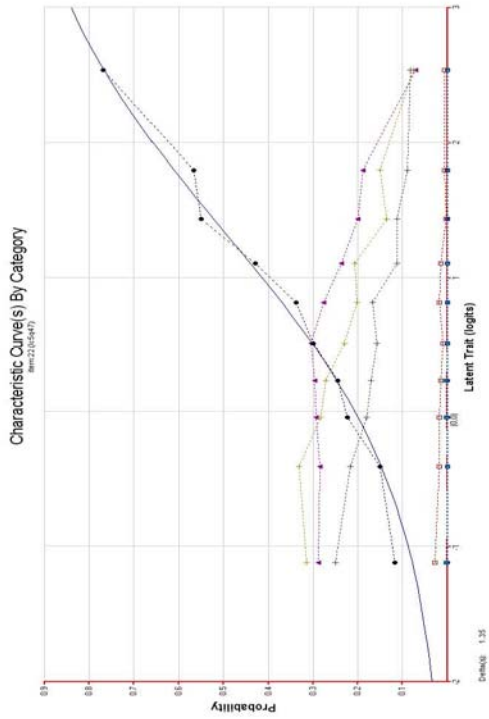


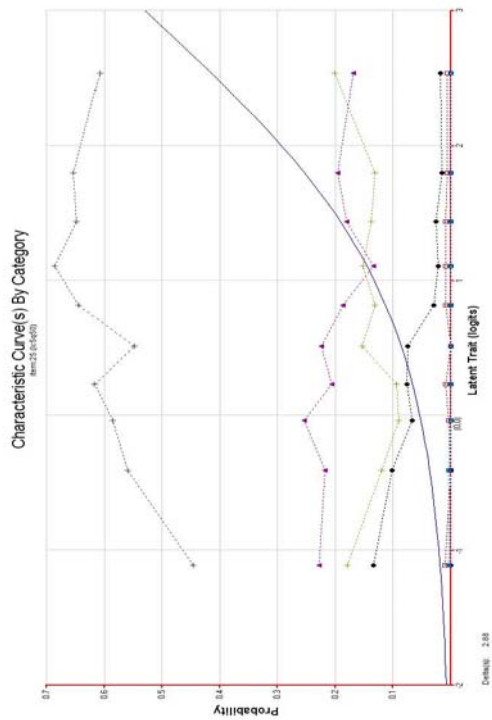
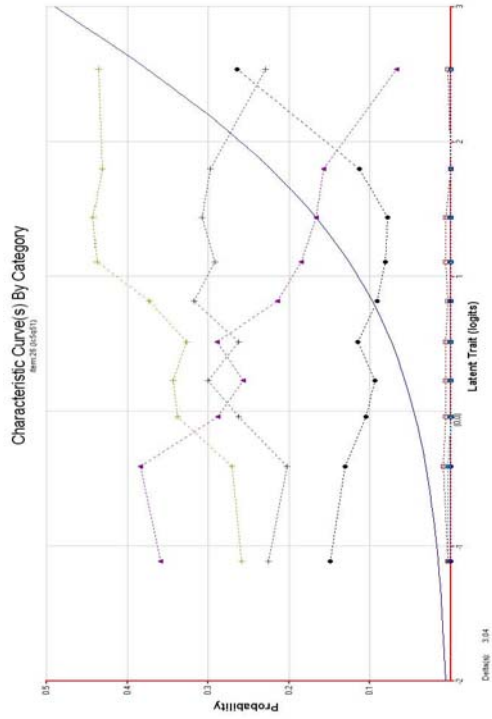




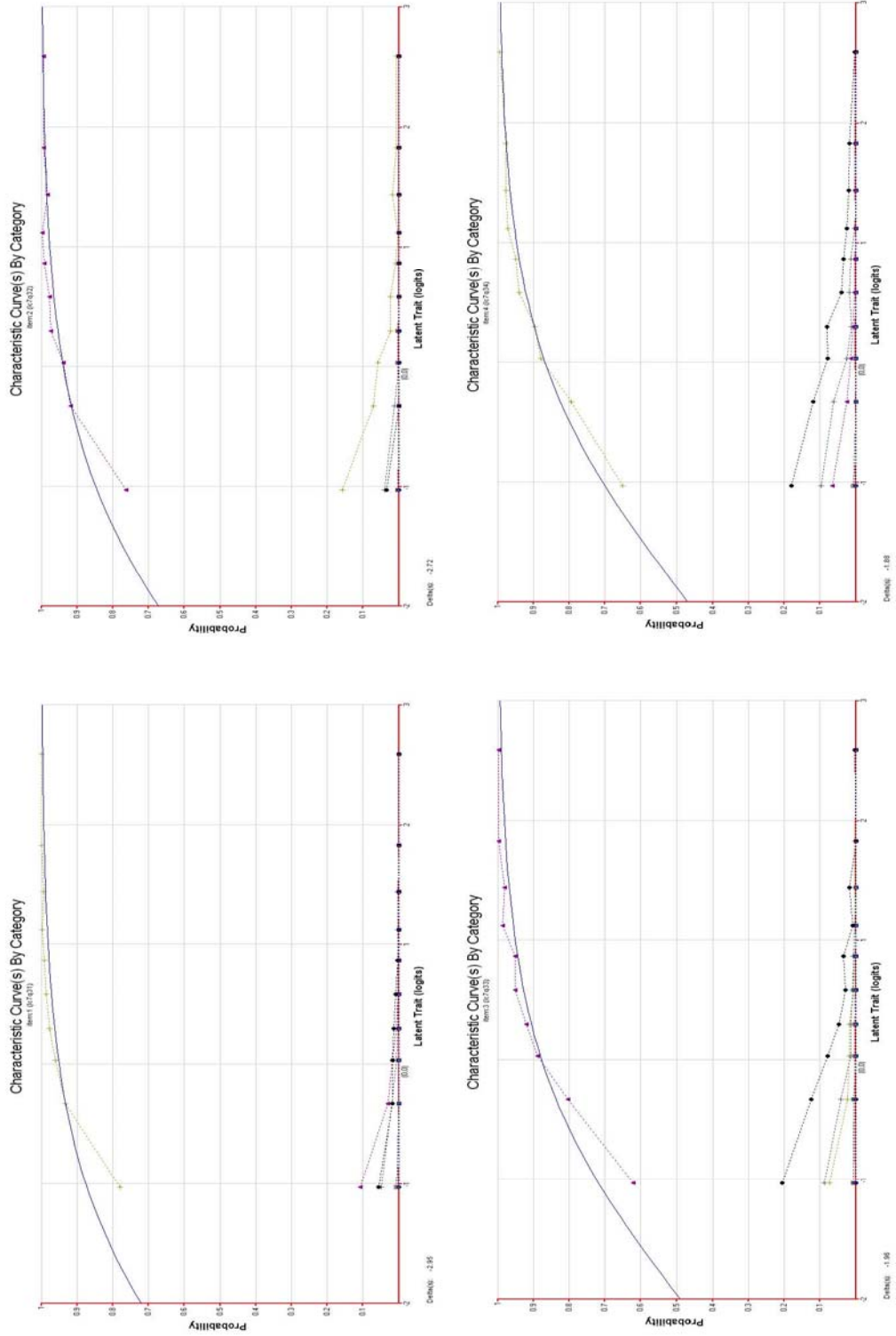


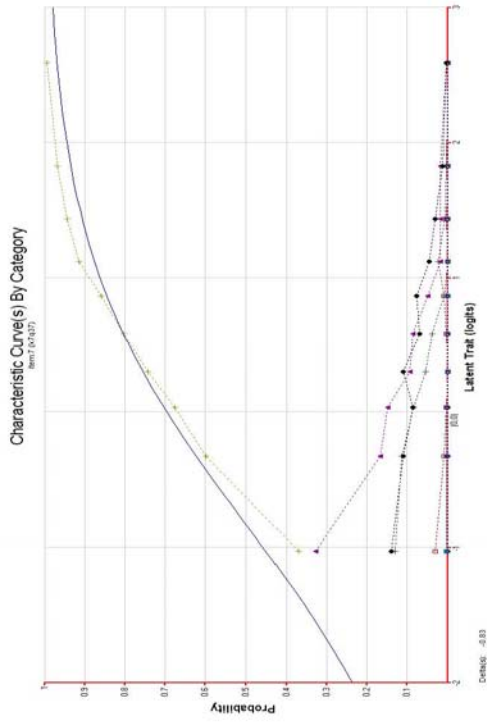
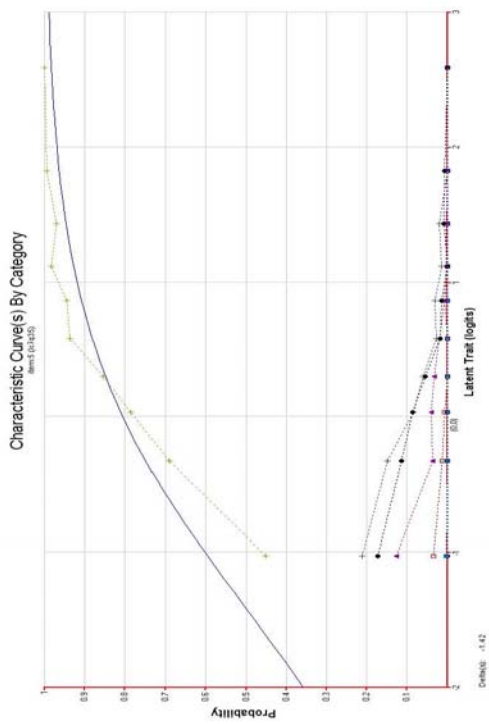
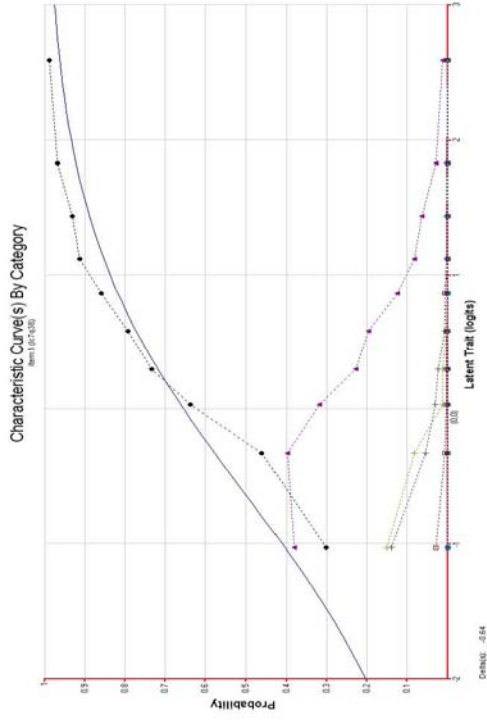
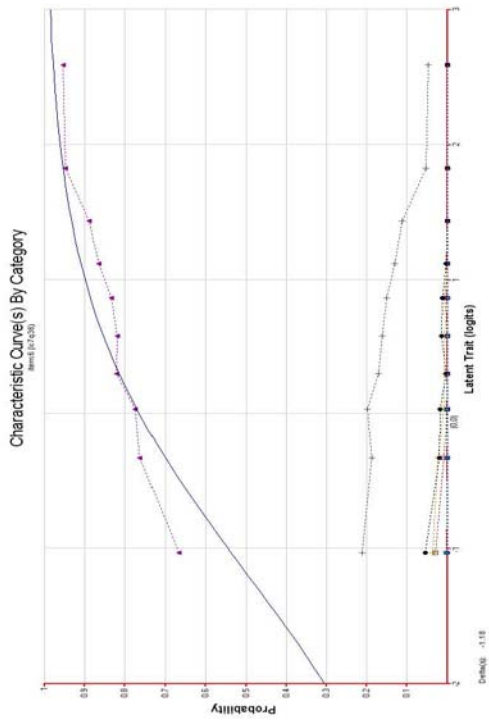


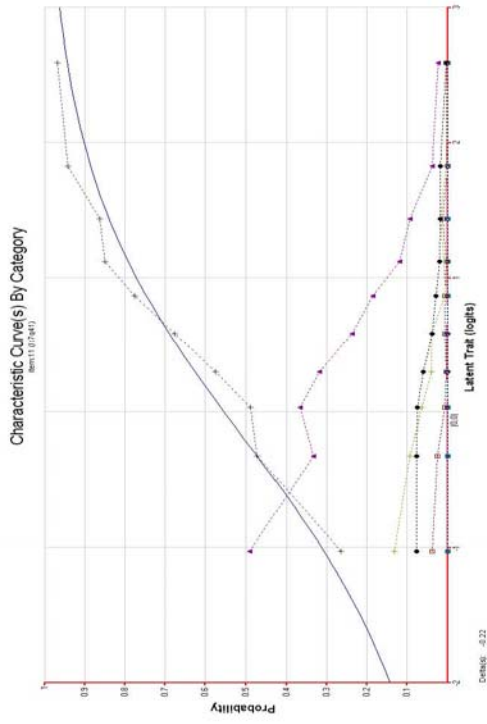
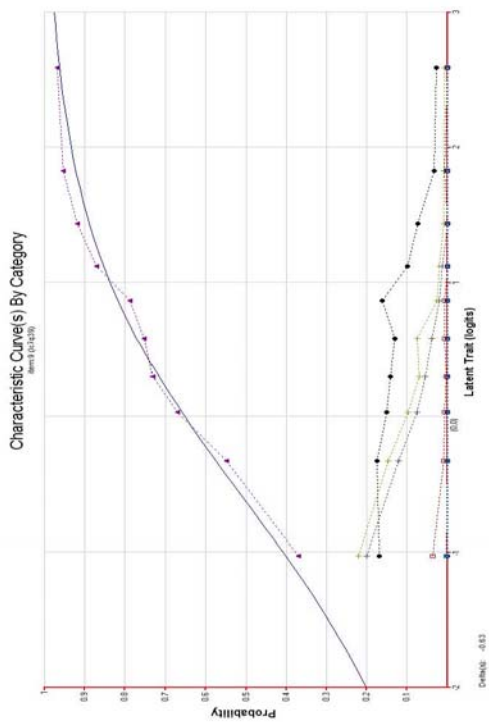
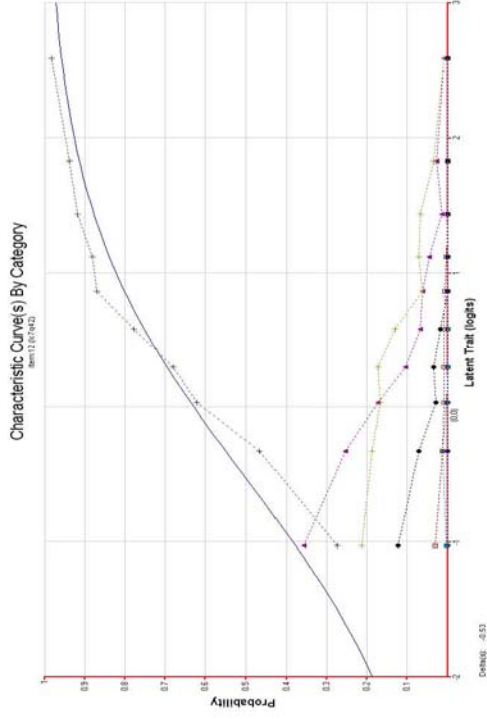
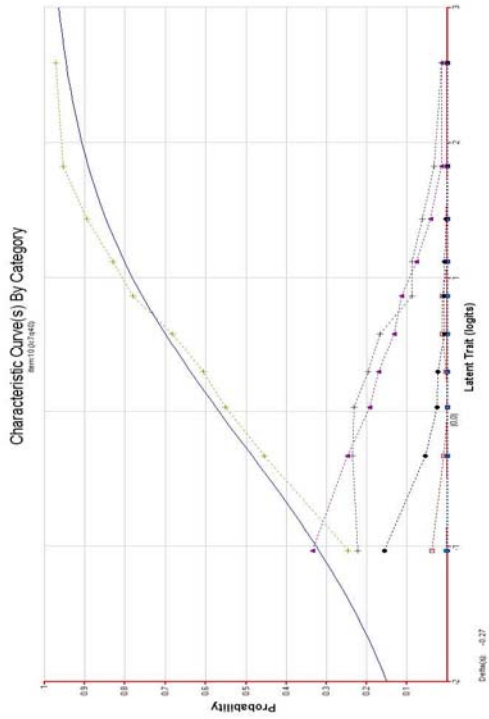




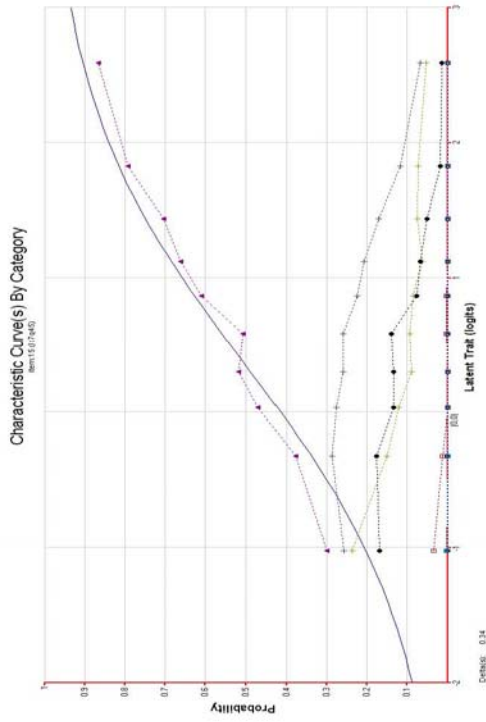
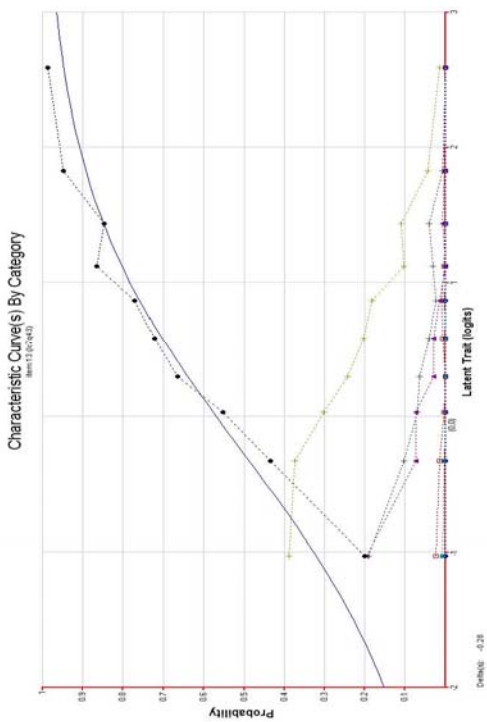
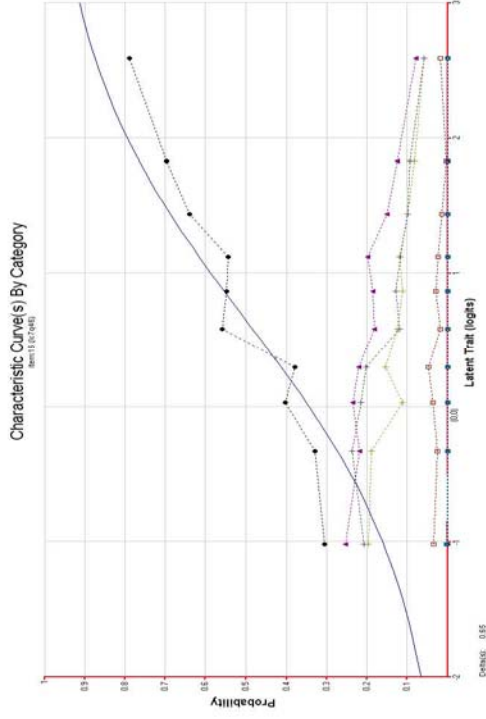
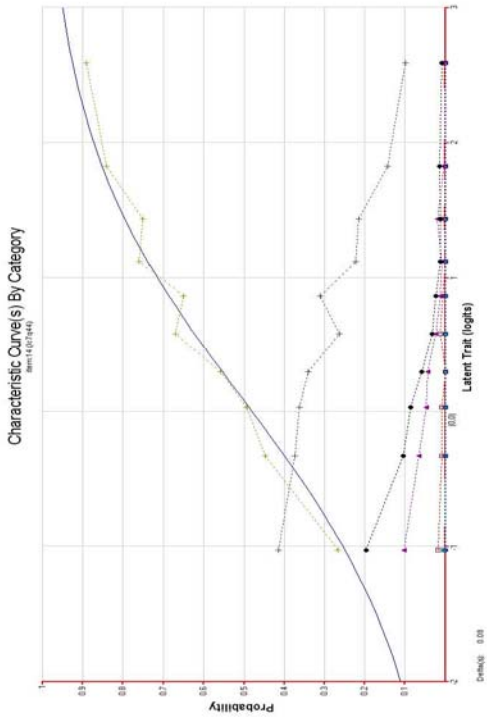
*Year 1 Grammar and Punctuation*

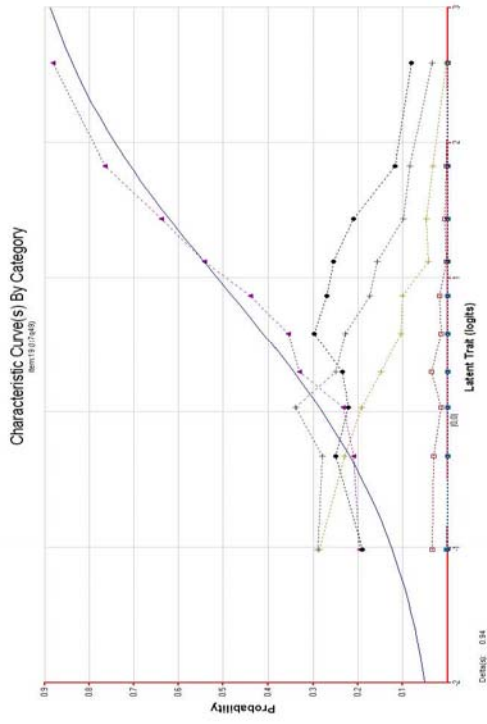
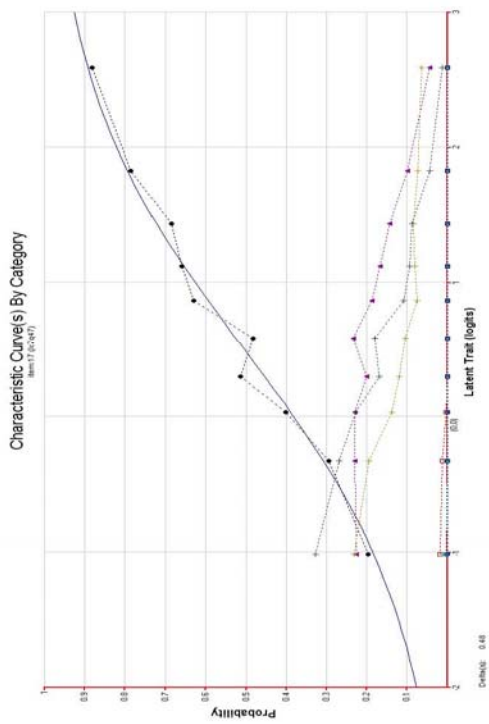
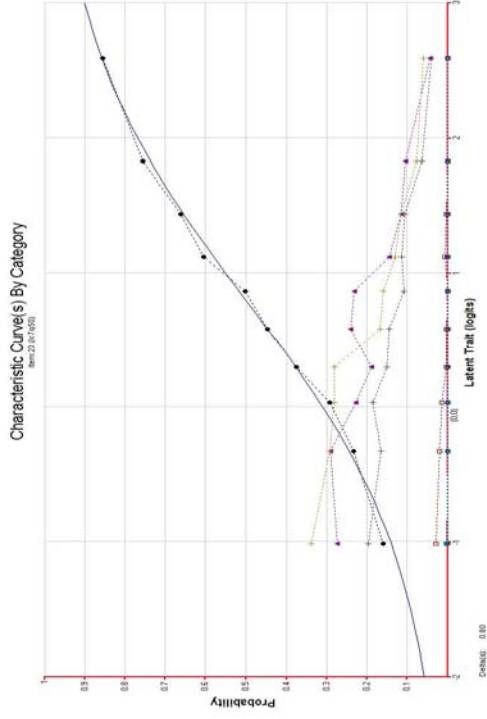
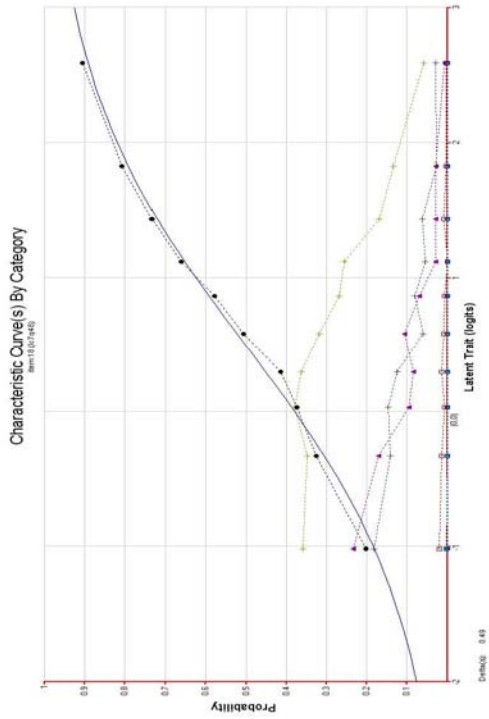


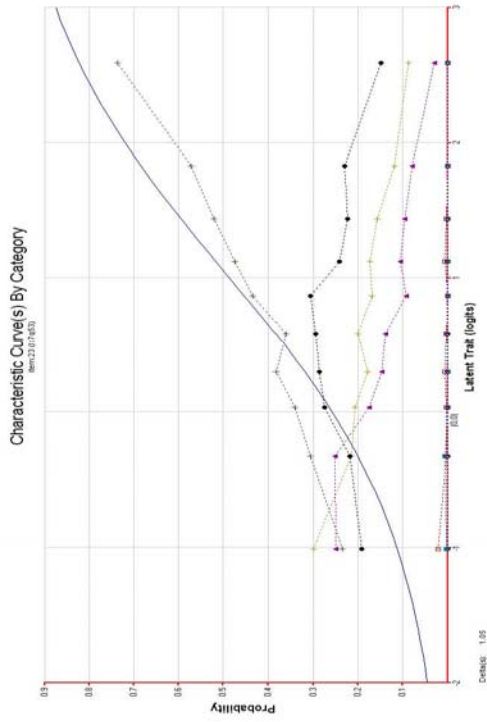
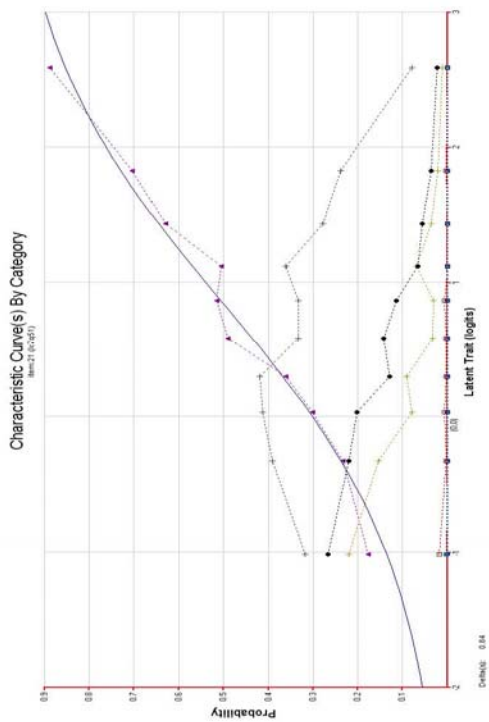
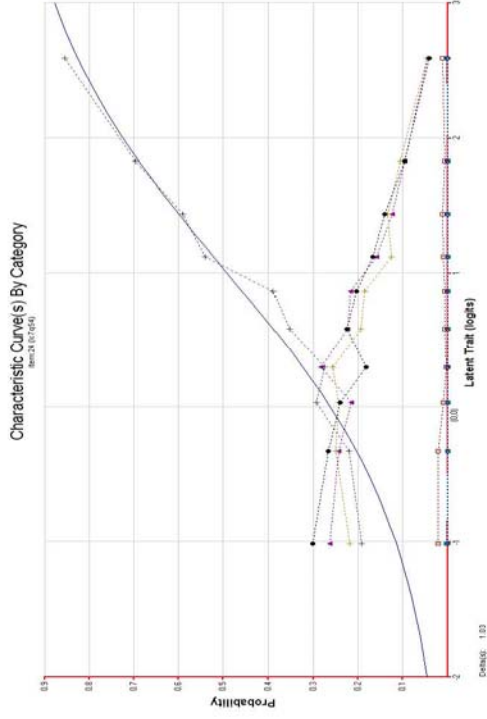
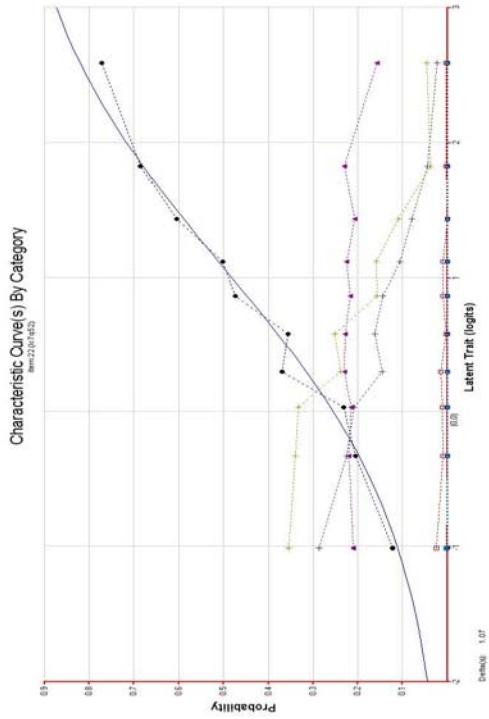


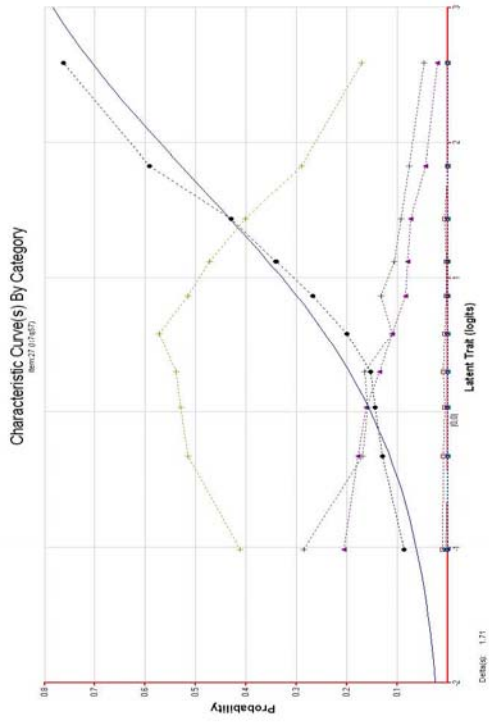
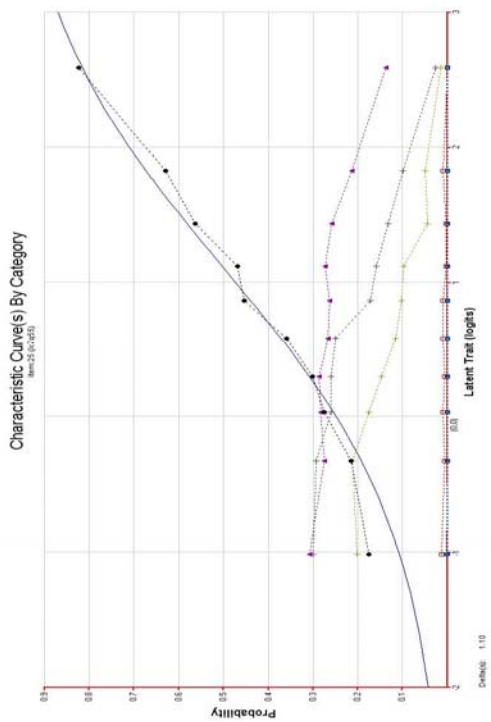
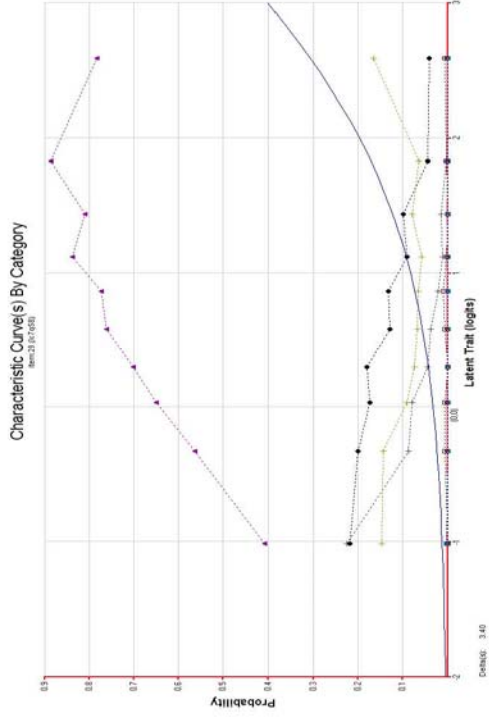
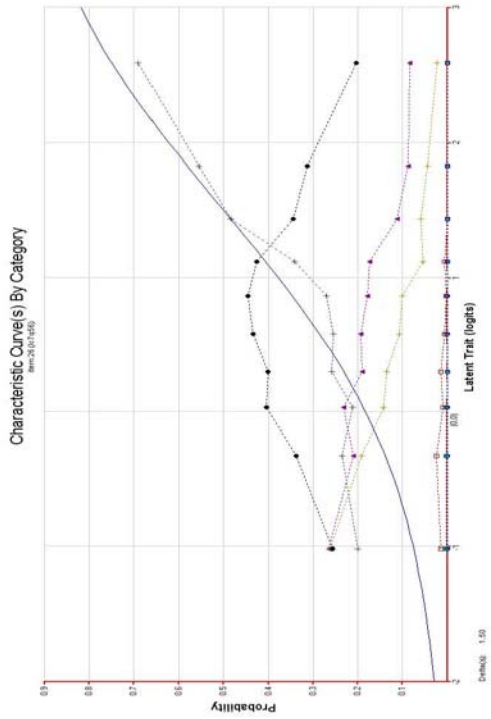




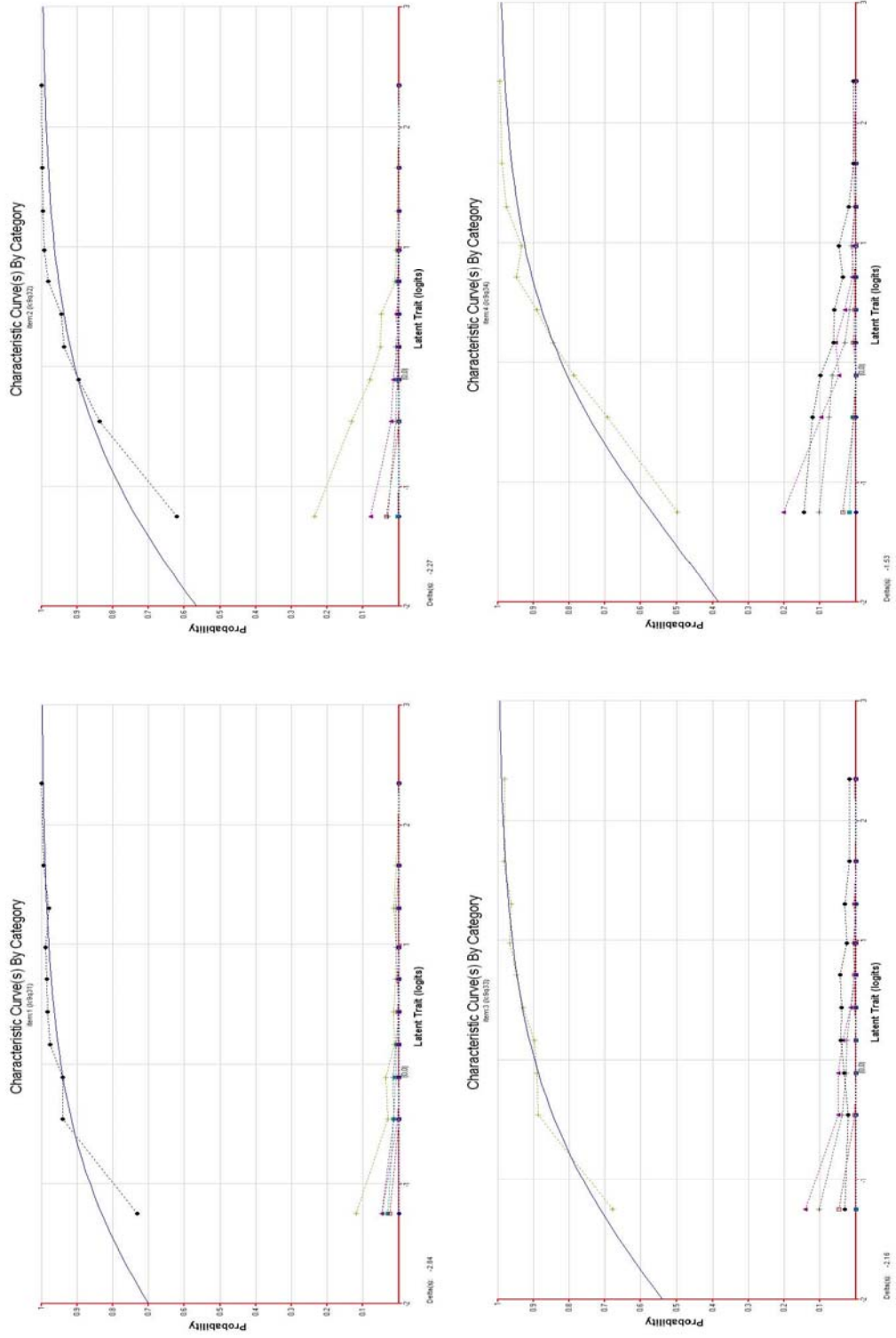


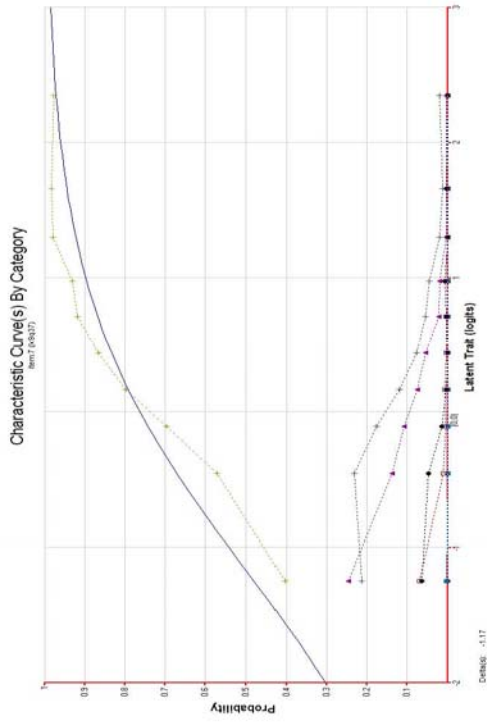
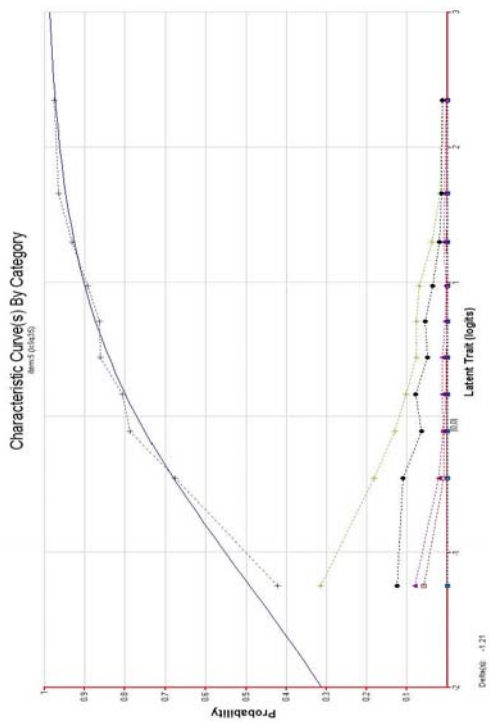
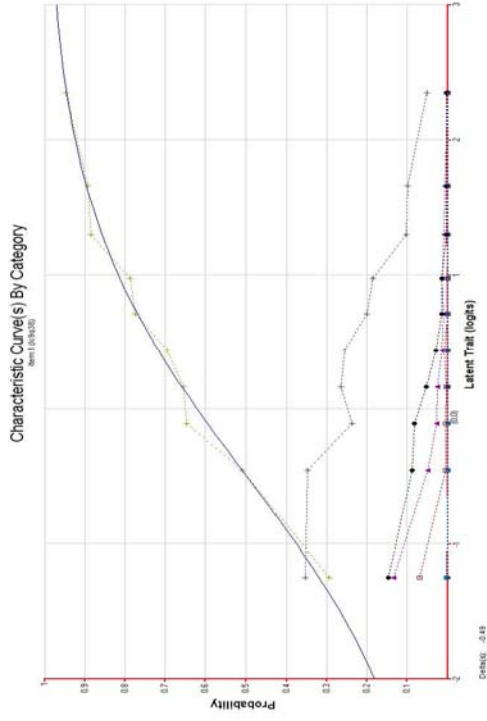
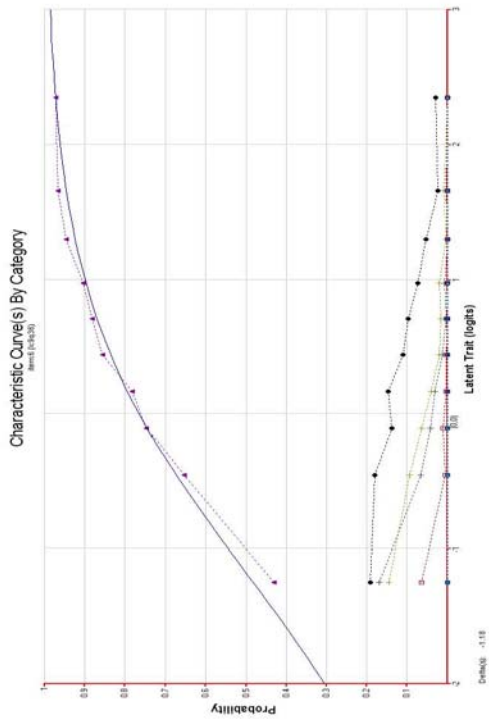


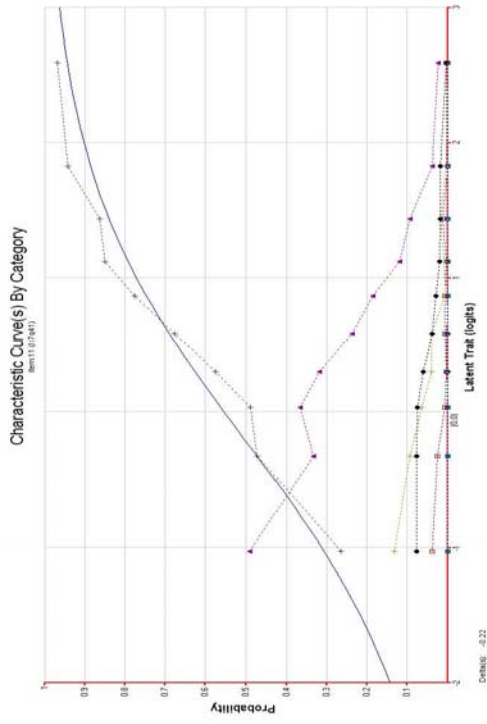
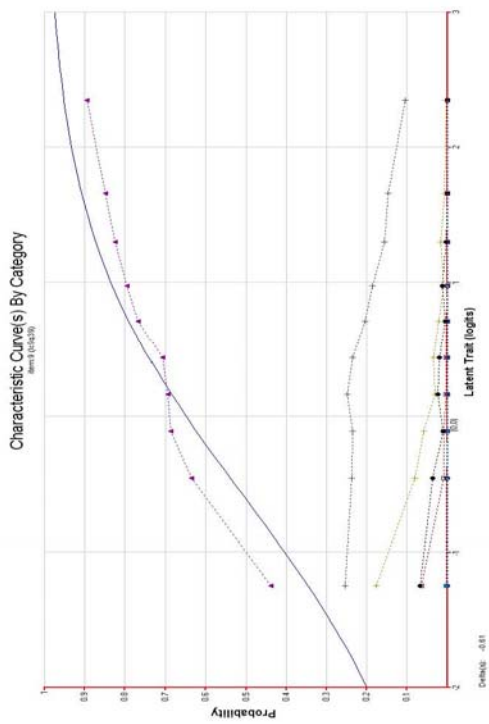
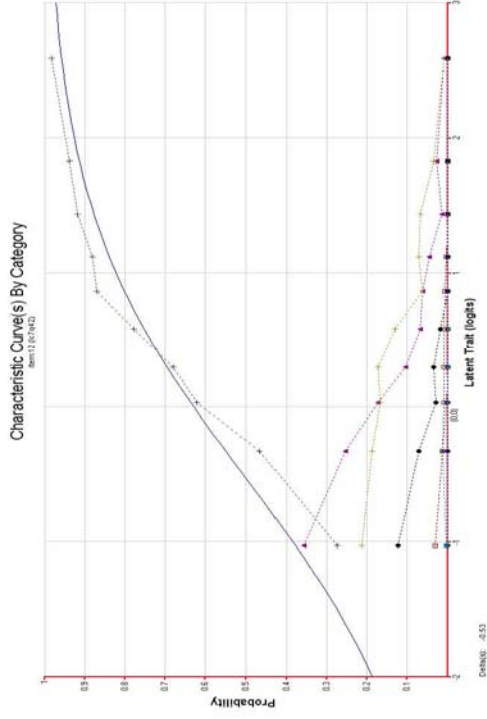
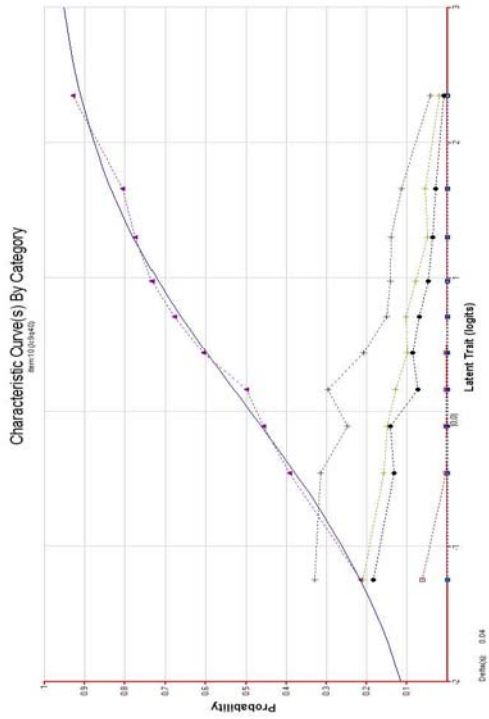


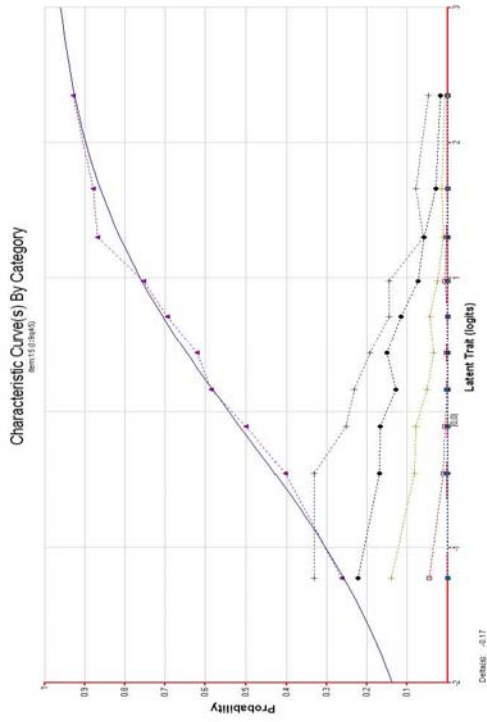
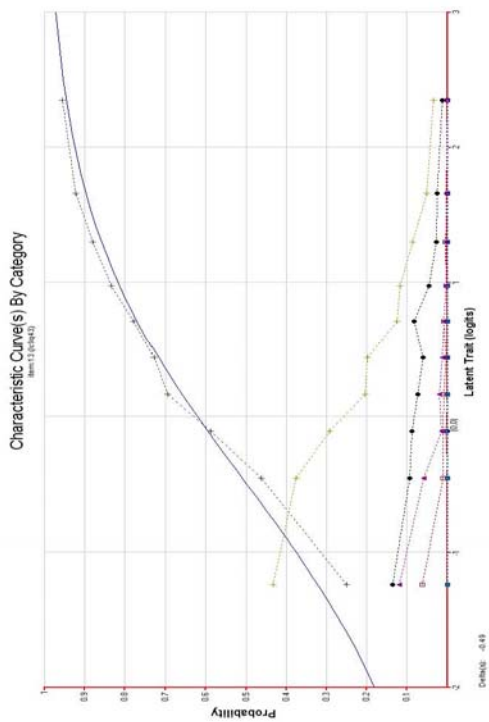
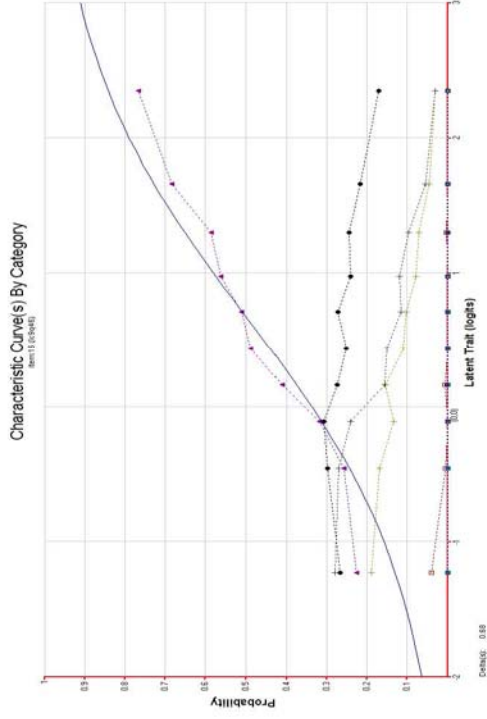
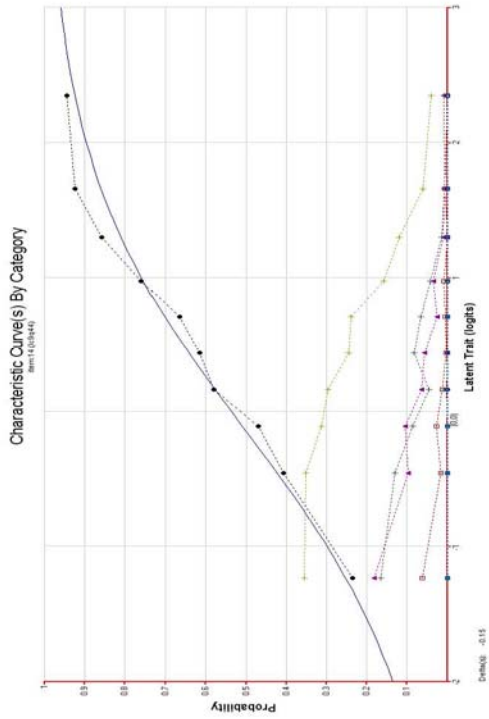


*Year 9 Grammar and Punctuation*

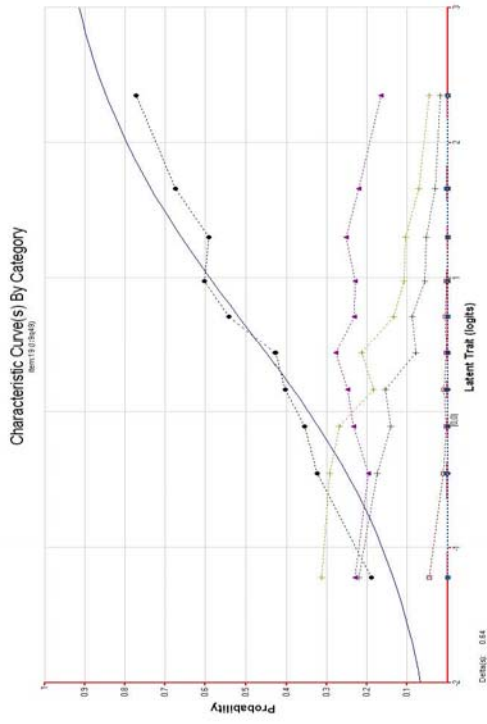
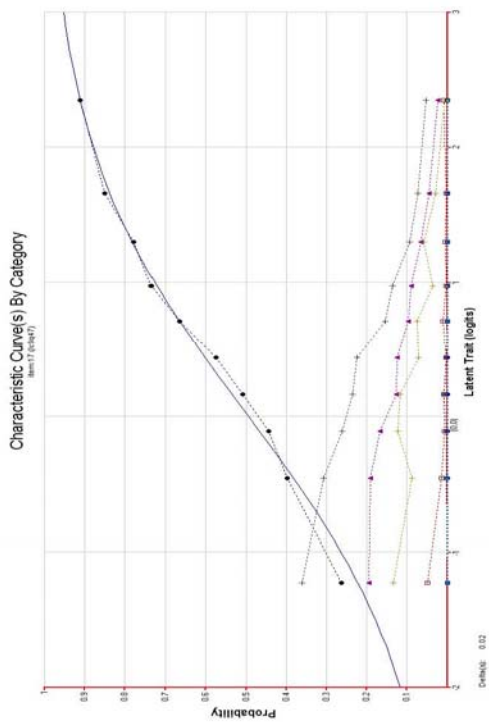
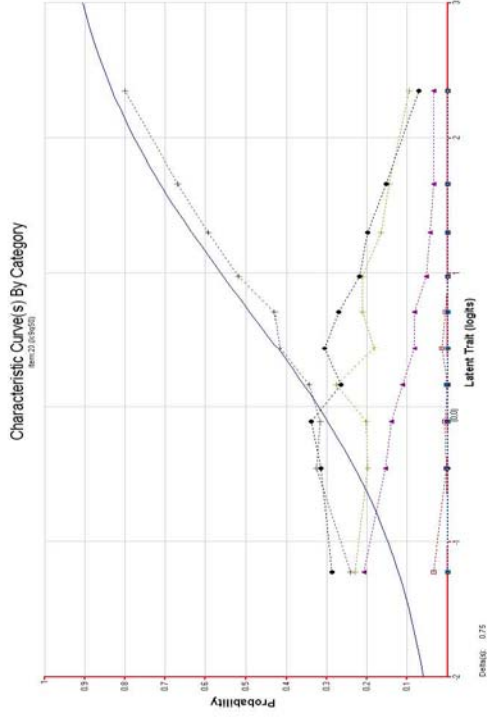
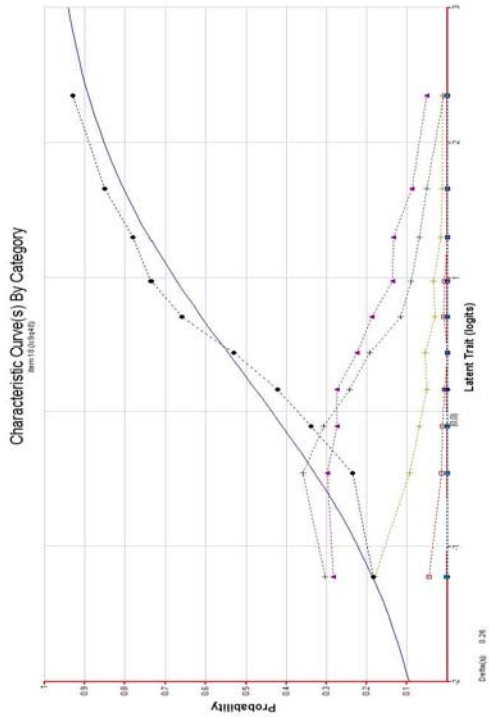


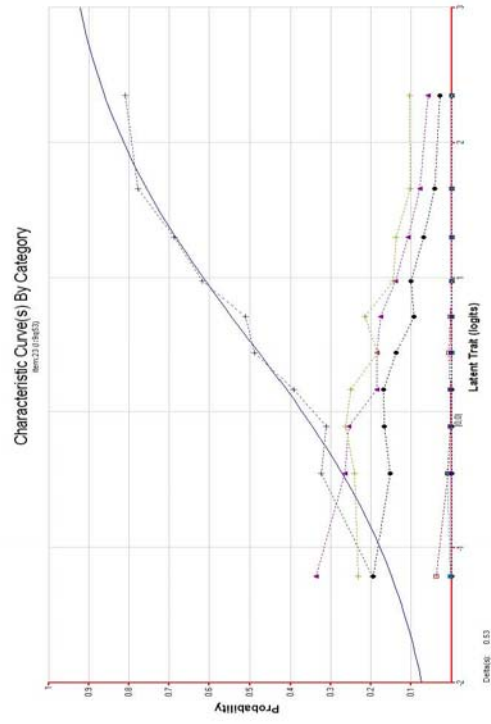
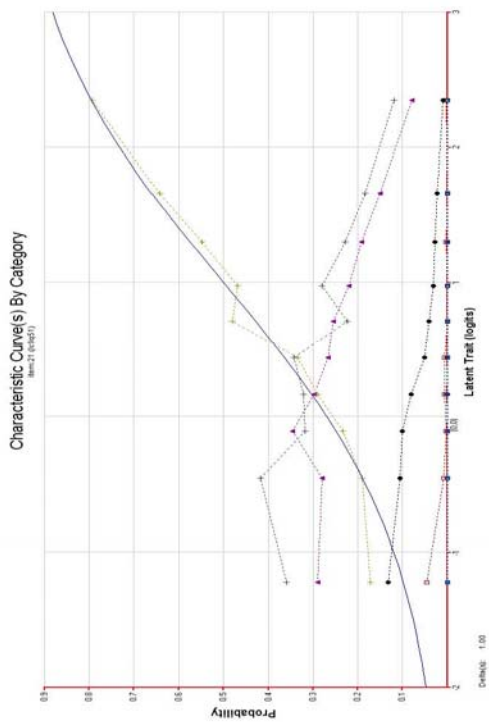
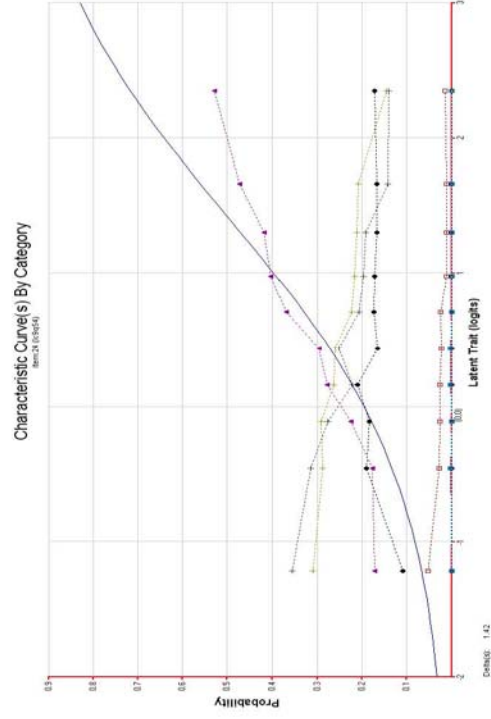
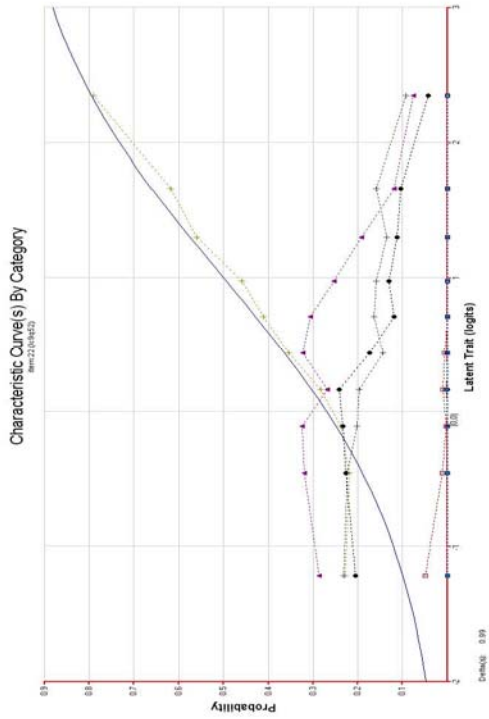


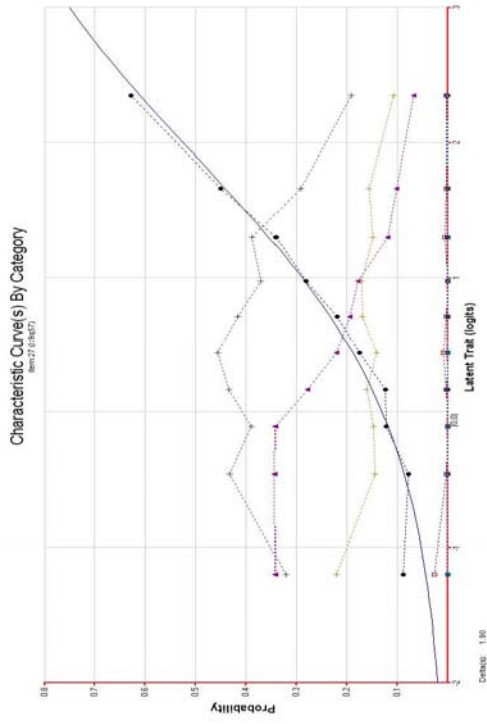
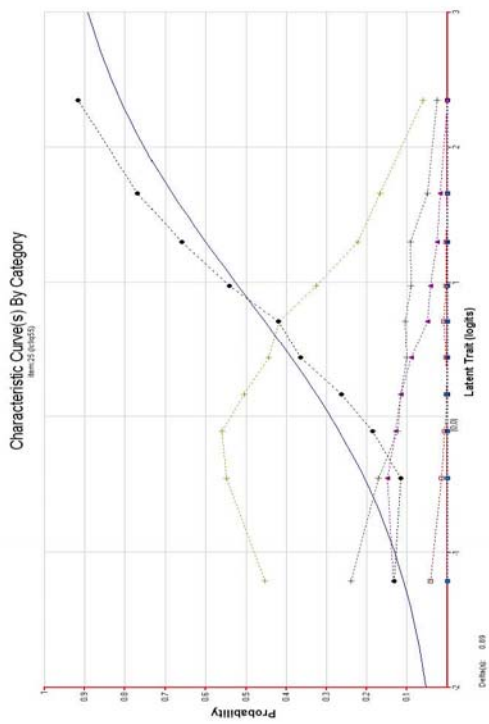
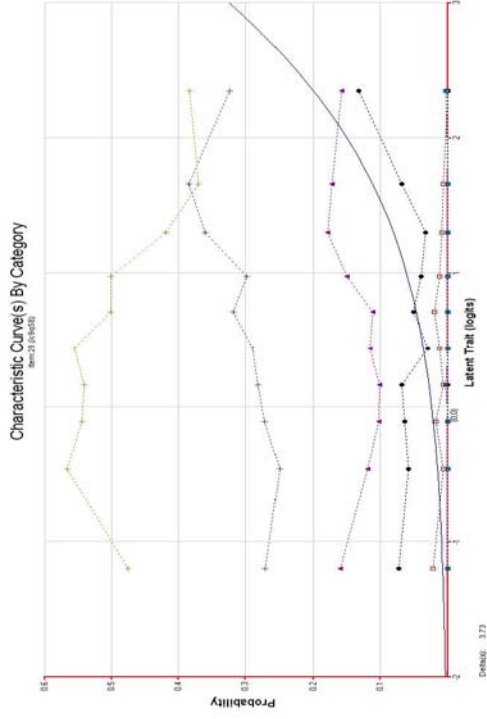
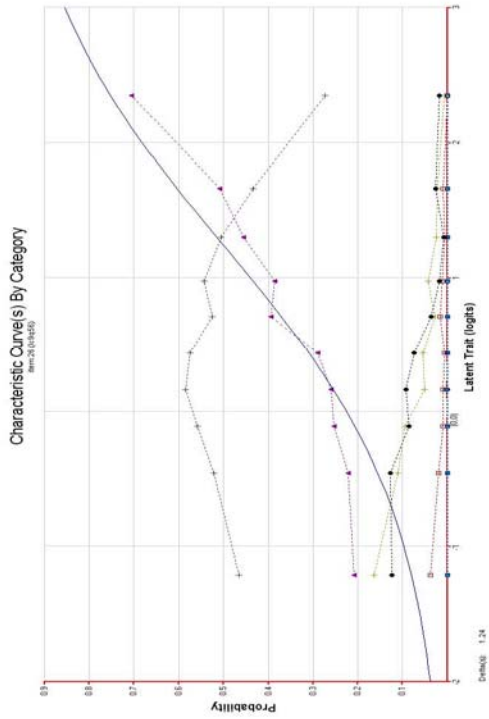




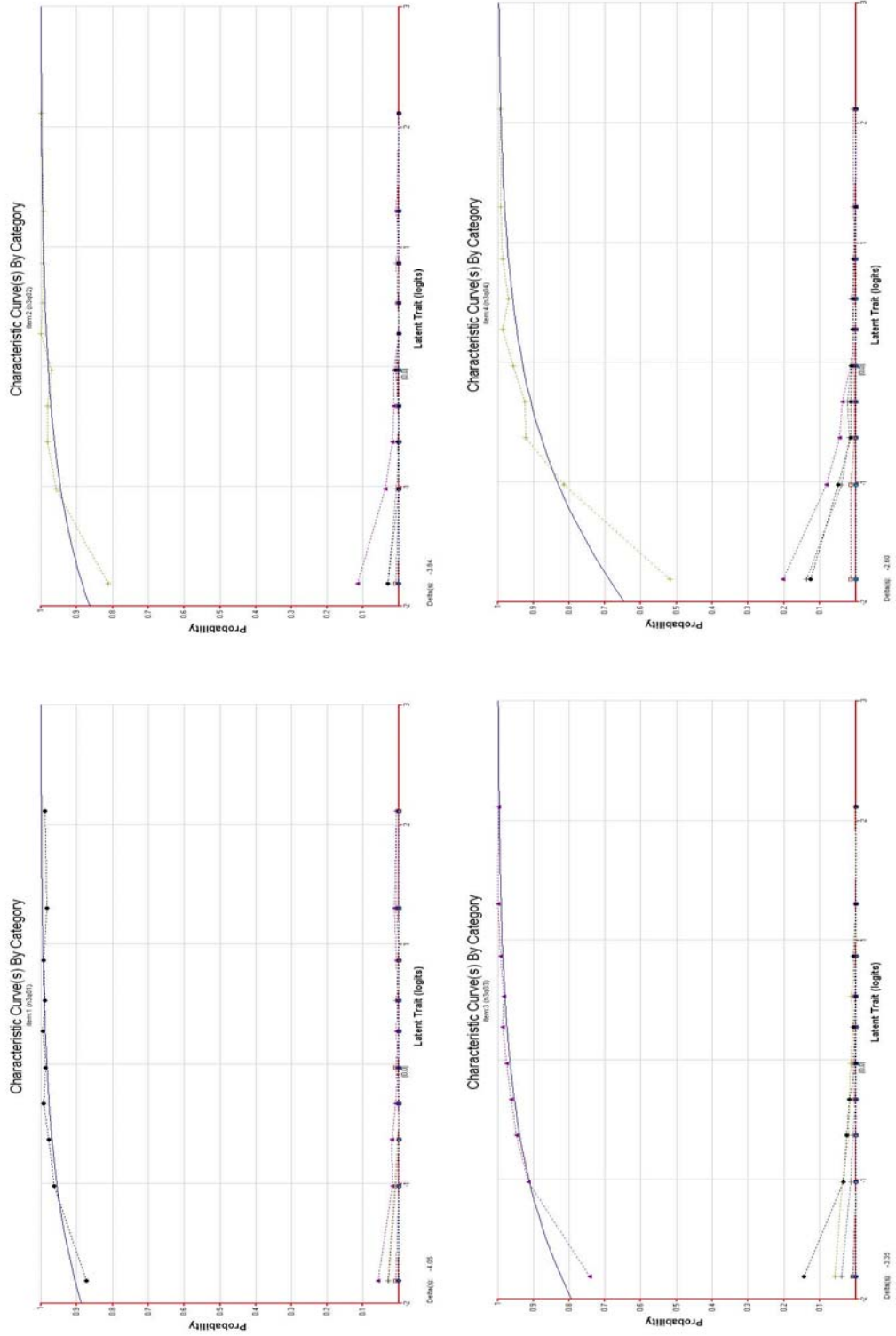


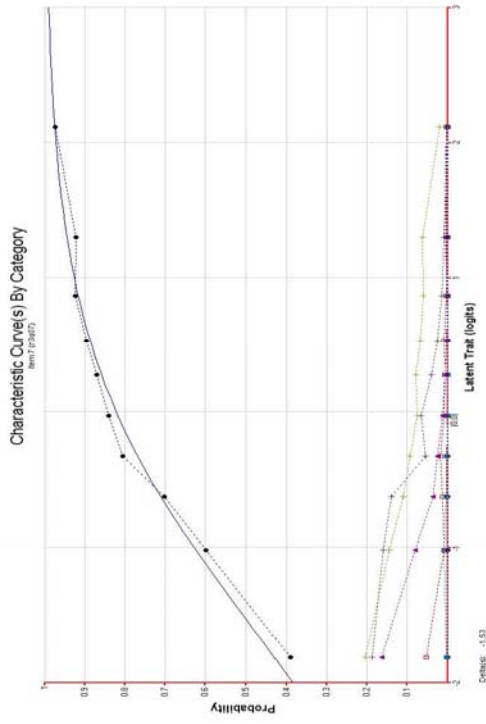
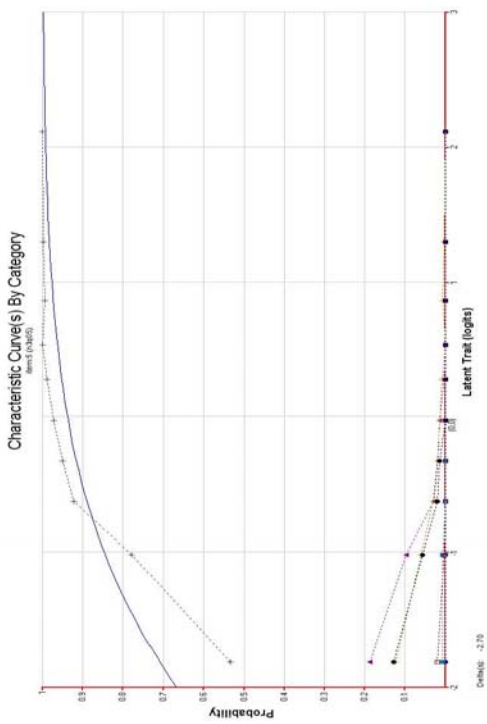
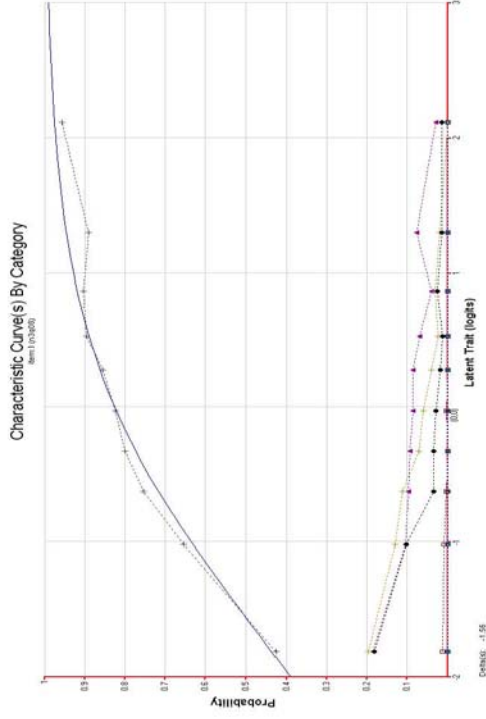
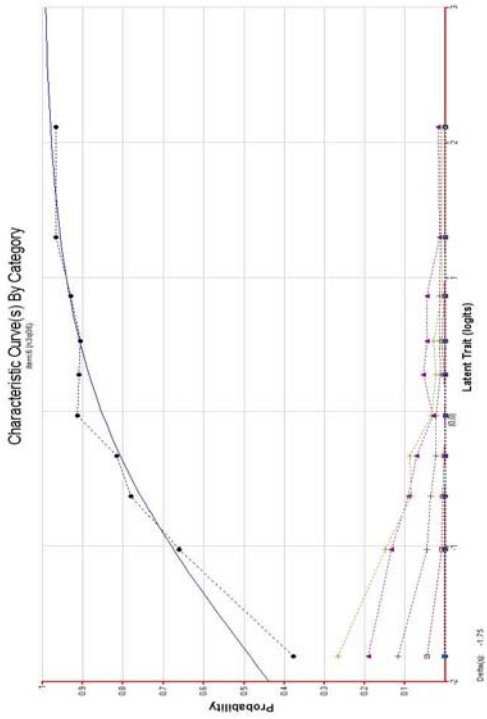


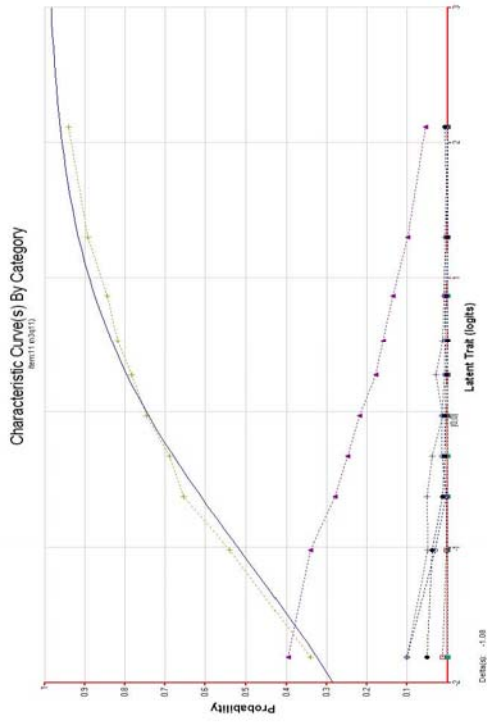
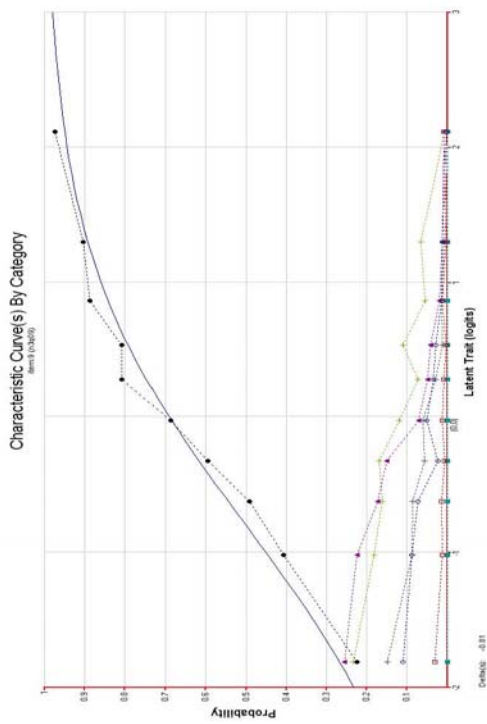
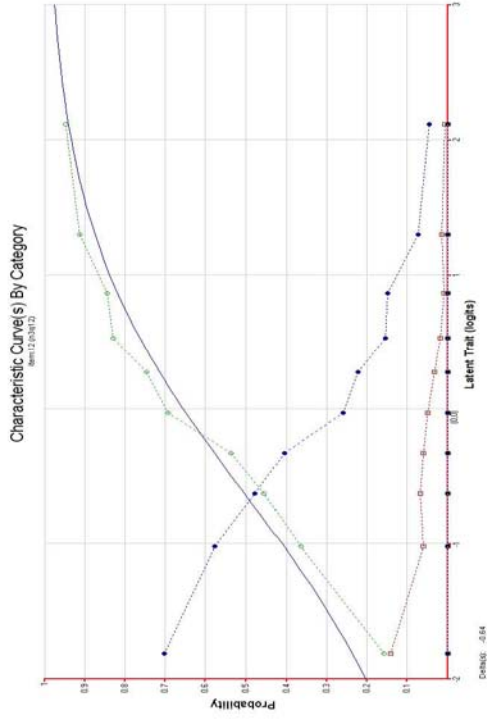
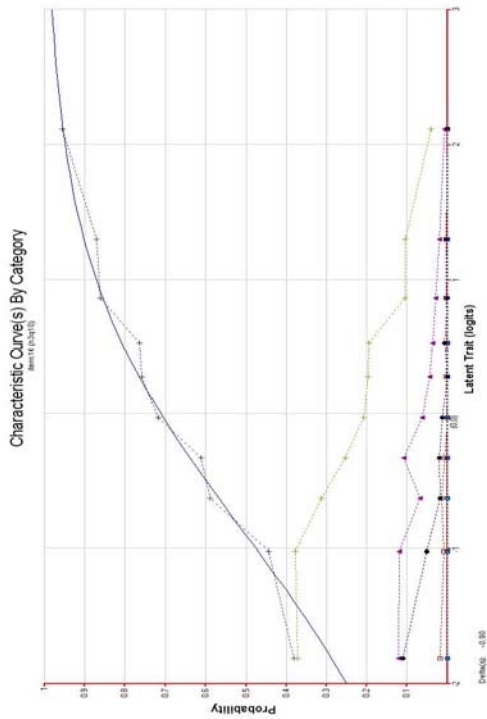


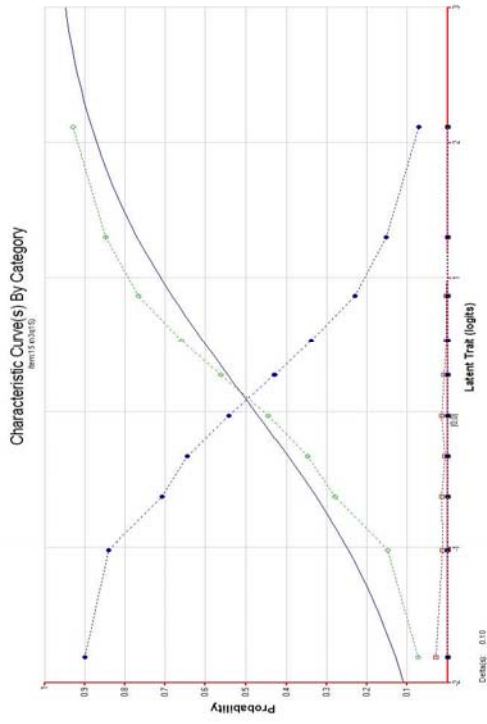
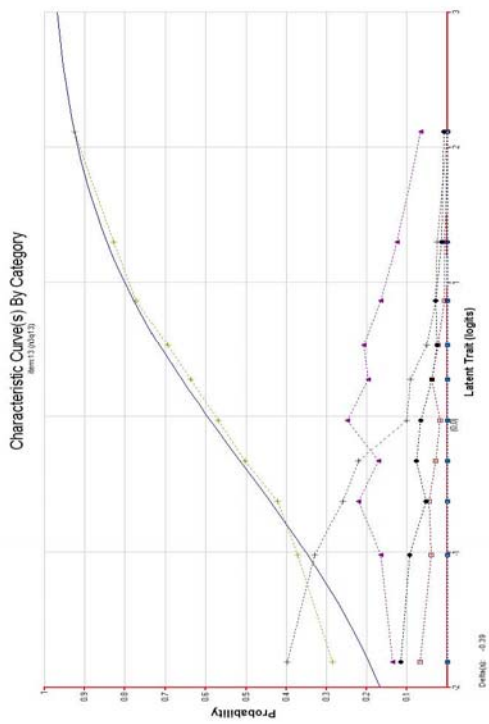
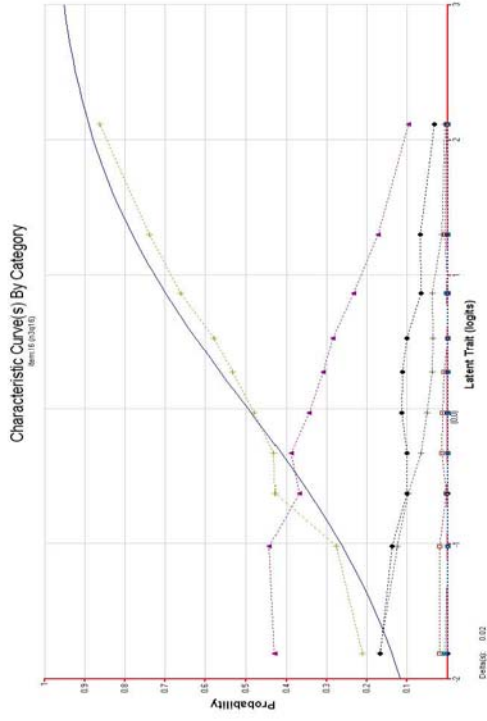
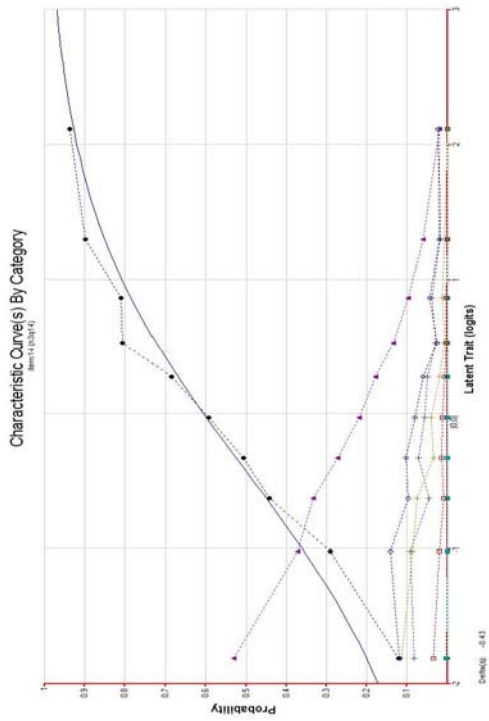


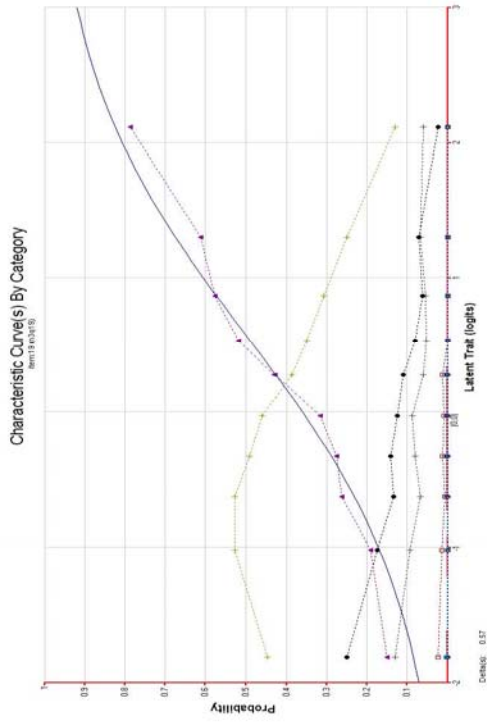
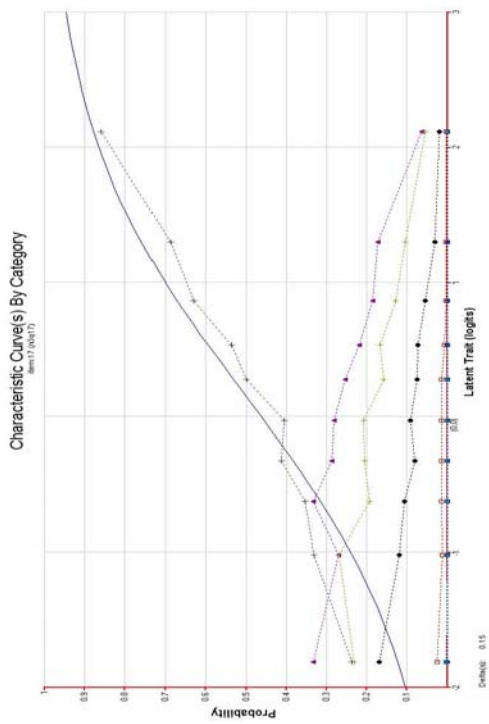
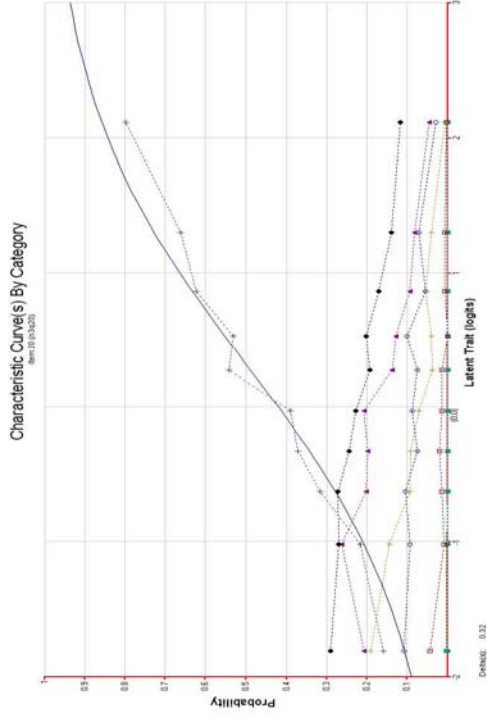
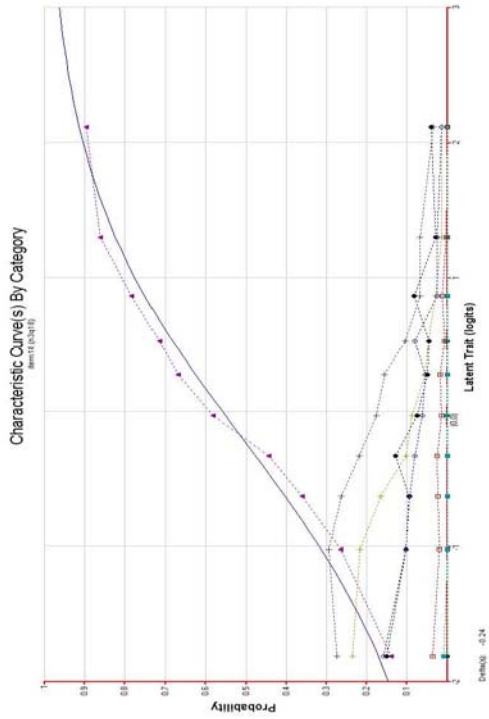
*Year 3 Numeracy*



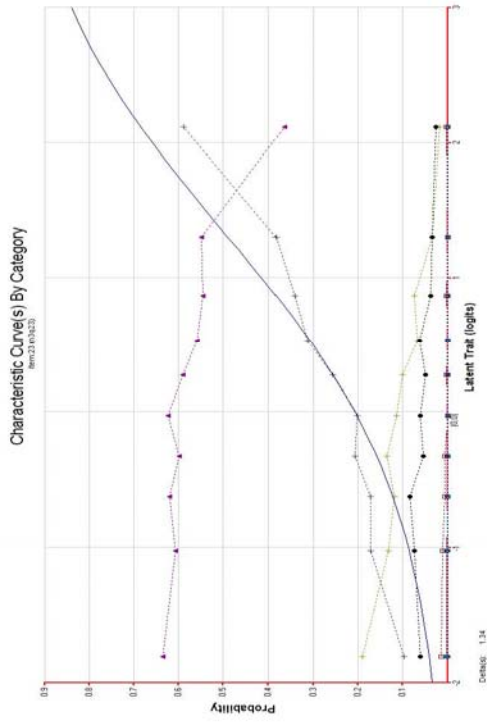
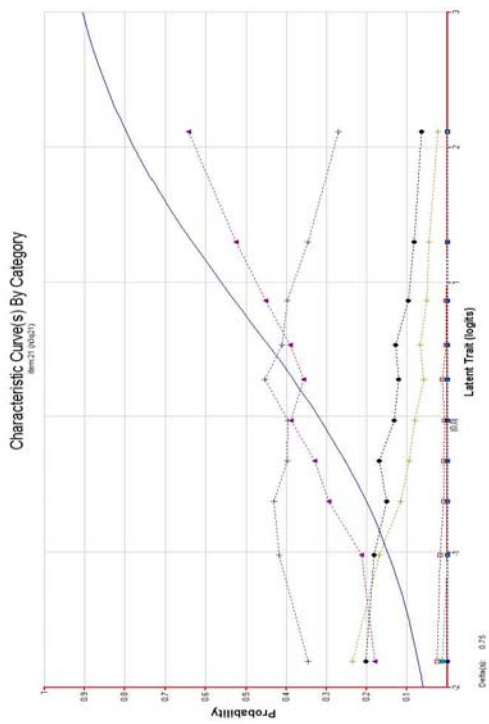
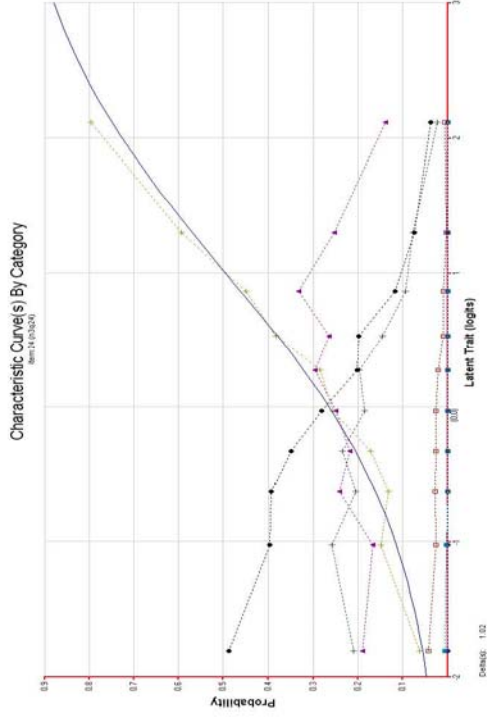
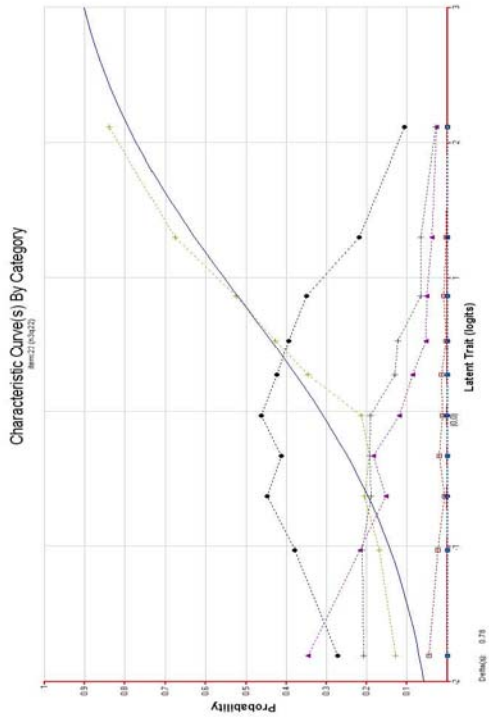


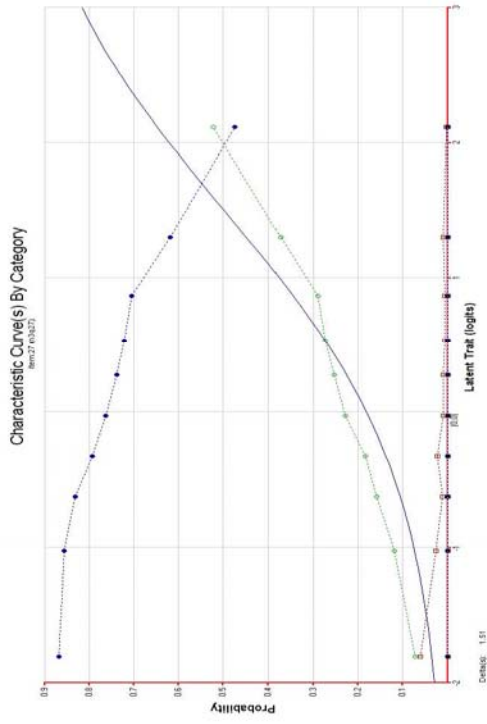
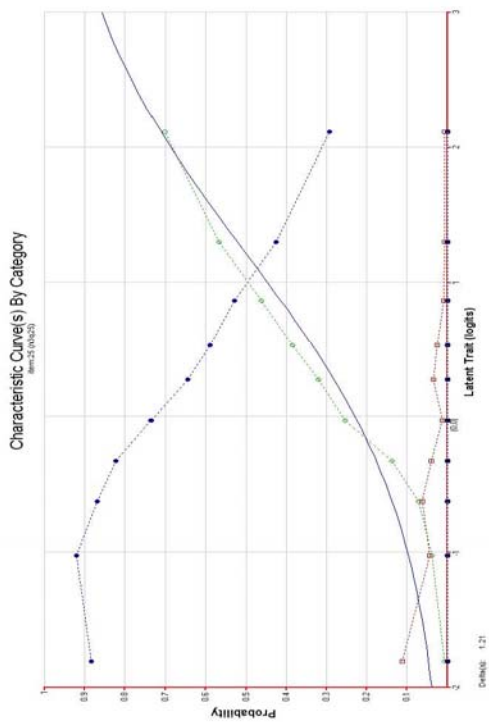
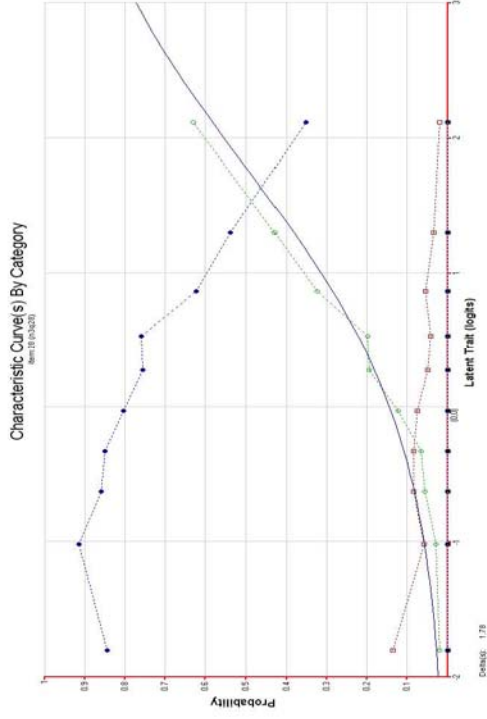
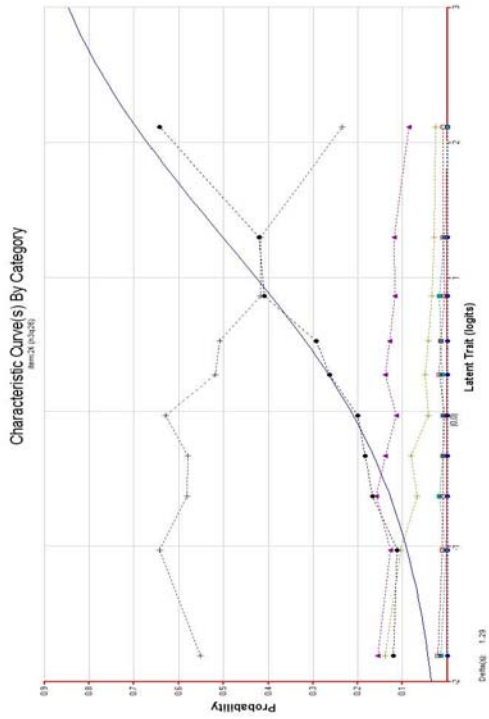


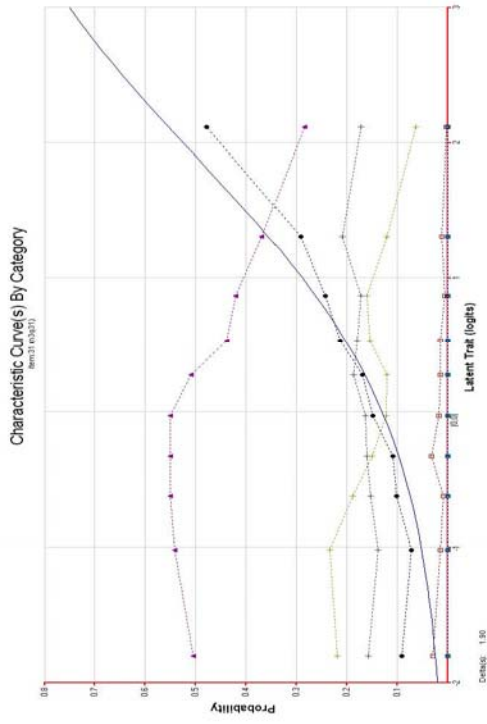
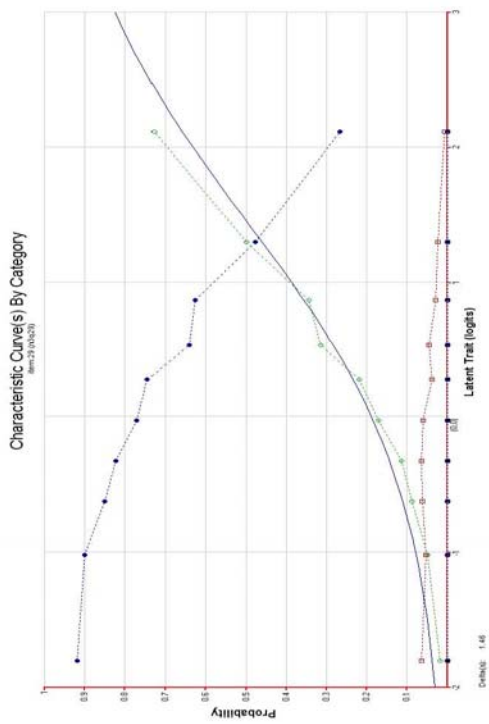
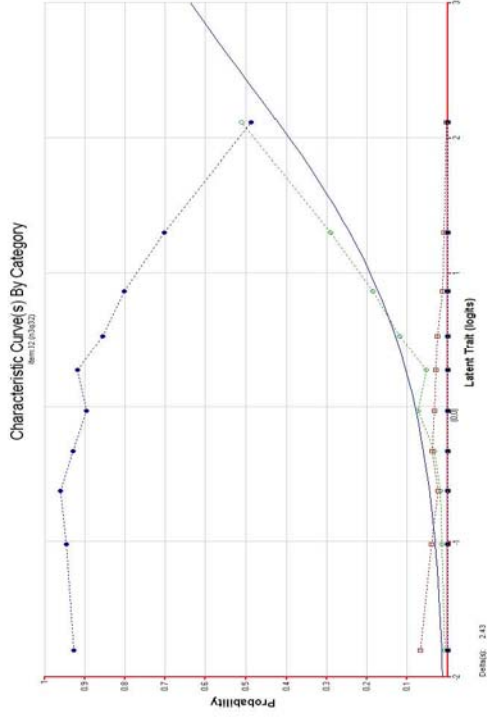
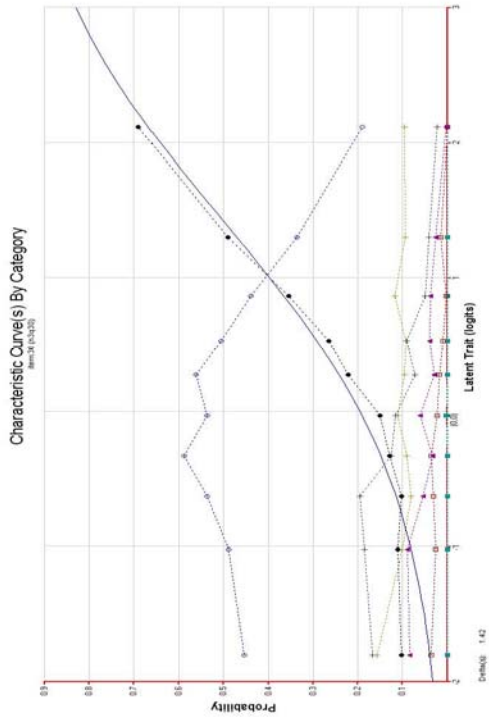


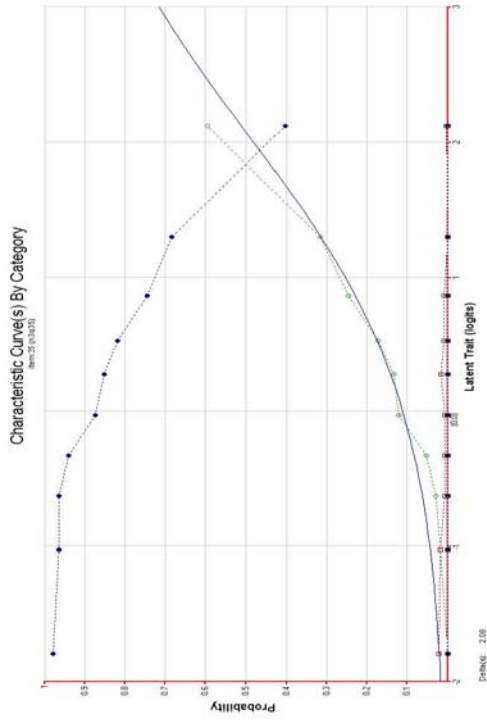
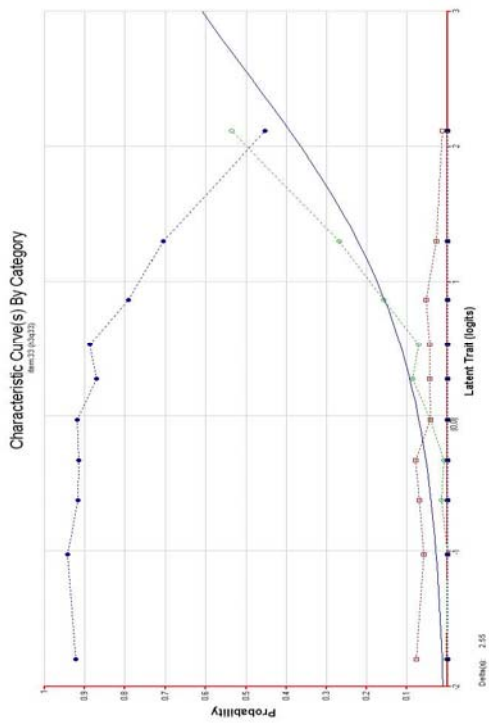
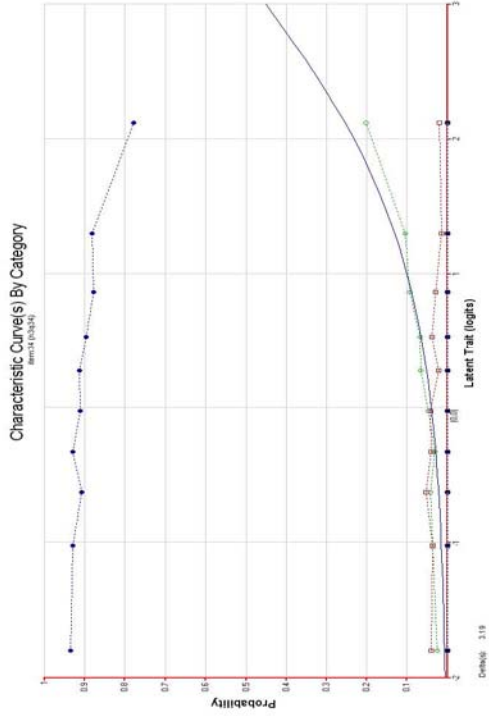




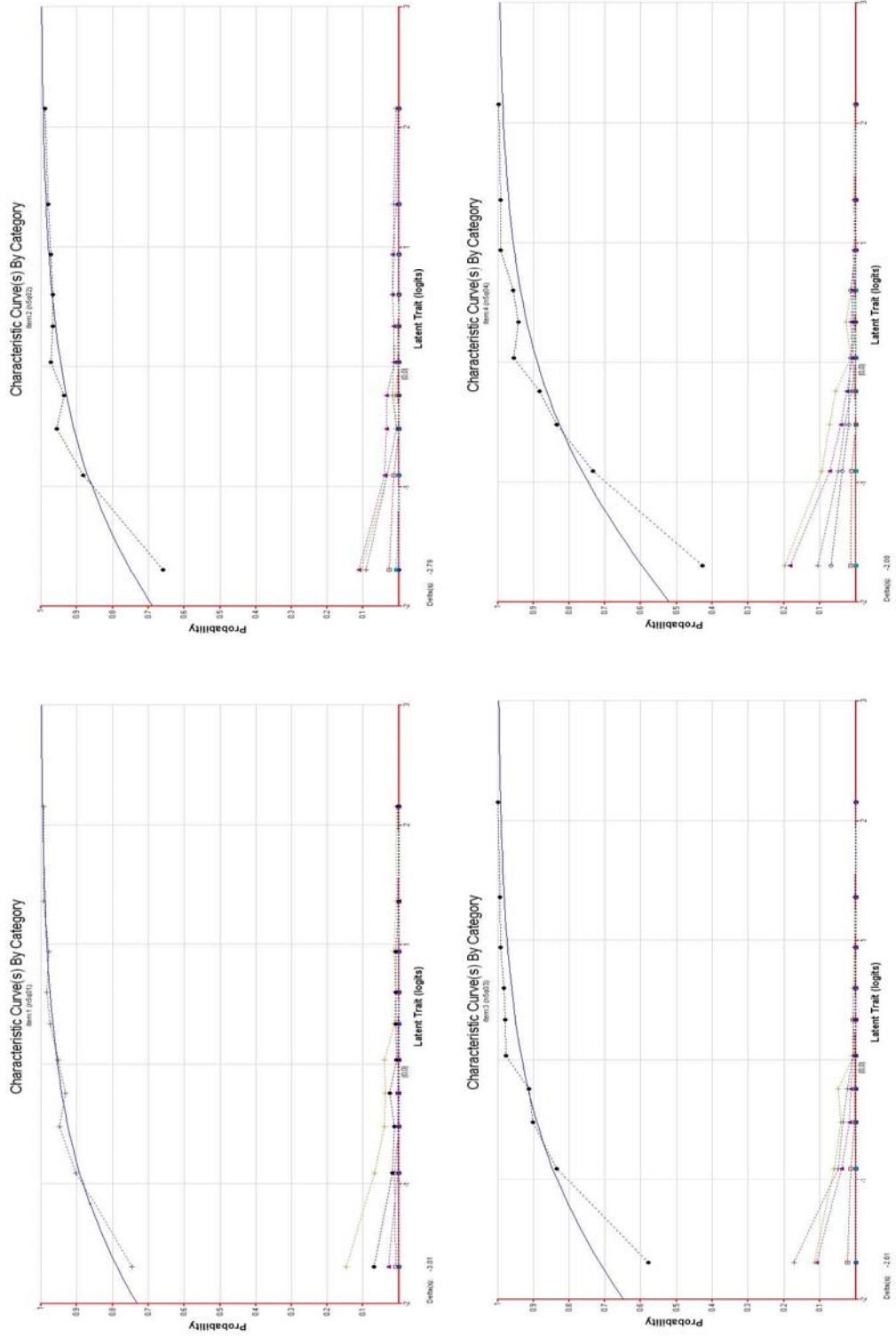


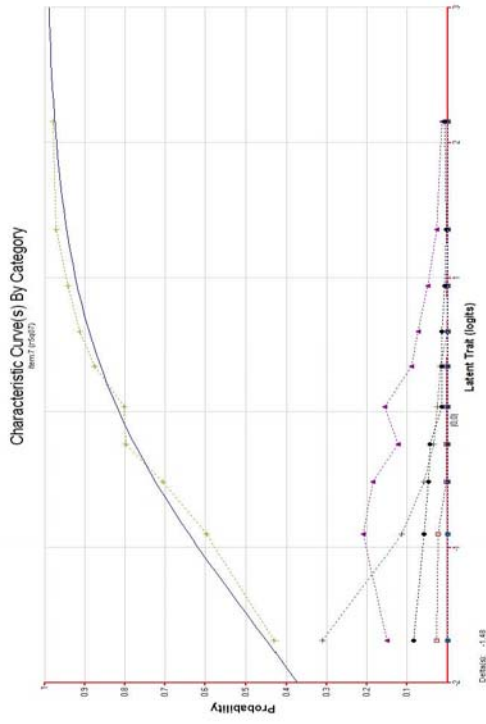
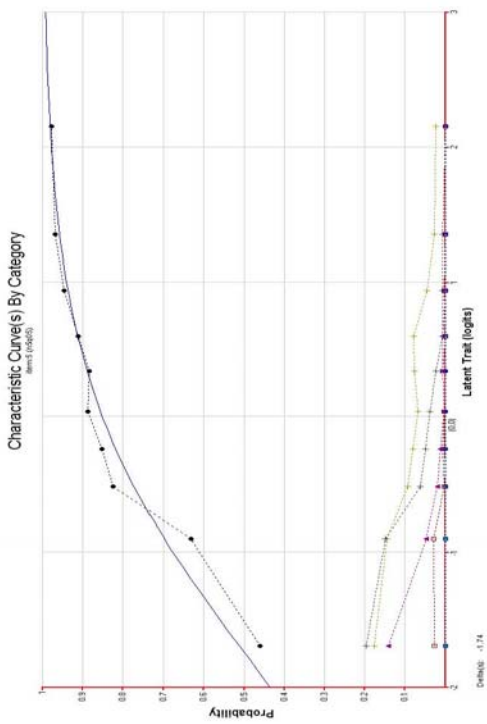
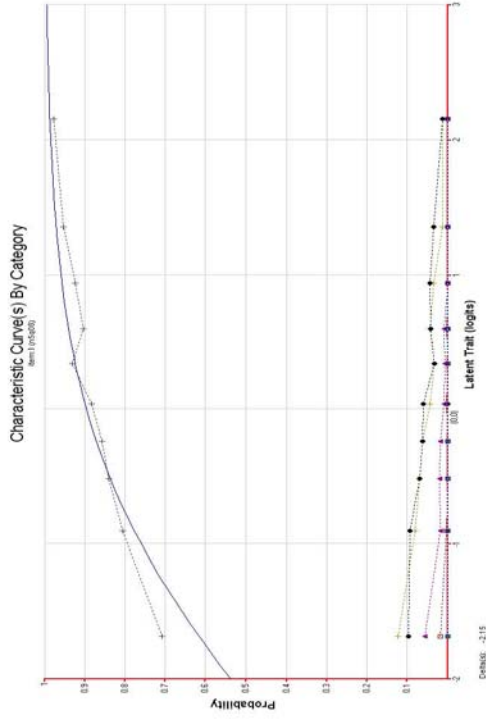
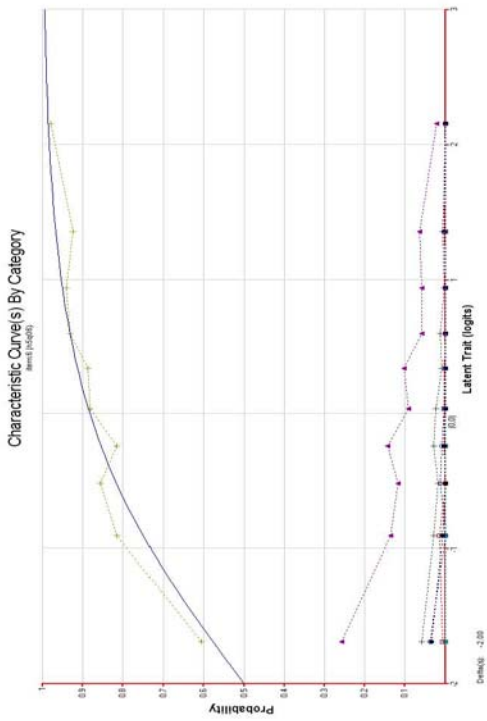


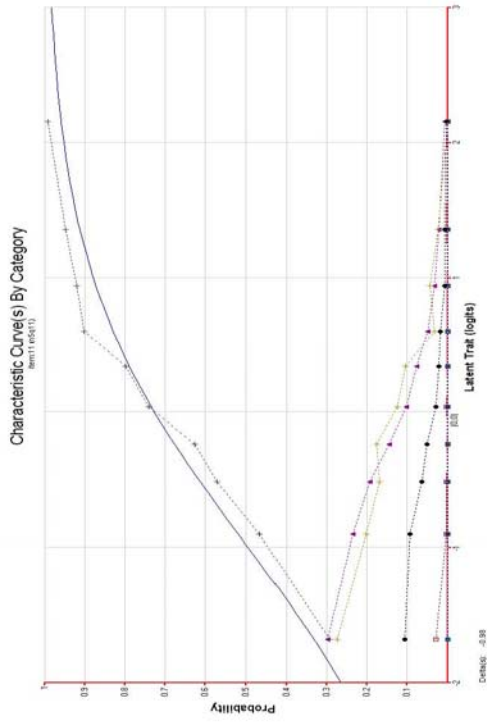
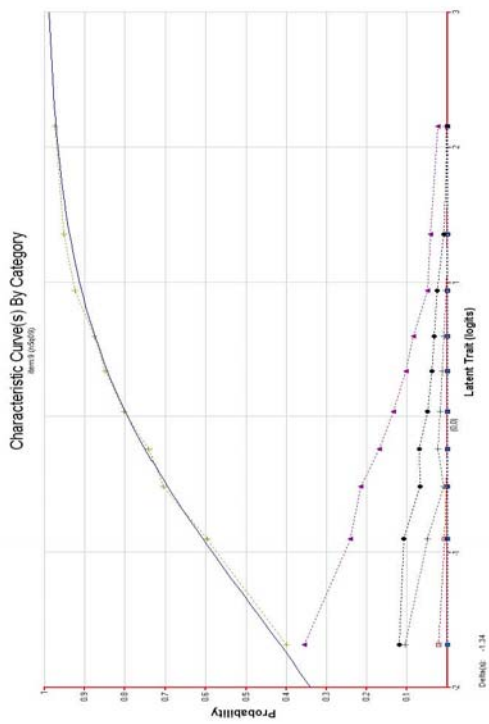
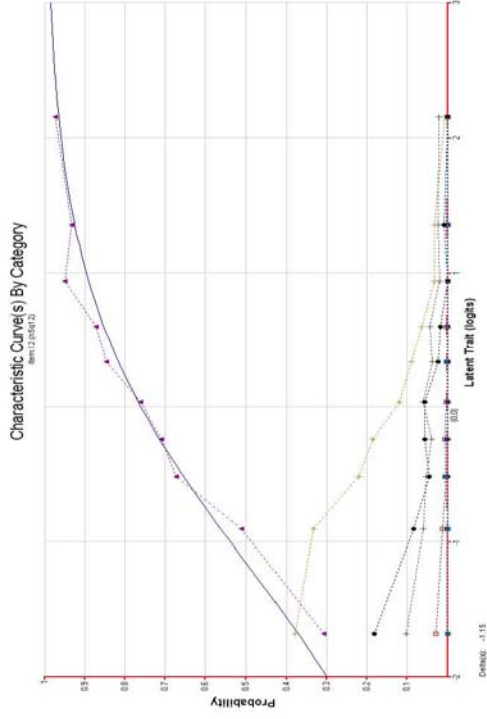
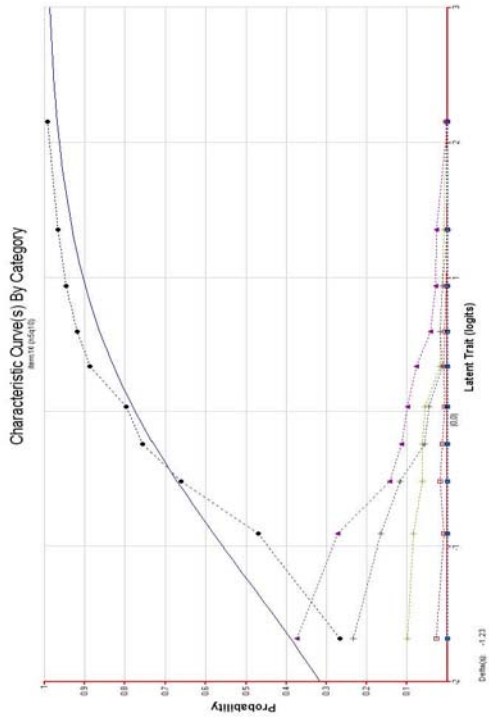


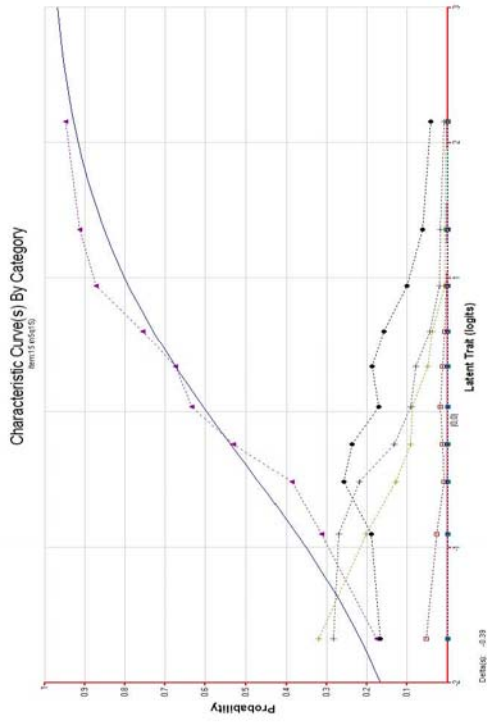
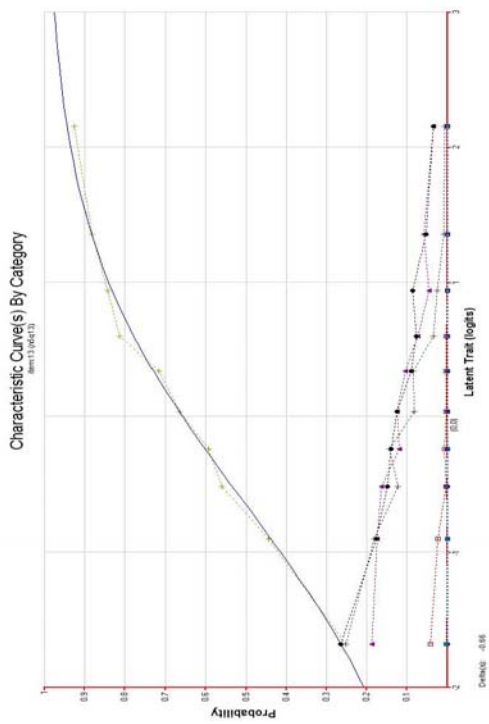
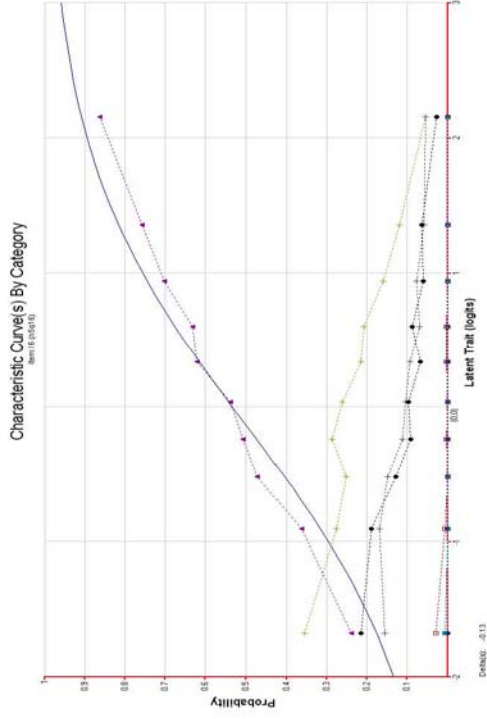
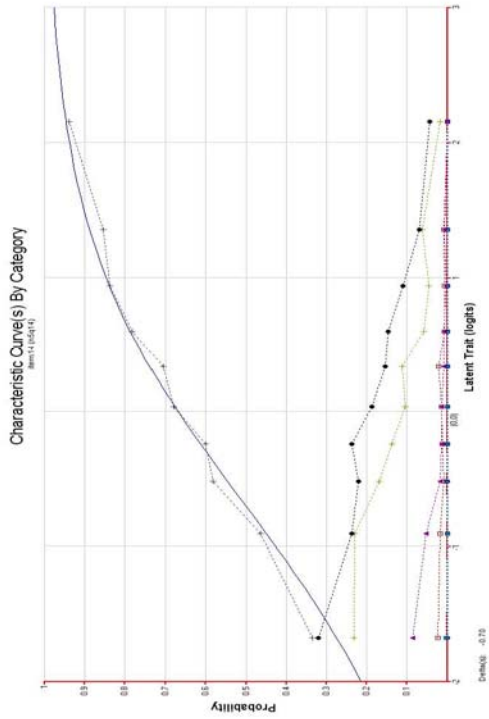


*Year 5 Numeracy*

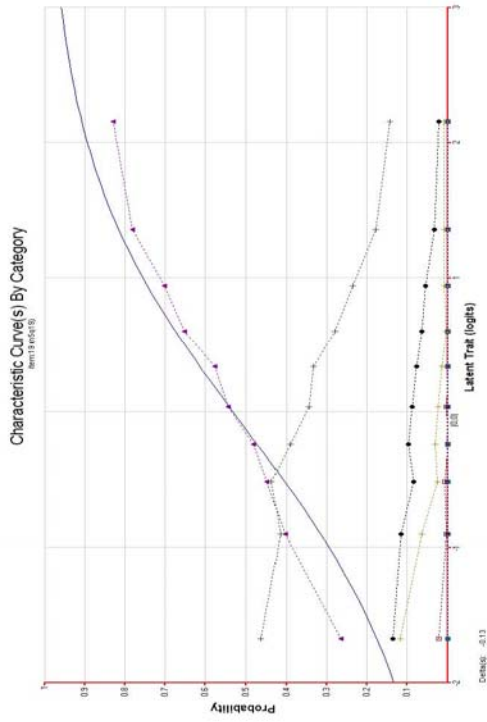
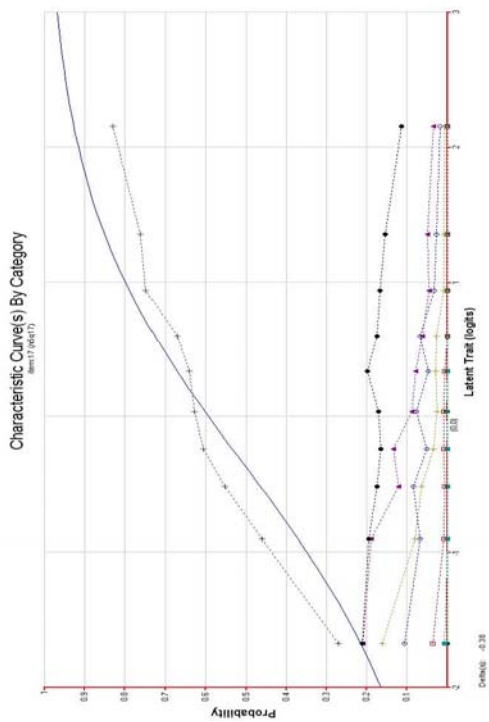
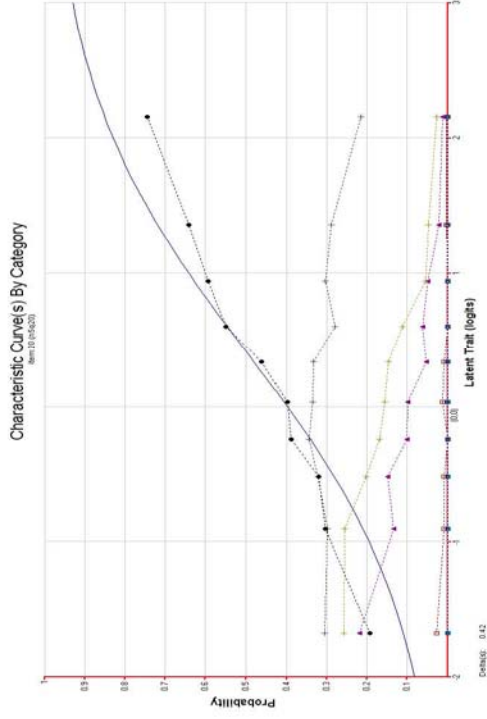
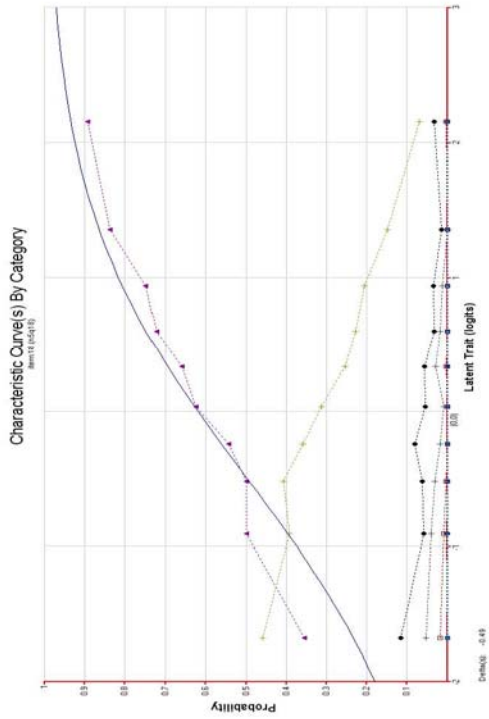


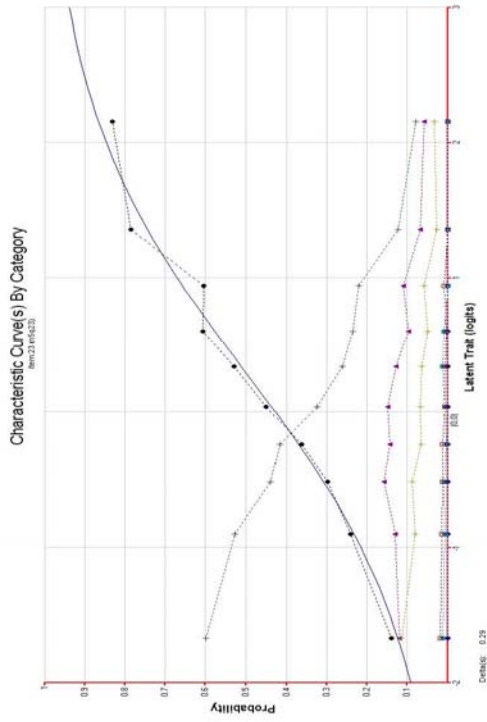
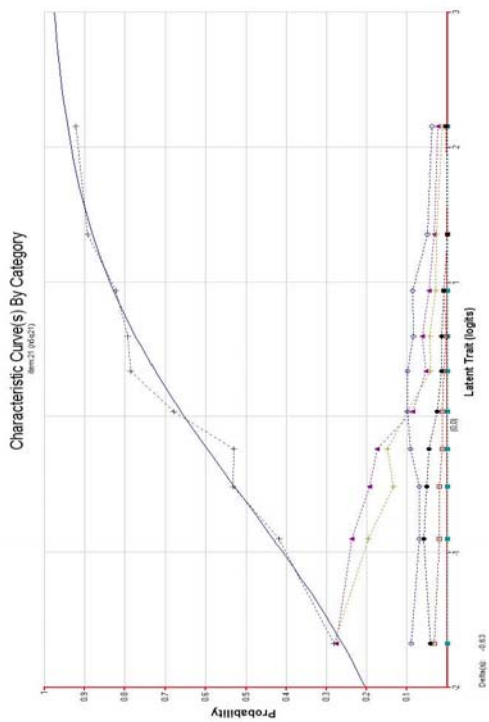
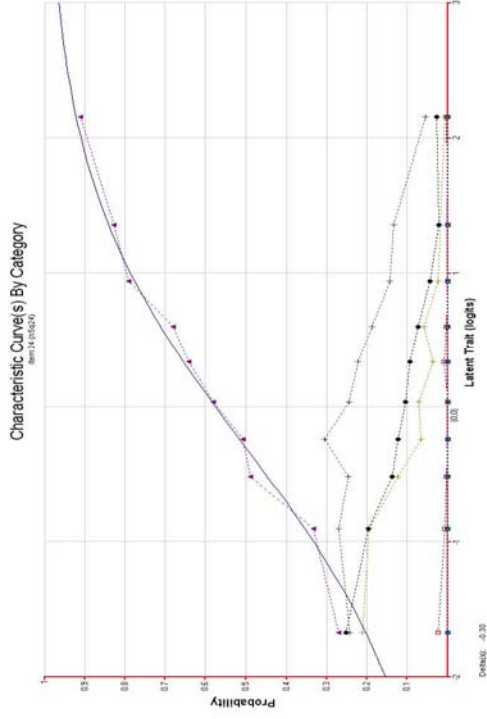
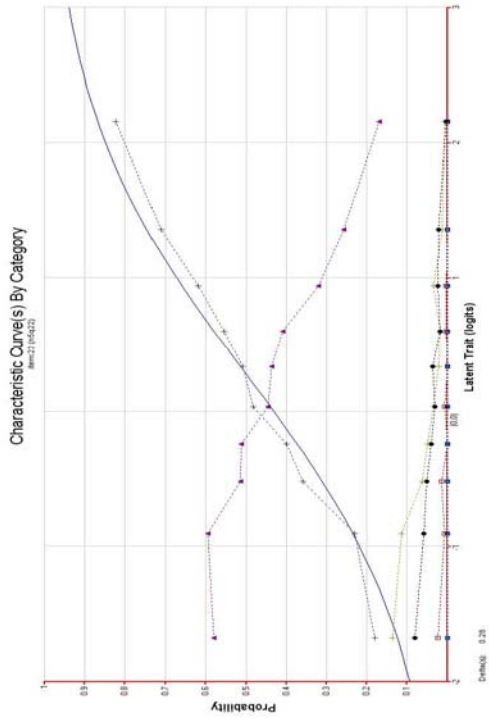


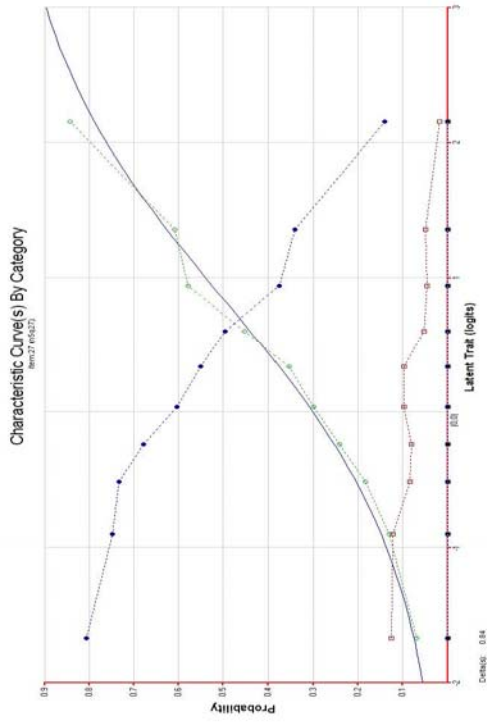
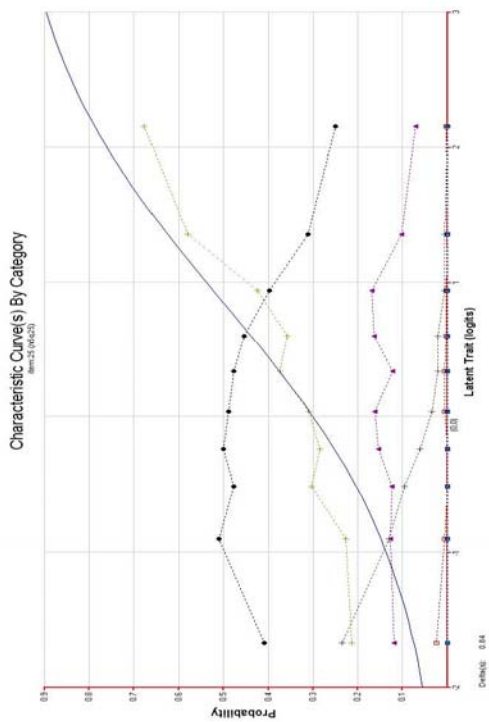
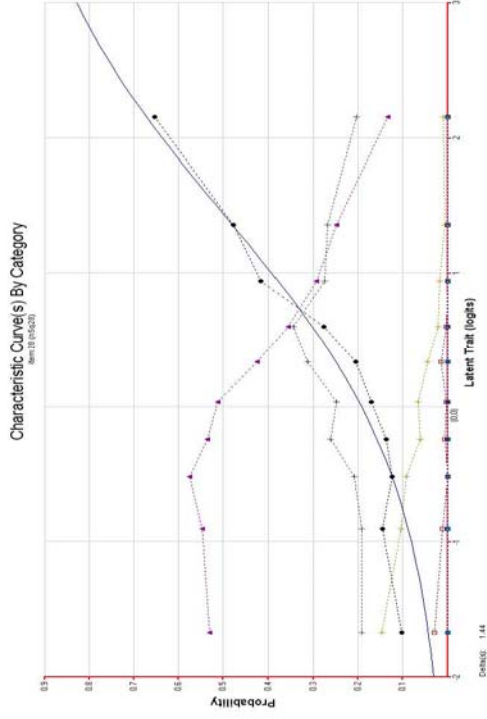
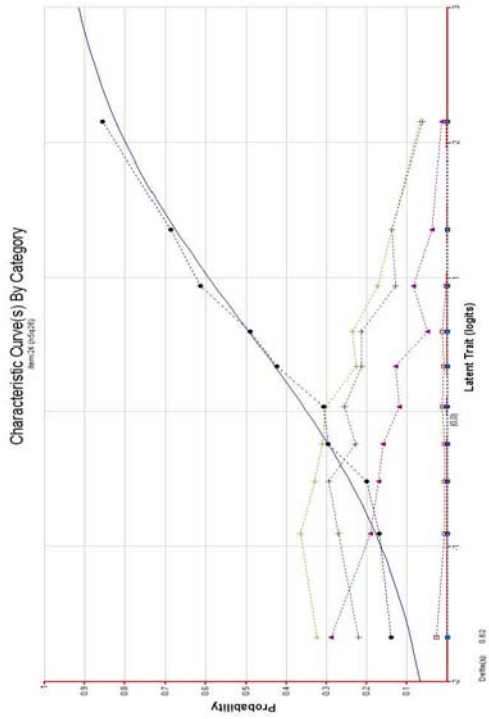


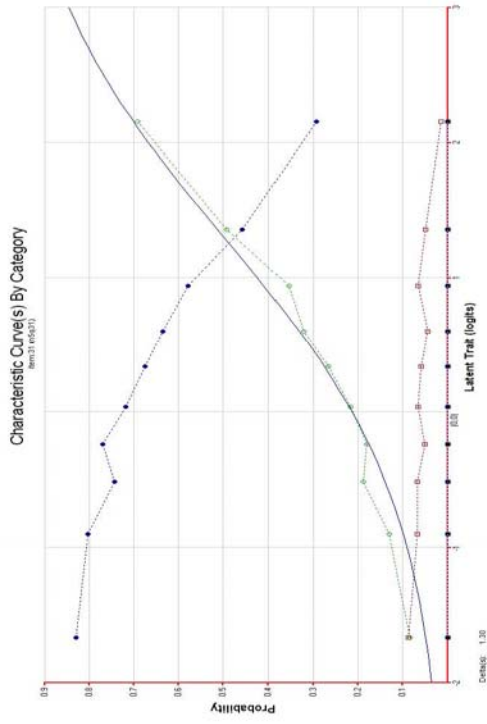
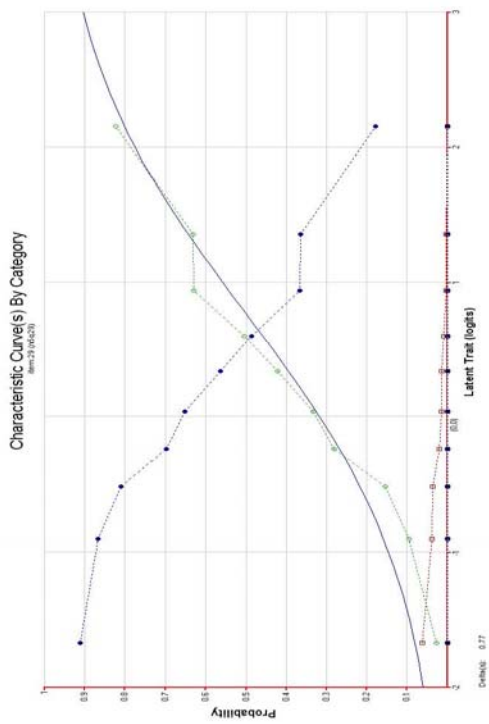
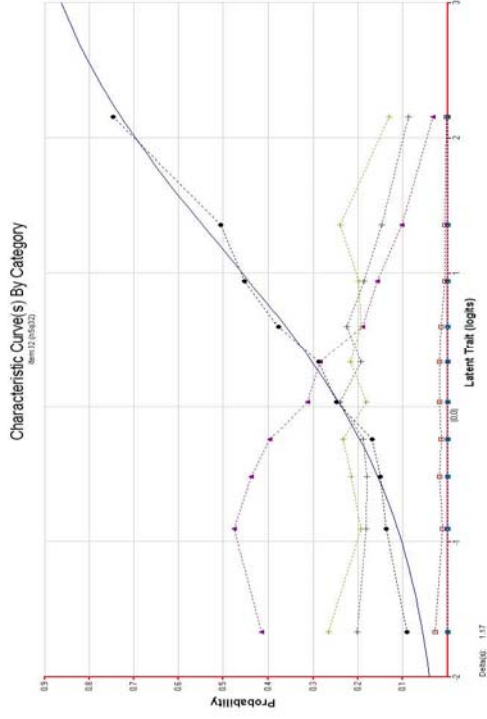
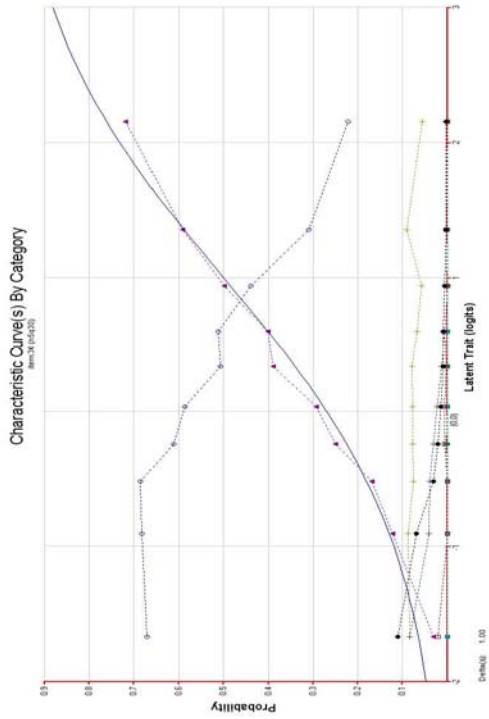


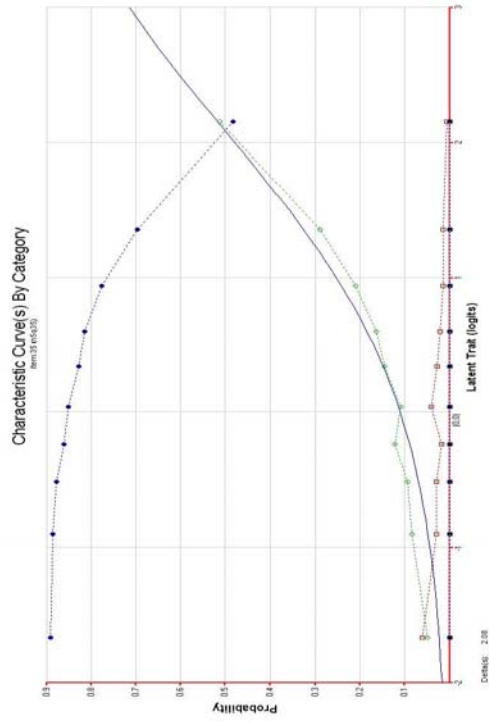
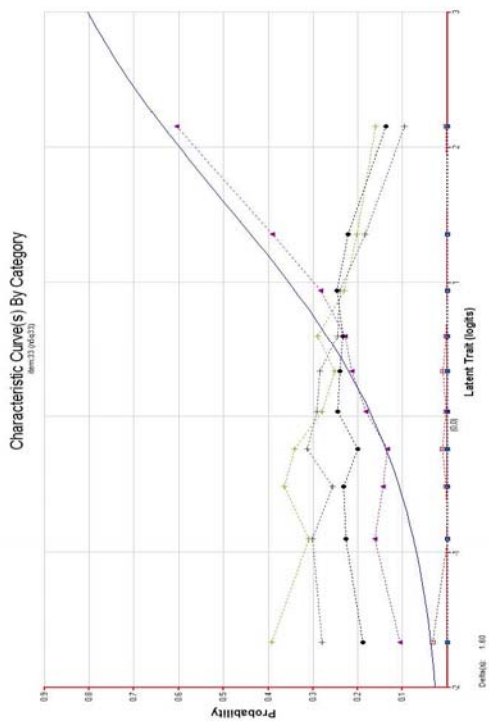
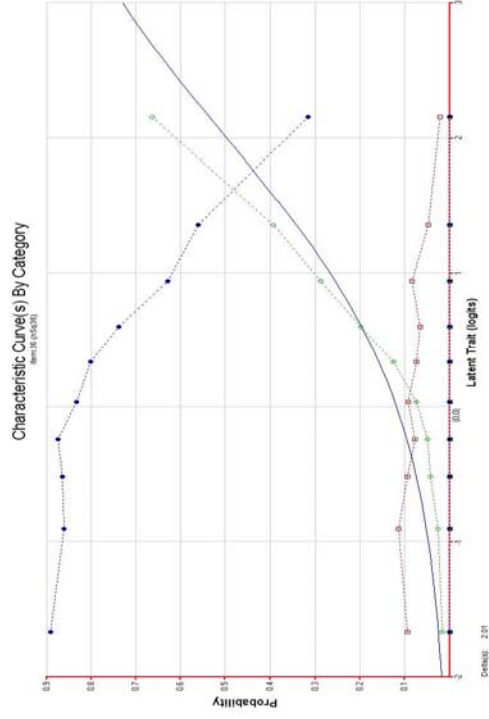
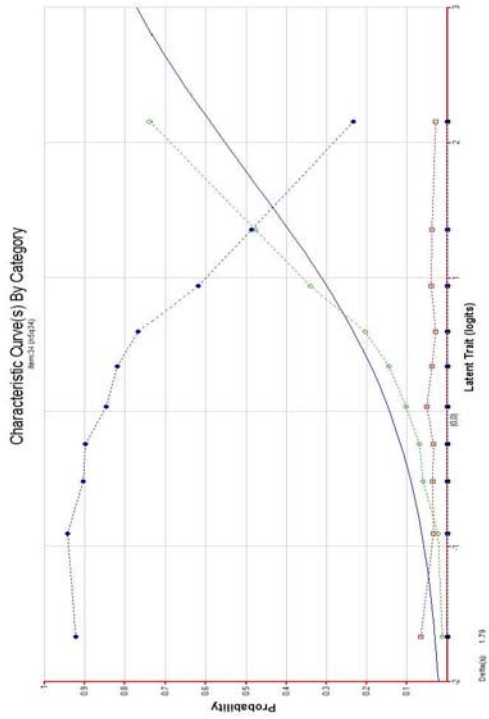


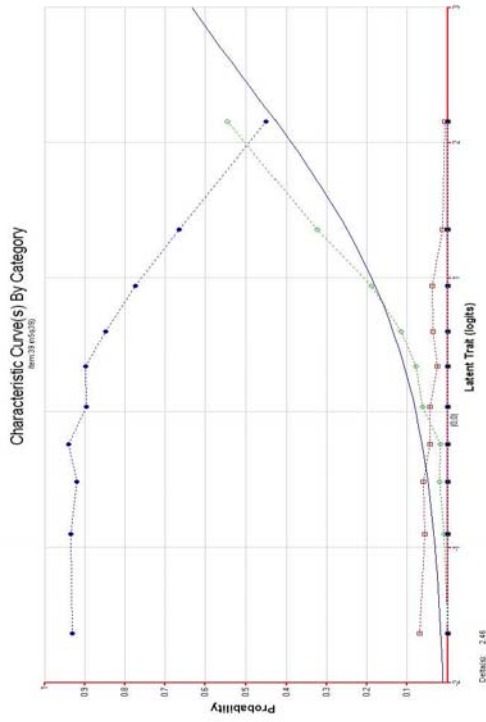
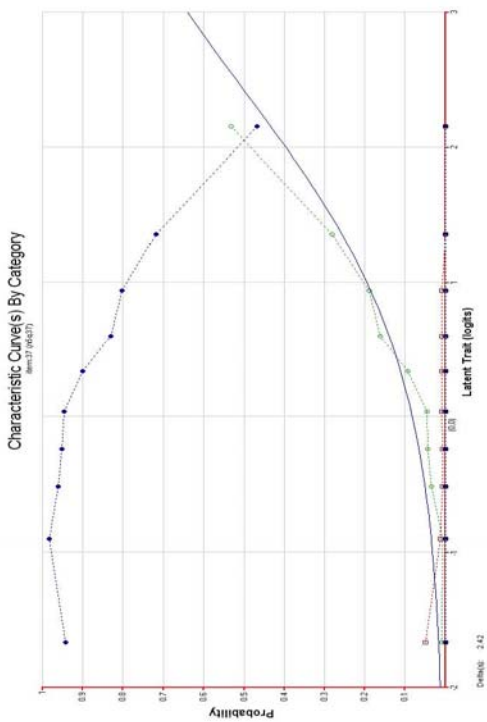
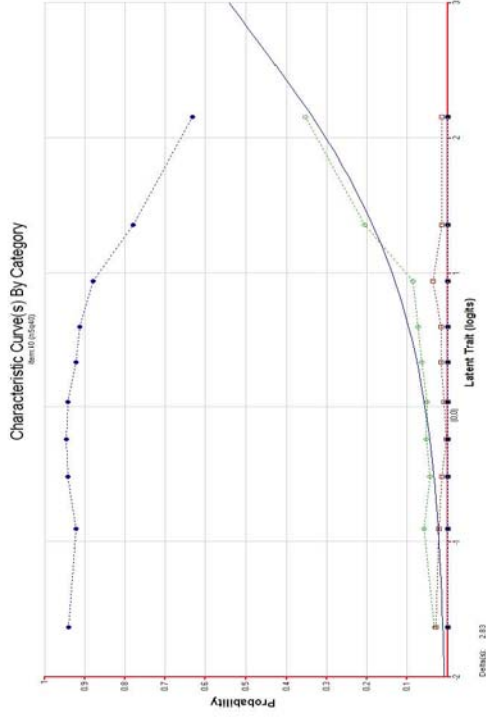
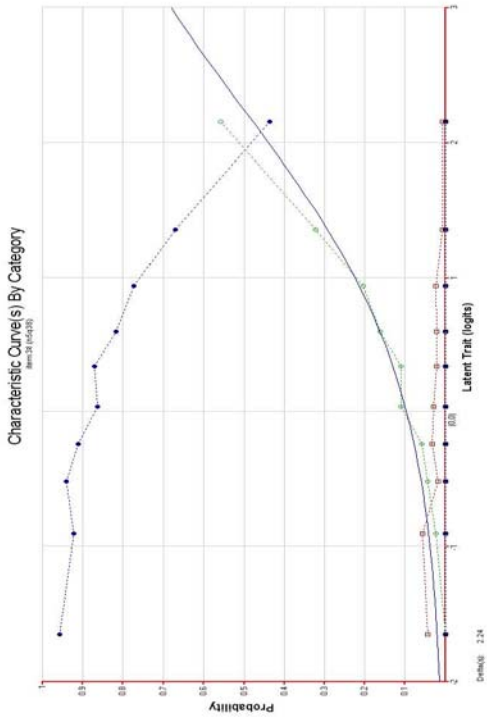




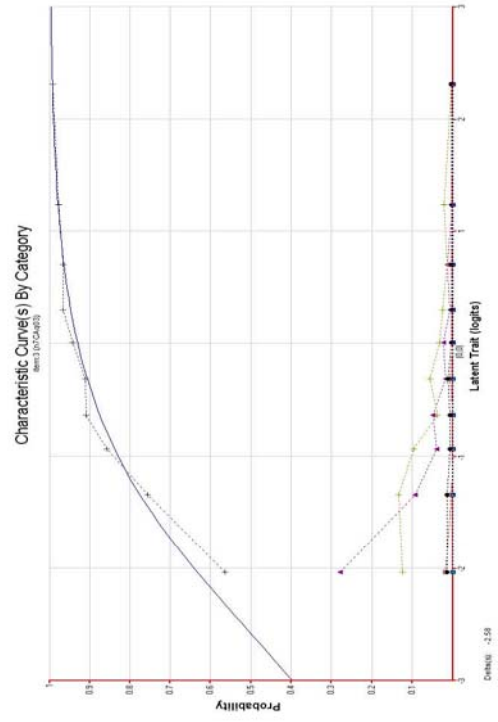
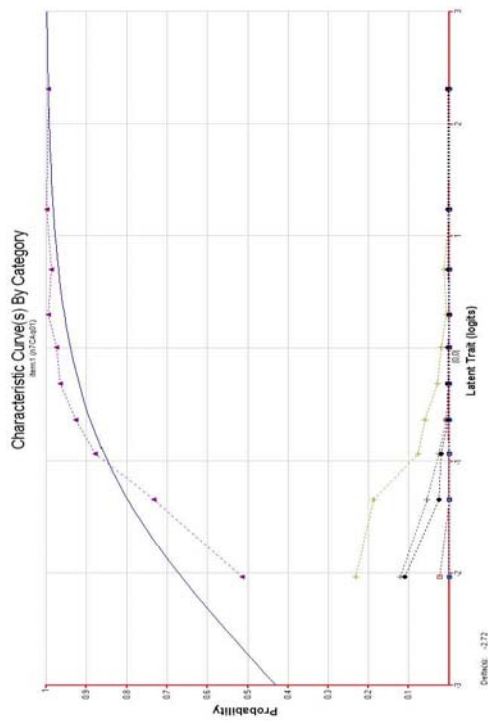
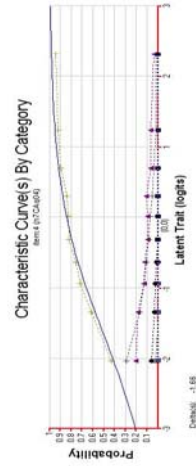
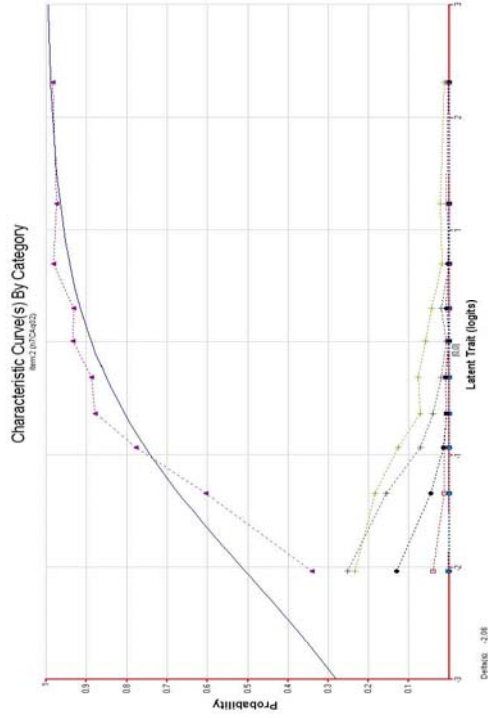


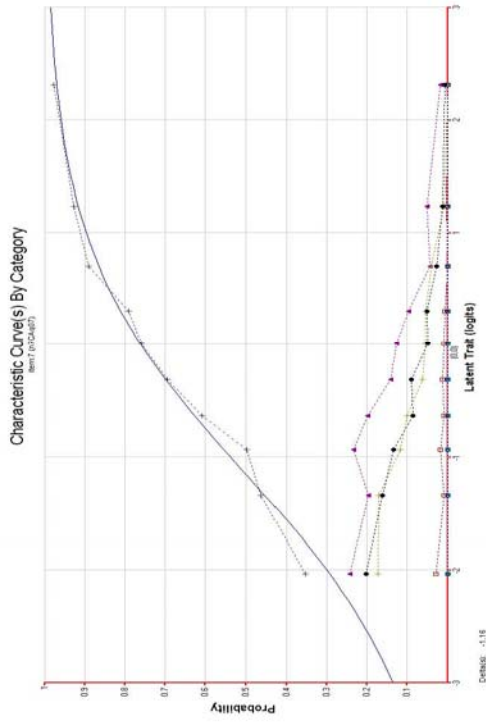
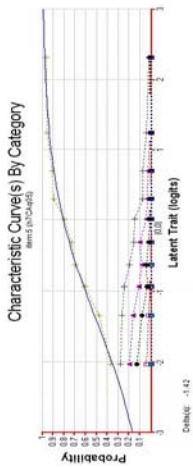
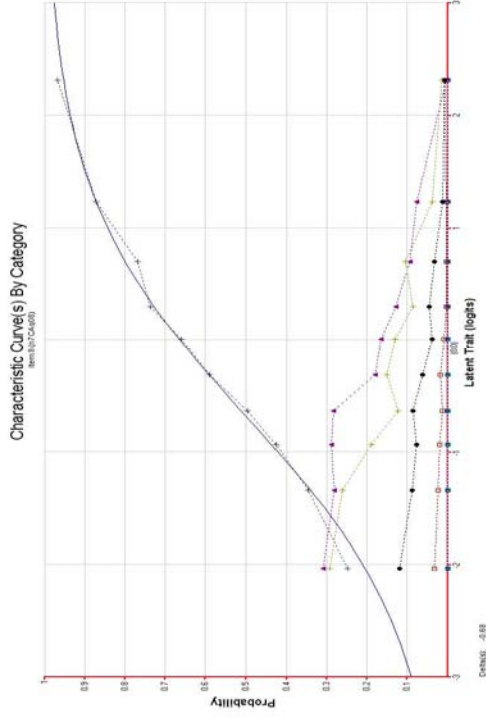
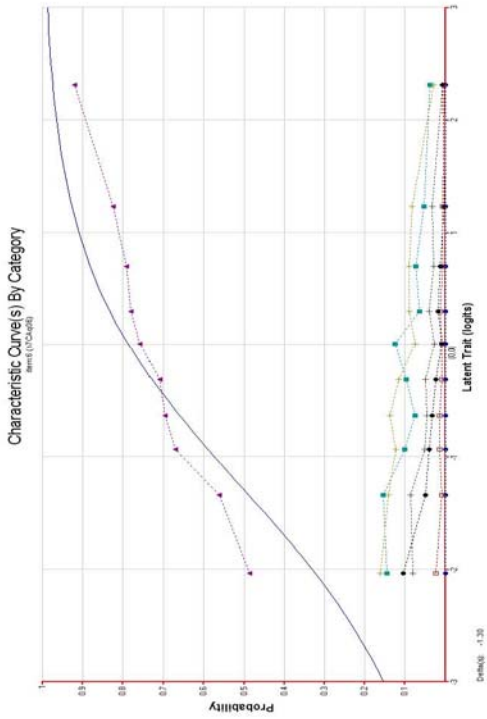




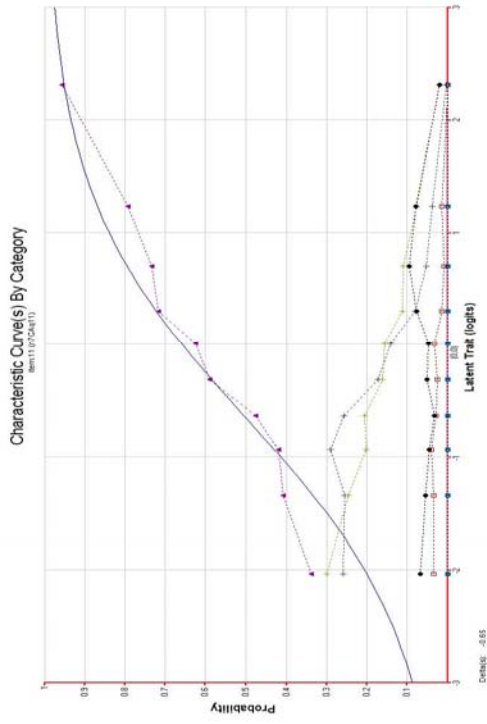
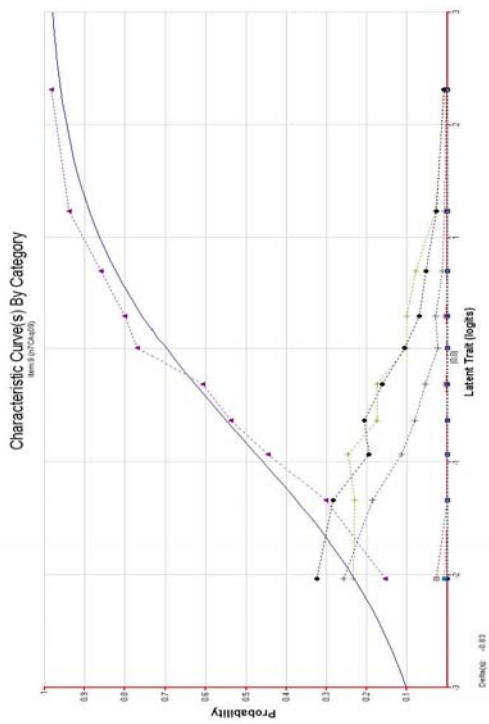
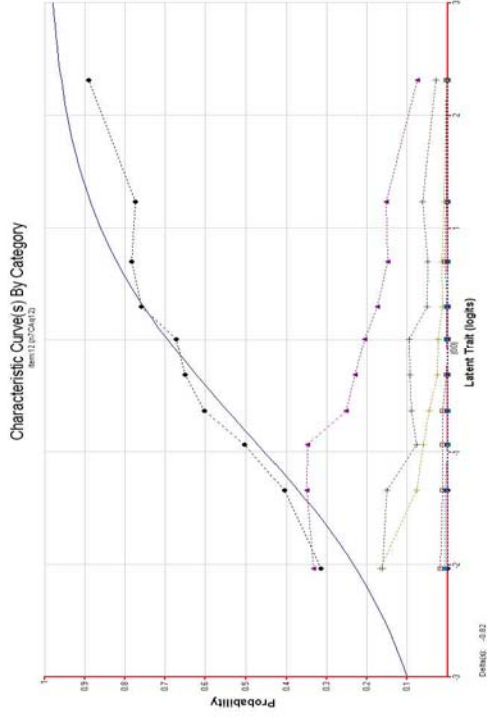
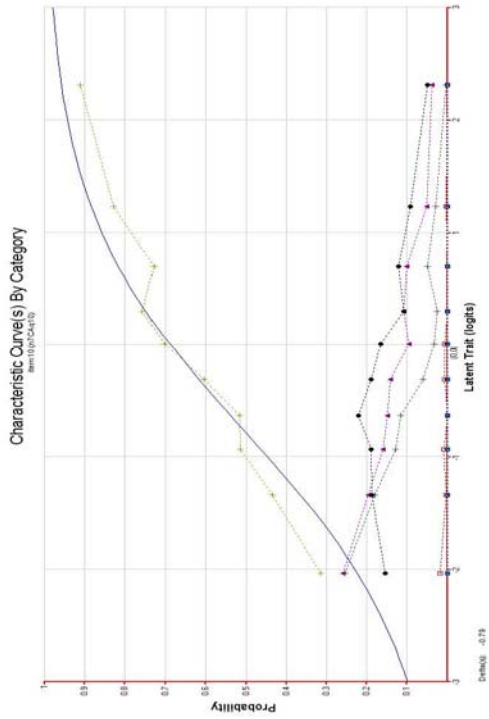


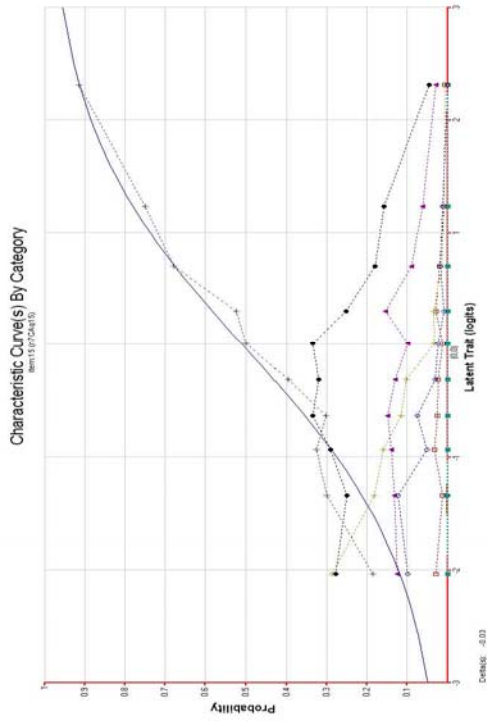
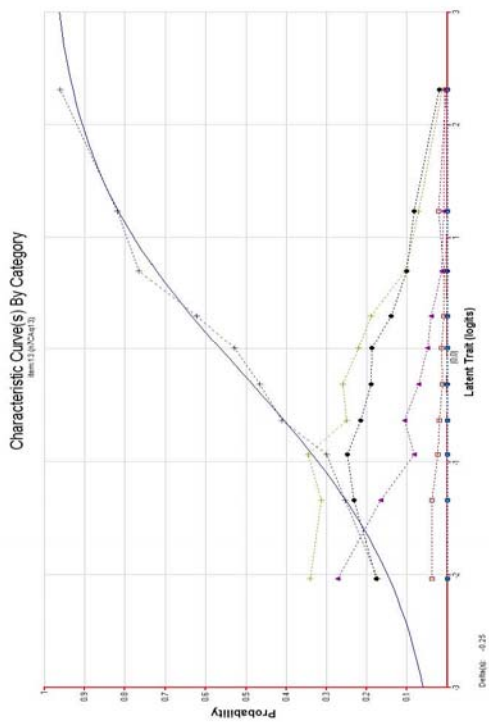
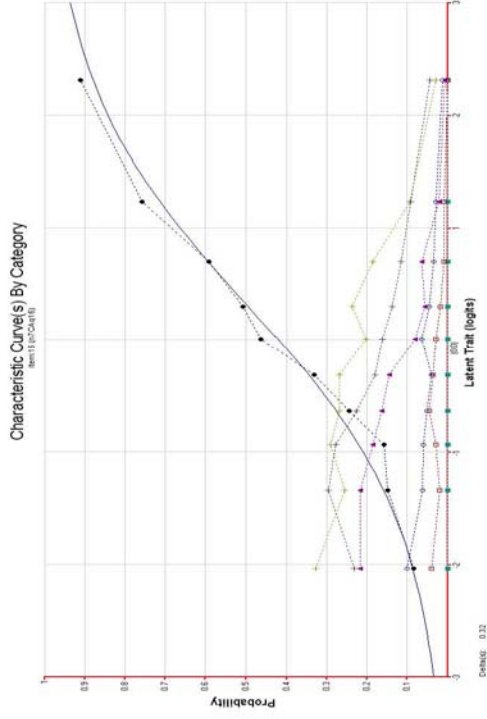
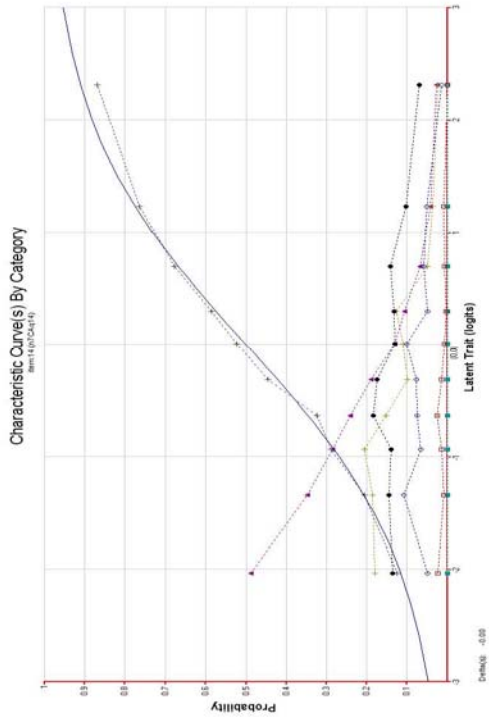
*Year 1 Numeracy*

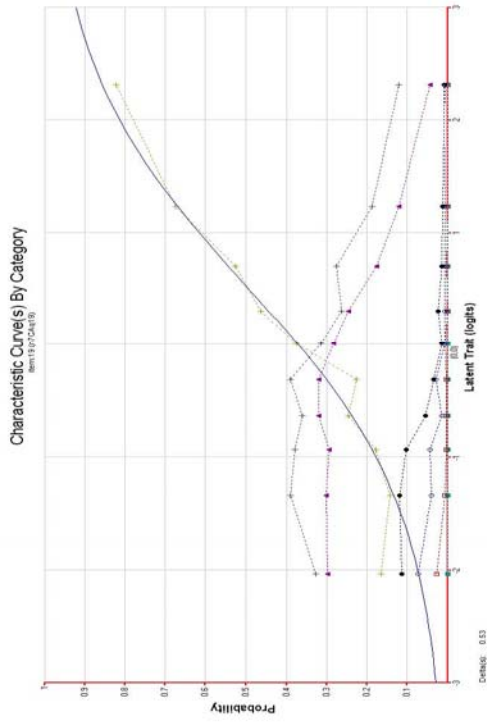
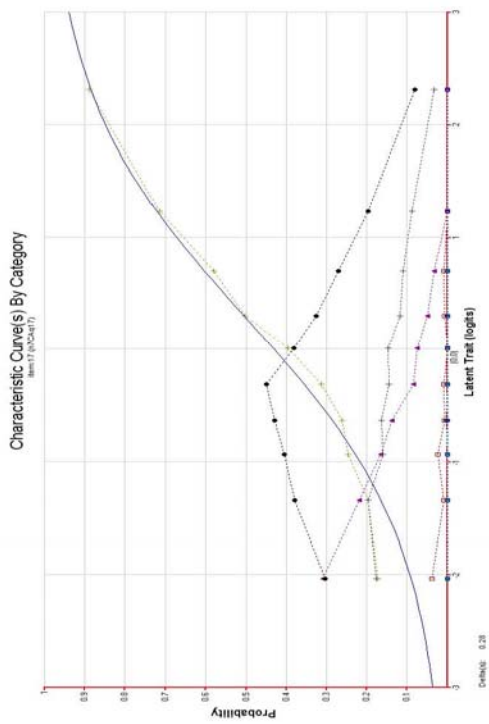
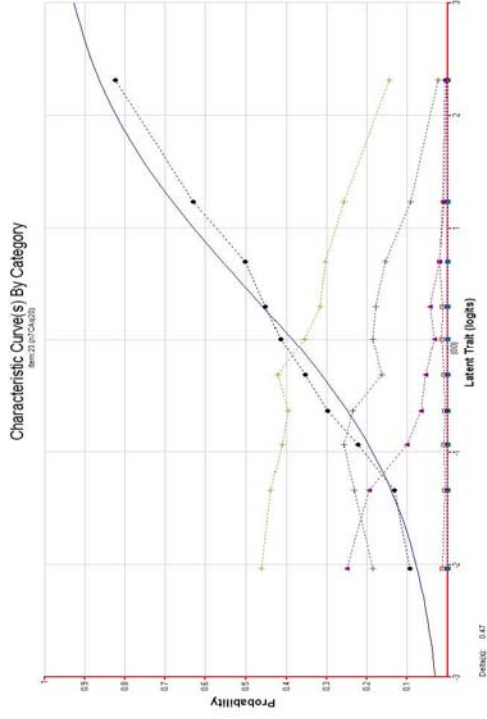
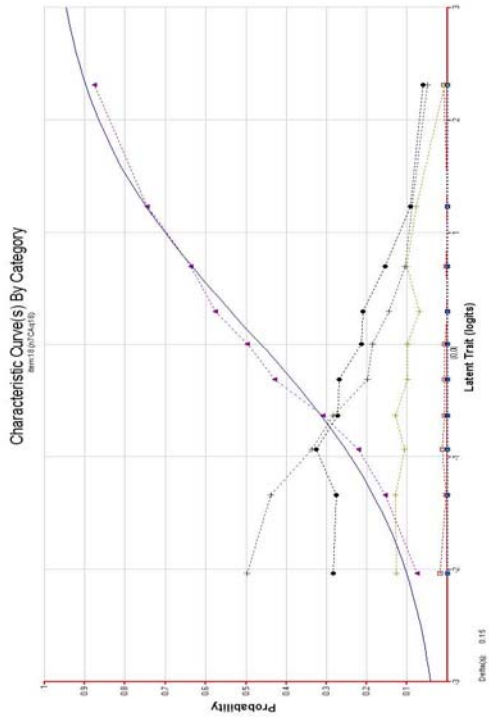


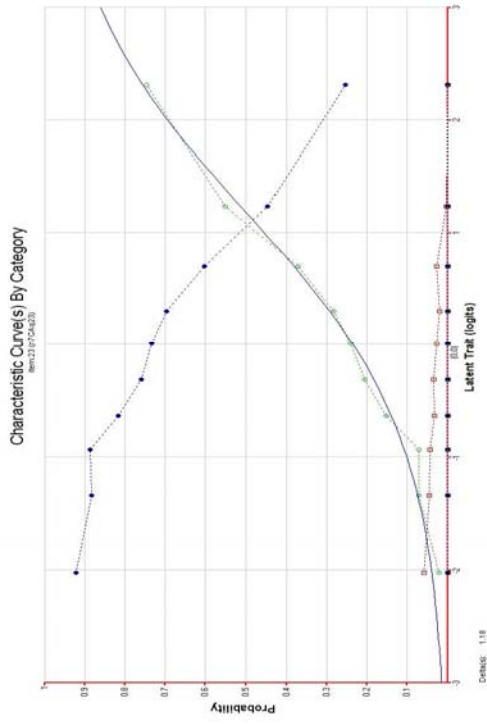
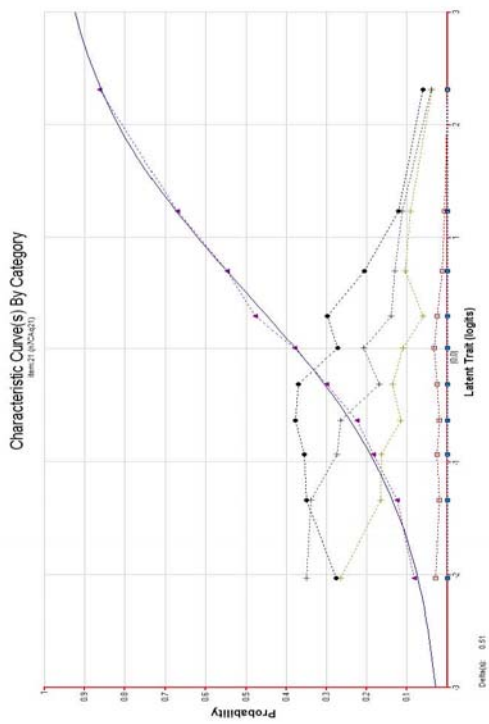
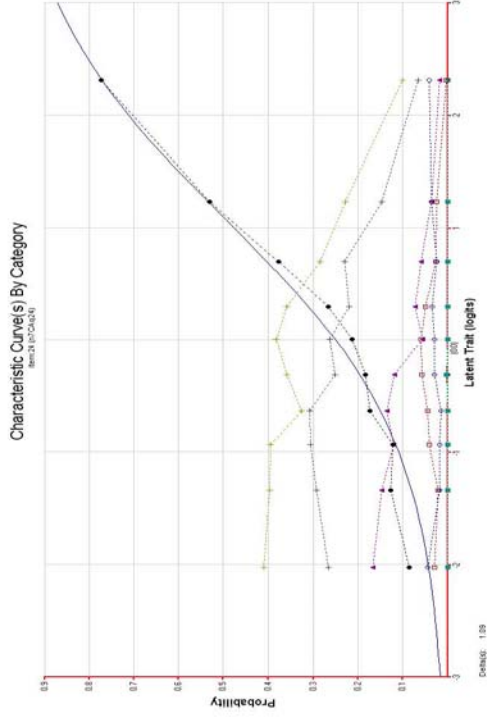
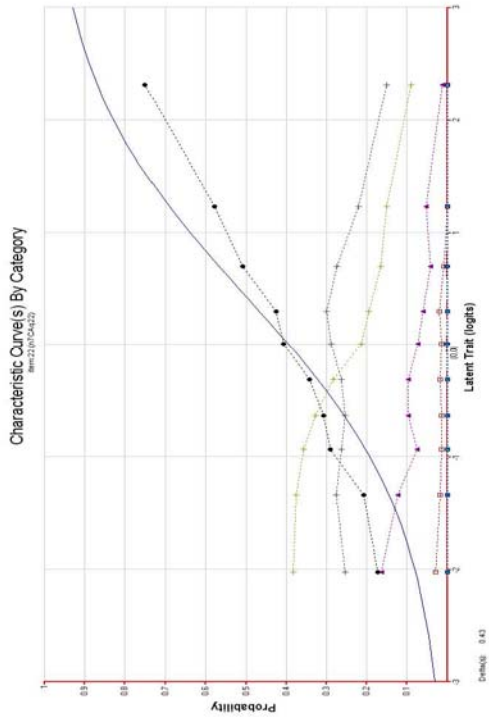


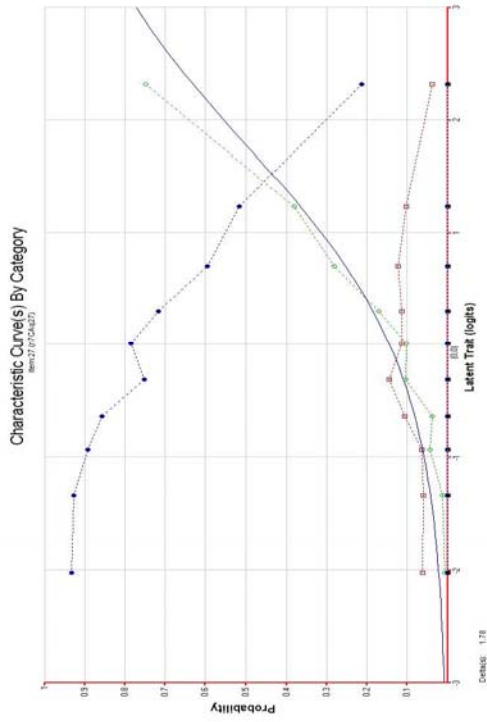
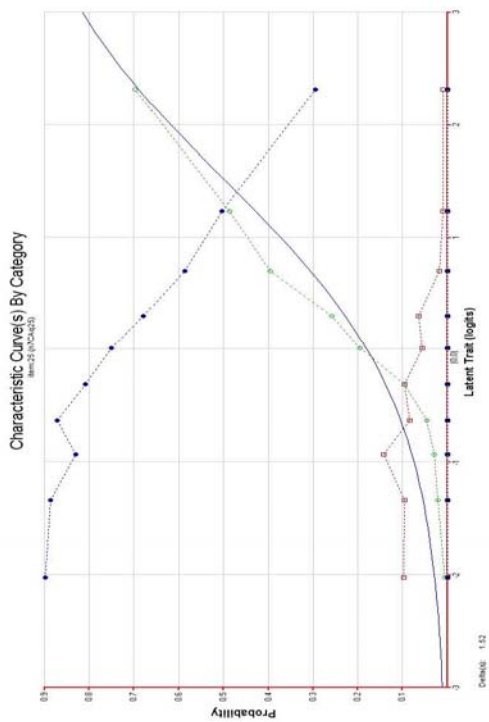
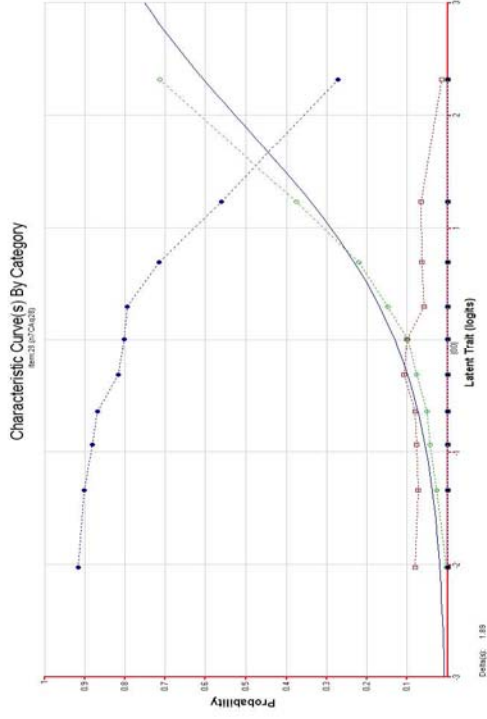
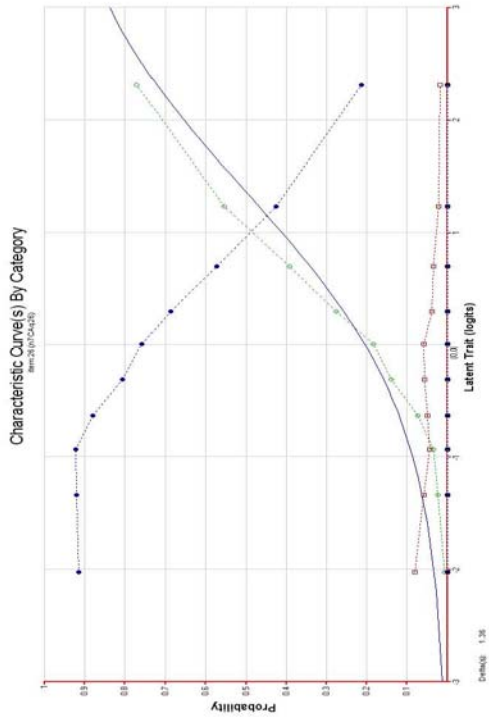


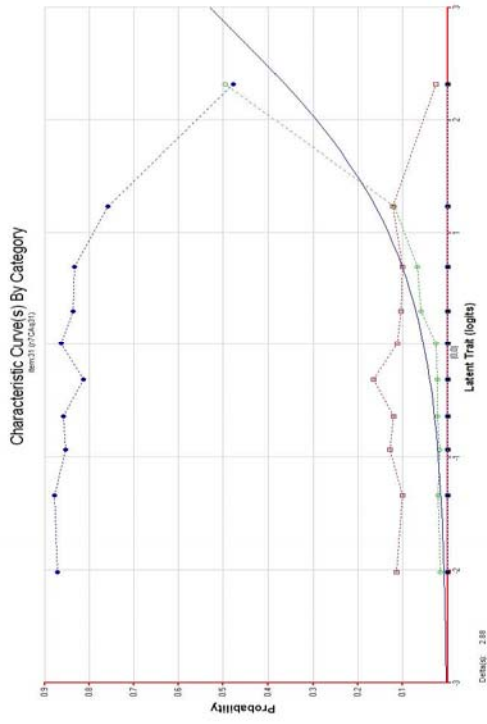
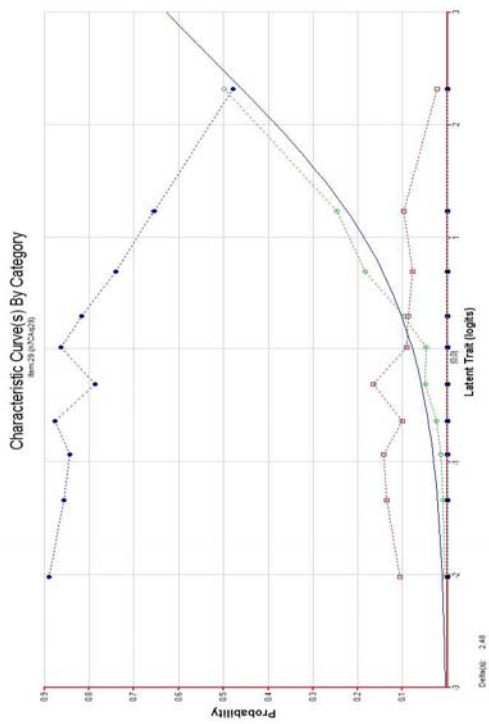
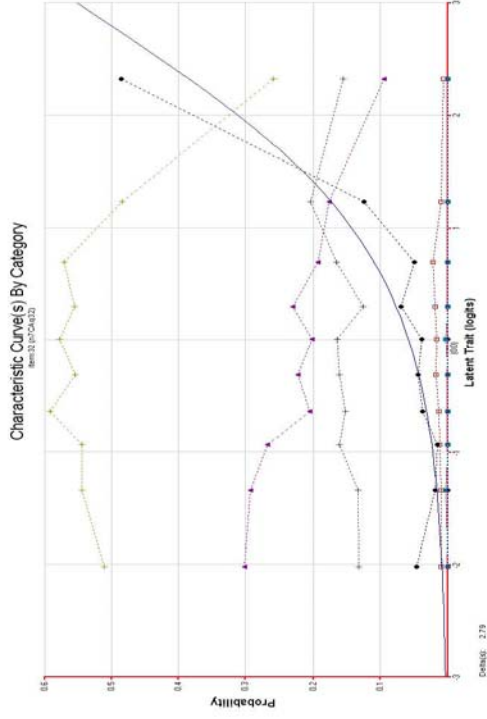
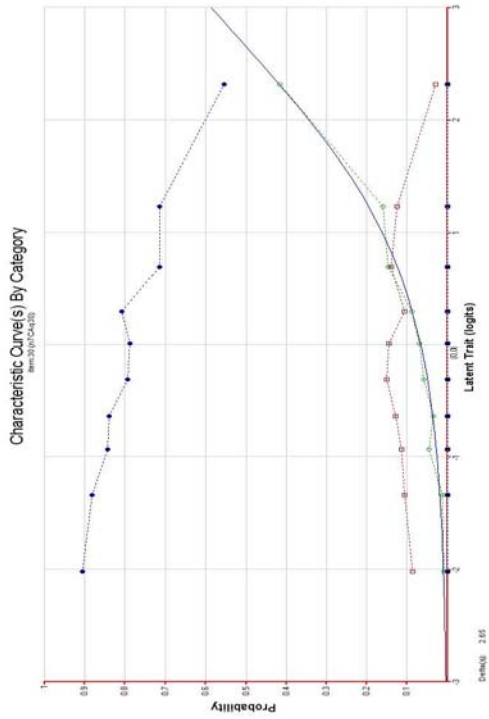


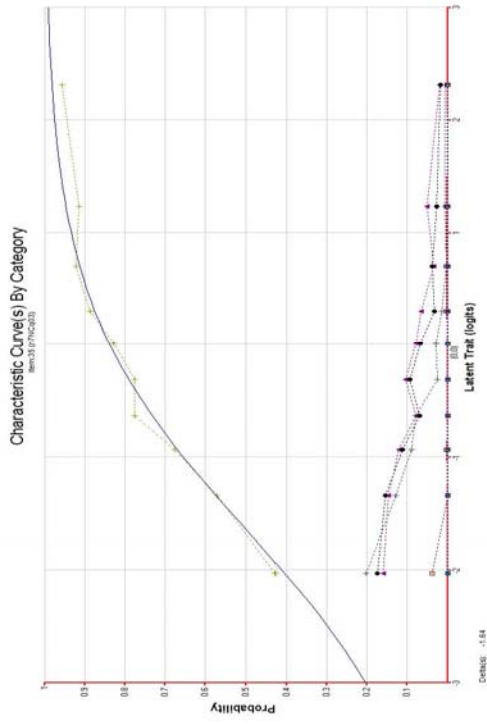
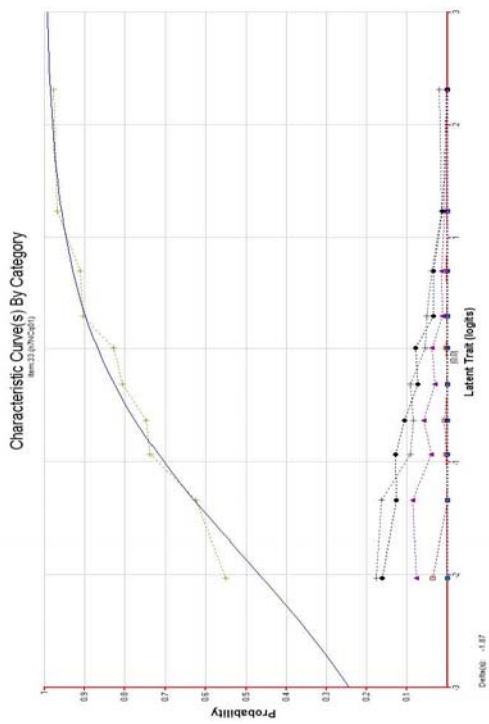
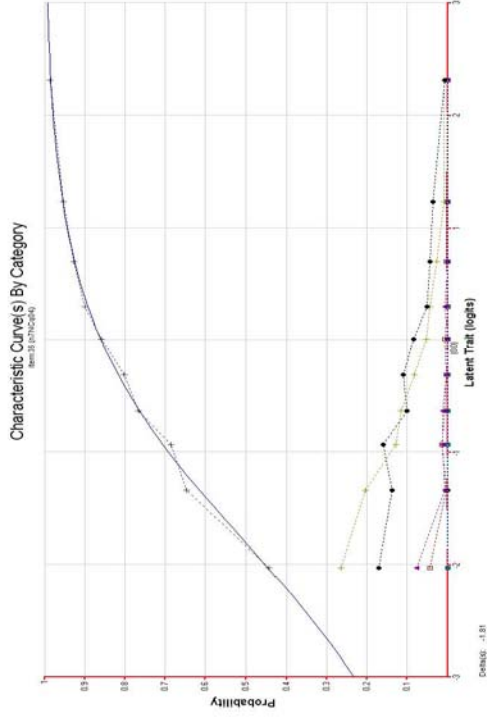
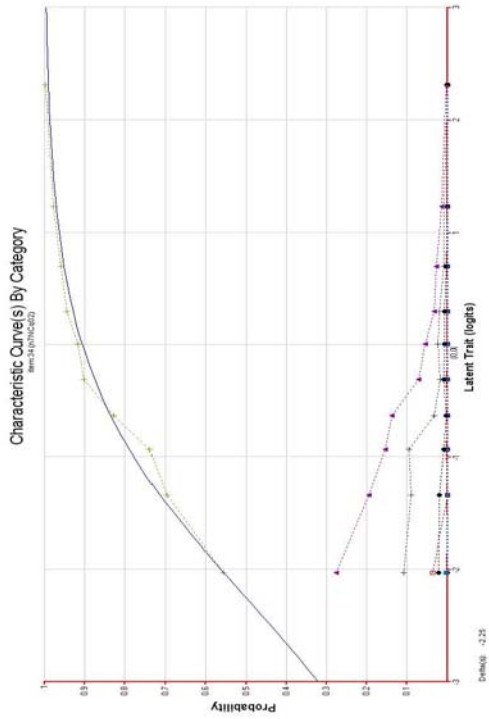


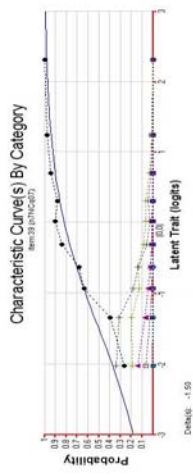
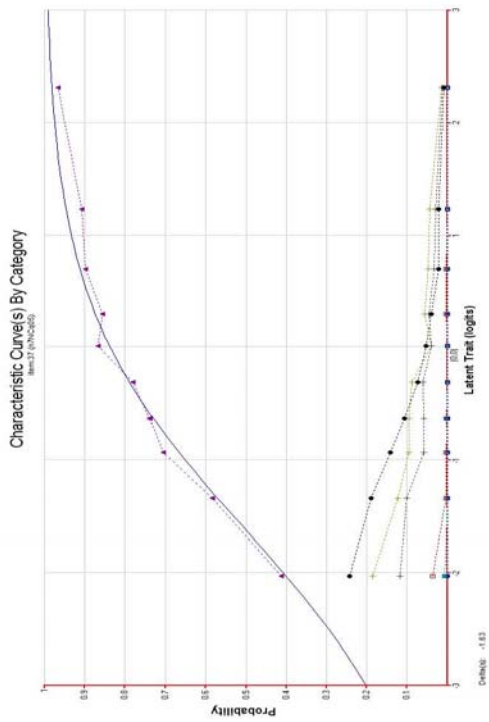
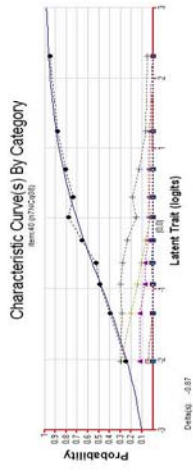
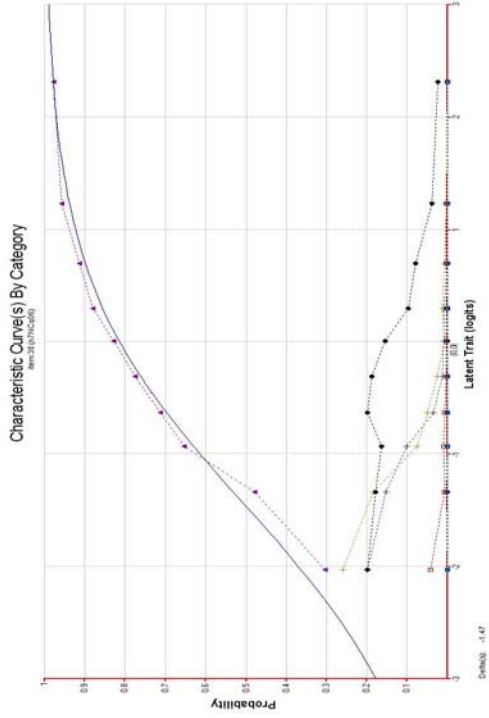




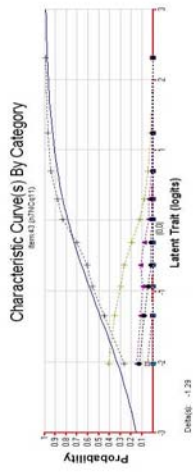
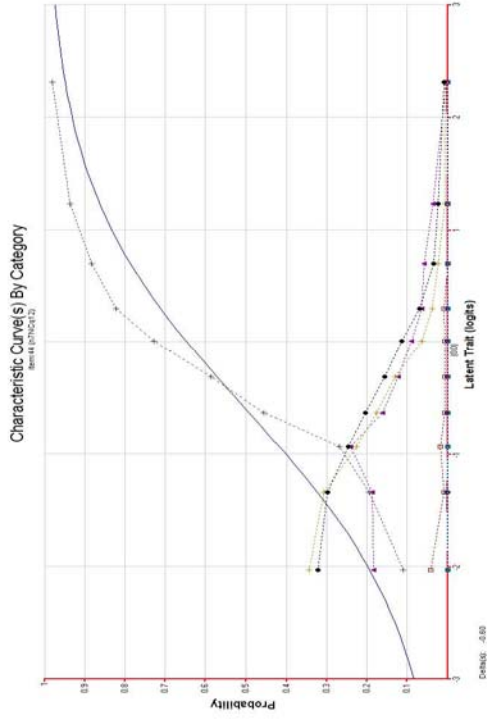
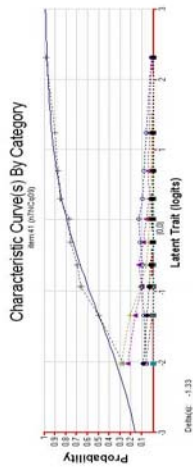
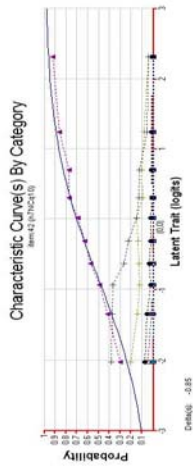


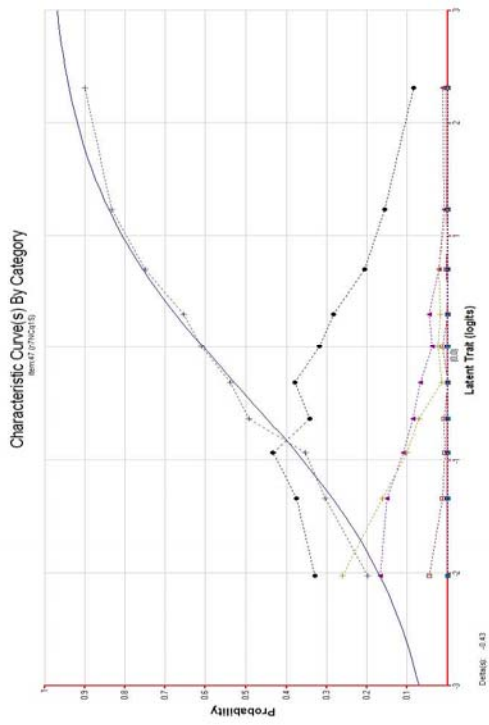
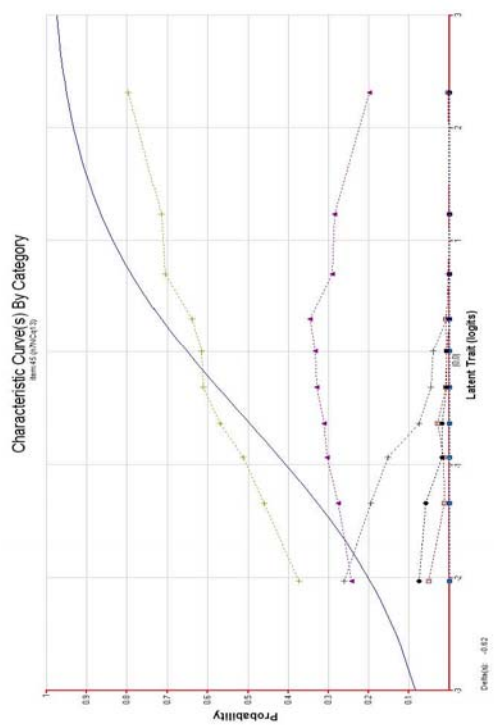
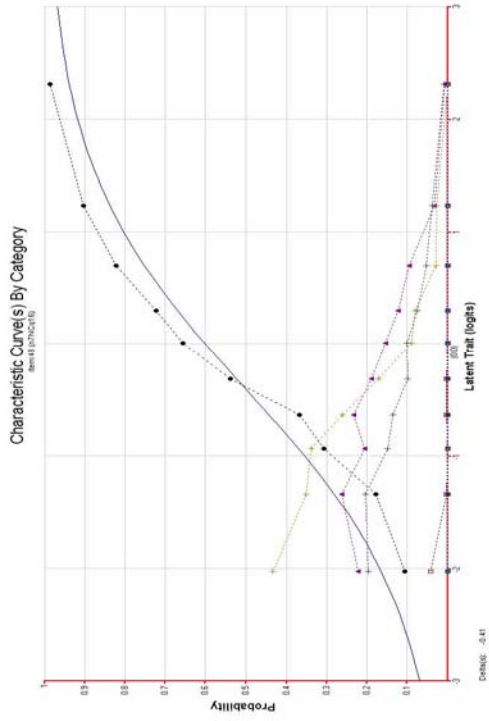
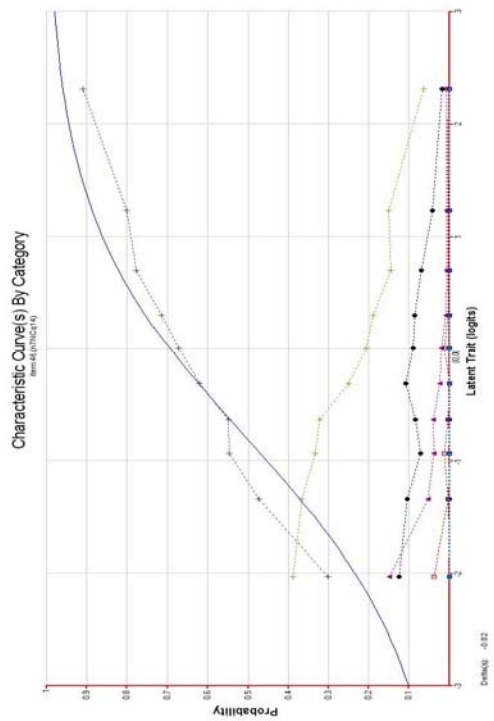


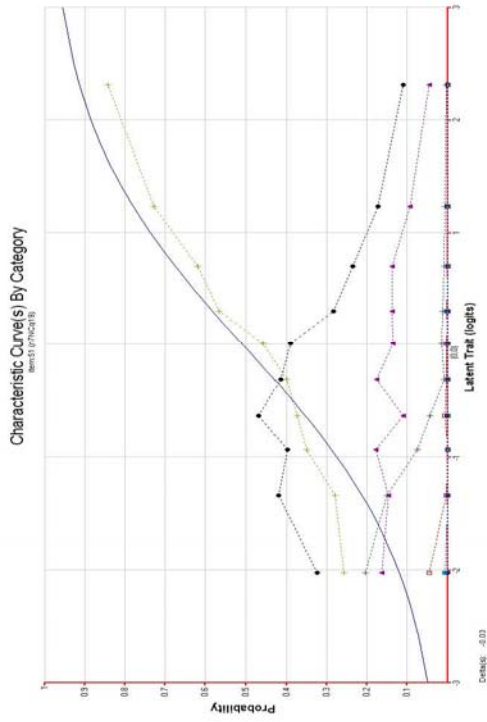
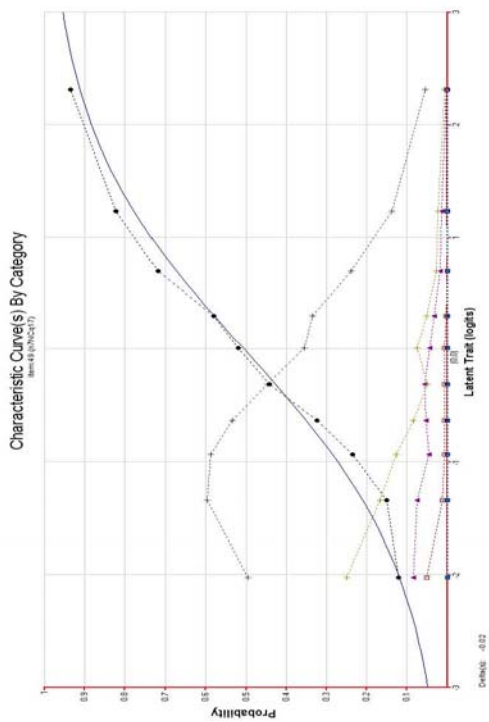
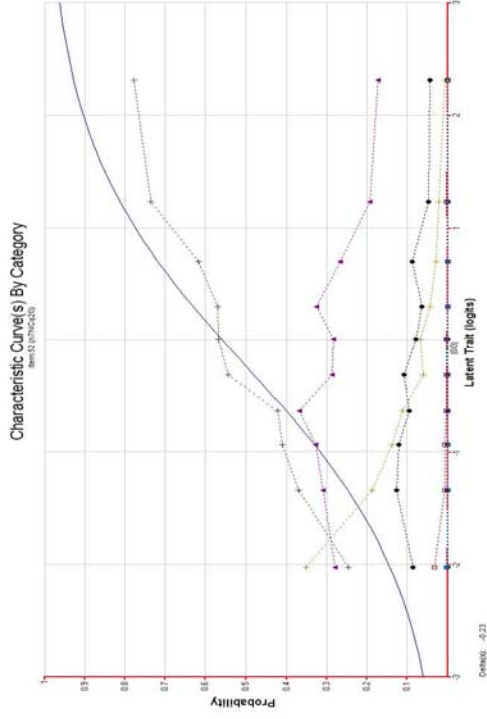
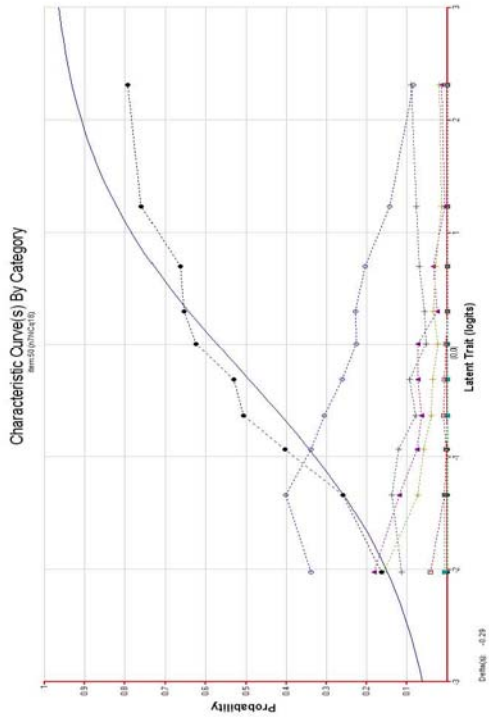


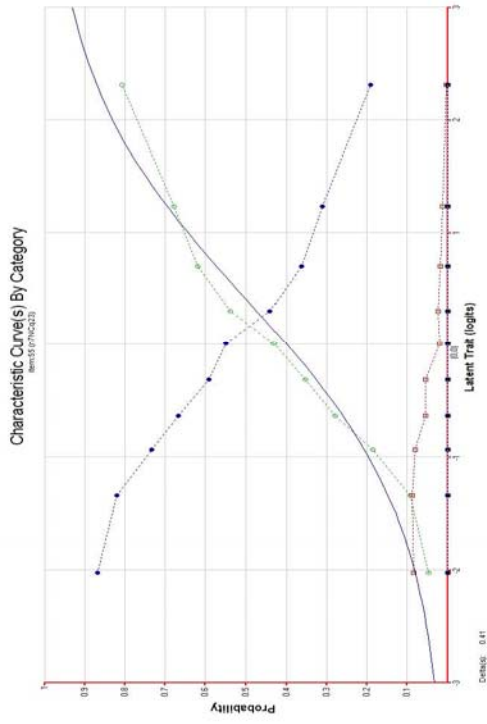
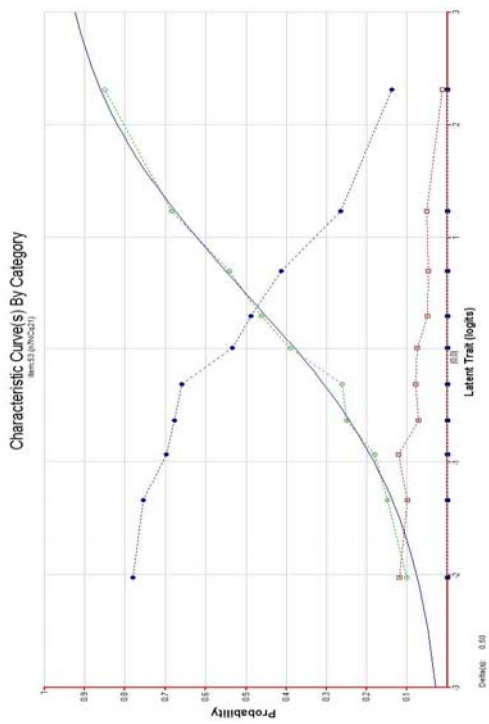
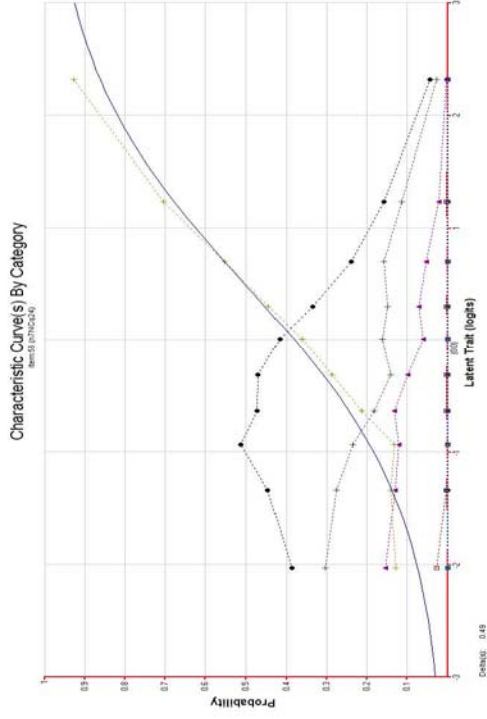
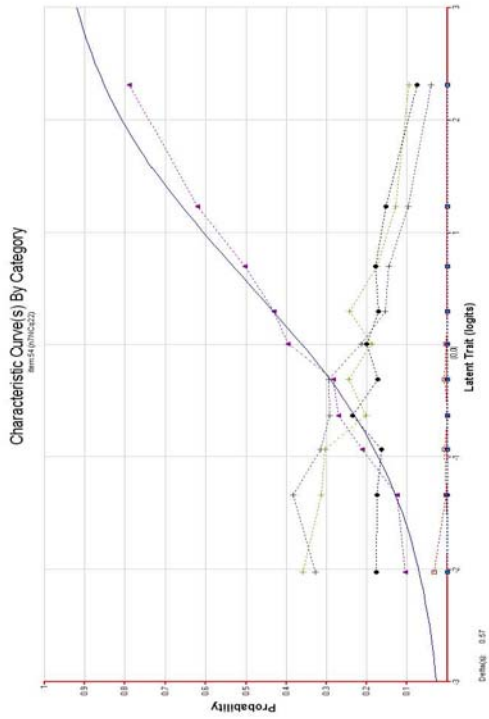


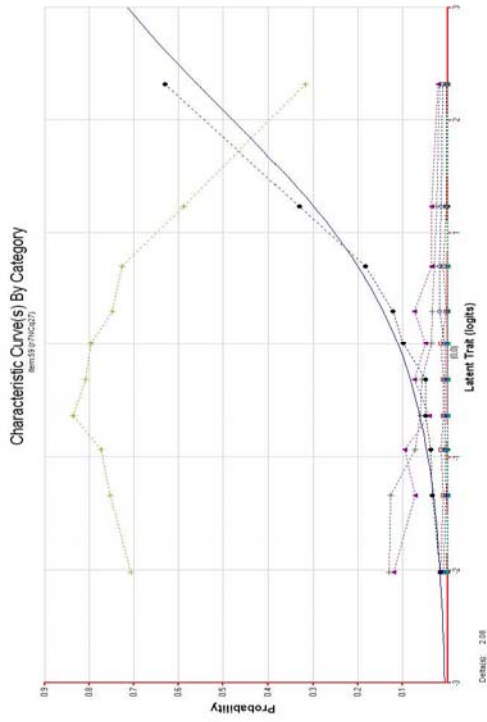
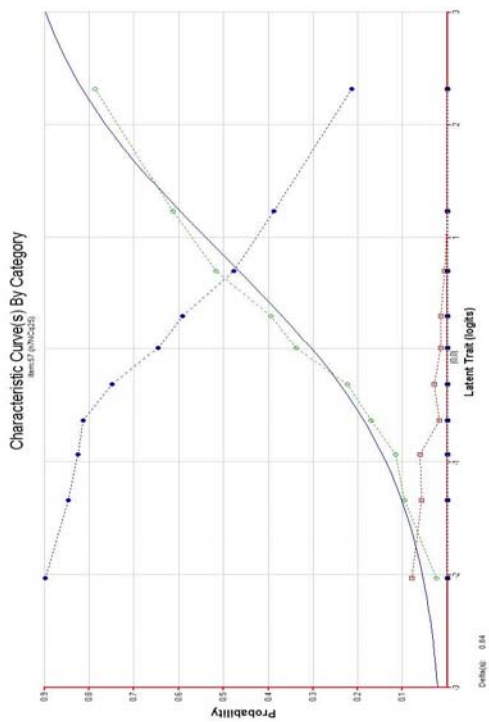
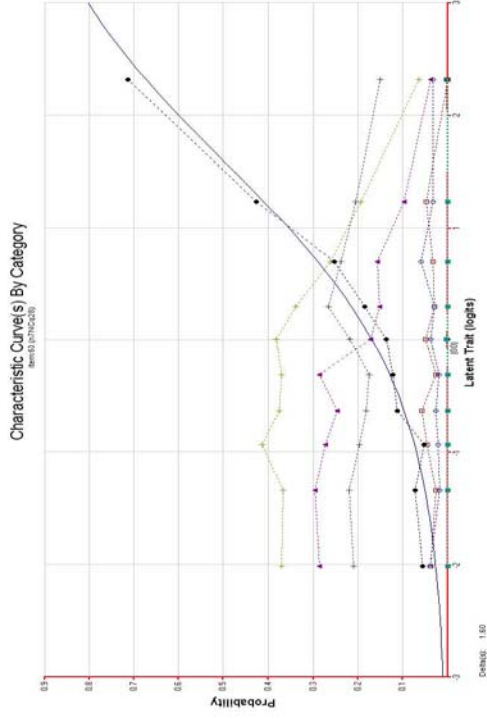
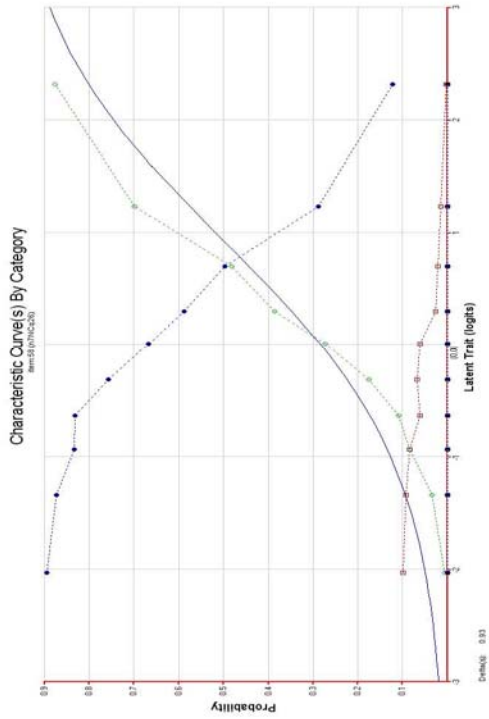


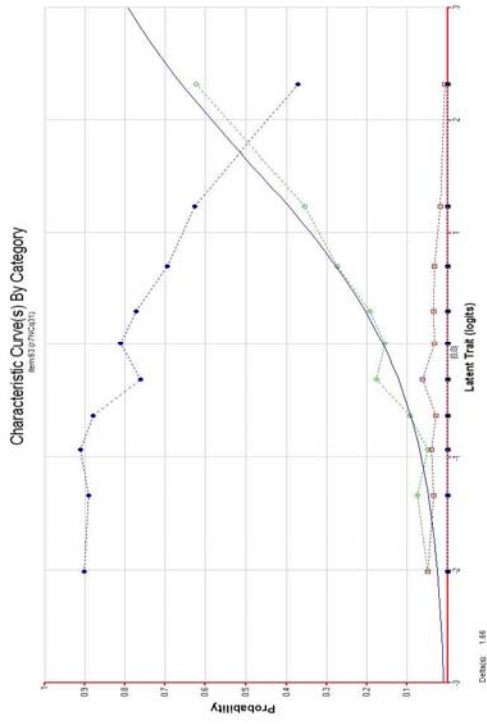
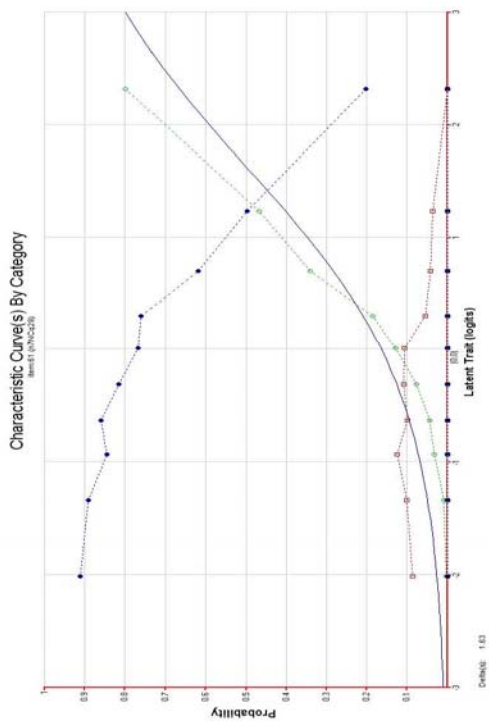
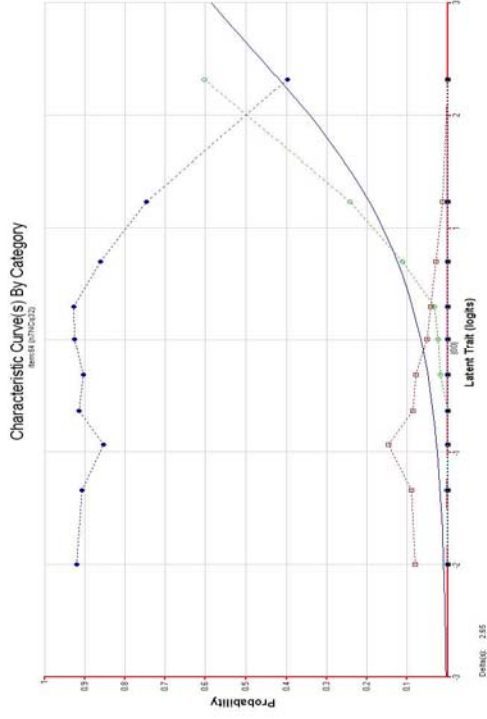
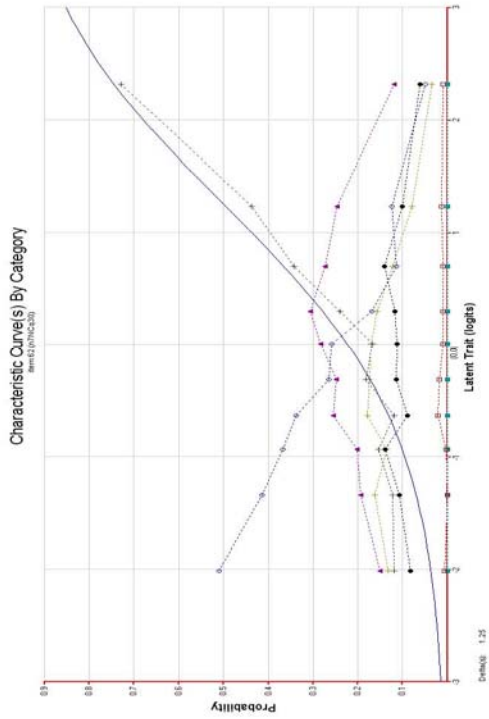




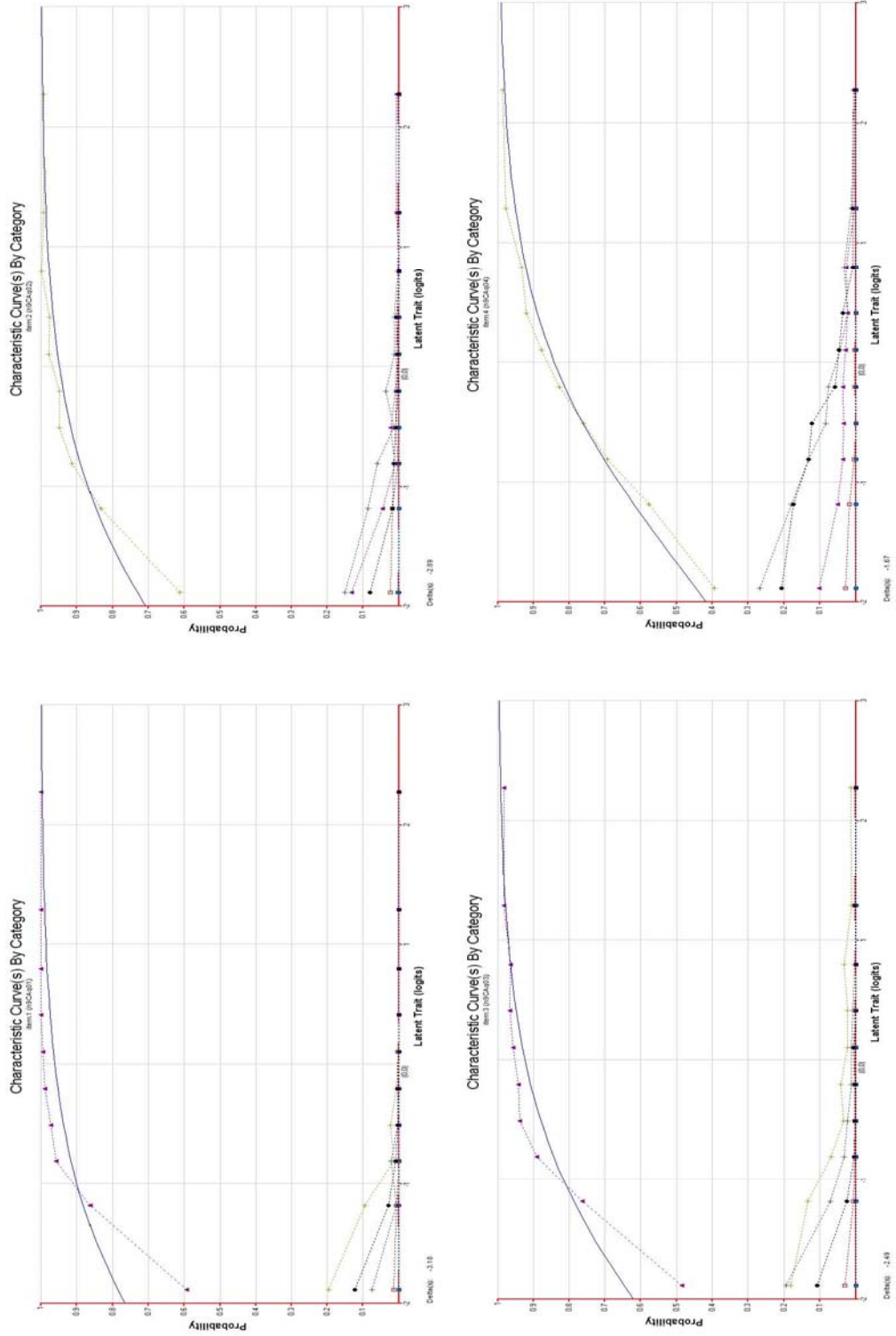


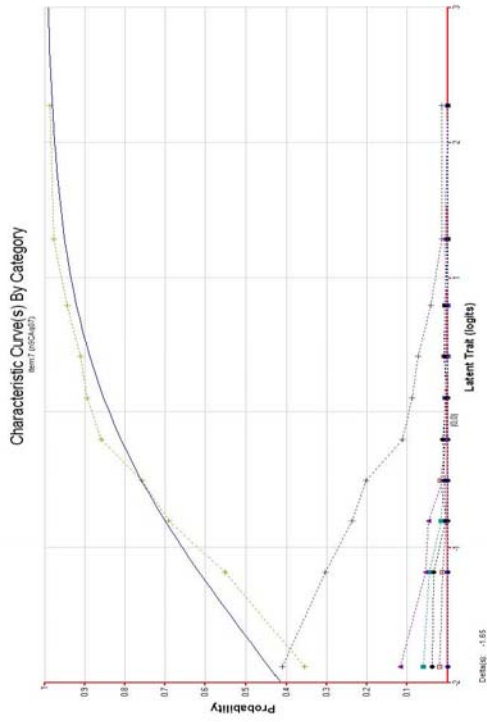
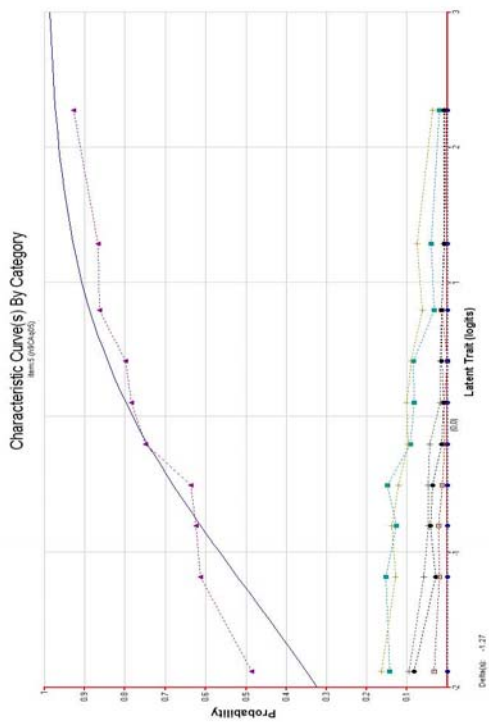
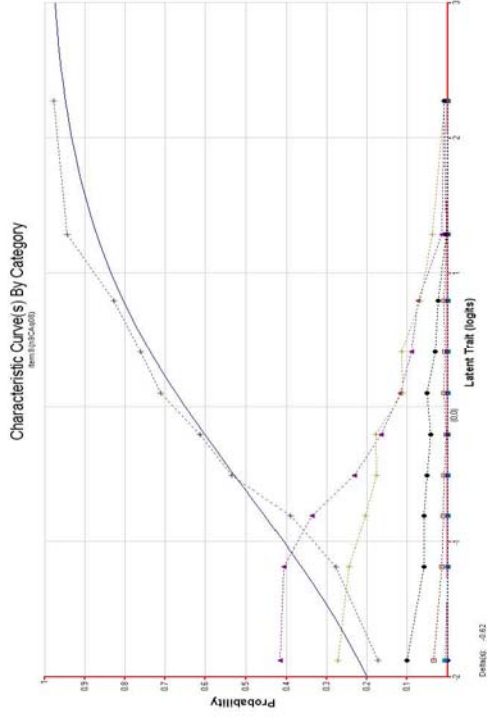
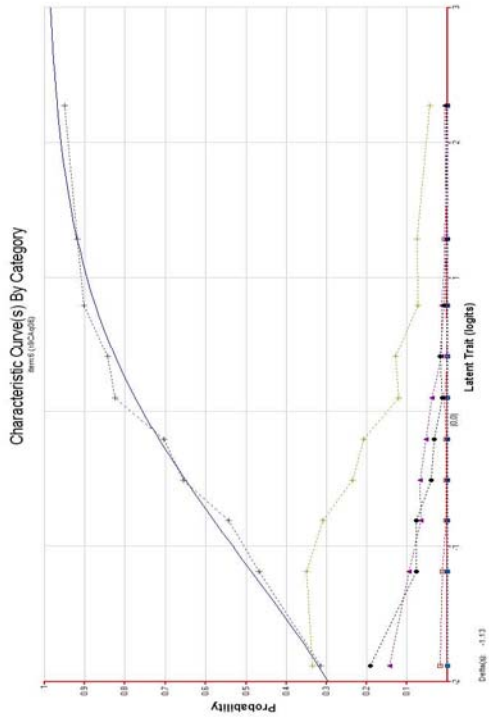




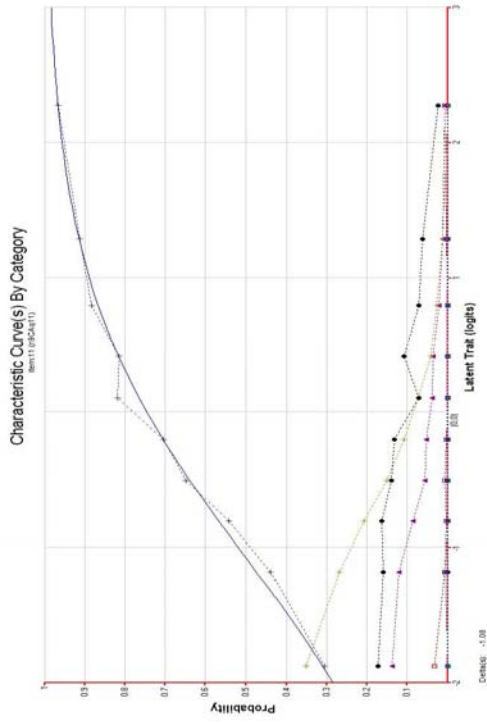
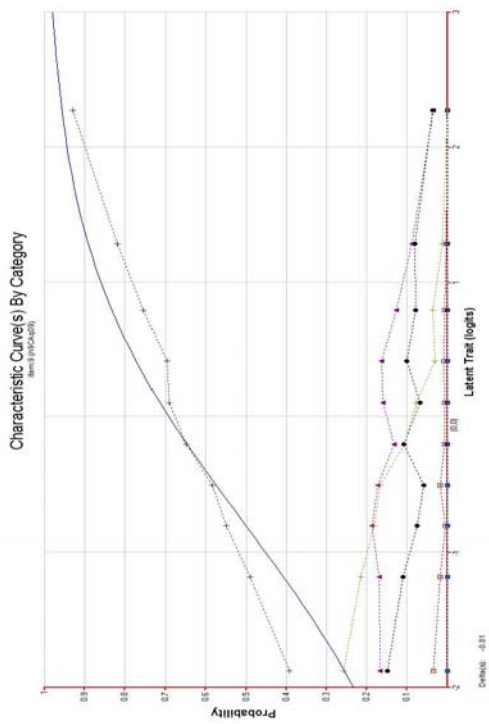
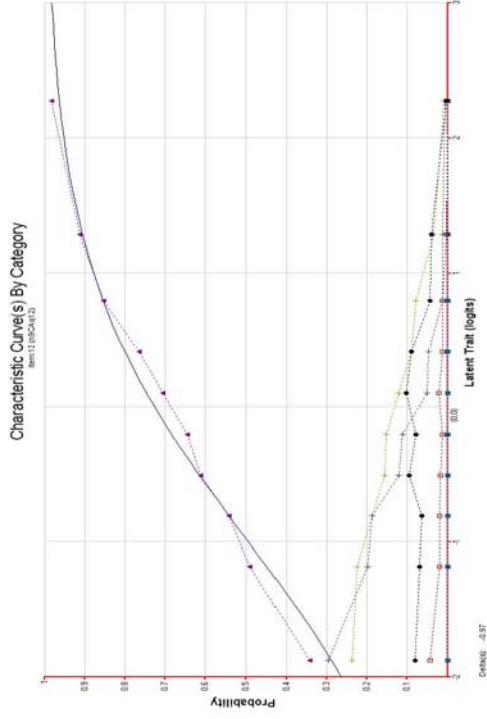
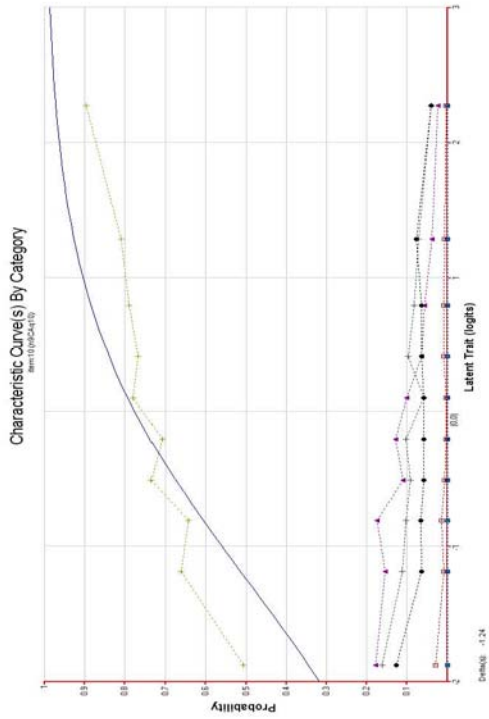


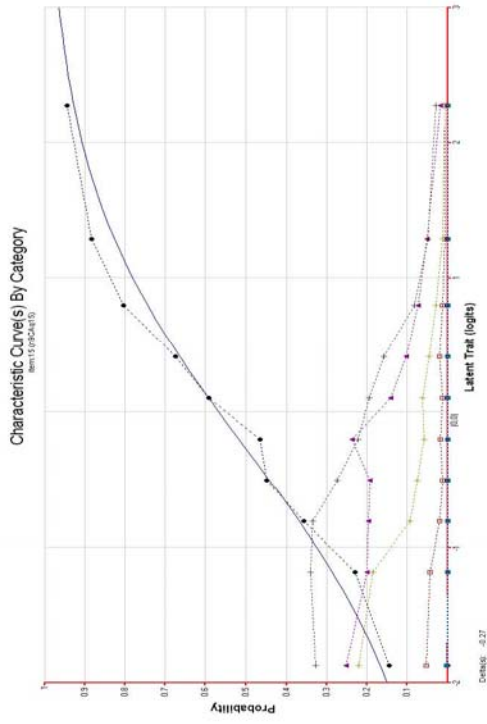
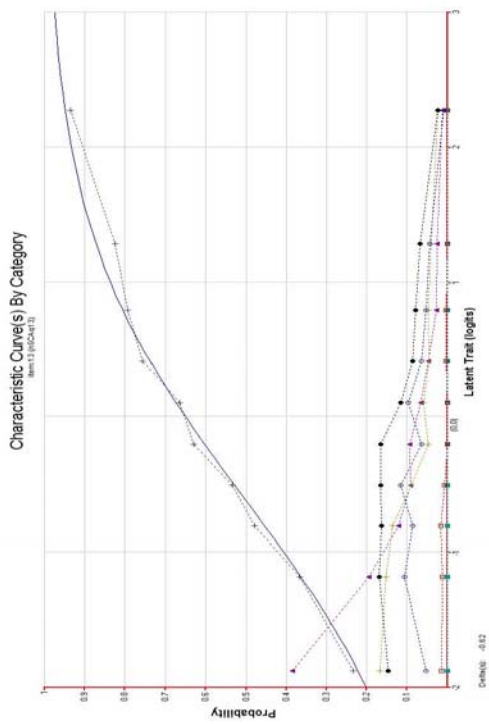
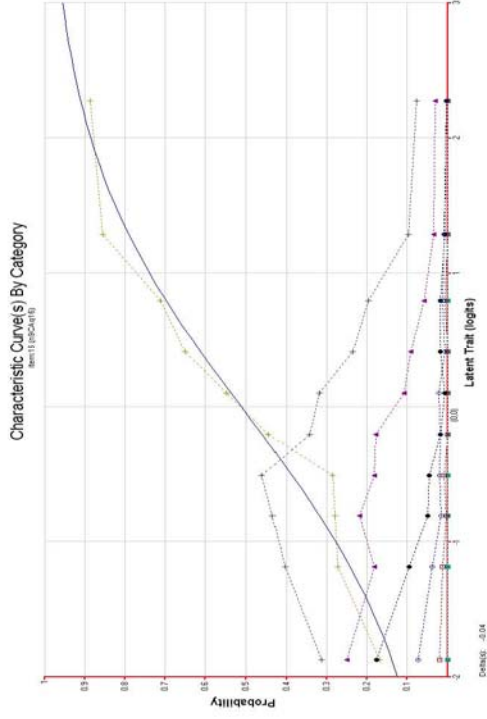
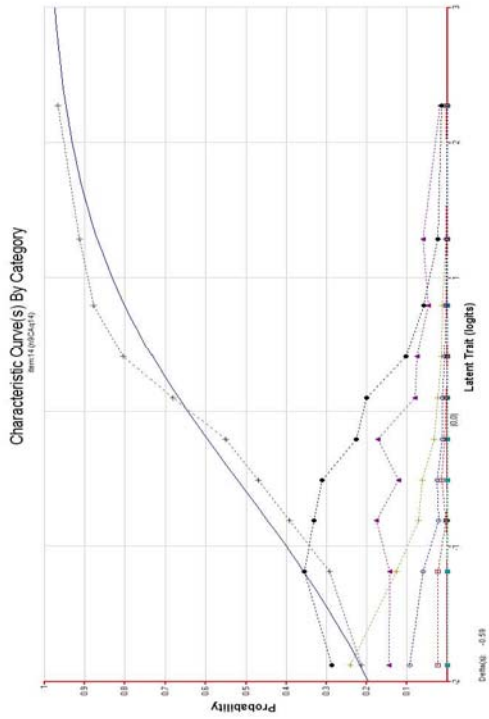
*Year 9 Numeracy*

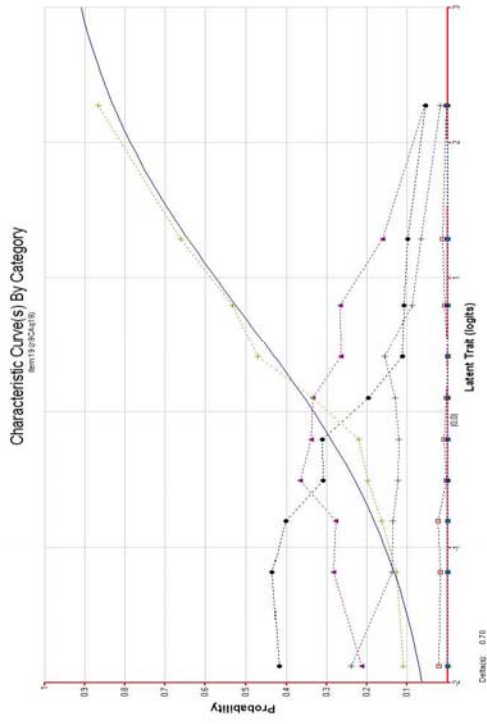
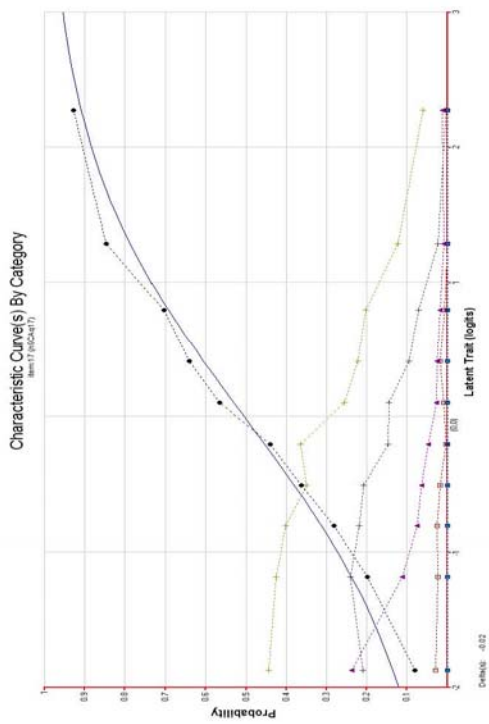
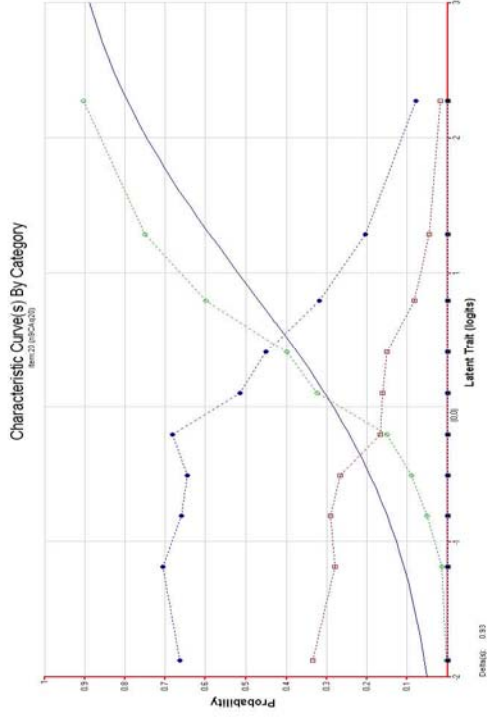
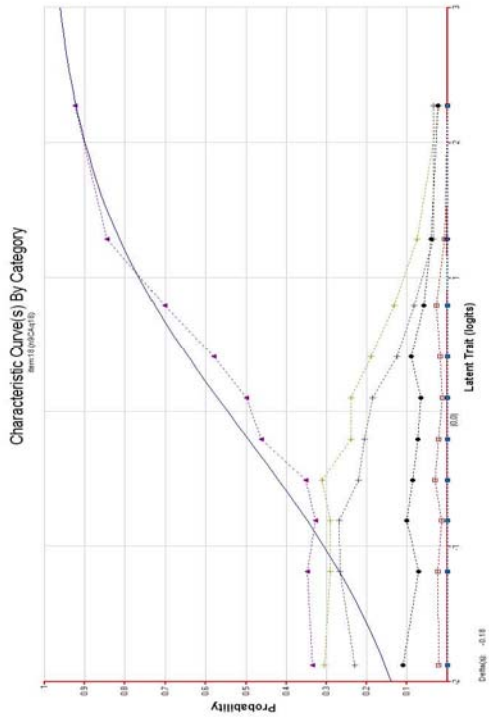


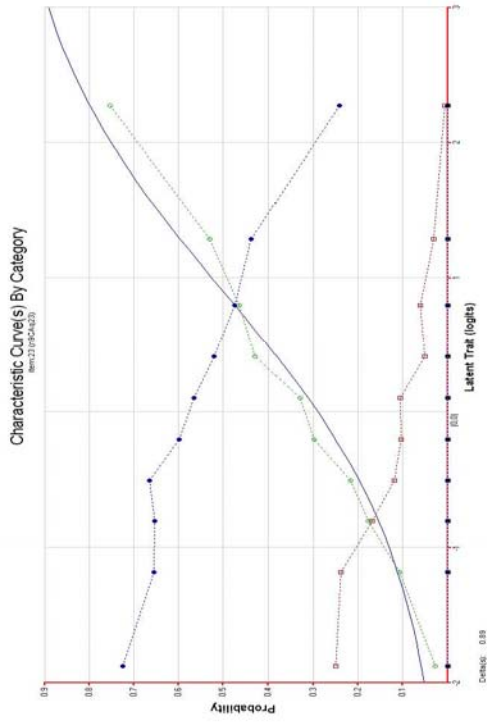
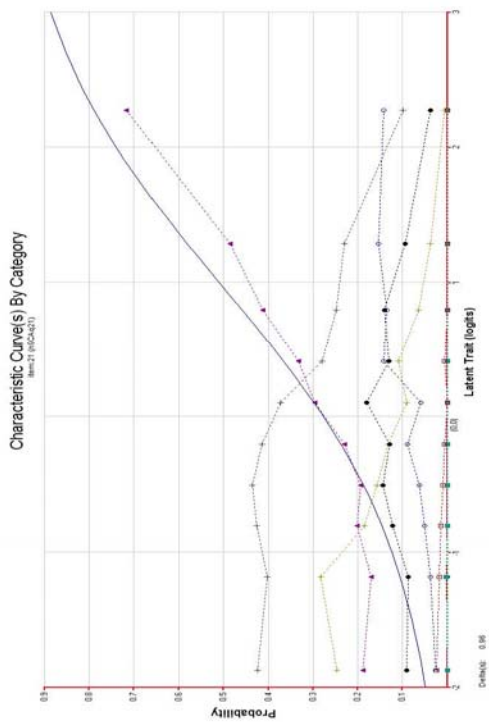
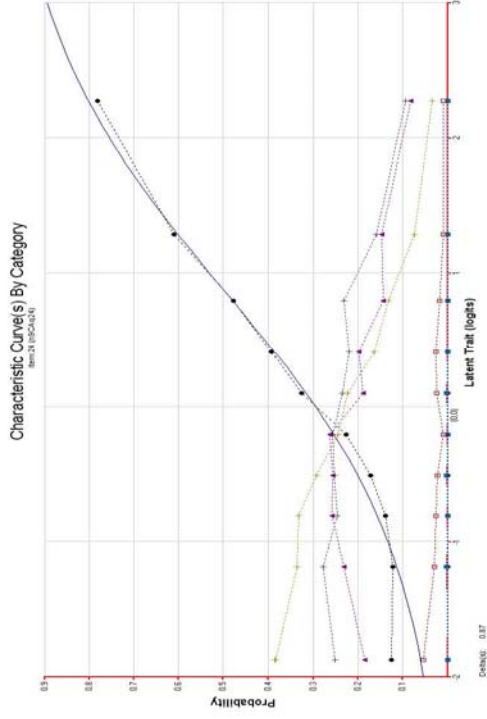
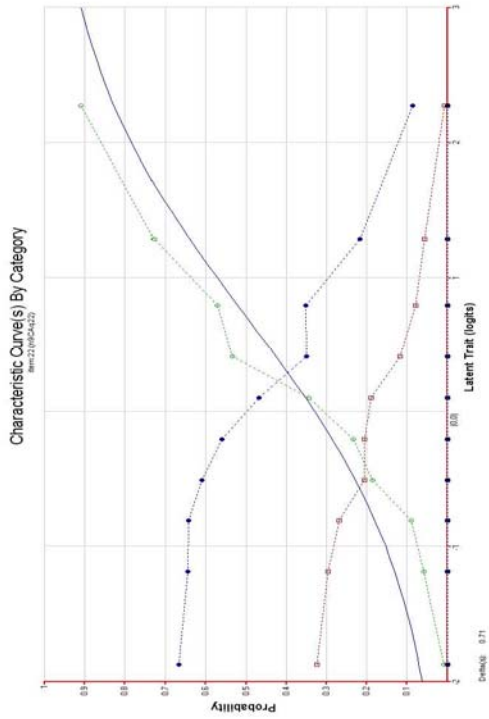


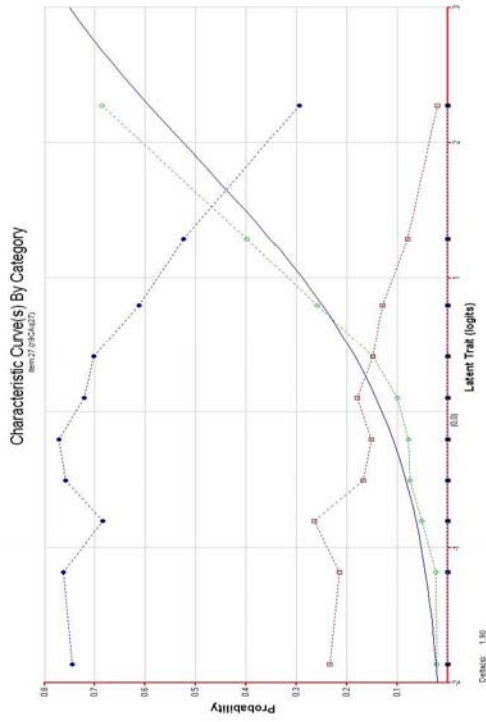
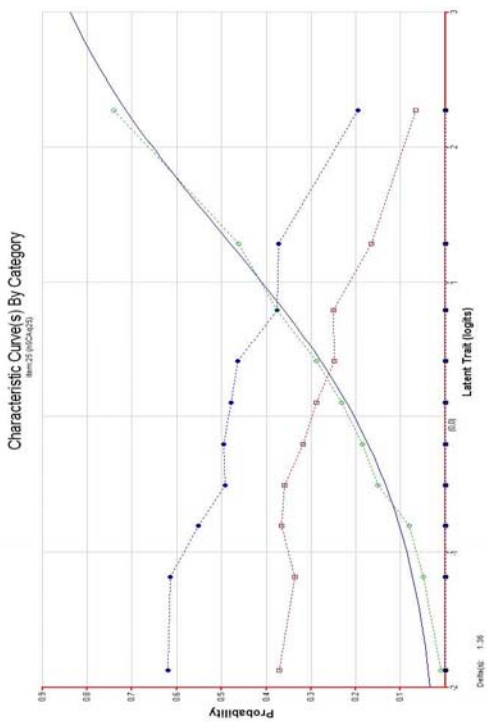
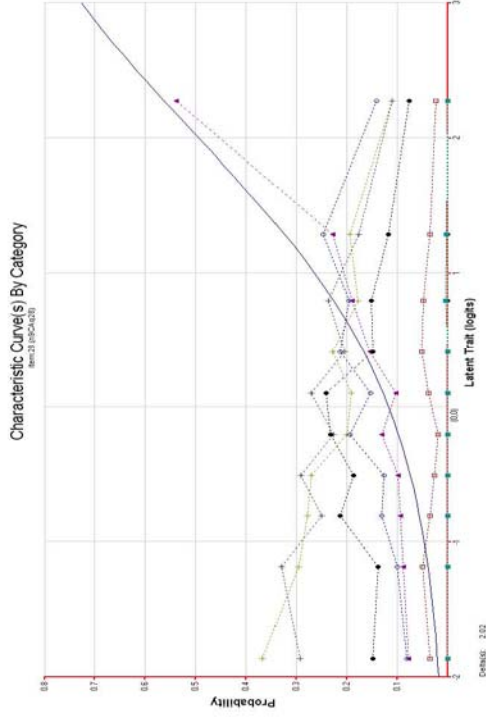
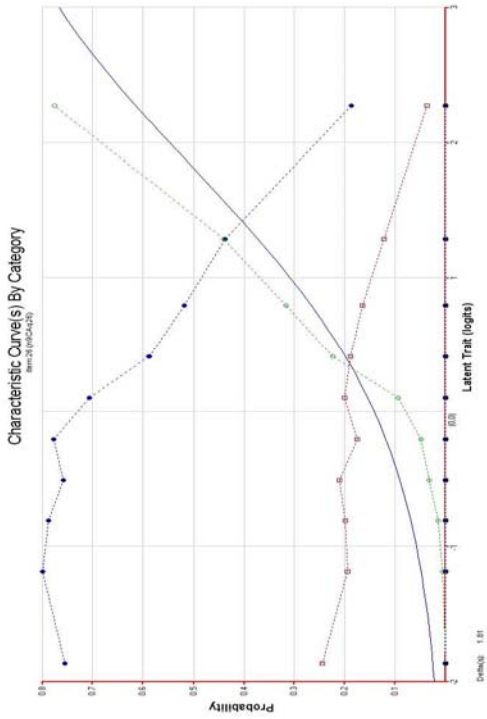


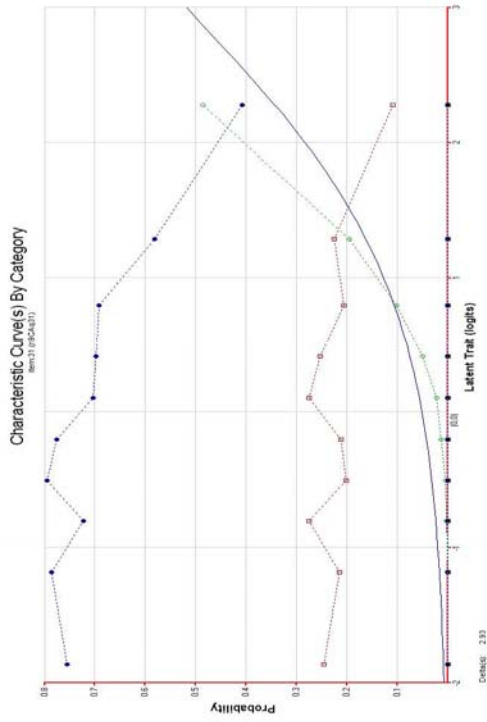
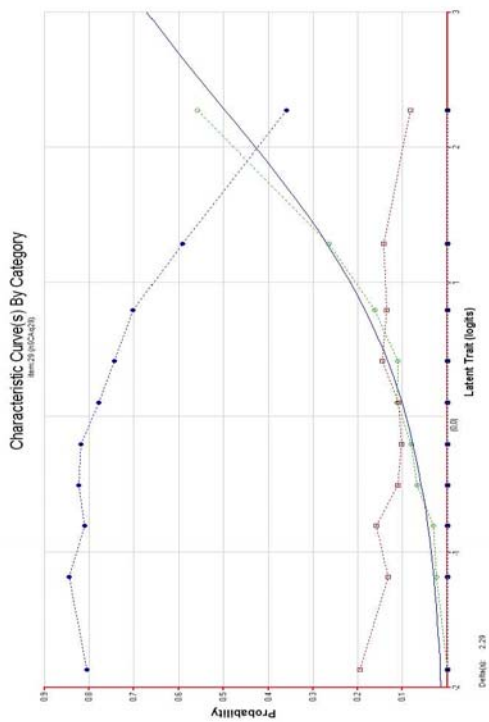
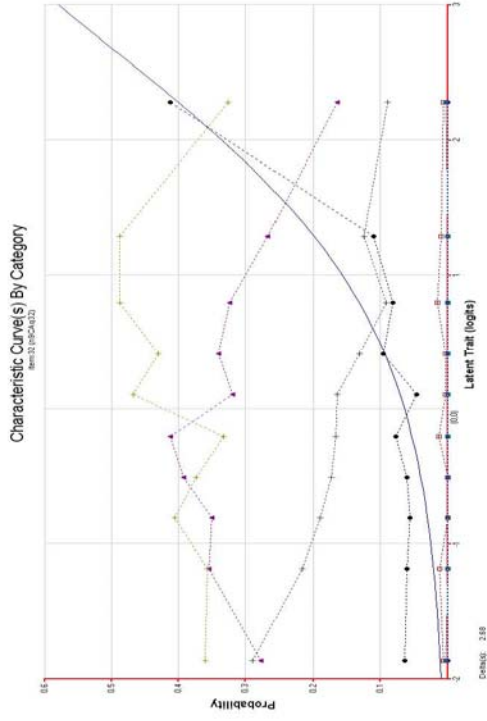
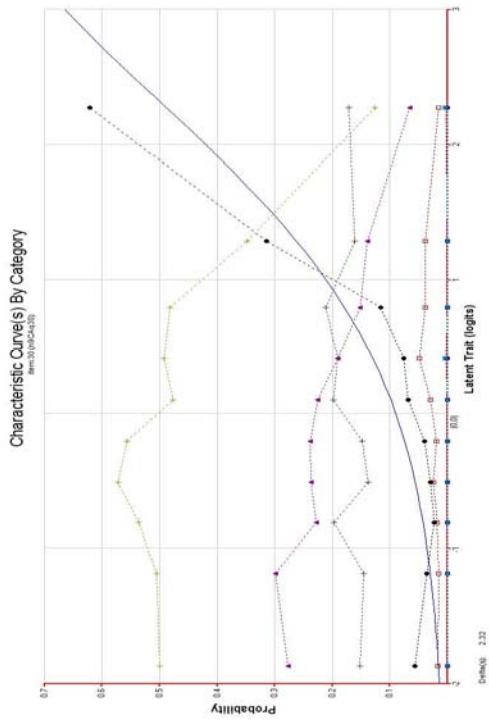


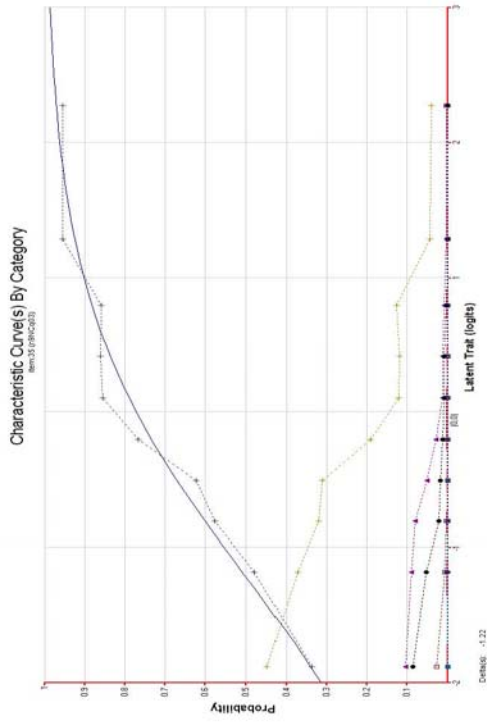
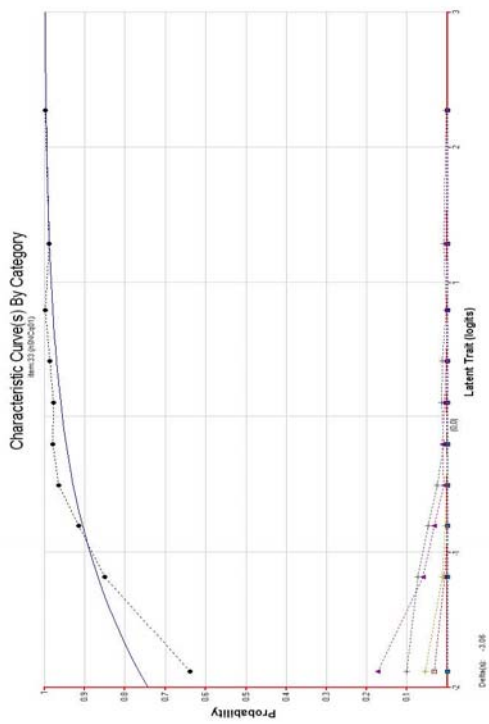
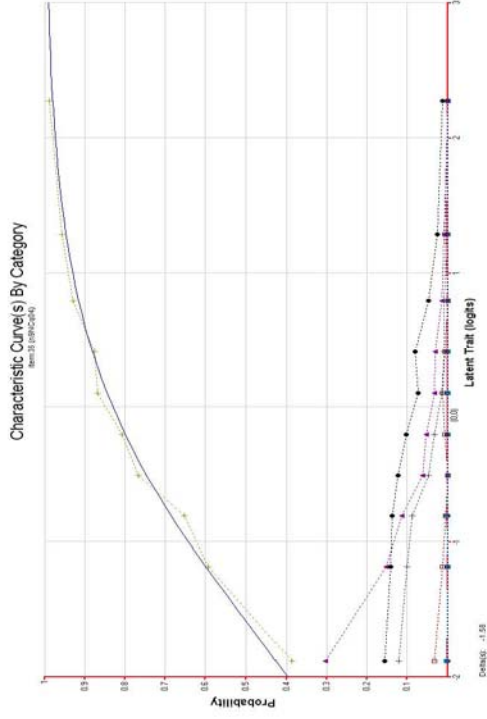
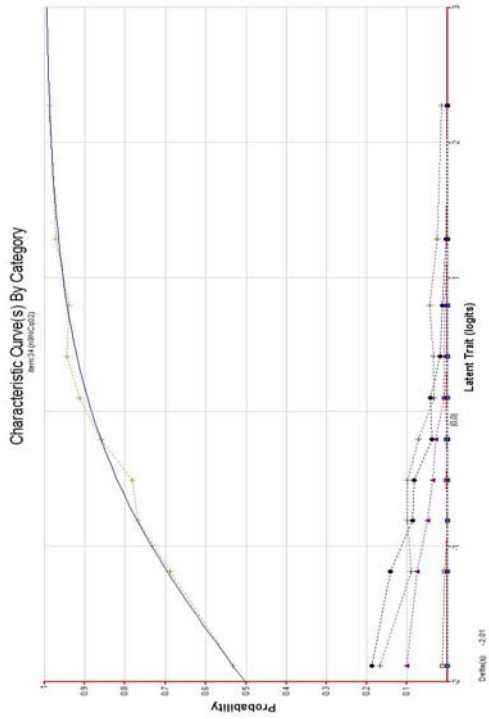


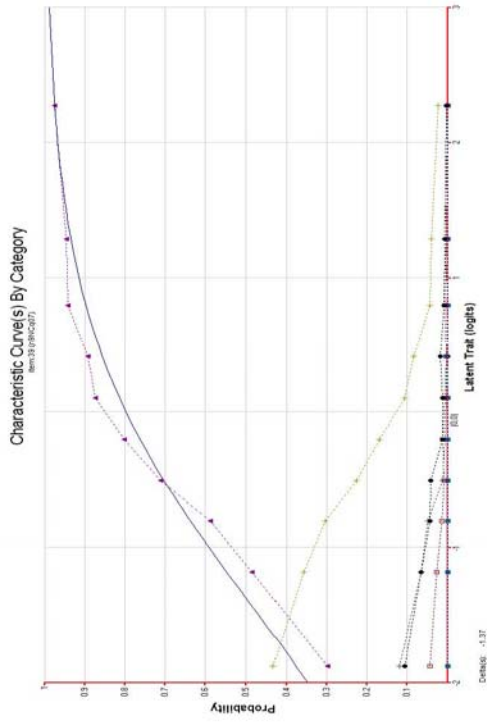
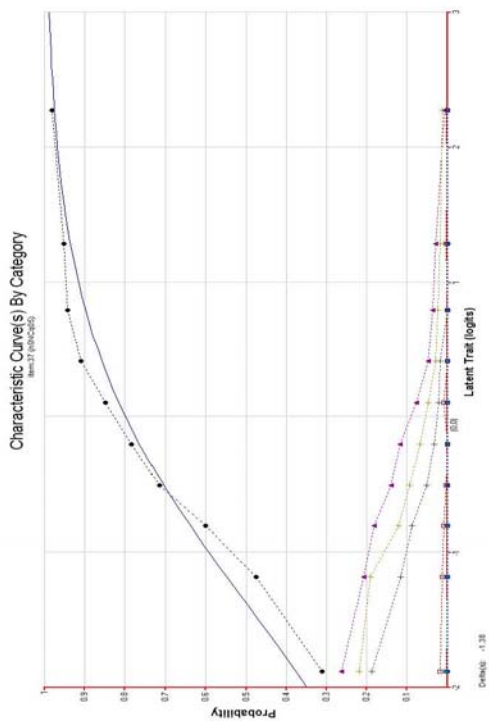
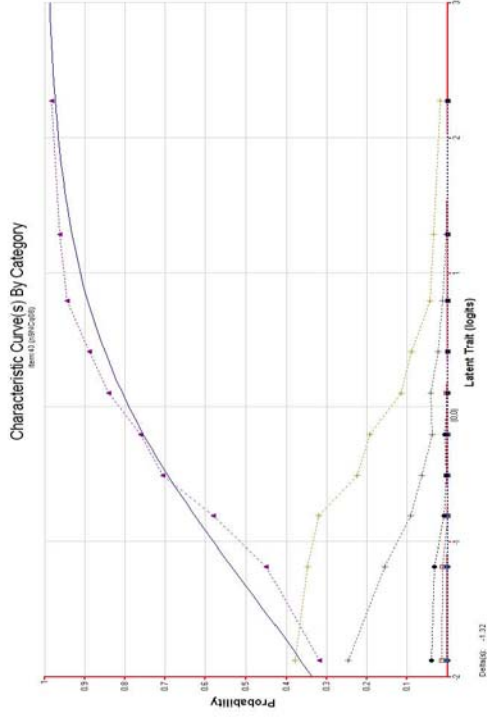
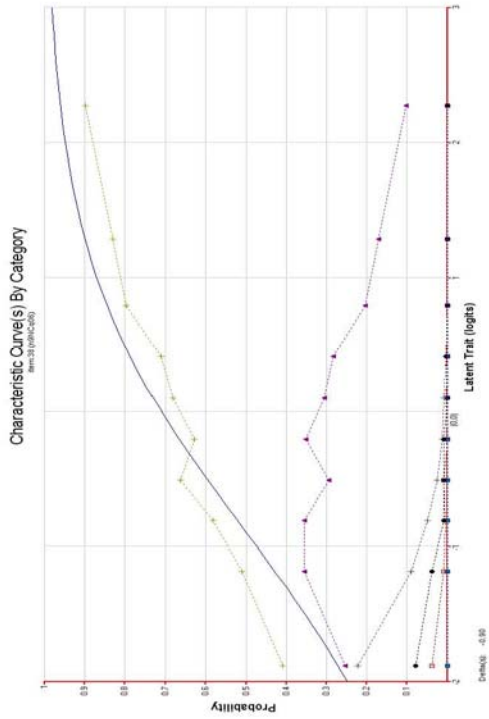




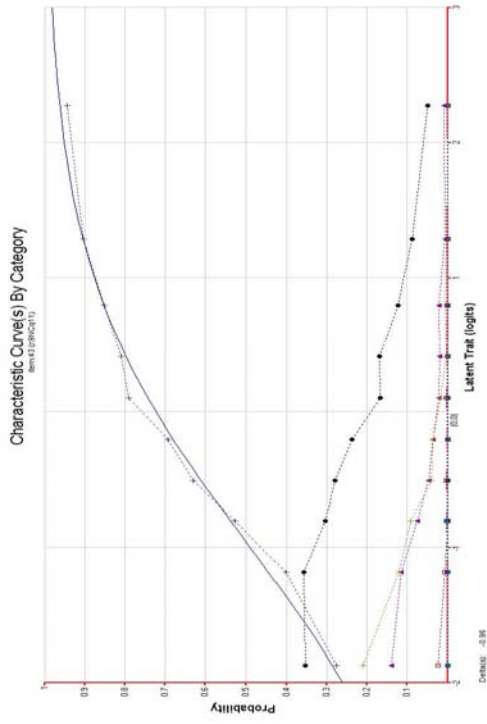
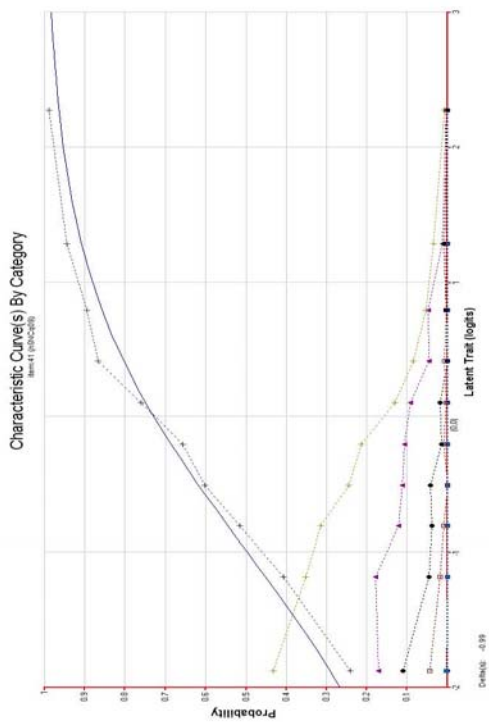
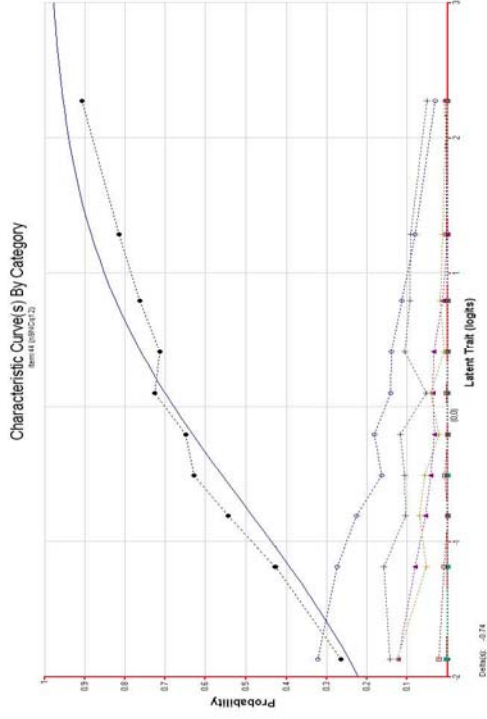
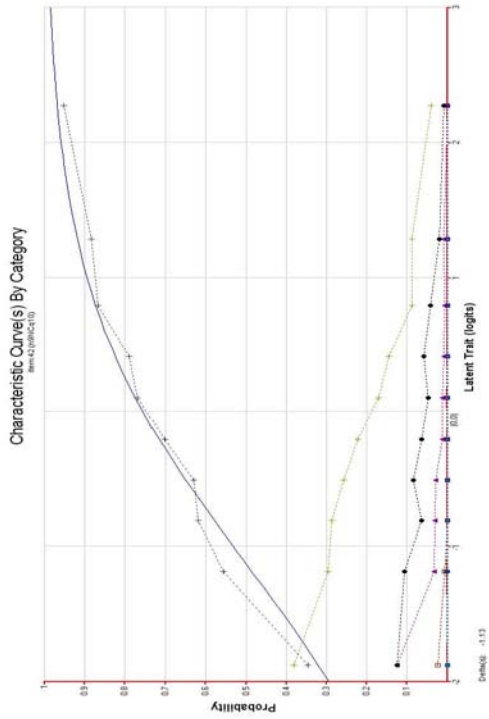


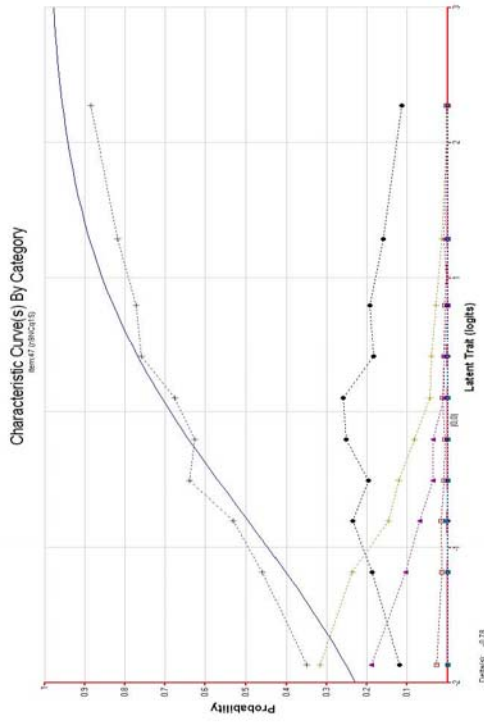
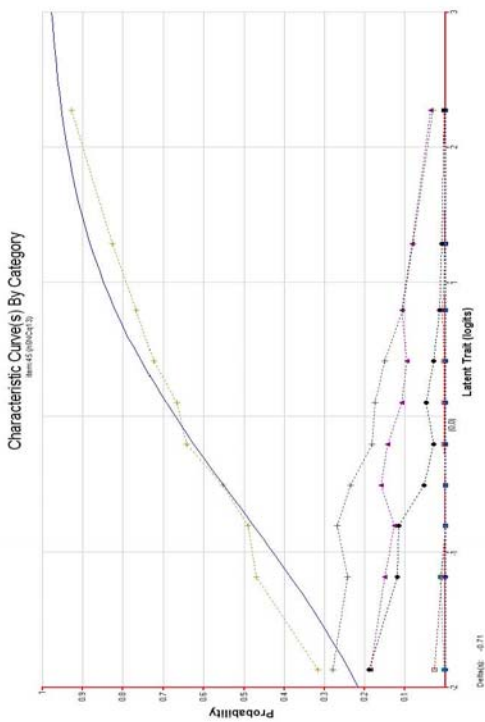
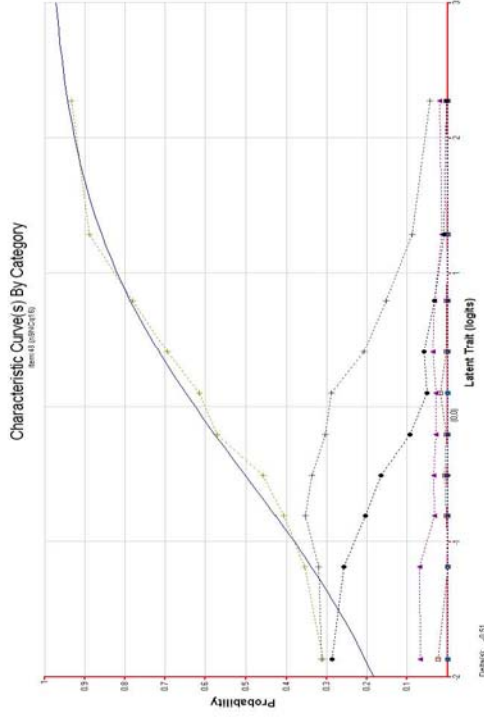
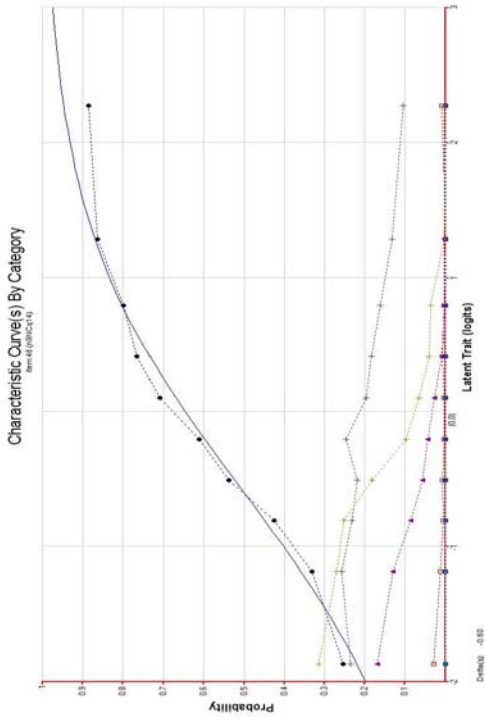


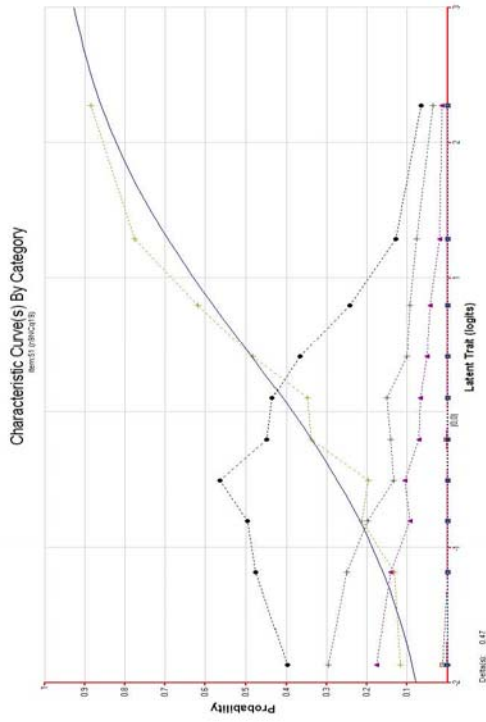
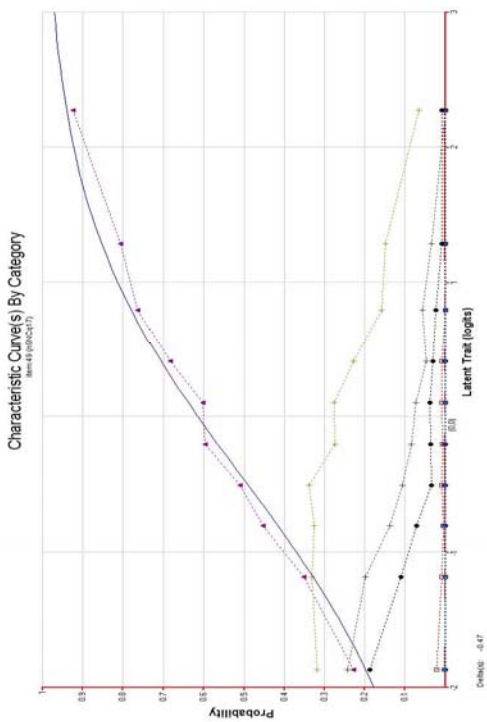
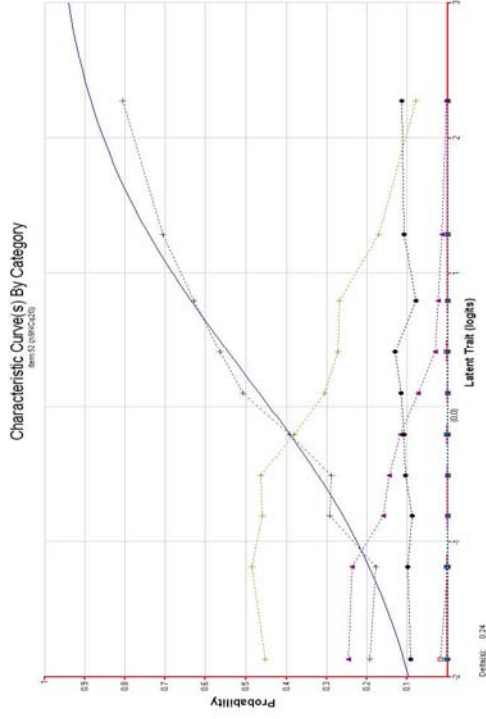
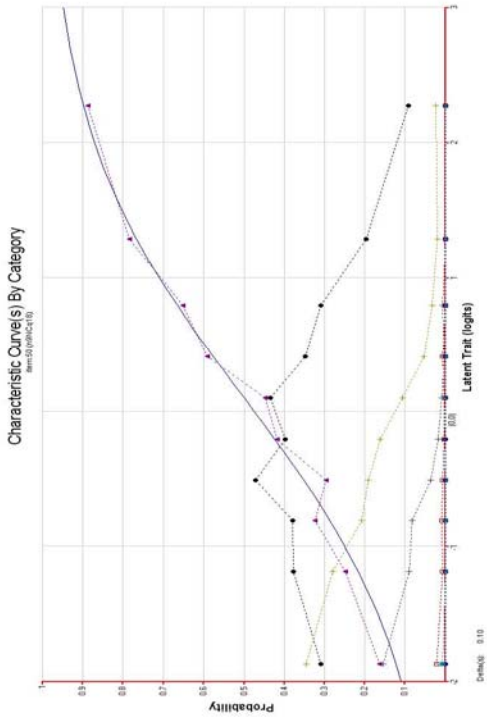


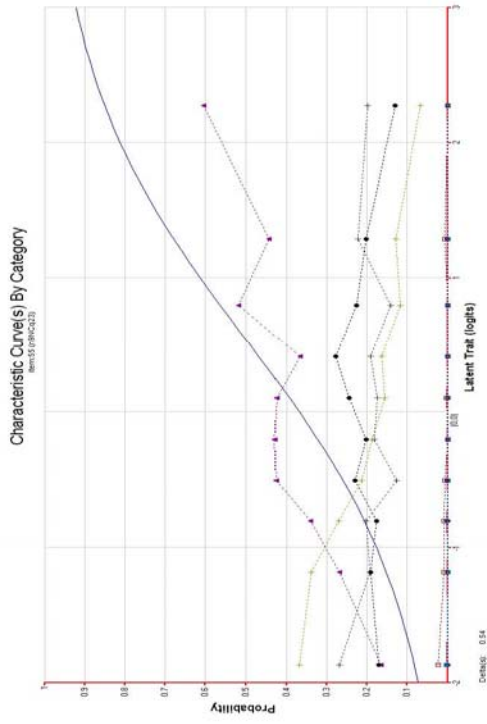
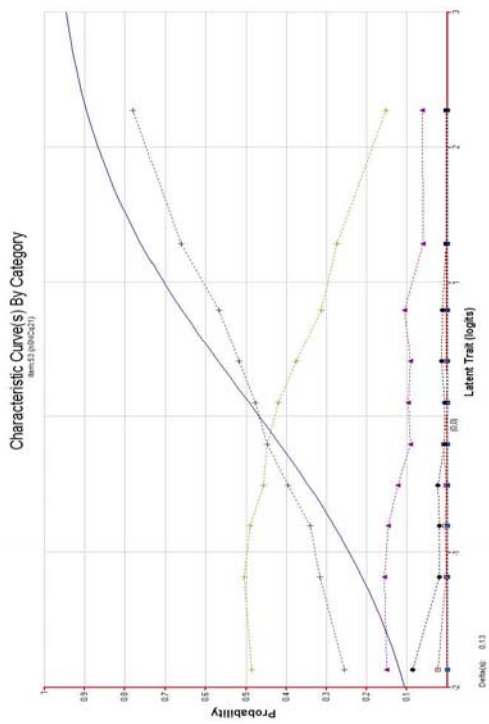
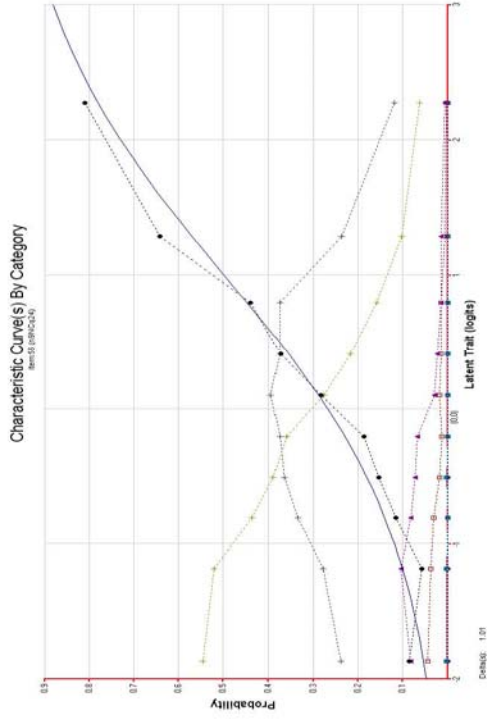
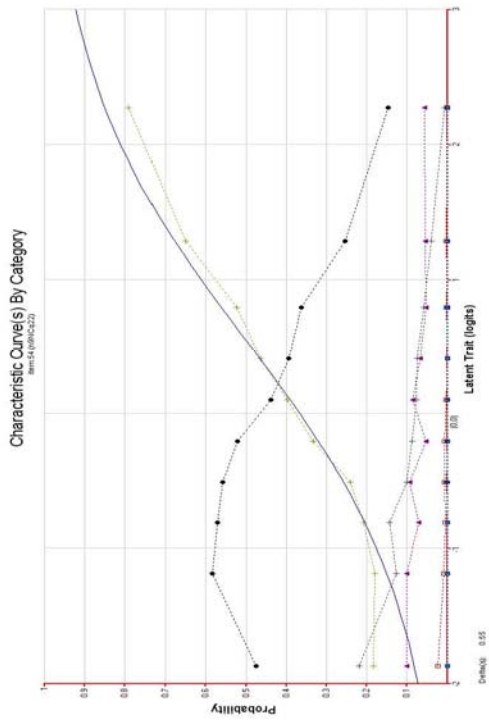


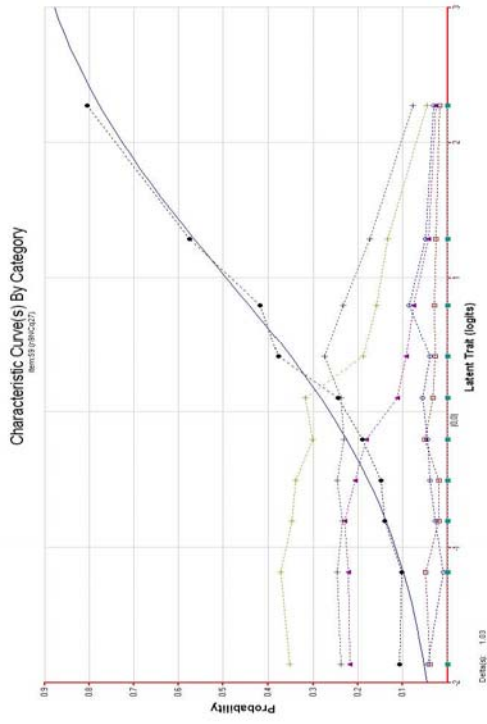
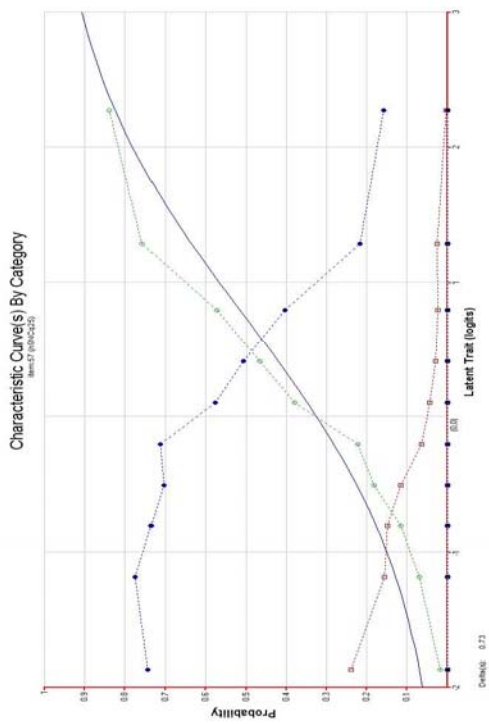
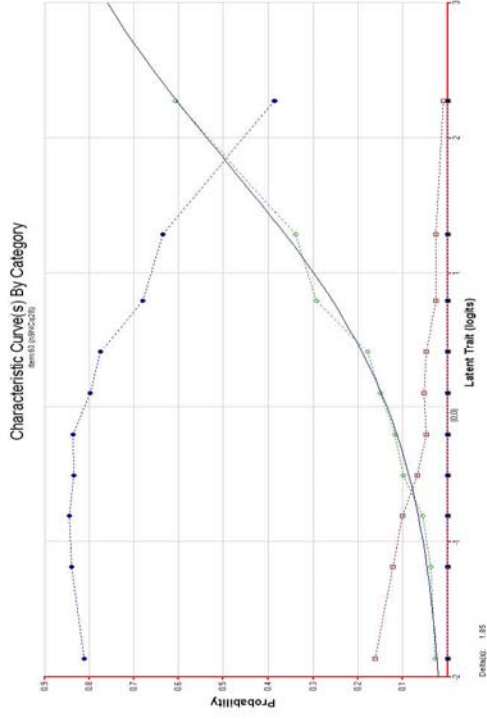
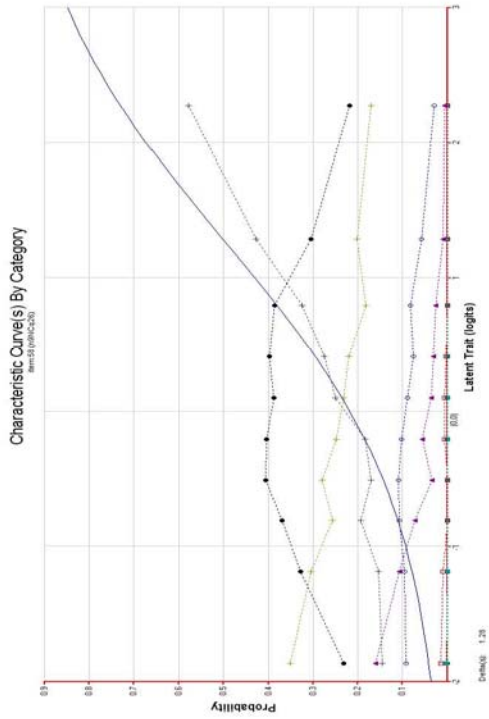


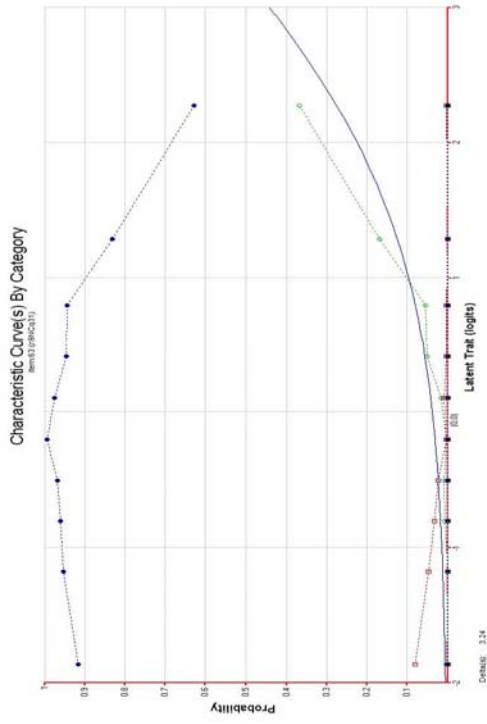
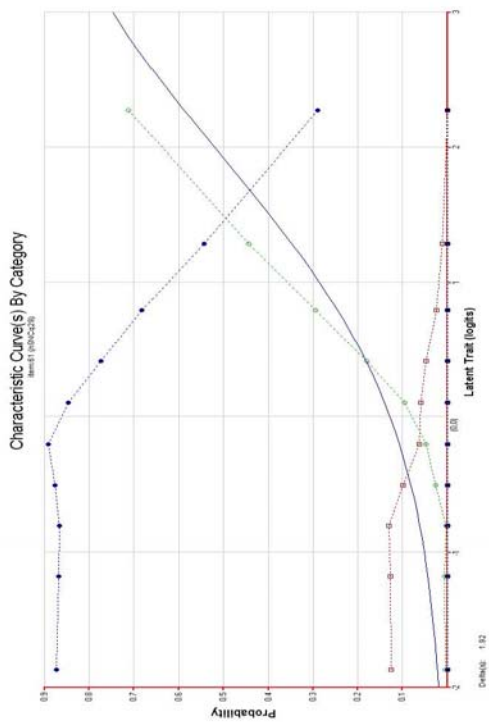
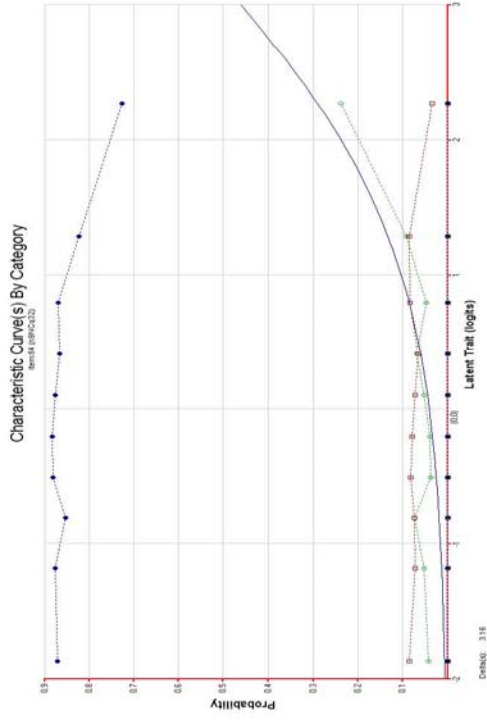
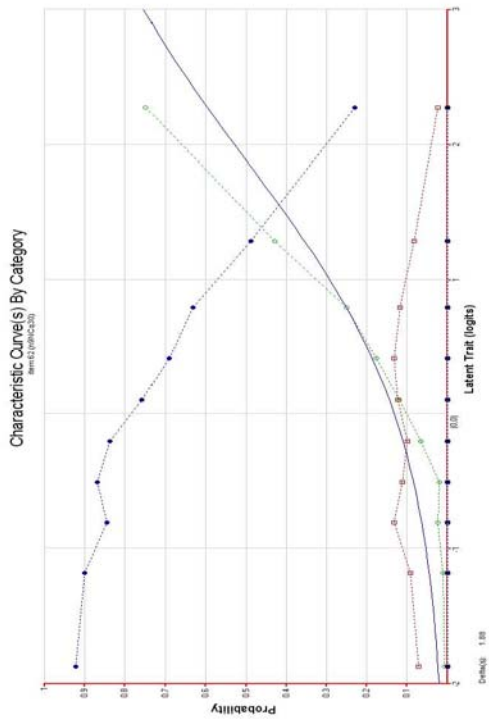






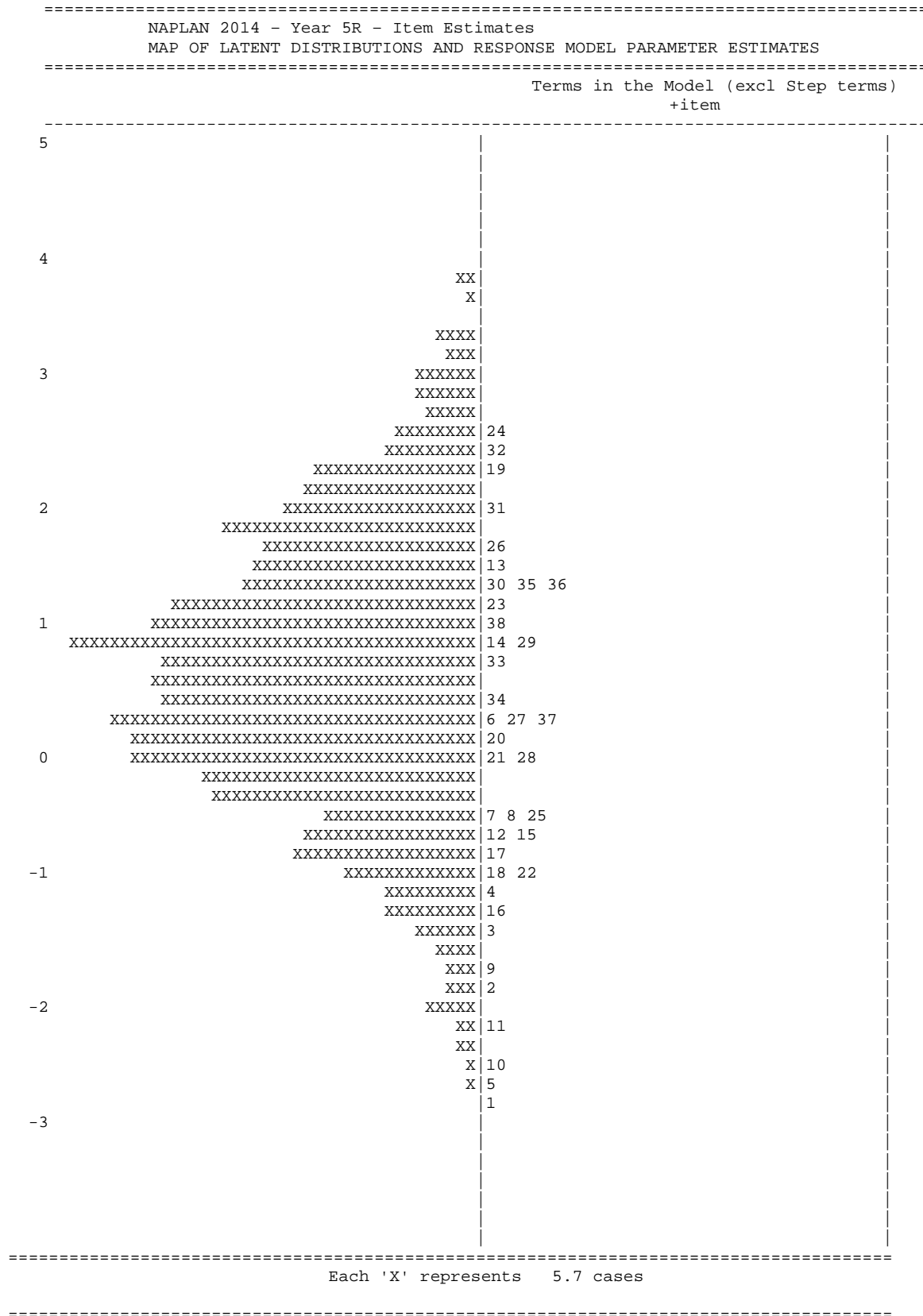








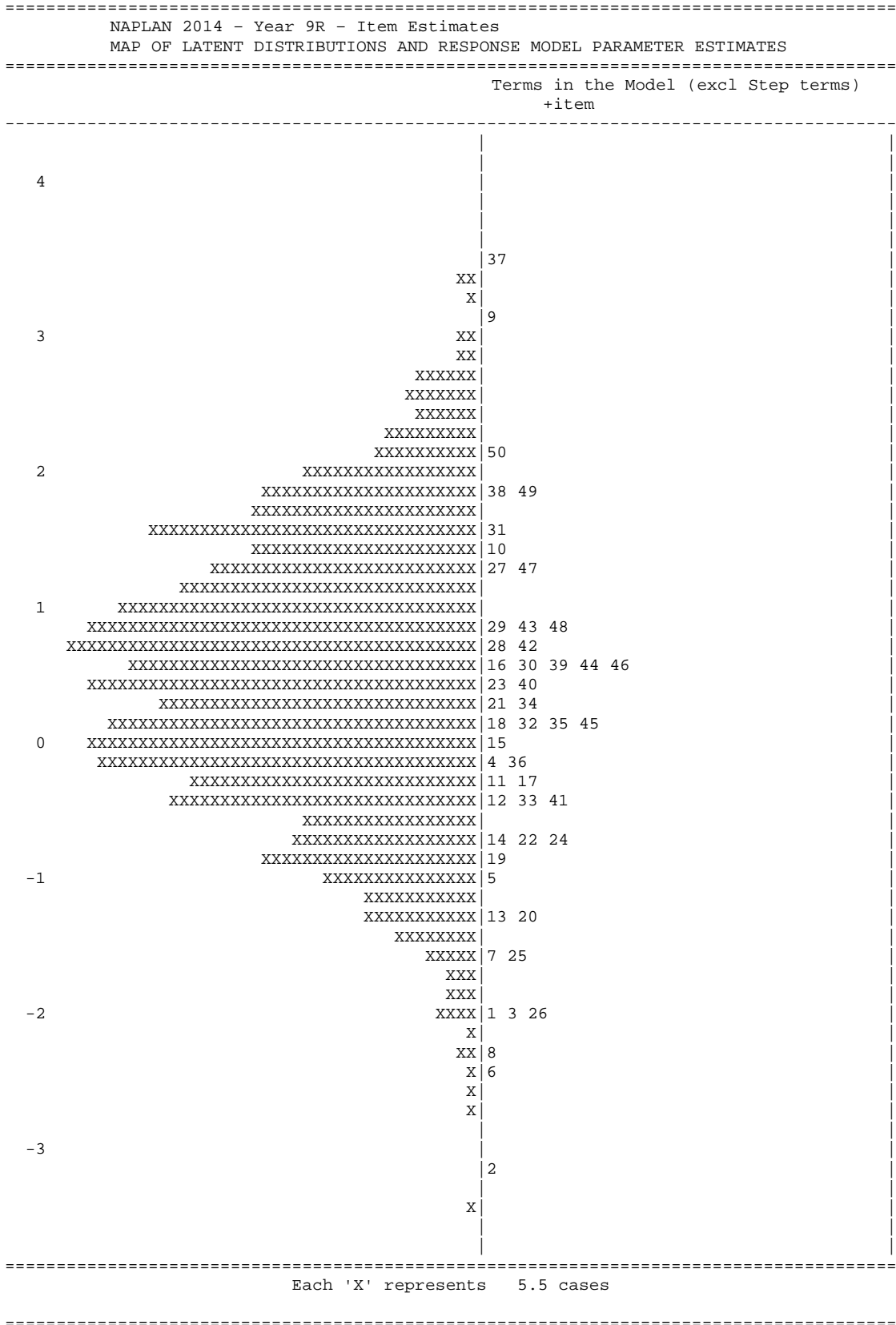
**Figure E.2 Year 5 Reading Variable Map**



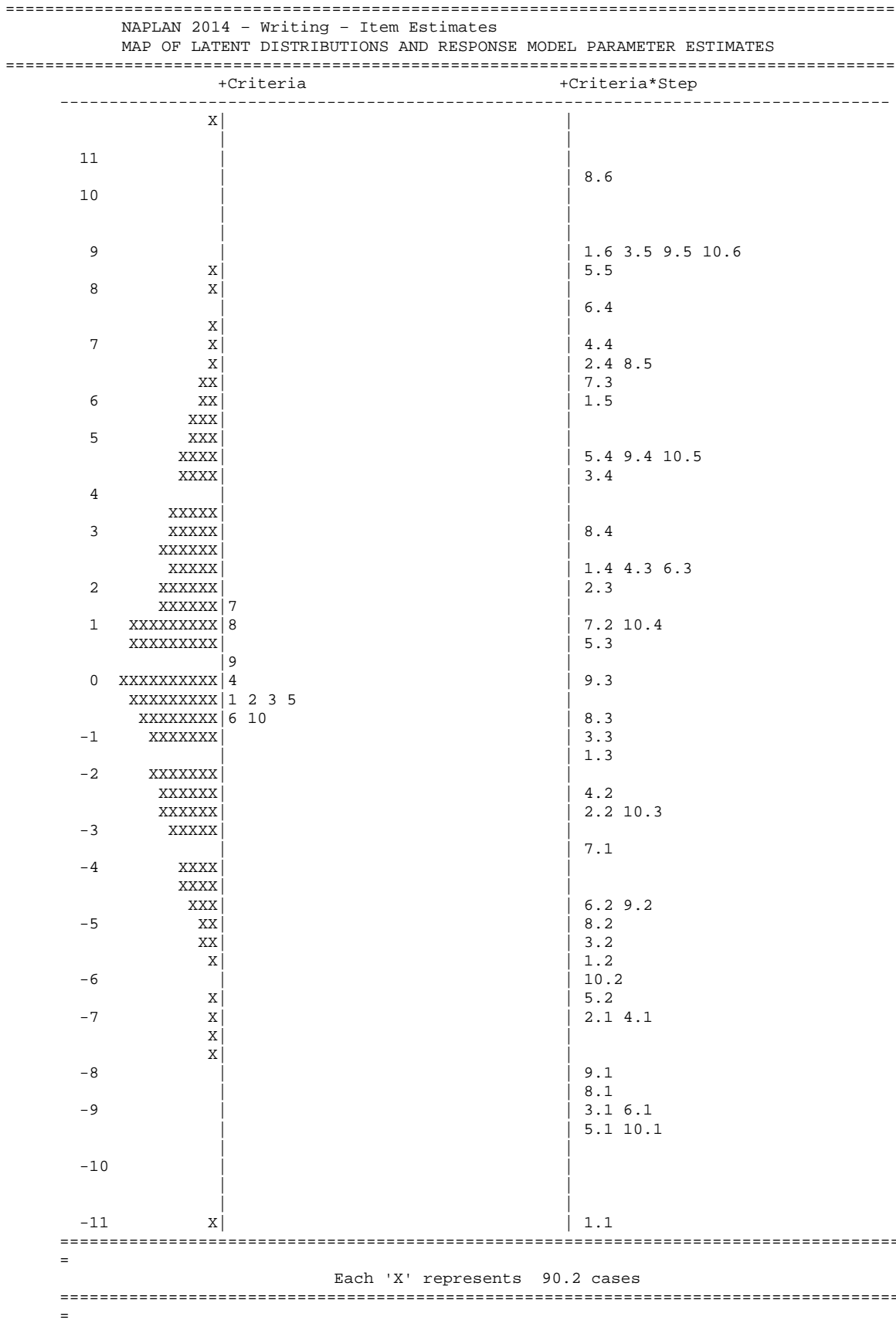




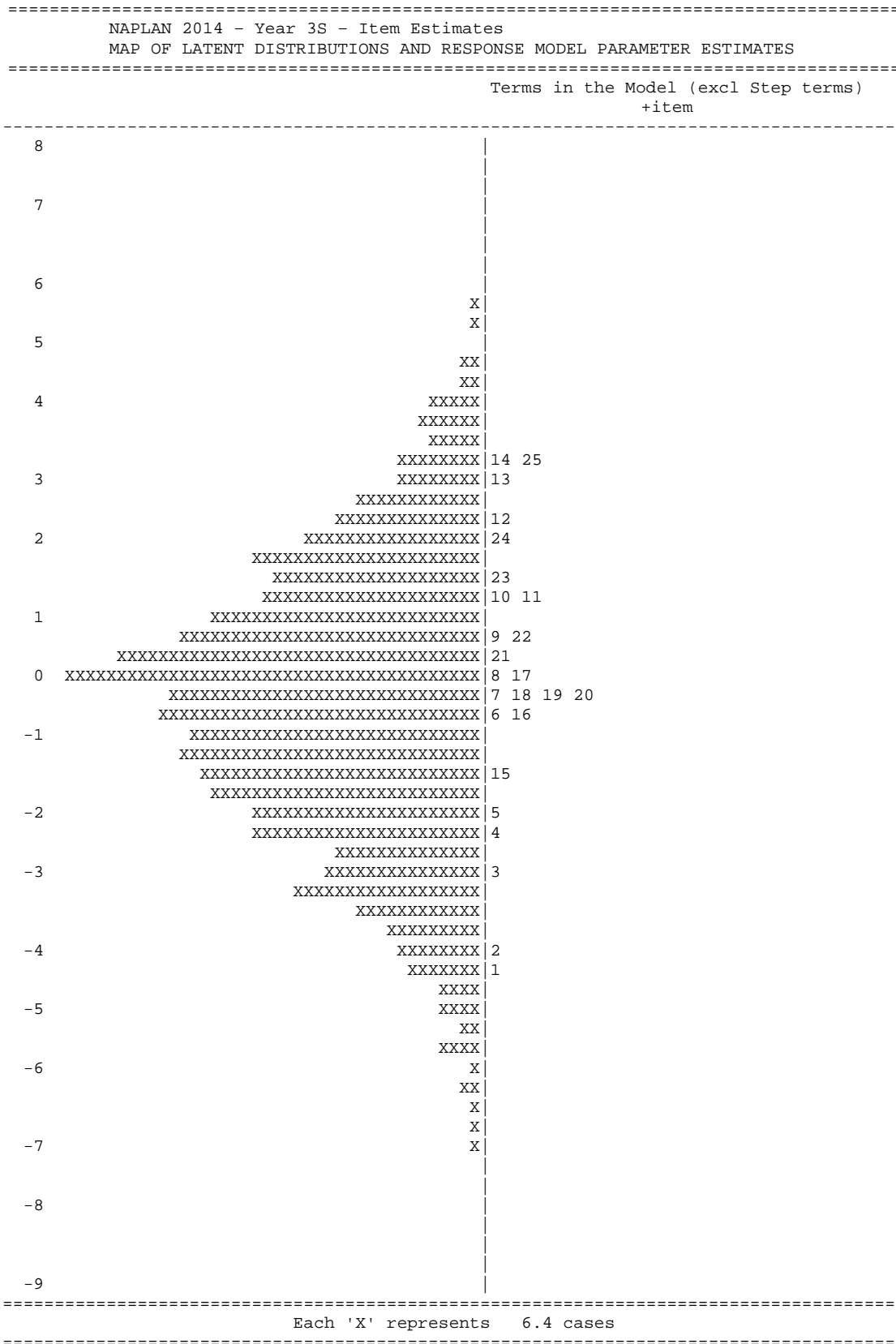
**Figure E.4 Year 9 Reading Variable Map**



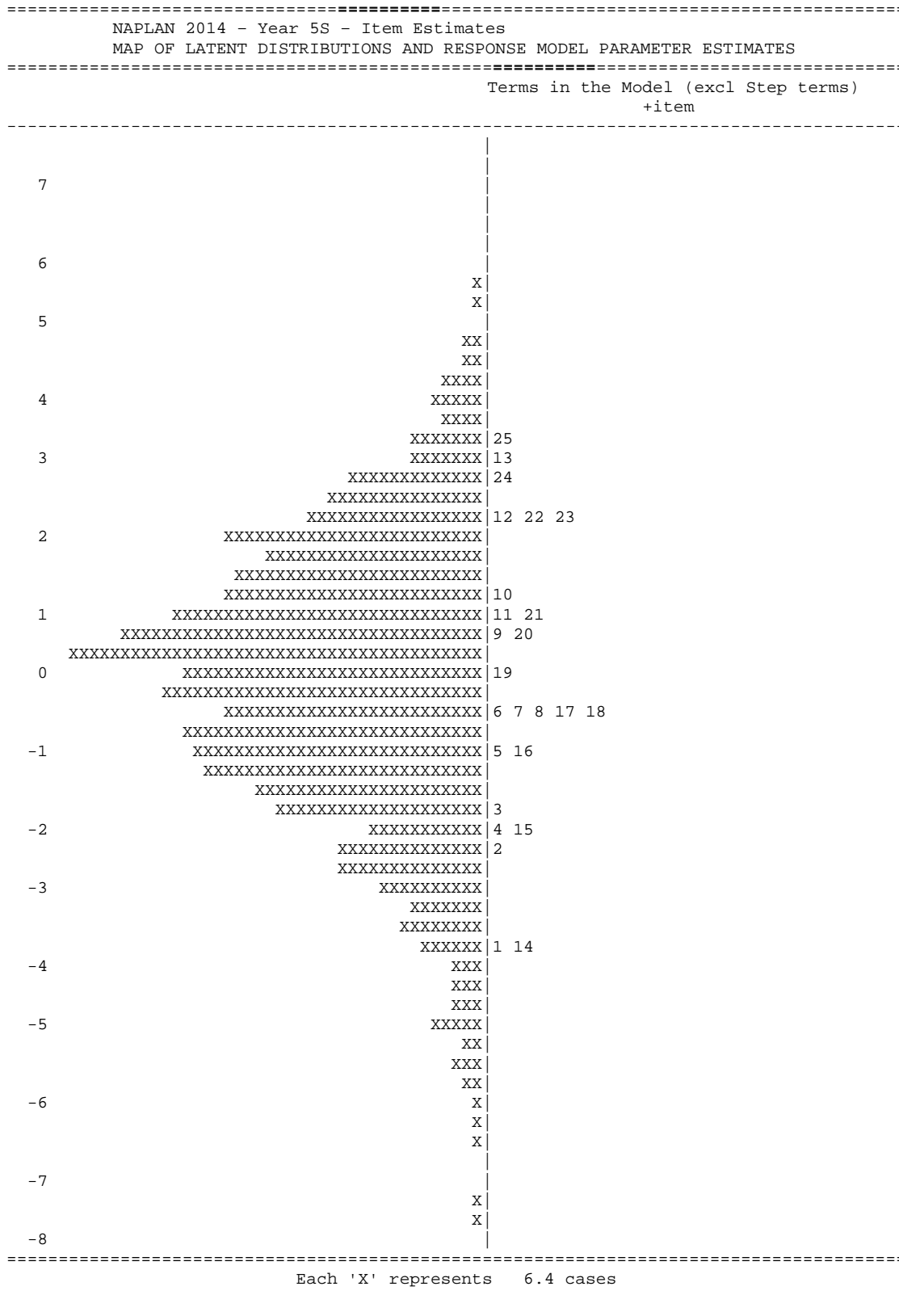
**Figure E.5 Years 3, 5, 7 and 9 Writing Variable Map**



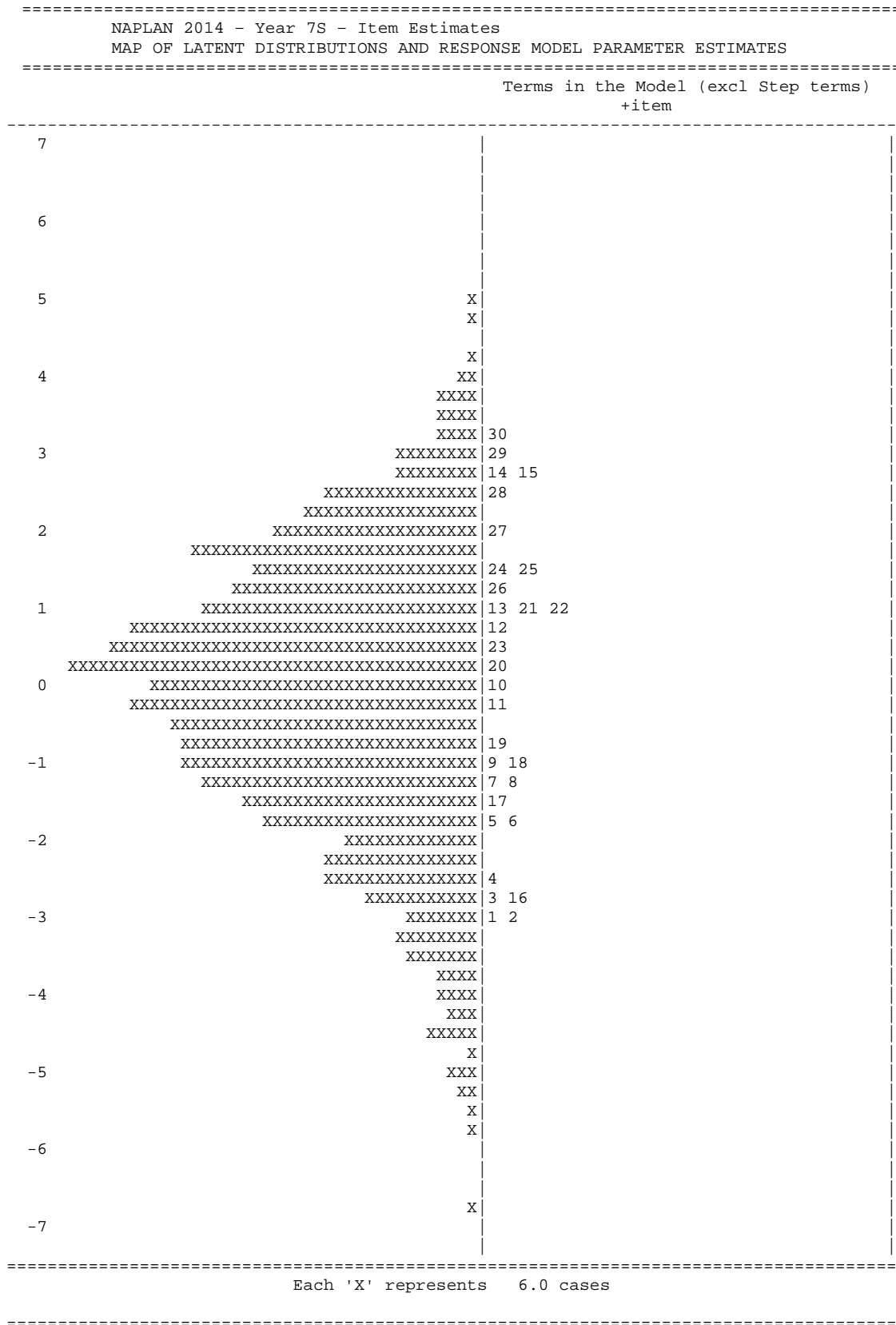
**Figure E.6 Year 3 Spelling Variable Map**



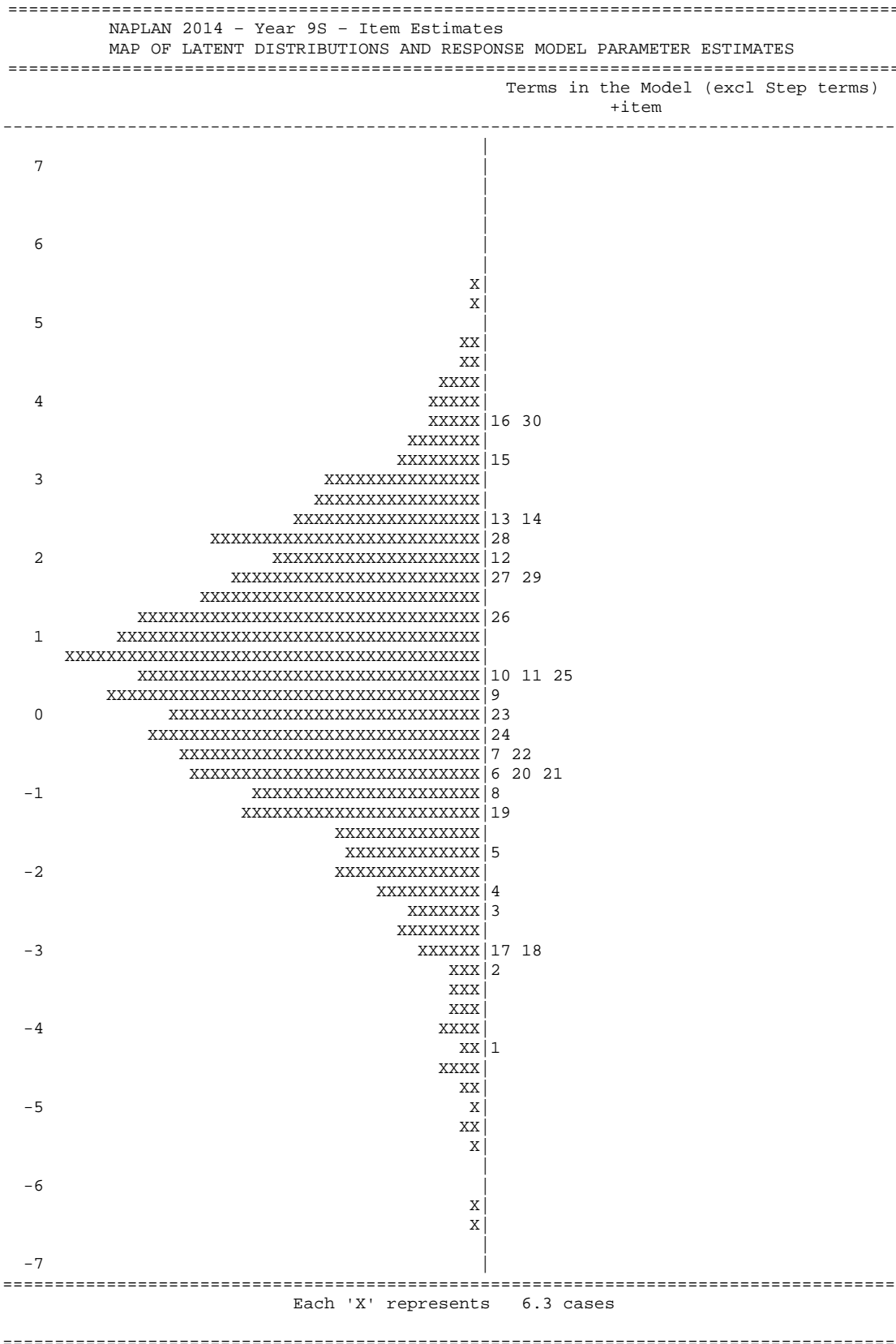
**Figure E.7 Year 5 Spelling Variable Map**



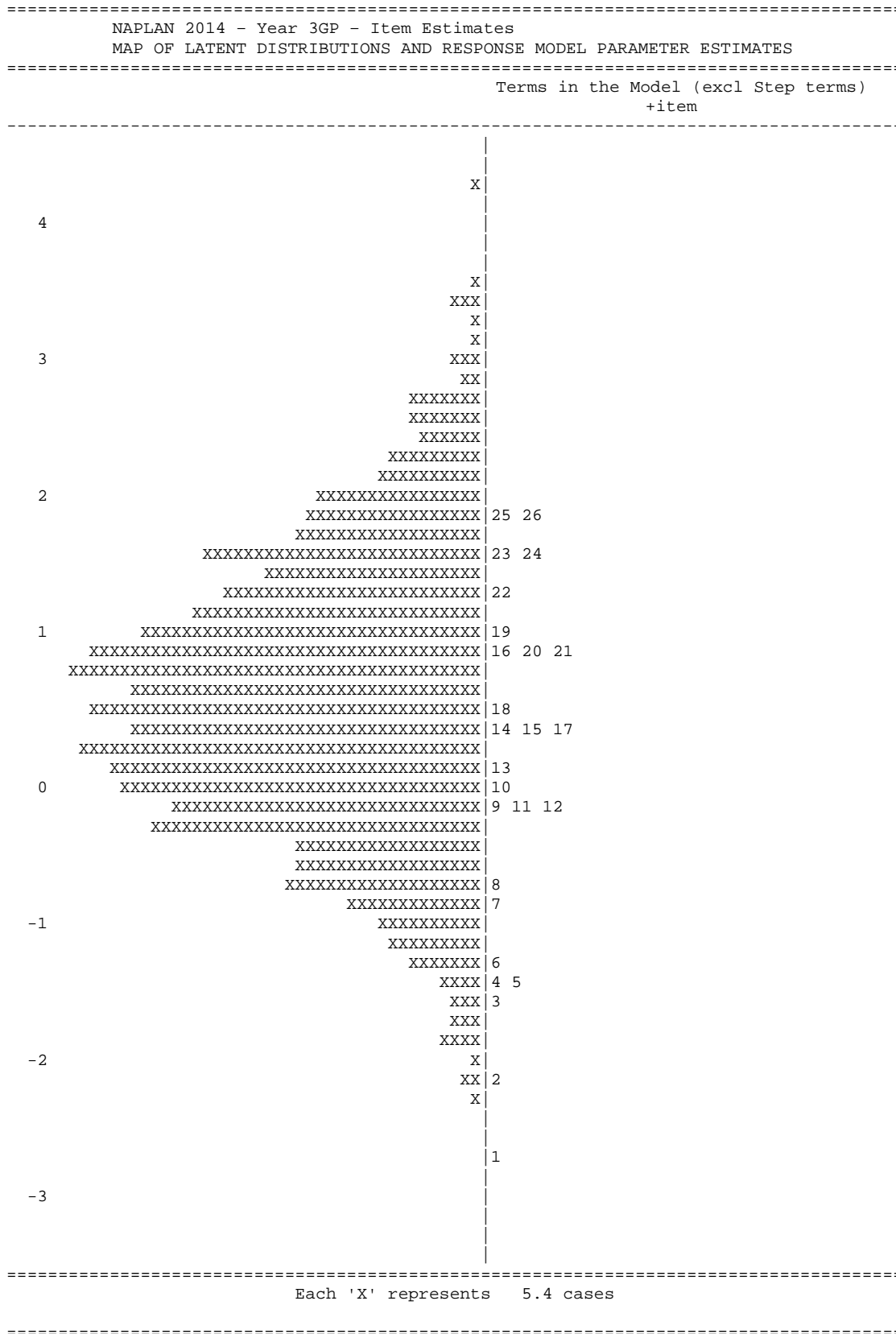
**Figure E.8 Year 7 Spelling Variable Map**



**Figure E.9 Year 9 Spelling Variable Map**



**Figure E.10 Year 3 Grammar and Punctuation Variable Map**



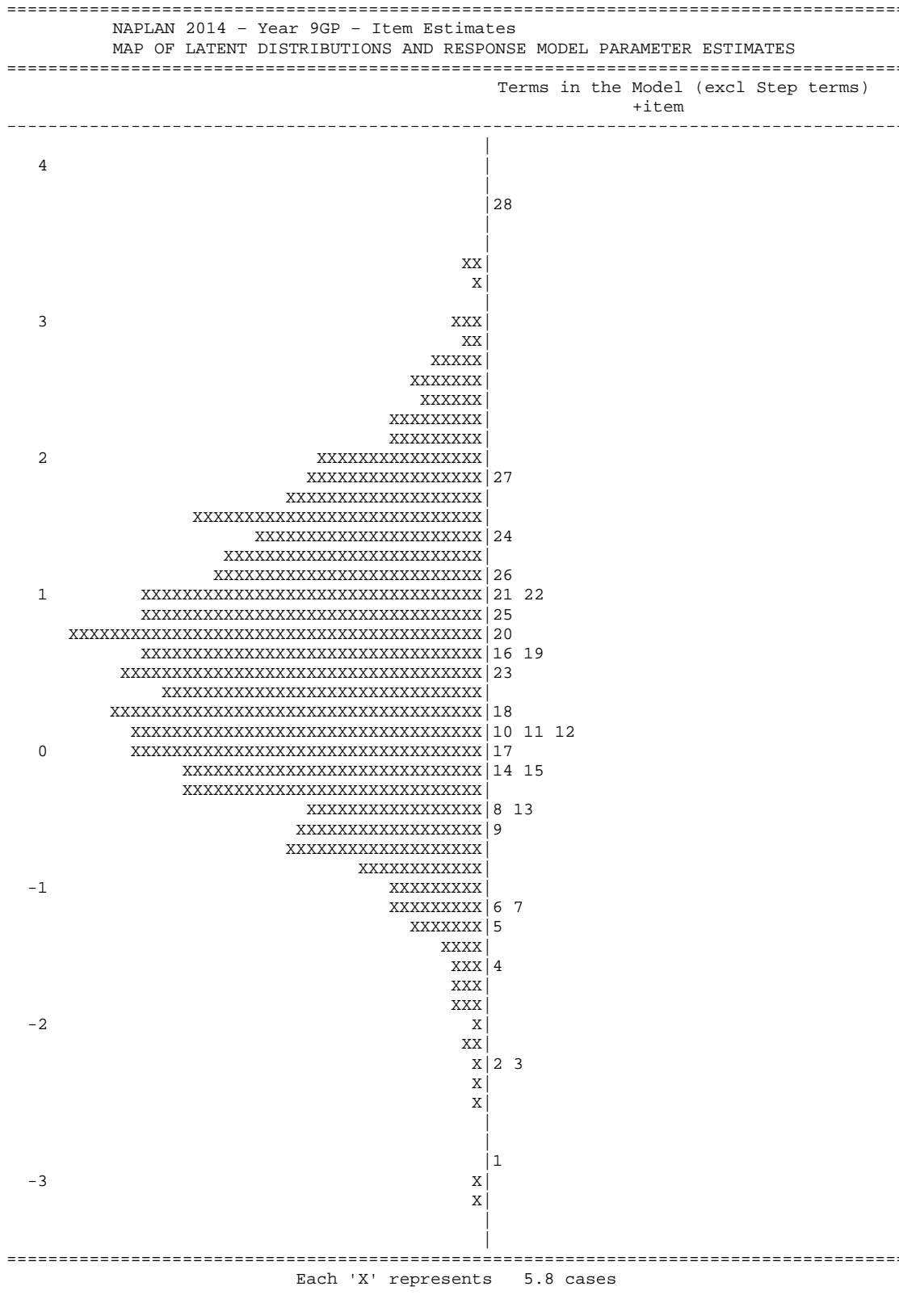


**Figure E.11 Year 5 Grammar and Punctuation Variable Map**

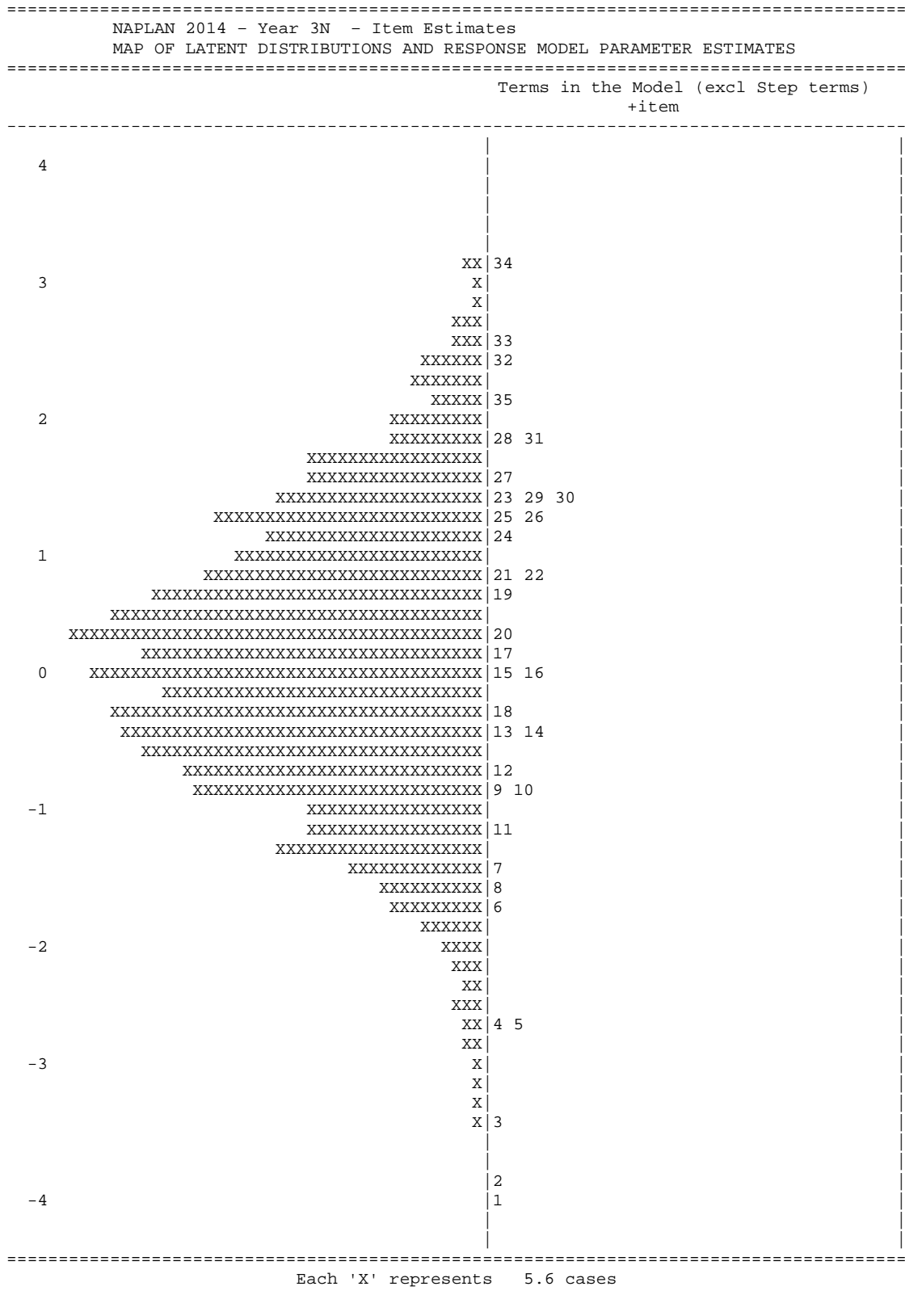




**Figure E.13 Year 9 Grammar and Punctuation Variable Map**



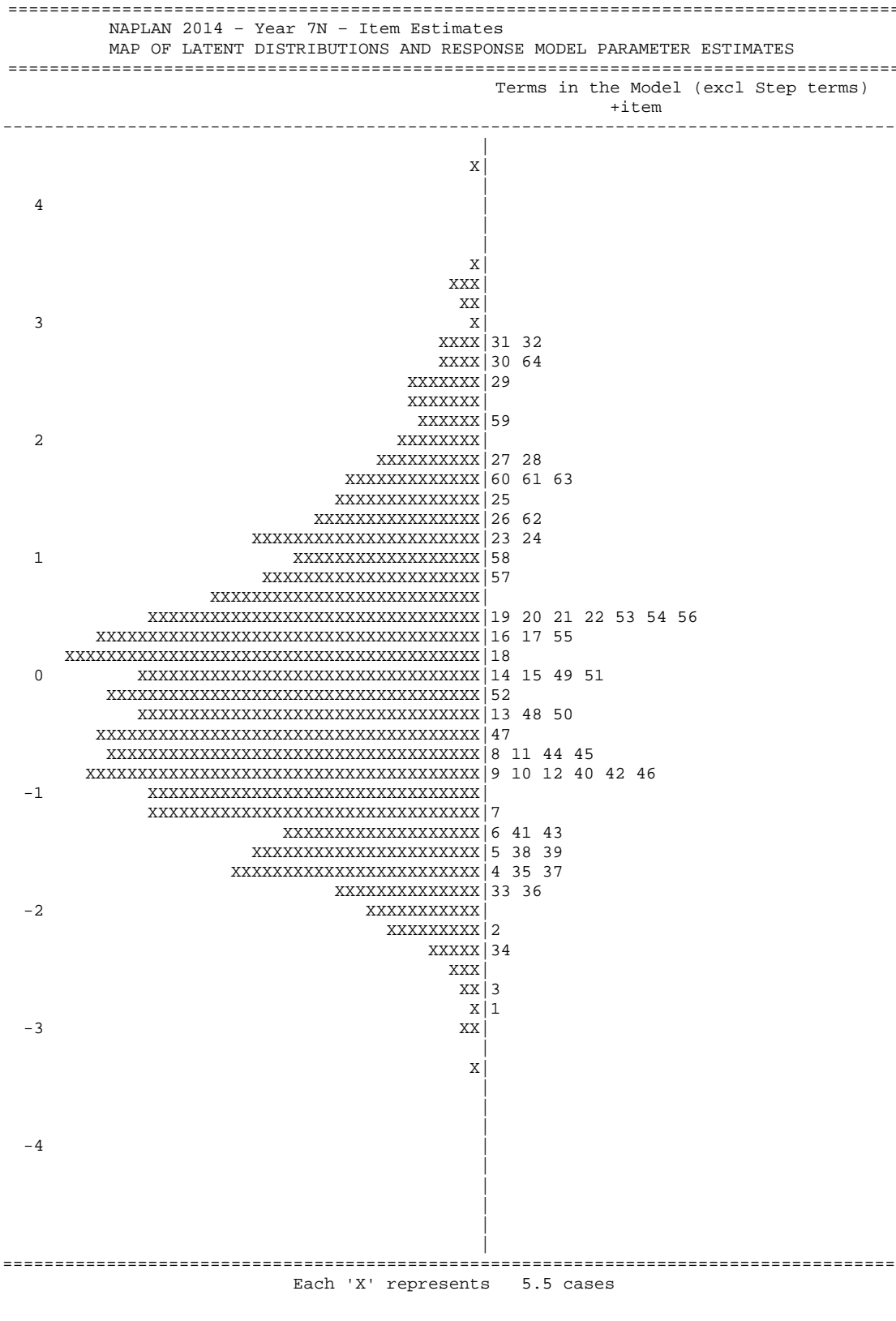
**Figure E.14 Year 3 Numeracy Variable Map**



**Figure E.15 Year 5 Numeracy Variable Map**



**Figure E.16 Year 7 Numeracy Variable Map**



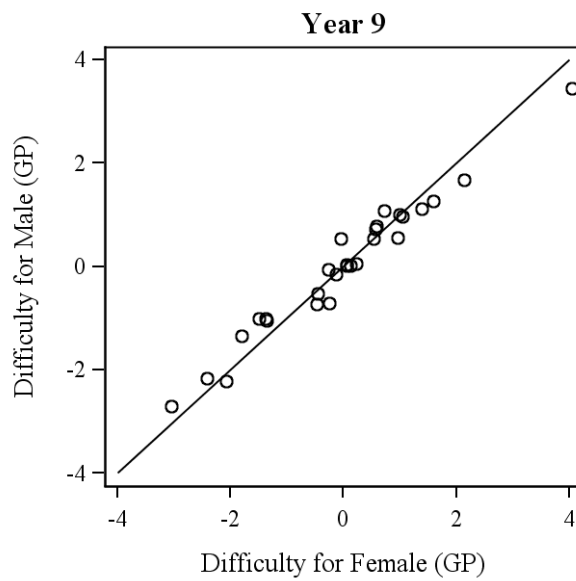
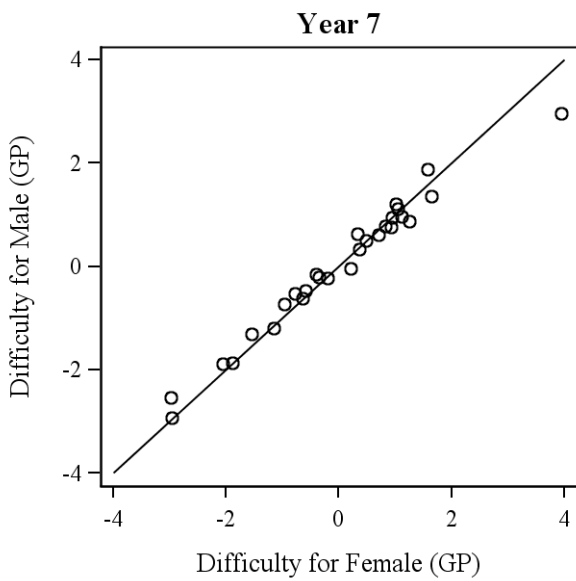
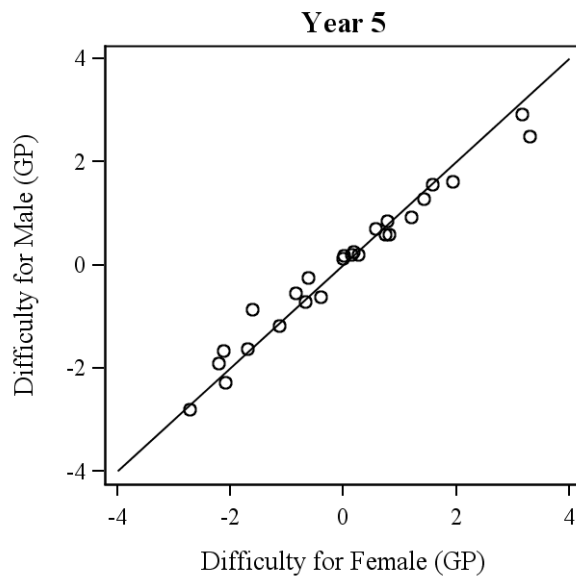
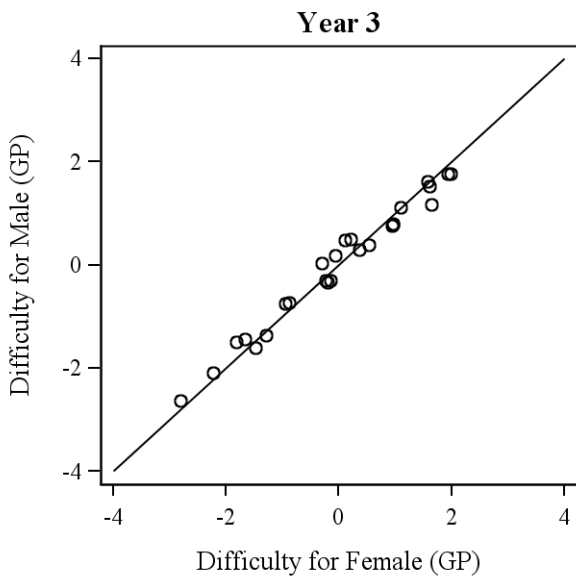
**Figure E.17 Year 9 Numeracy Variable Map**



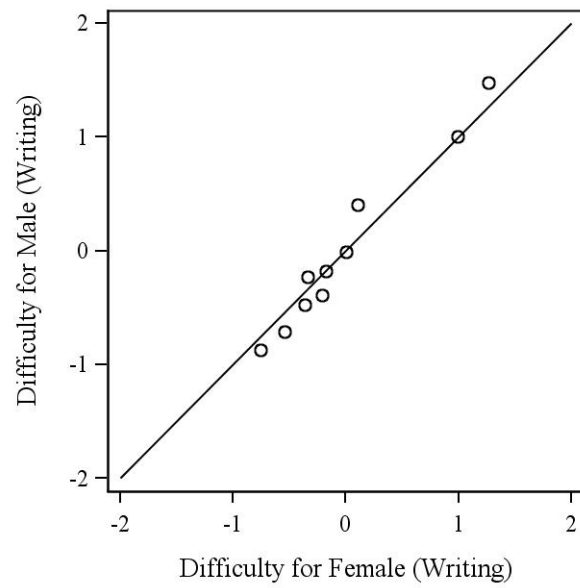
**APPENDIX F. GENDER DIF ANALYSIS**

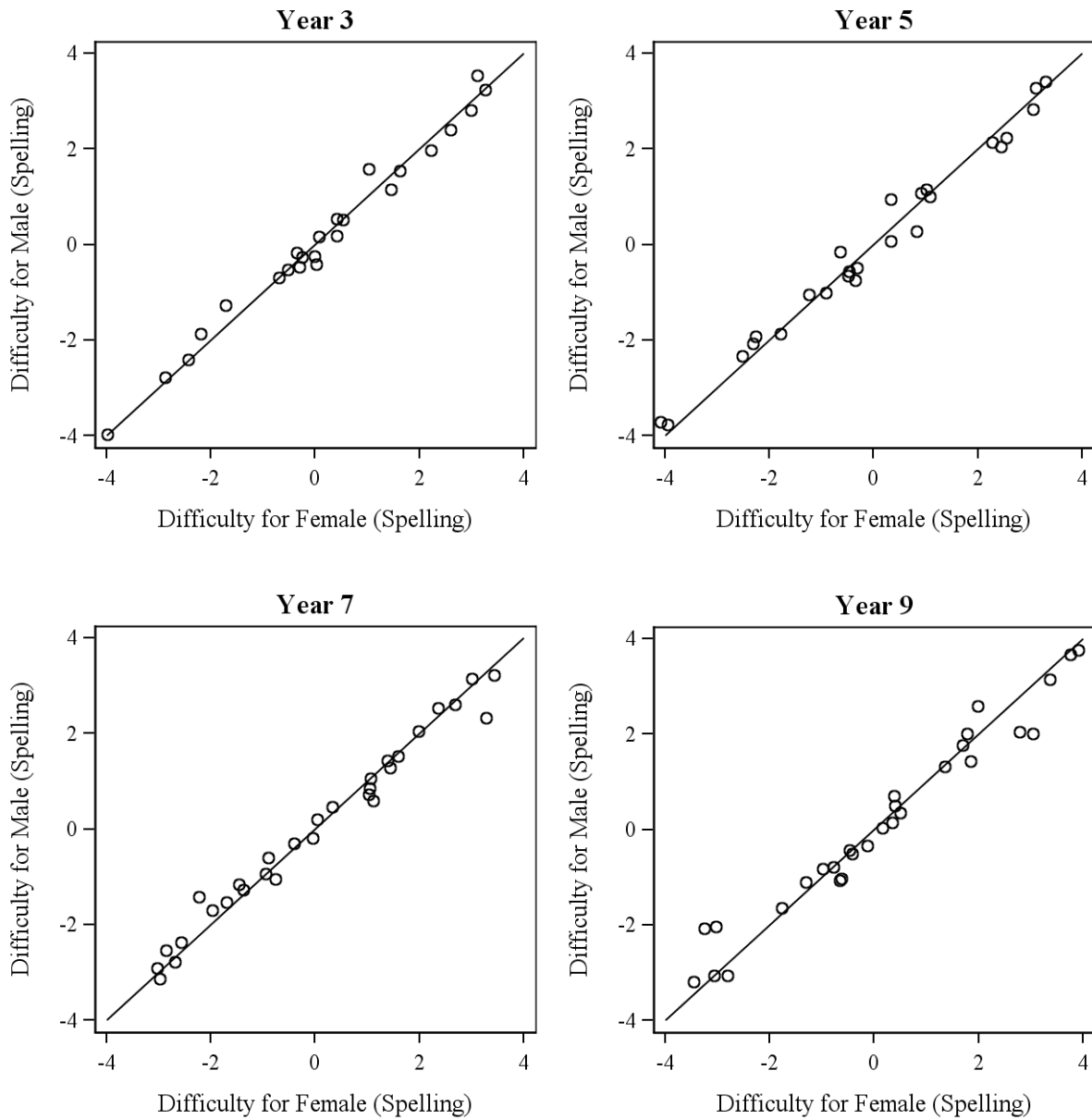
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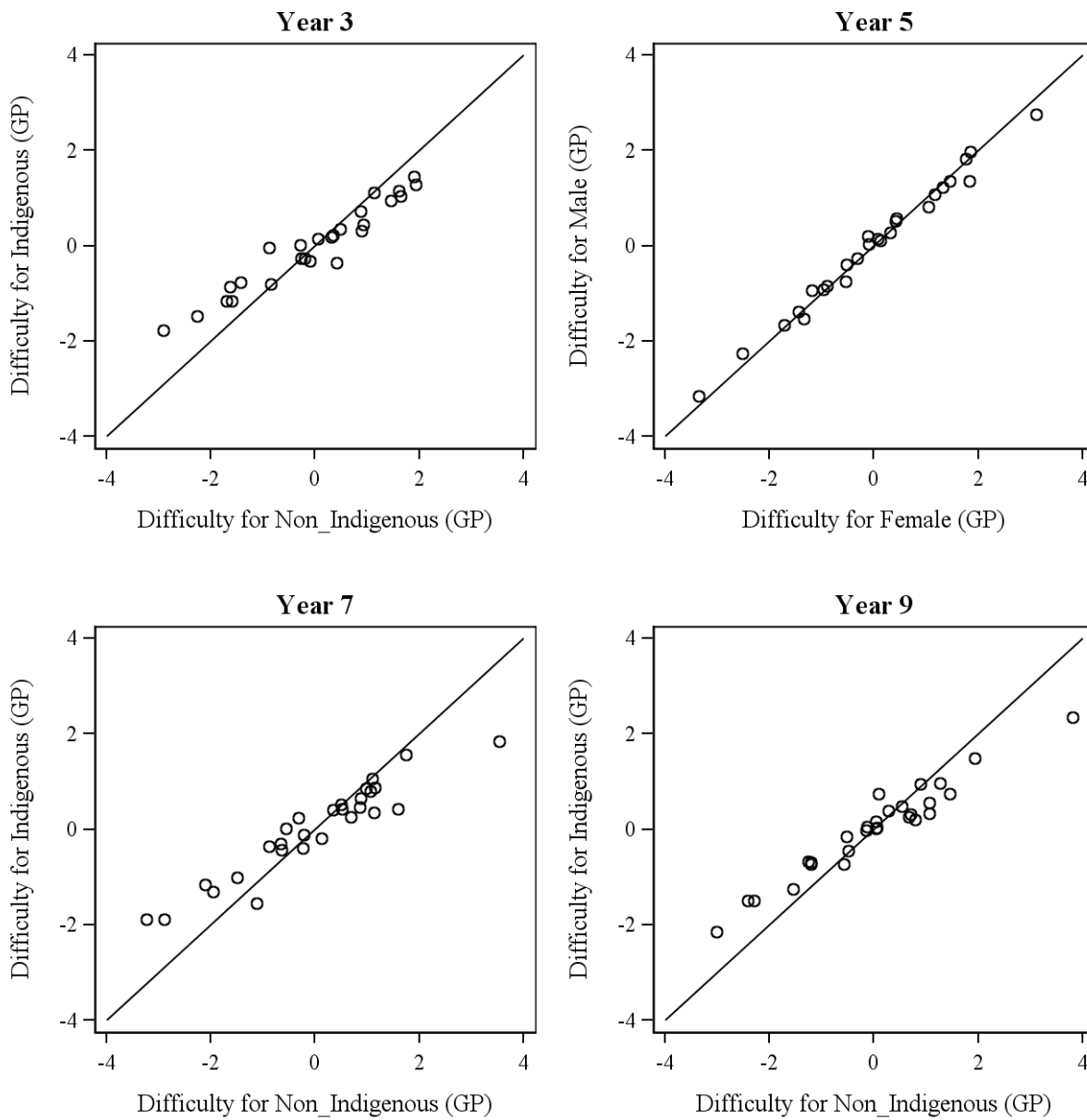
**F.1 Centred Item Locations of Male and Female Students in Reading (2014)**

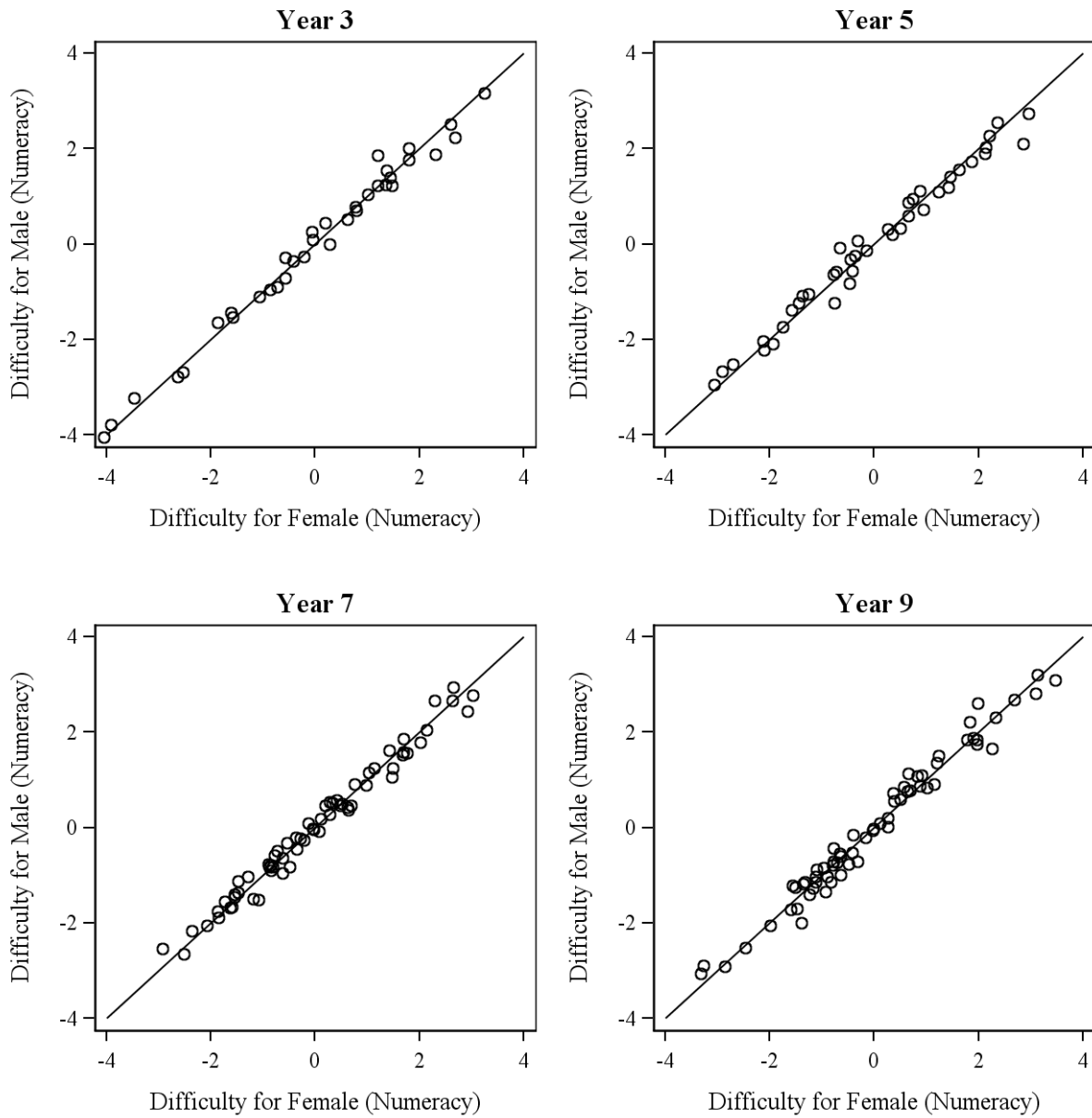




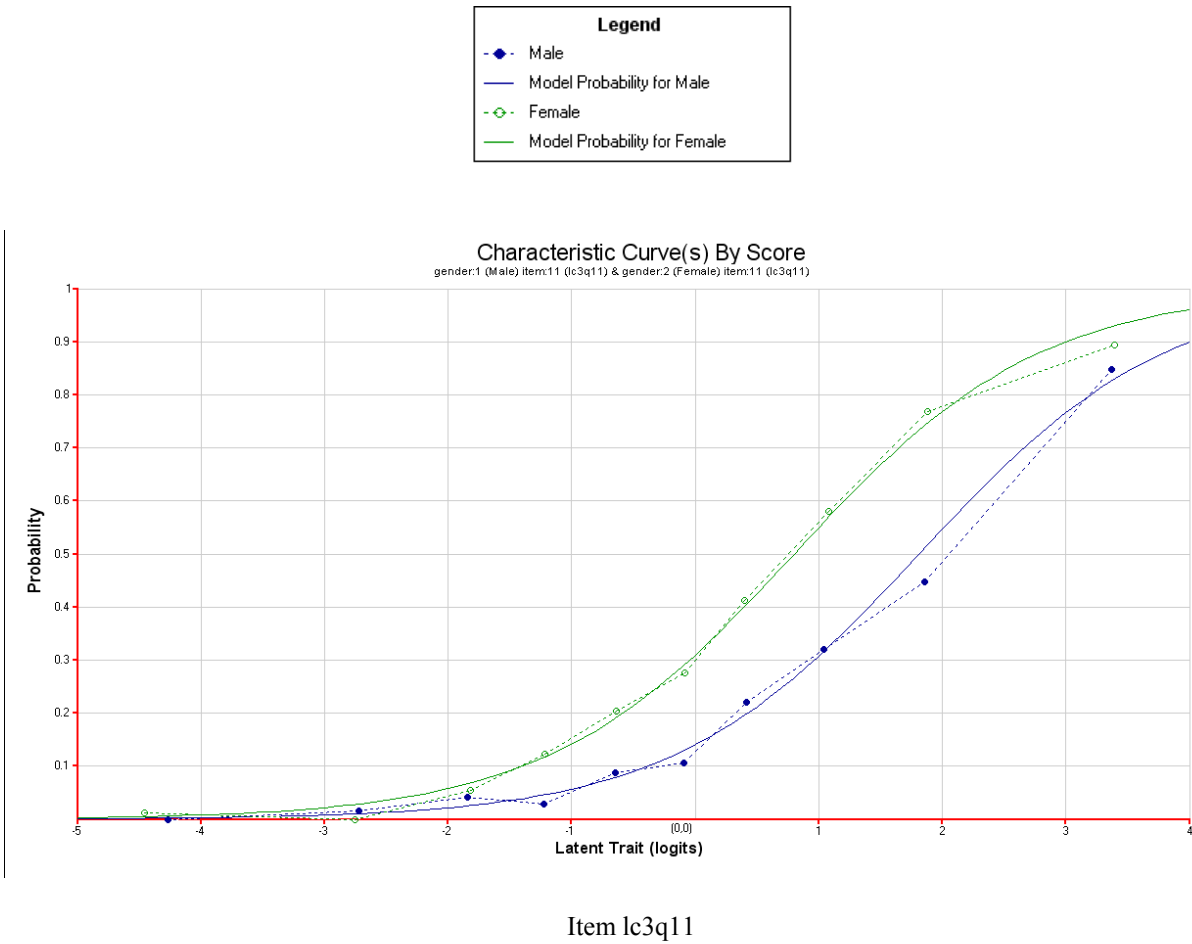
**F.2 Centred Item Locations of Male and Female Students Years 3, 5, 7, and 9 Writing (2014)**

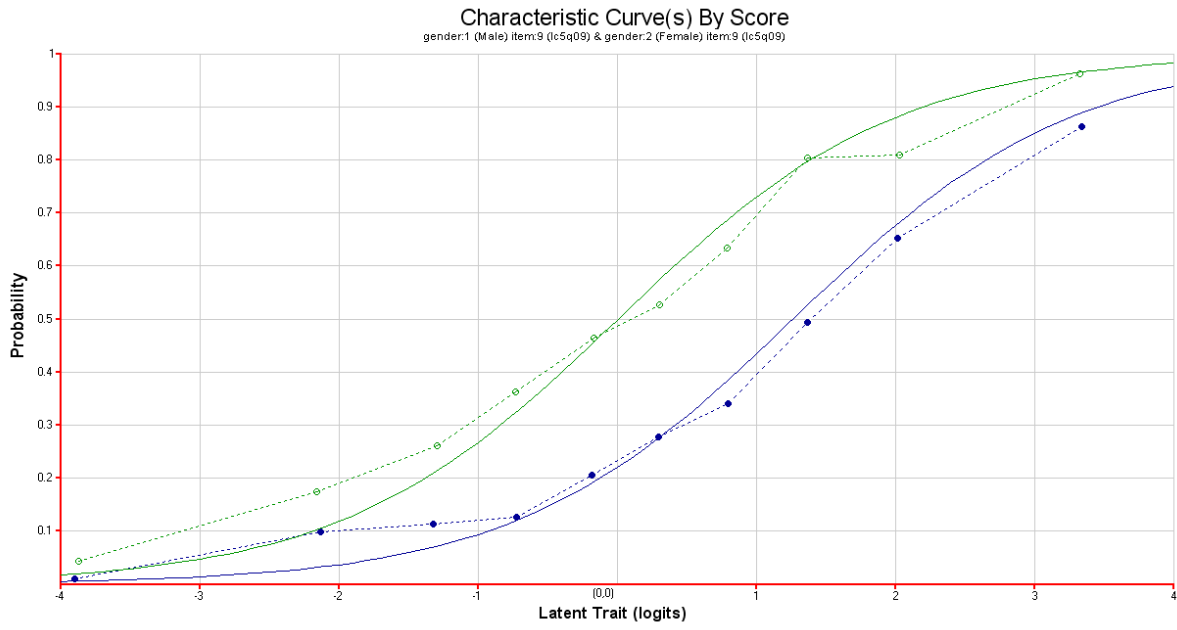
**F.3 Centred Item Locations of Male and Female Students in Spelling (2014)**

**F.4 Centred Item Locations of Male and Female Students in Grammar and Punctuation (2014)**

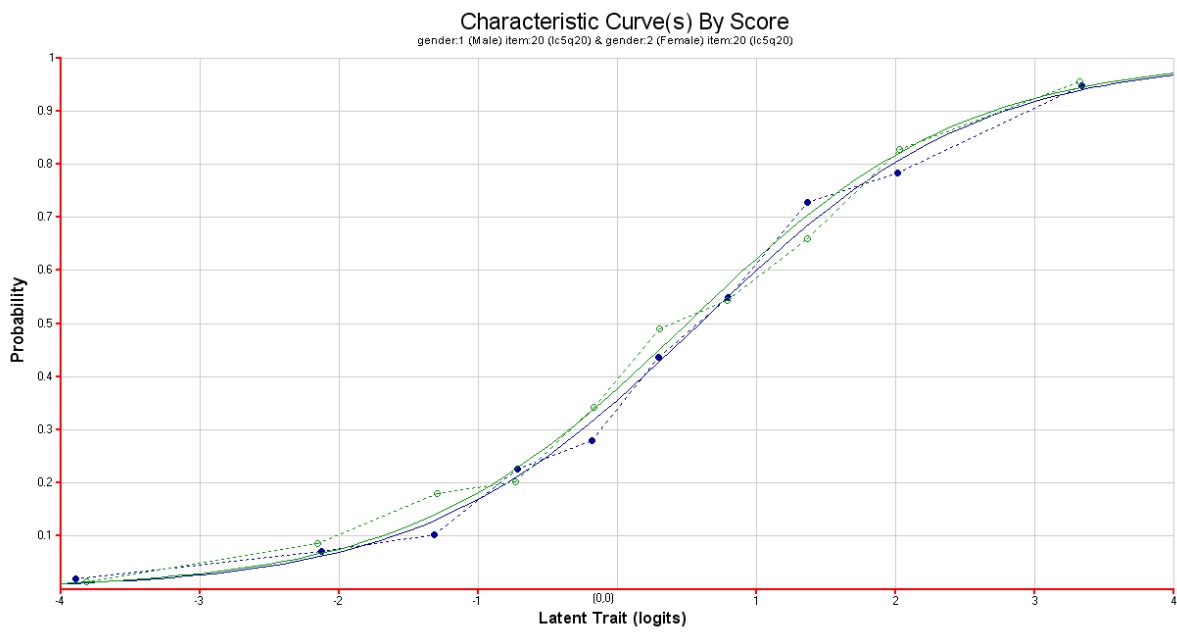
**F.5 Centred Item Locations of Male and Female Students in Numeracy (2014)**

### F.6 Item DIF Plots for Items Showing Gender DIF

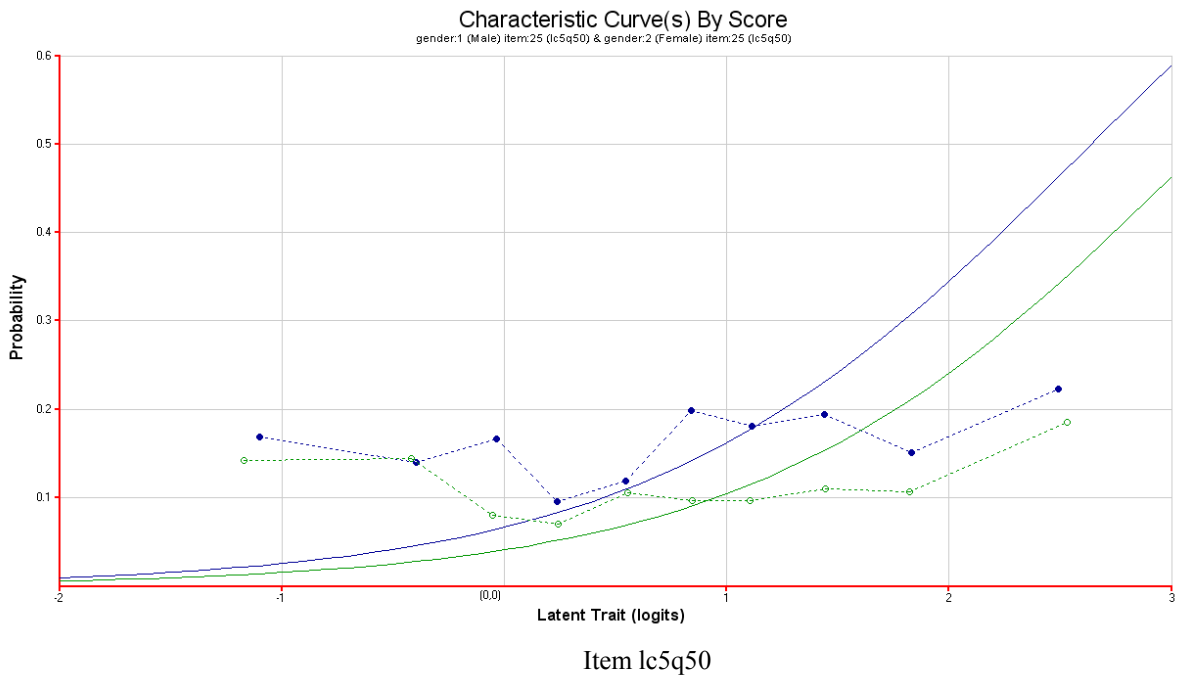
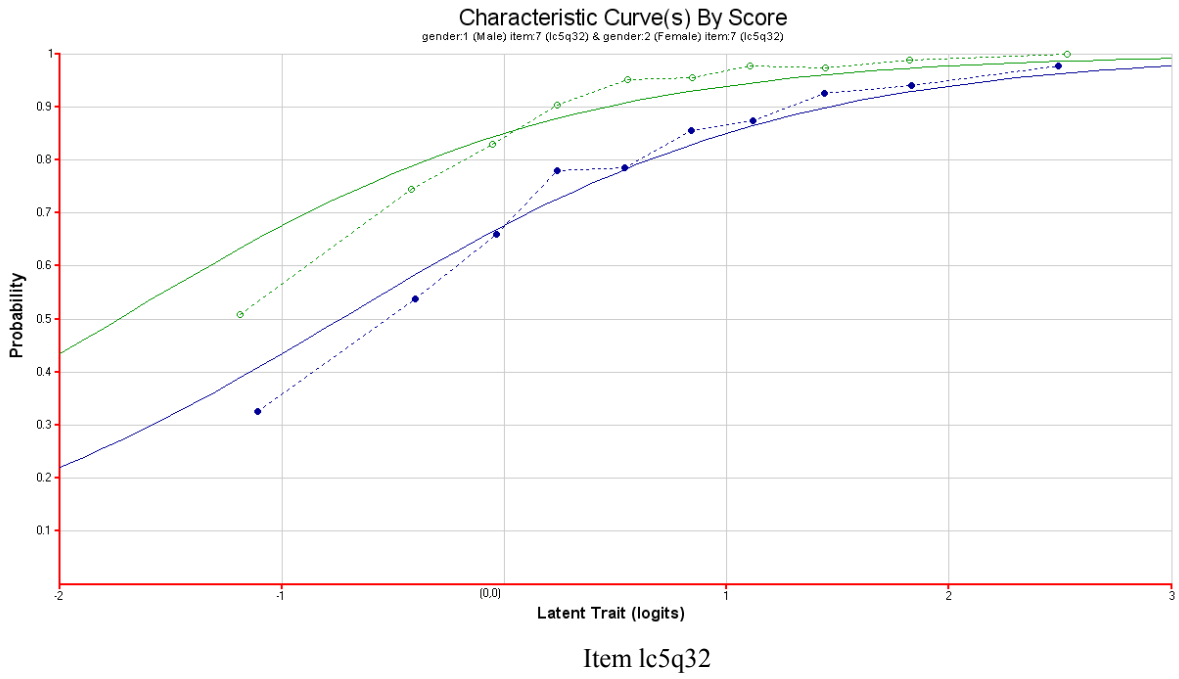


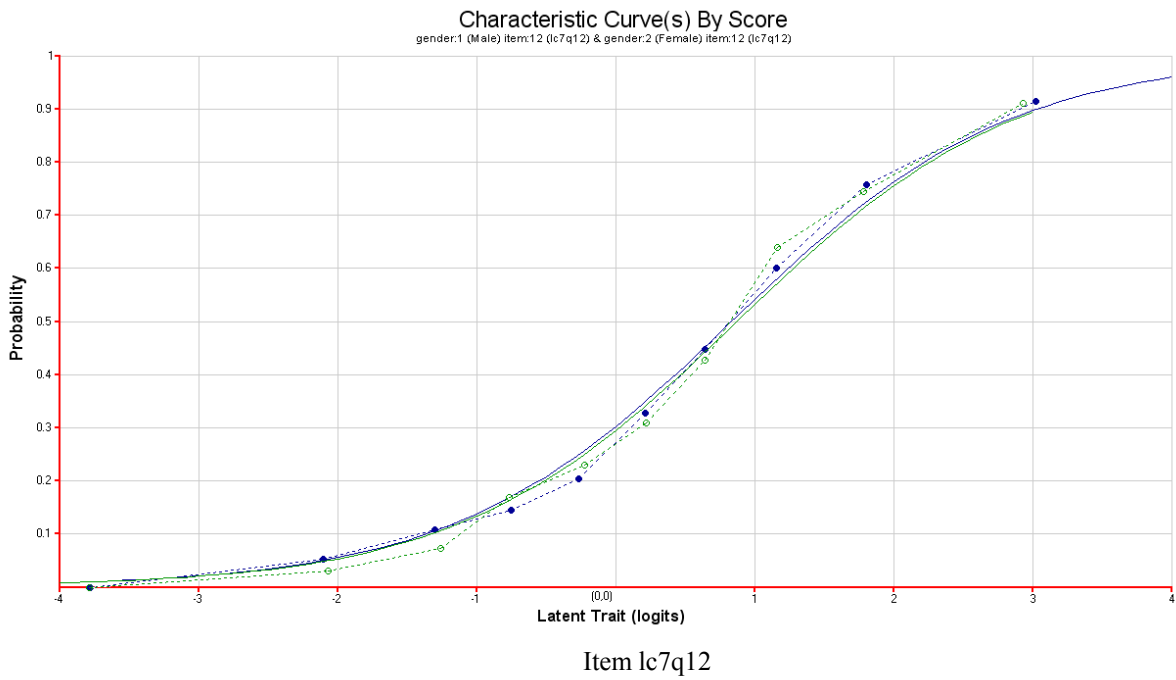
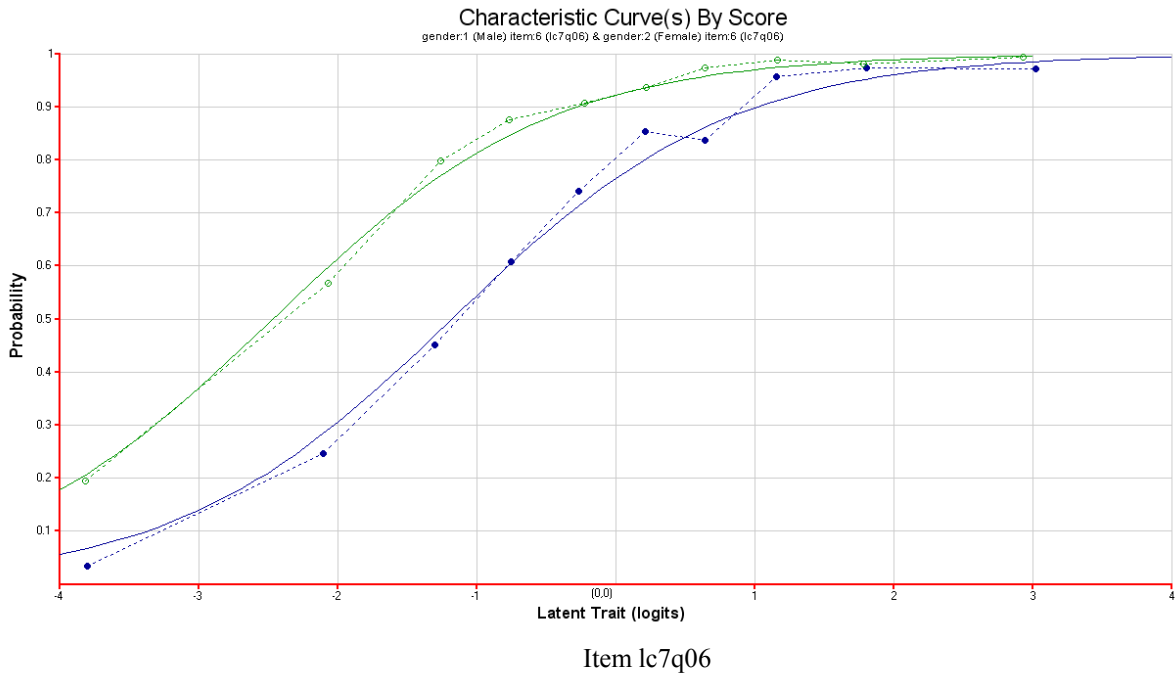


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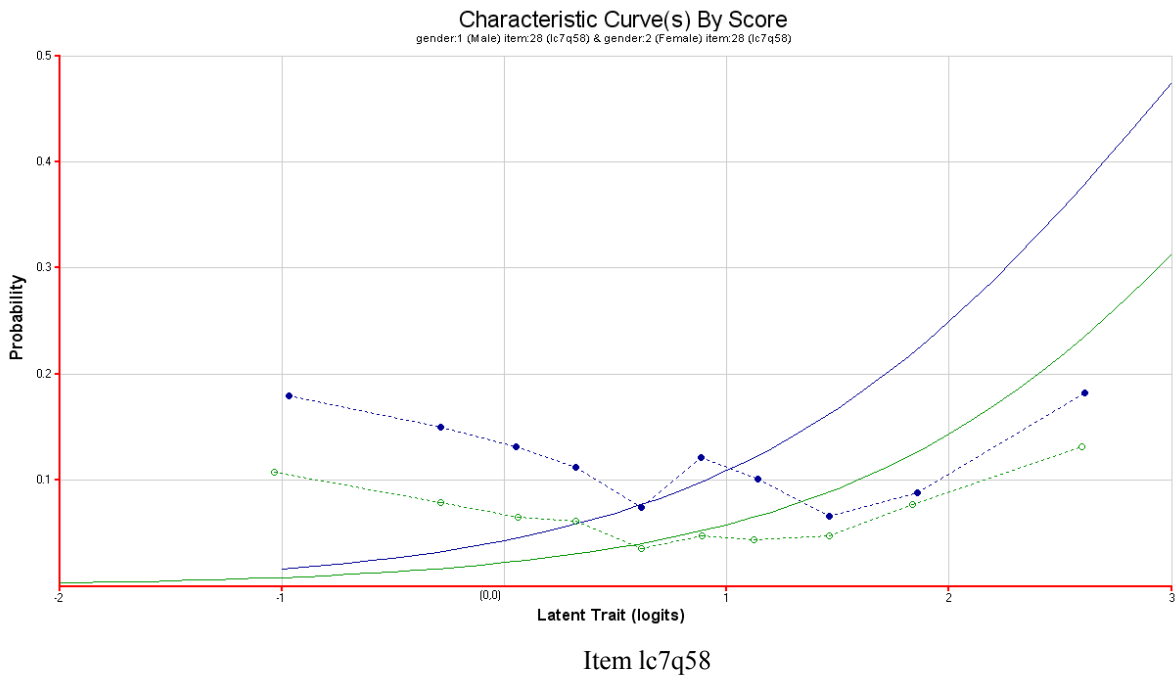
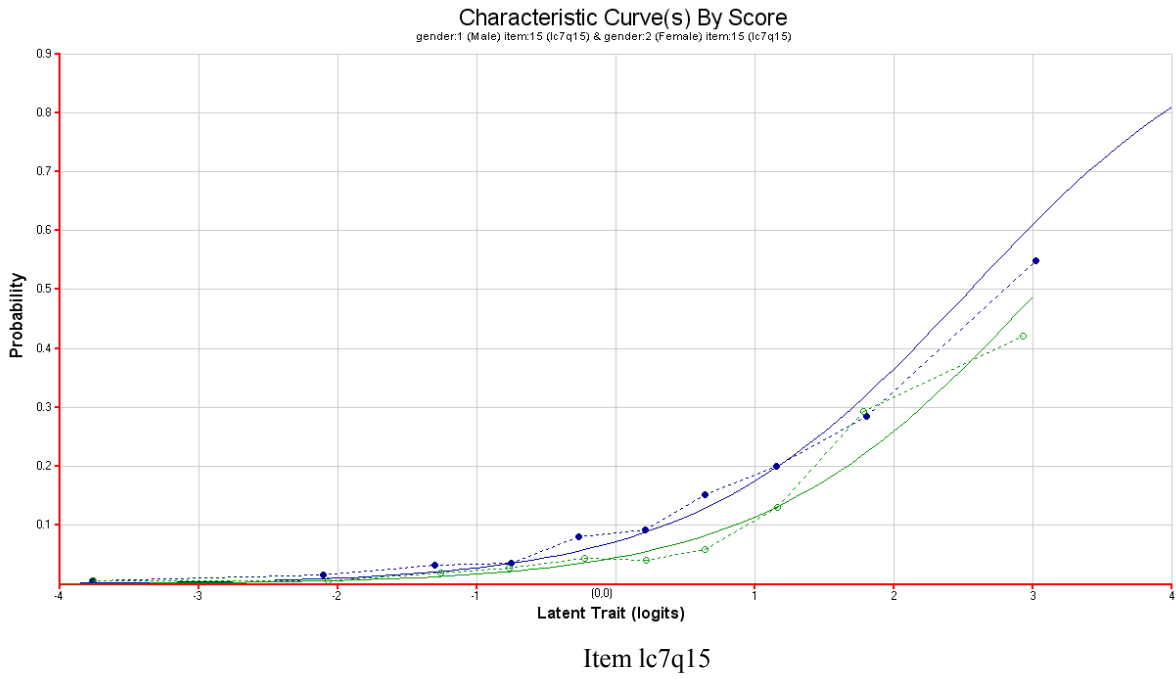


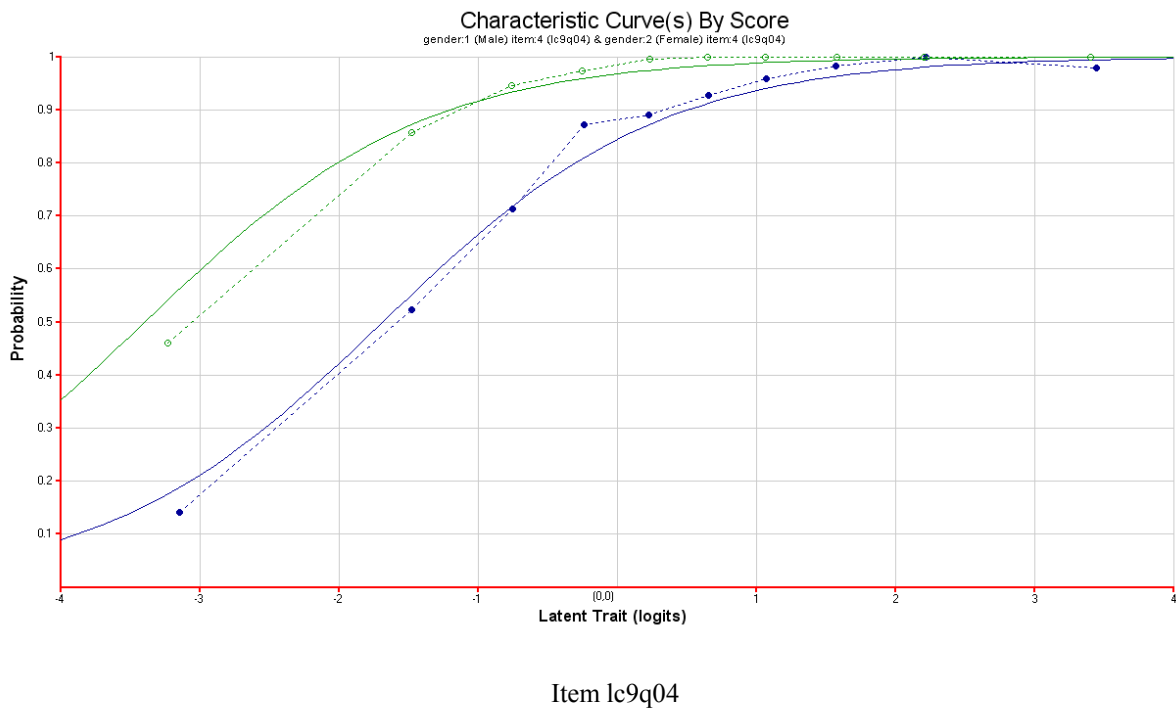
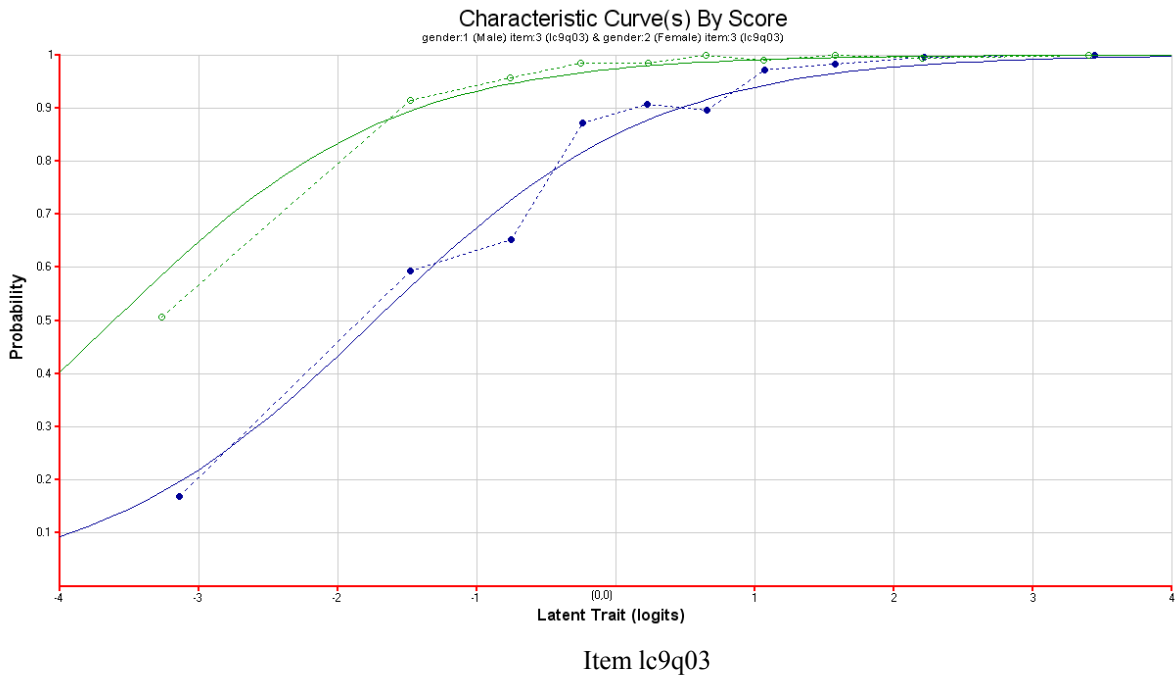
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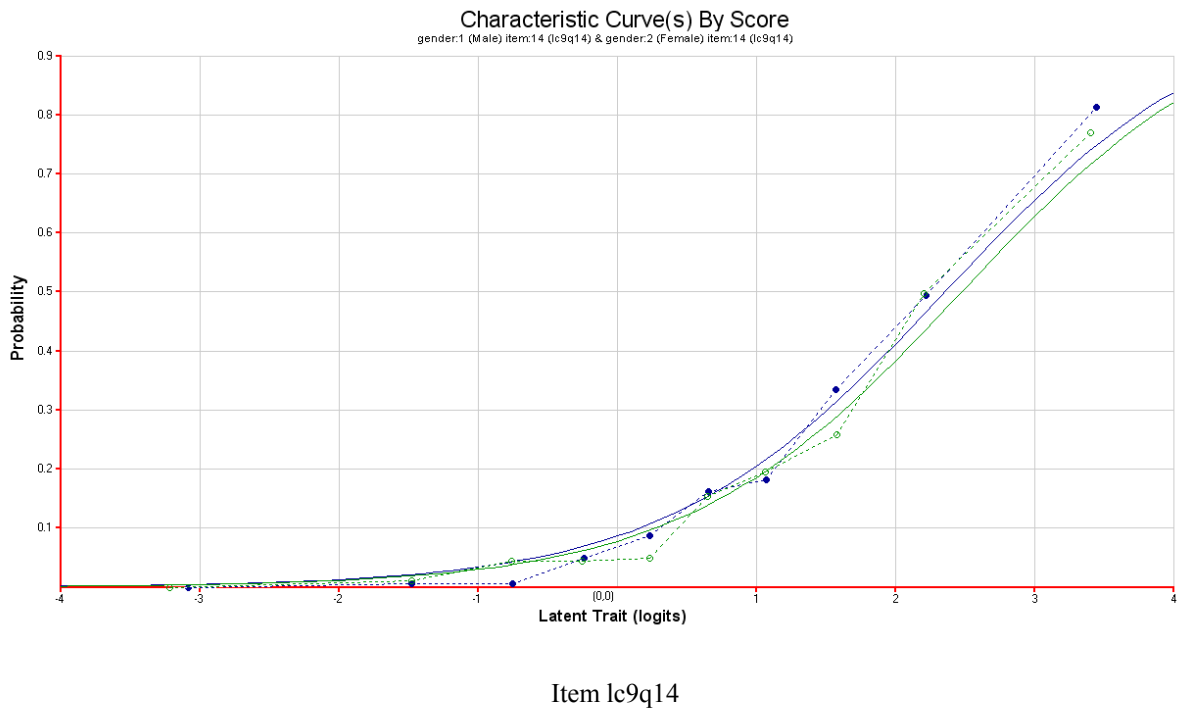
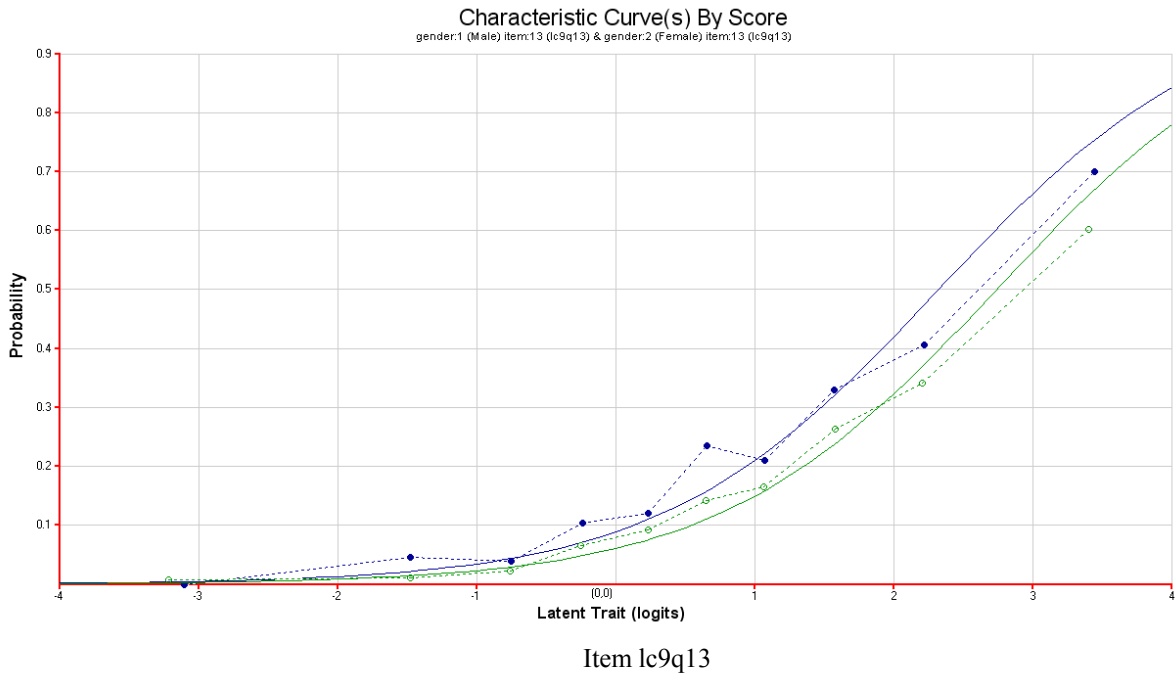


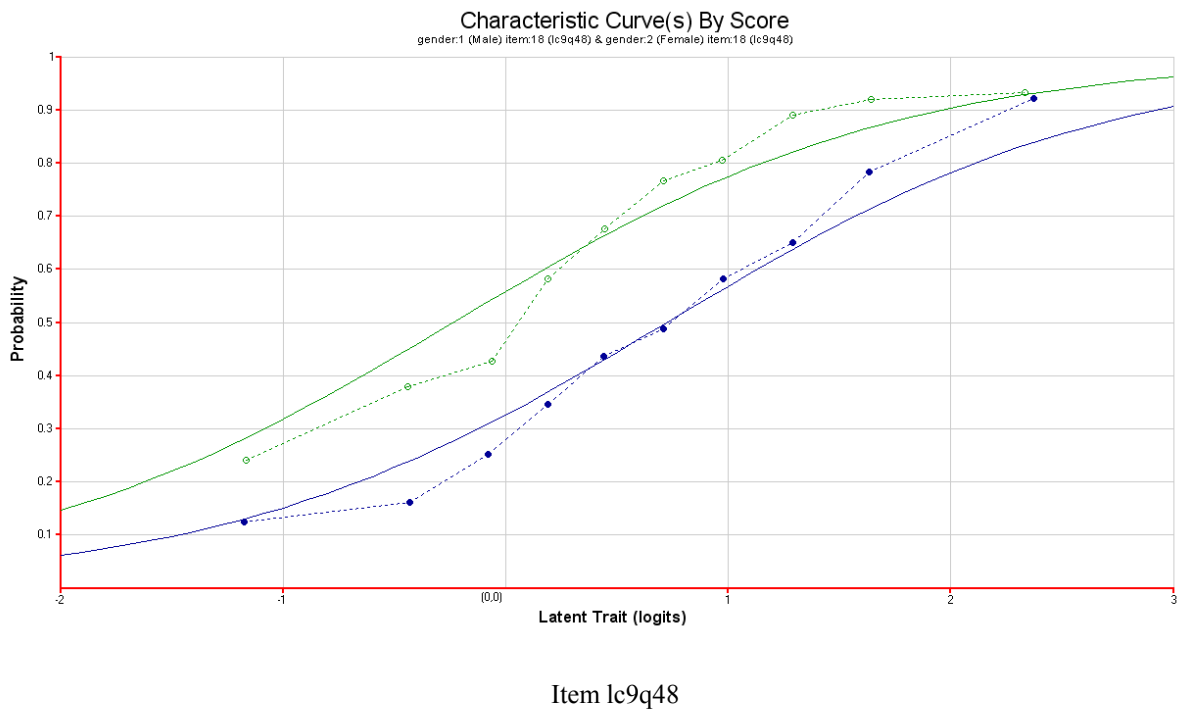
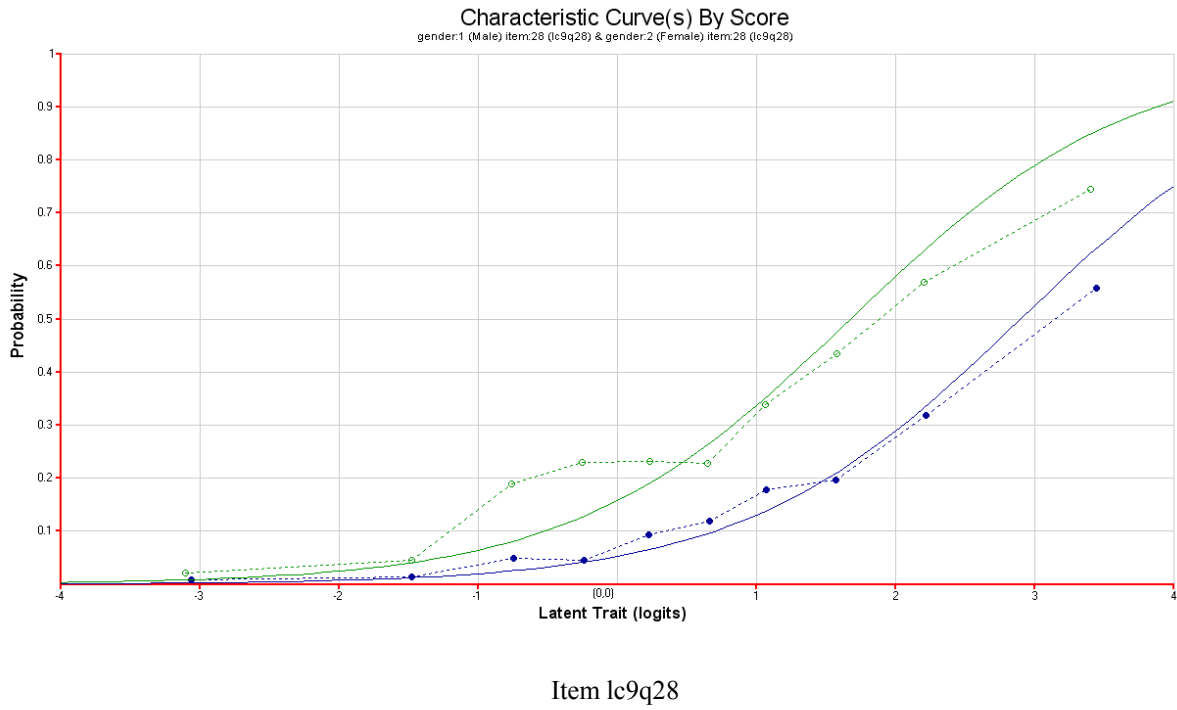


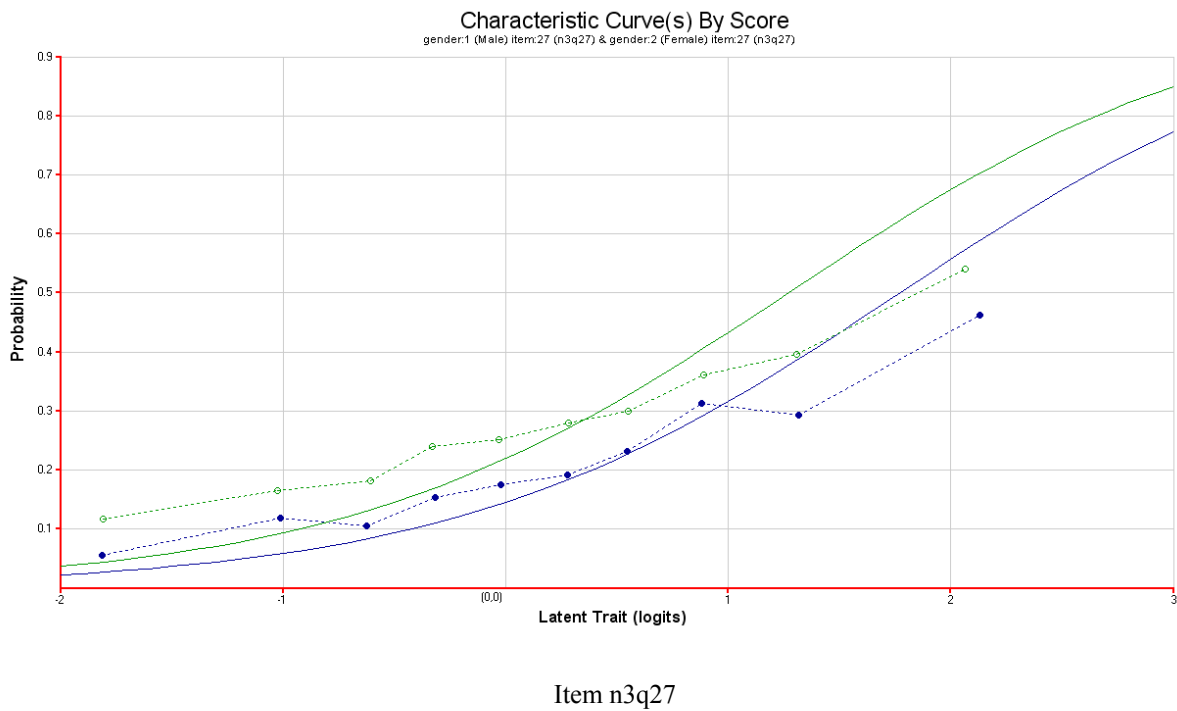
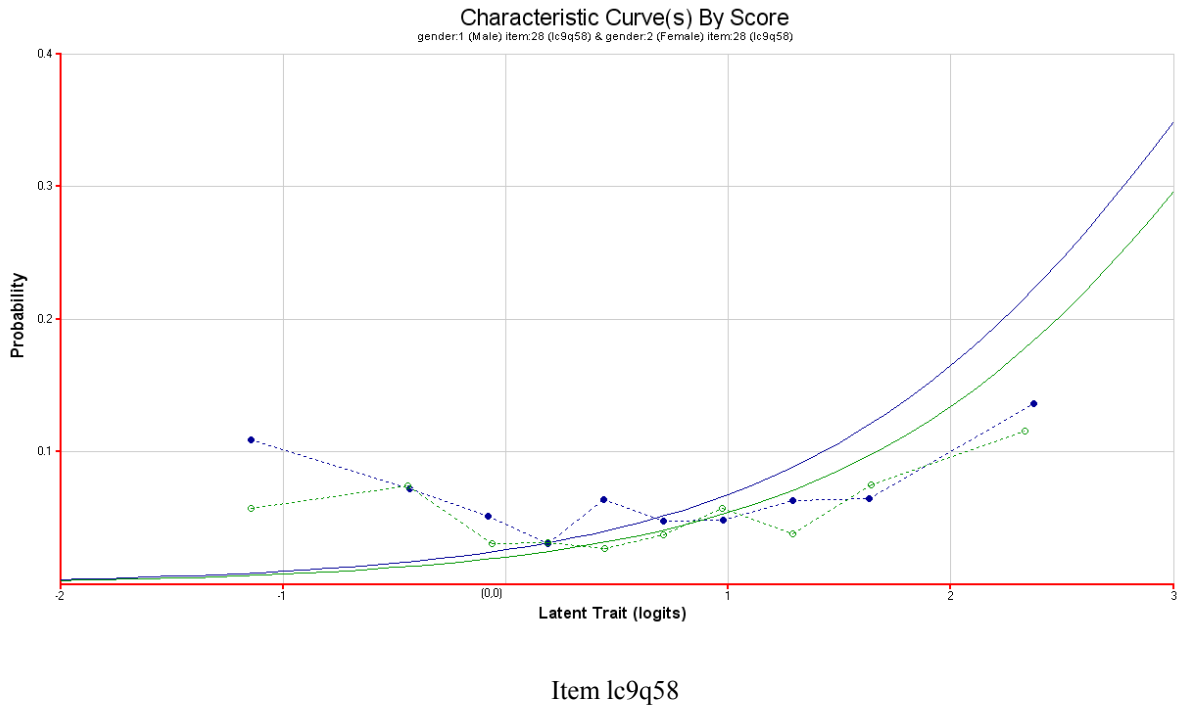


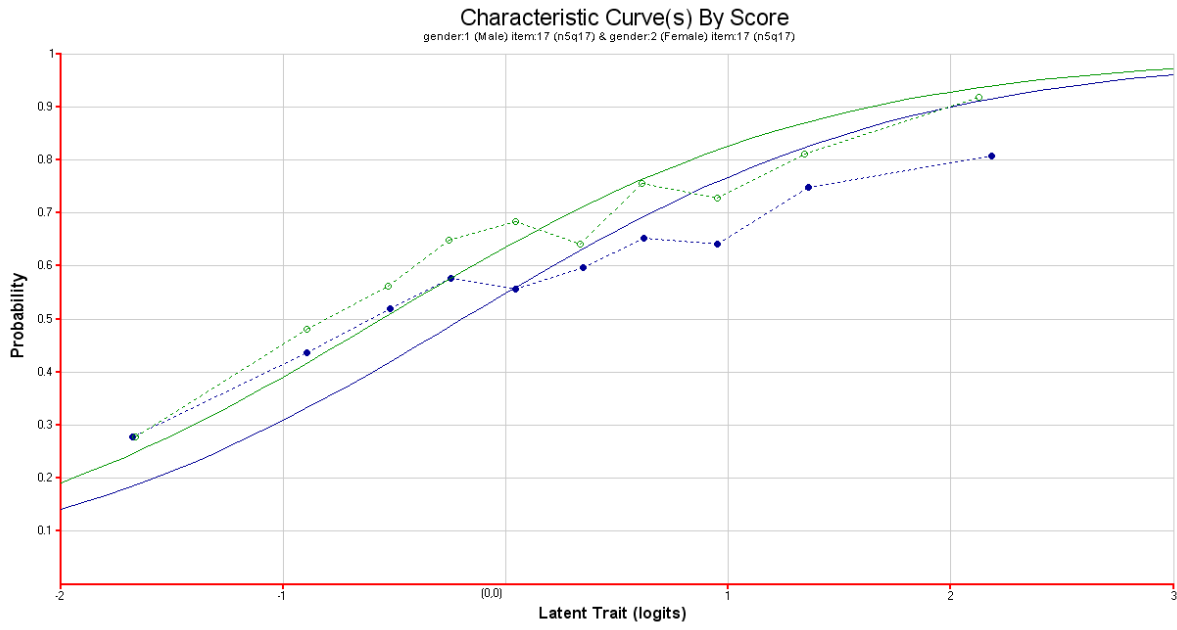




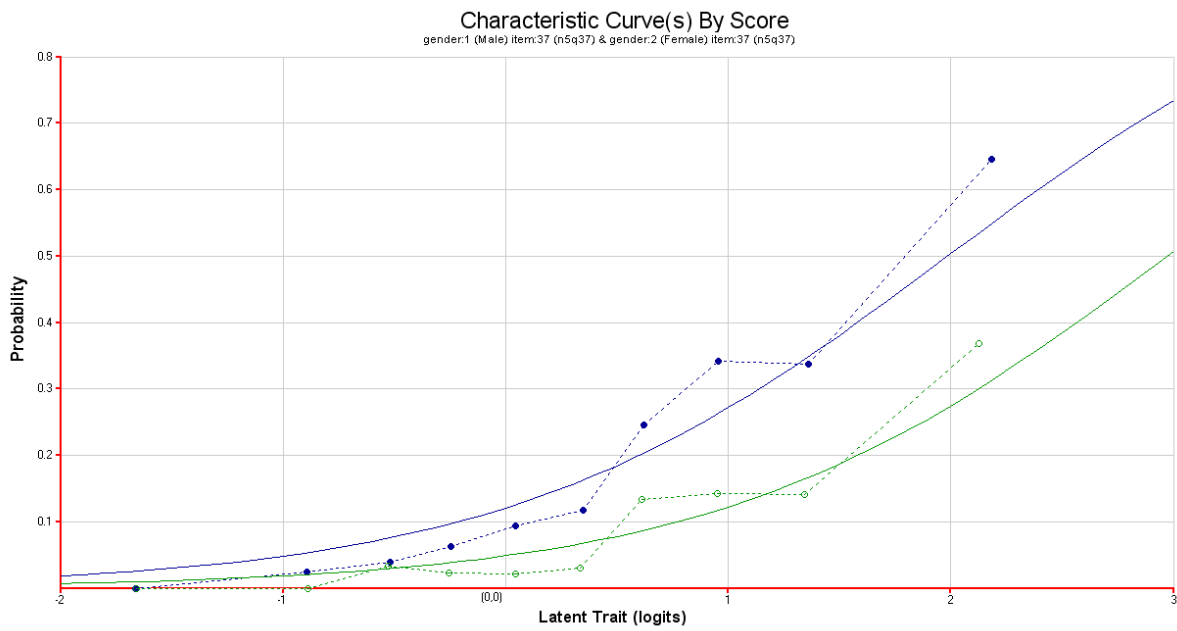




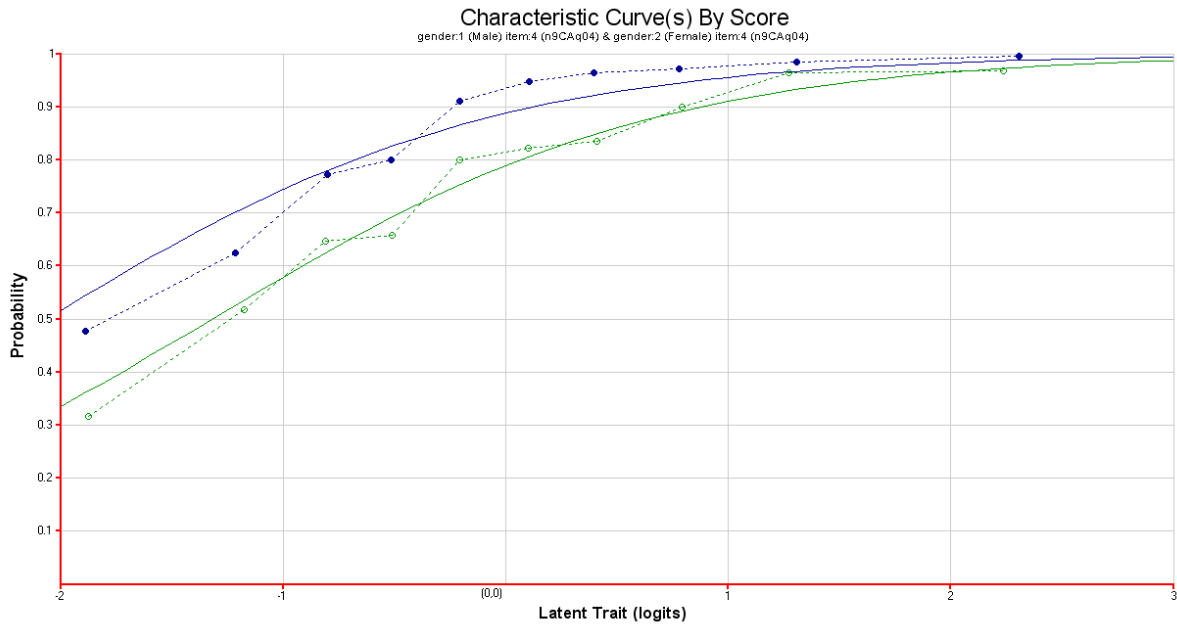




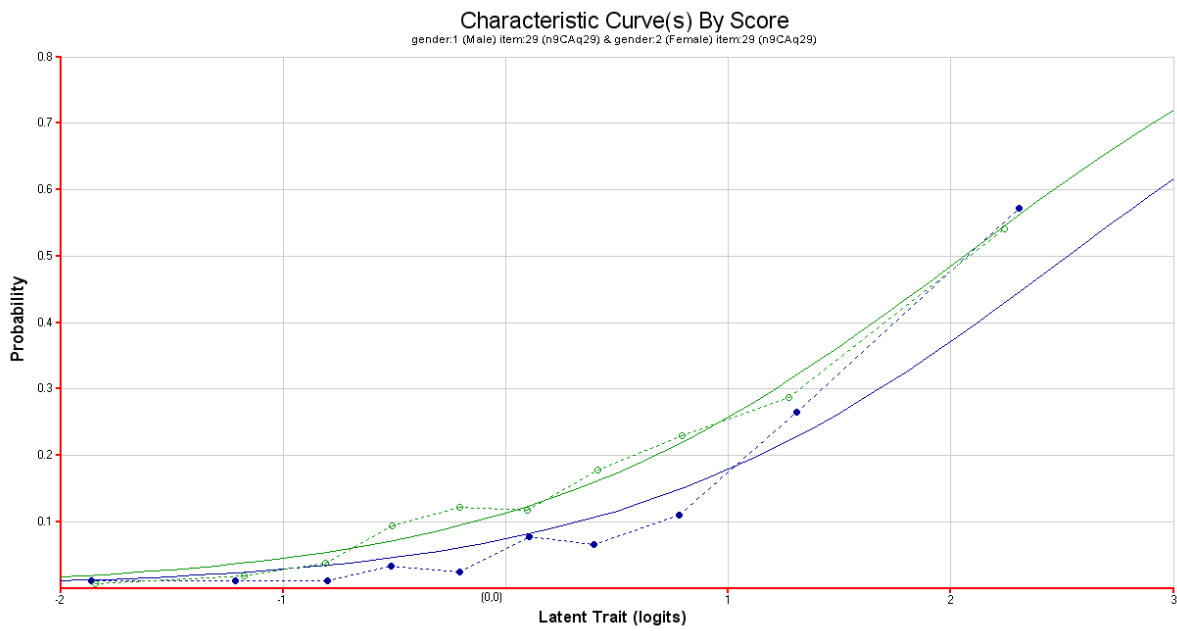
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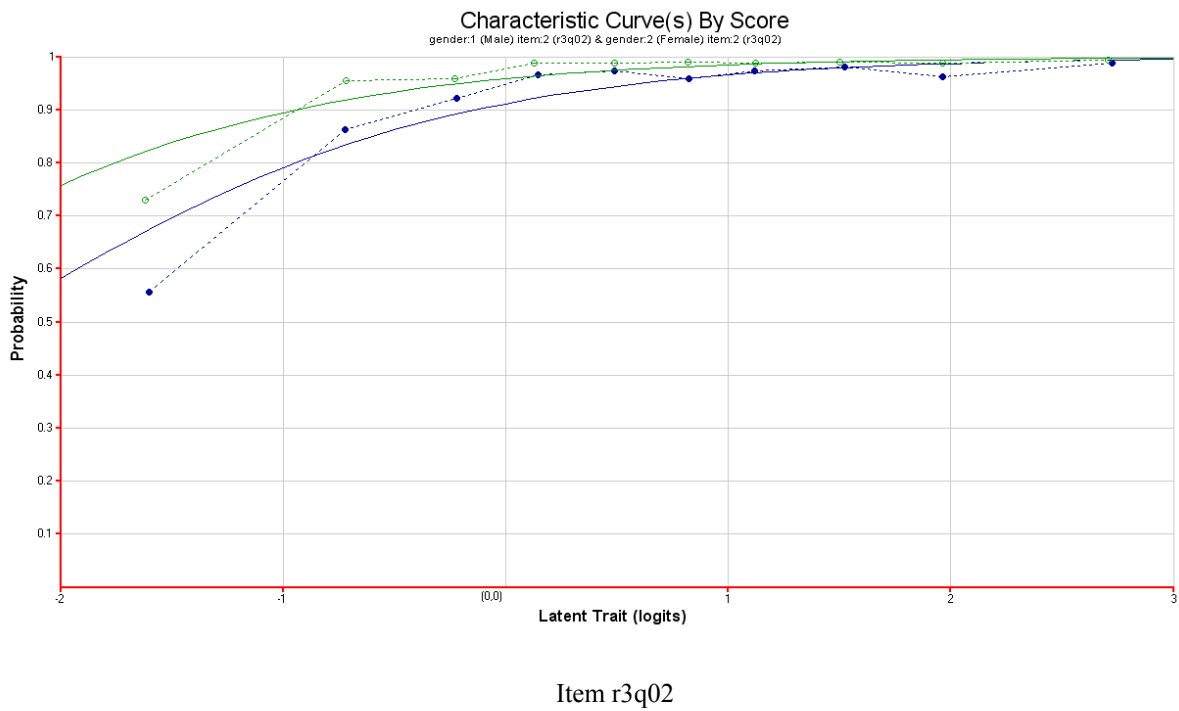
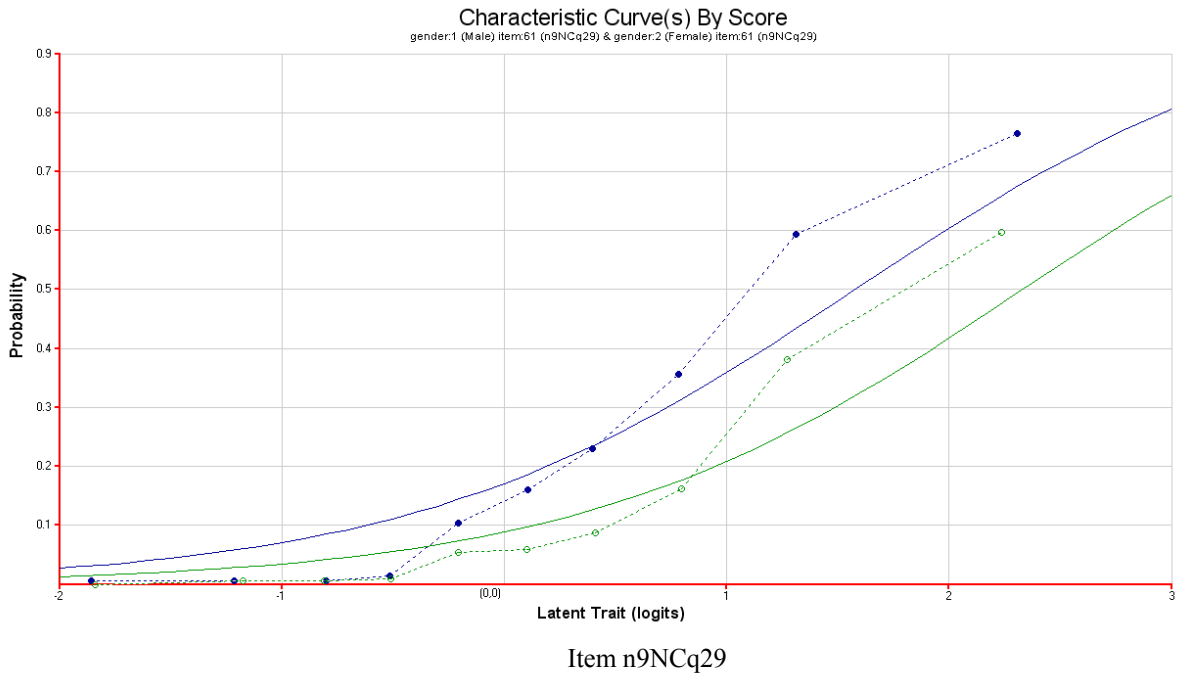
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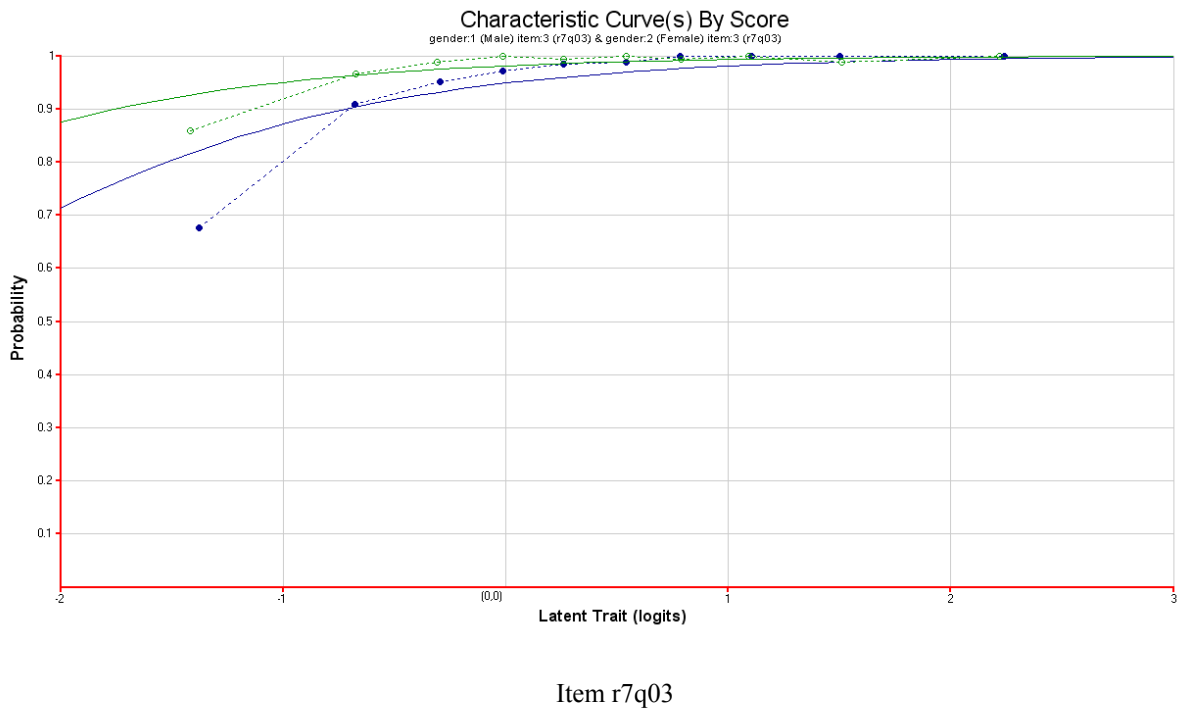
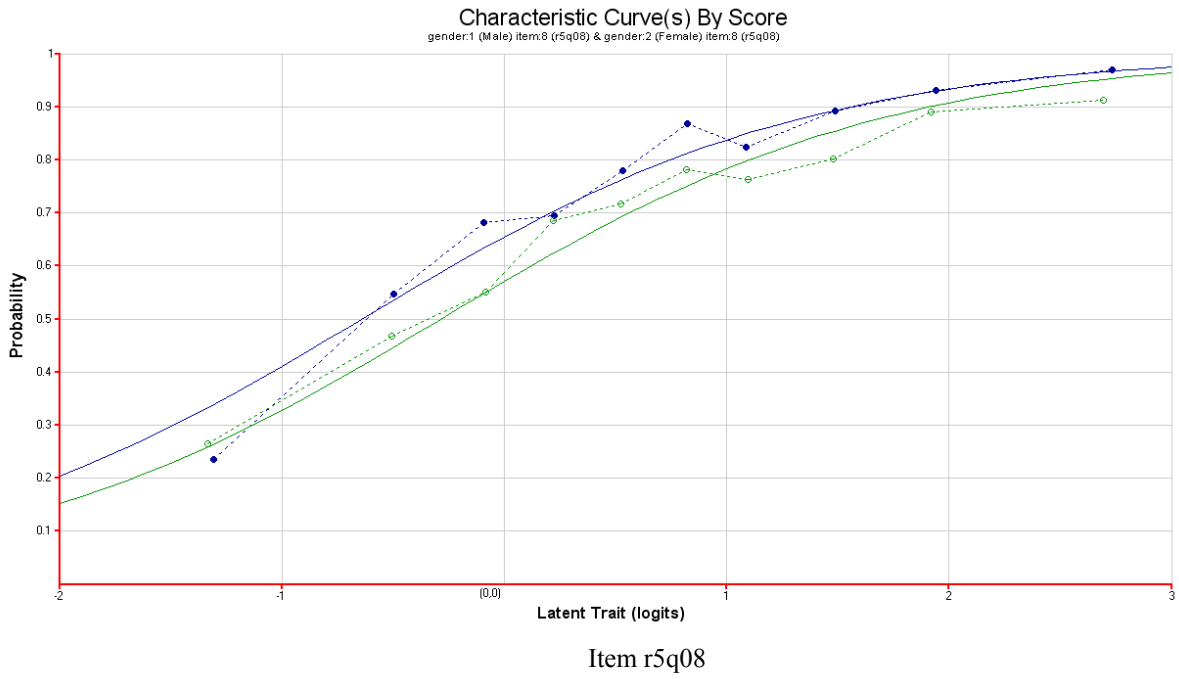
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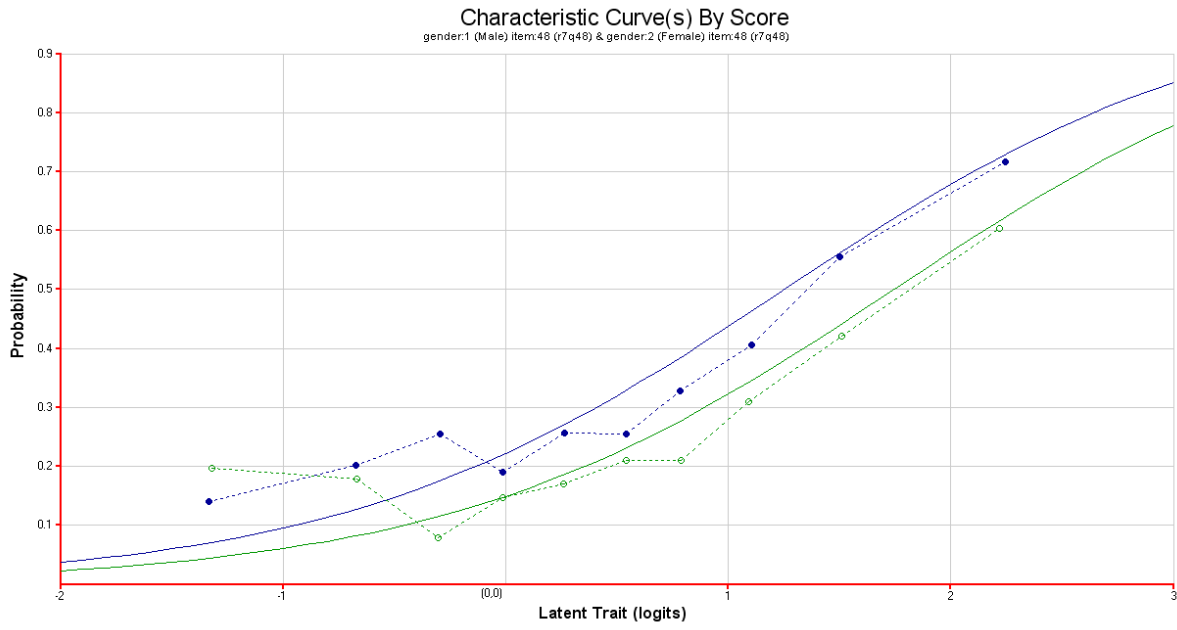


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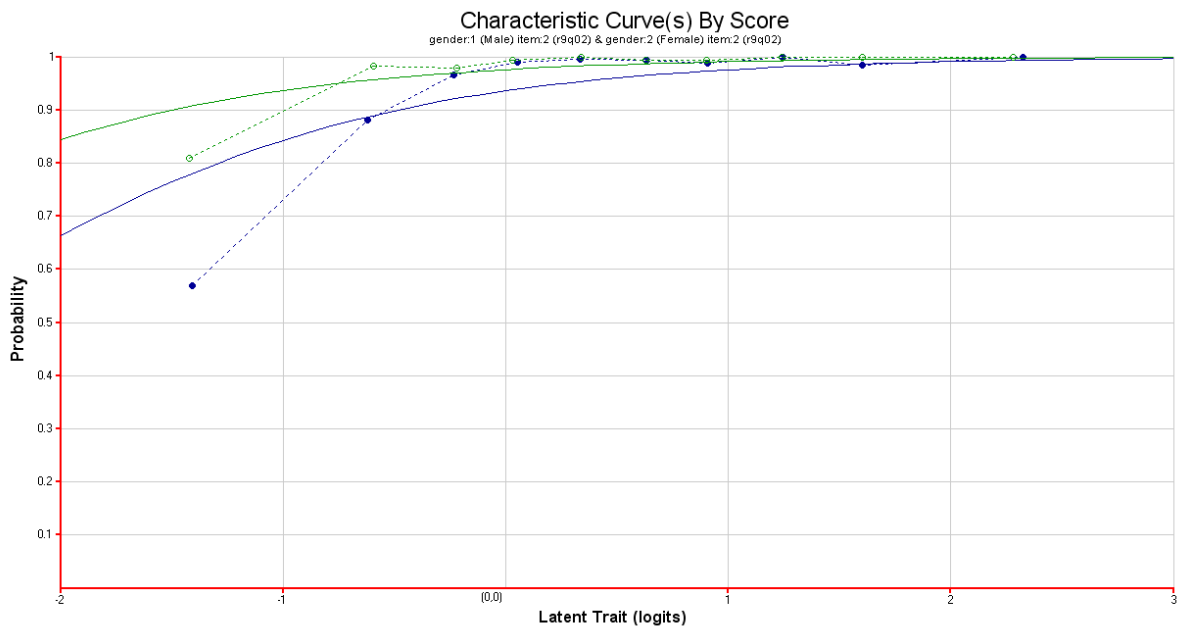




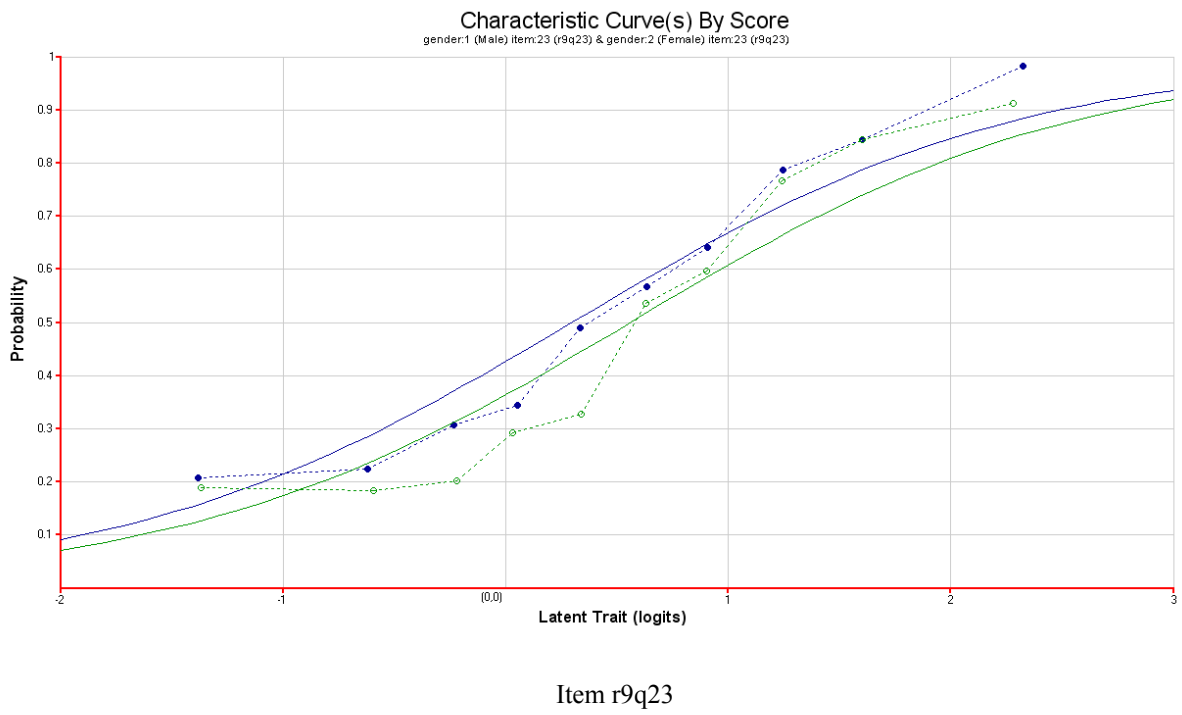
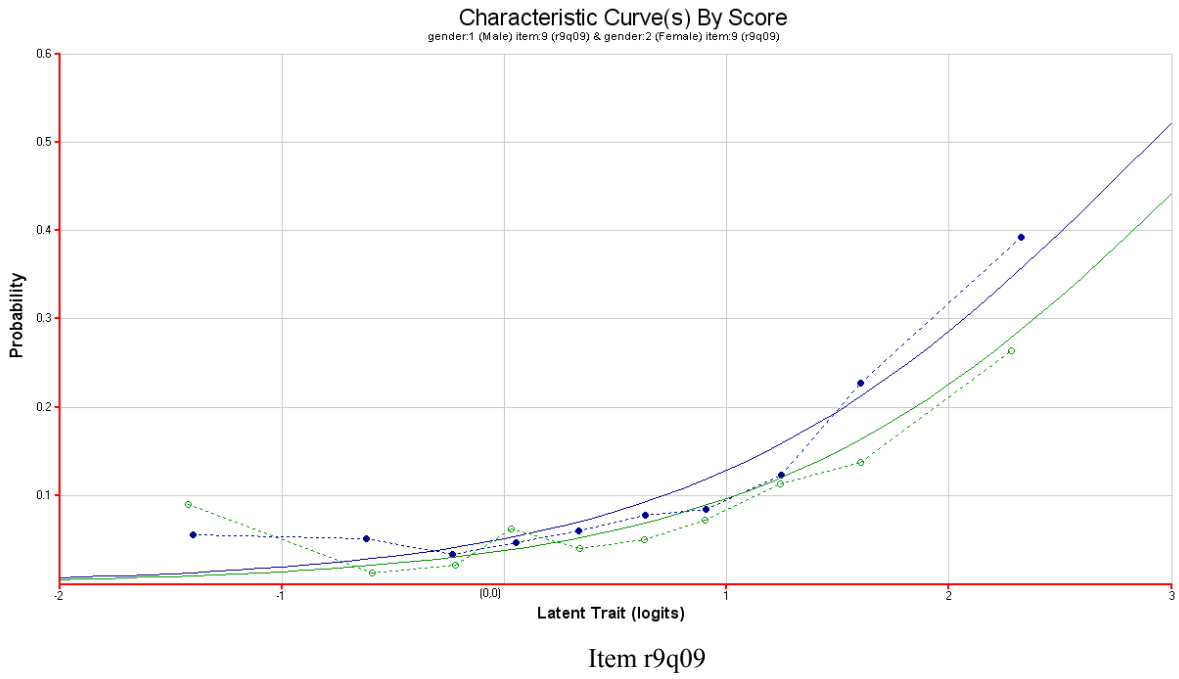


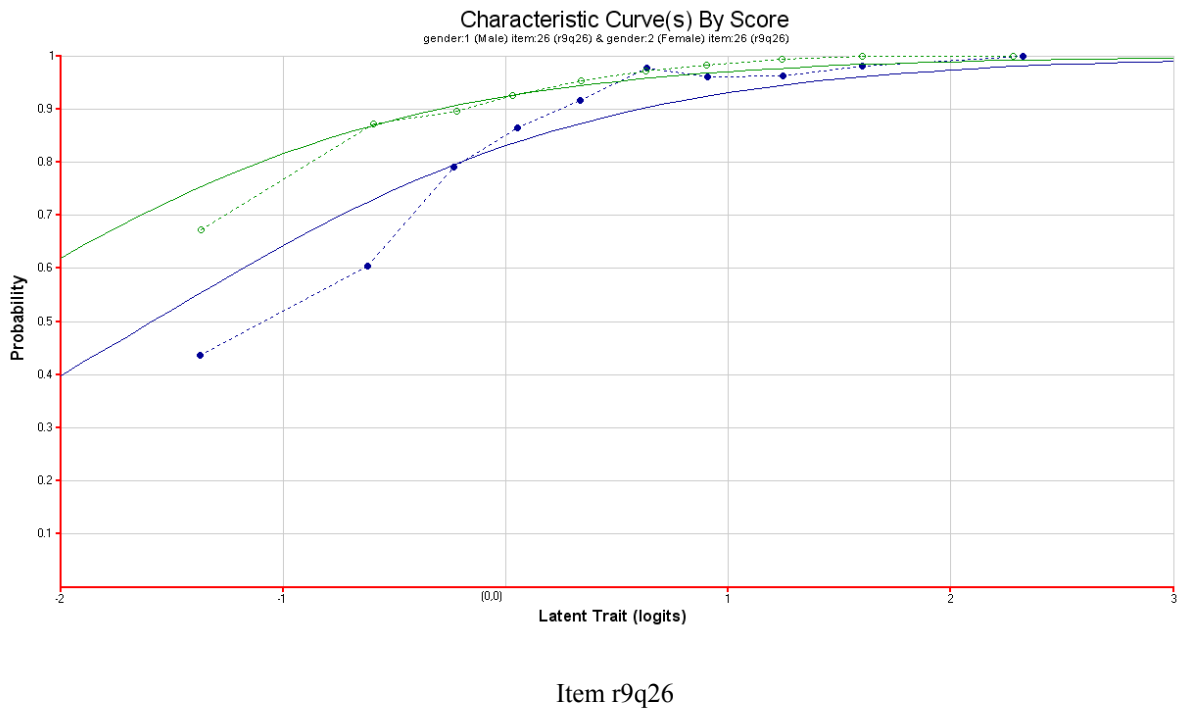
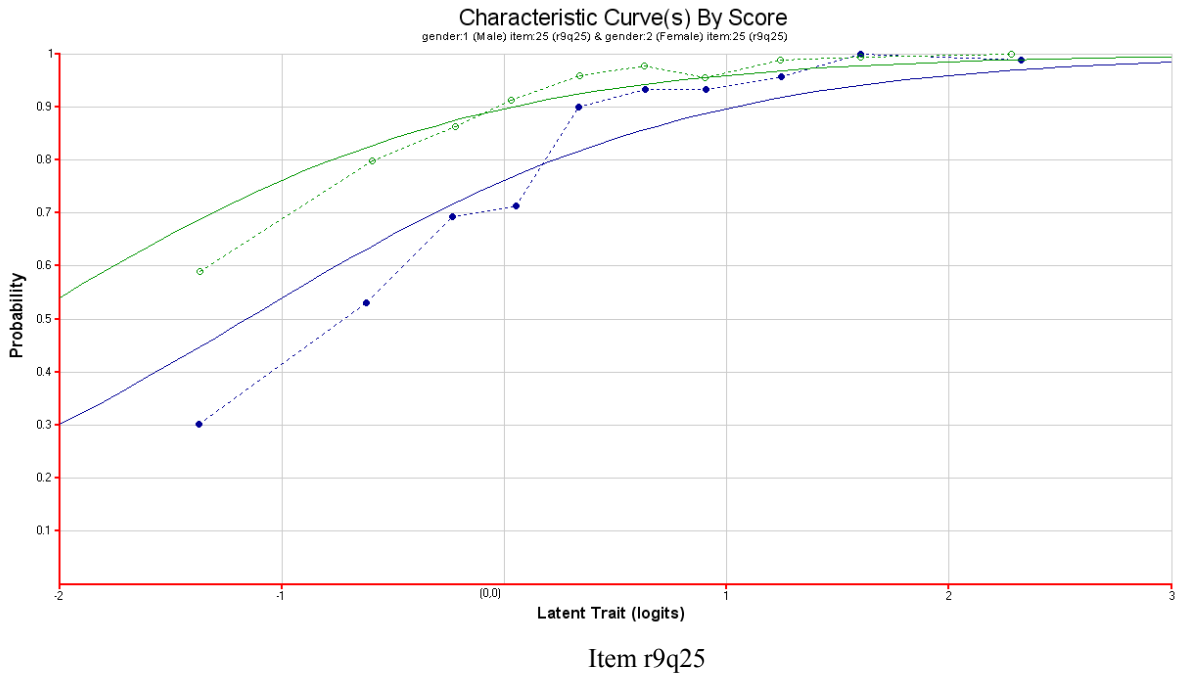


Item r7q48



Item r9q02

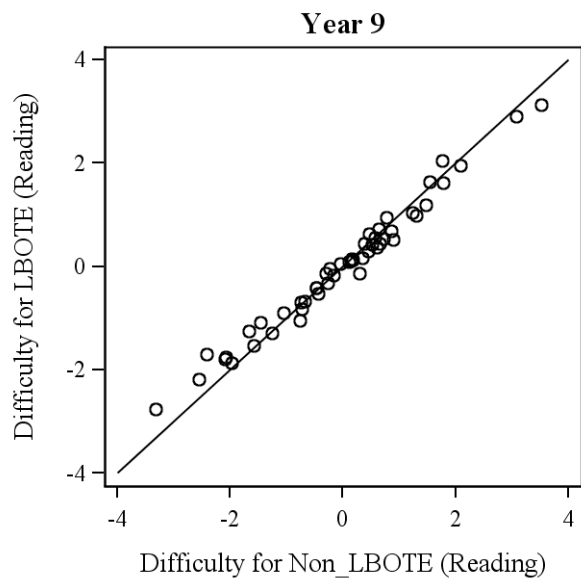
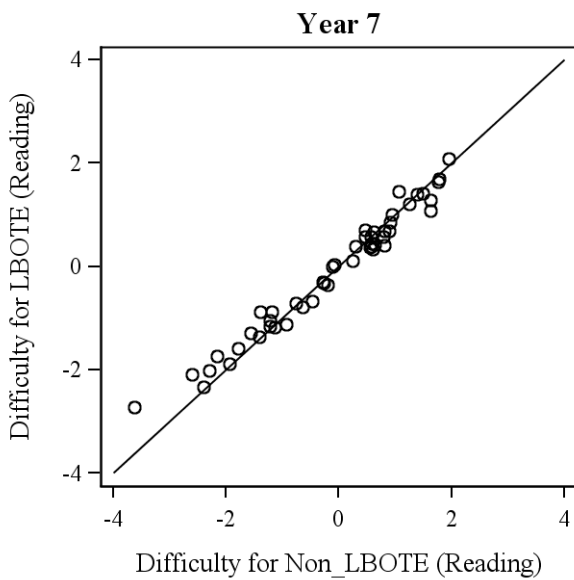
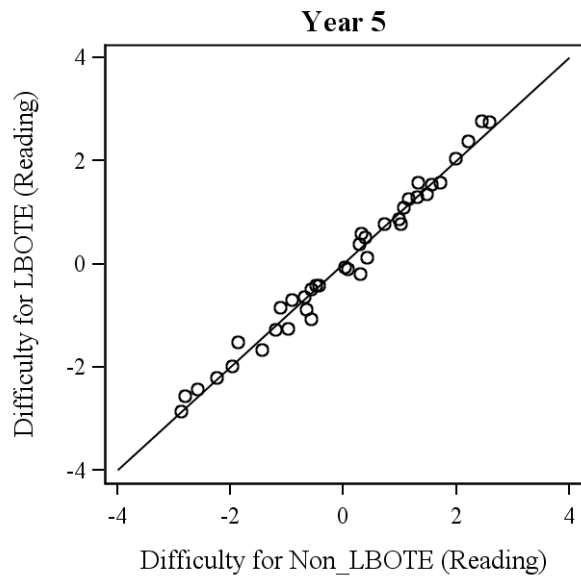
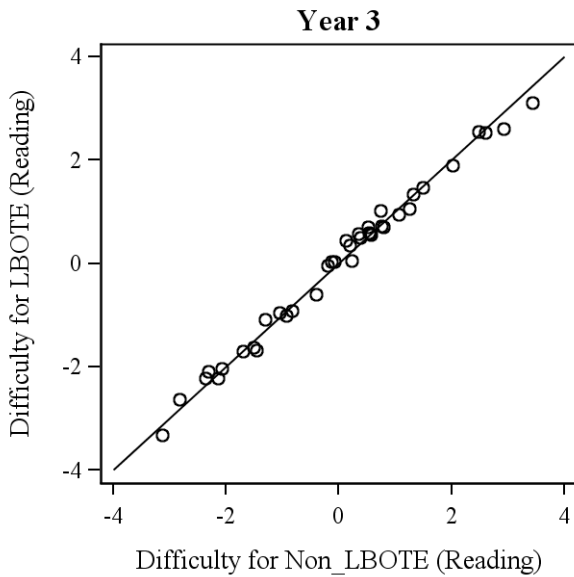


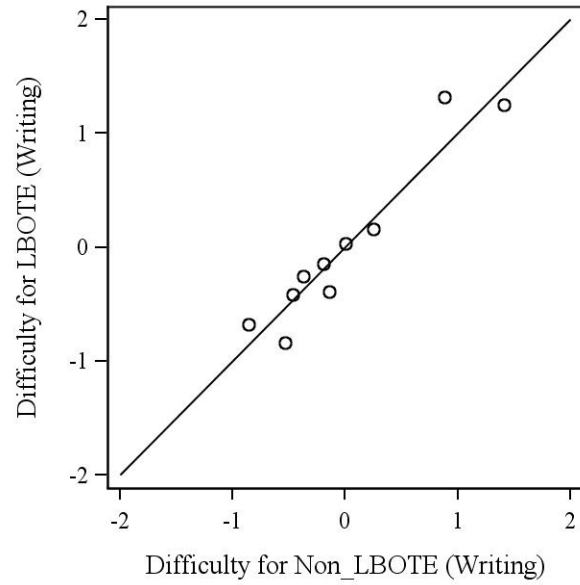


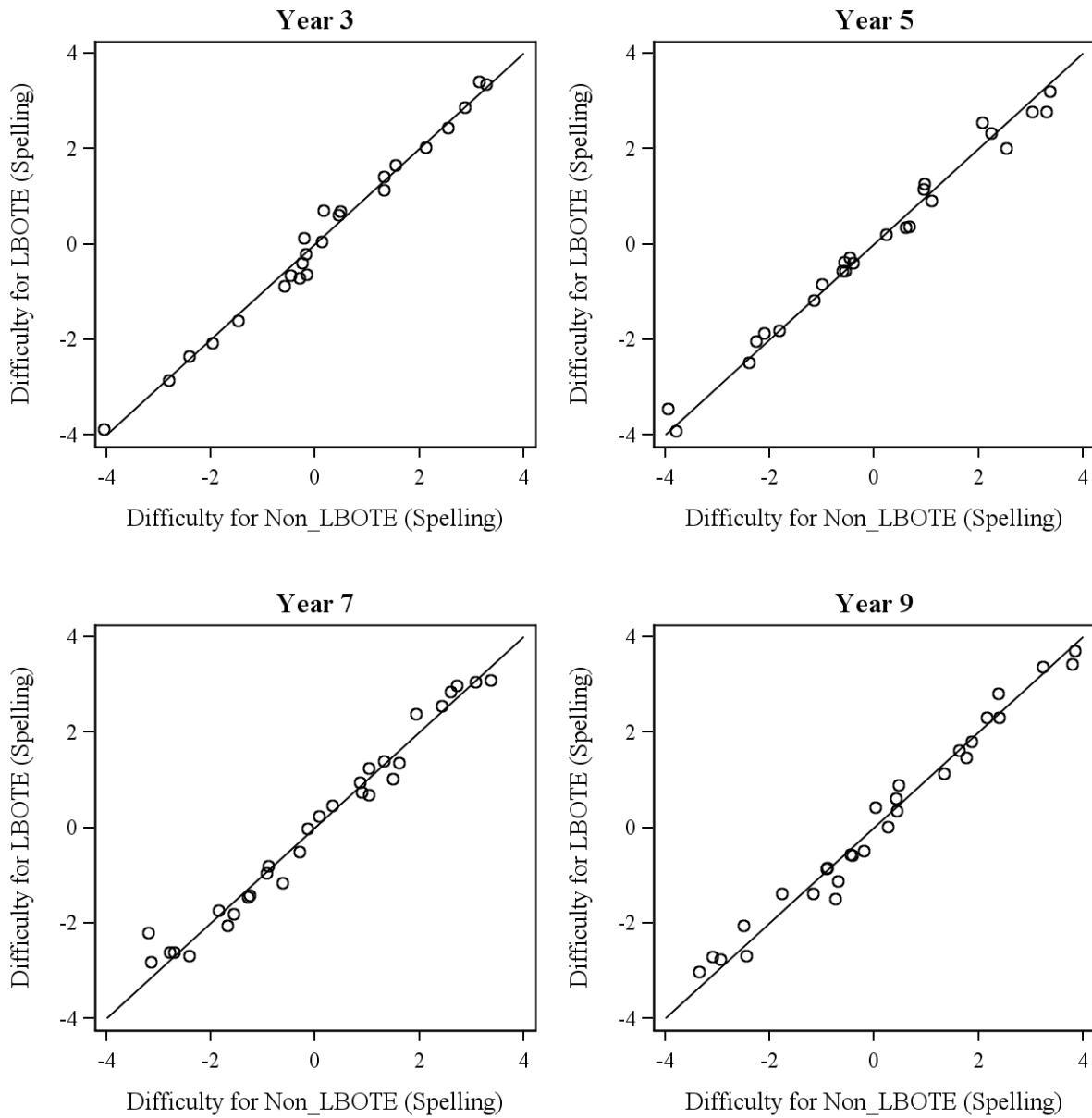
**APPENDIX G. LBOTE DIF ANALYSIS**

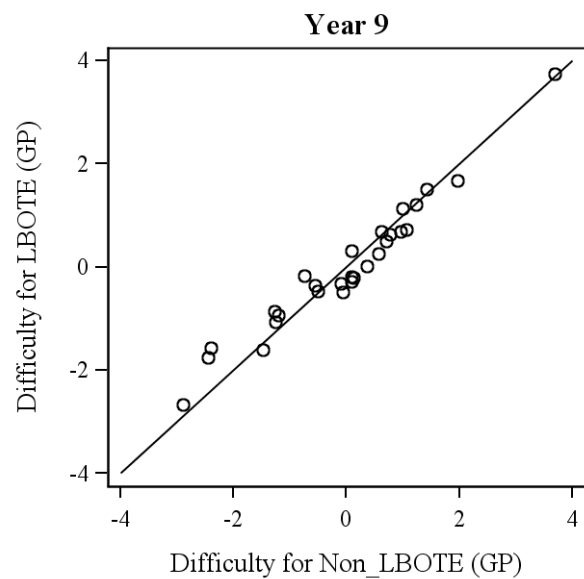
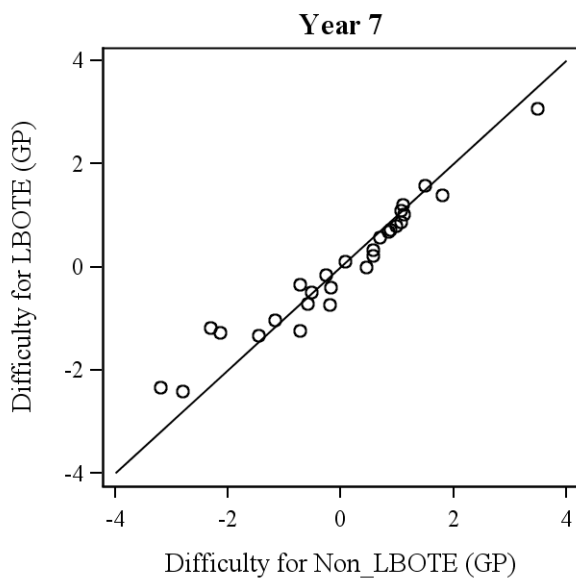
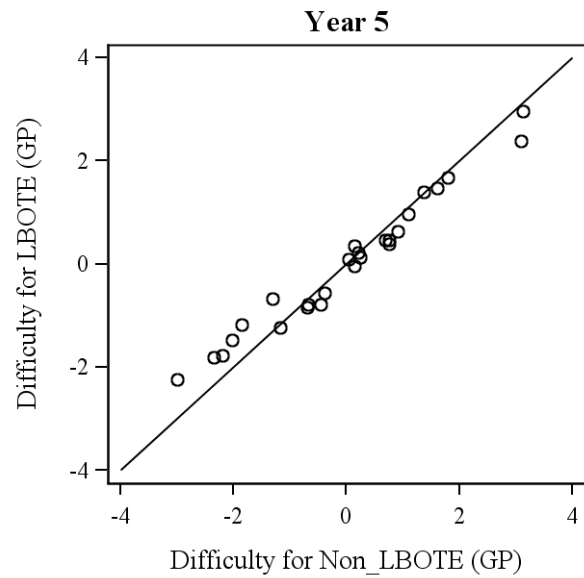
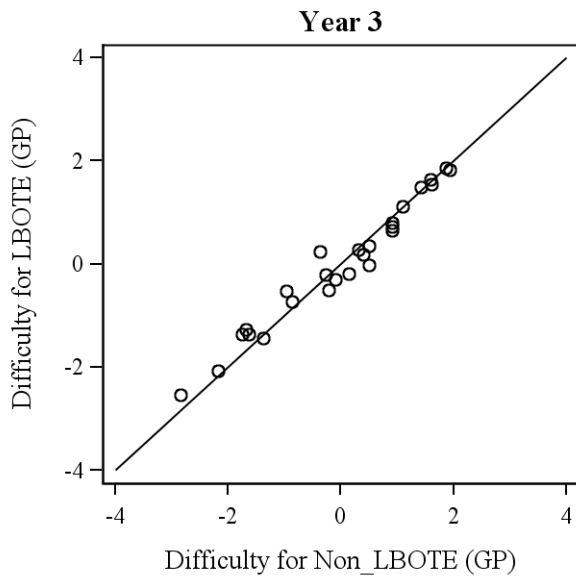
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**G.1 Centred Item Locations of LBOTE and Non-LBOTE Students in Reading (2014)**

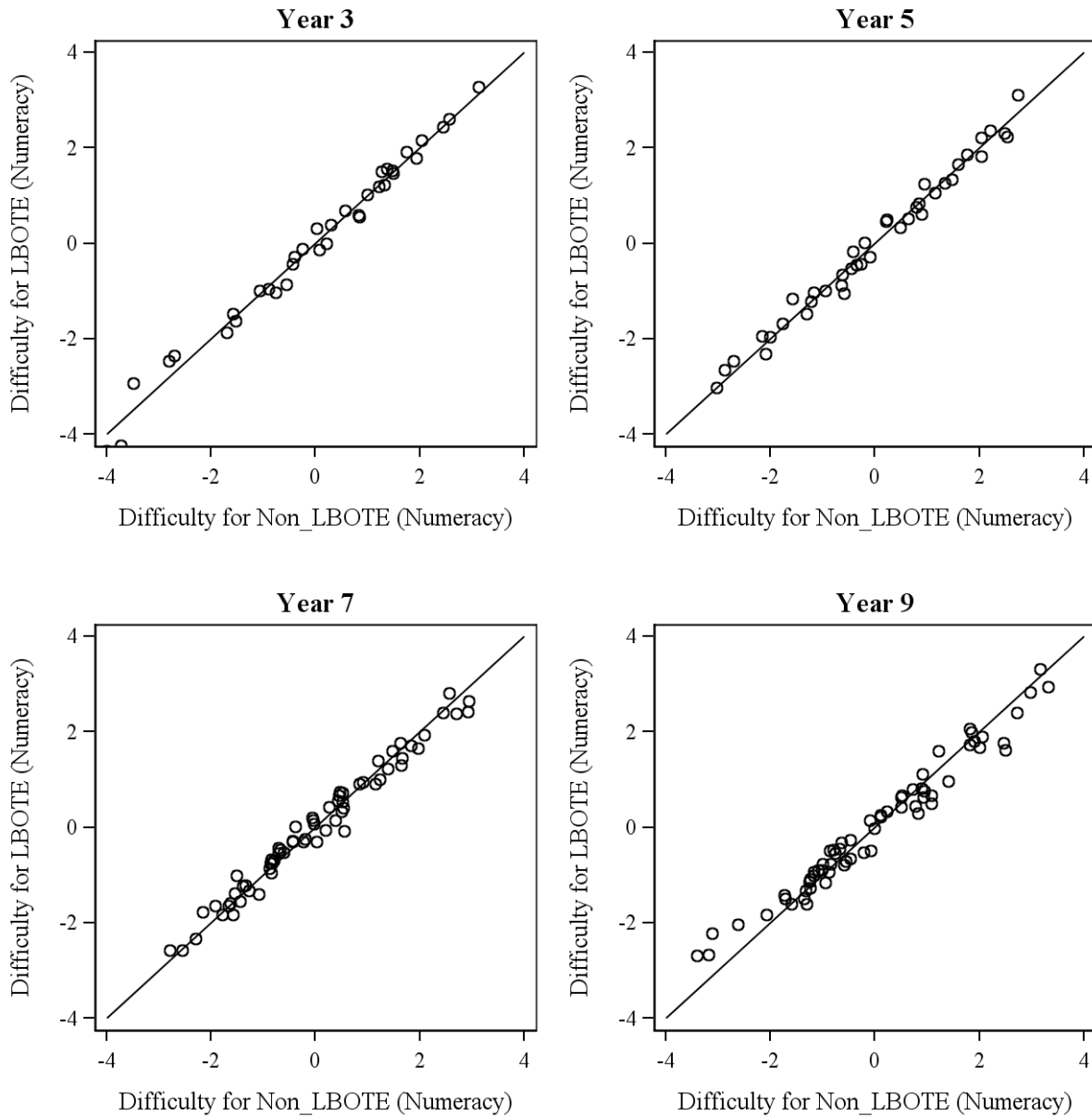


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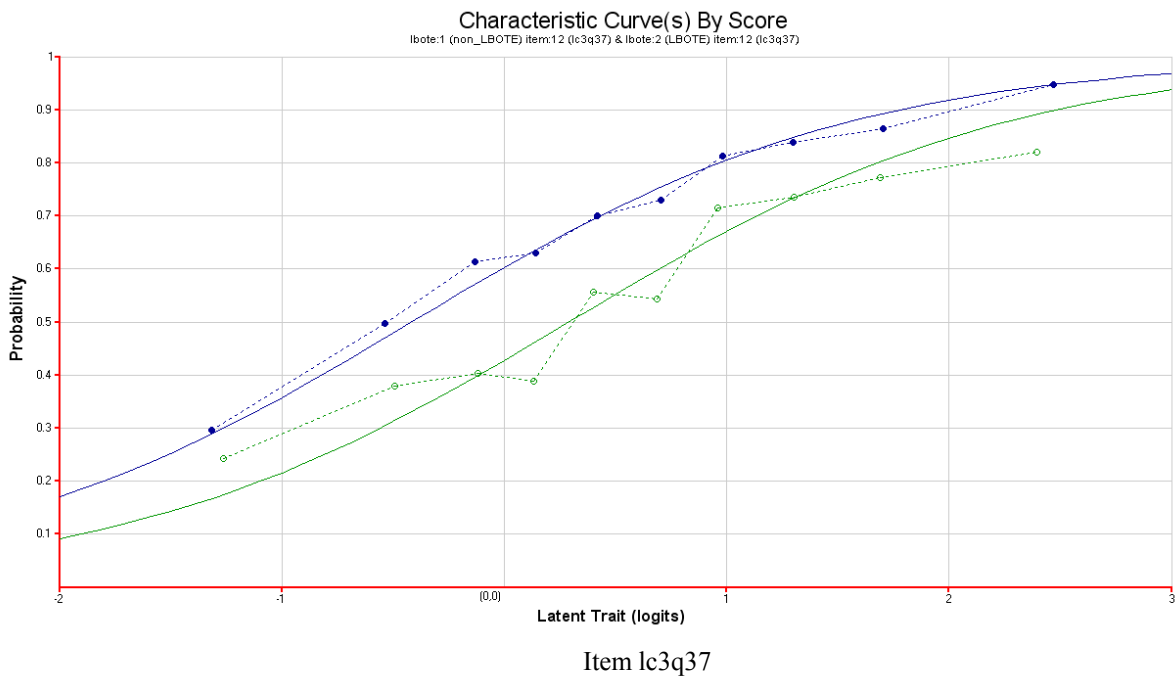
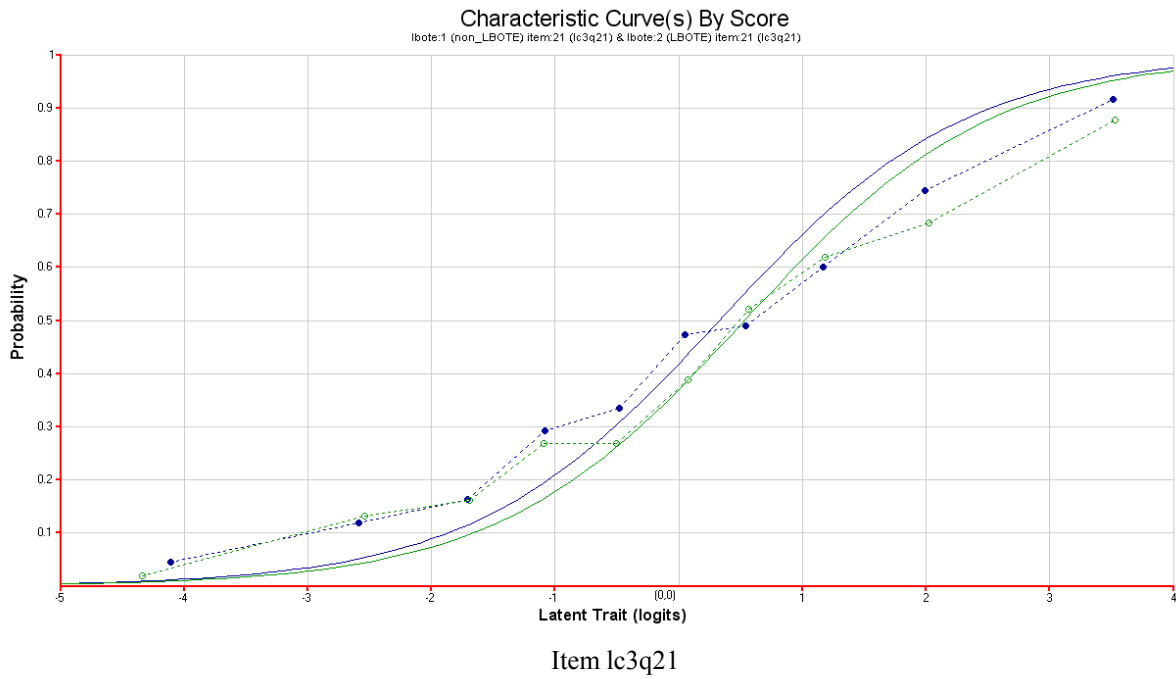
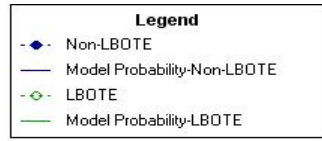
**G.3 Centred Item Locations of LBOTE and Non-LBOTE Students in Spelling (2014)**

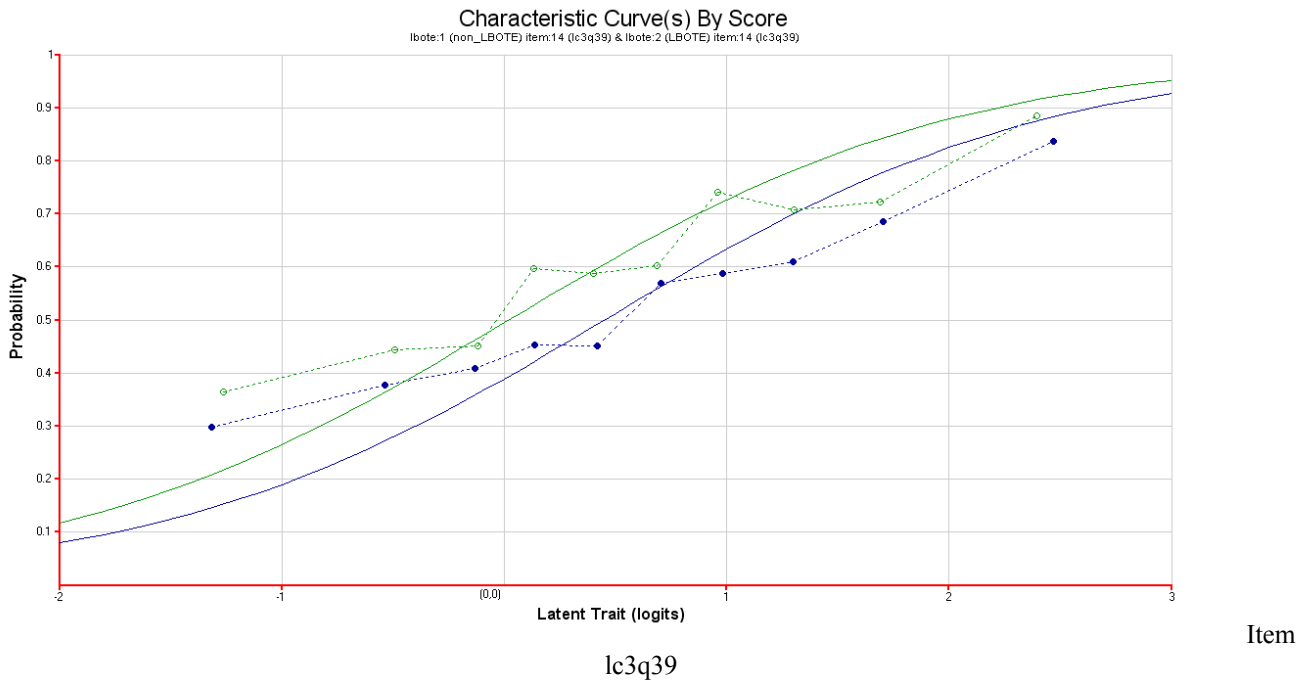
**G.4 Centred Item Locations of LBOTE and Non-LBOTE Students in Grammar and Punctuation (2014)**

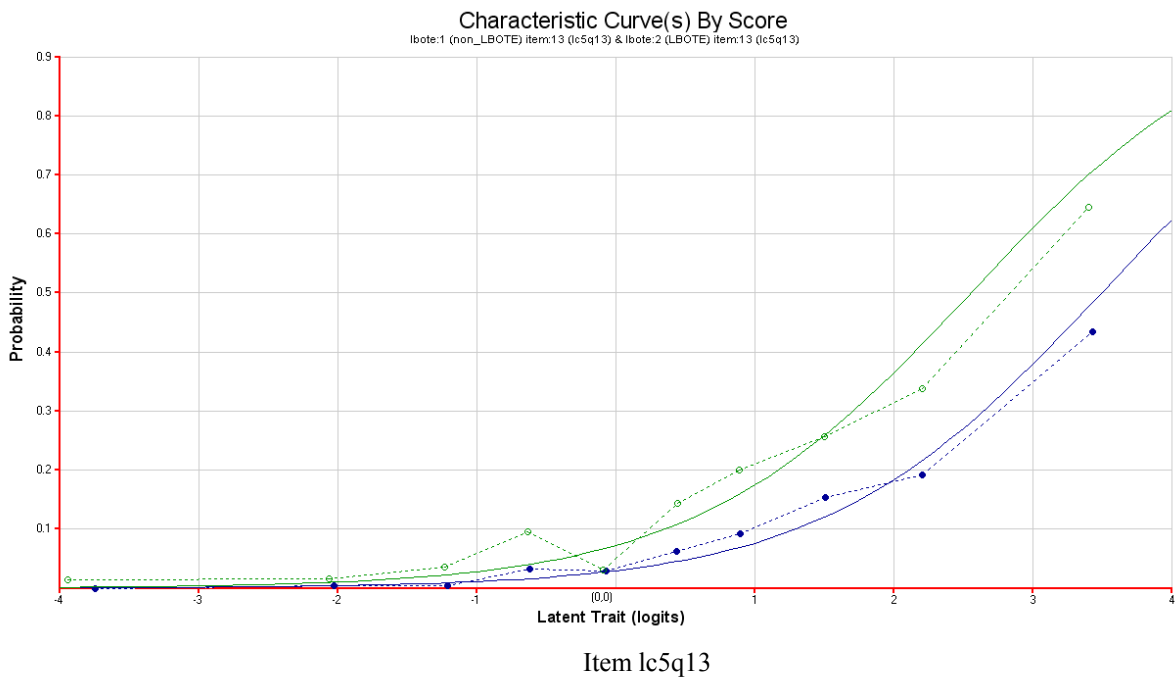
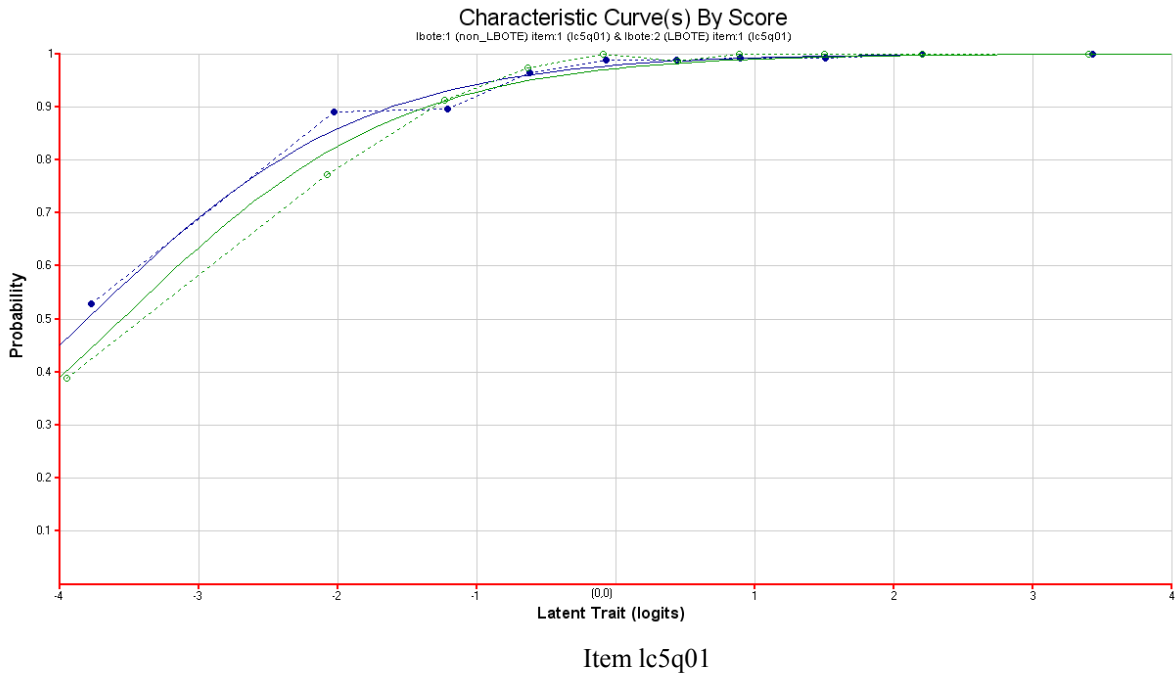


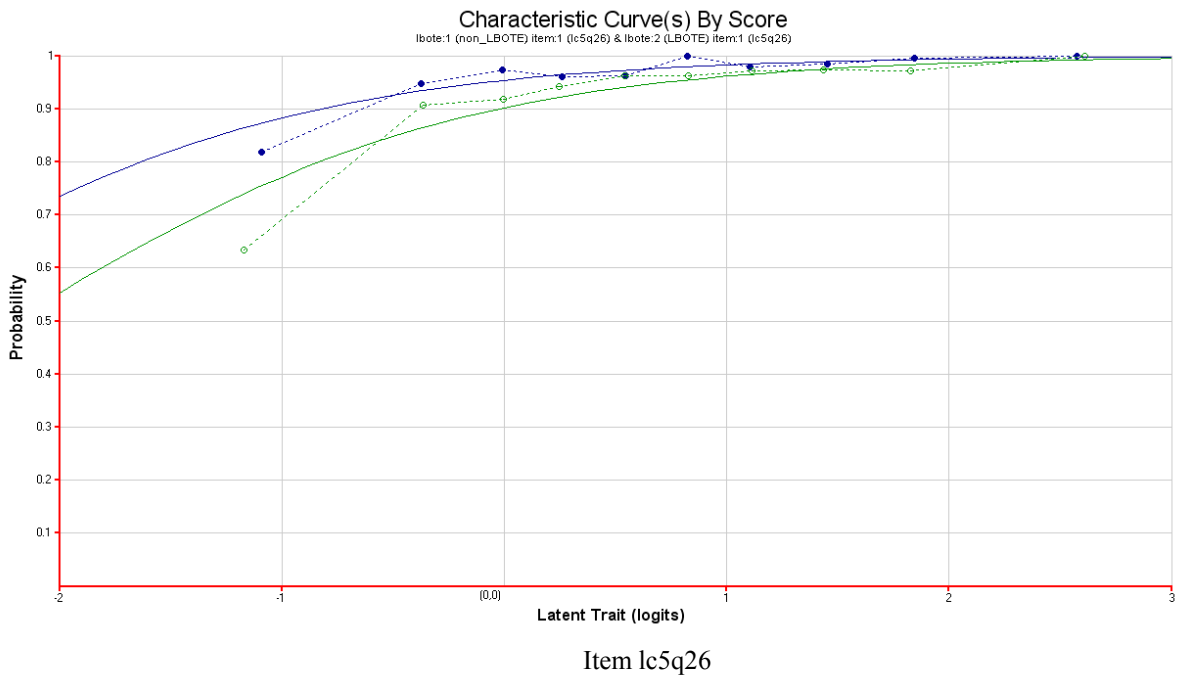
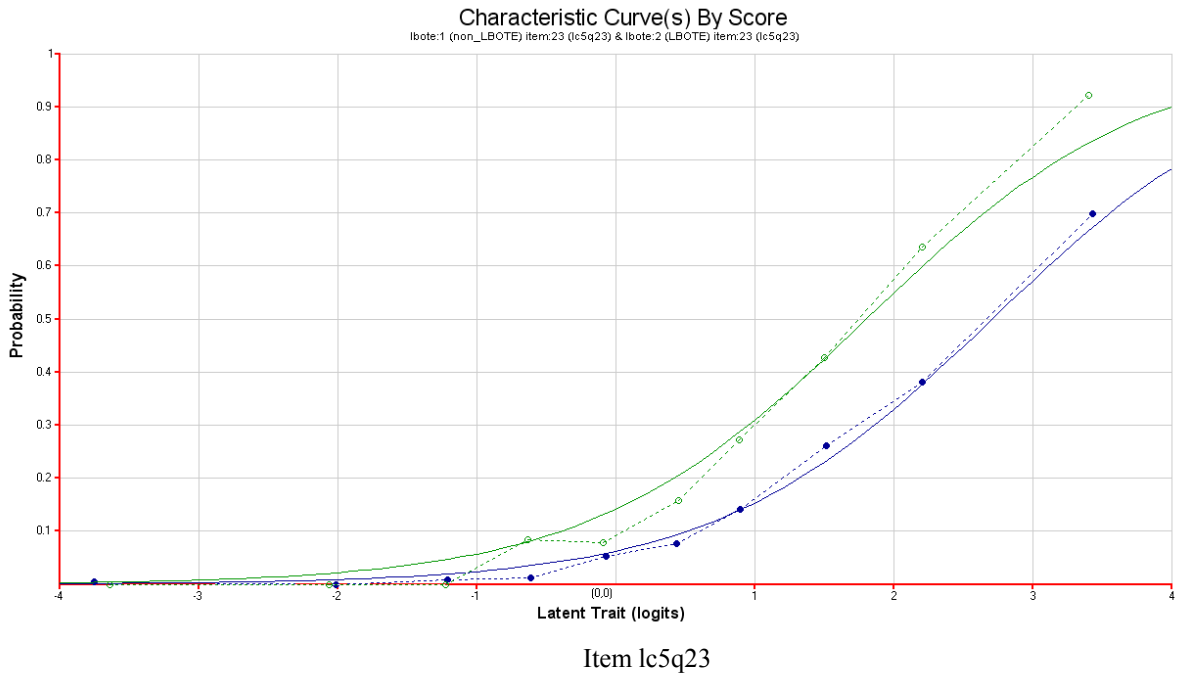
**G.5 Centred Item Locations of LBOTE and Non-LBOTE Students in Numeracy (2014)**

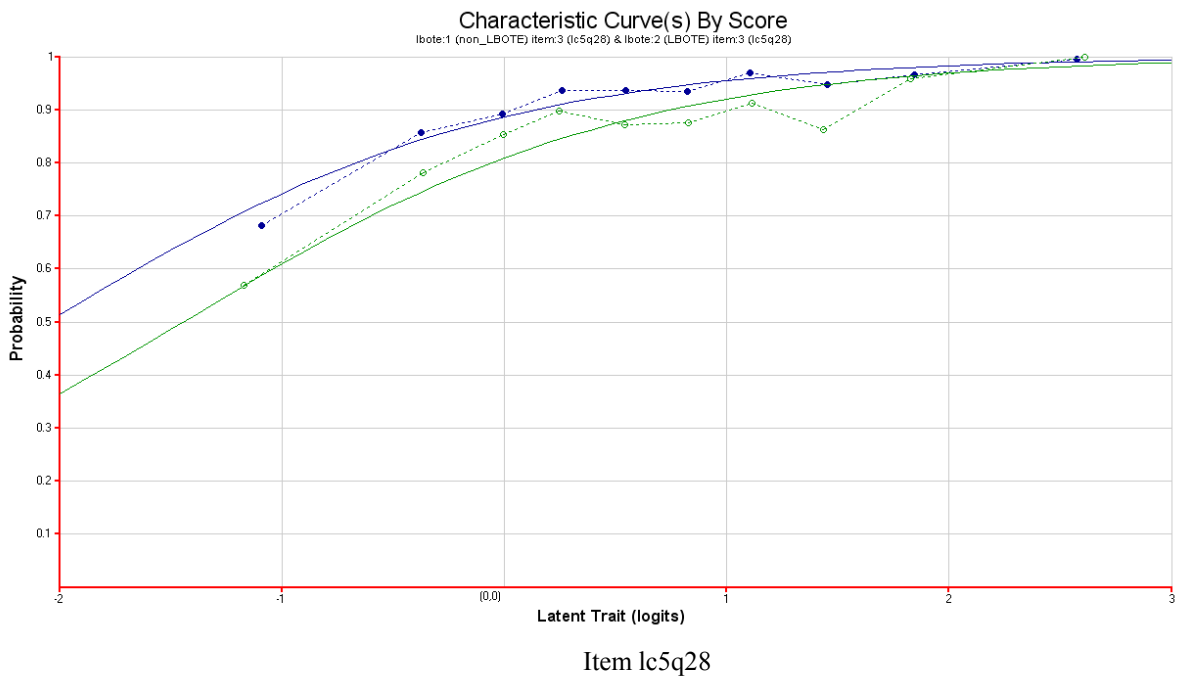
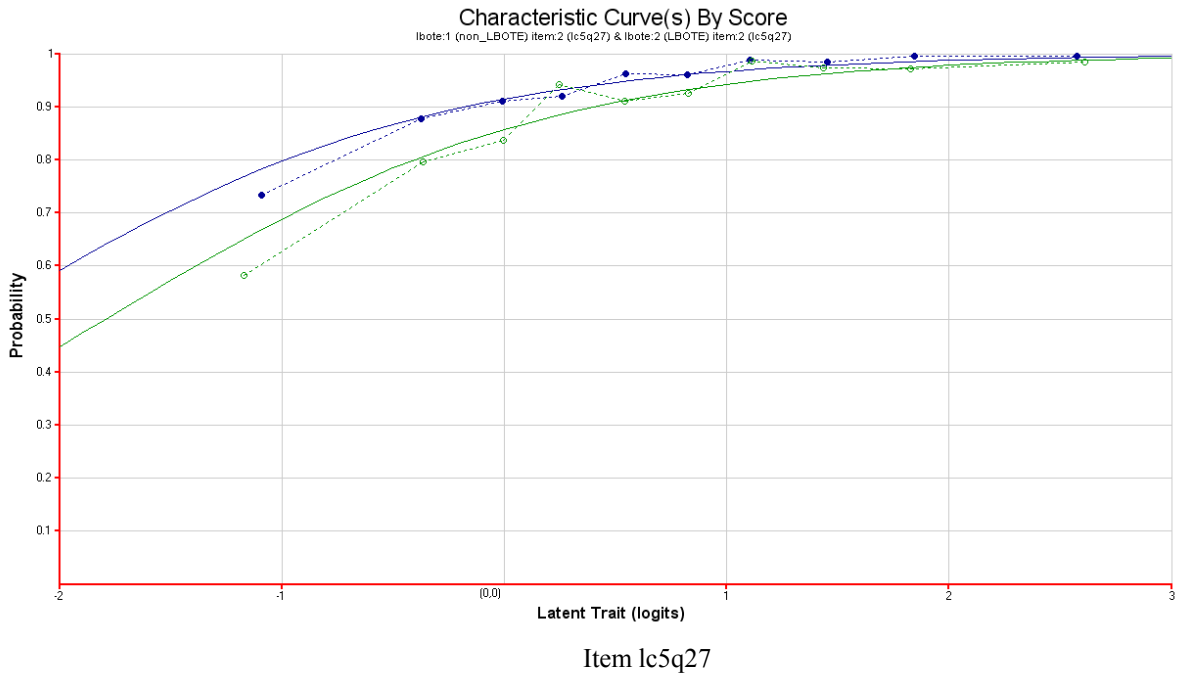
### G.6 Item DIF Plots for Items Showing LBOTE DIF

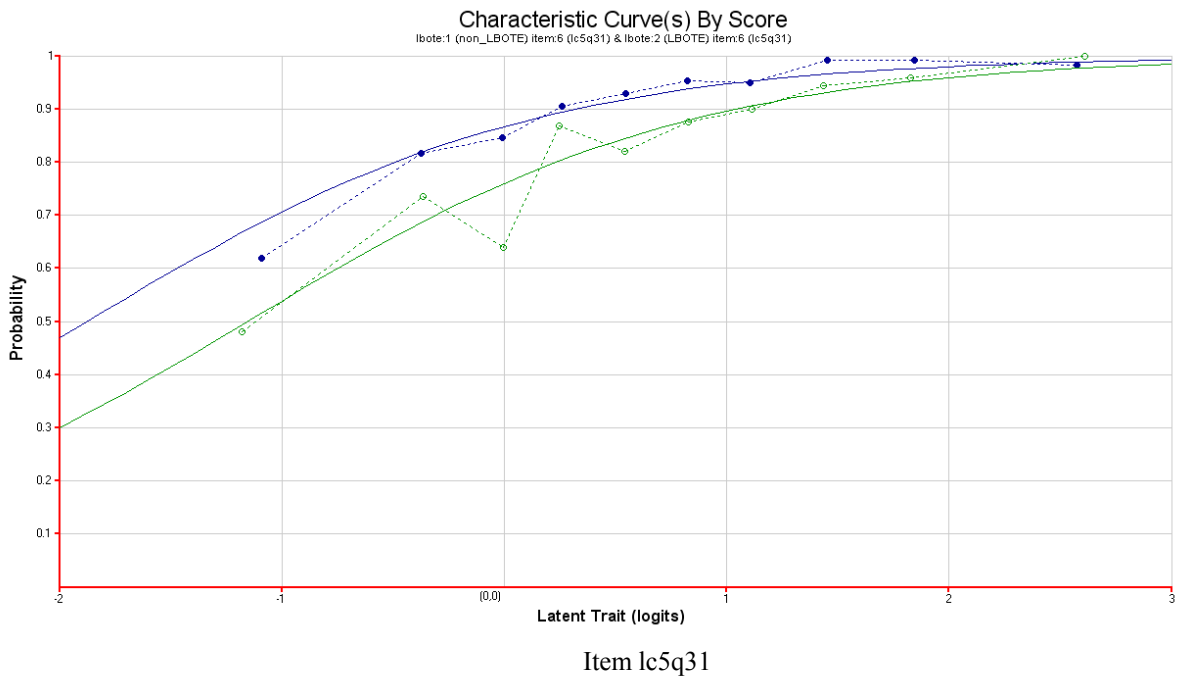
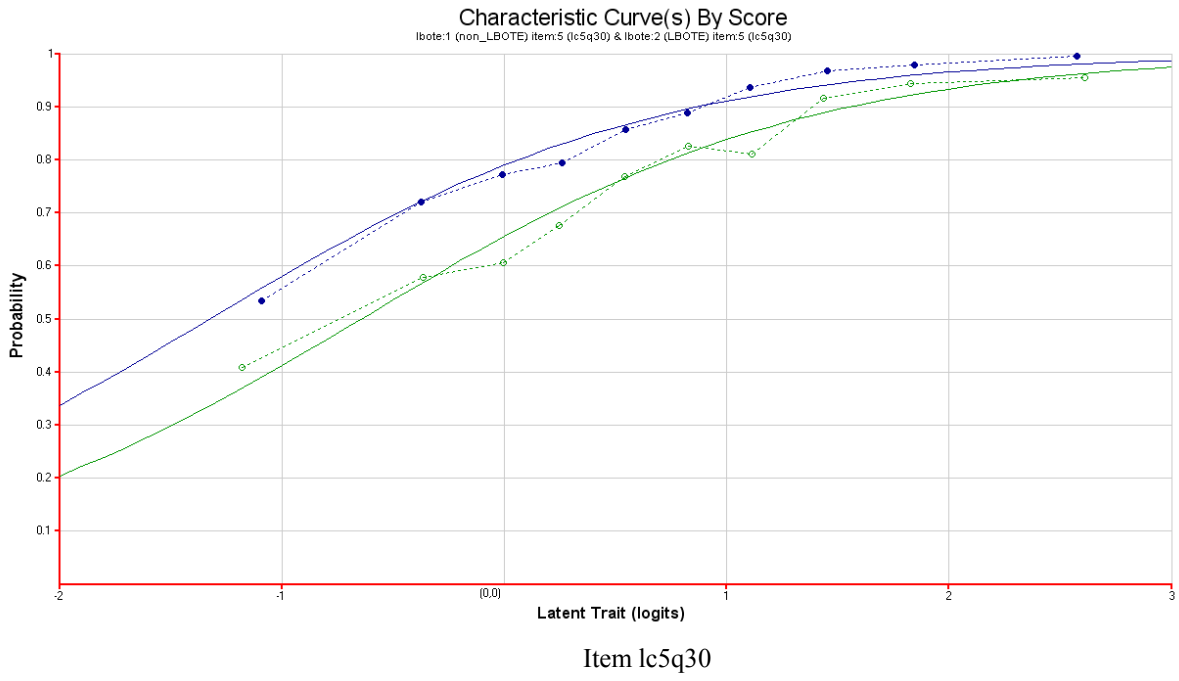


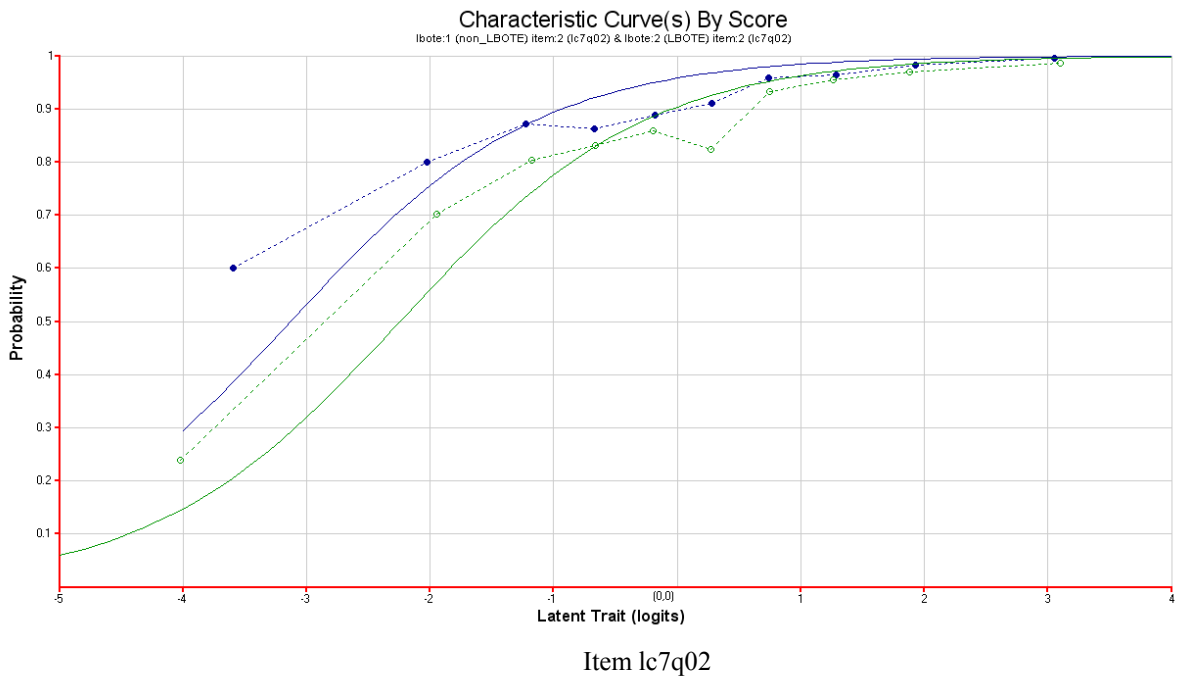
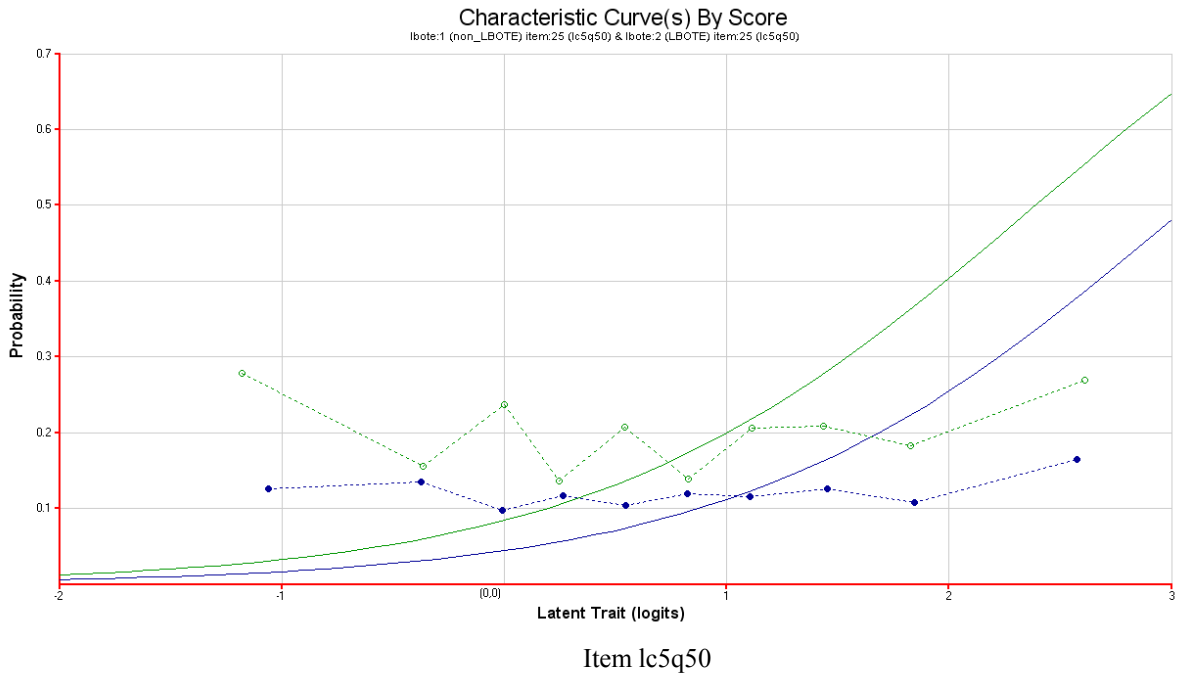




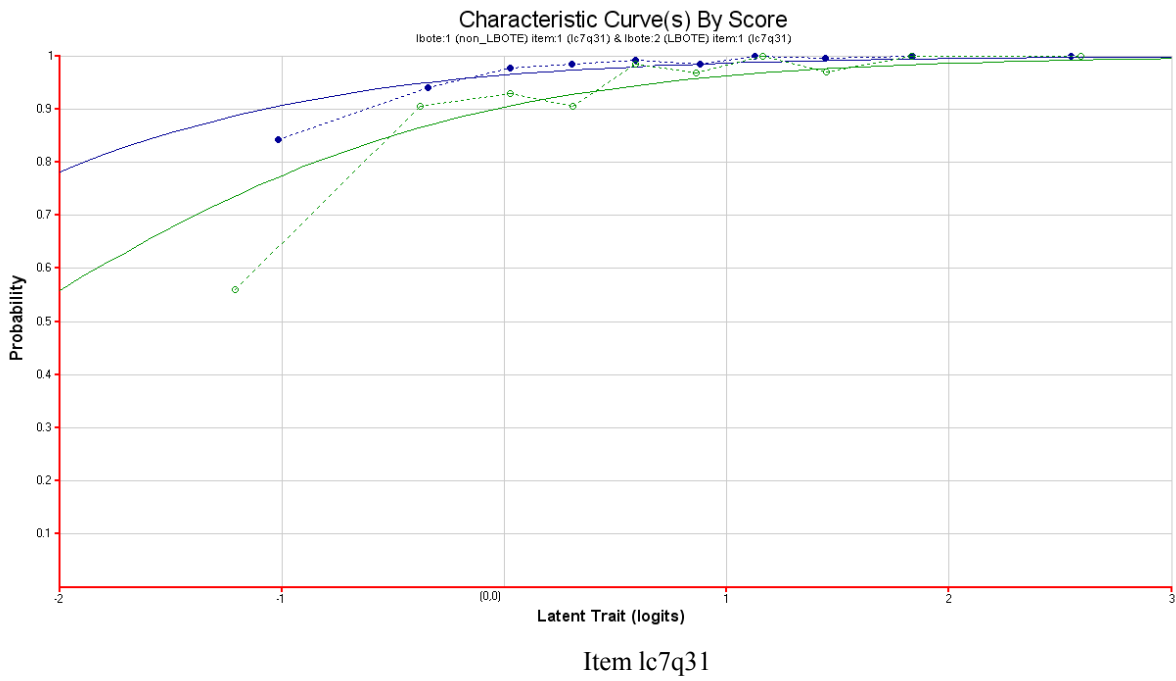
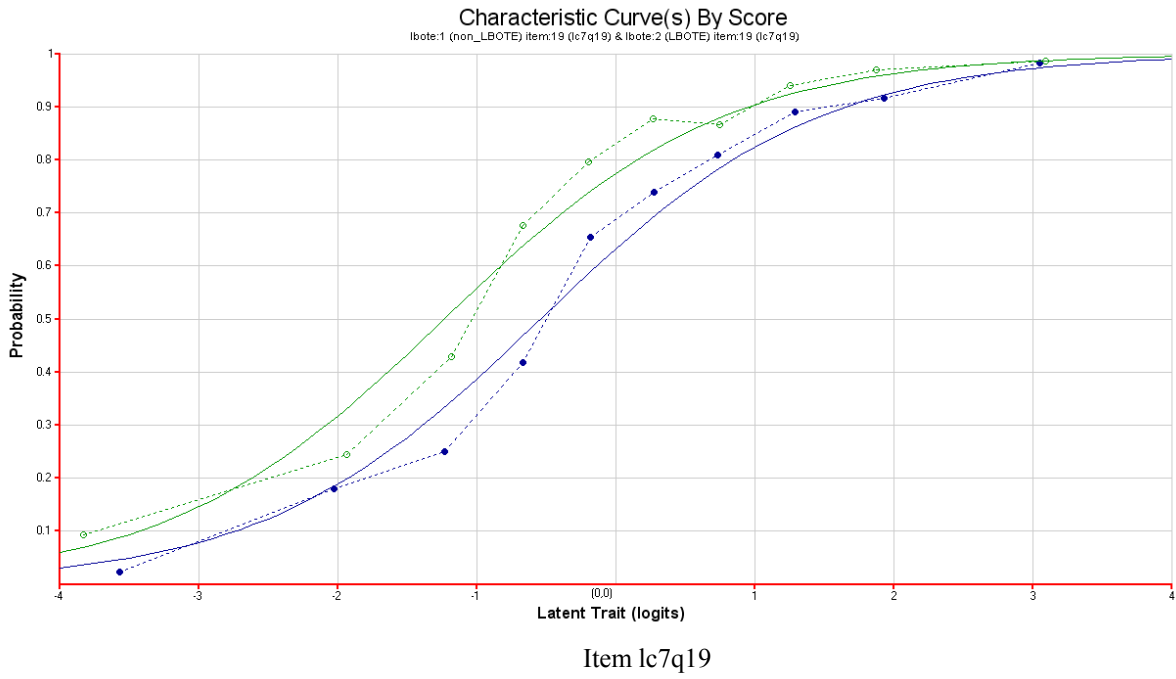


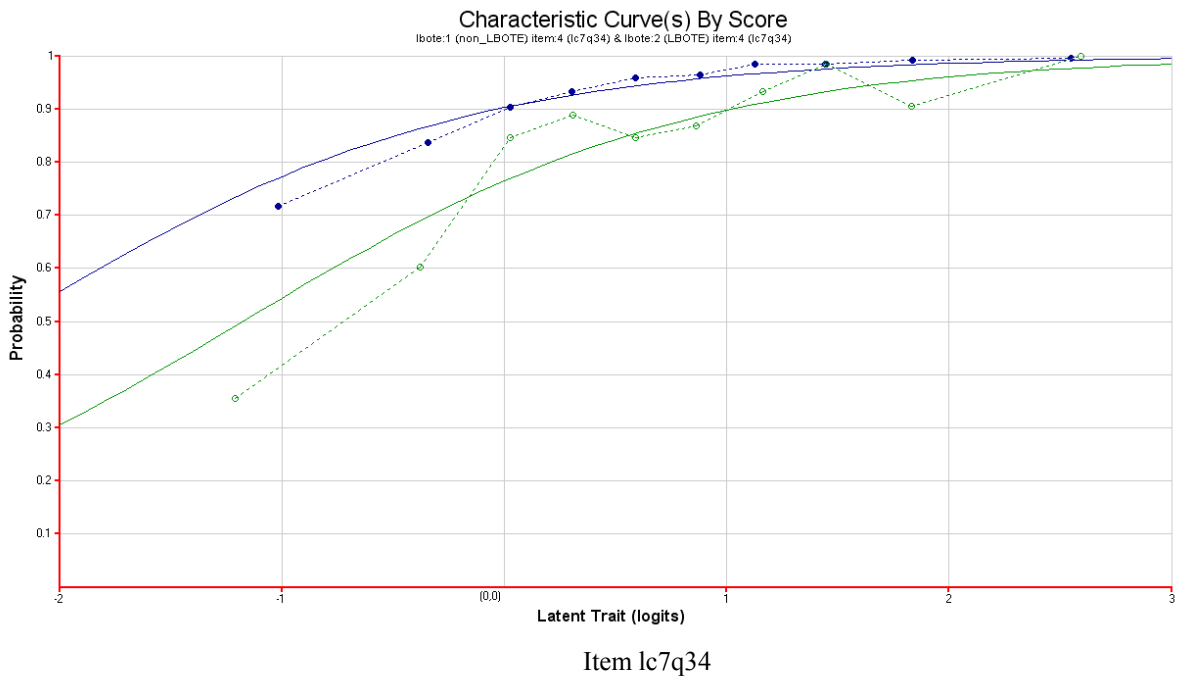
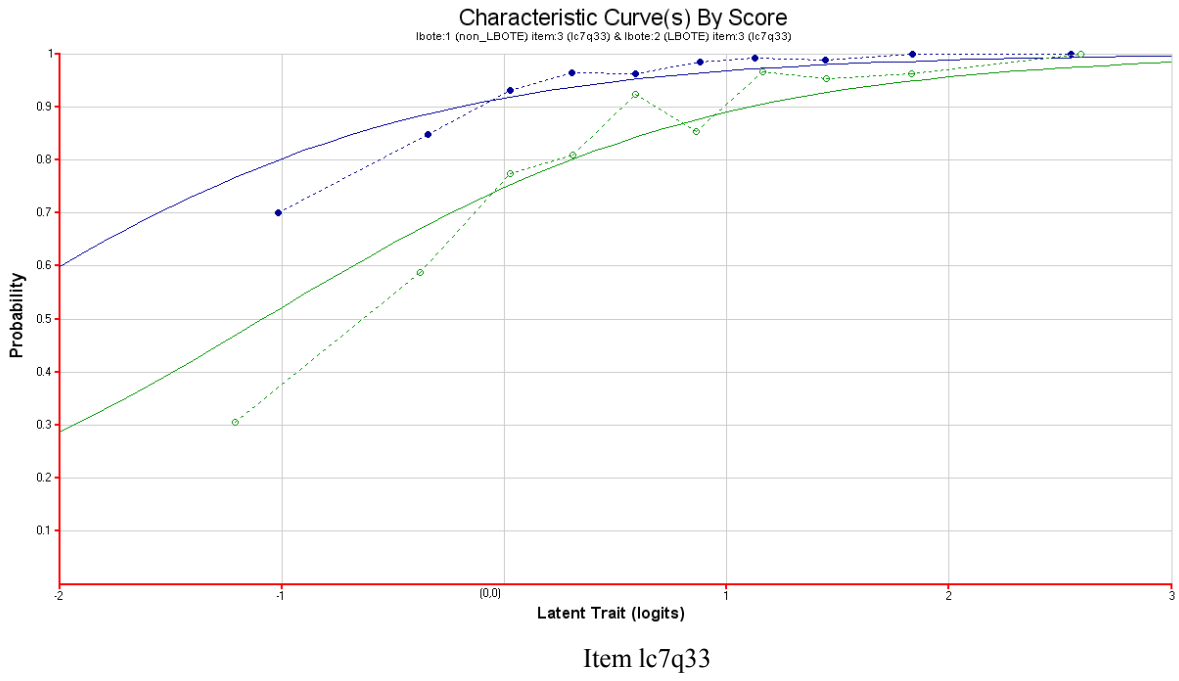


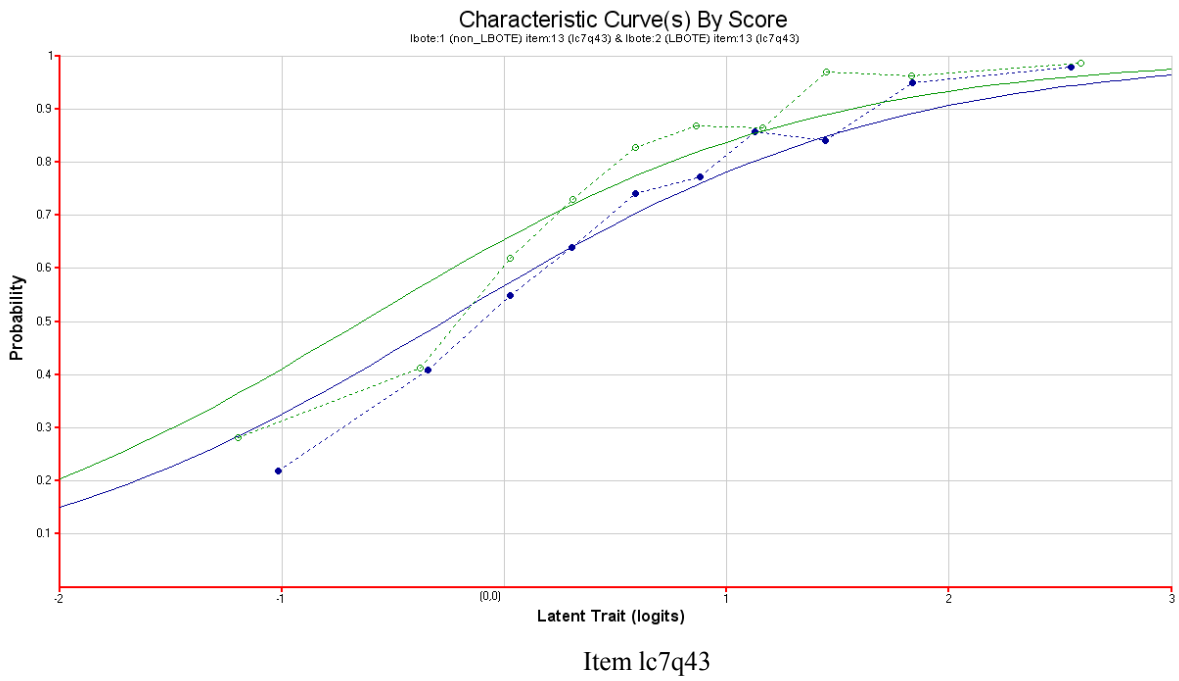
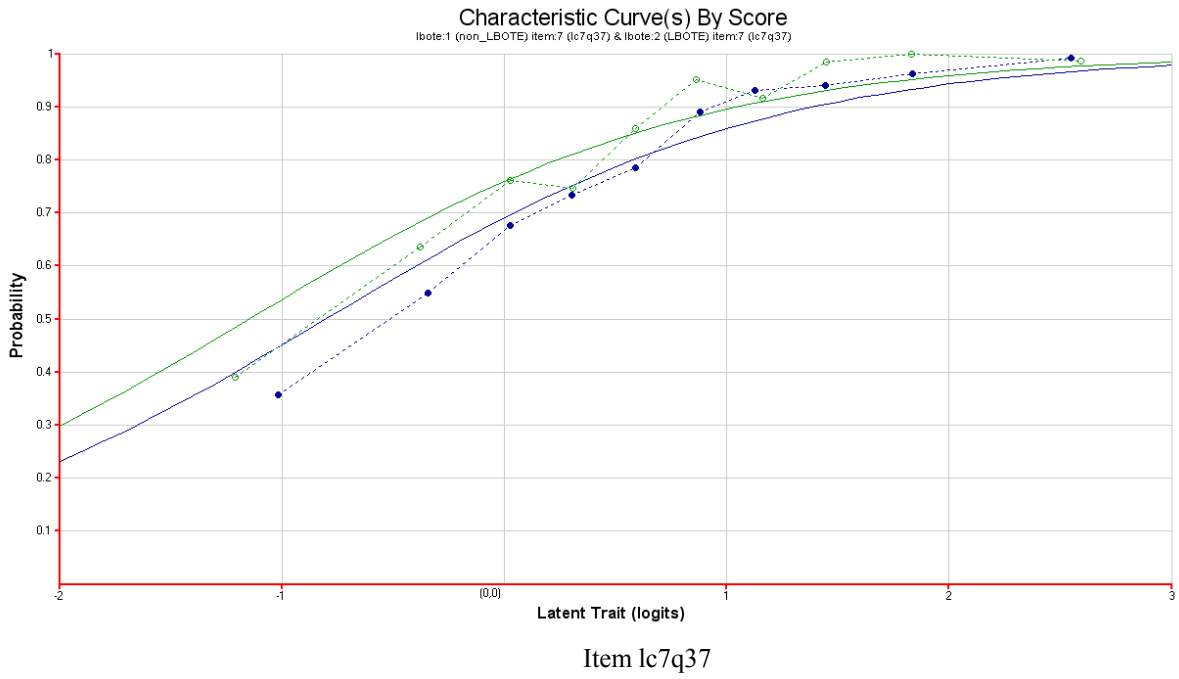


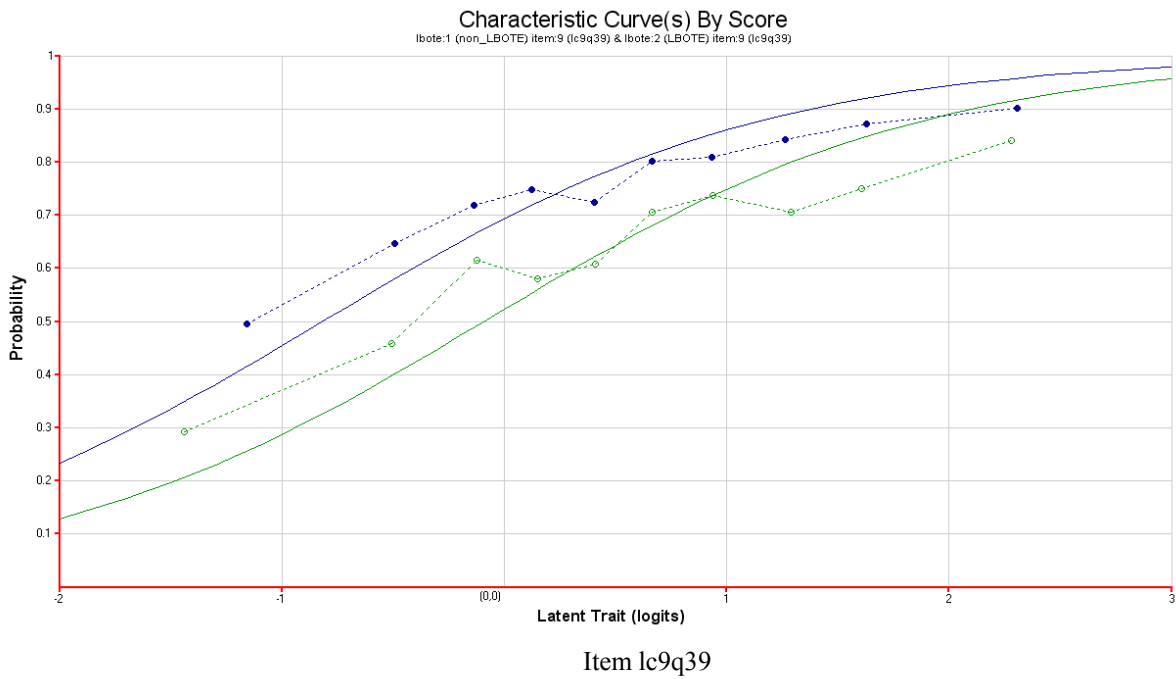
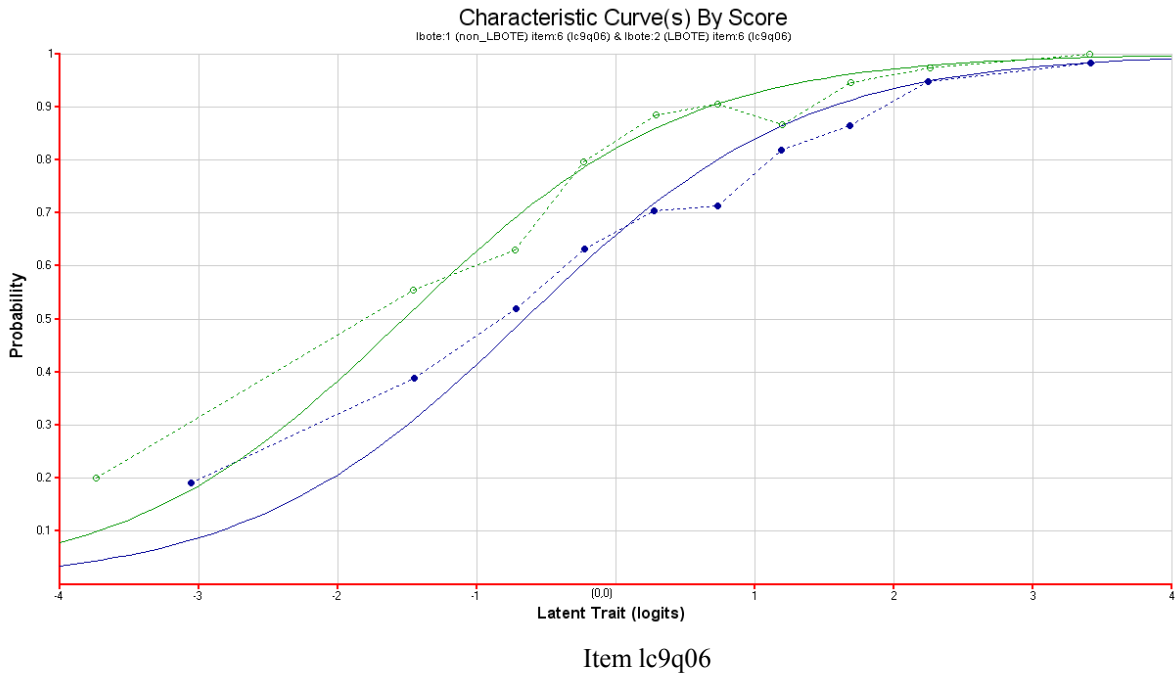


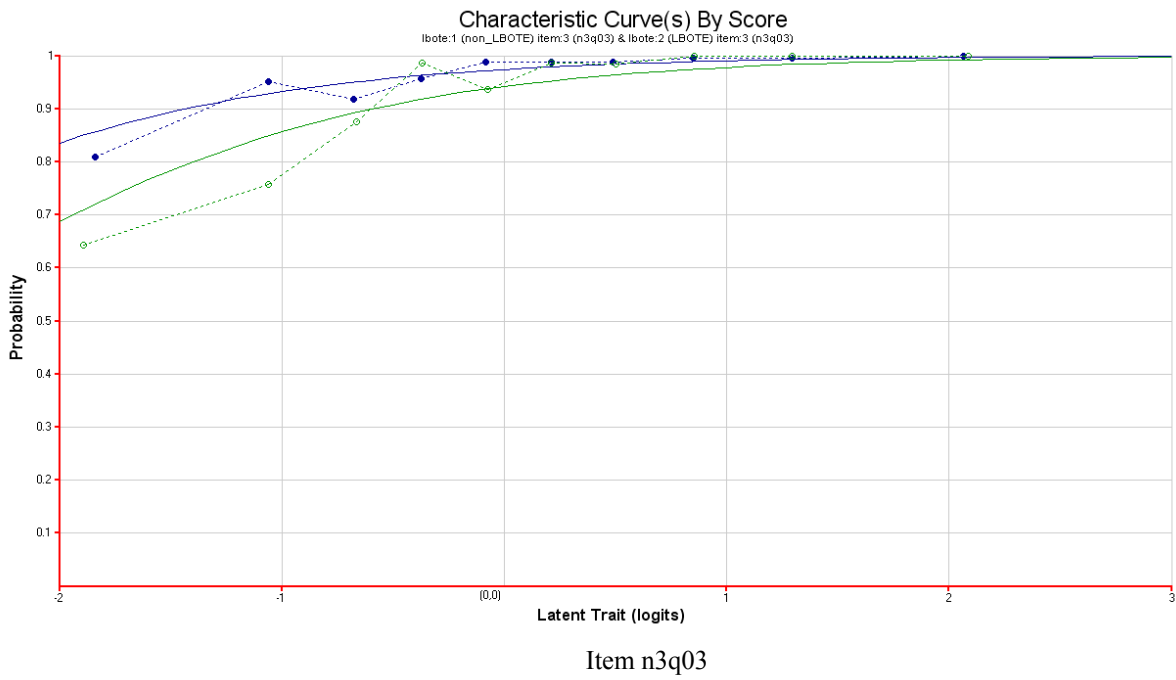
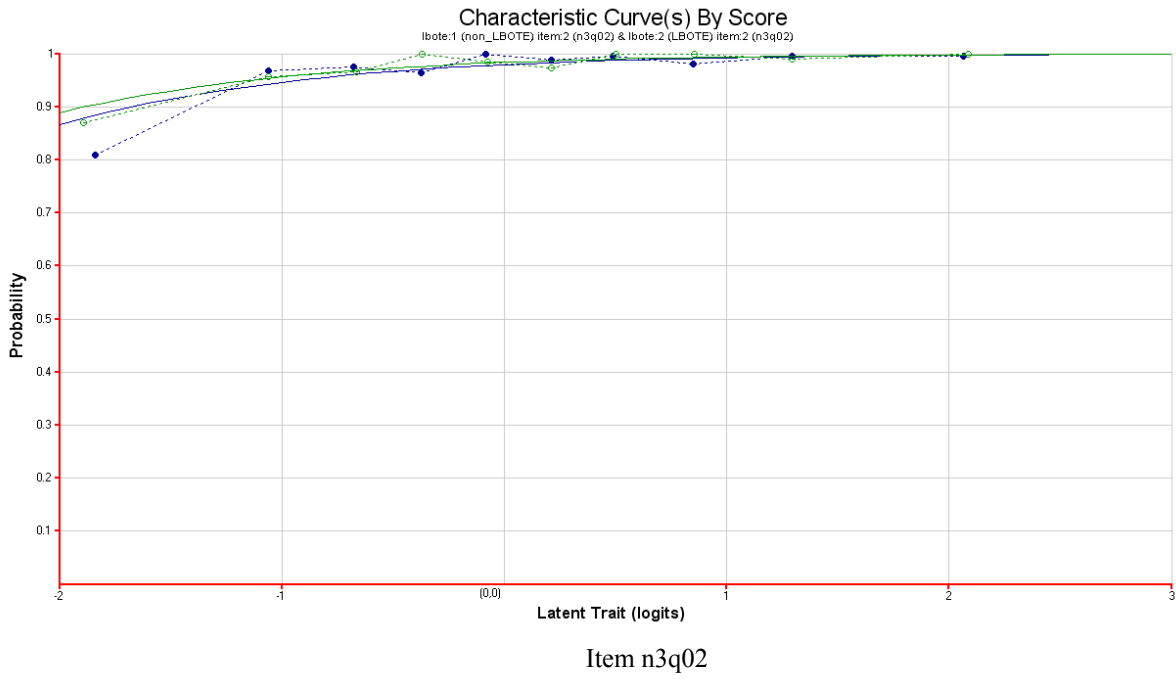


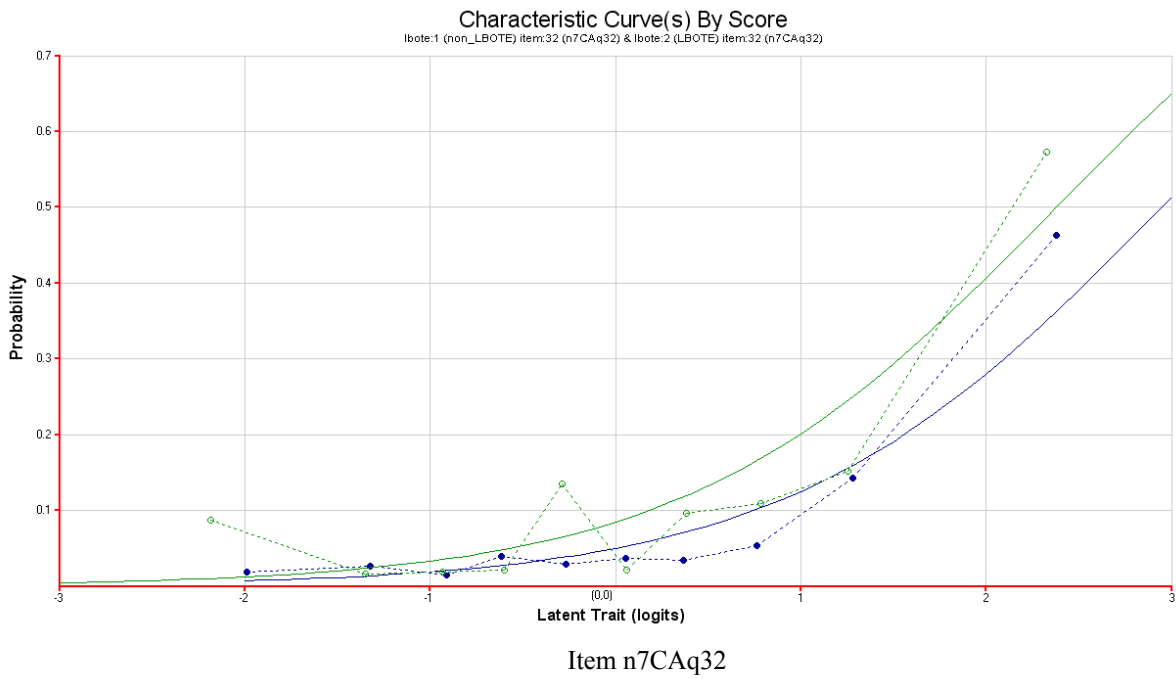
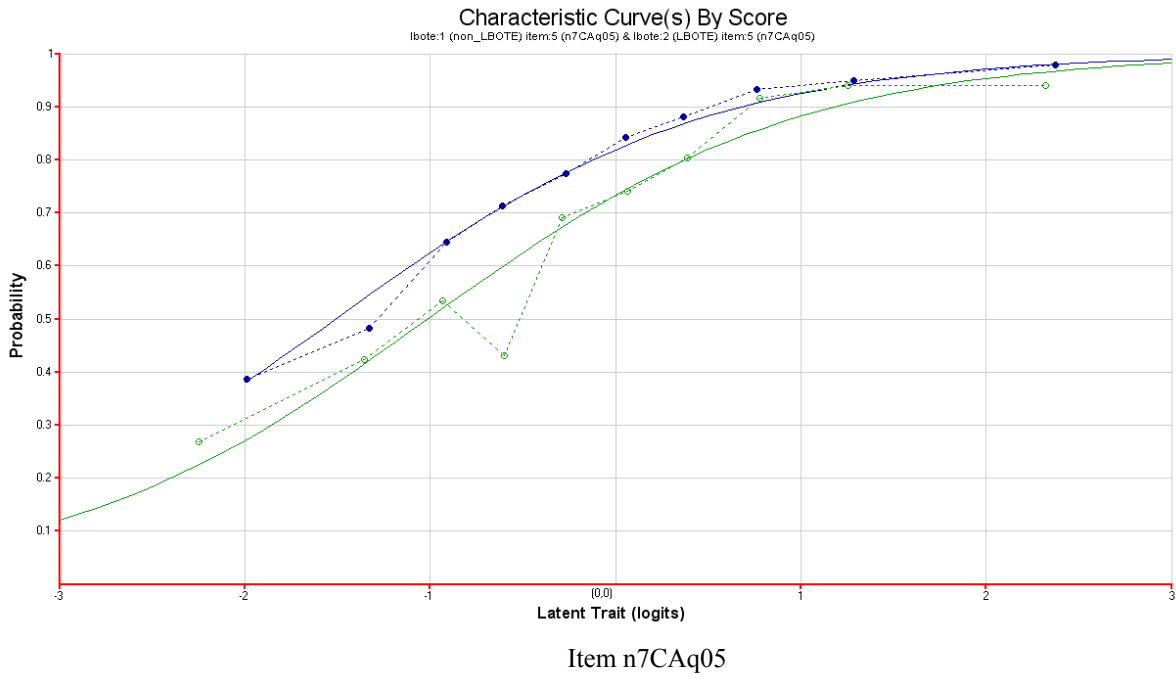


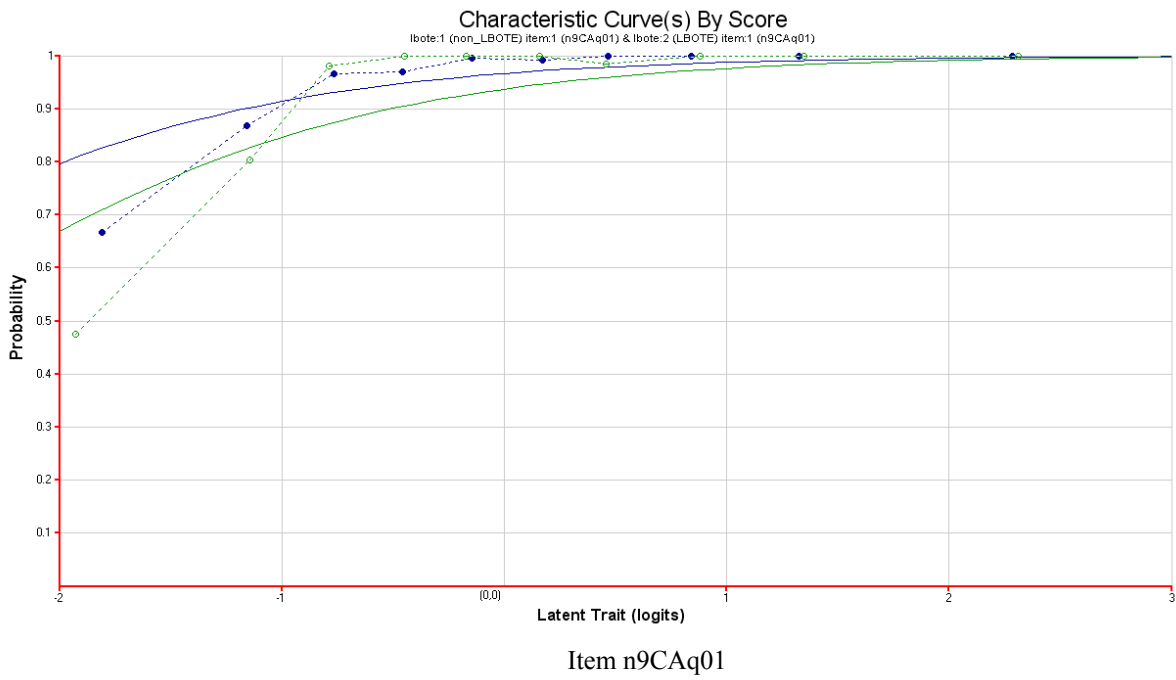
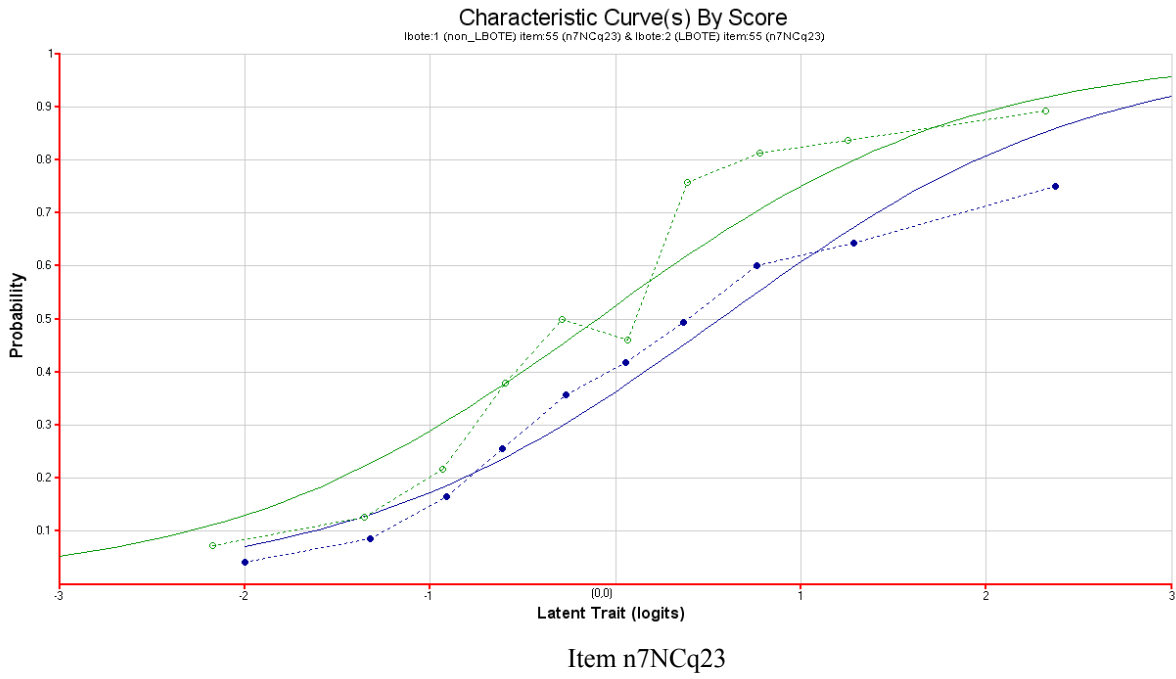


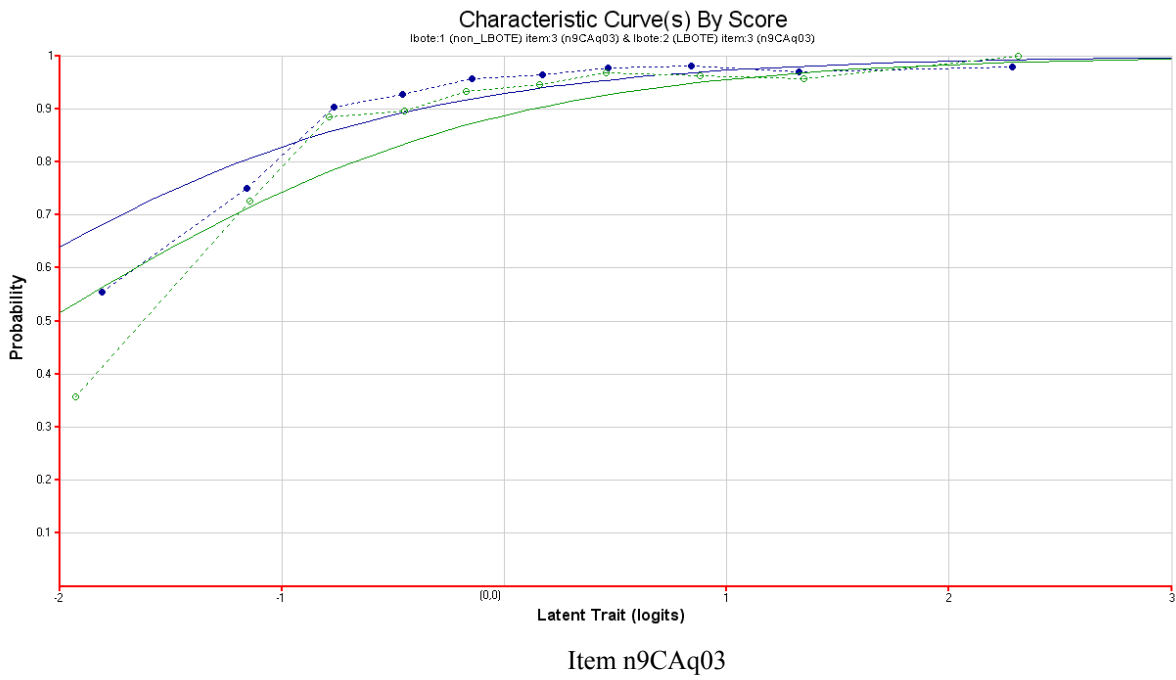
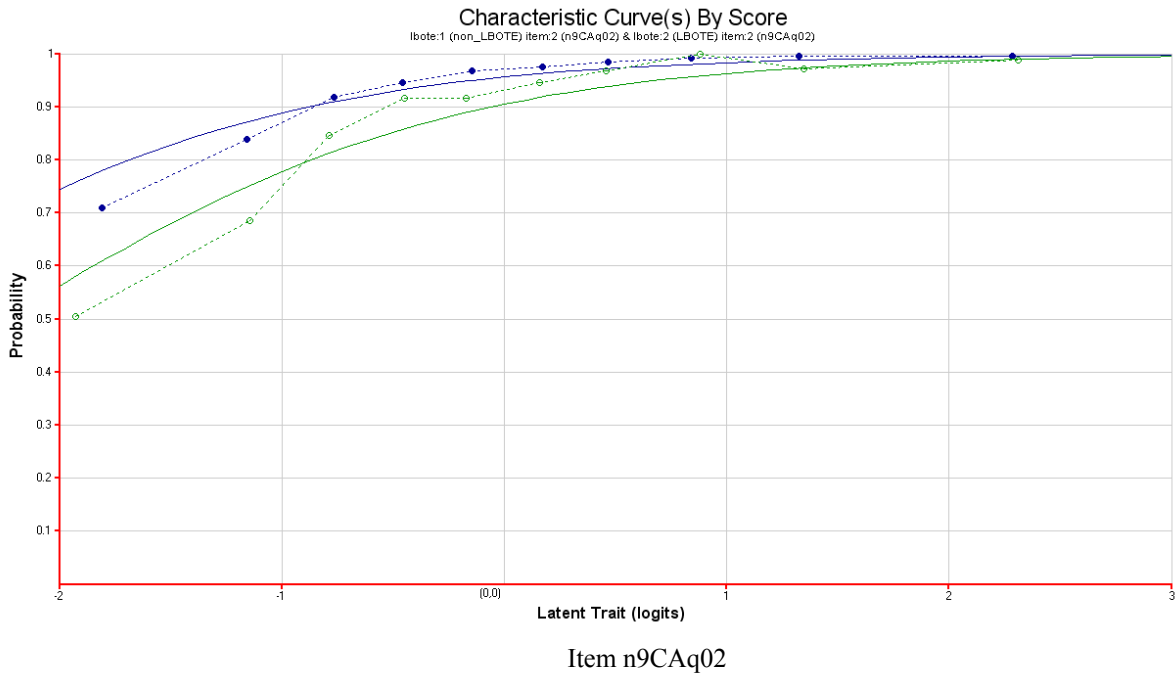




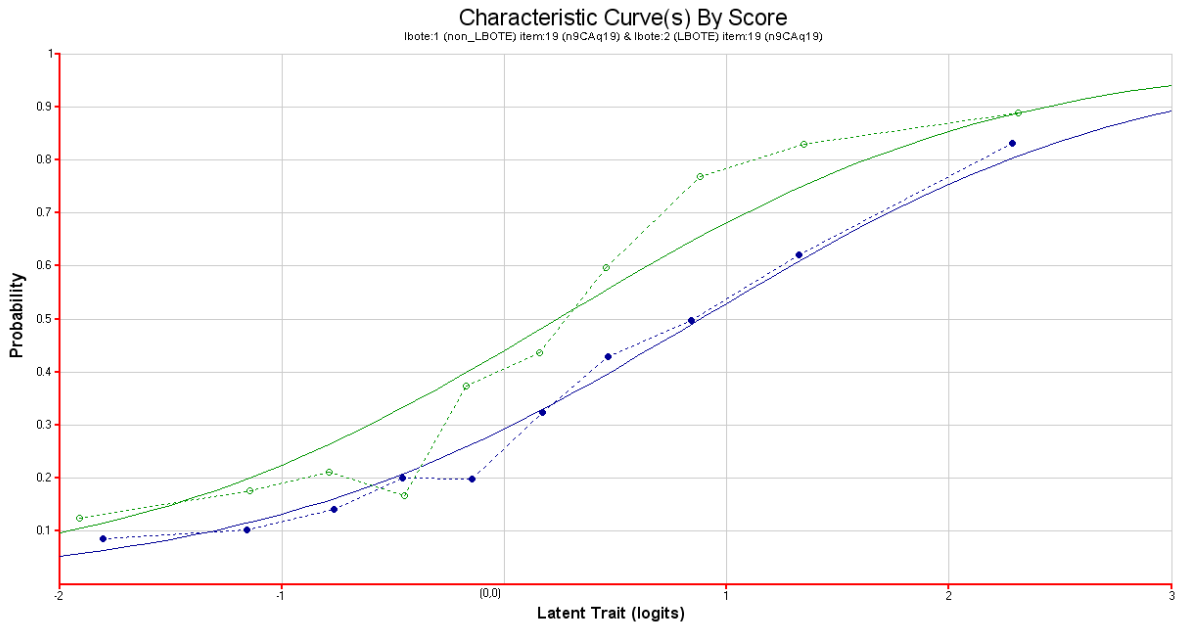


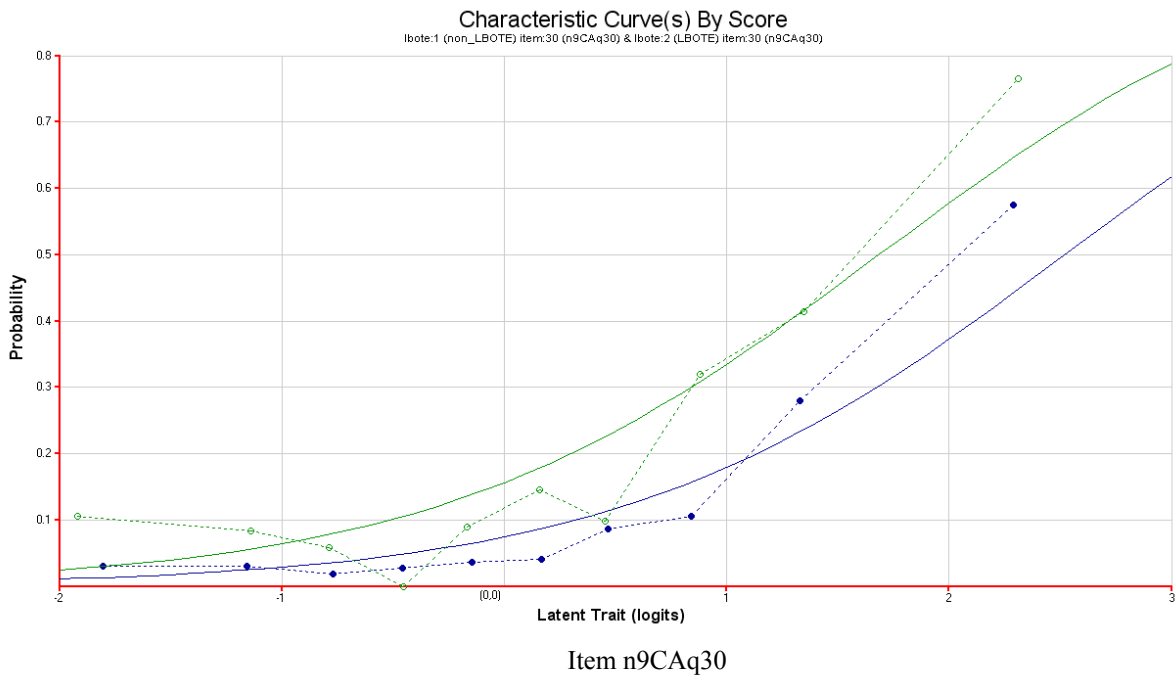
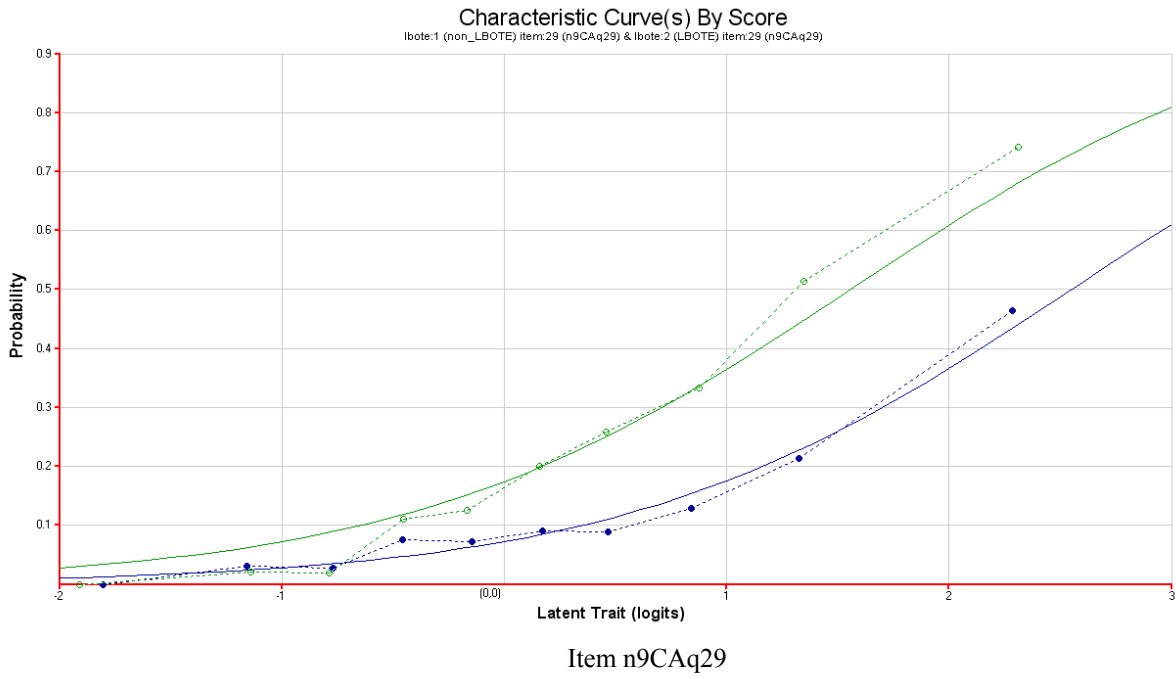


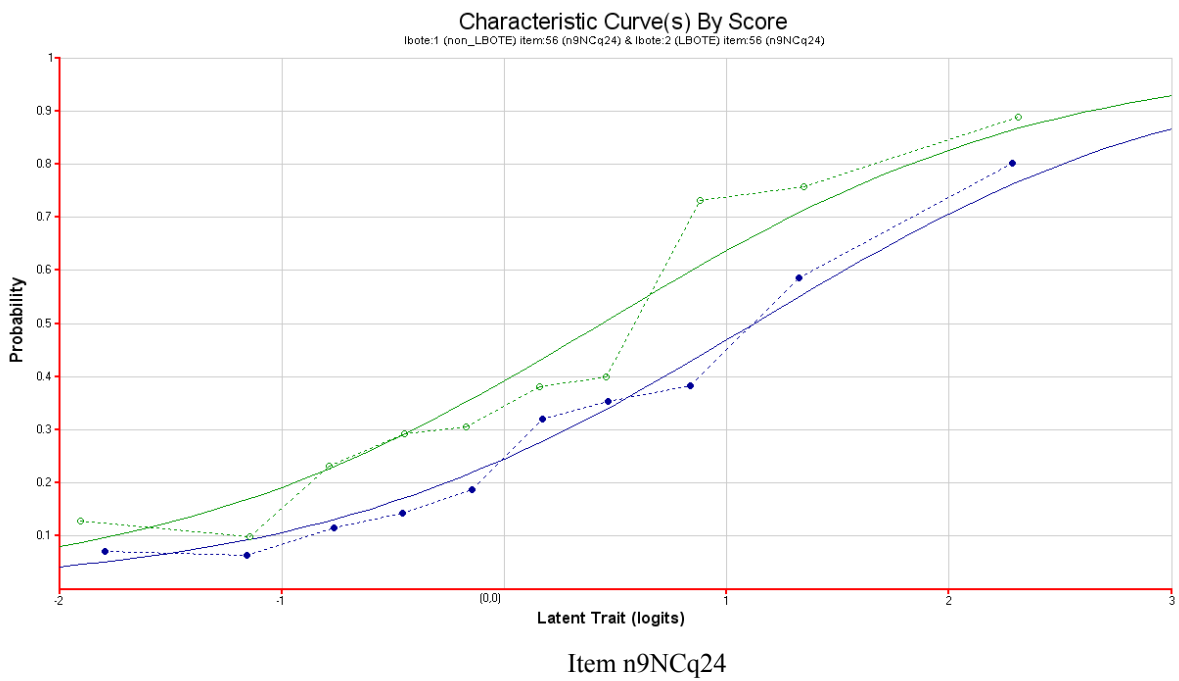
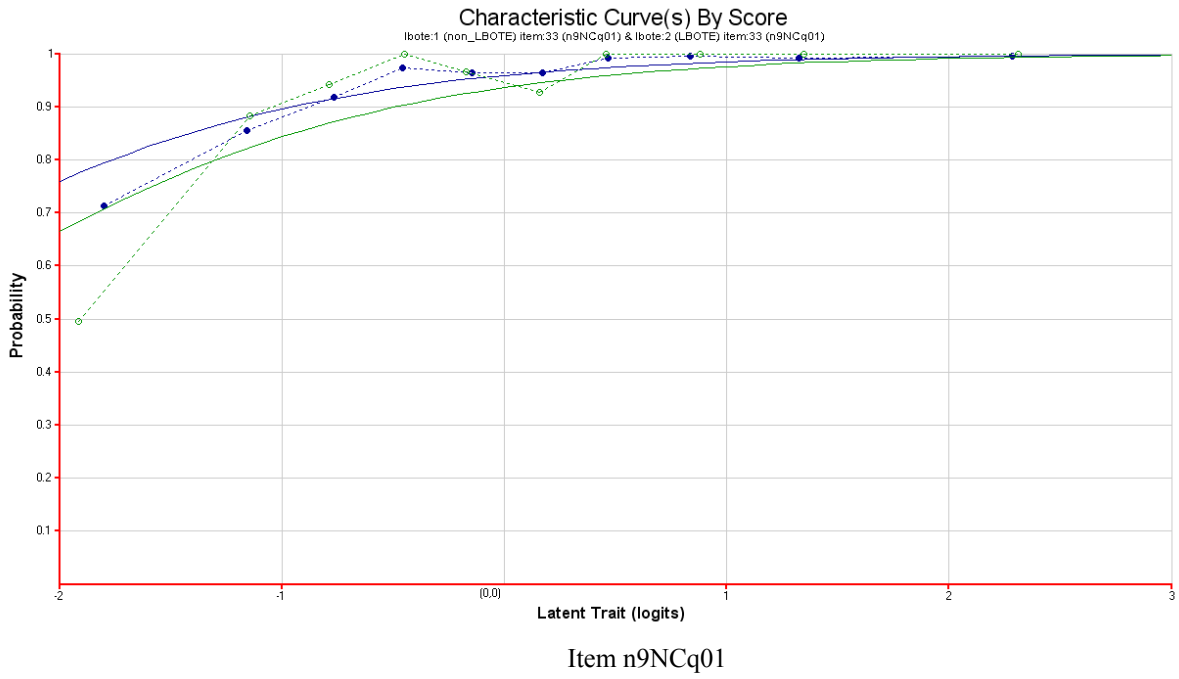


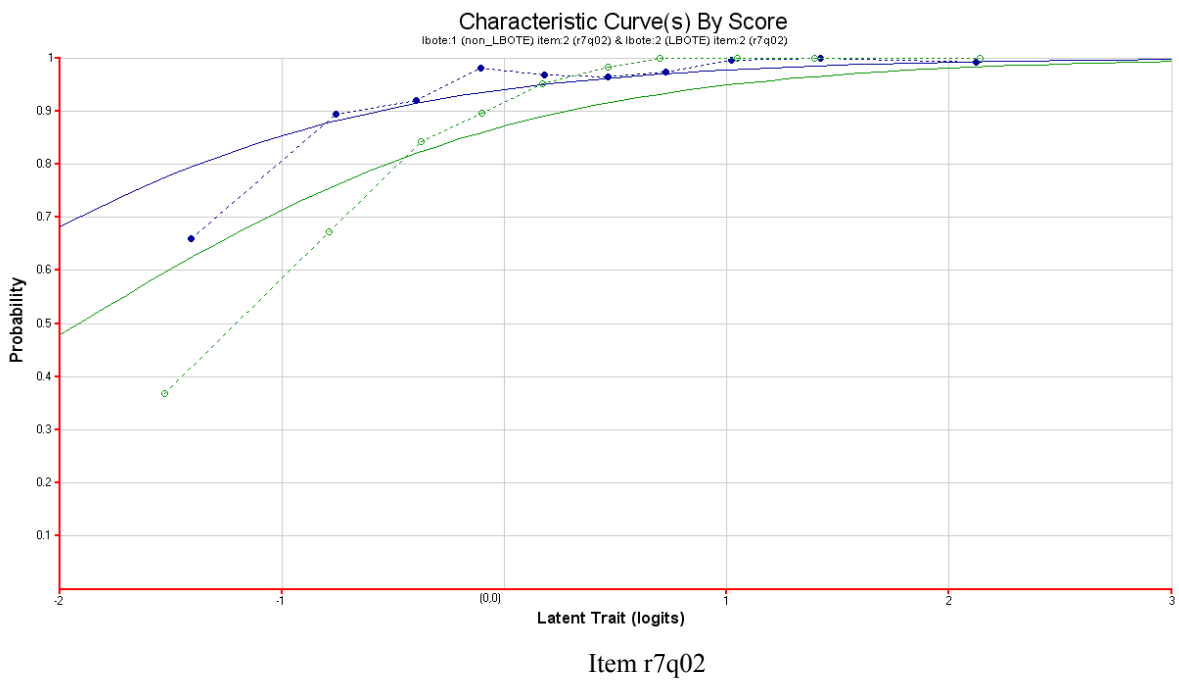
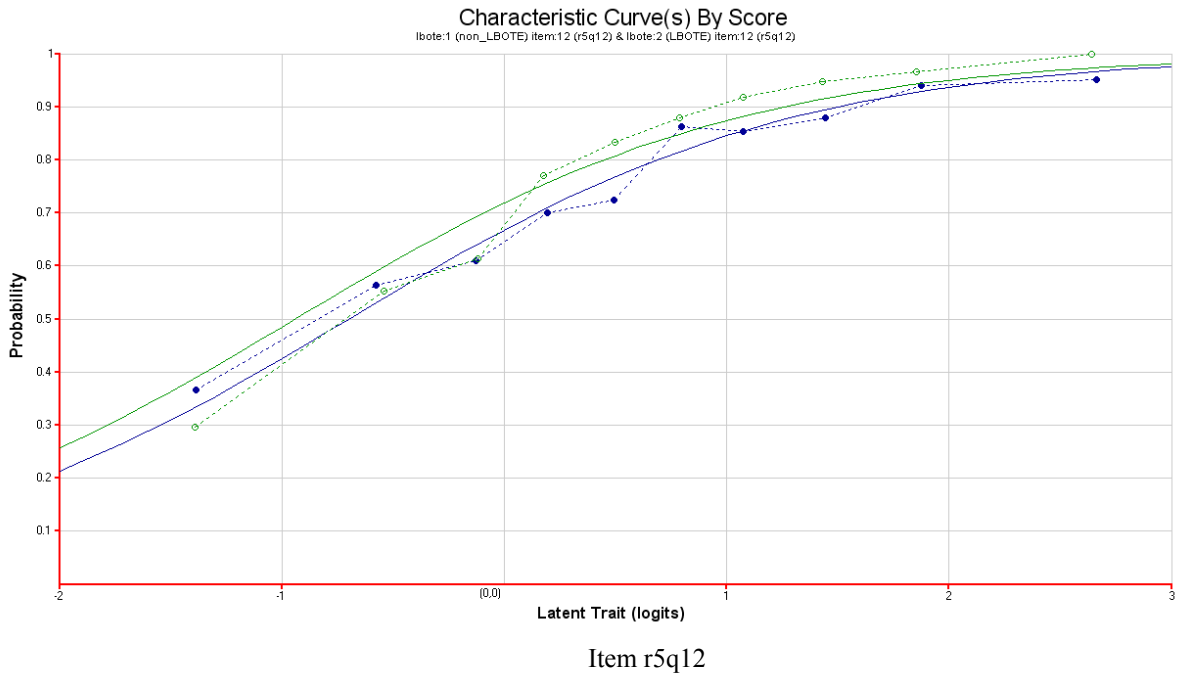


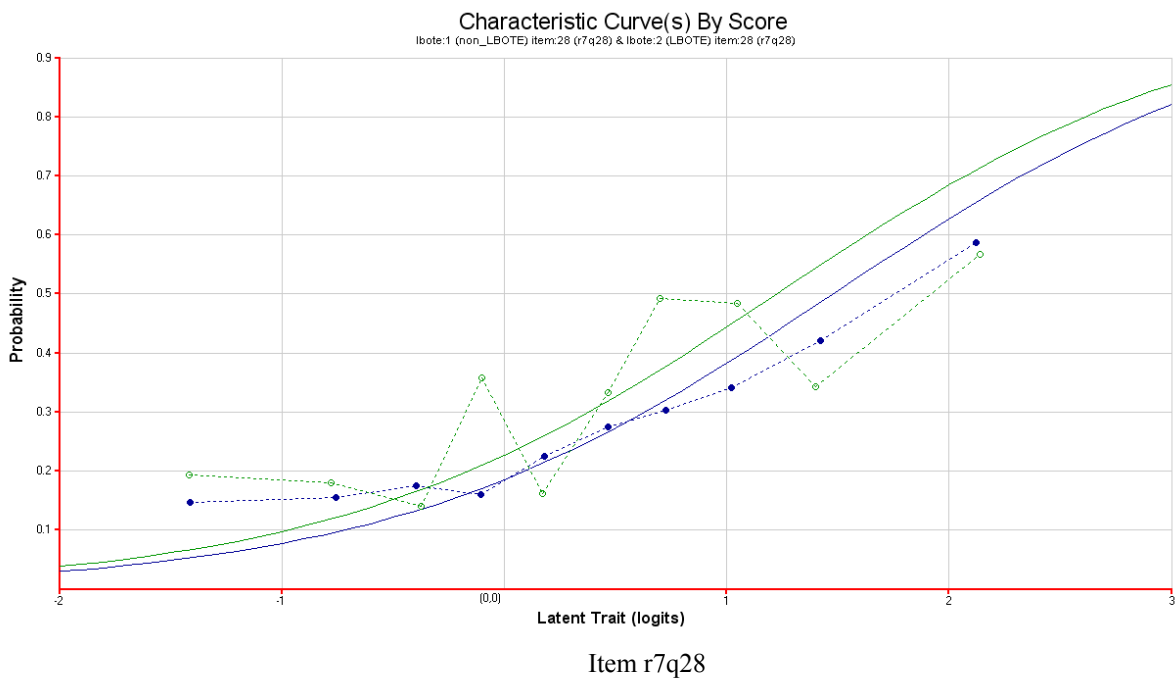
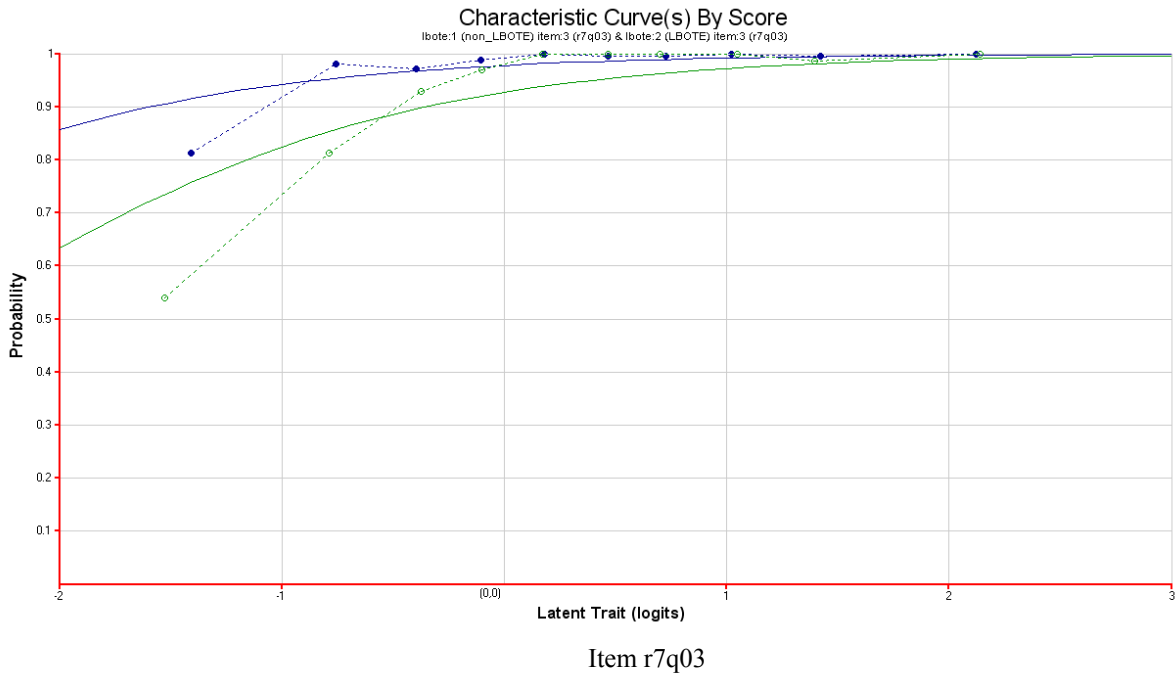


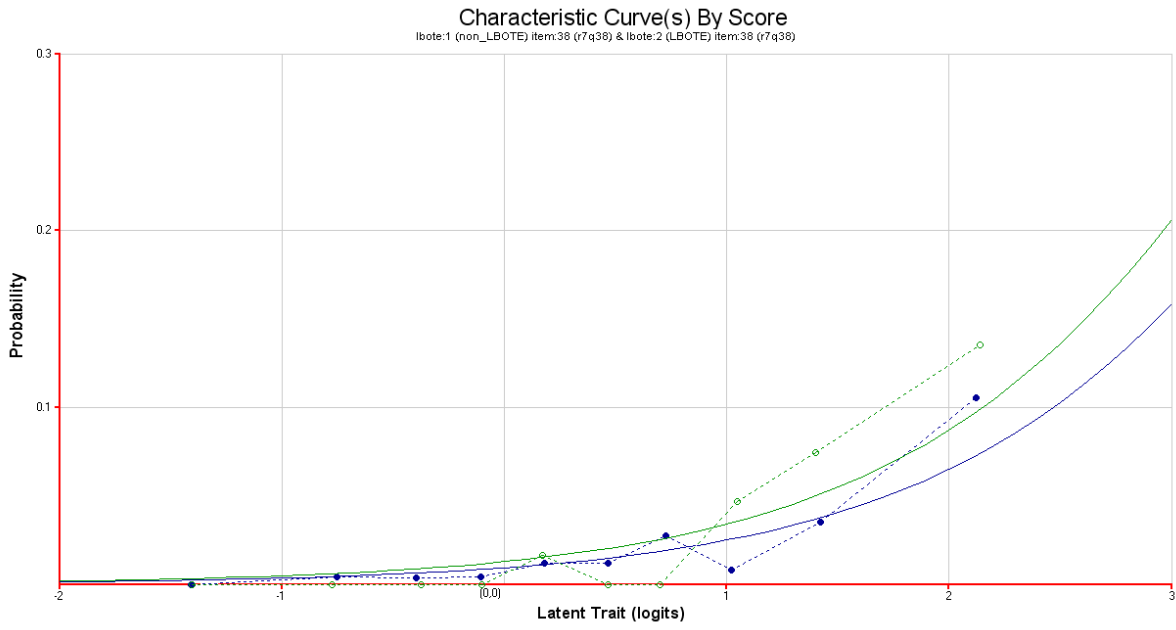




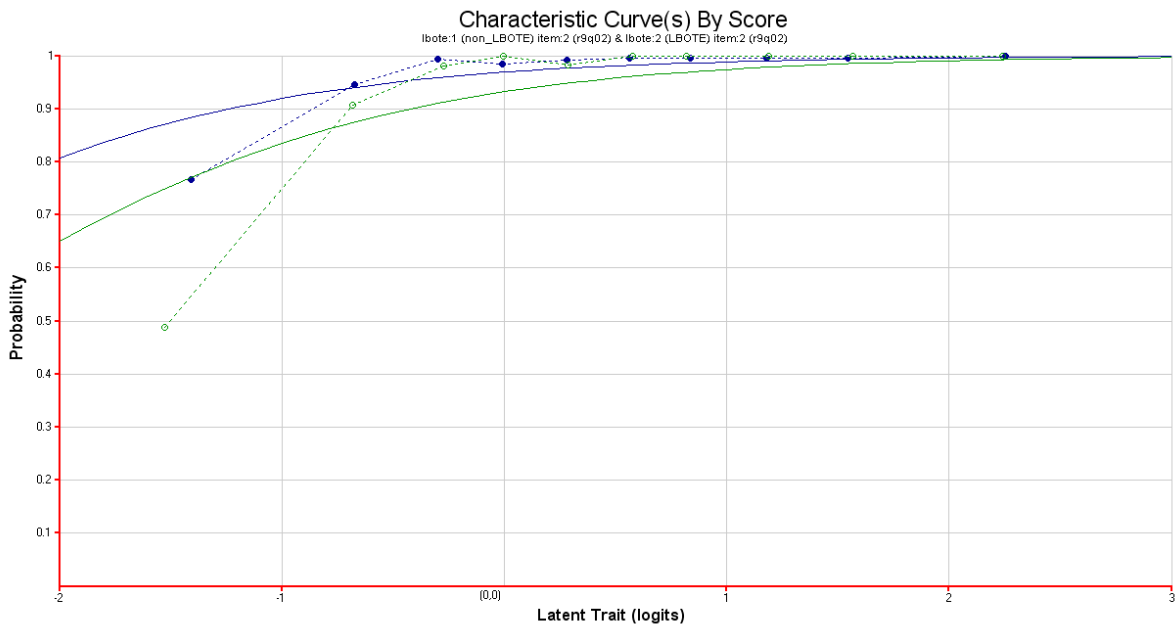




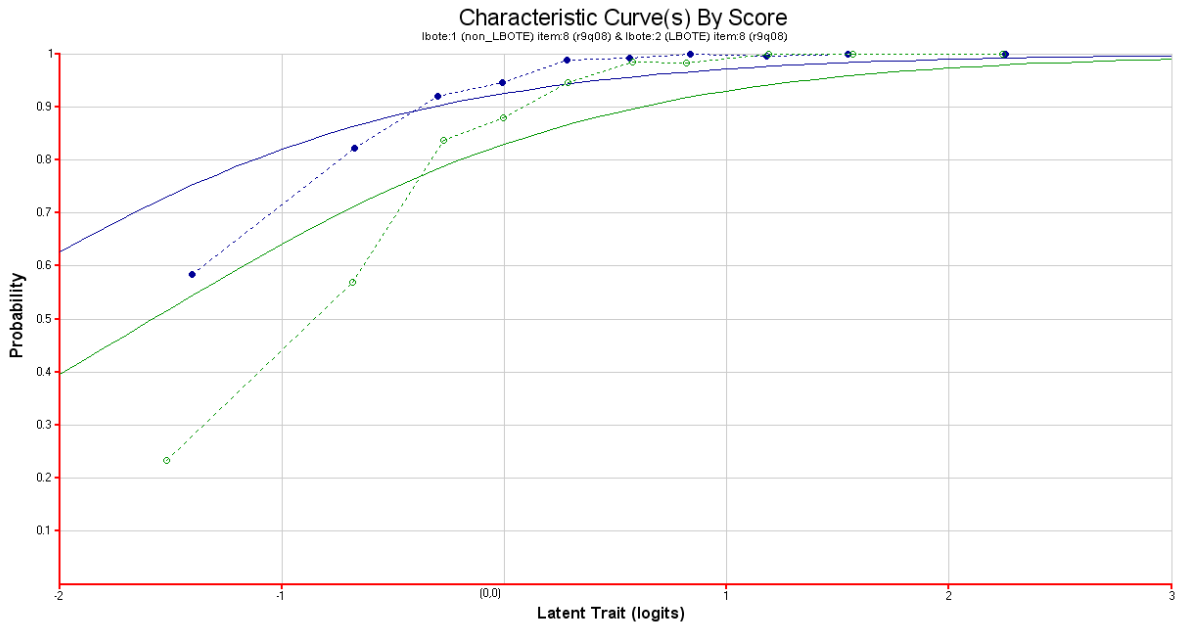




Item r7q38



Item r9q02

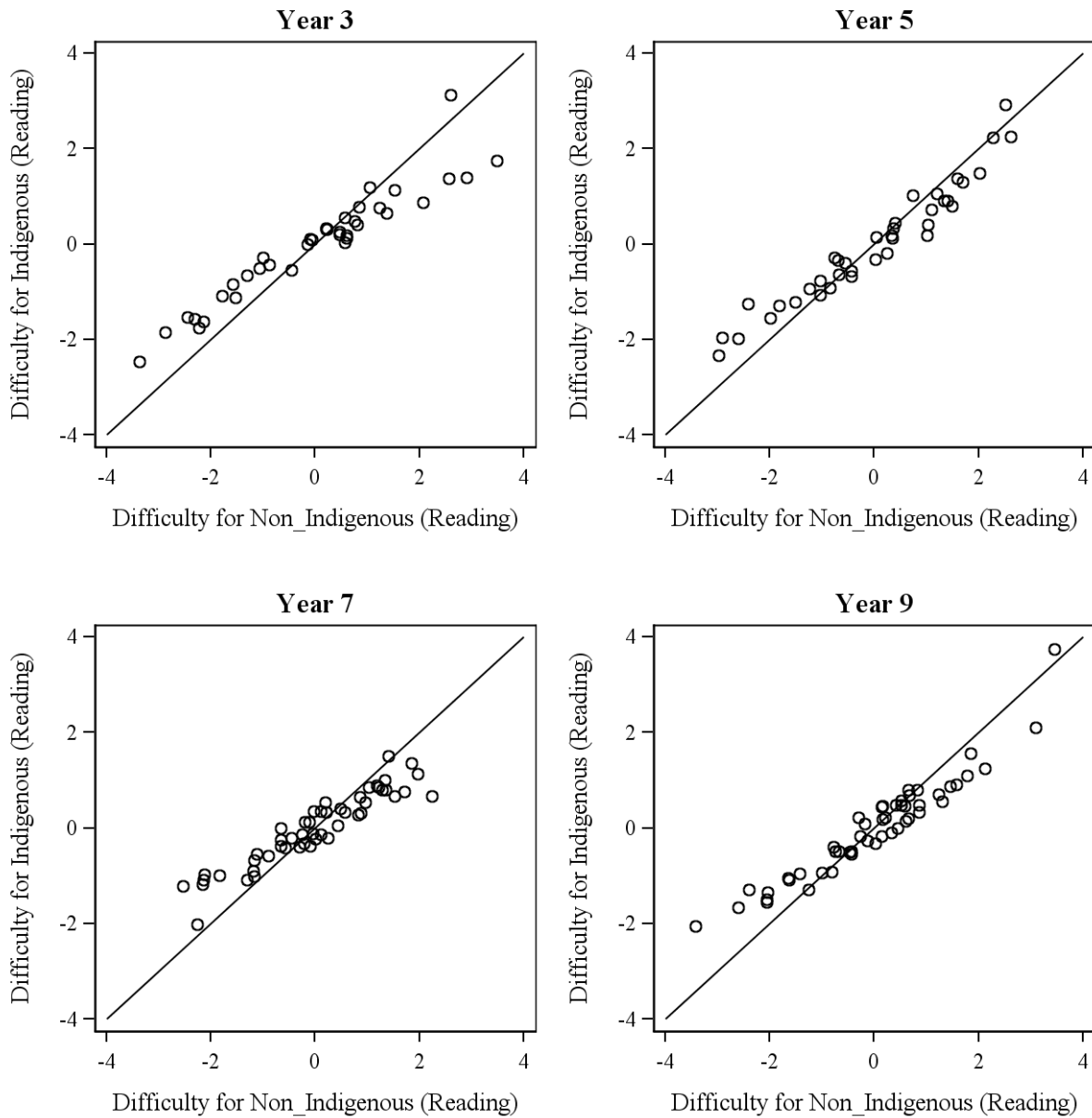


Item r9q08

## APPENDIX H. INDIGENOUS STATUS DIF ANALYSIS

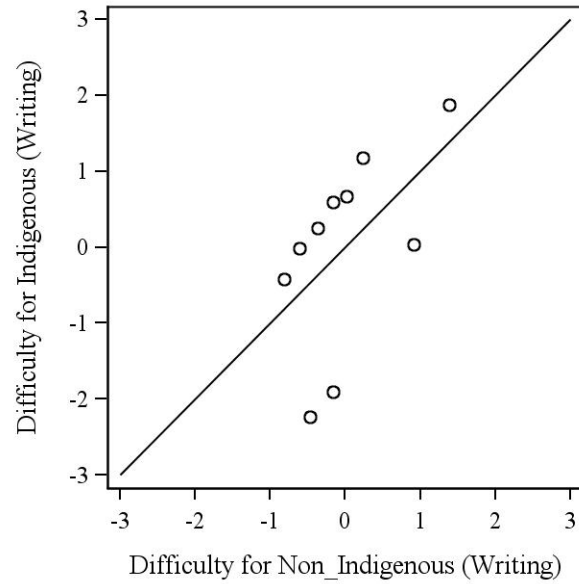
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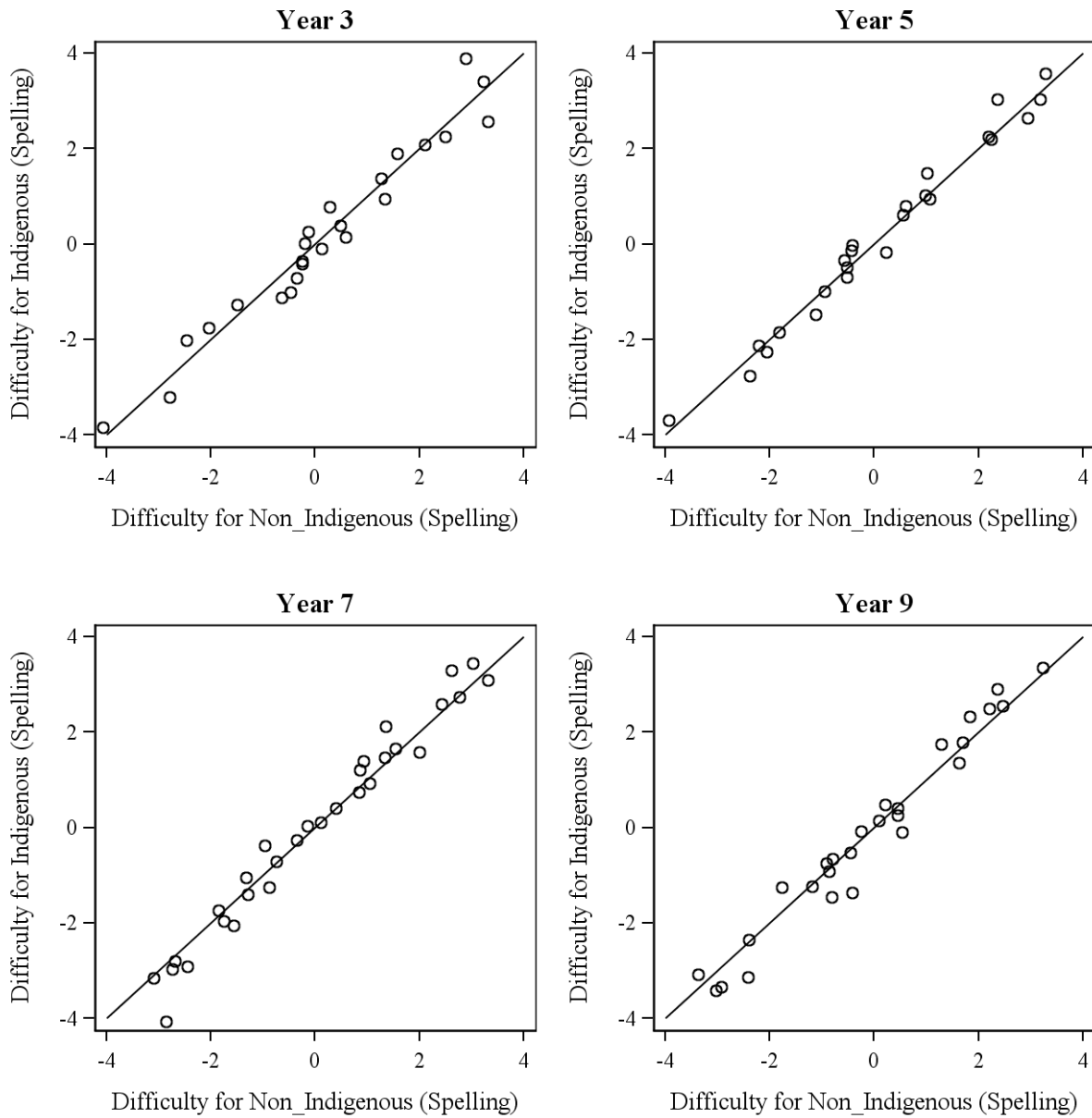
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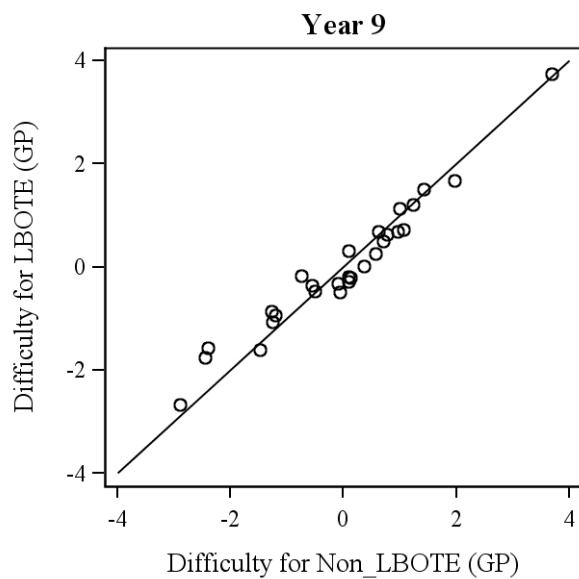
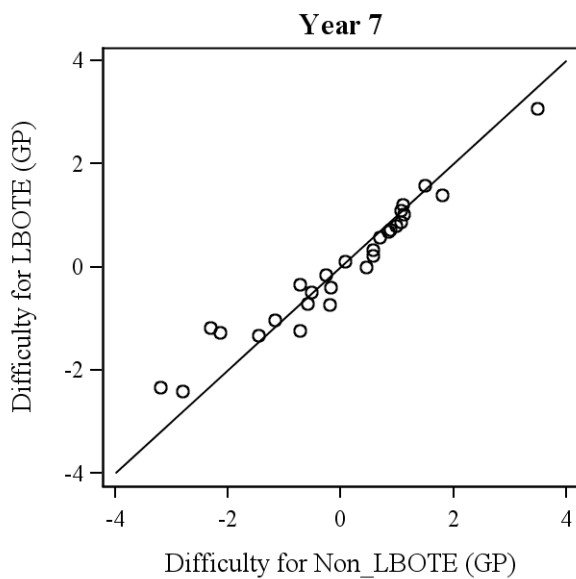
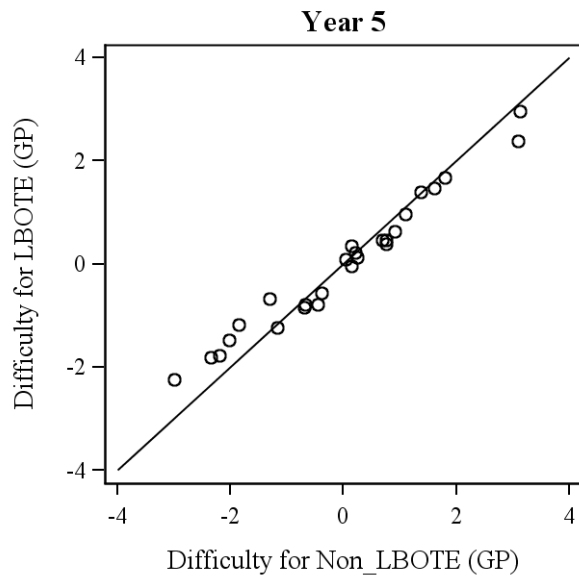
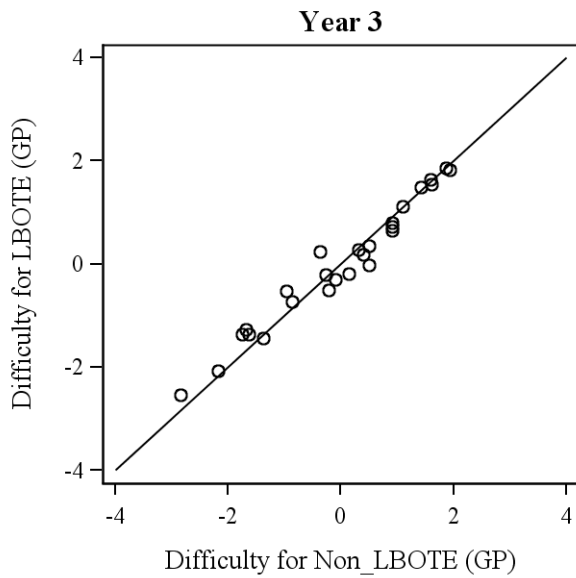


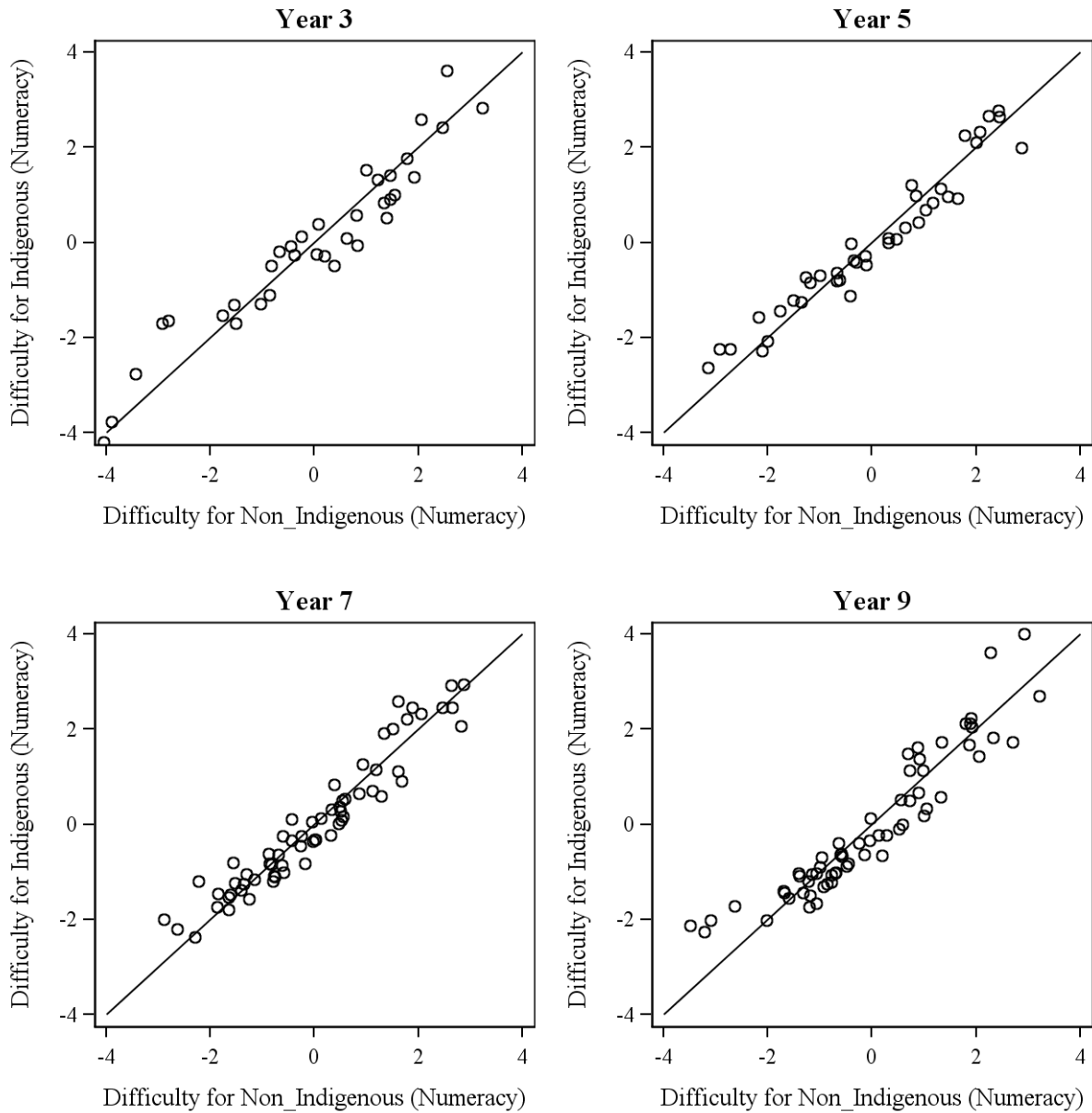


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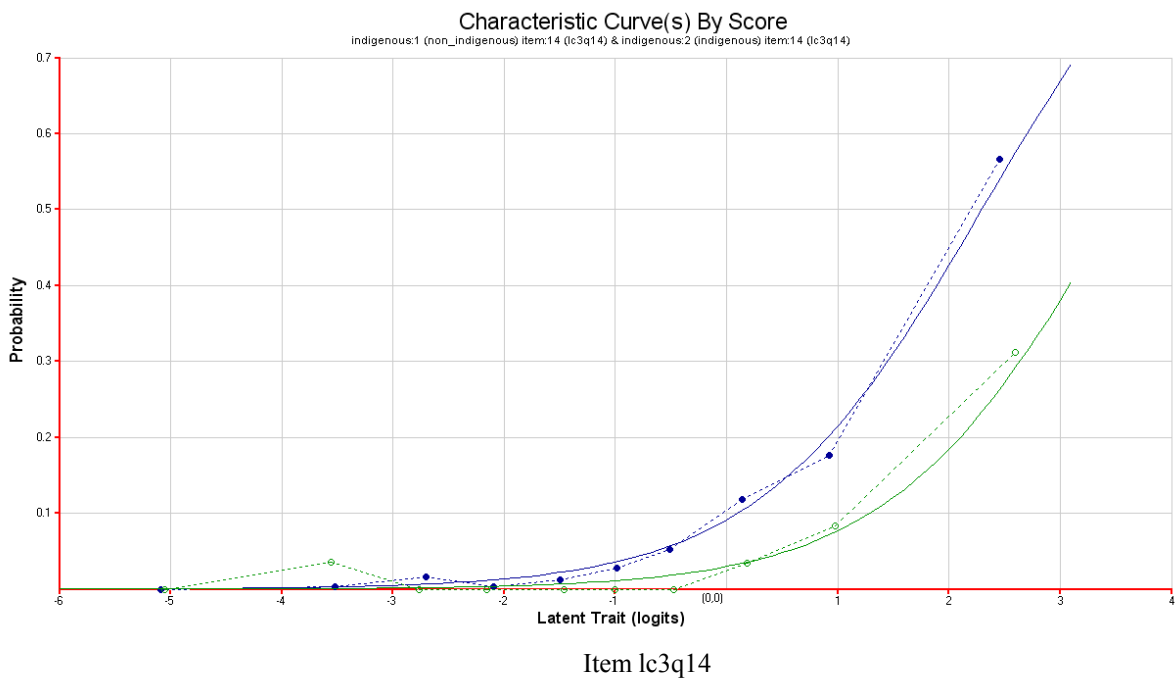
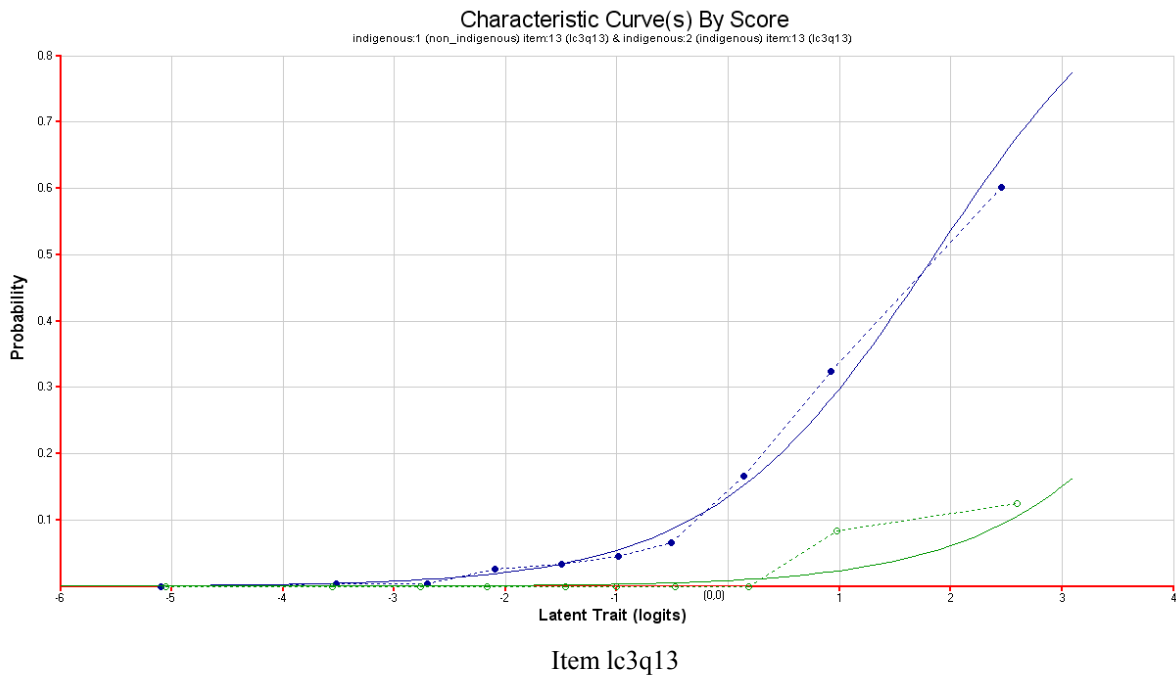
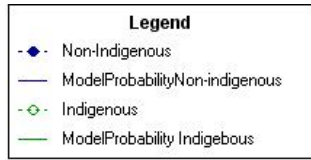


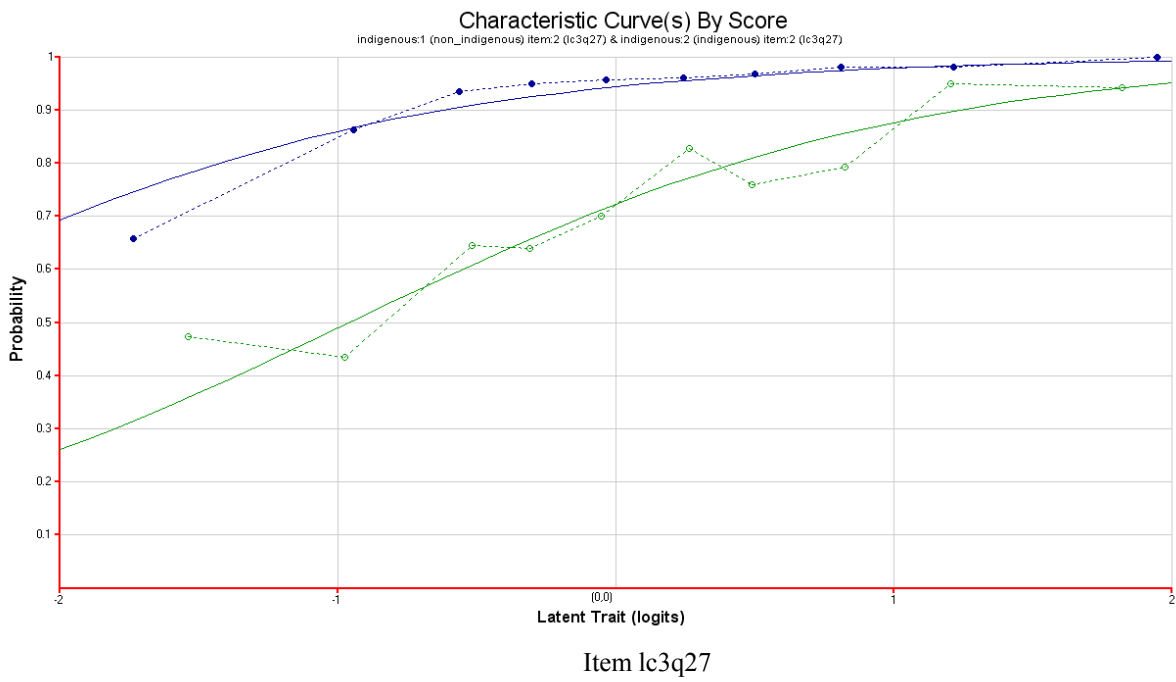
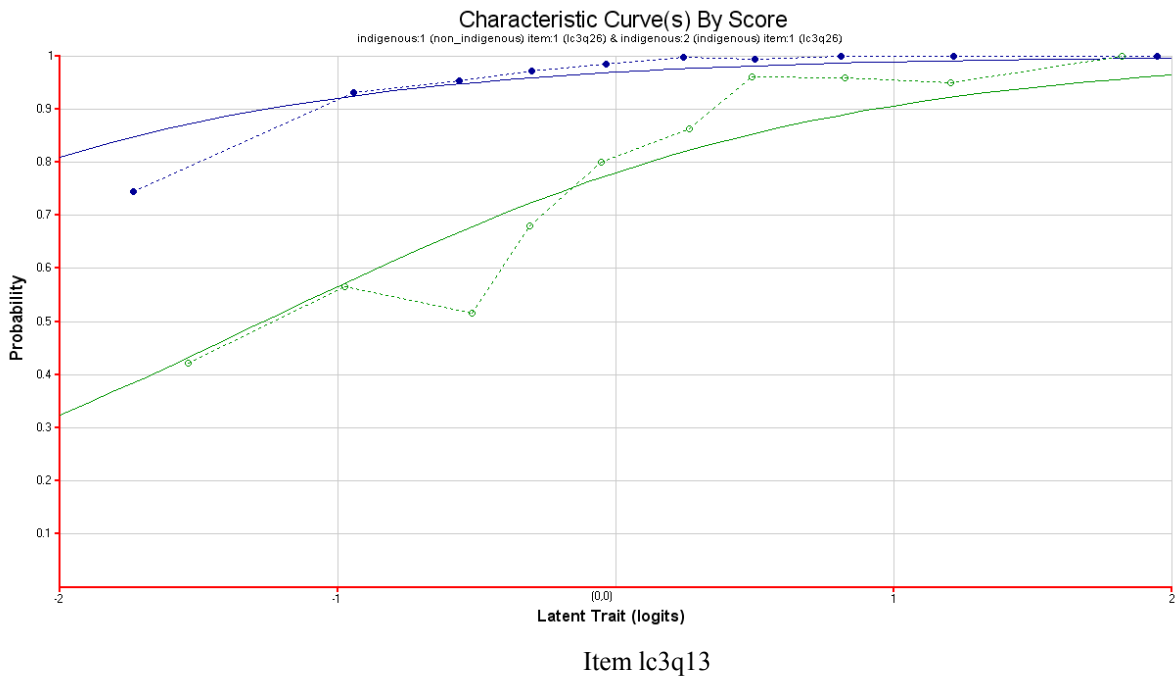
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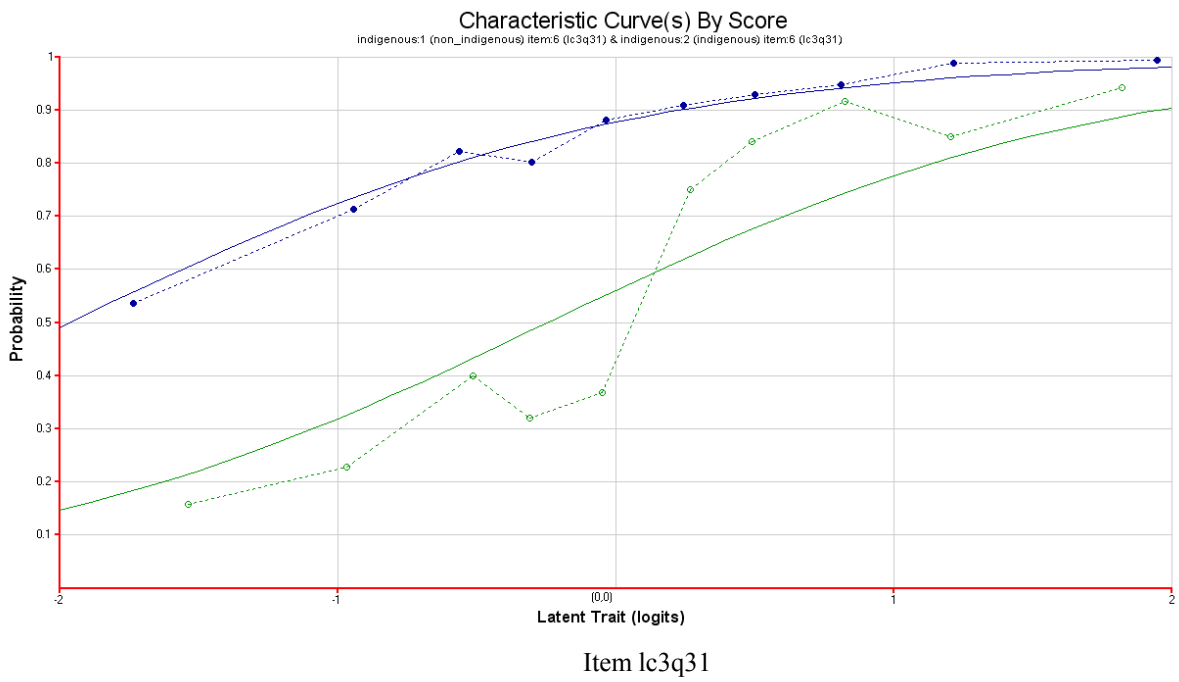
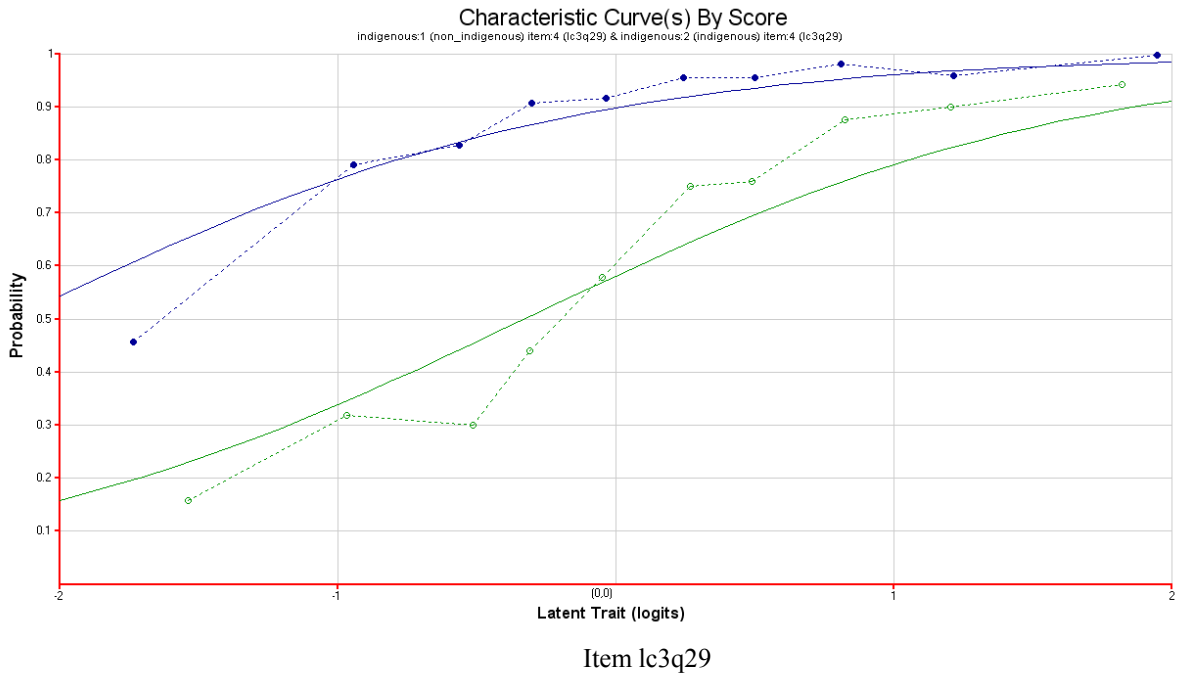
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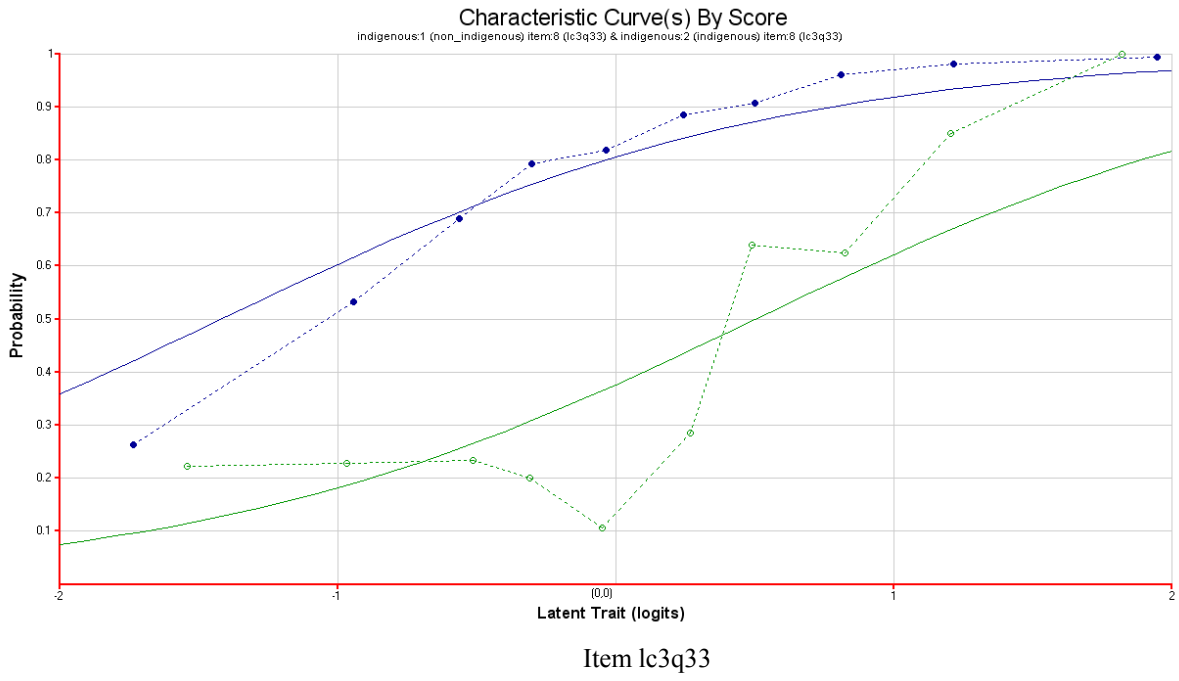
**H.5 Centred Item Locations of Indigenous and Non-Indigenous Students in Numeracy (2014)**

**H.6 Item DIF Plots for Items Showing Indigenous Status DIF**

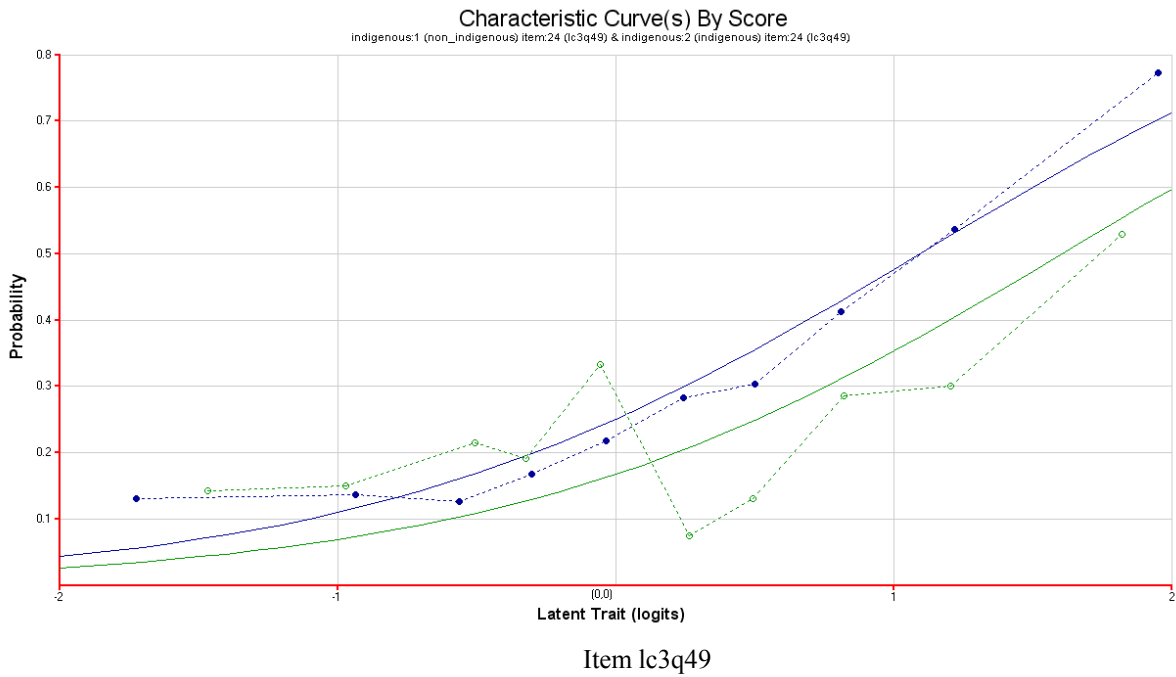
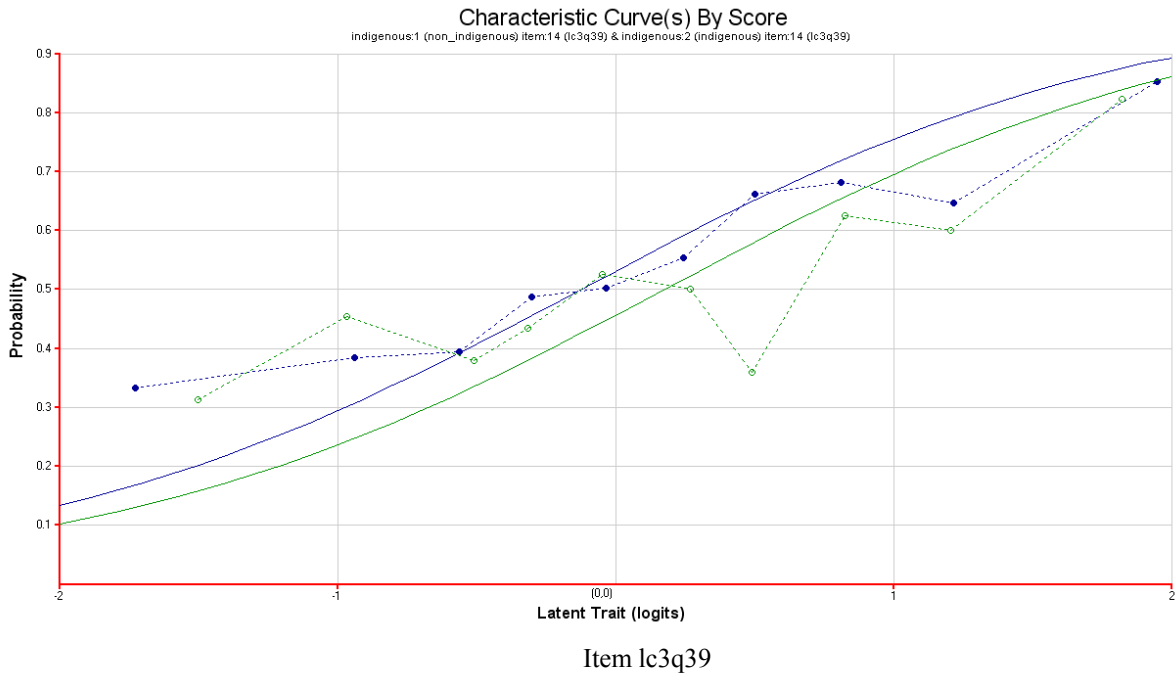


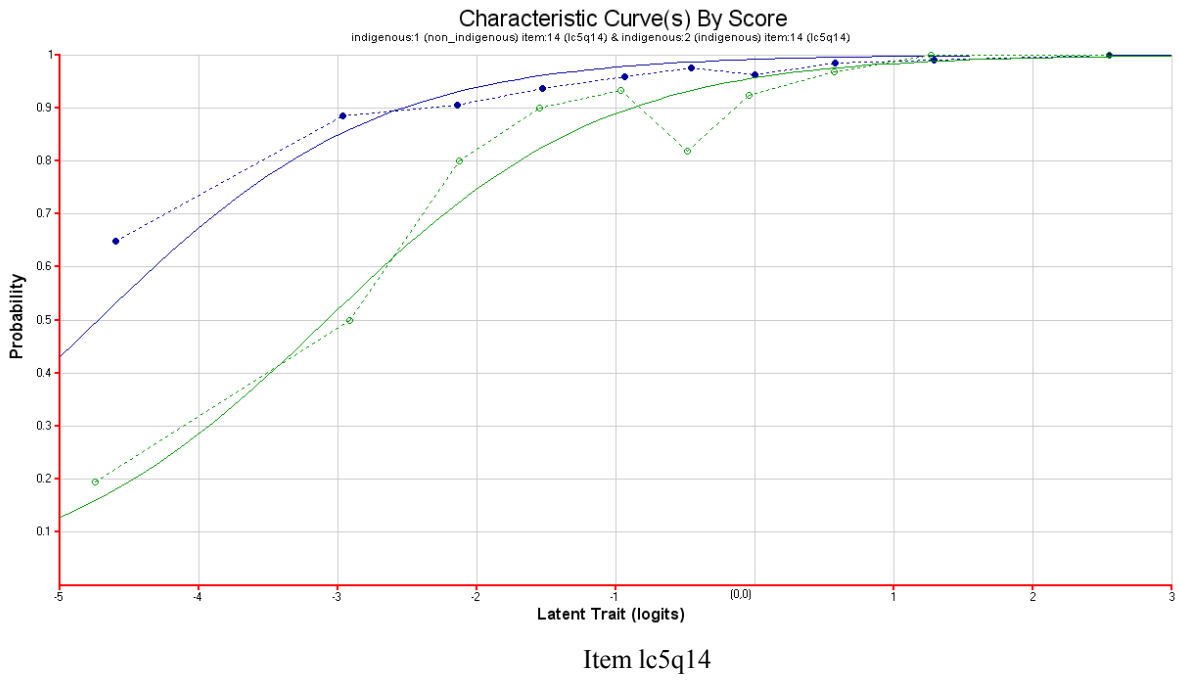
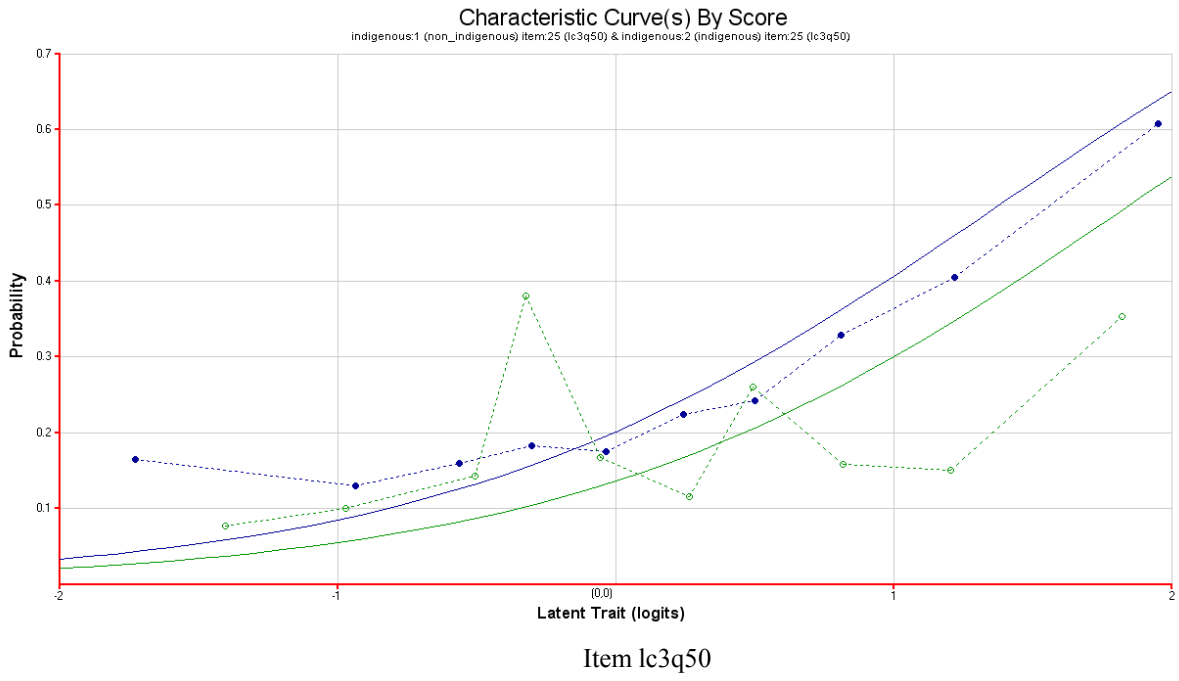


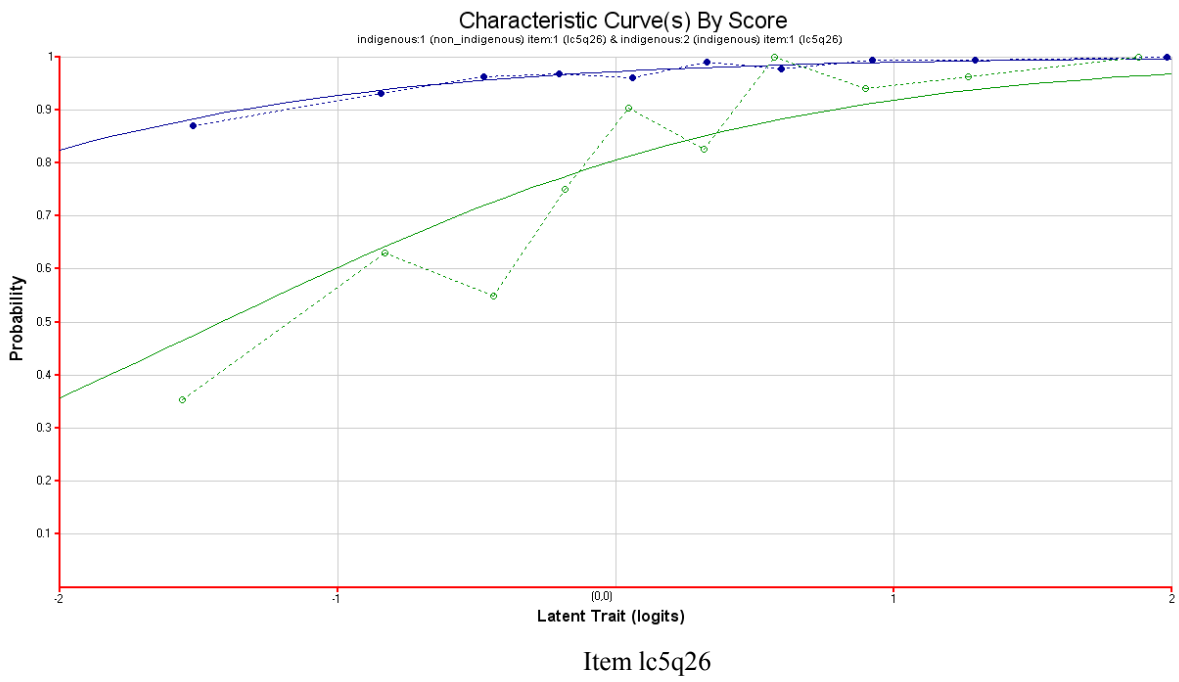
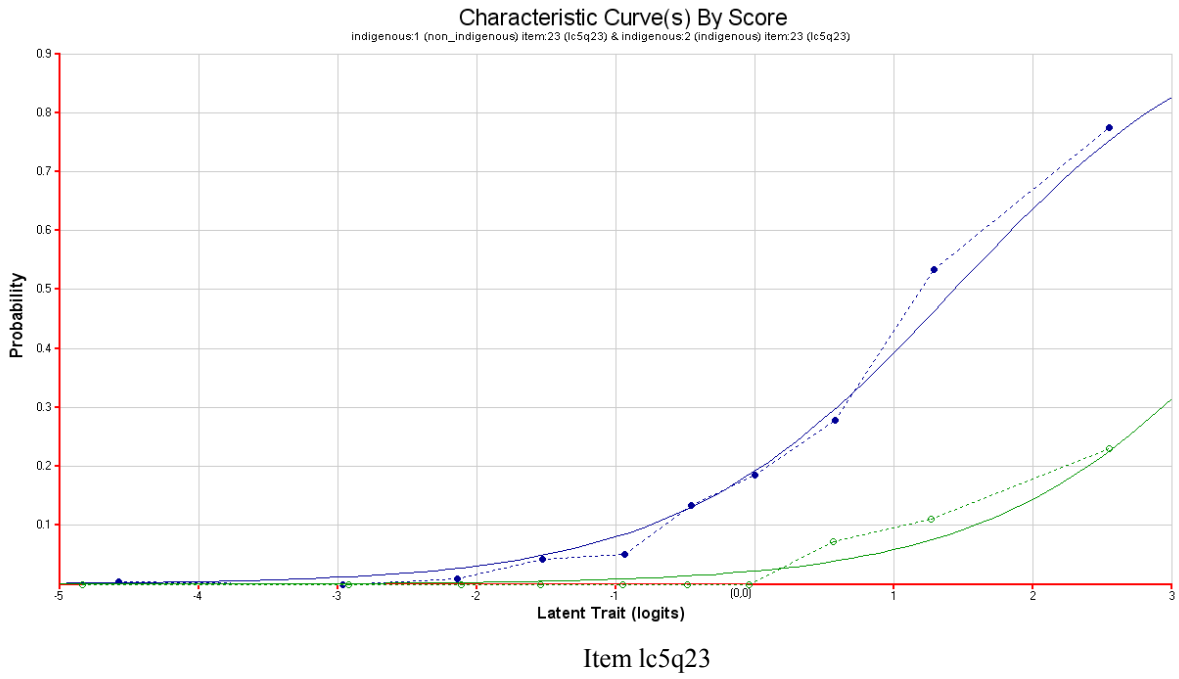


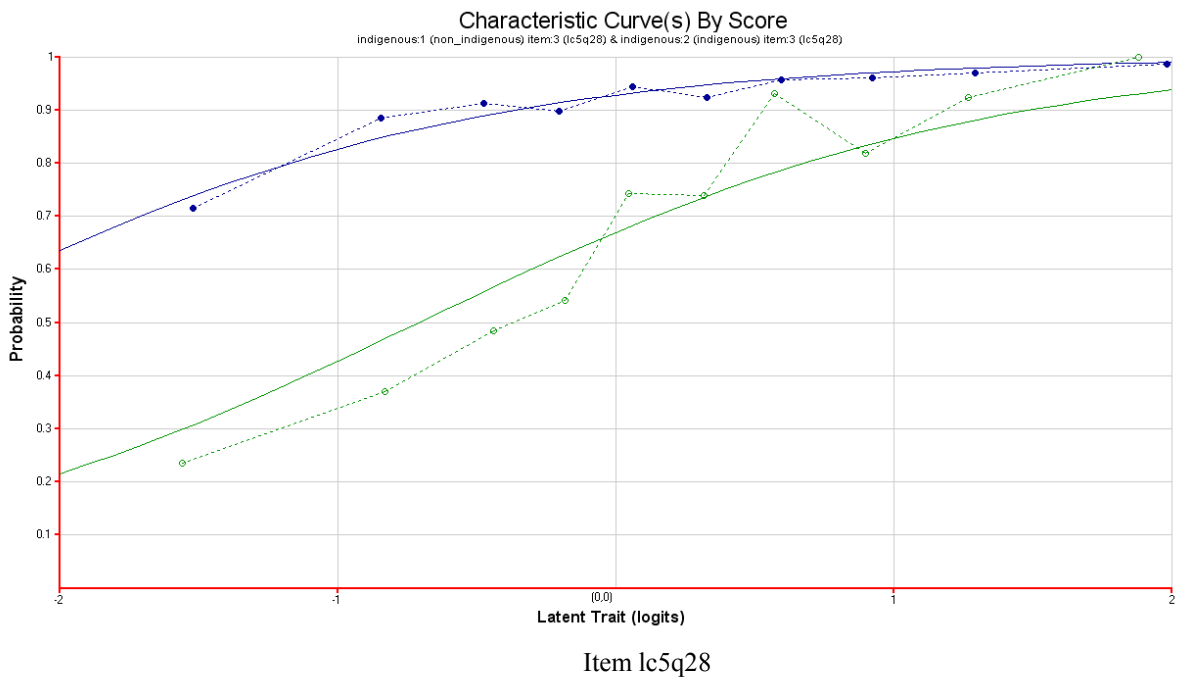
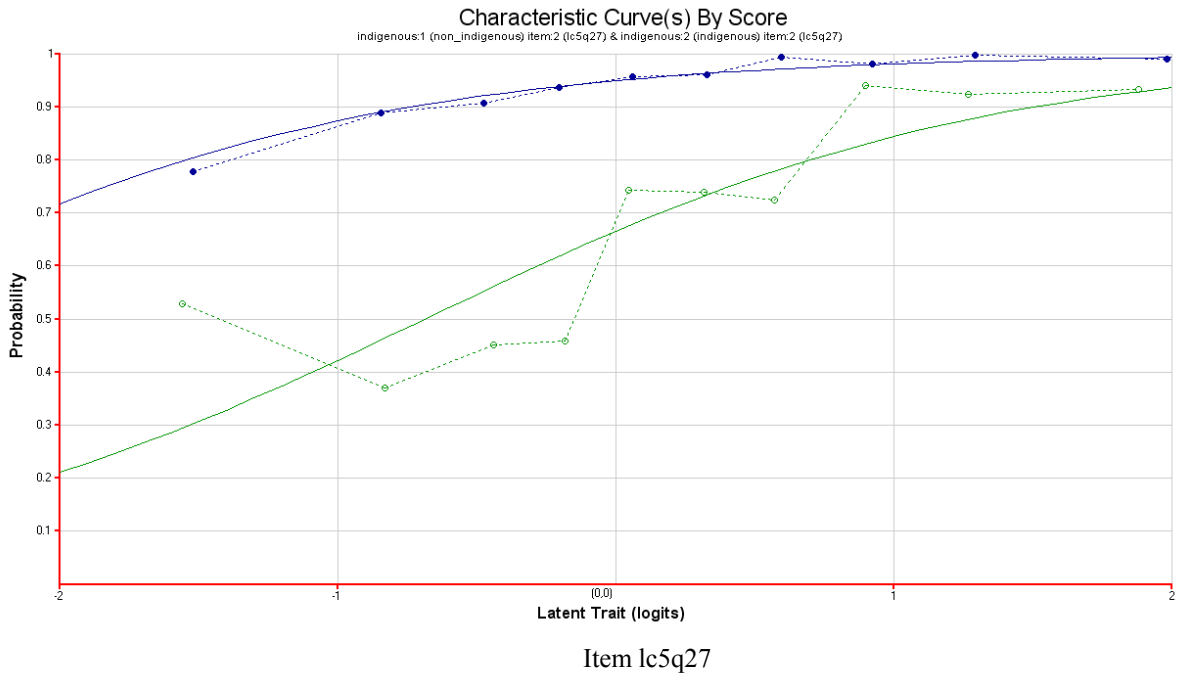


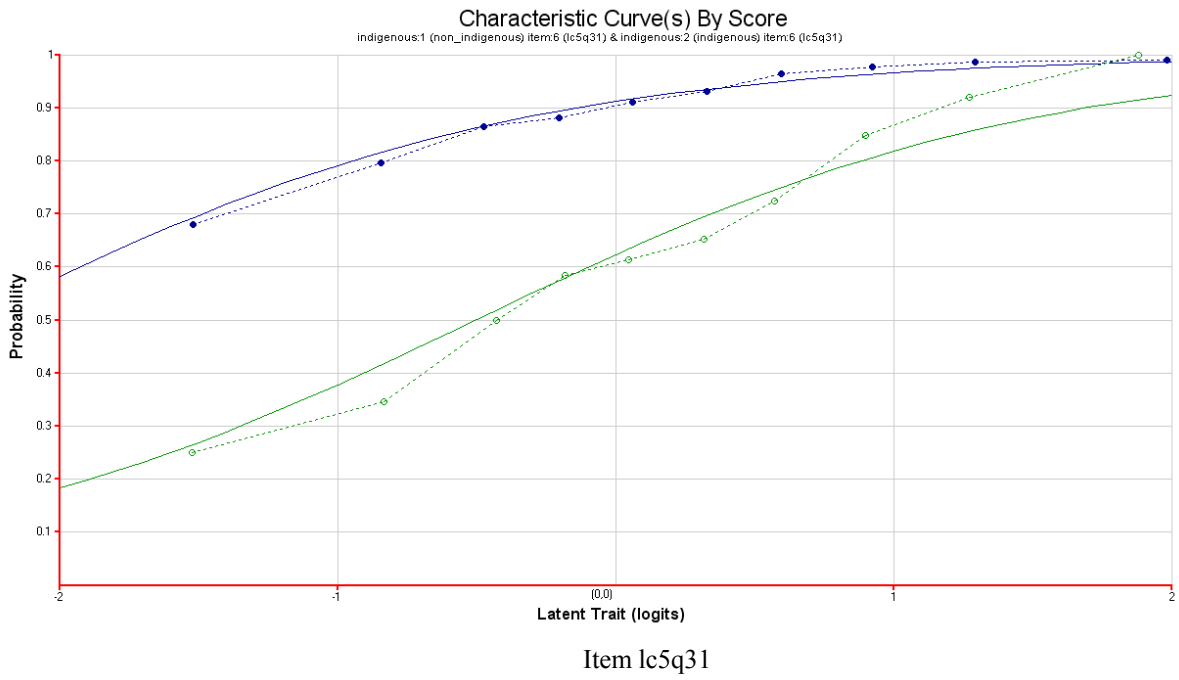
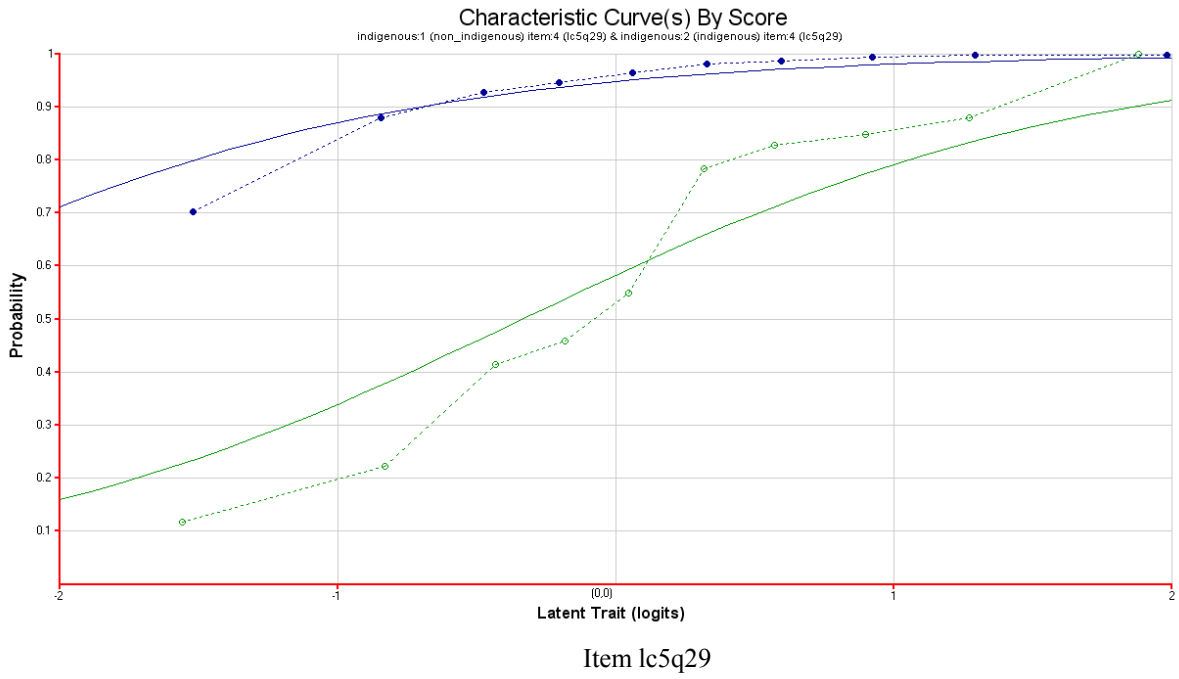


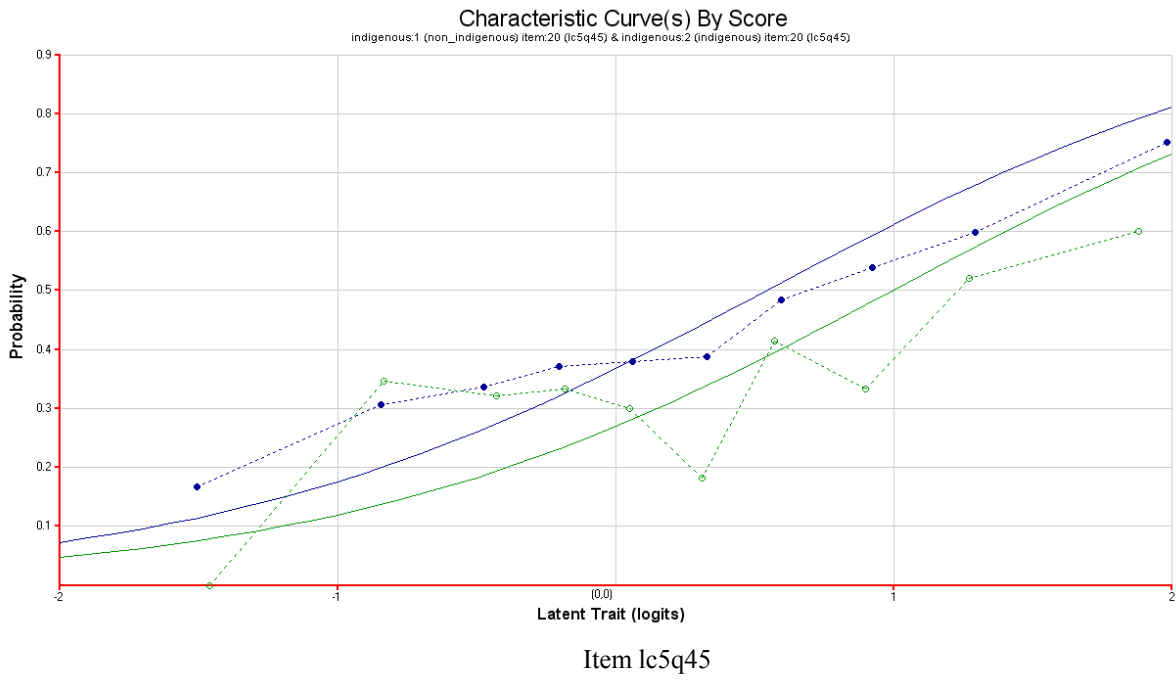
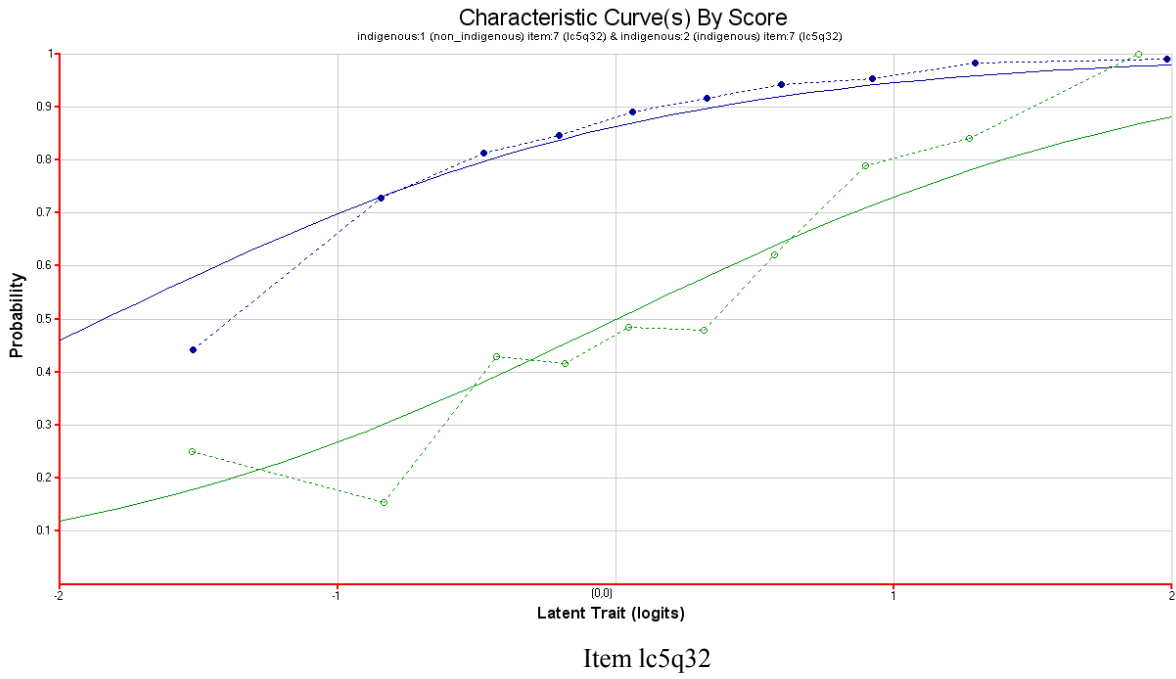


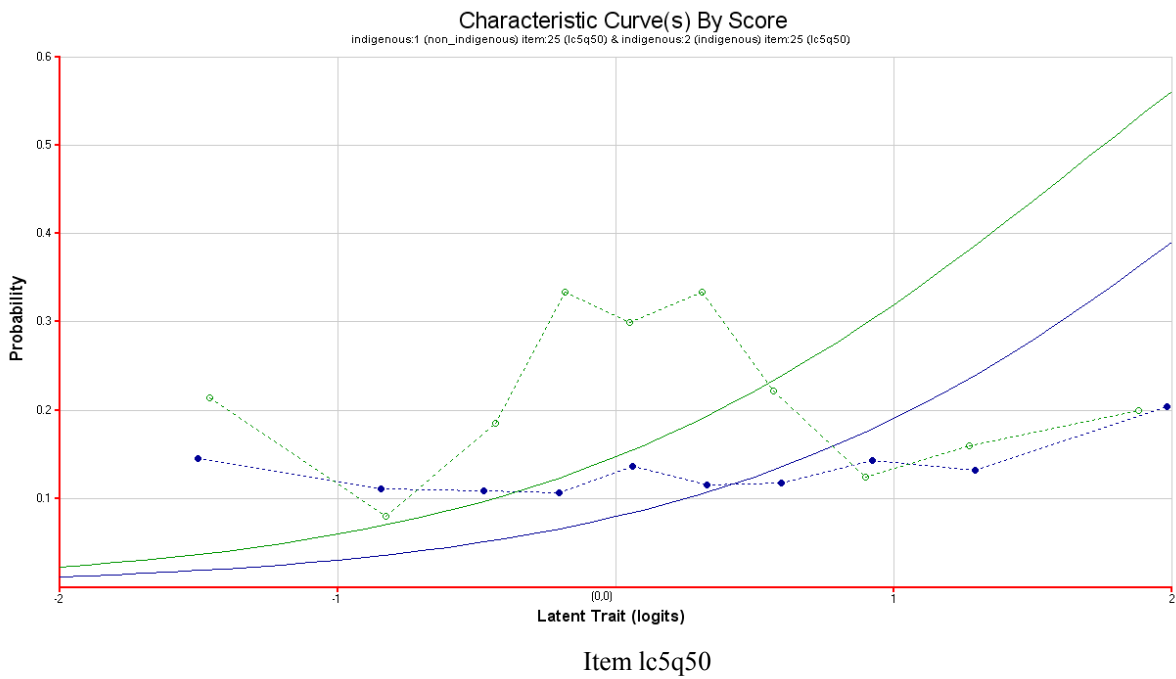
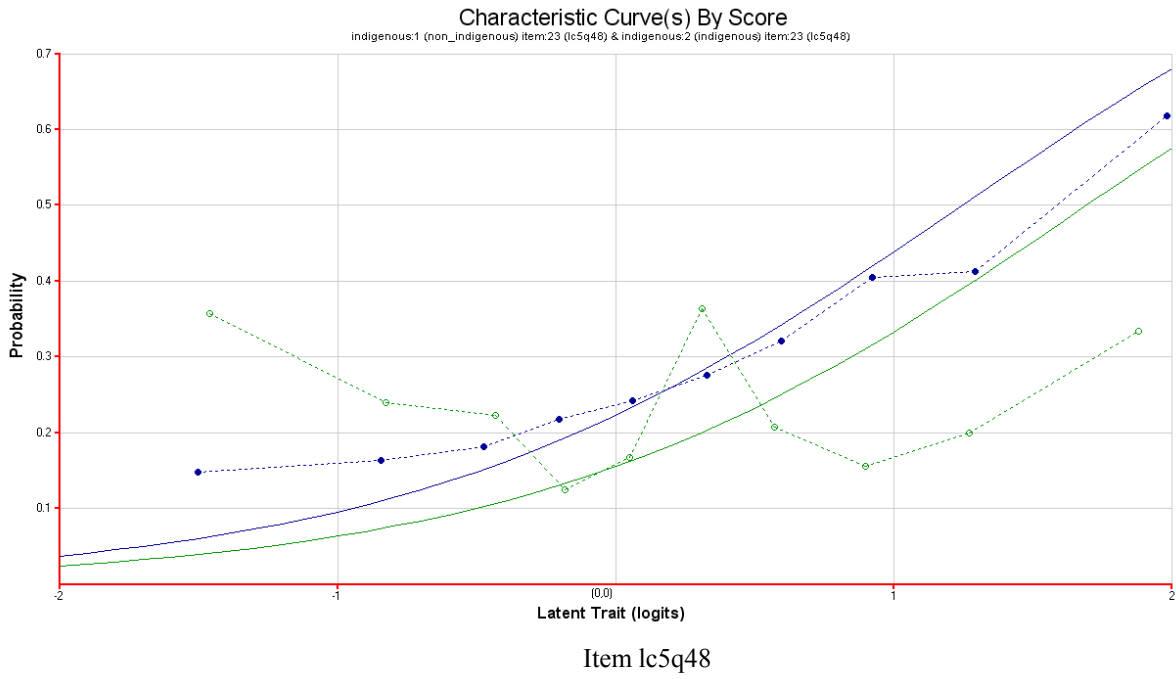


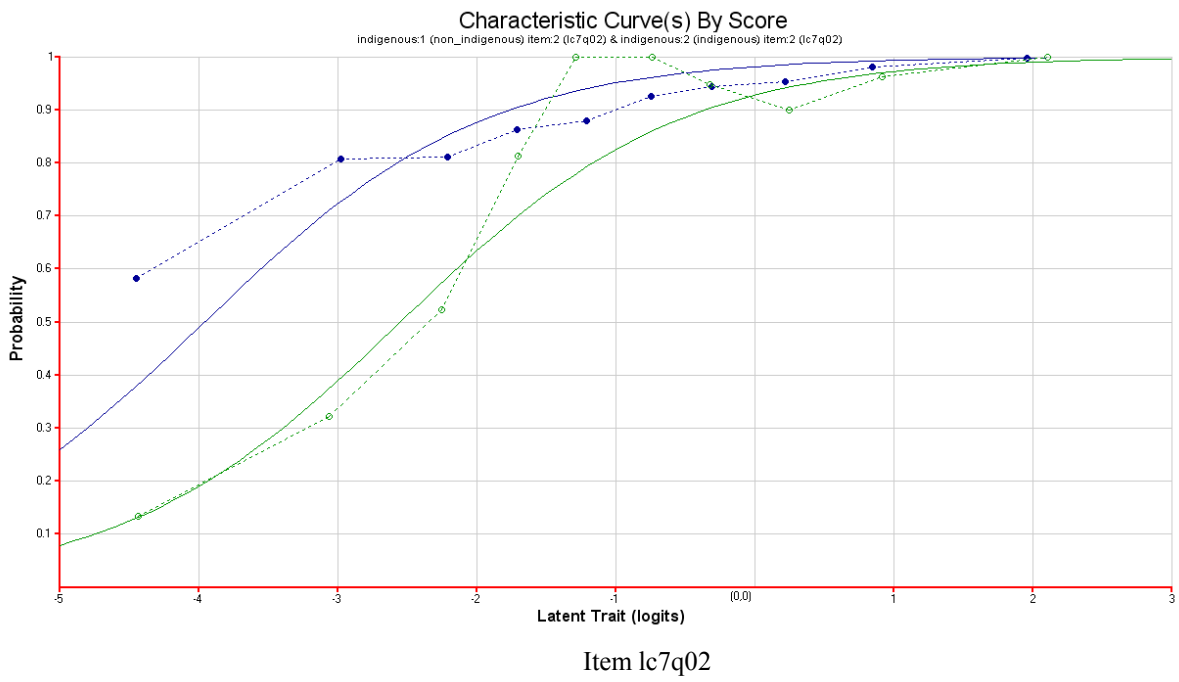
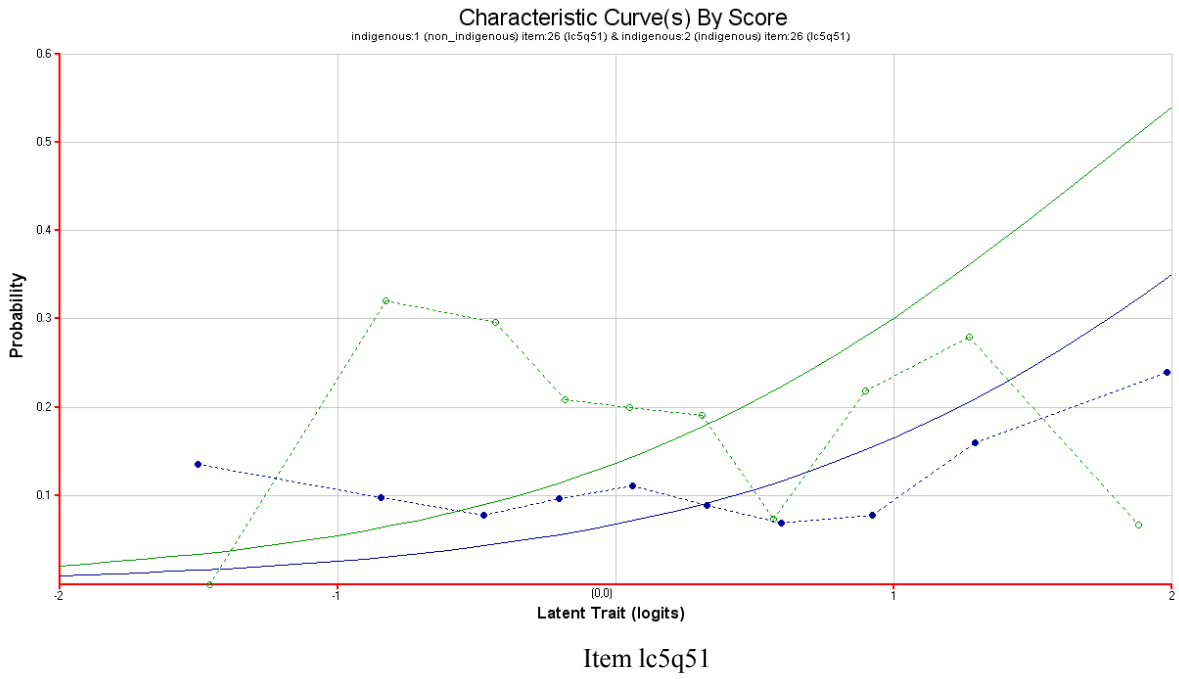




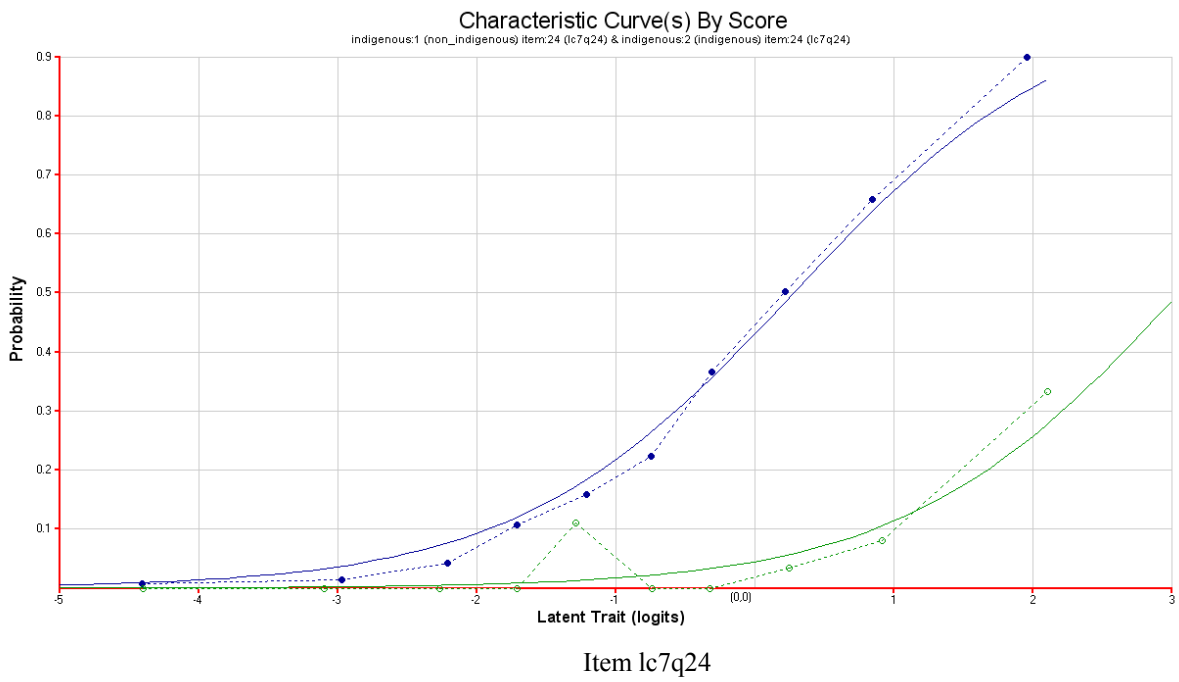
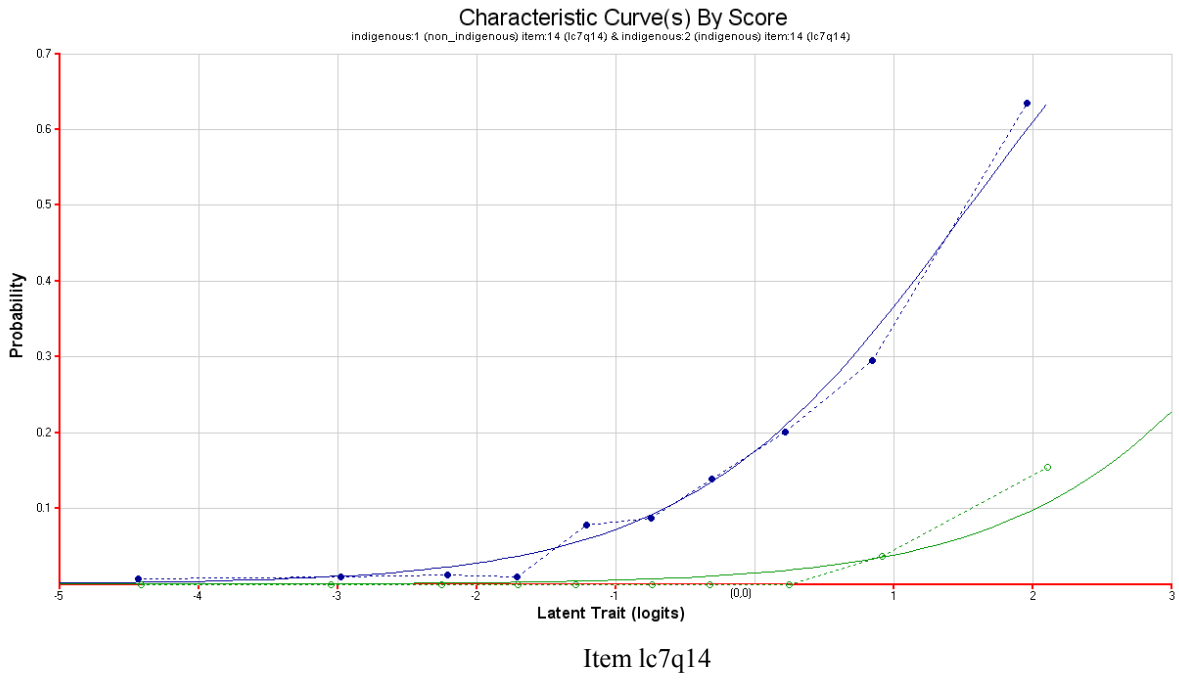


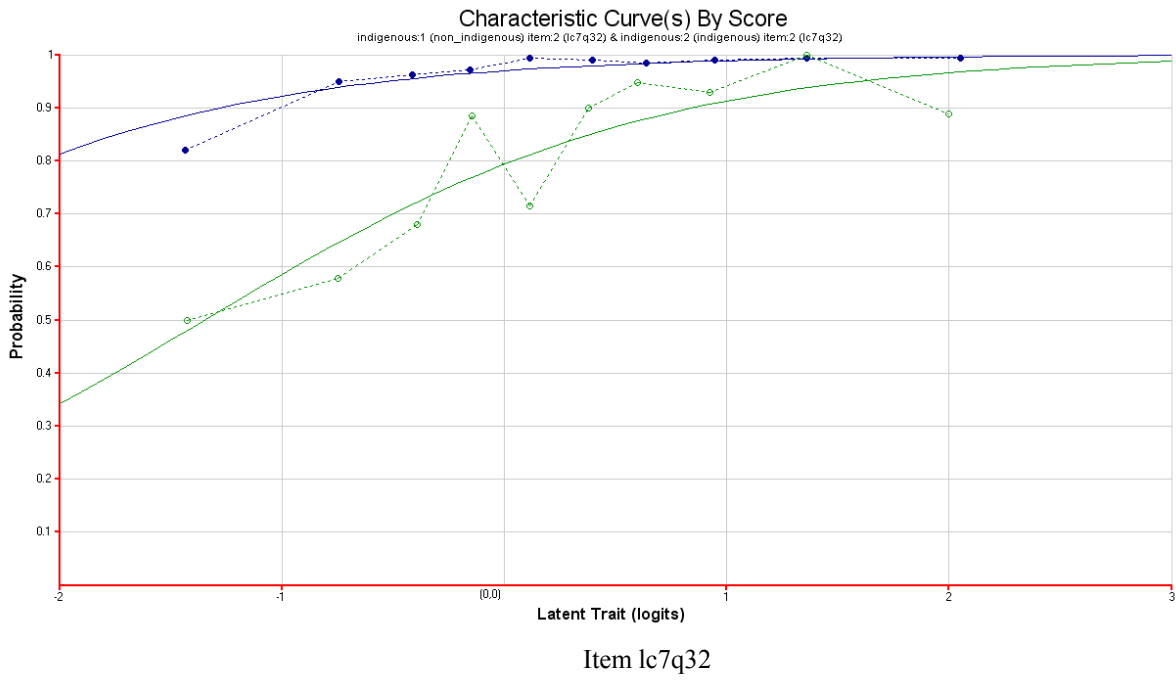
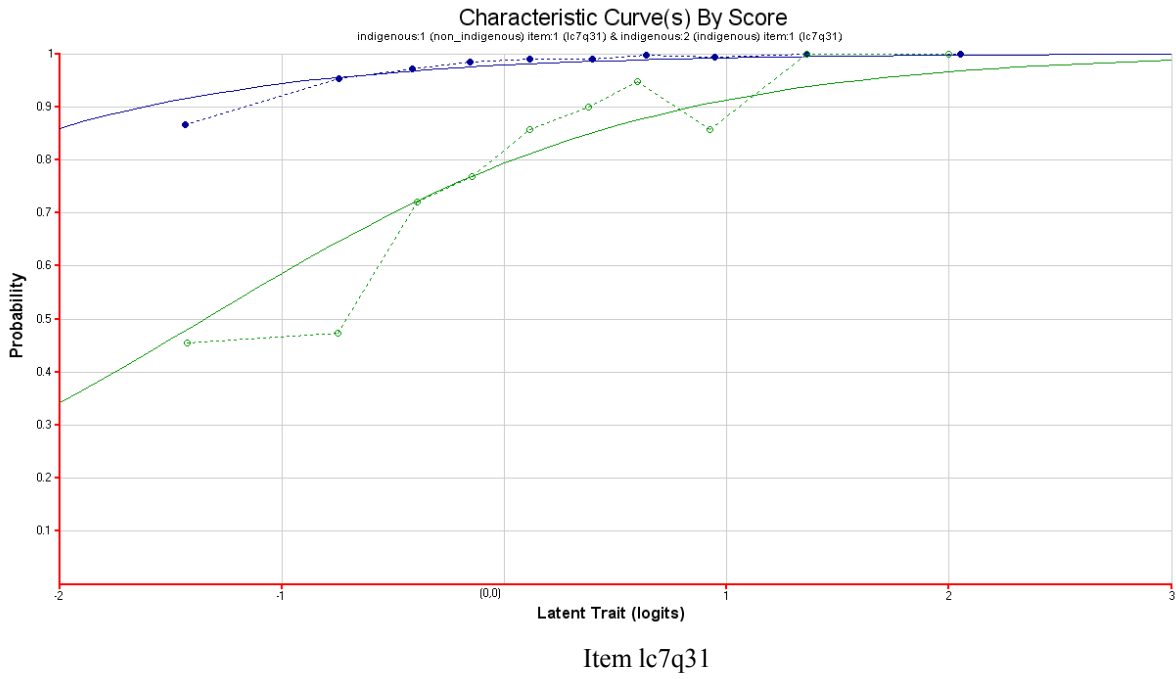


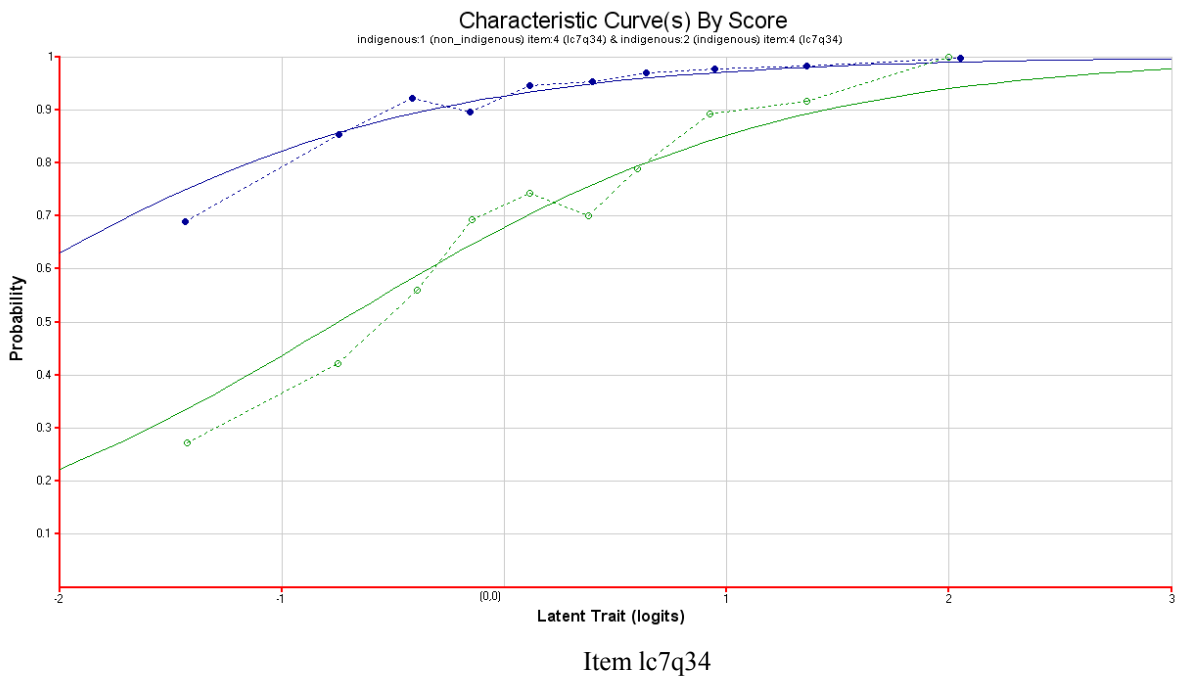
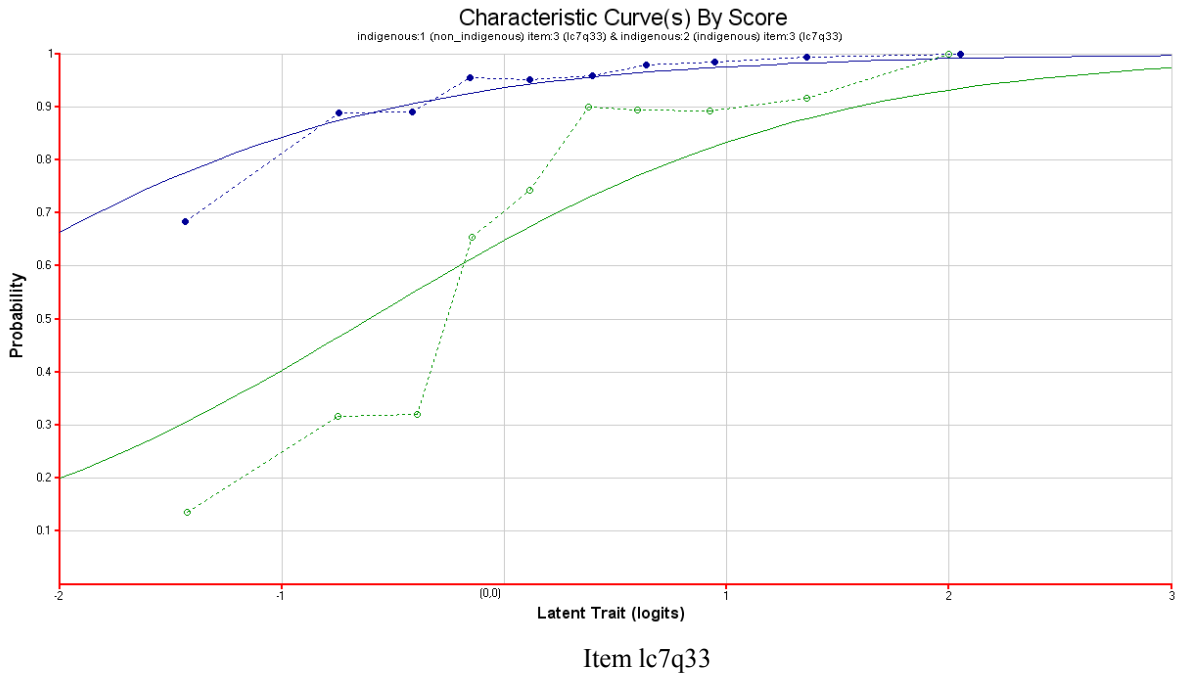


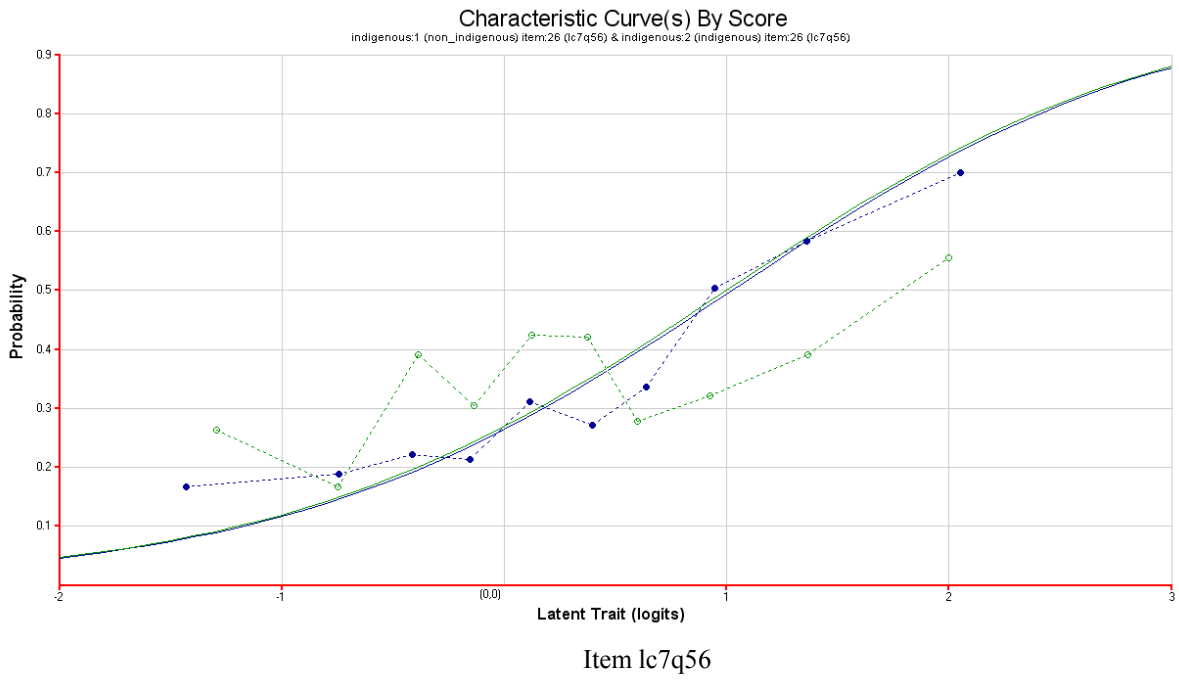
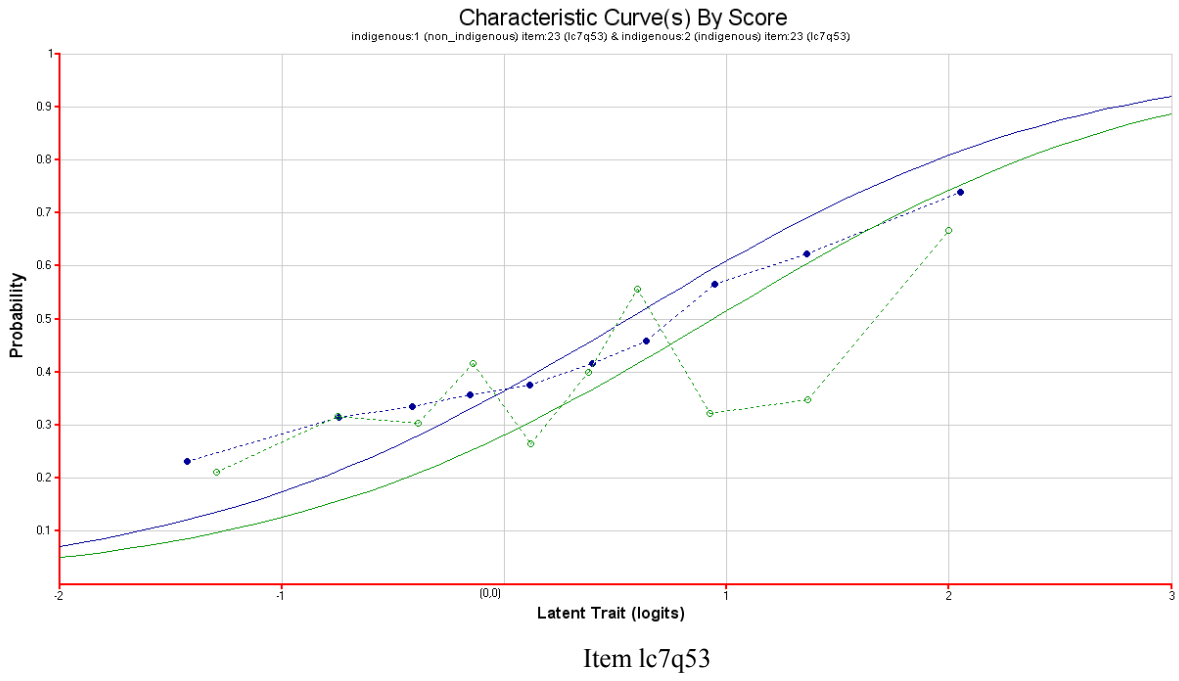


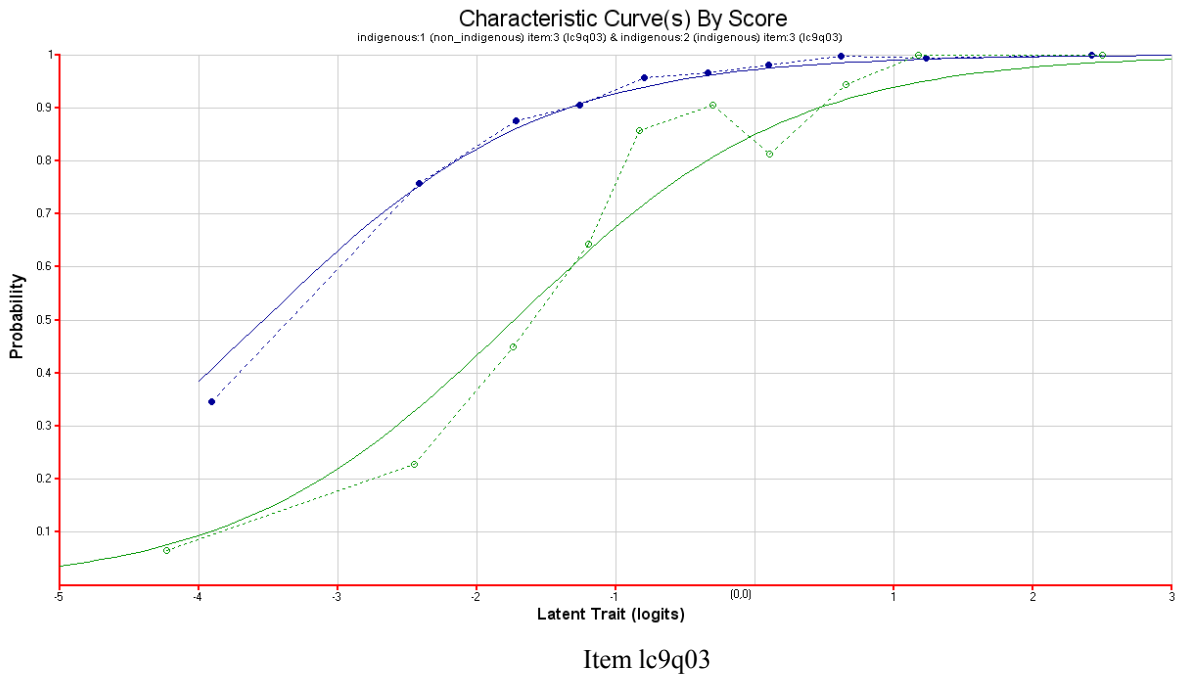
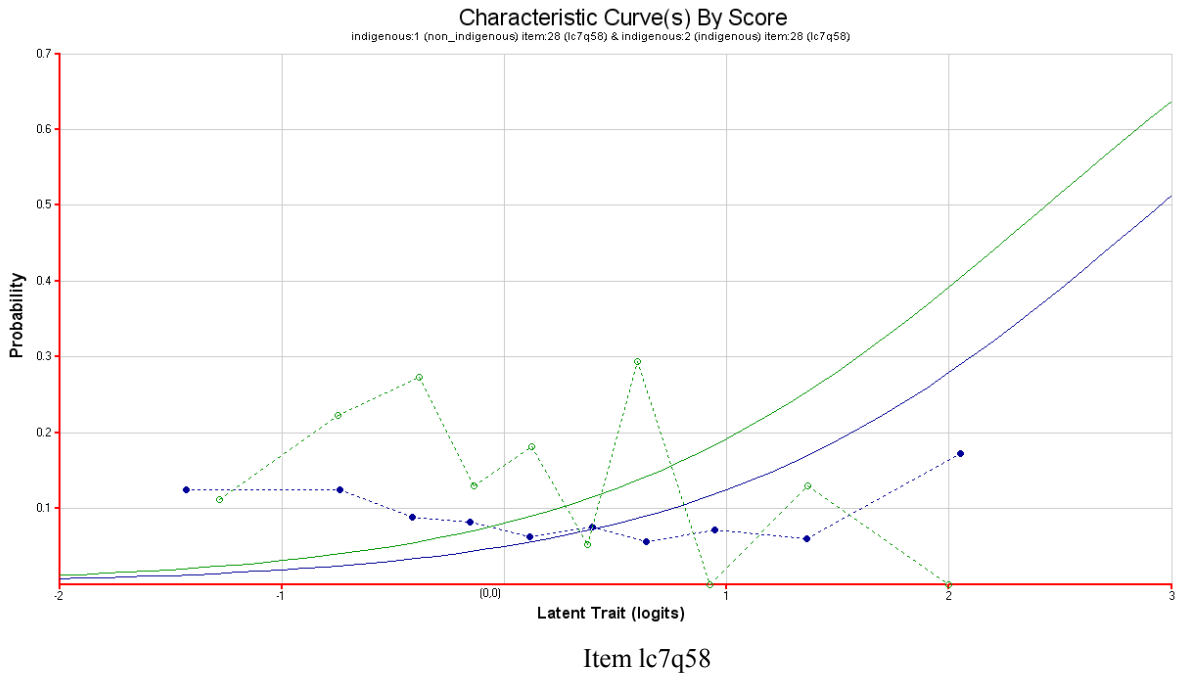


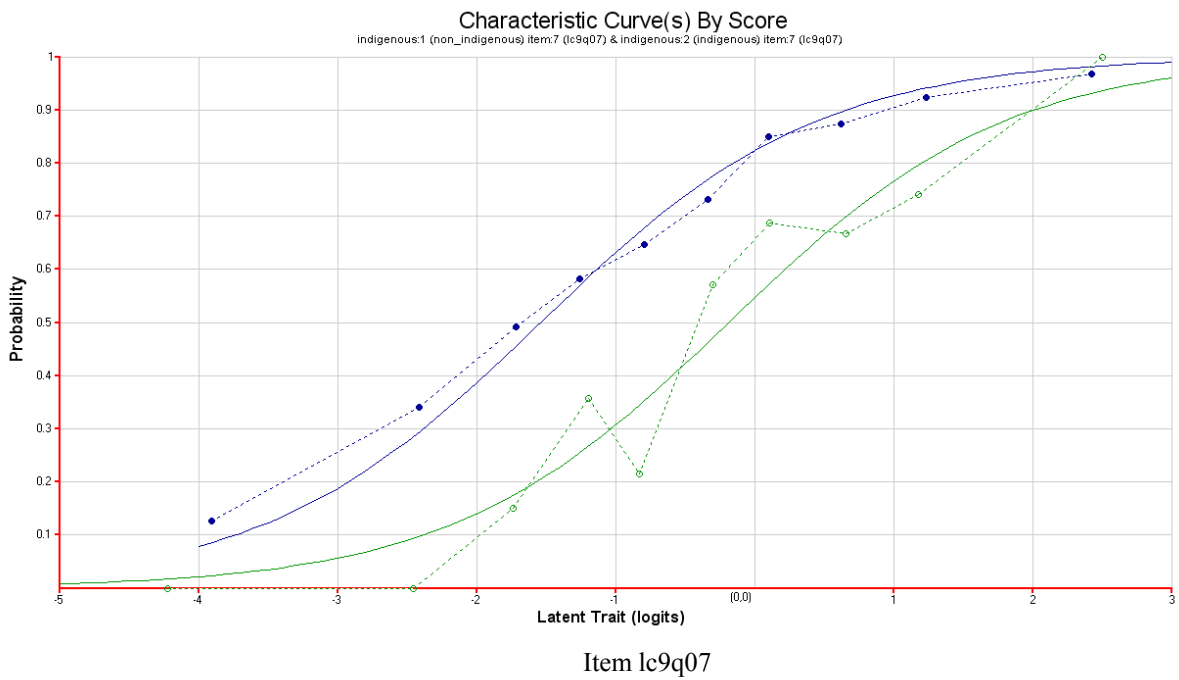
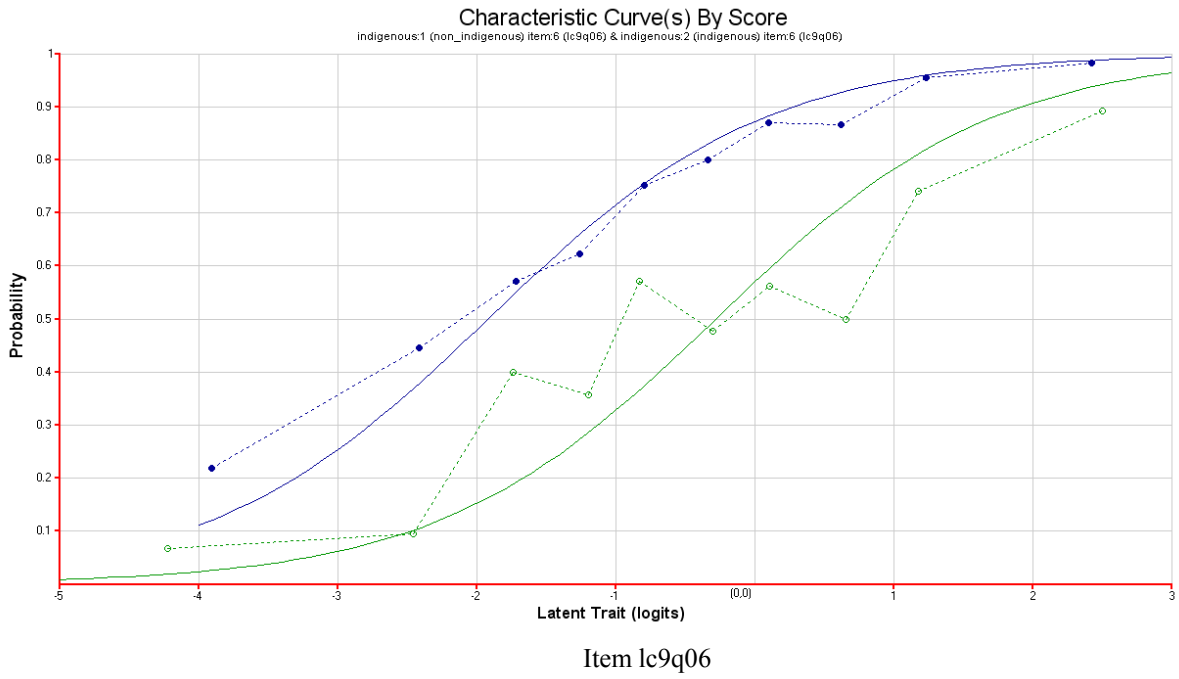


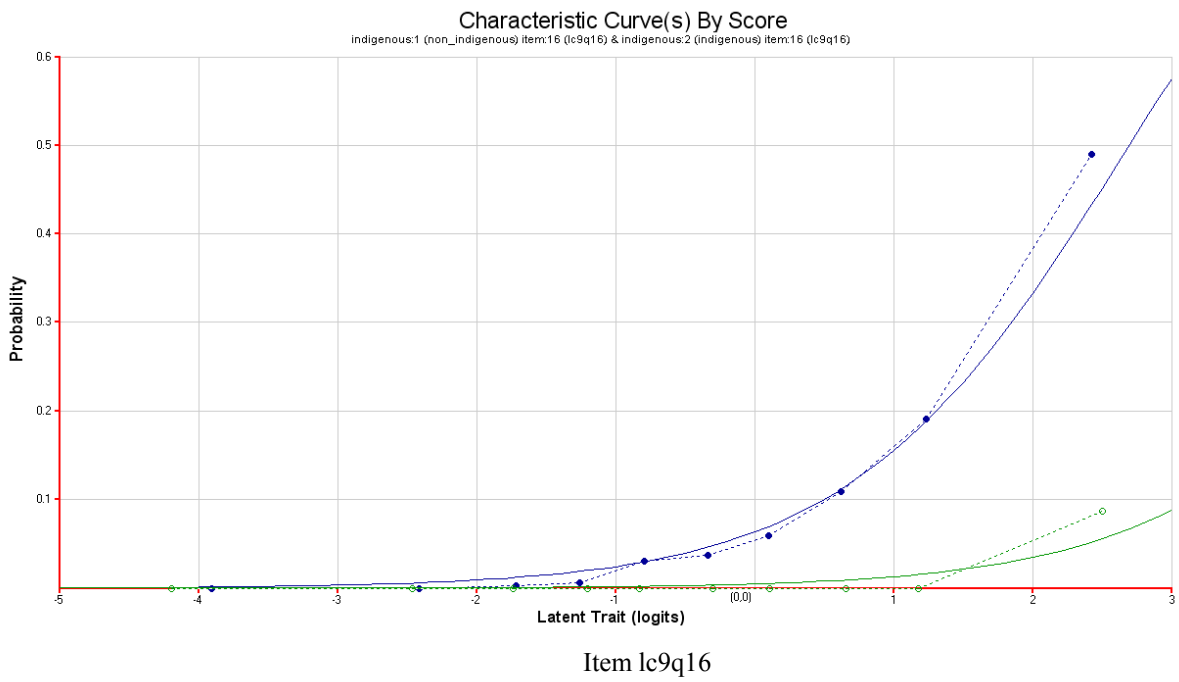
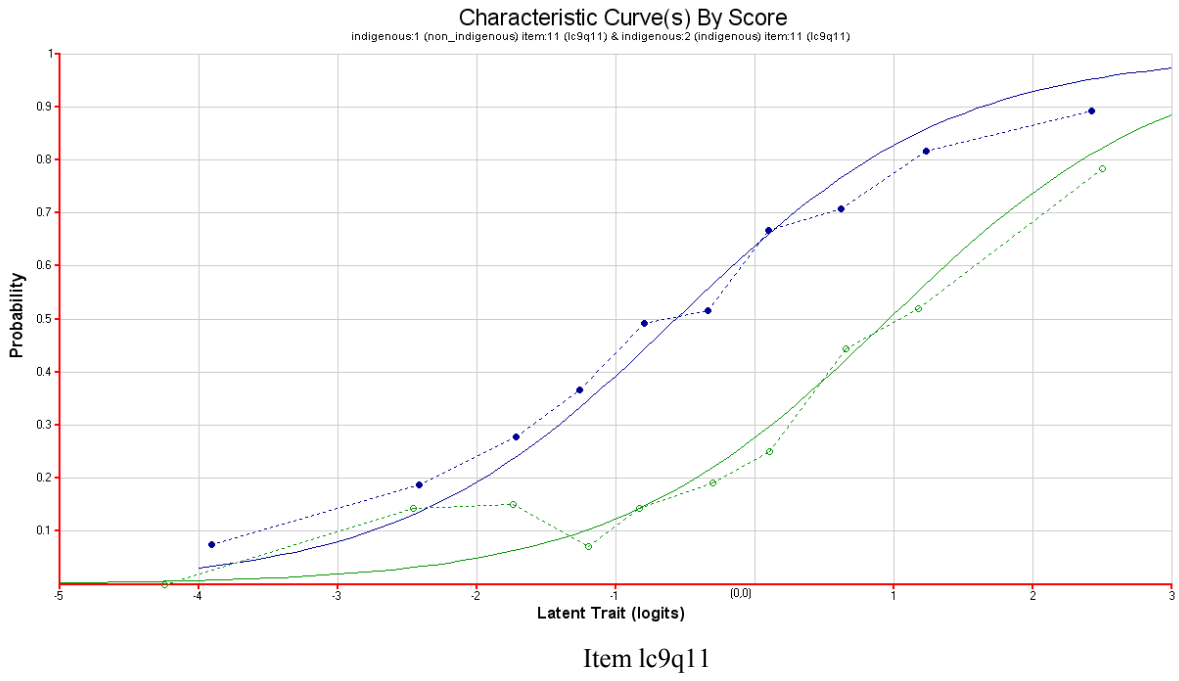


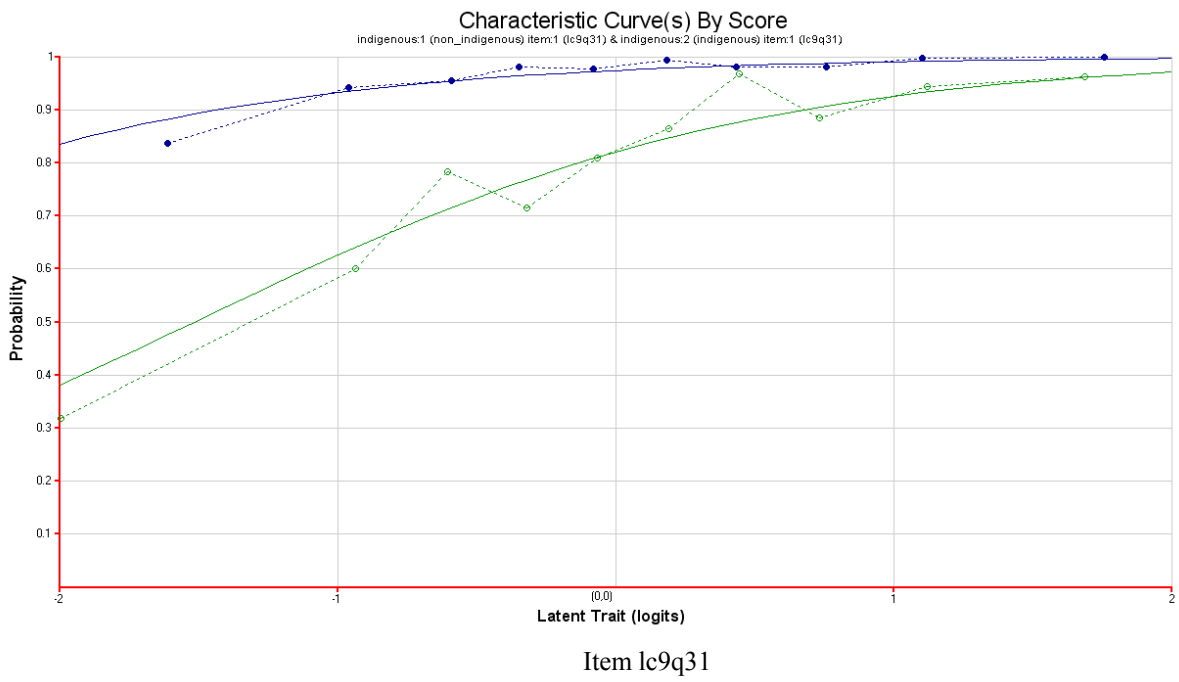
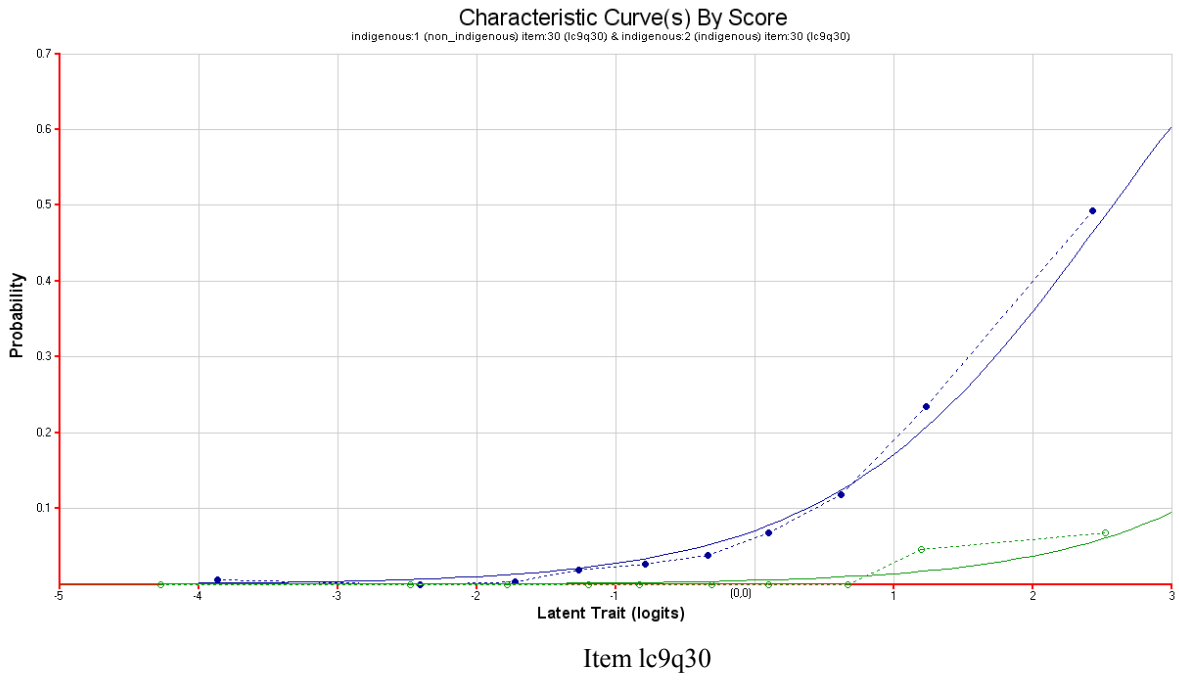




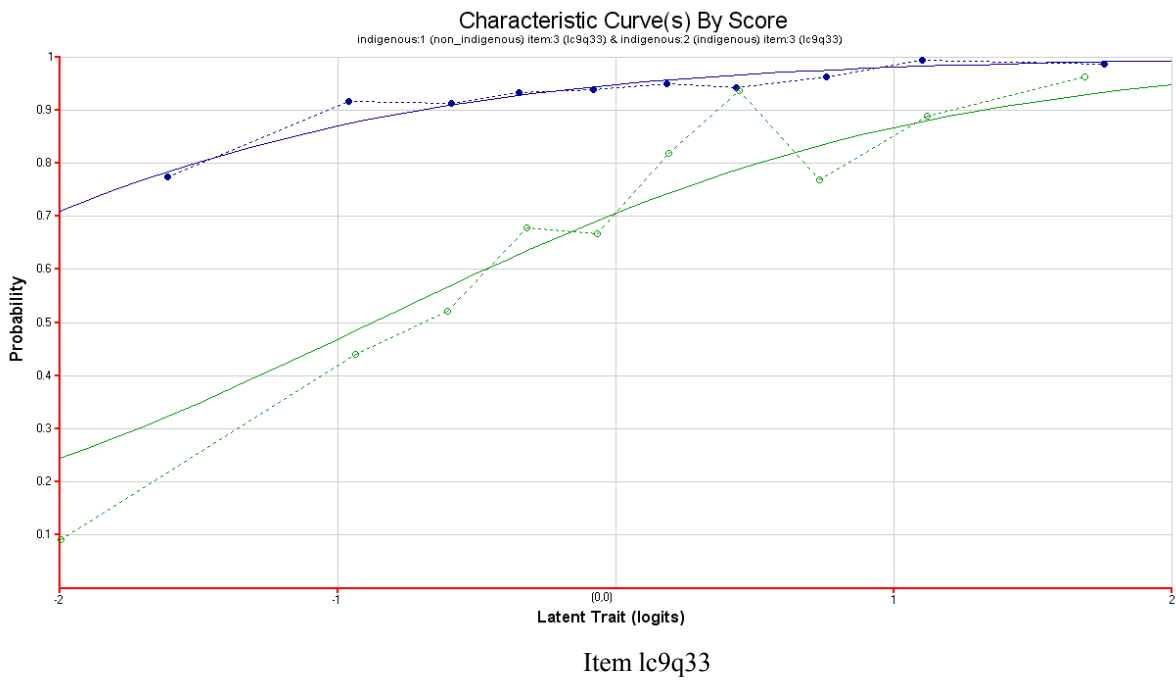
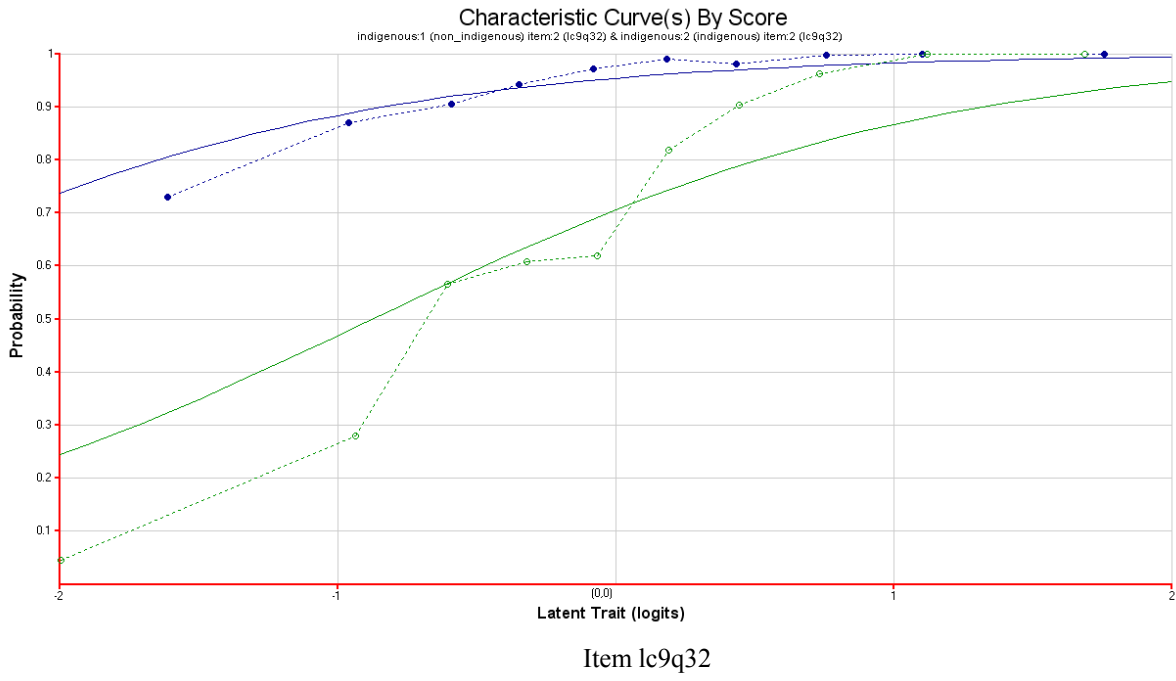


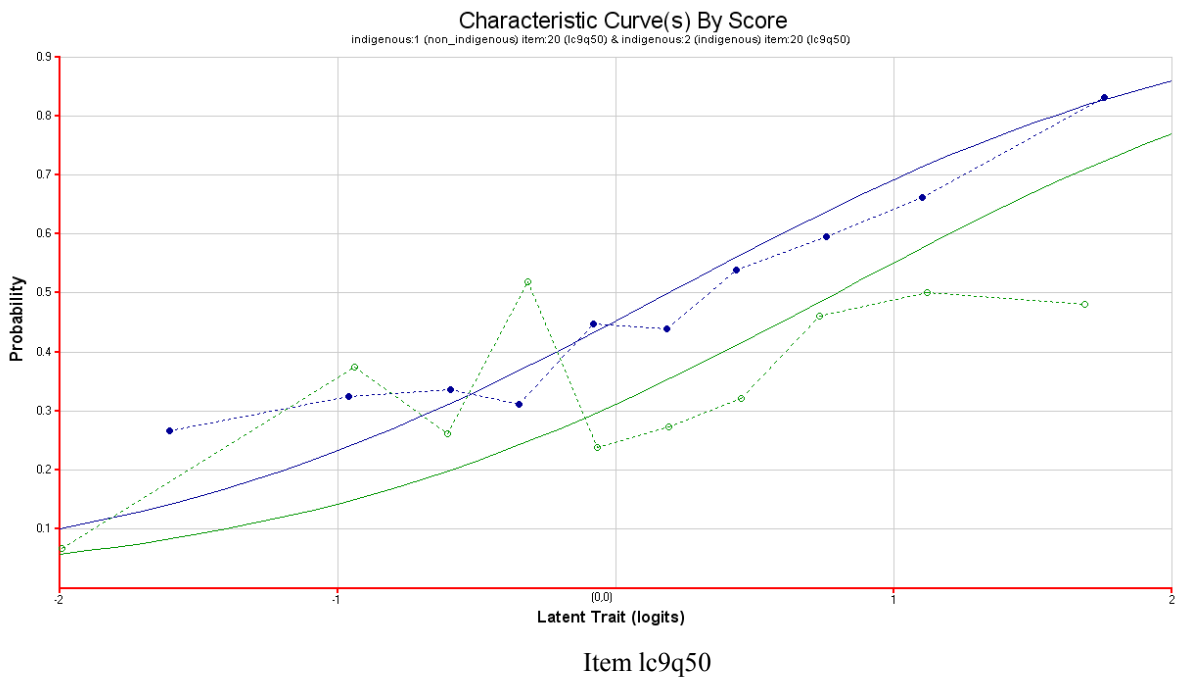
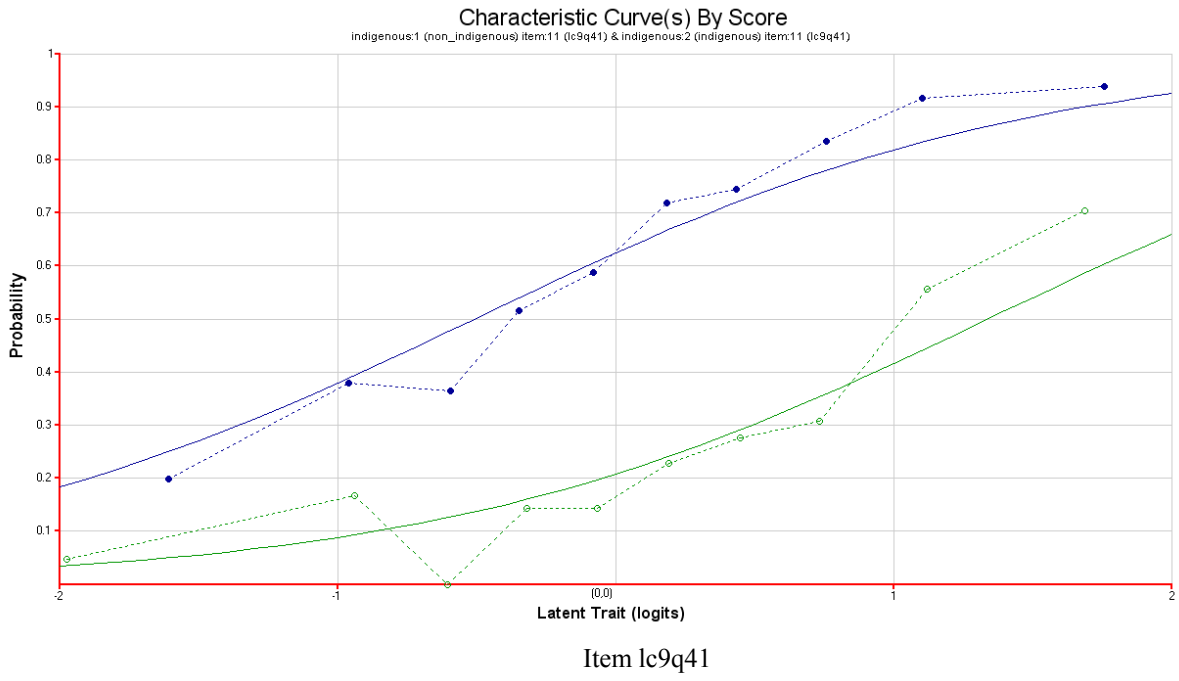


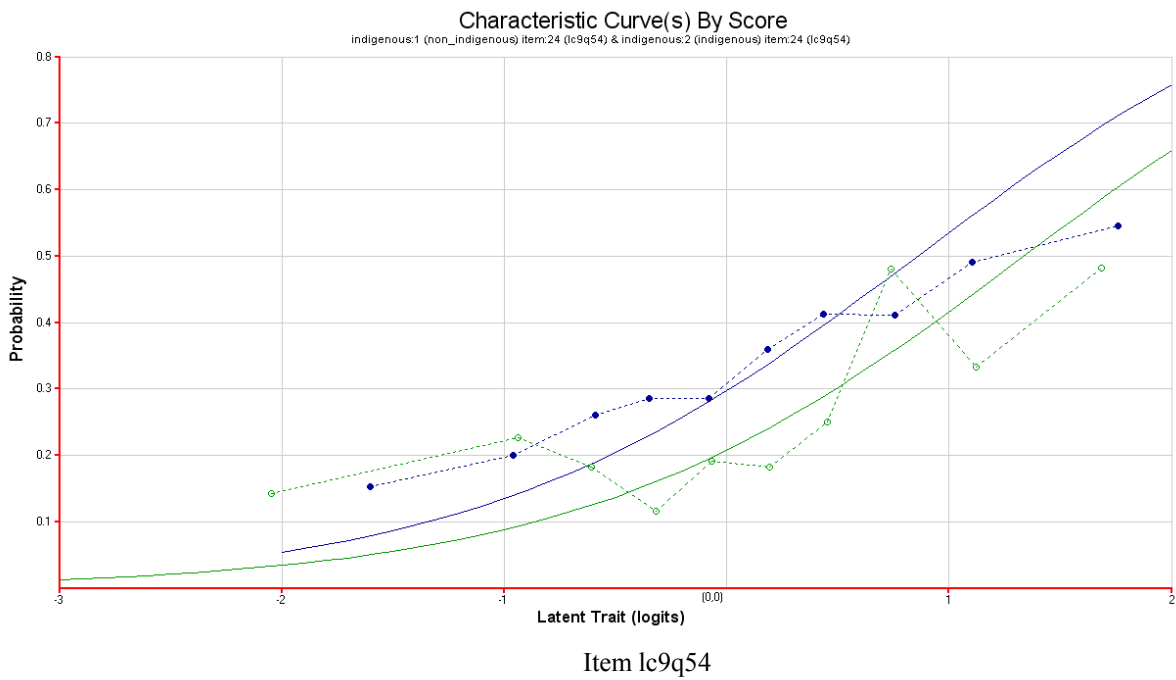
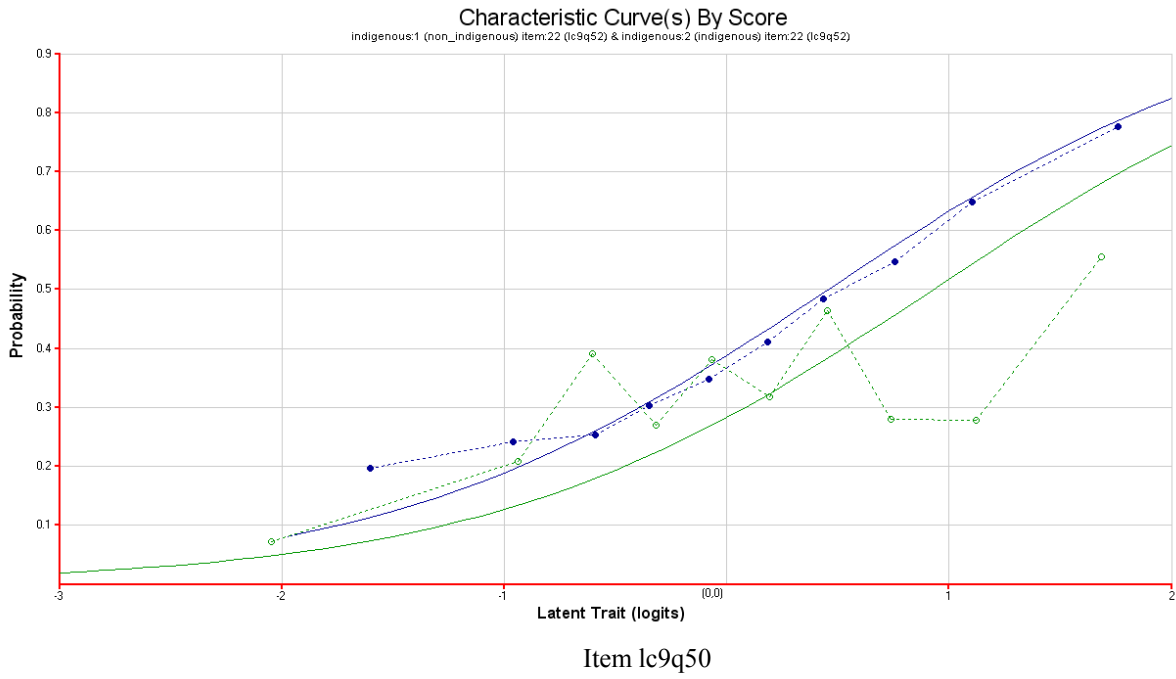


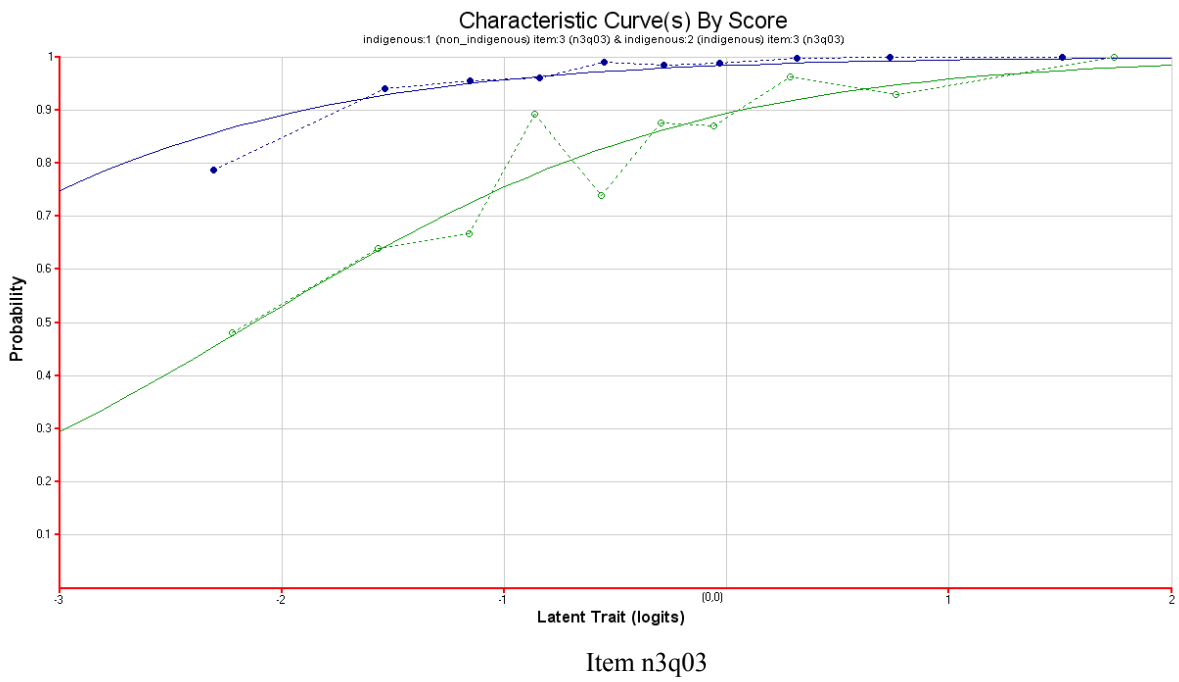
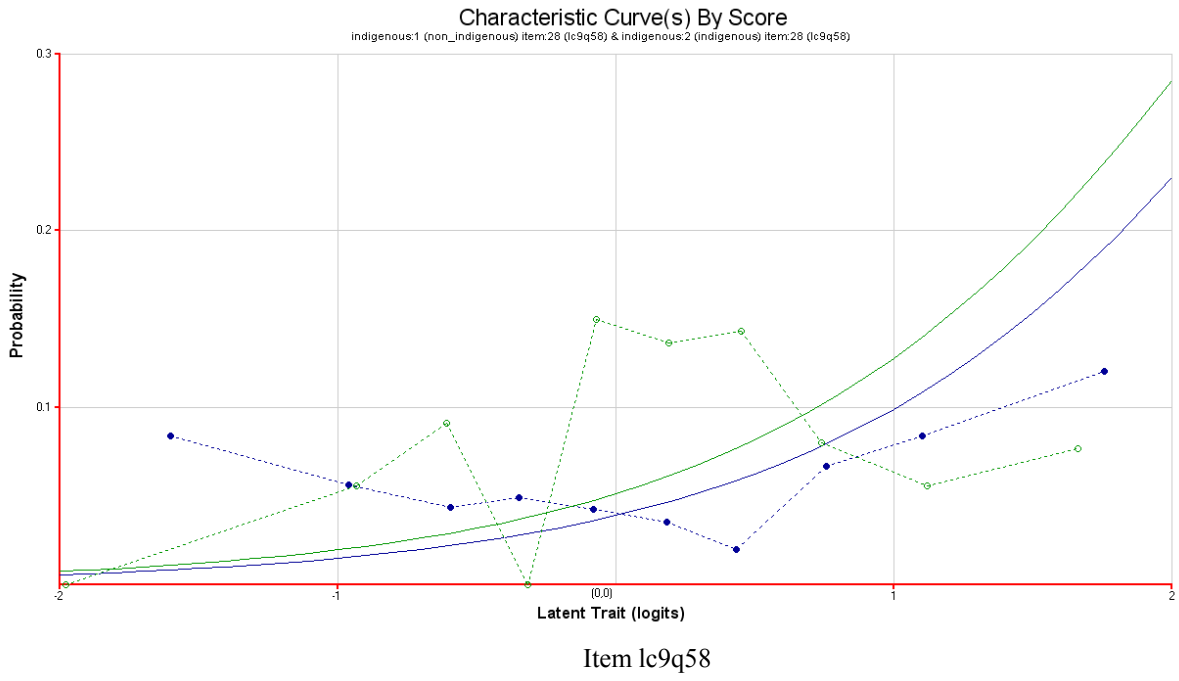


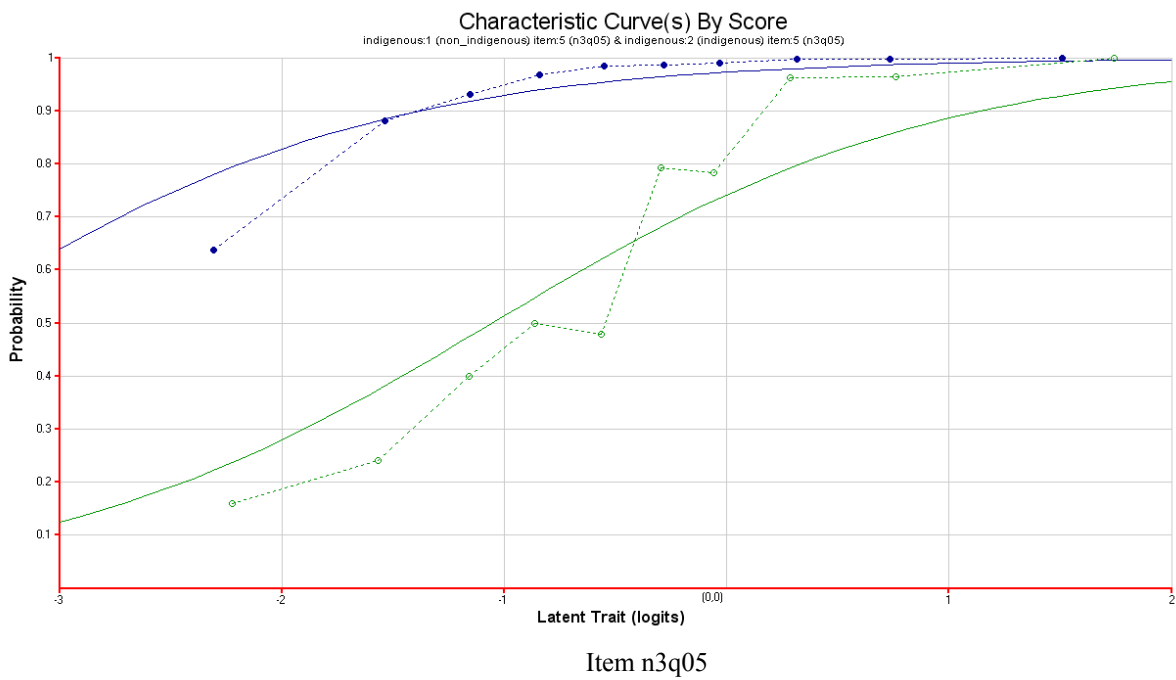
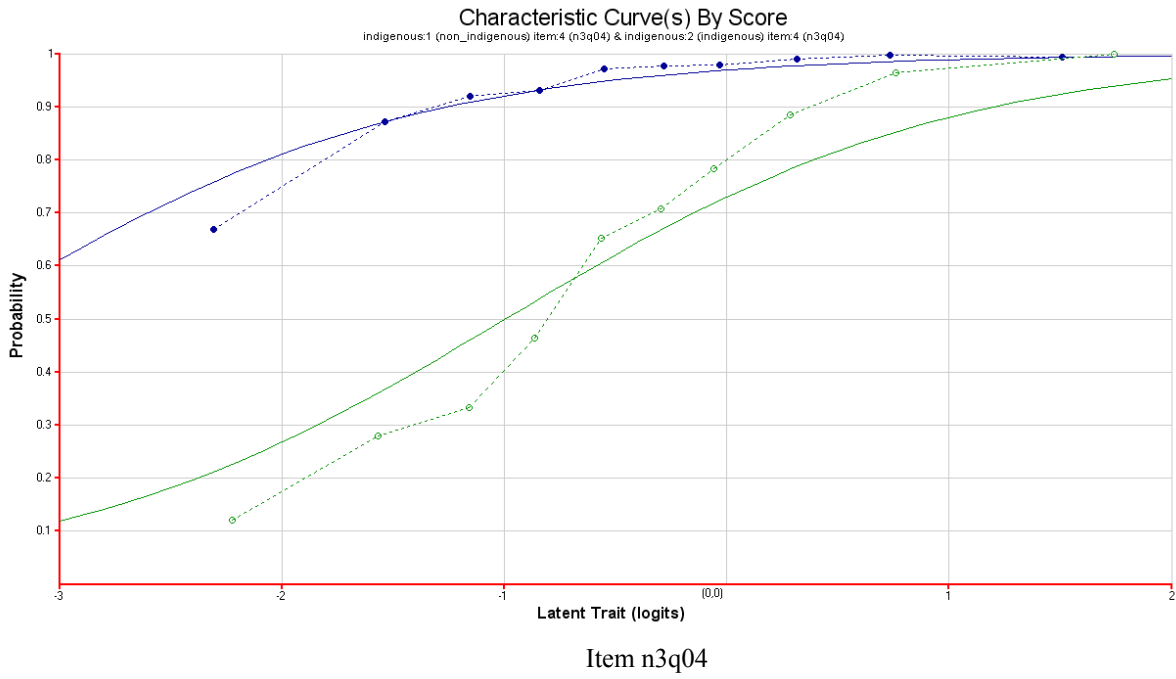


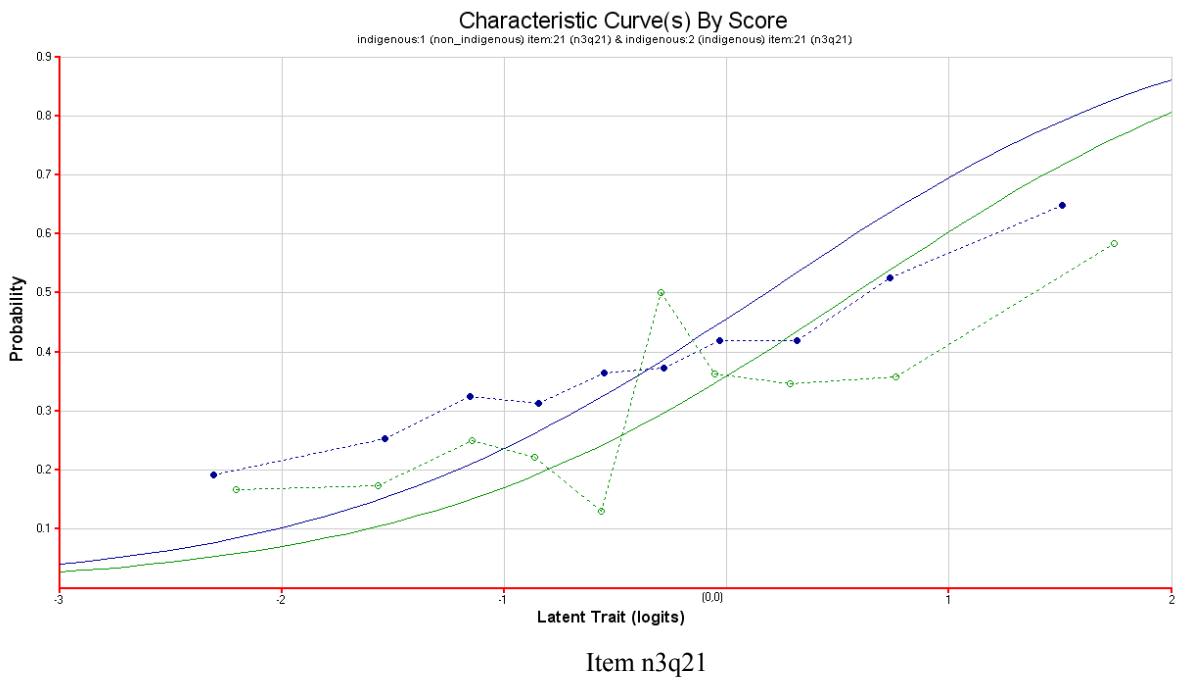
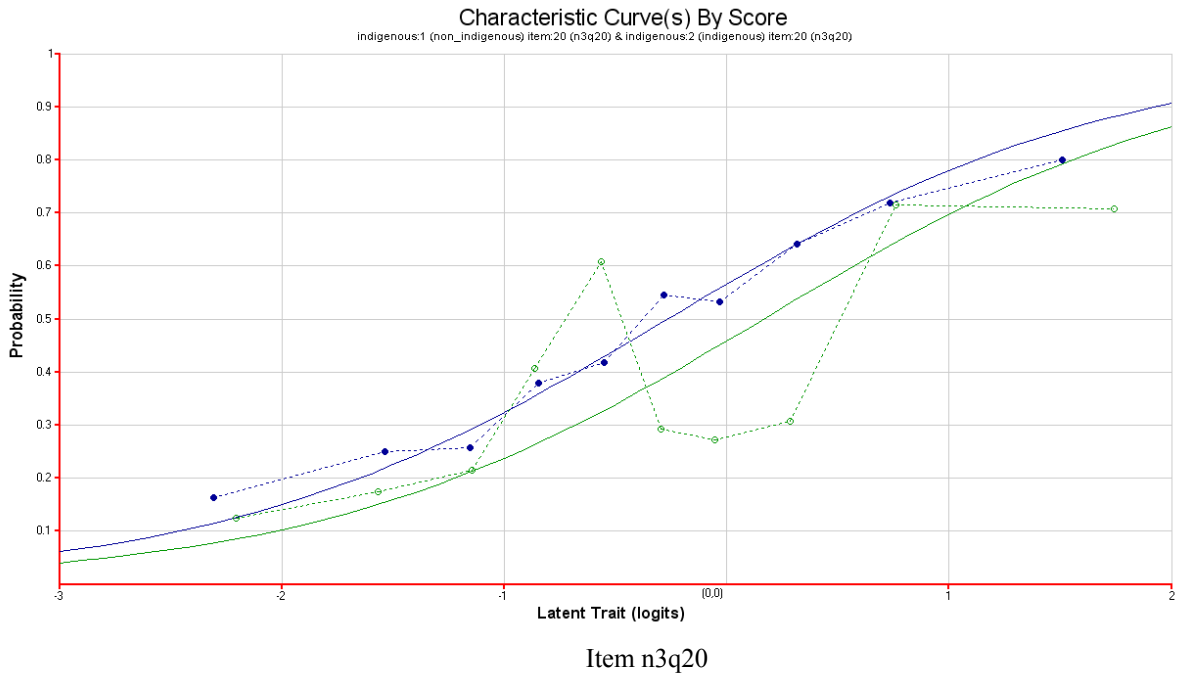


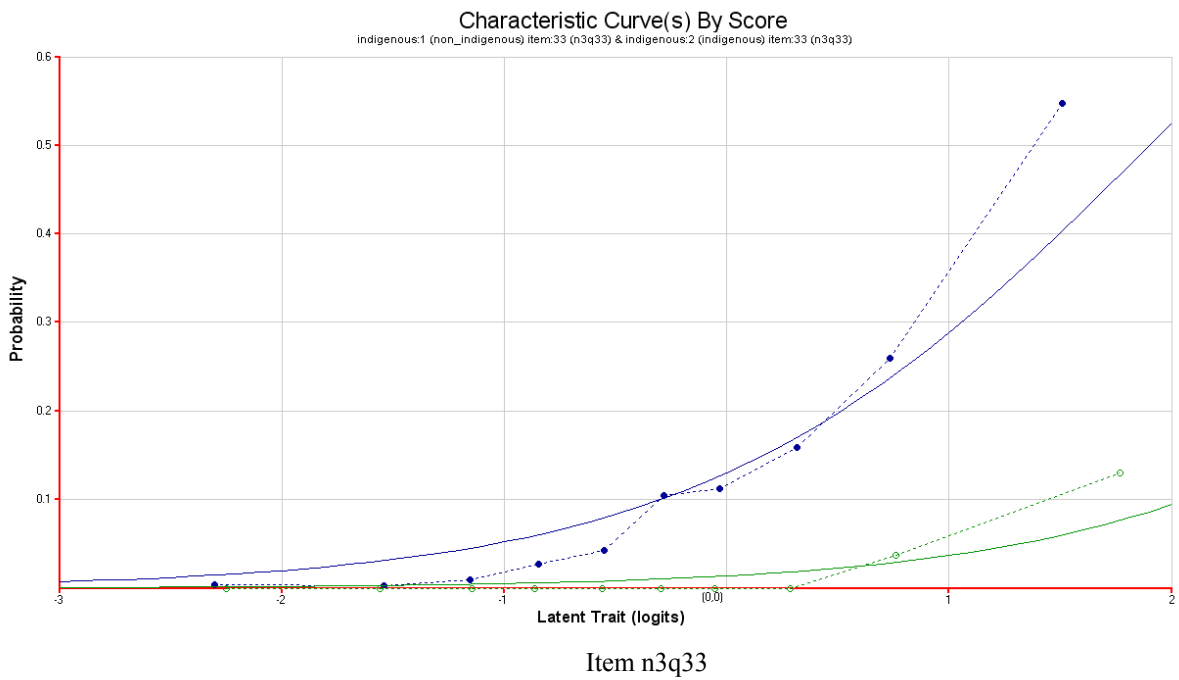
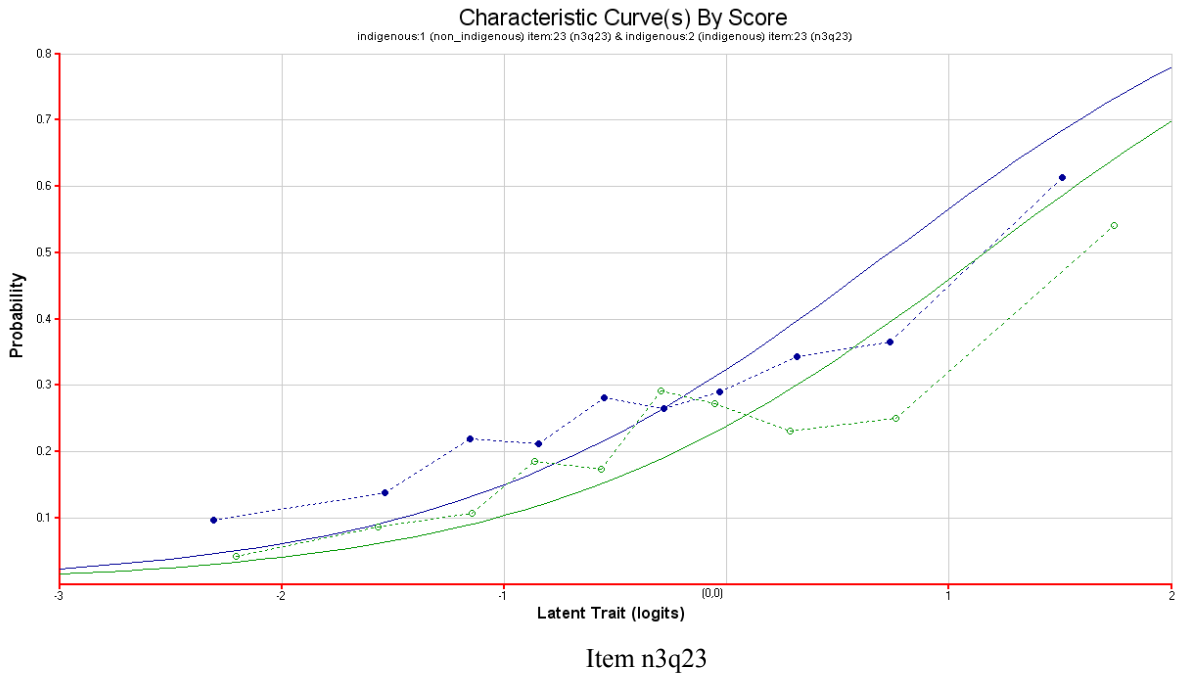


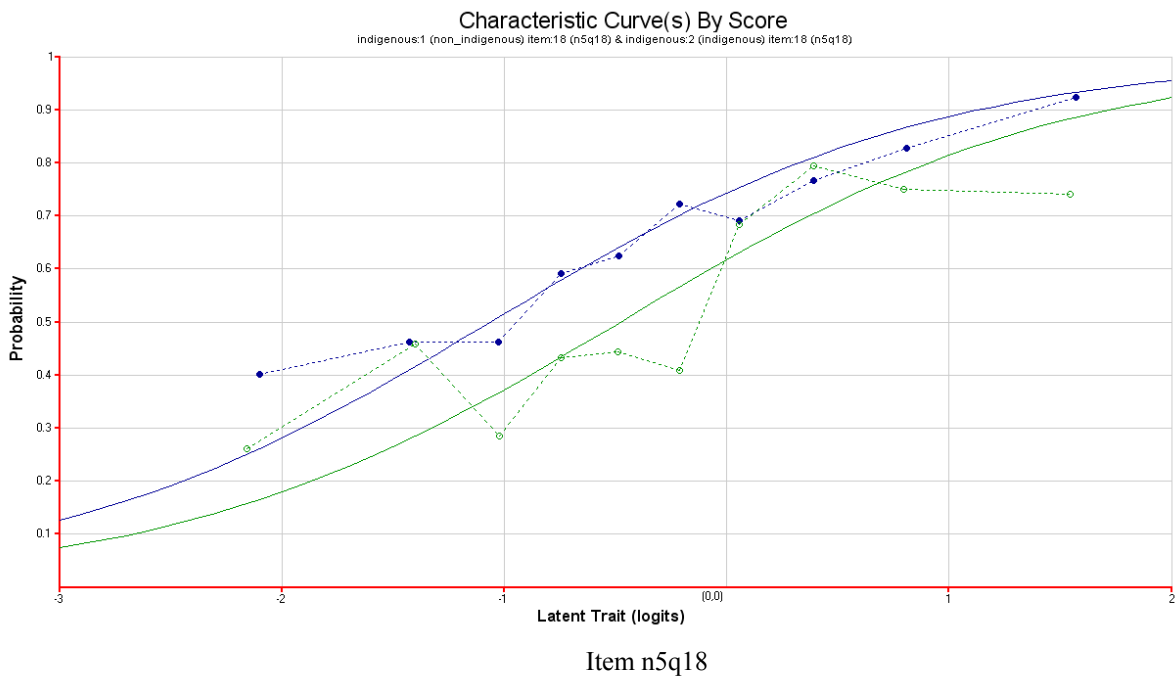
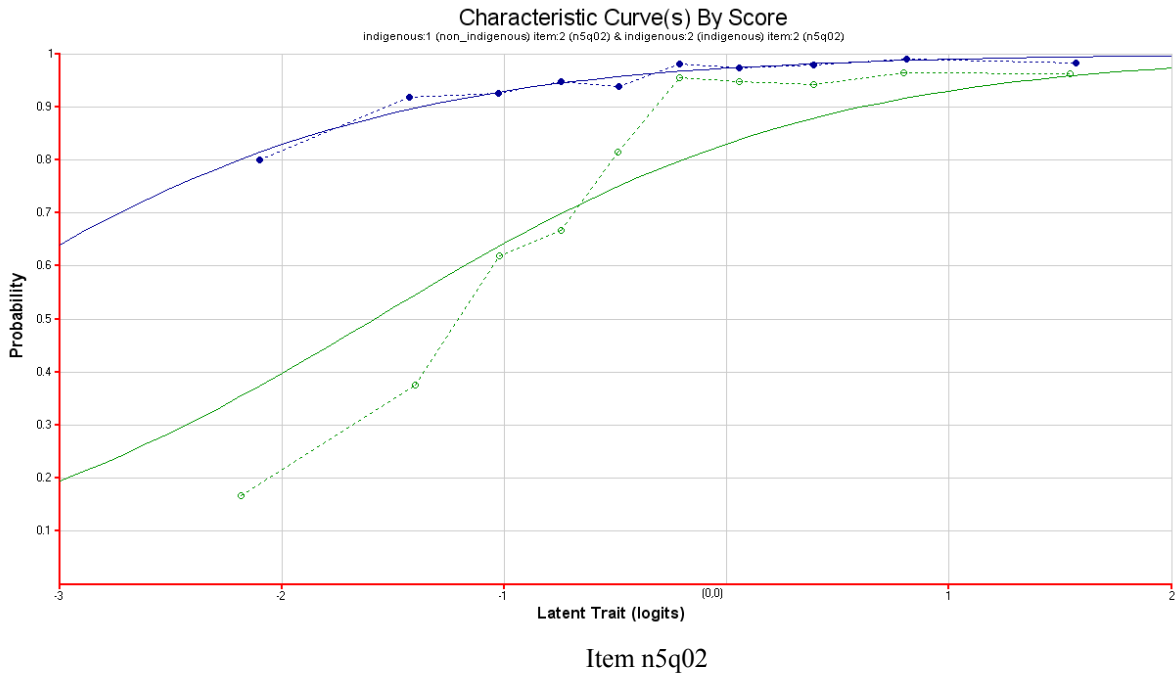




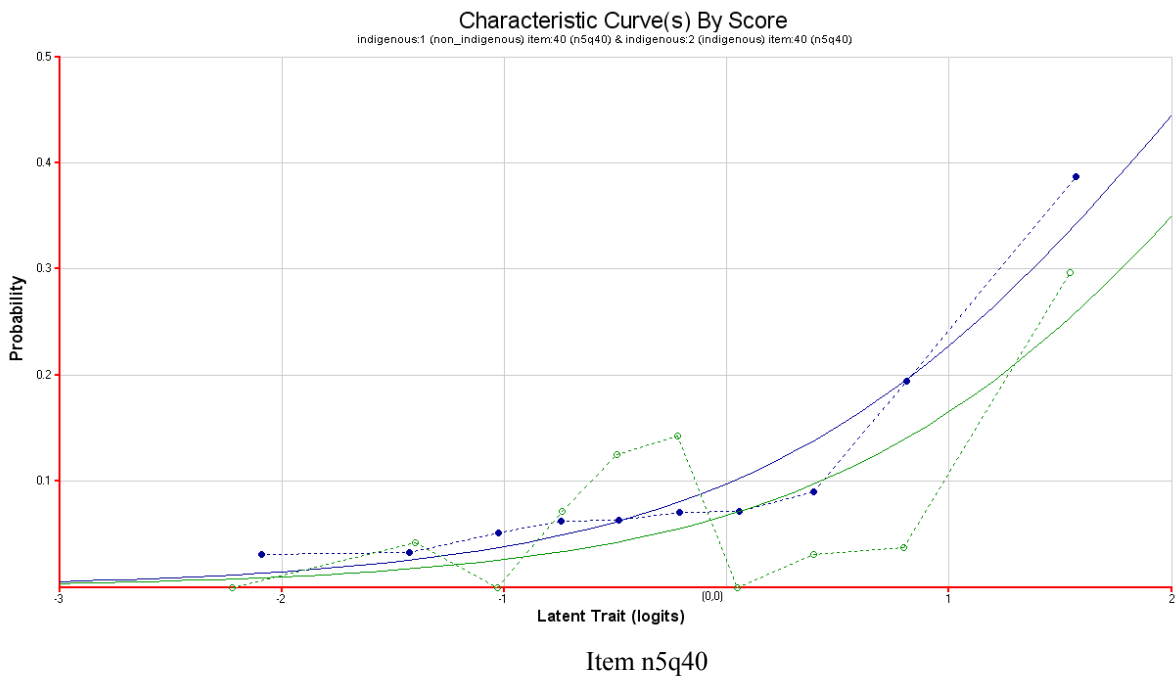
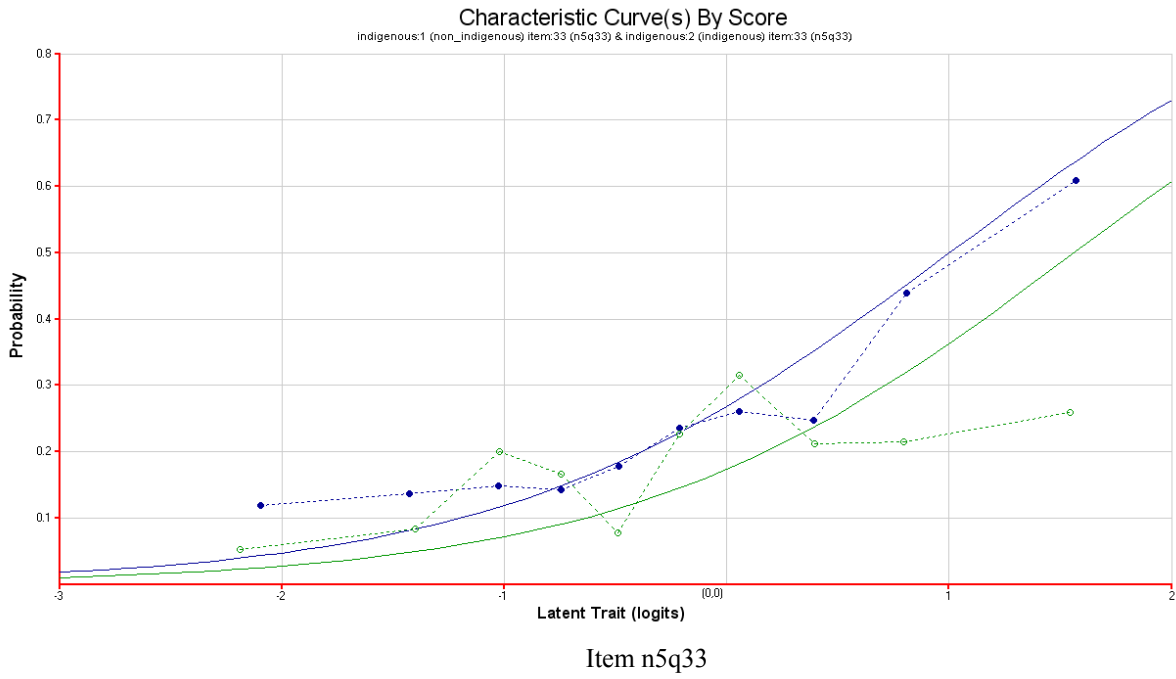


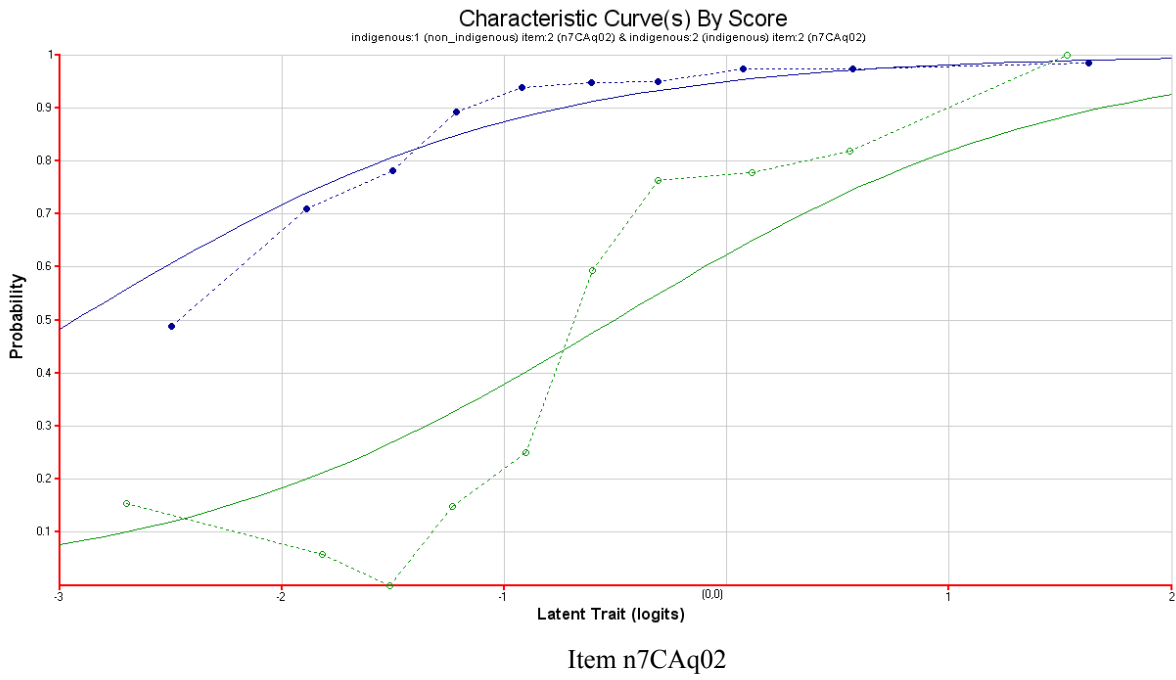
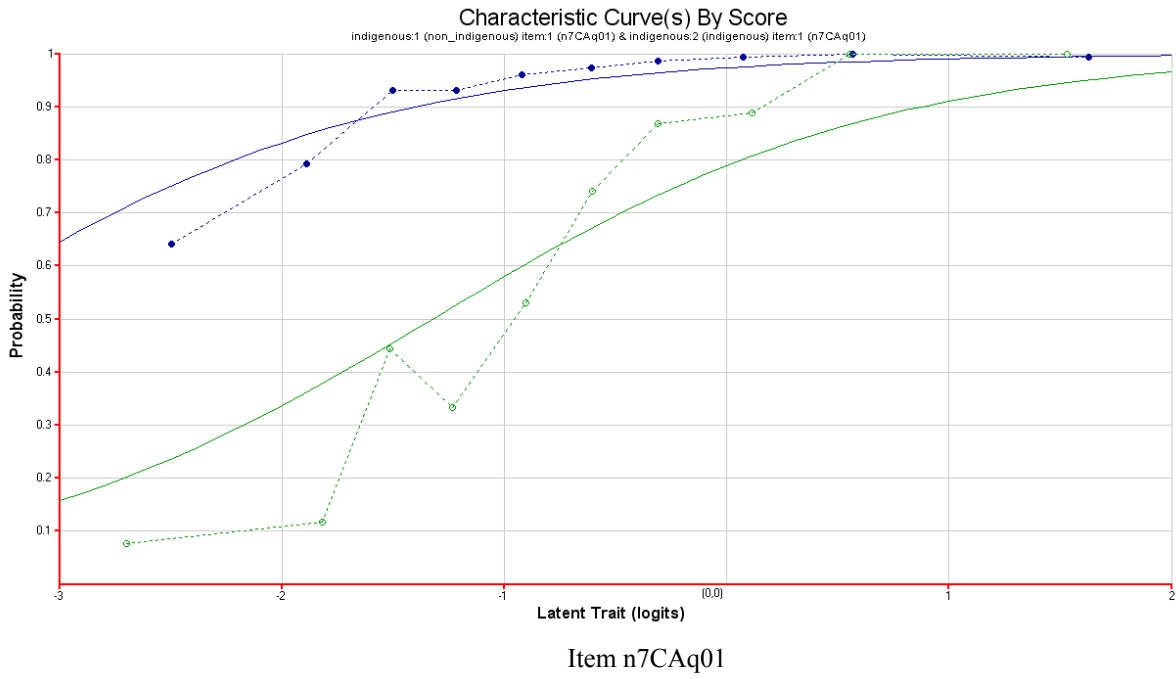


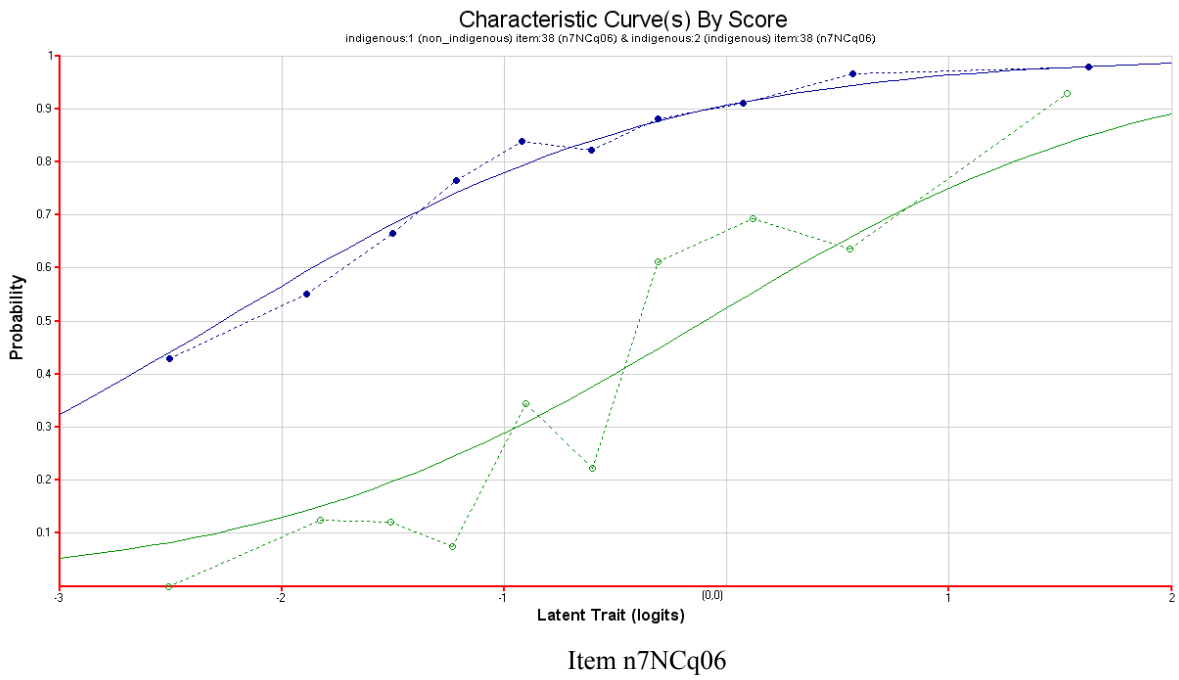
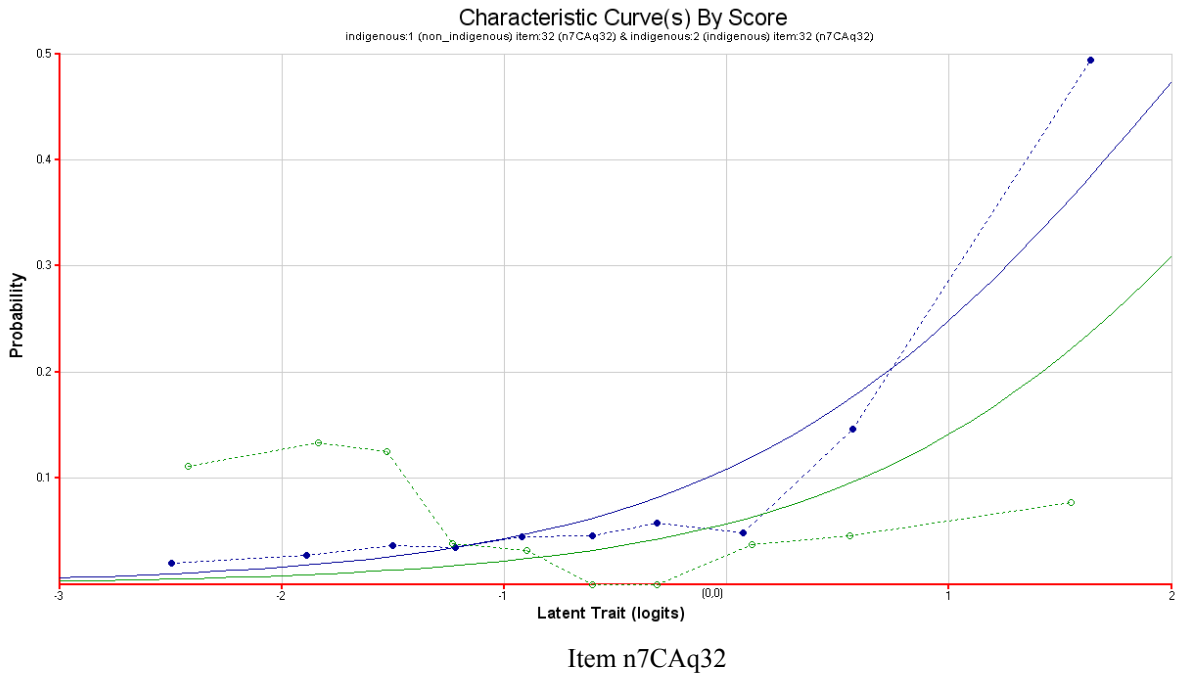


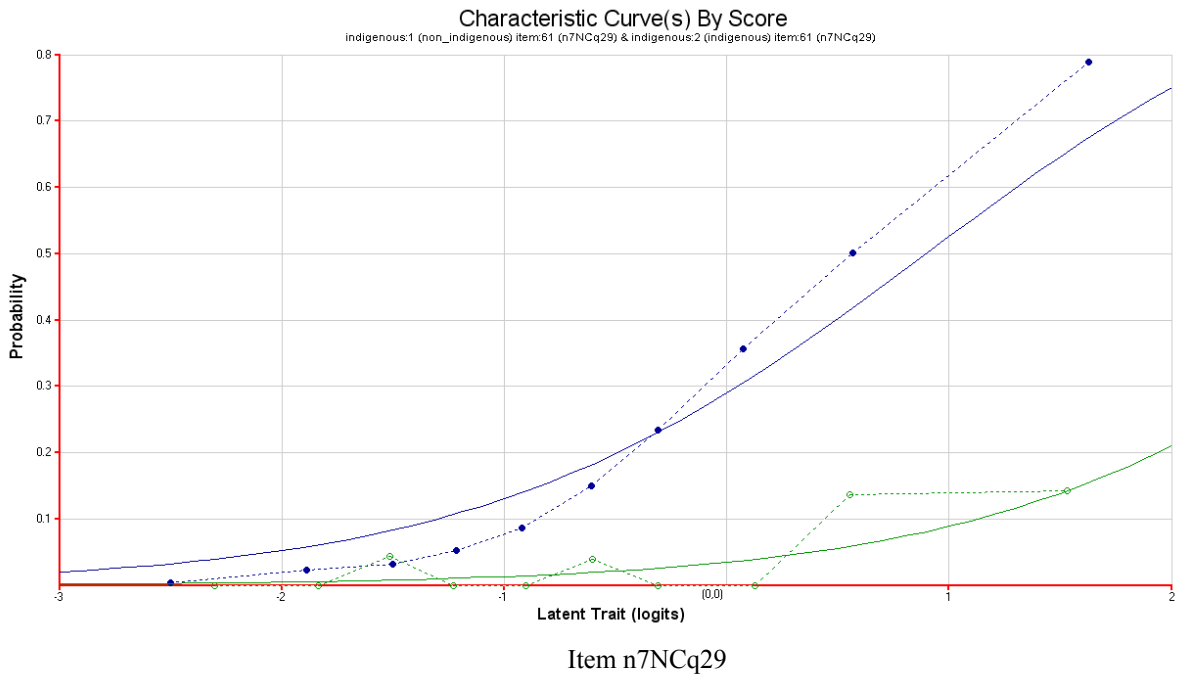
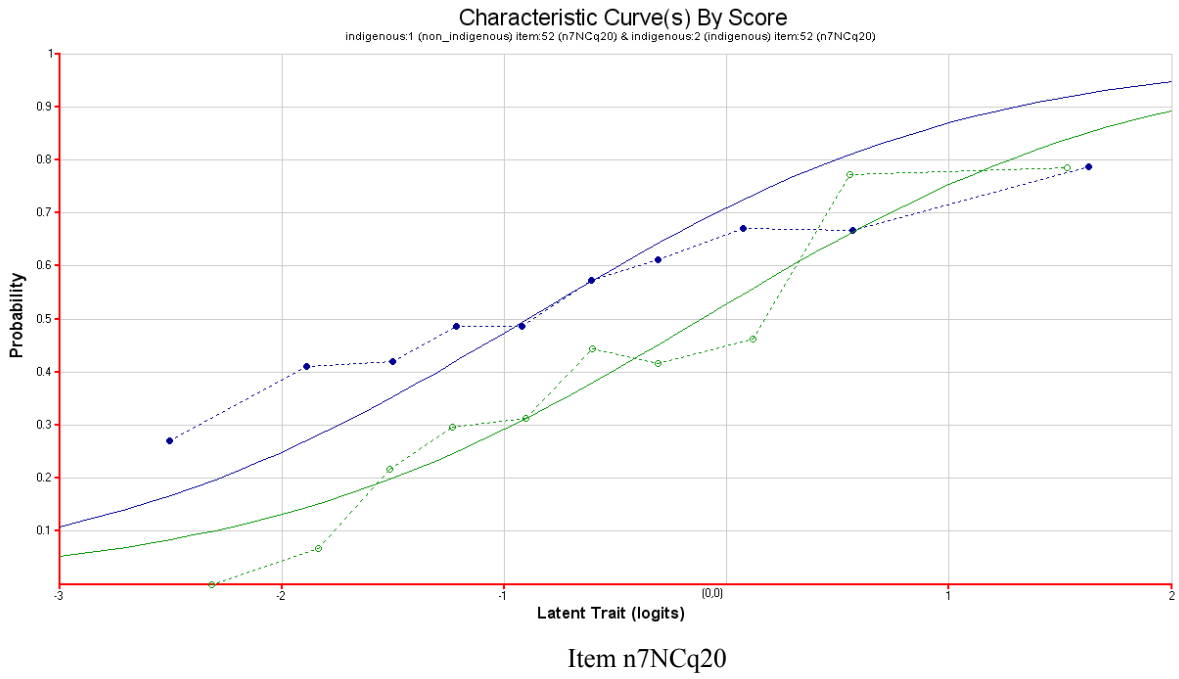


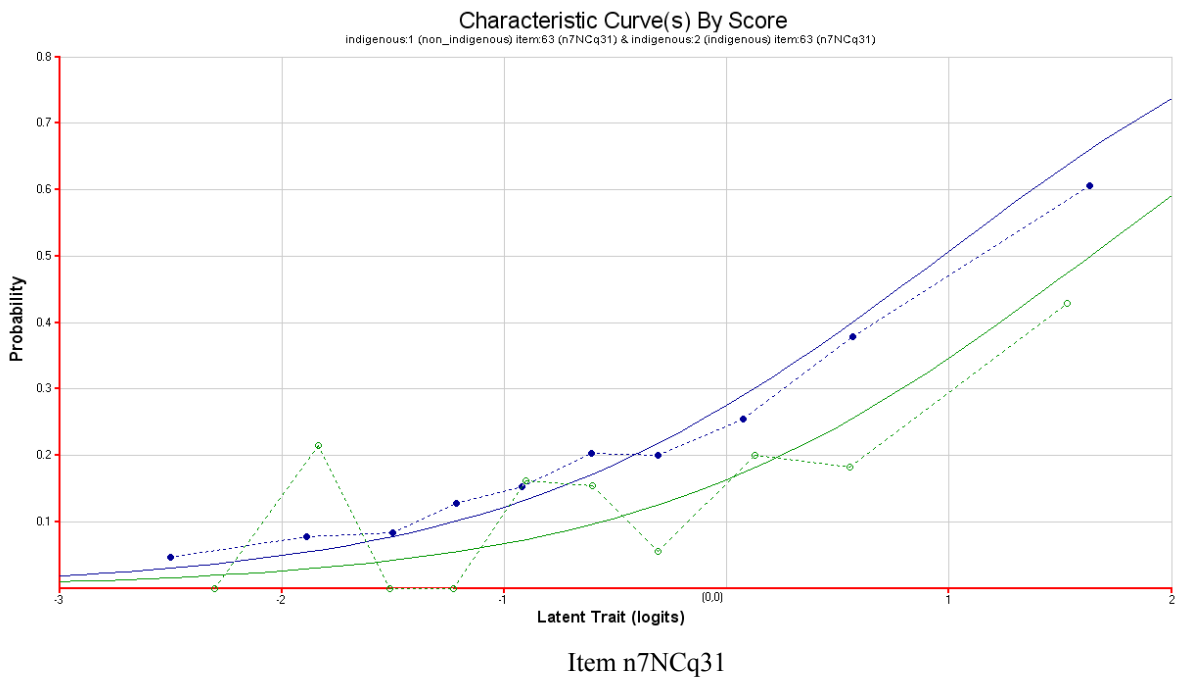
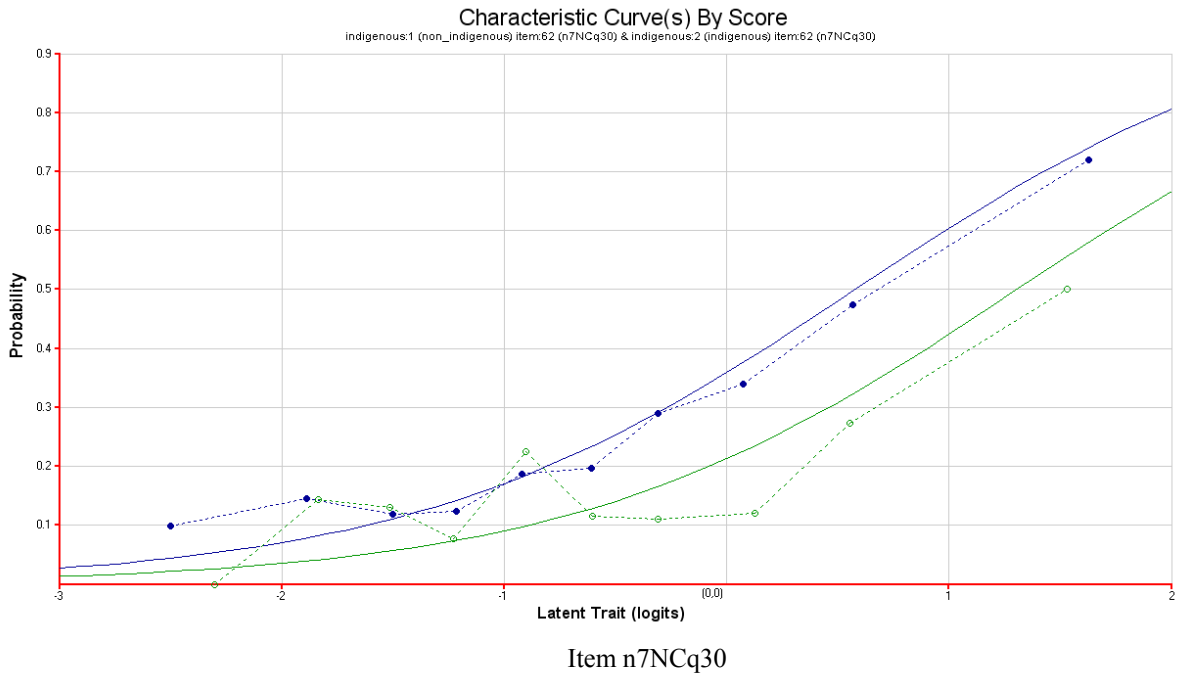


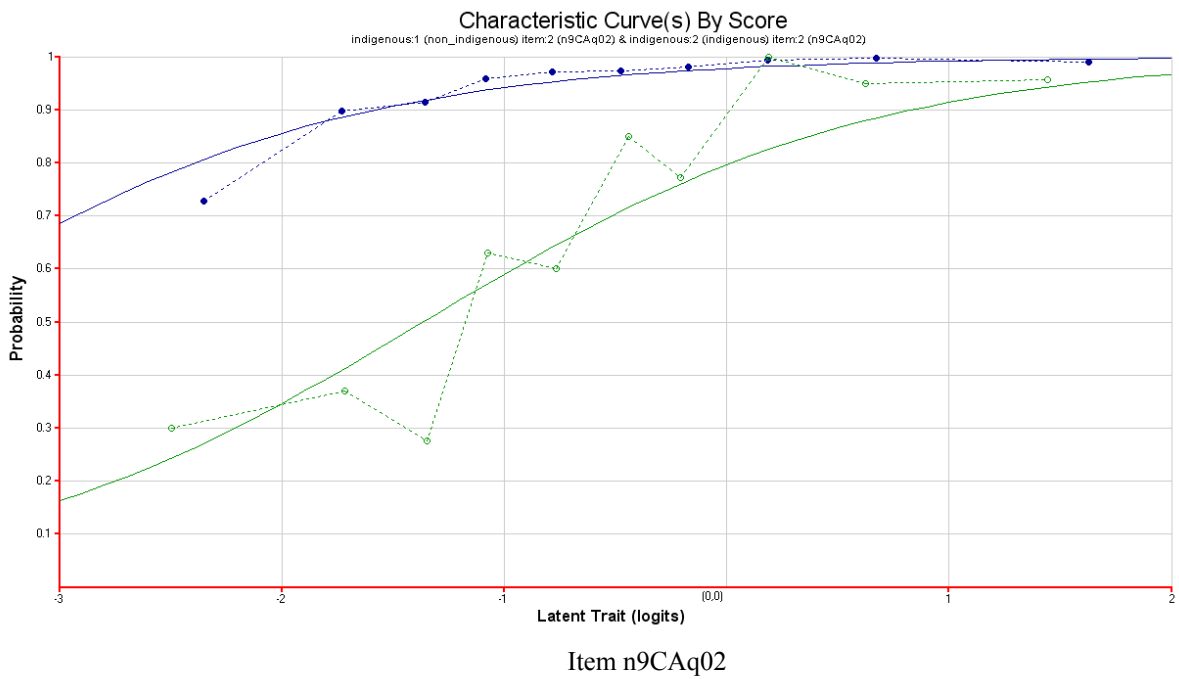
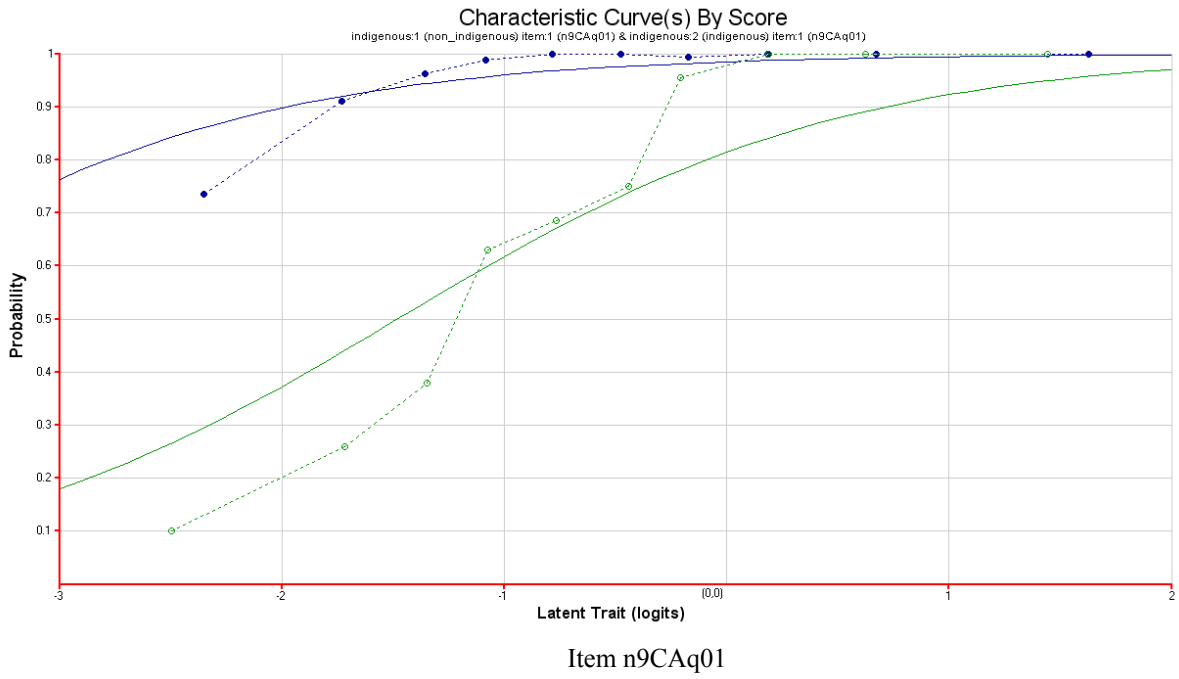


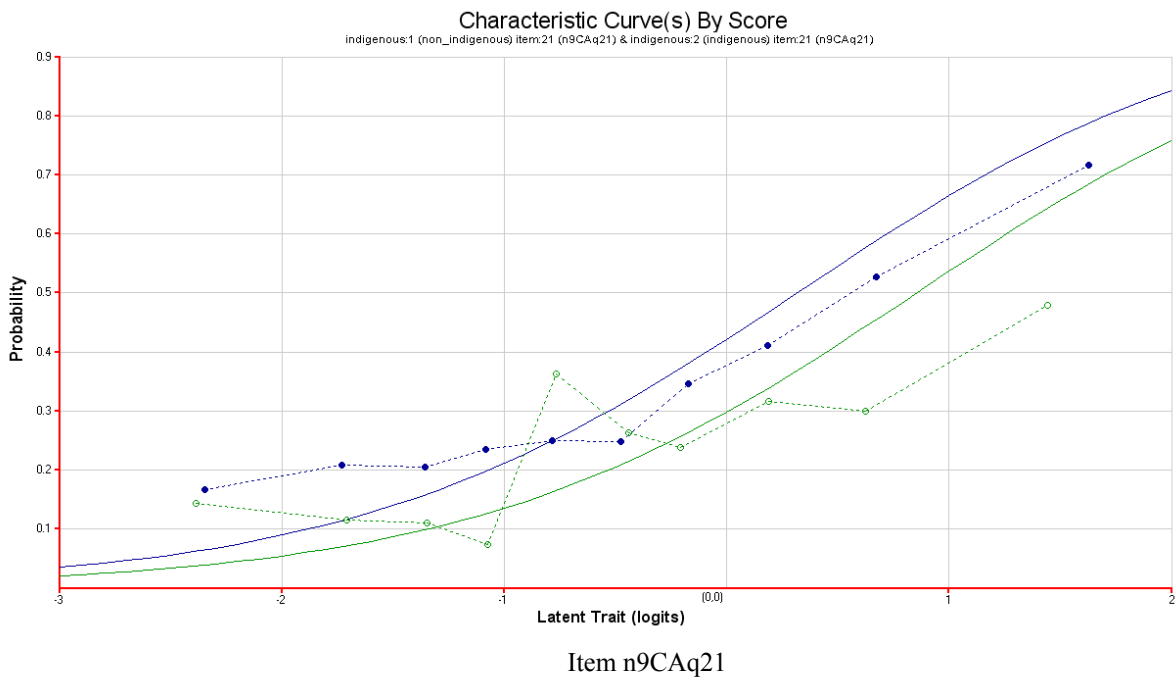
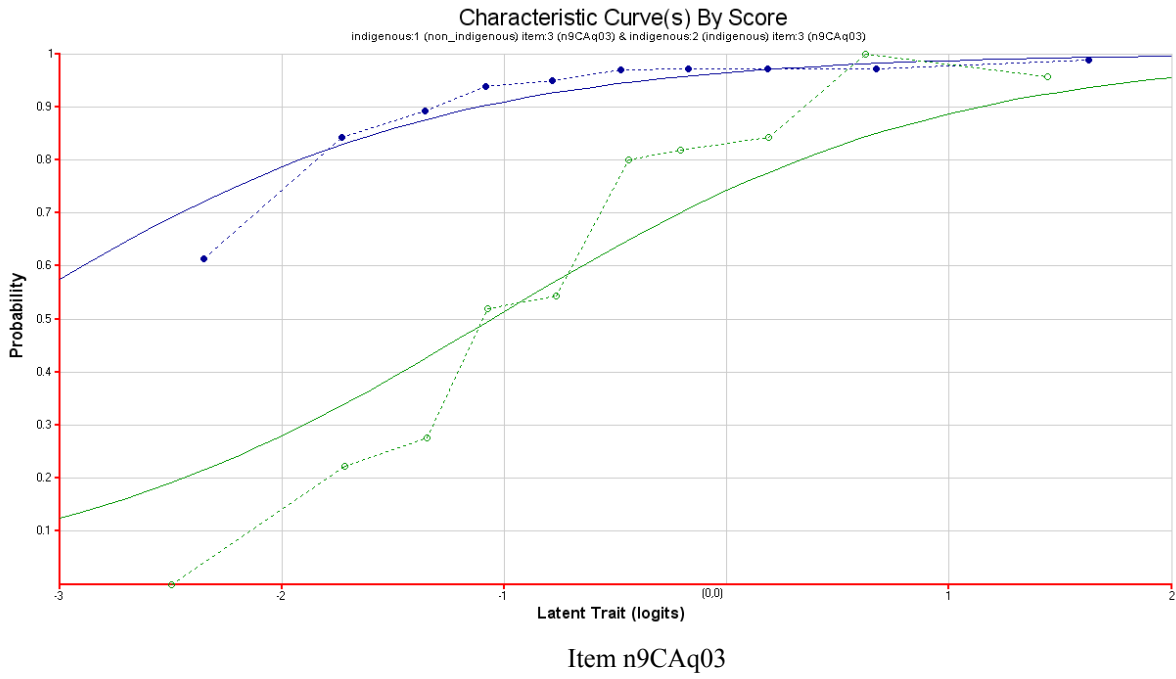


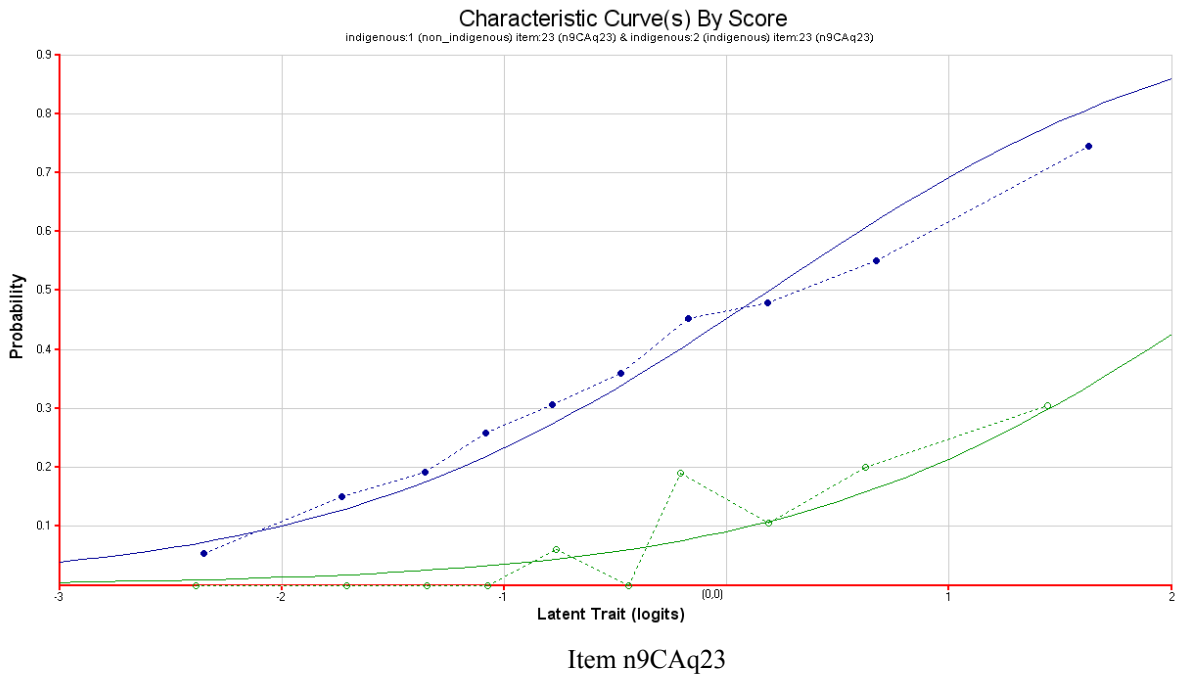
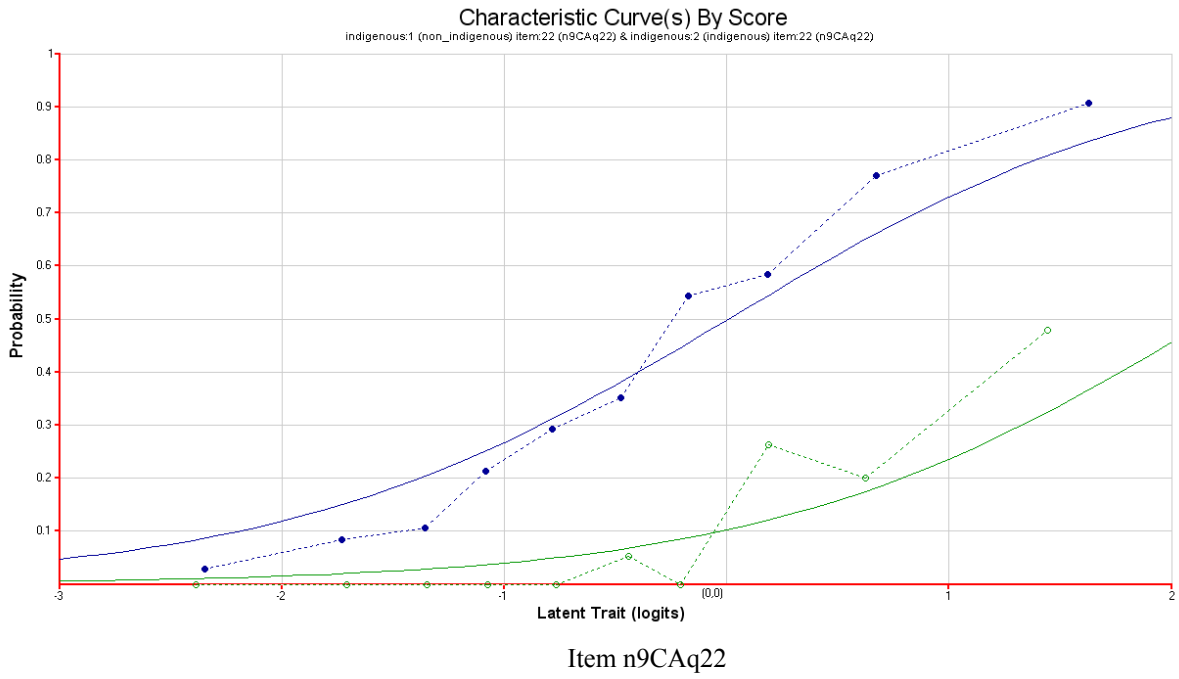




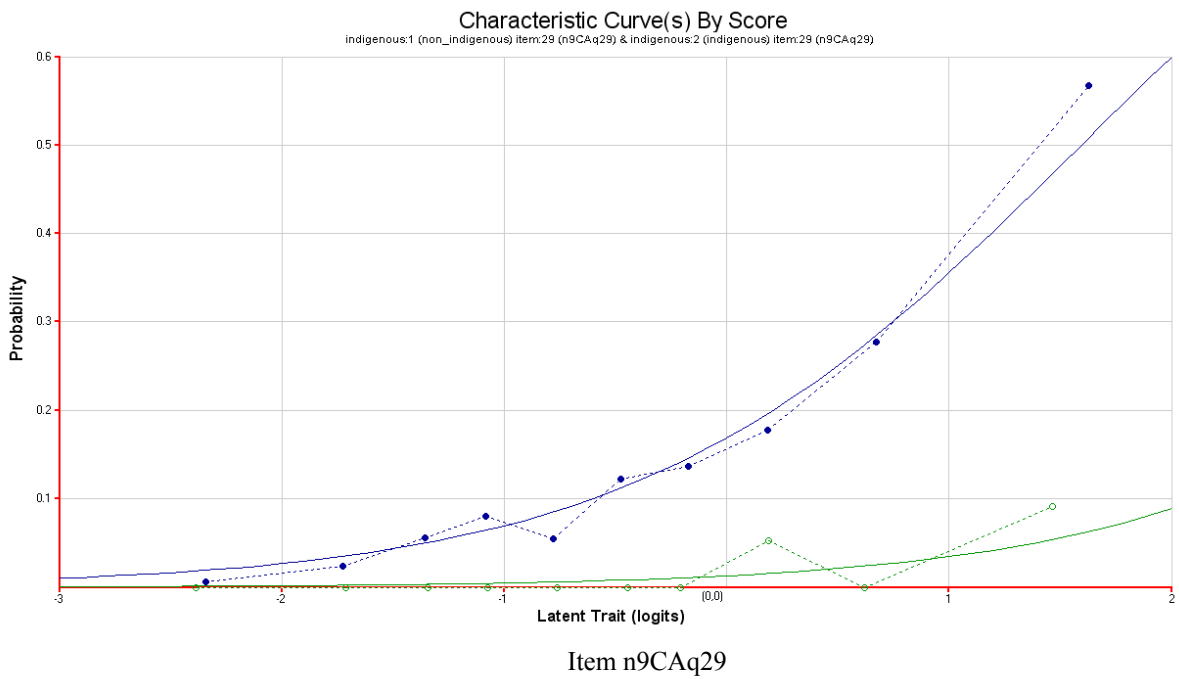
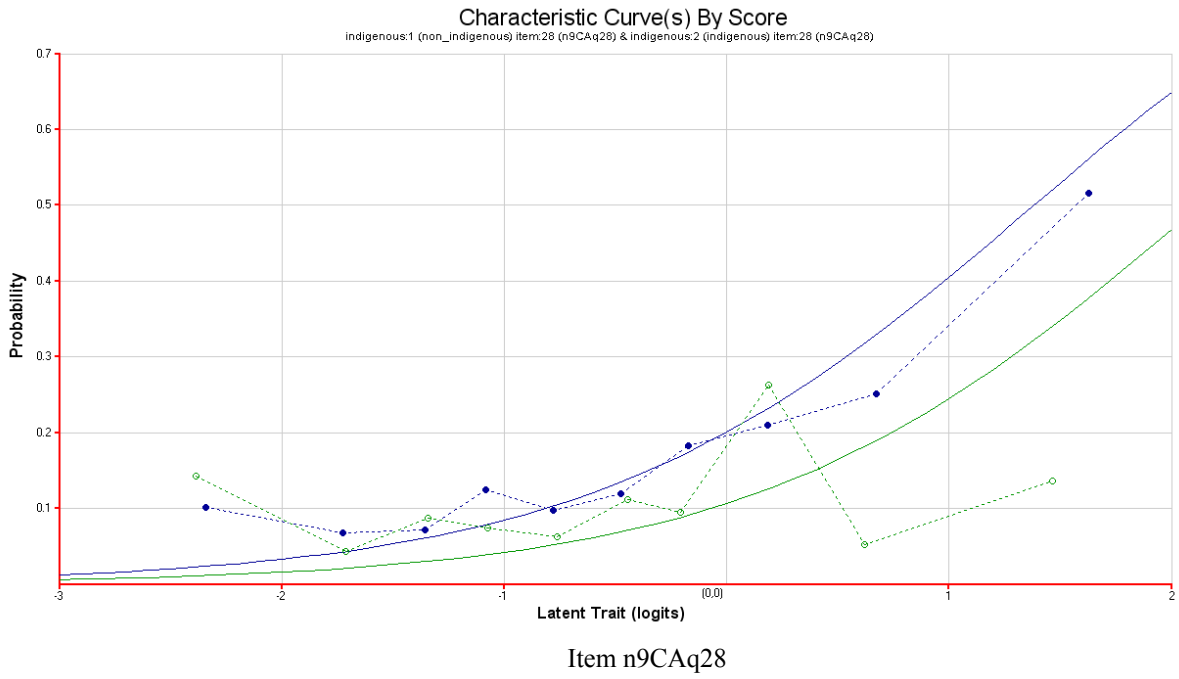


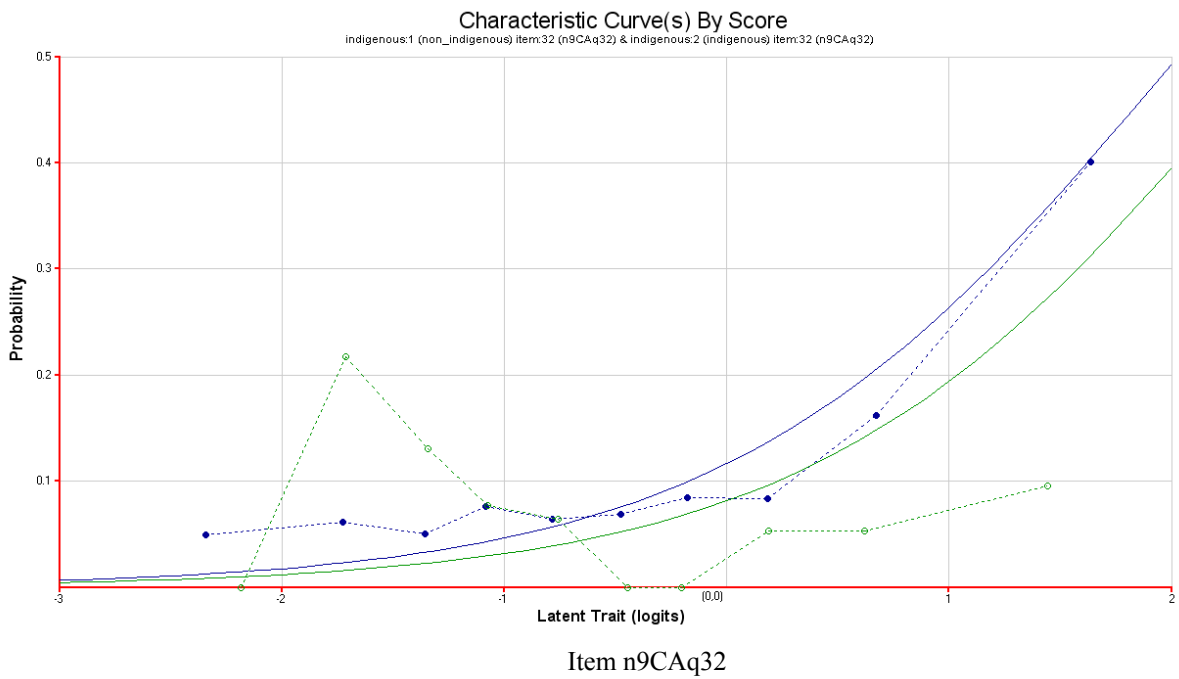
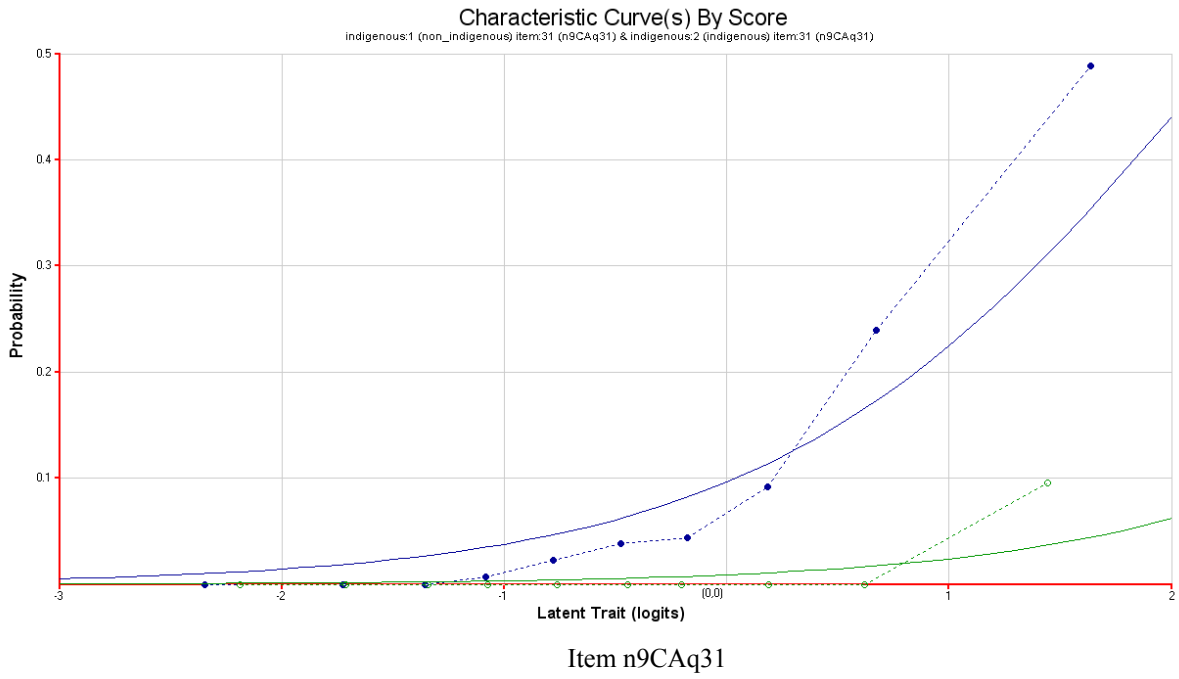


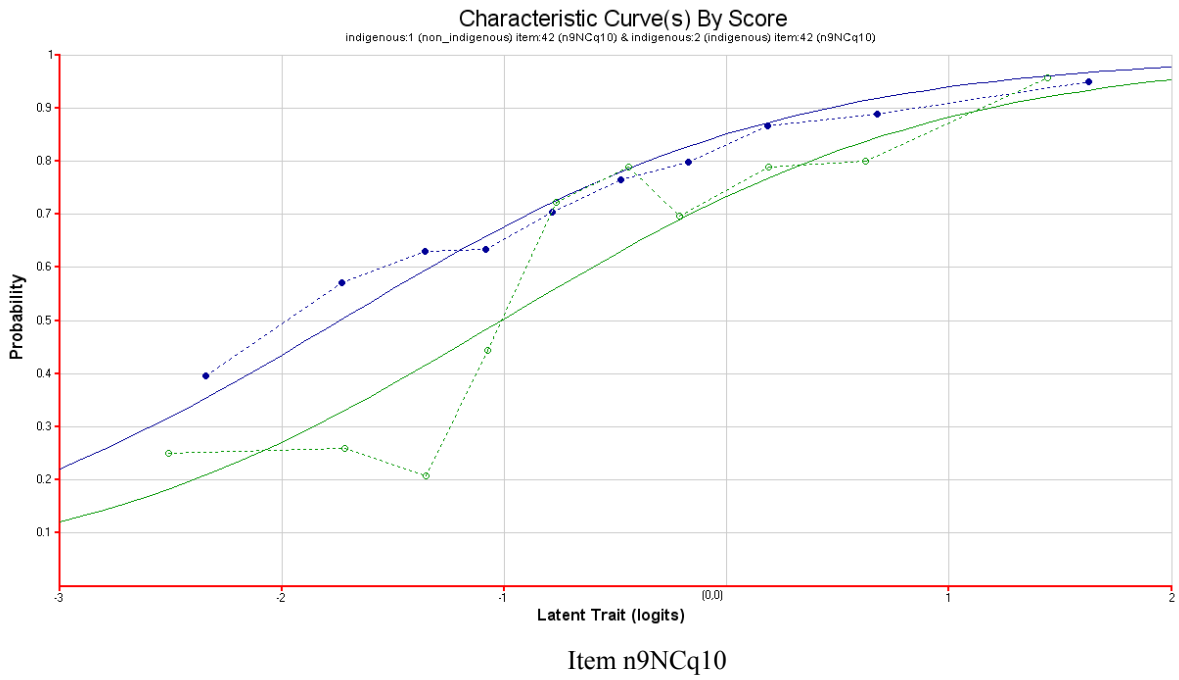
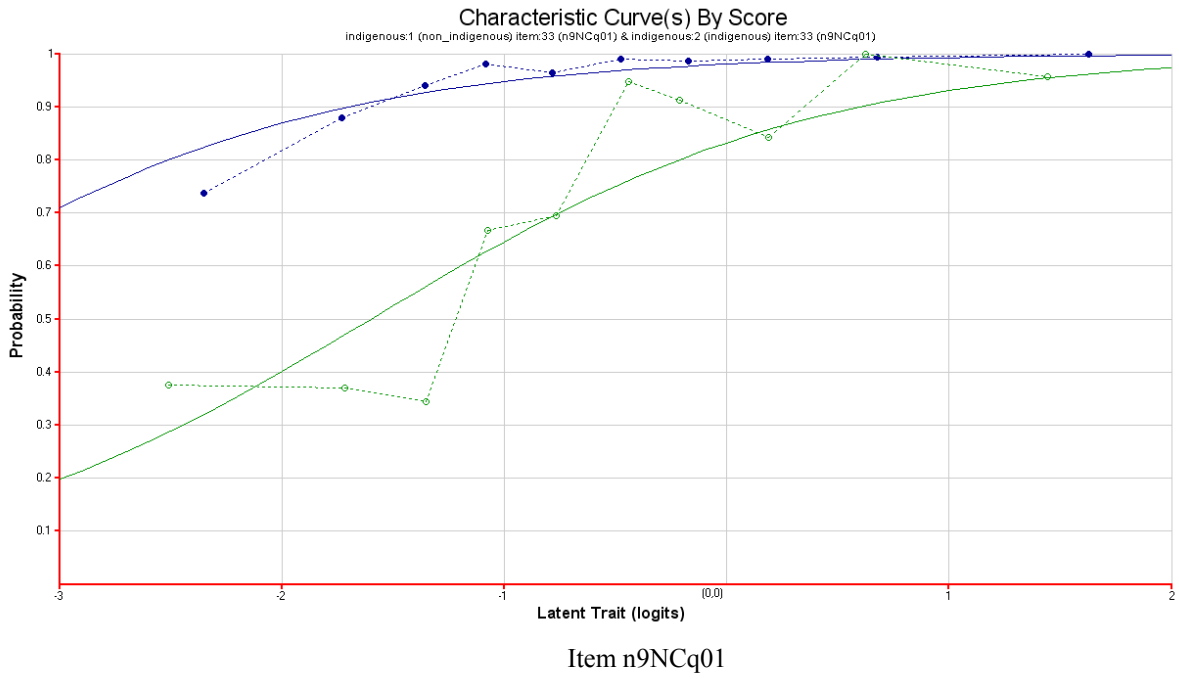


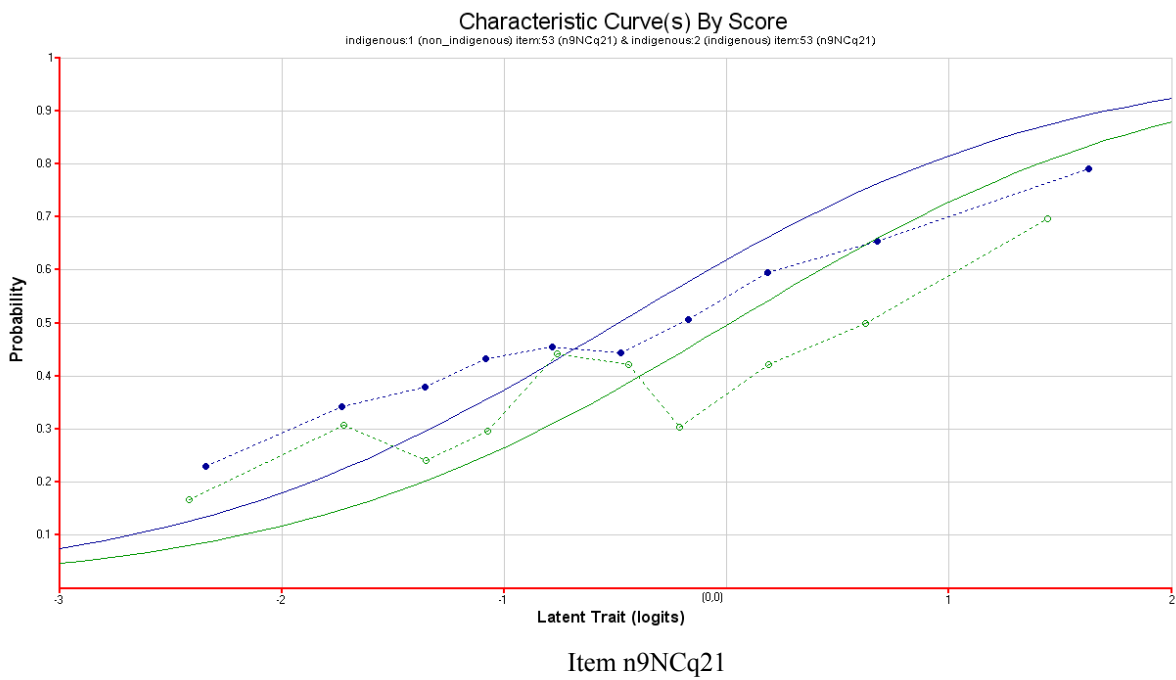
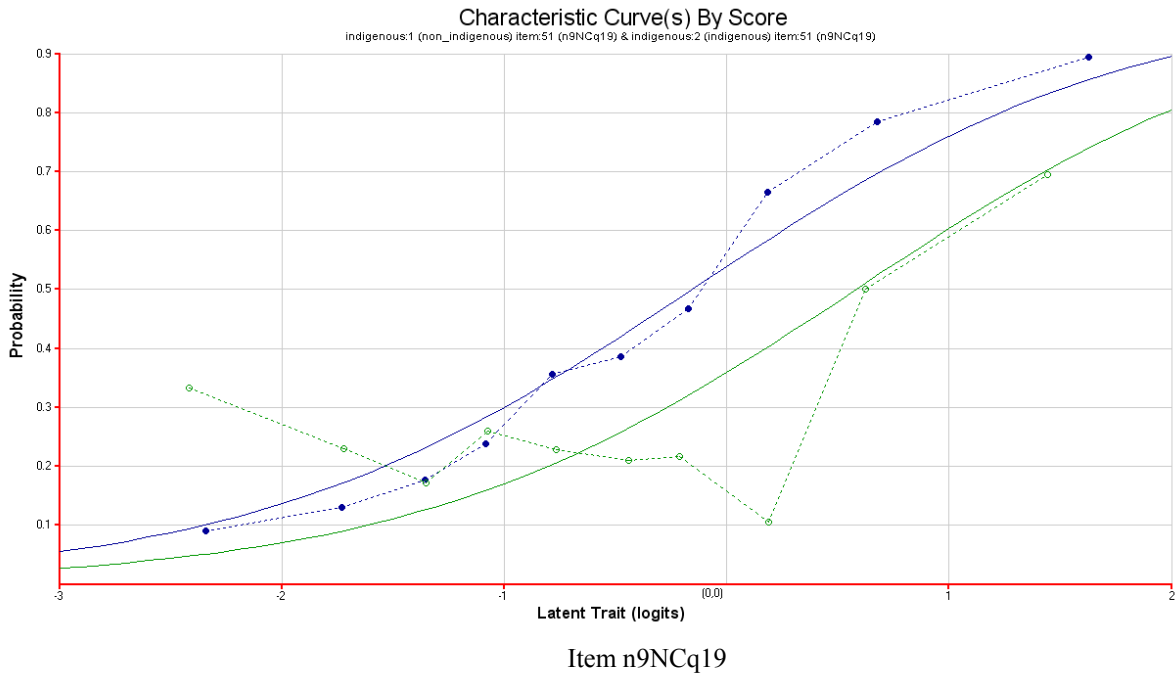


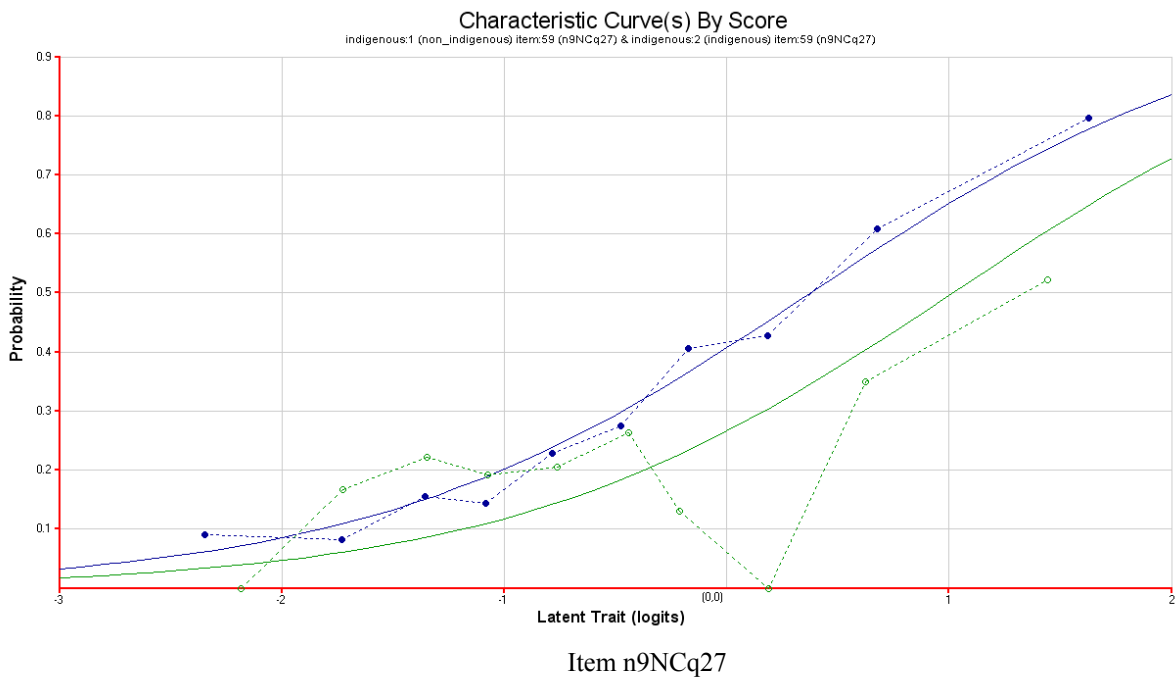
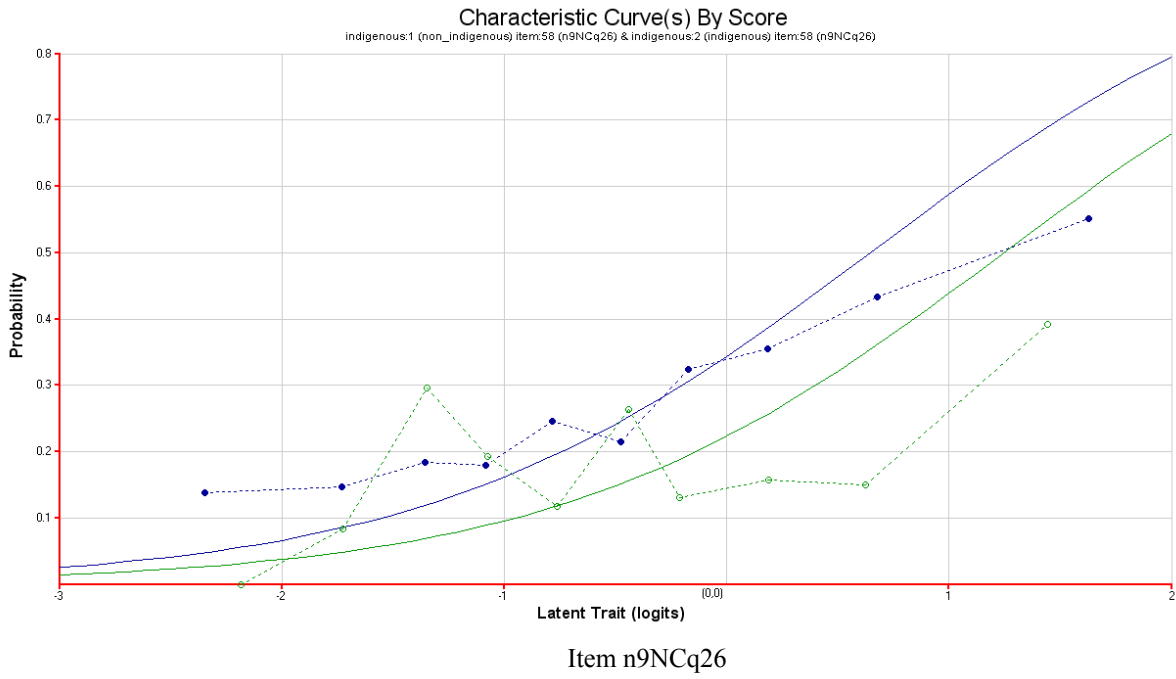


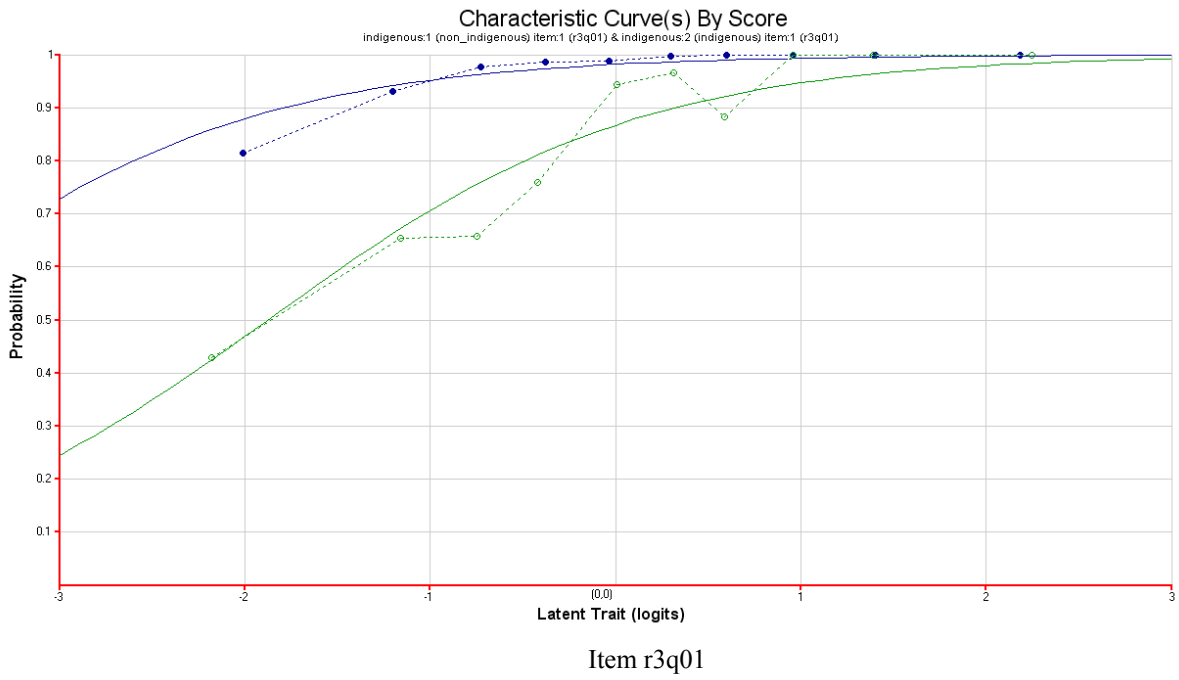
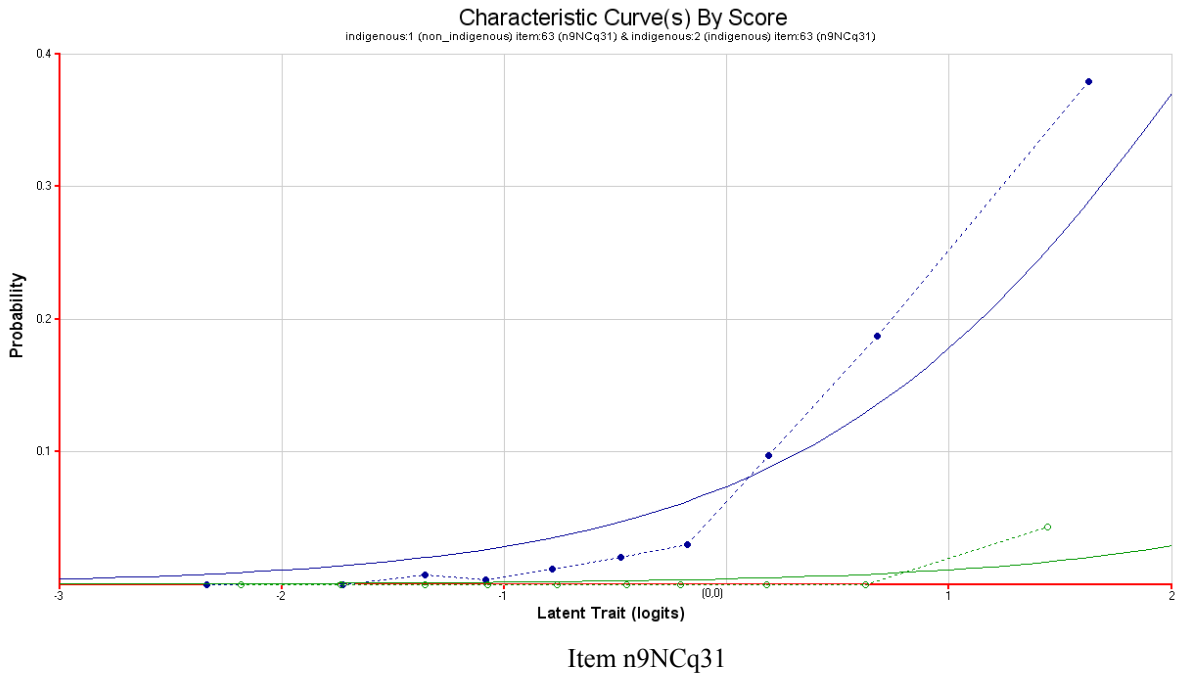


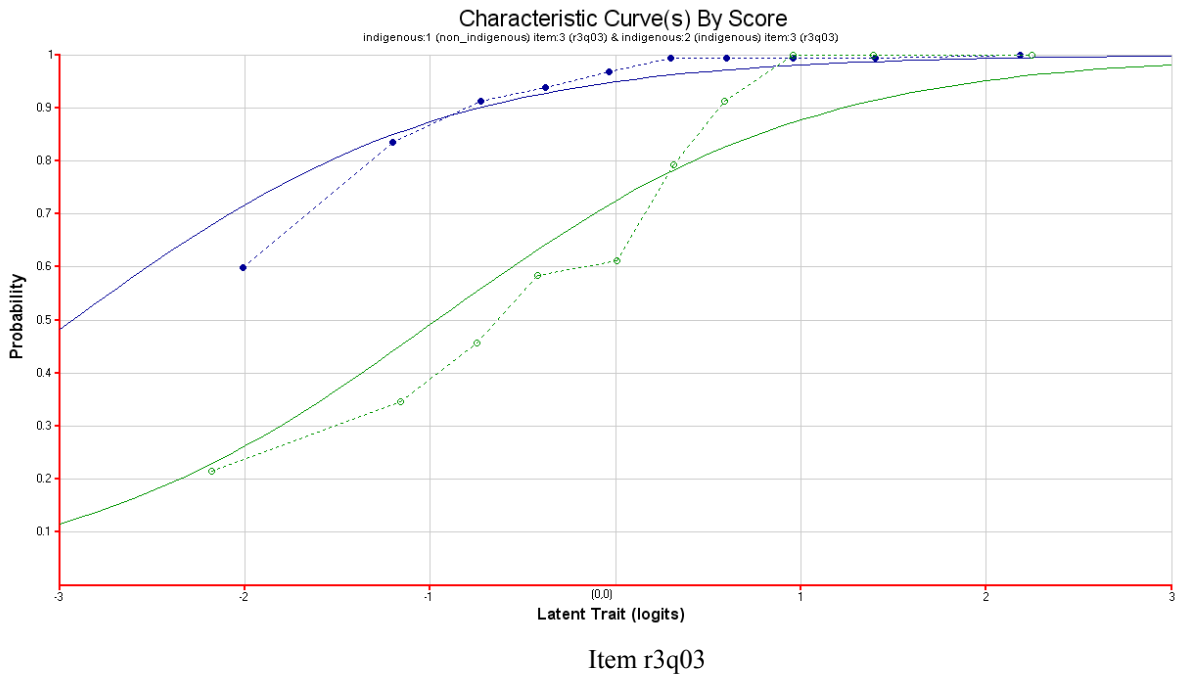
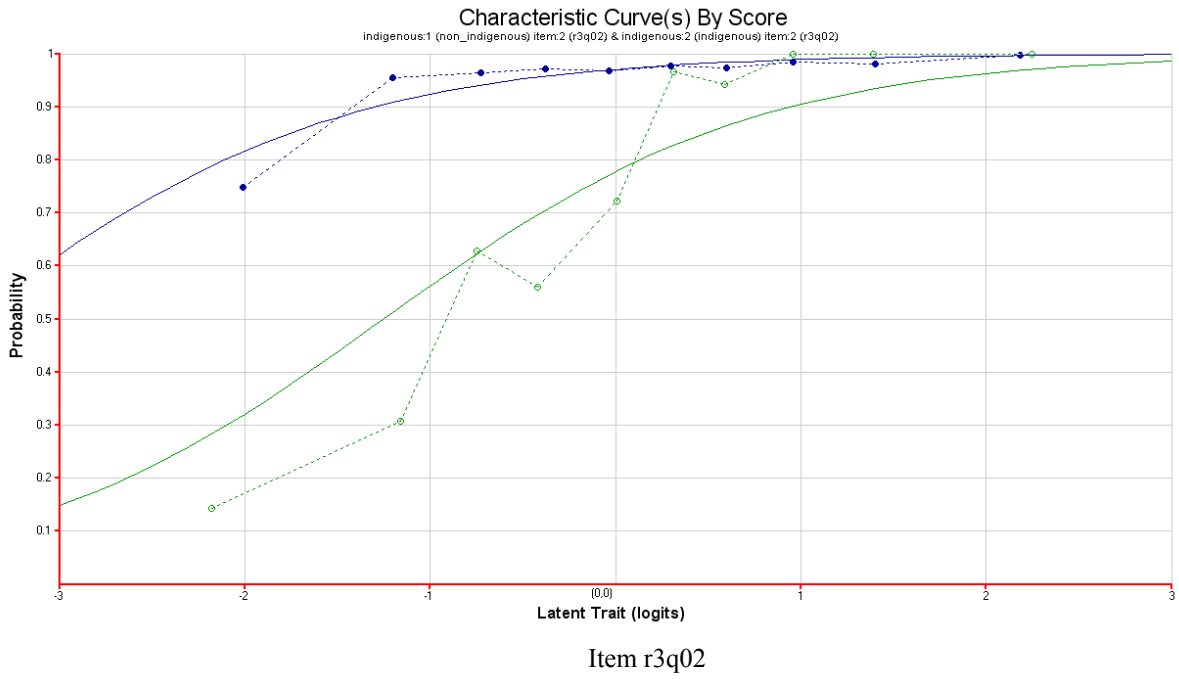


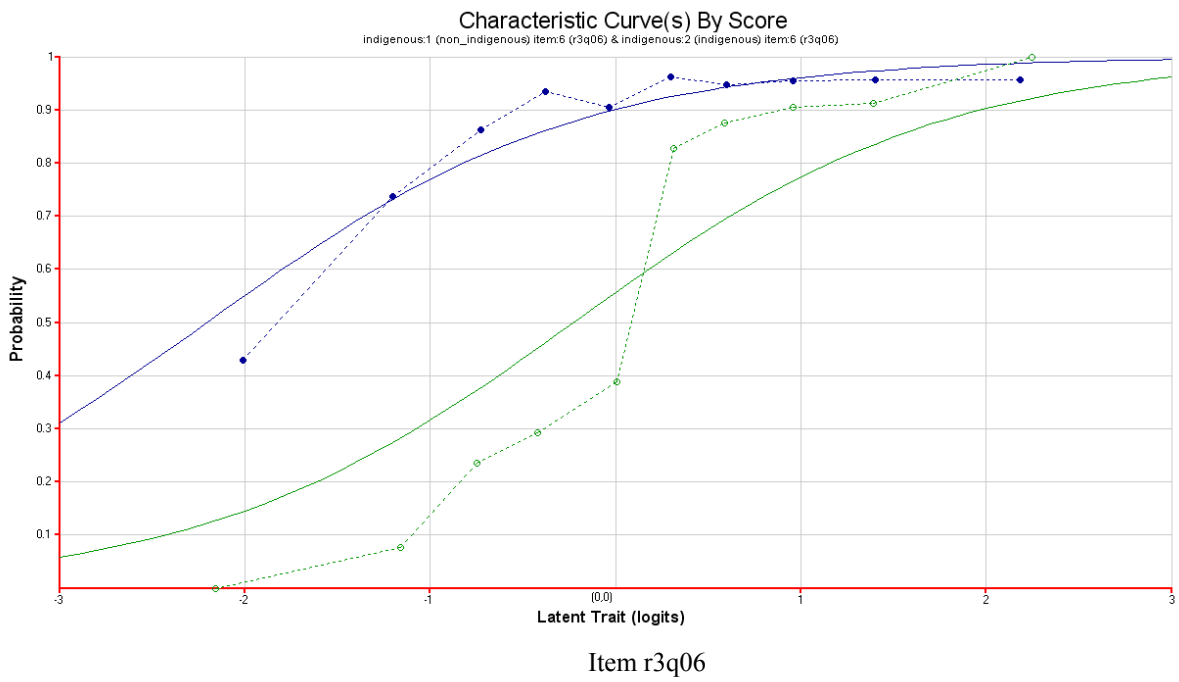
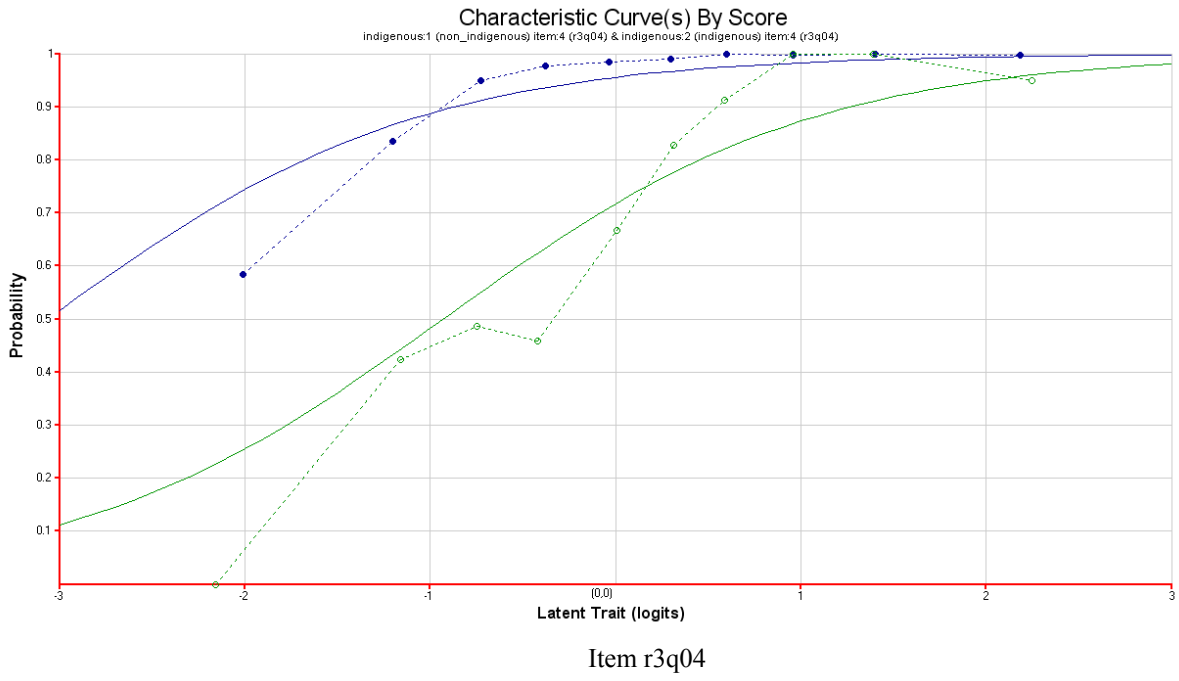




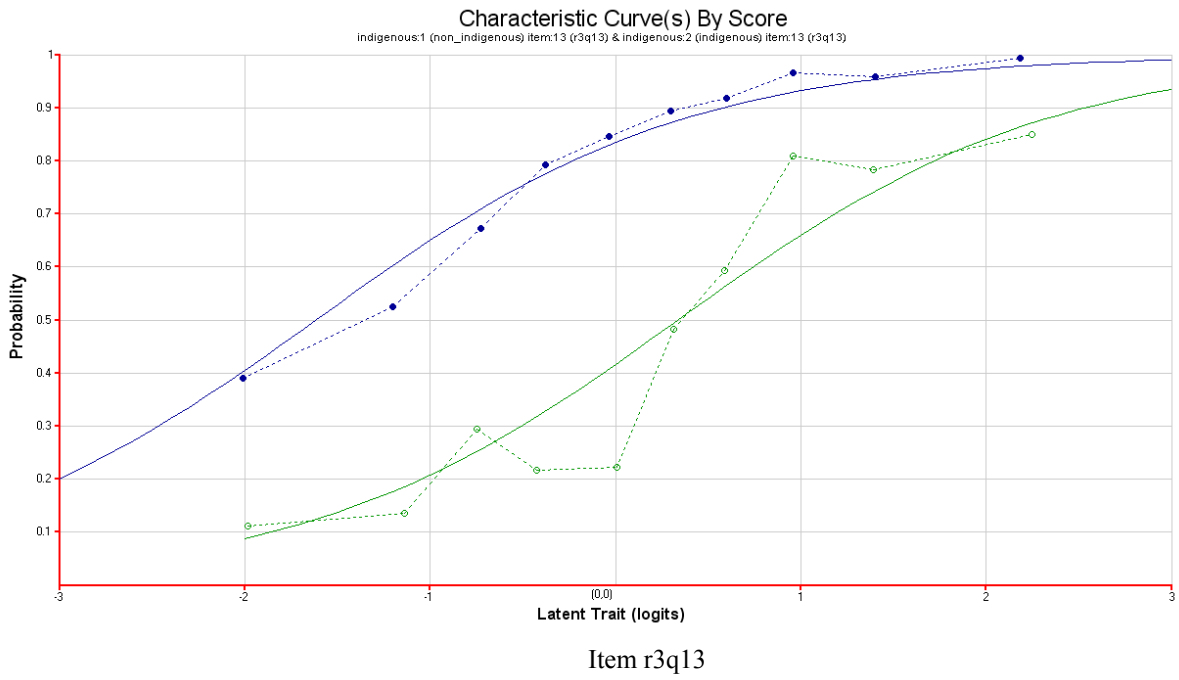
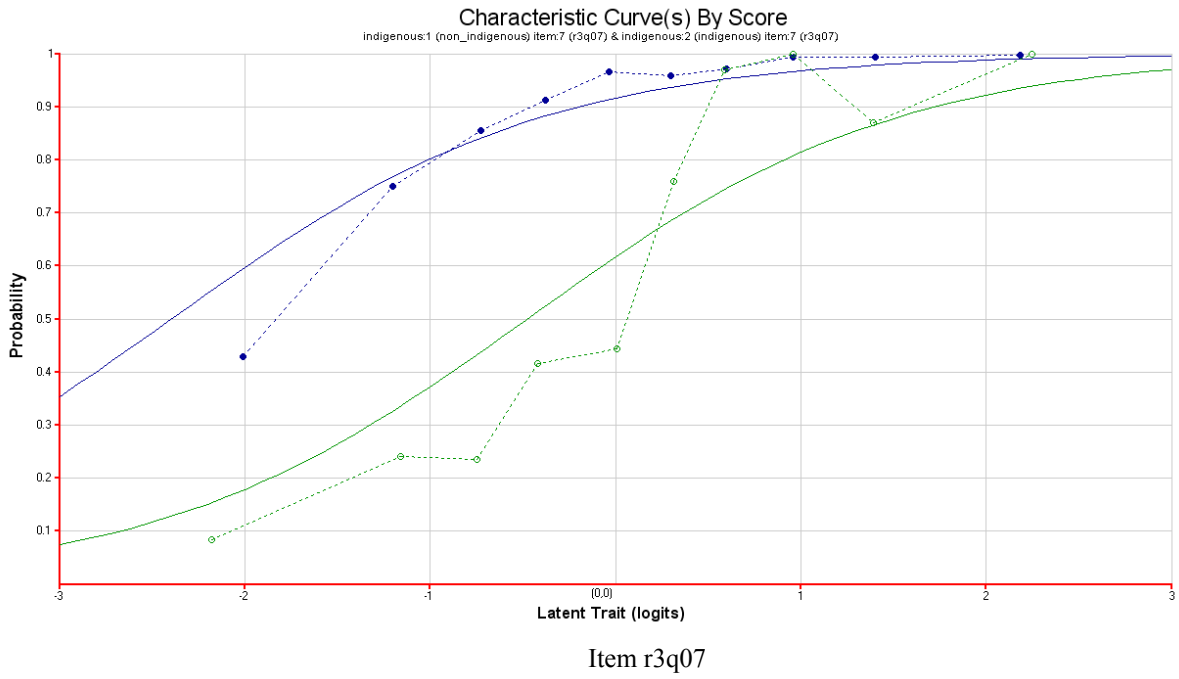


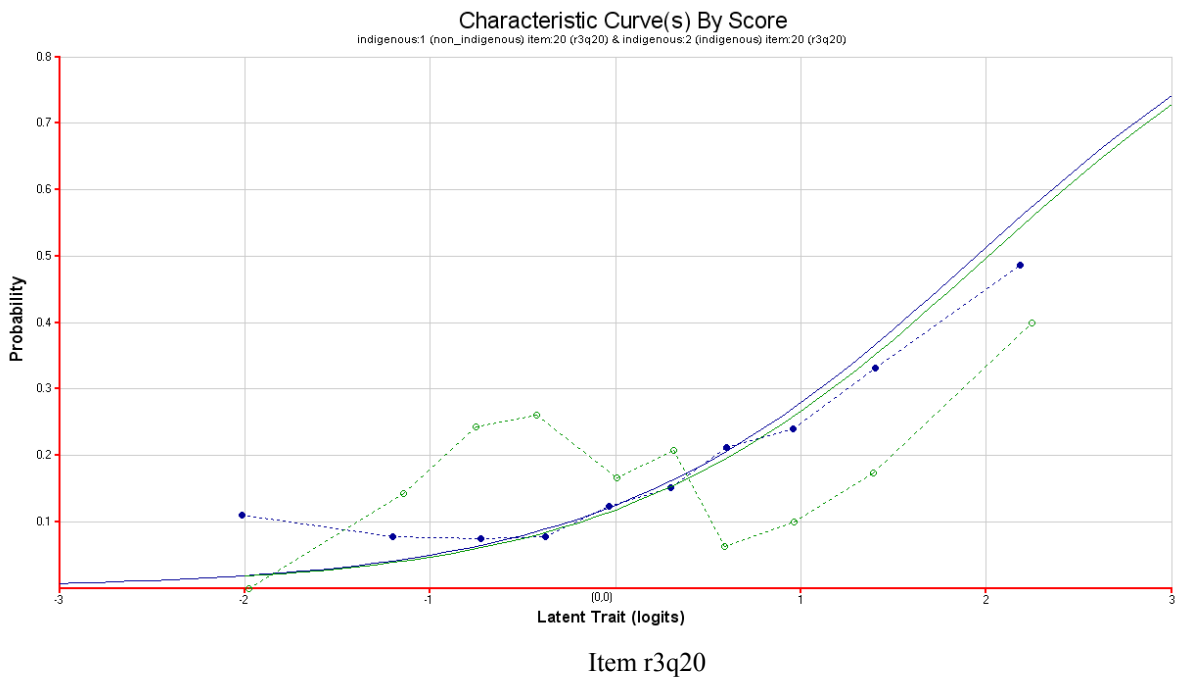
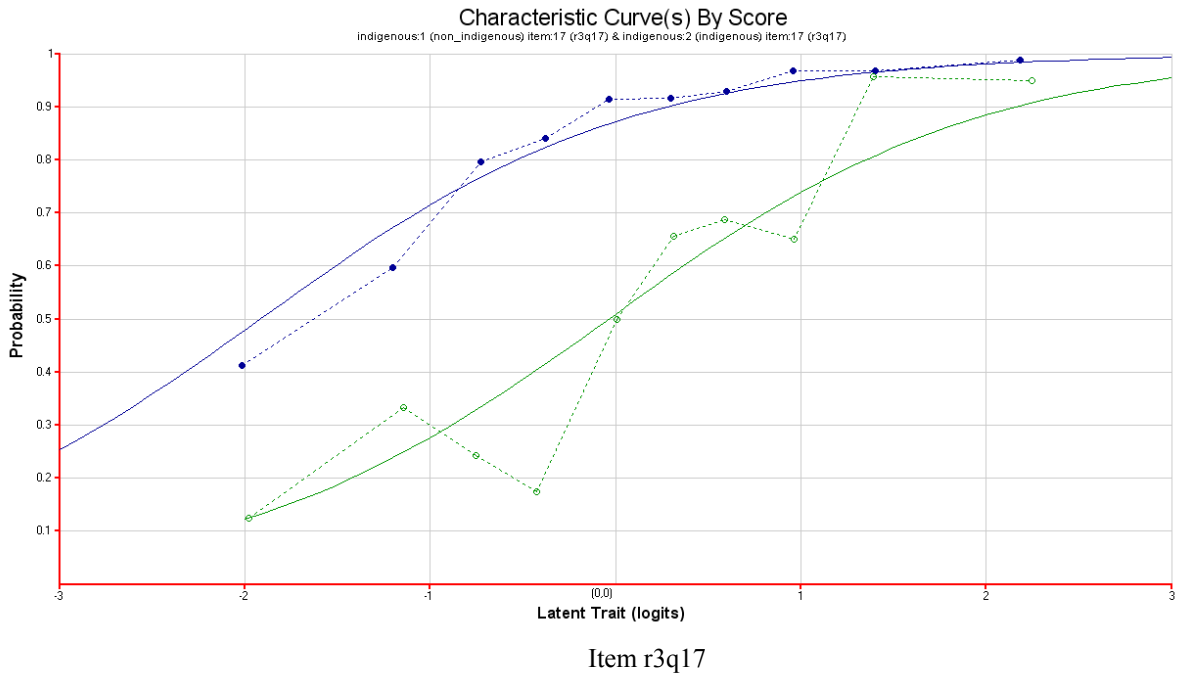


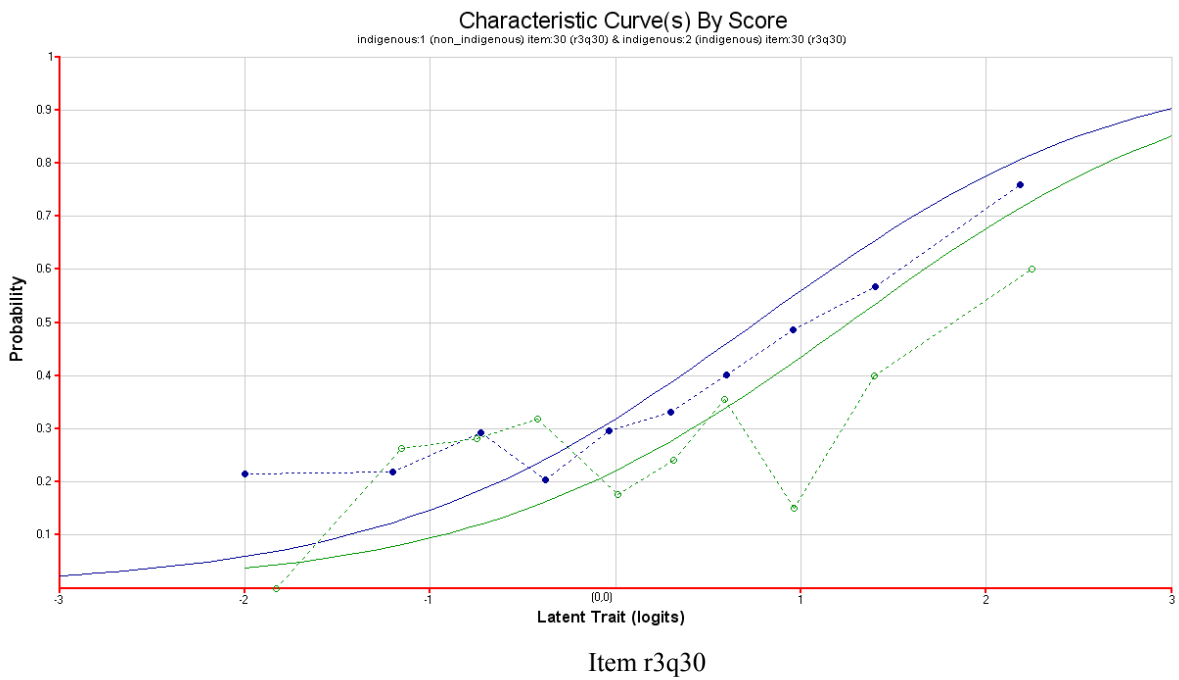
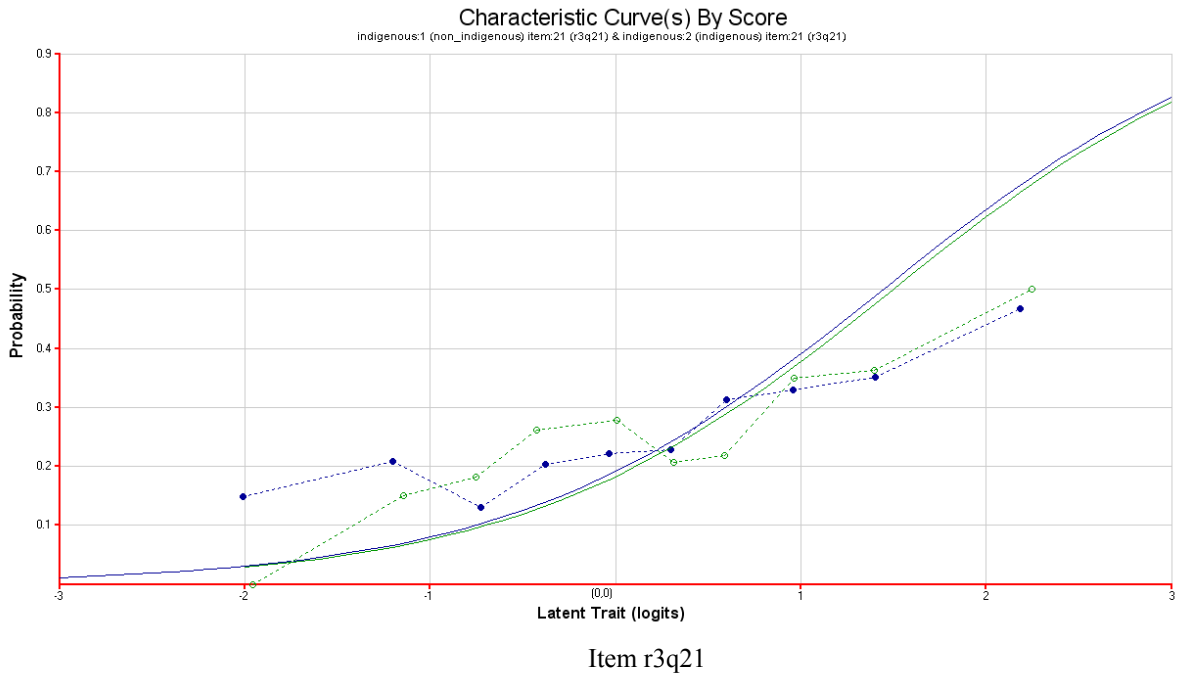


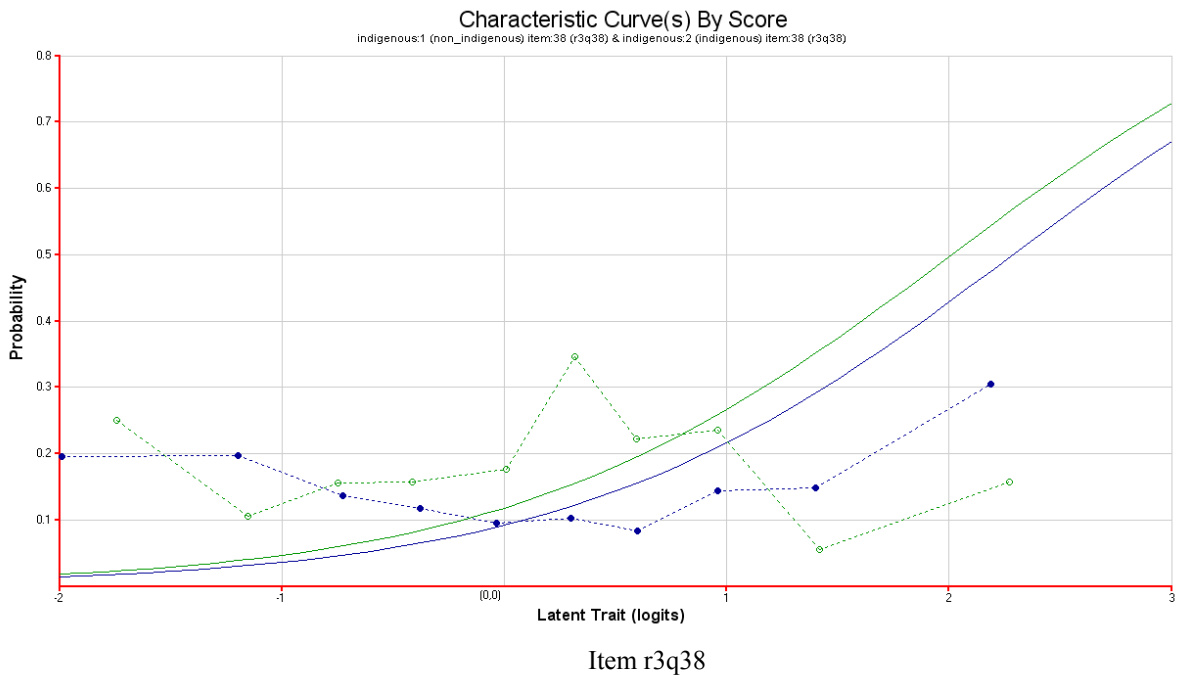
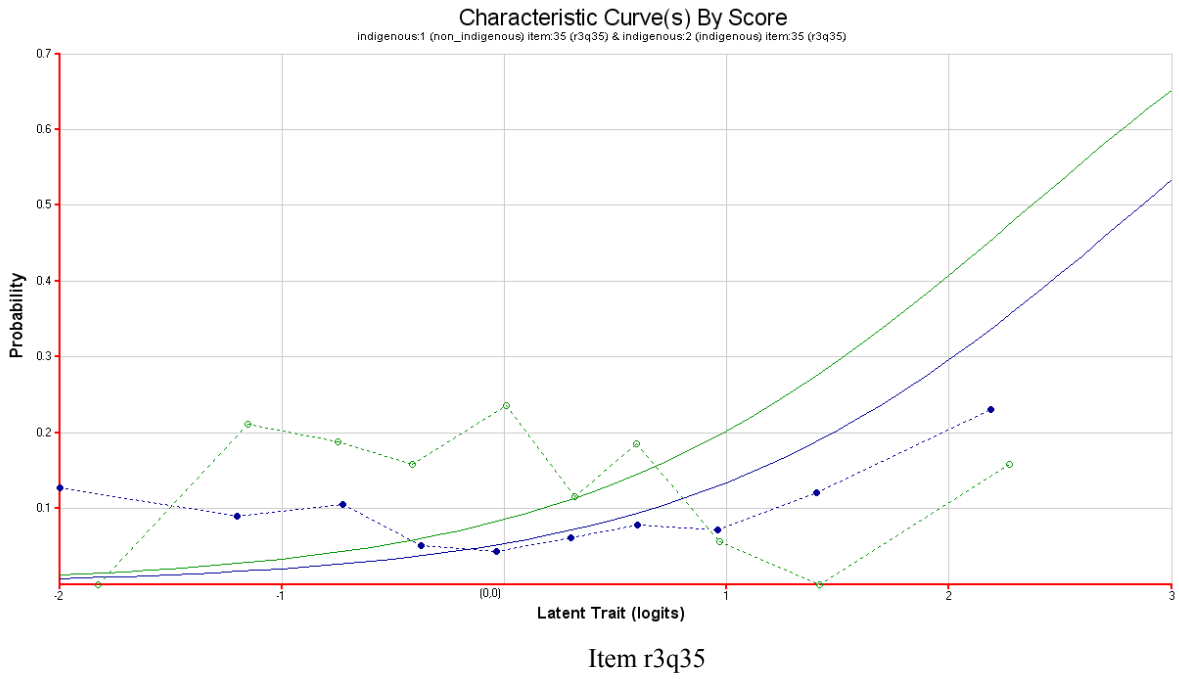


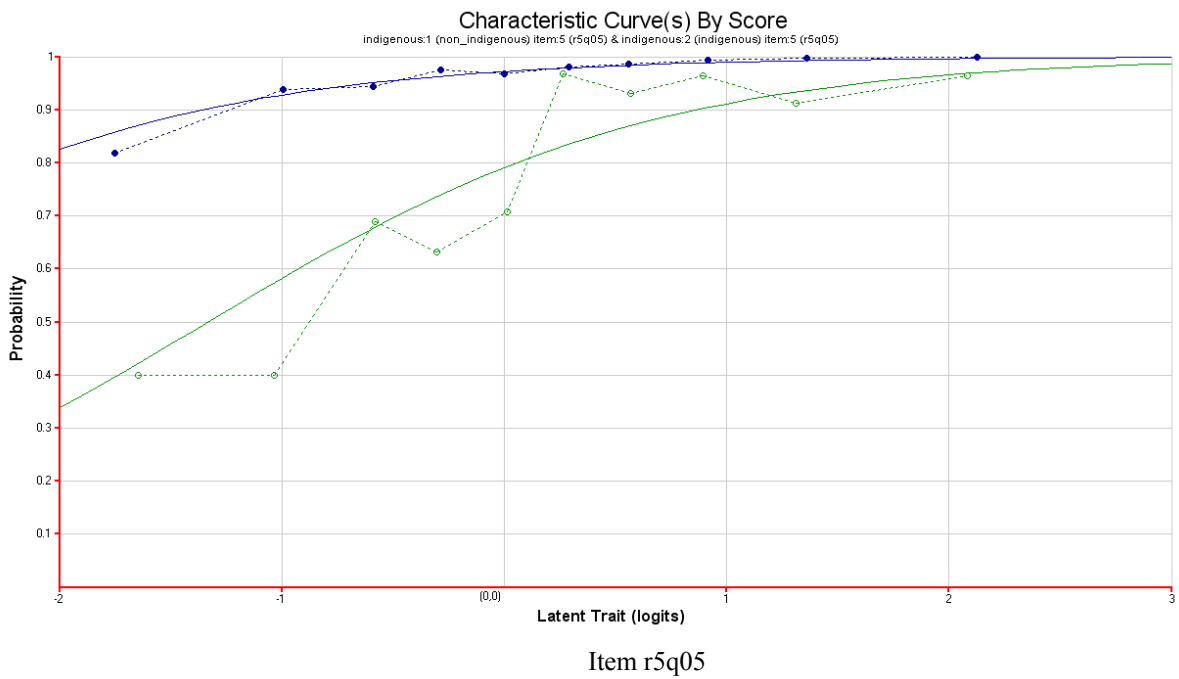
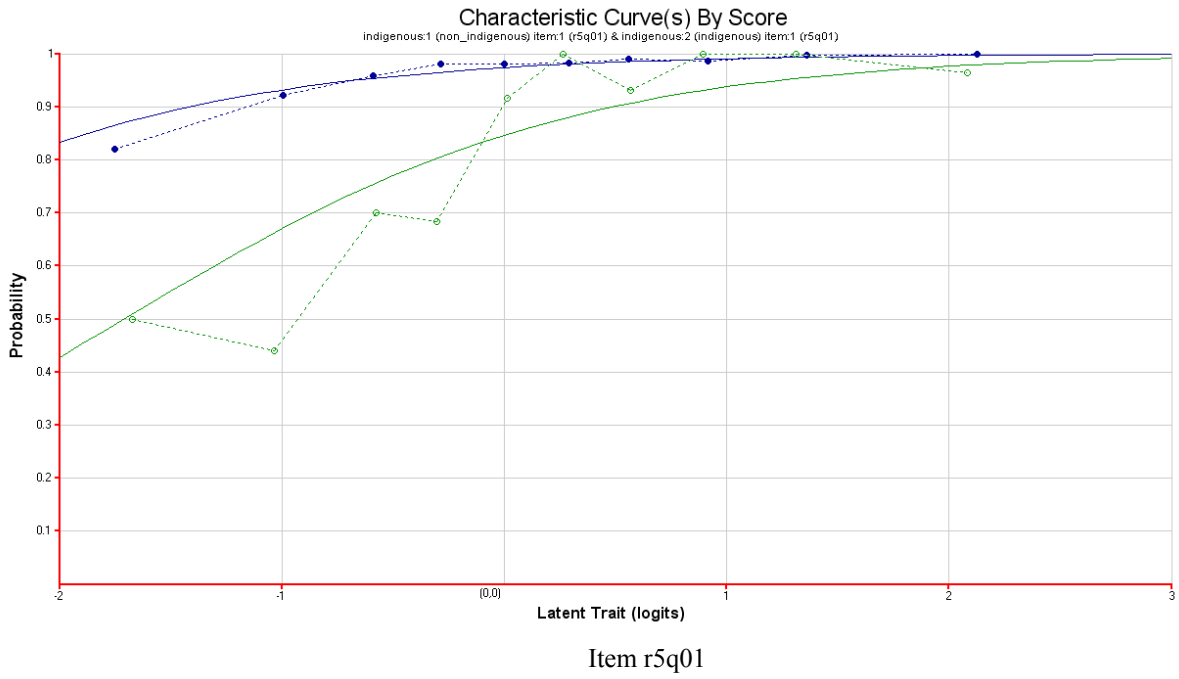


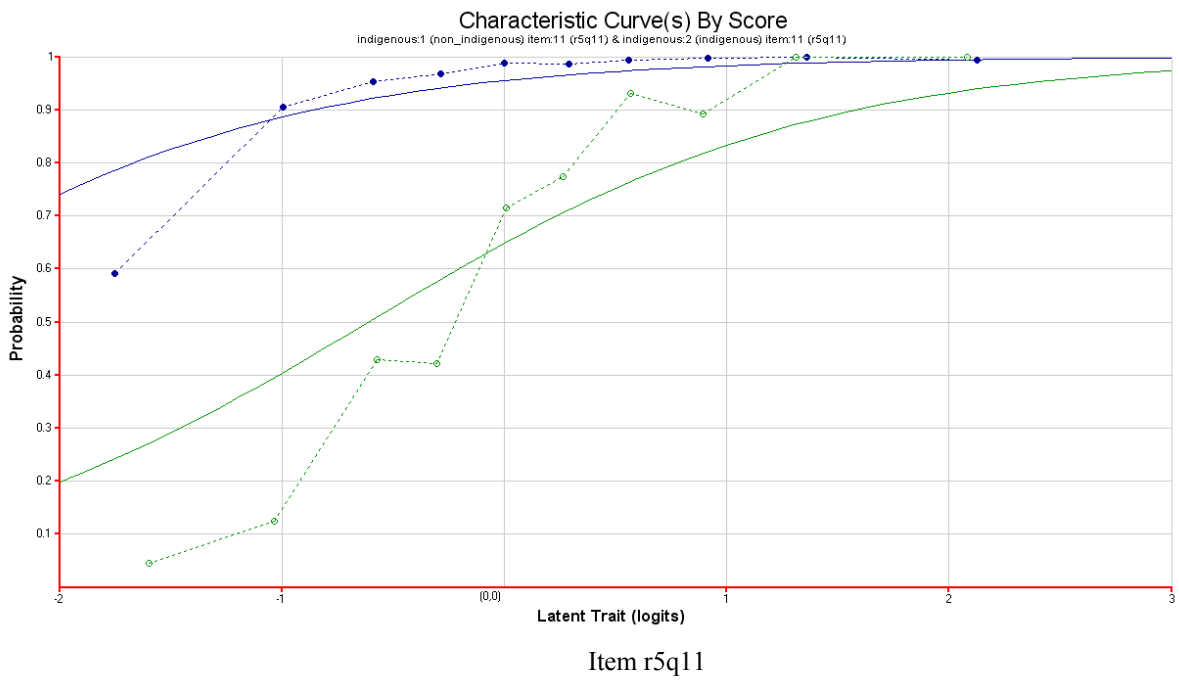
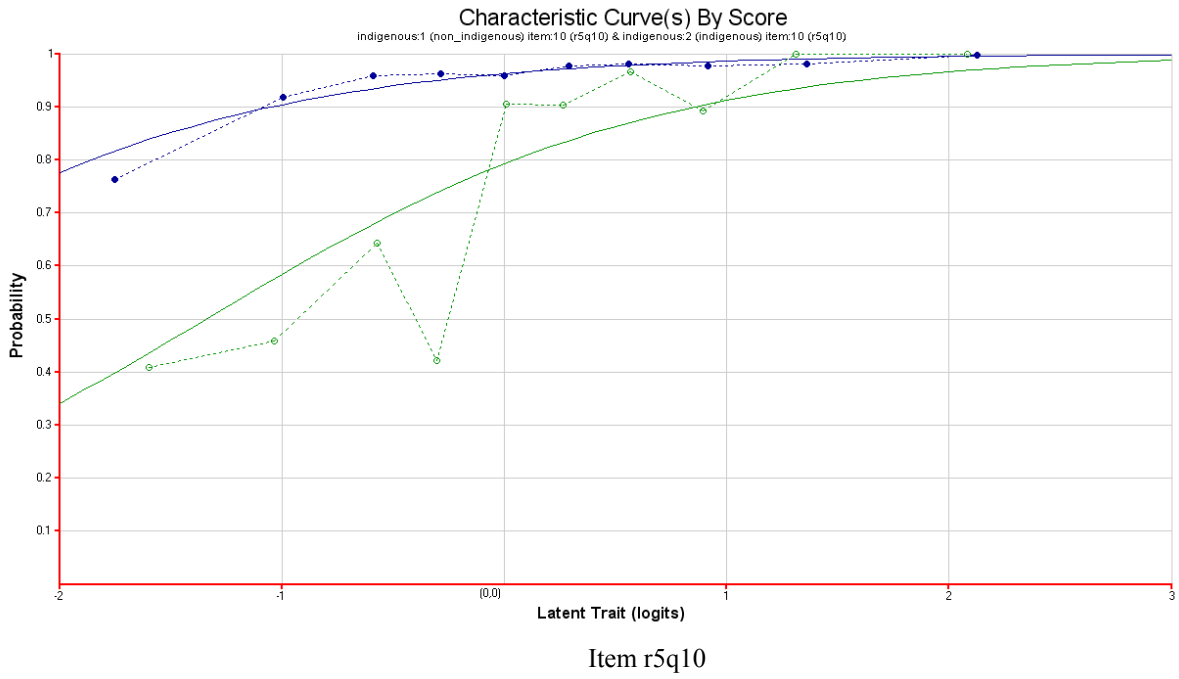


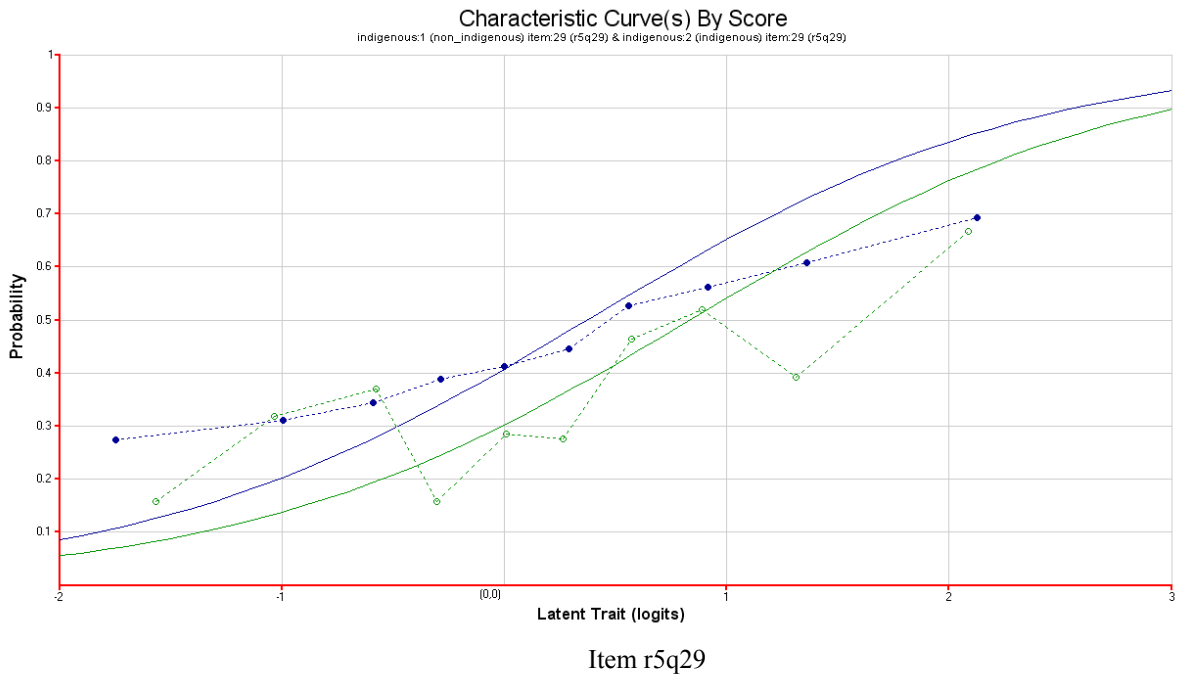
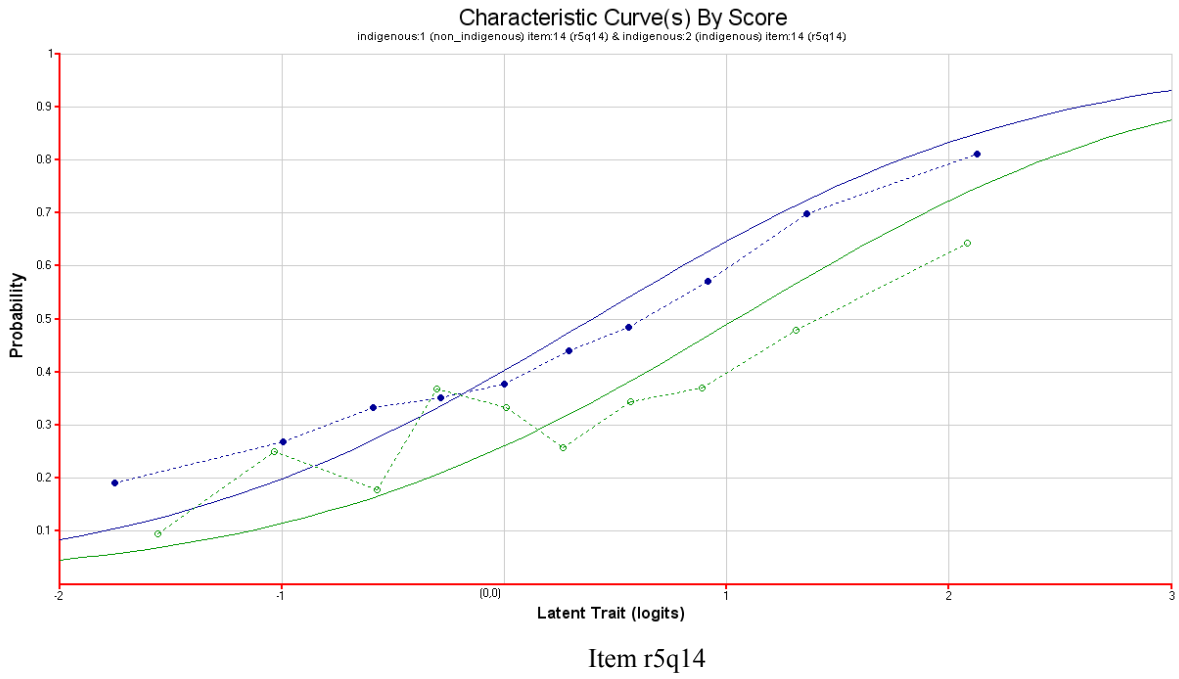


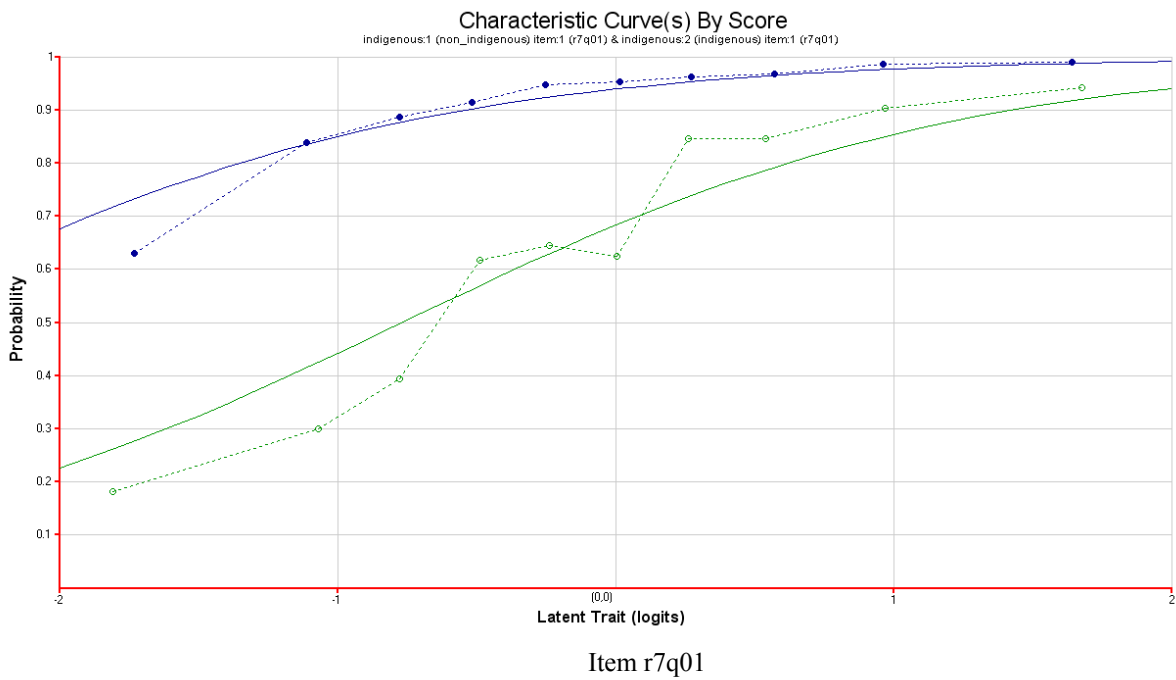
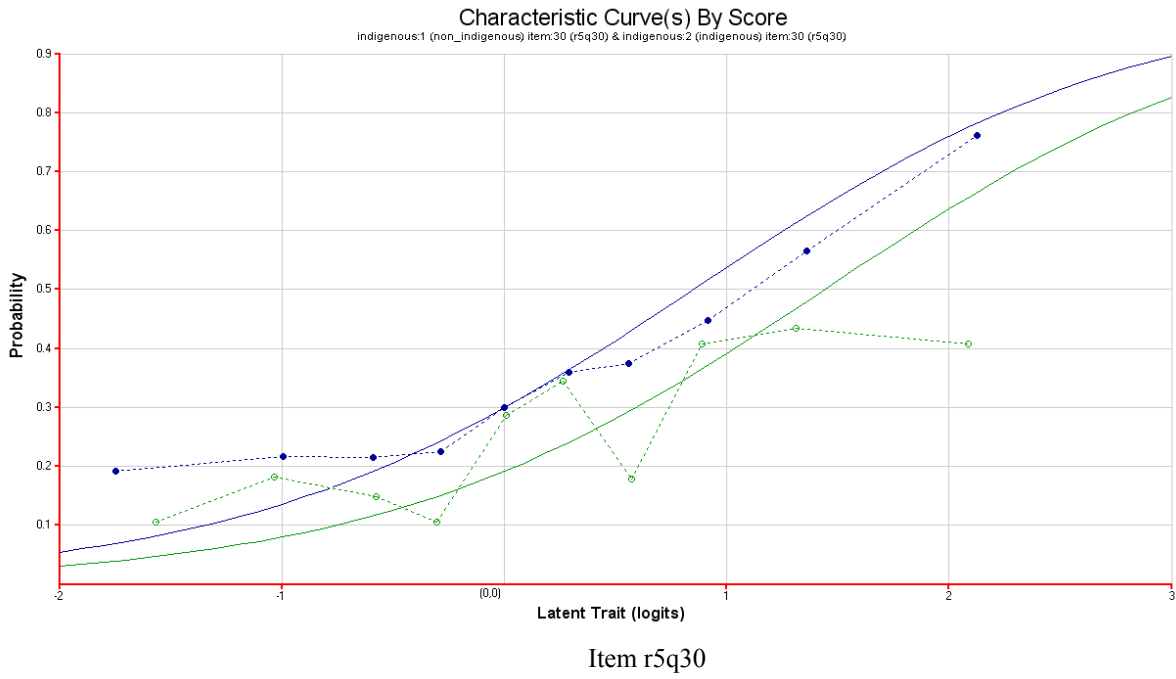




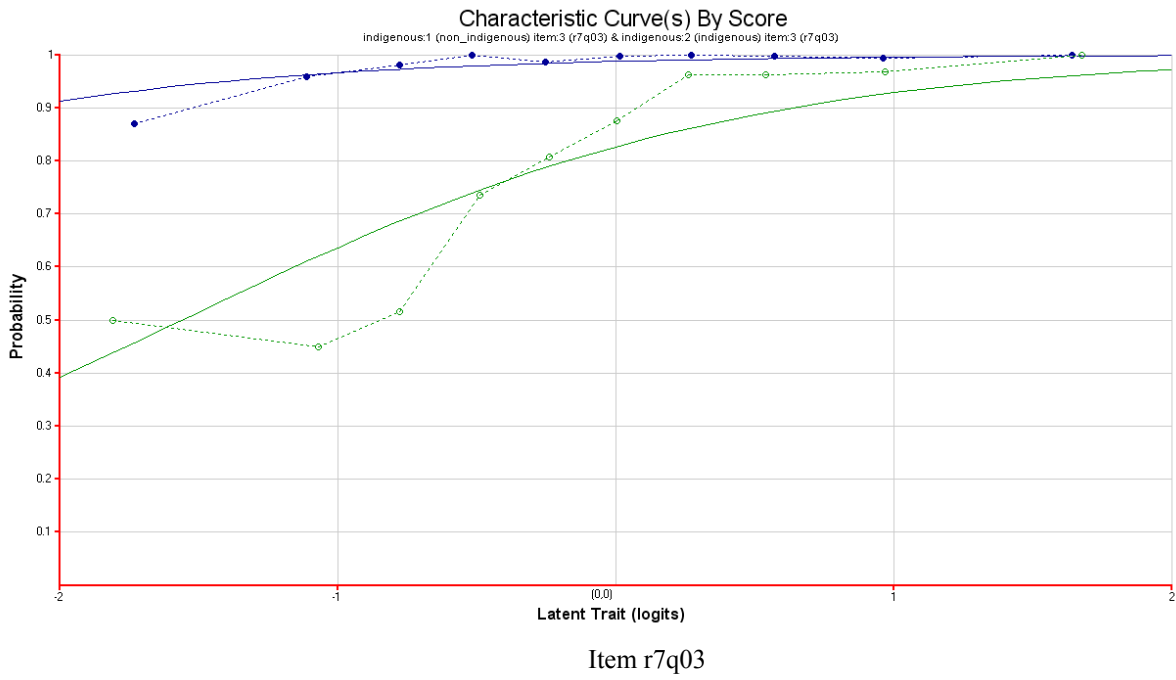
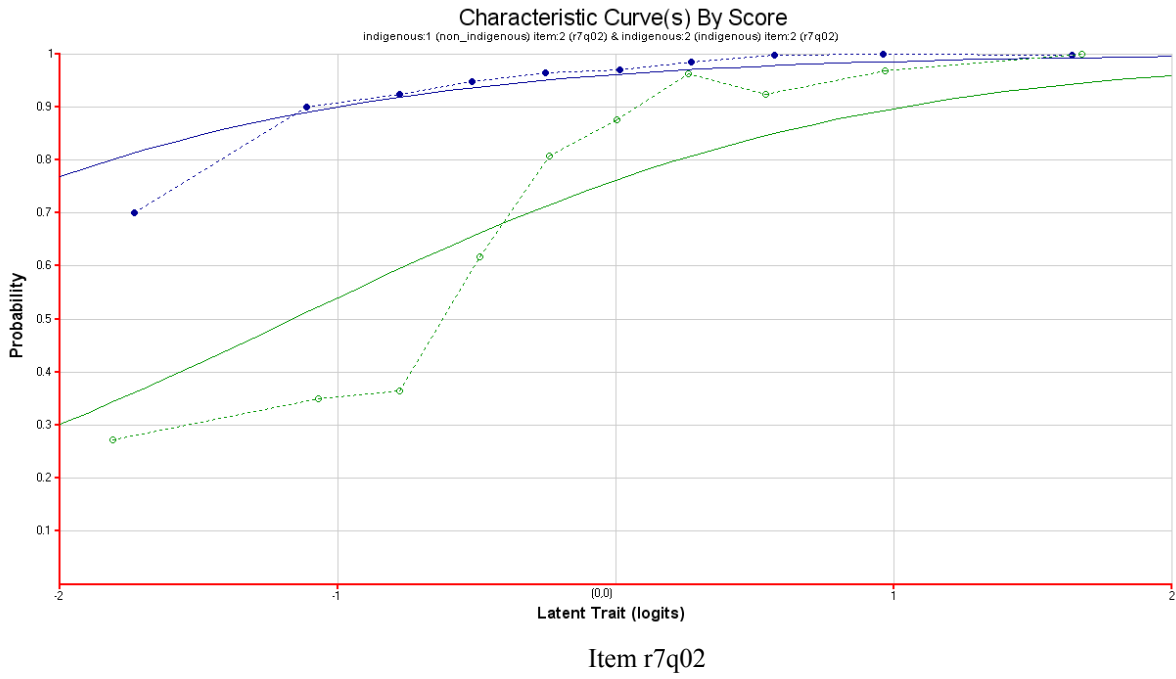


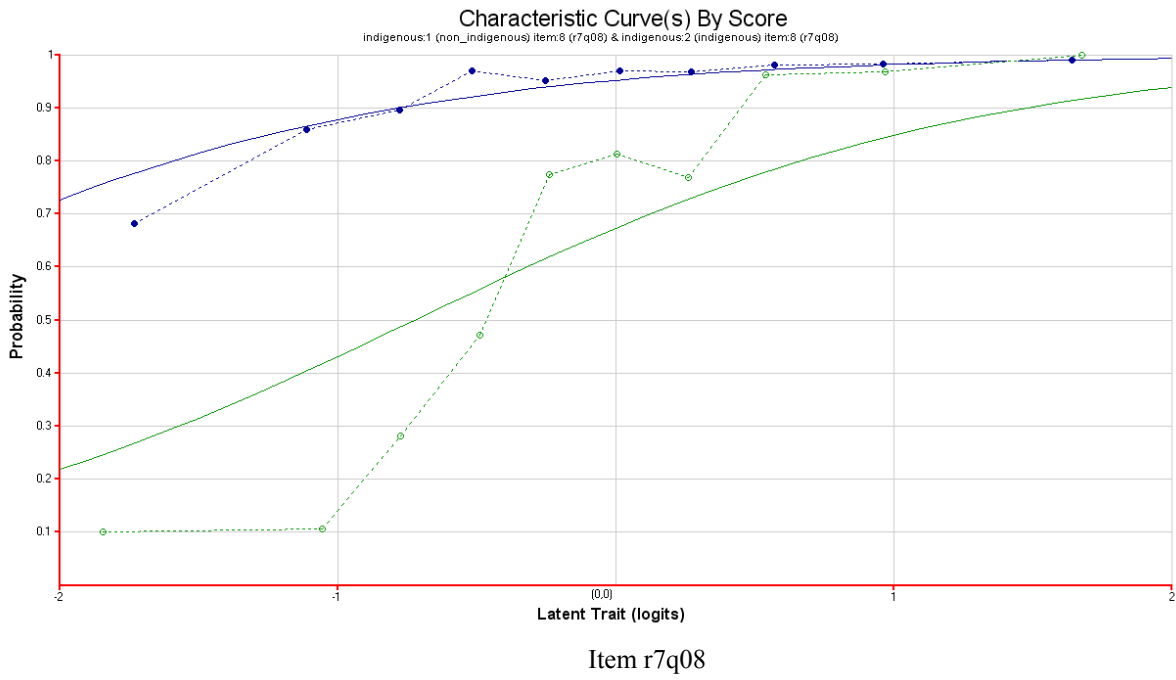
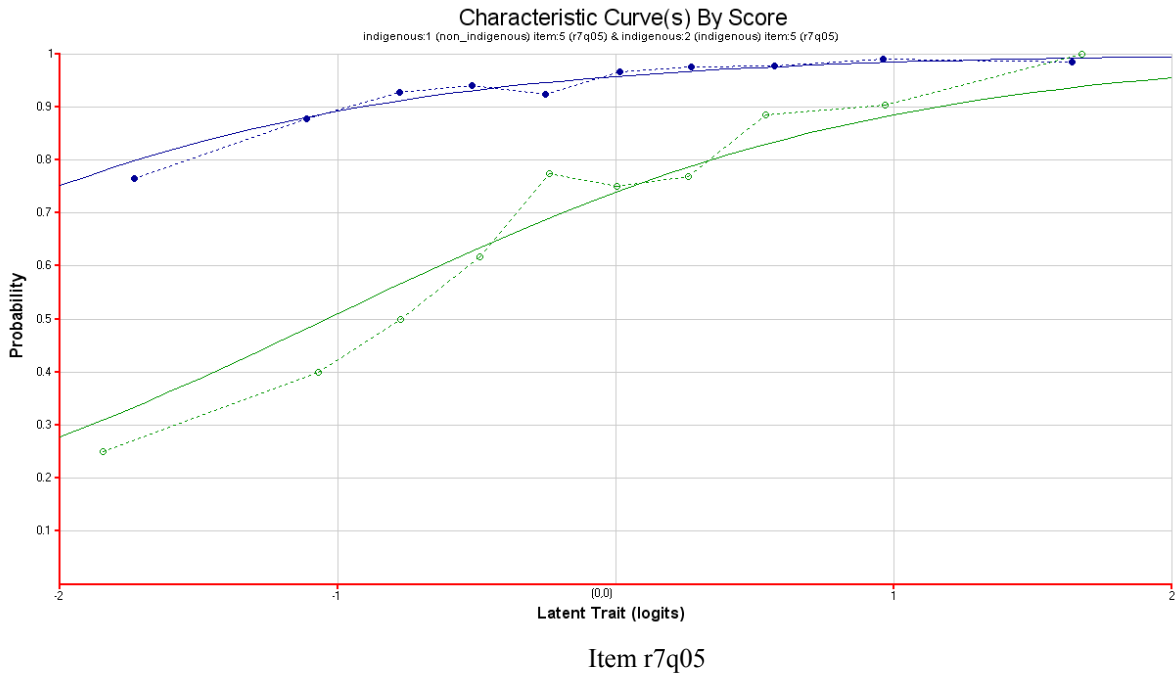


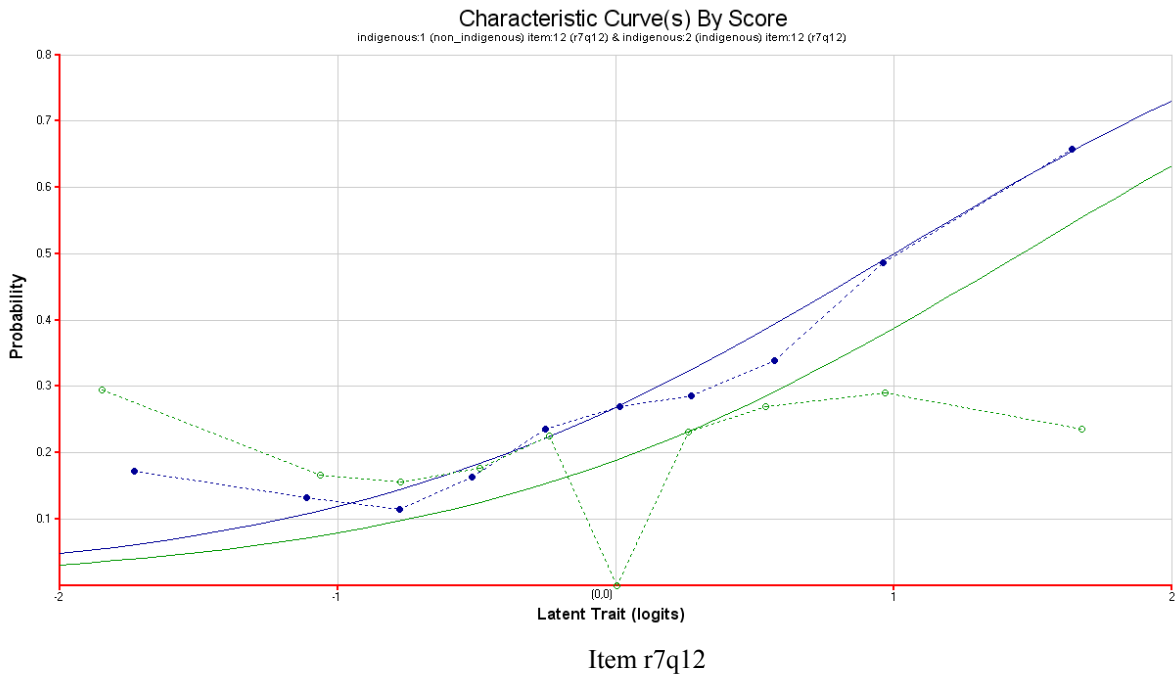
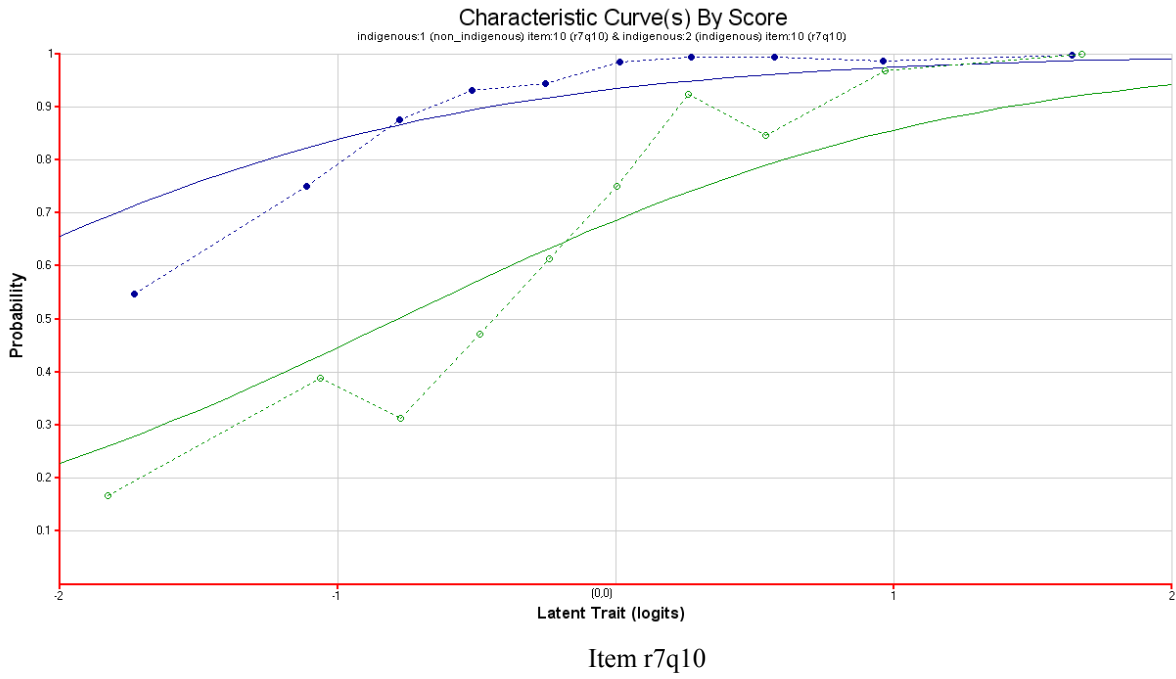


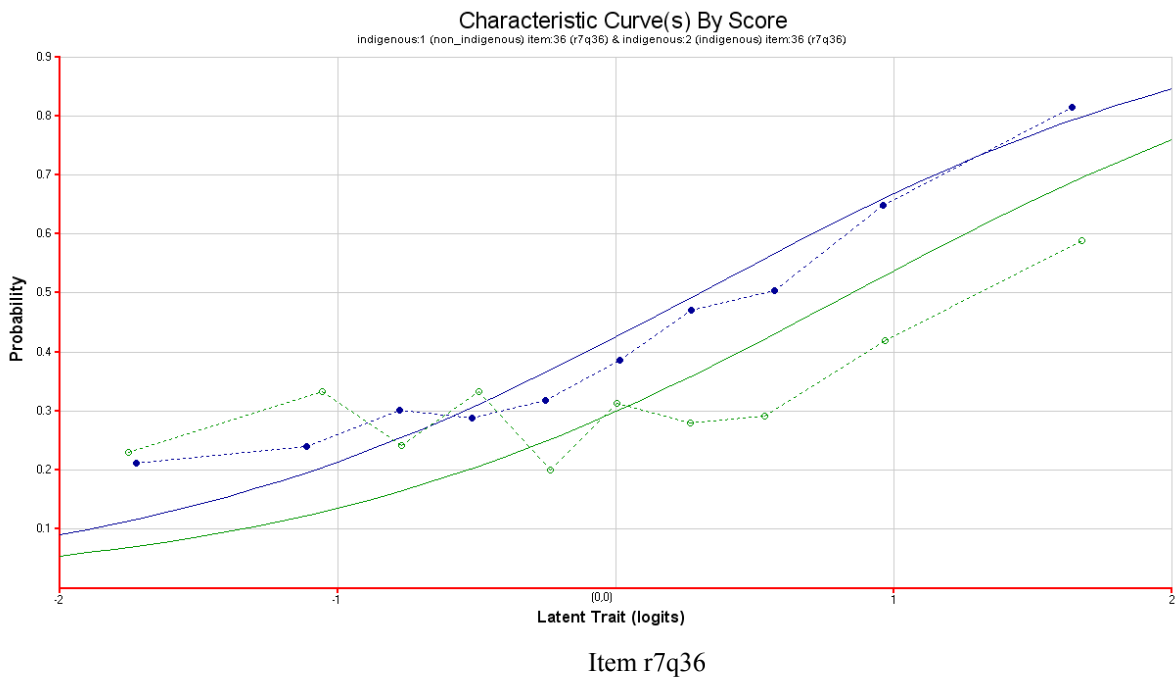
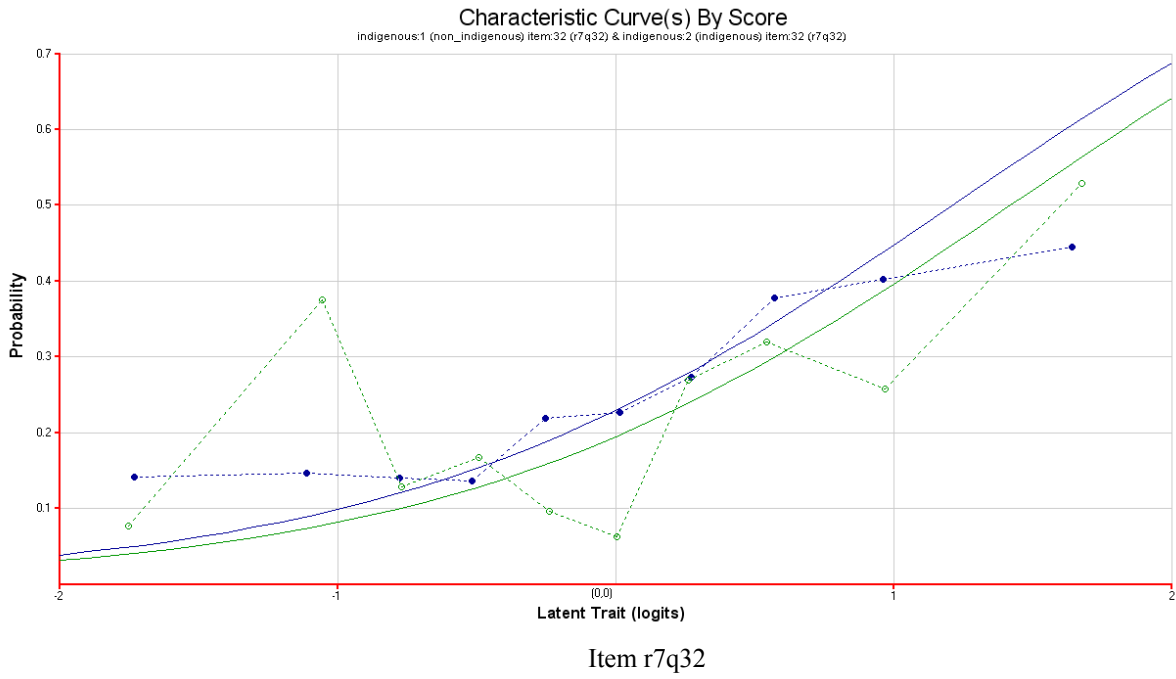


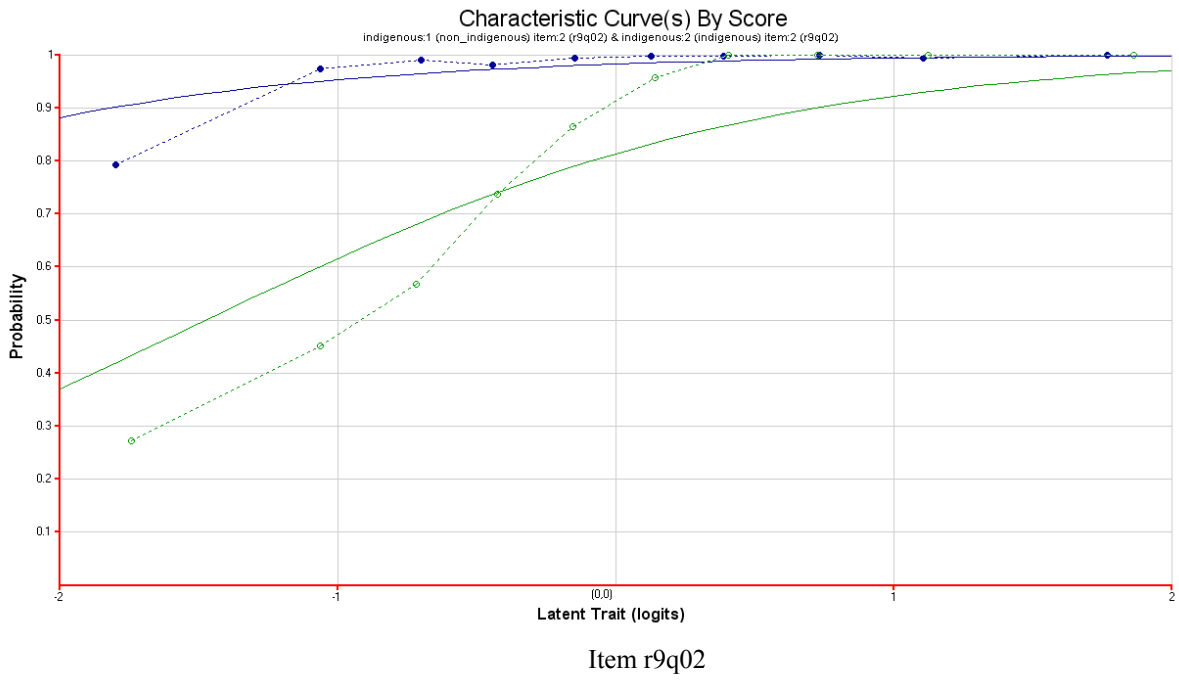
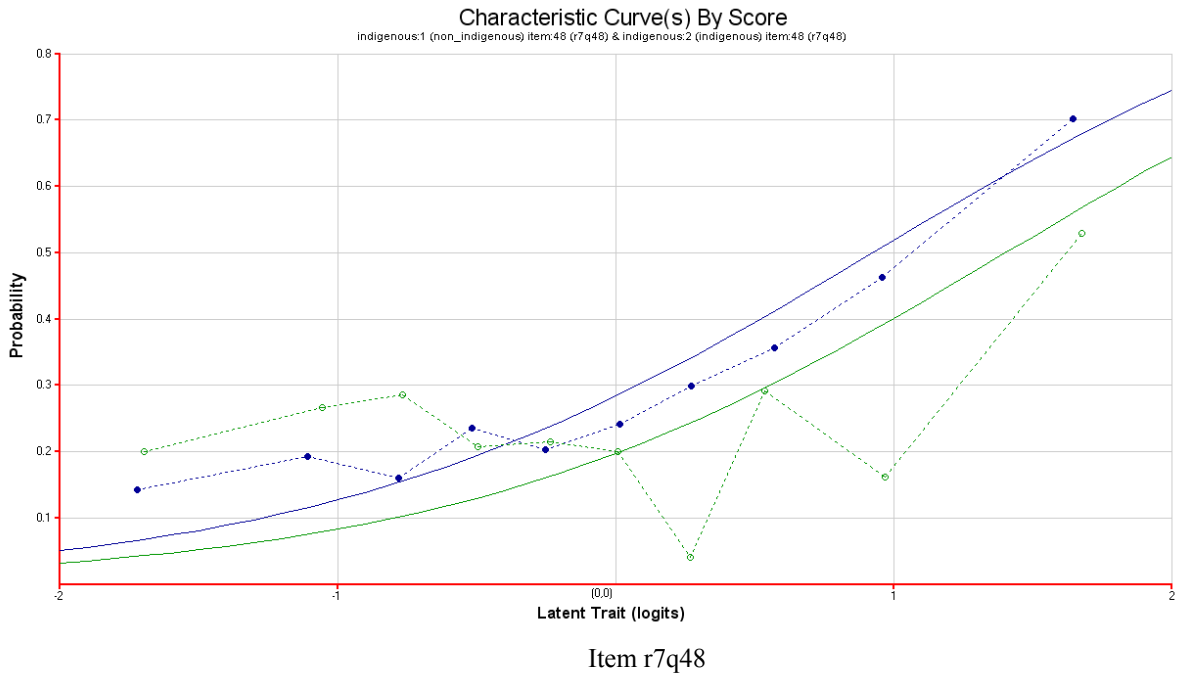


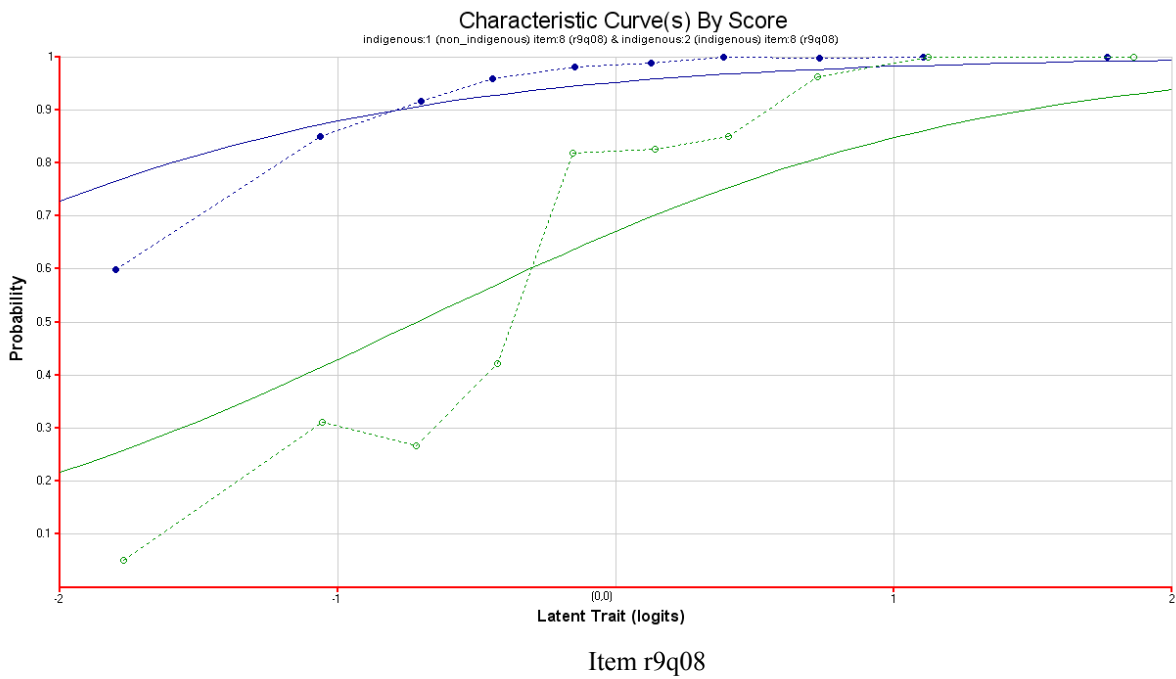
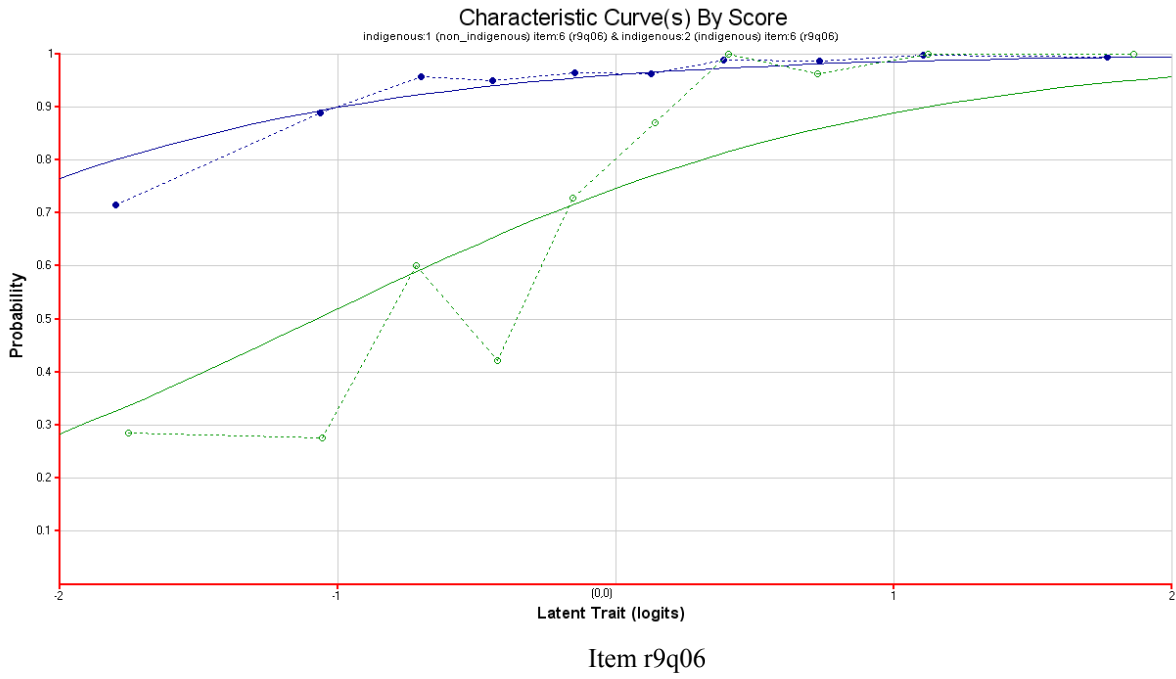


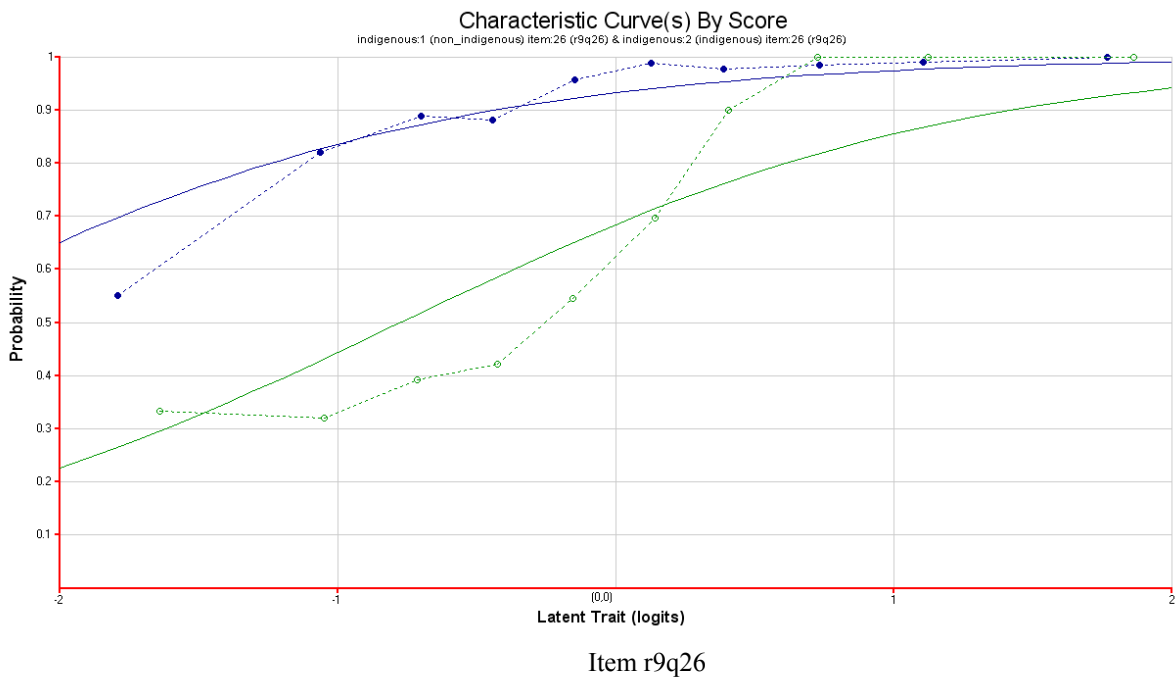
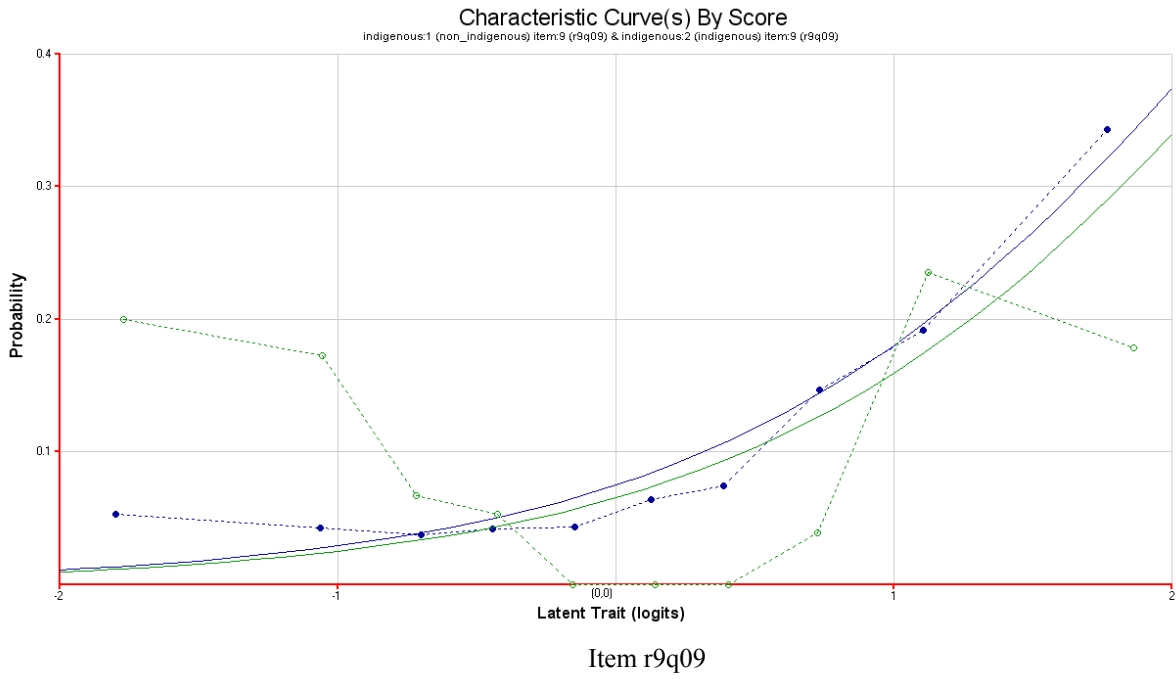


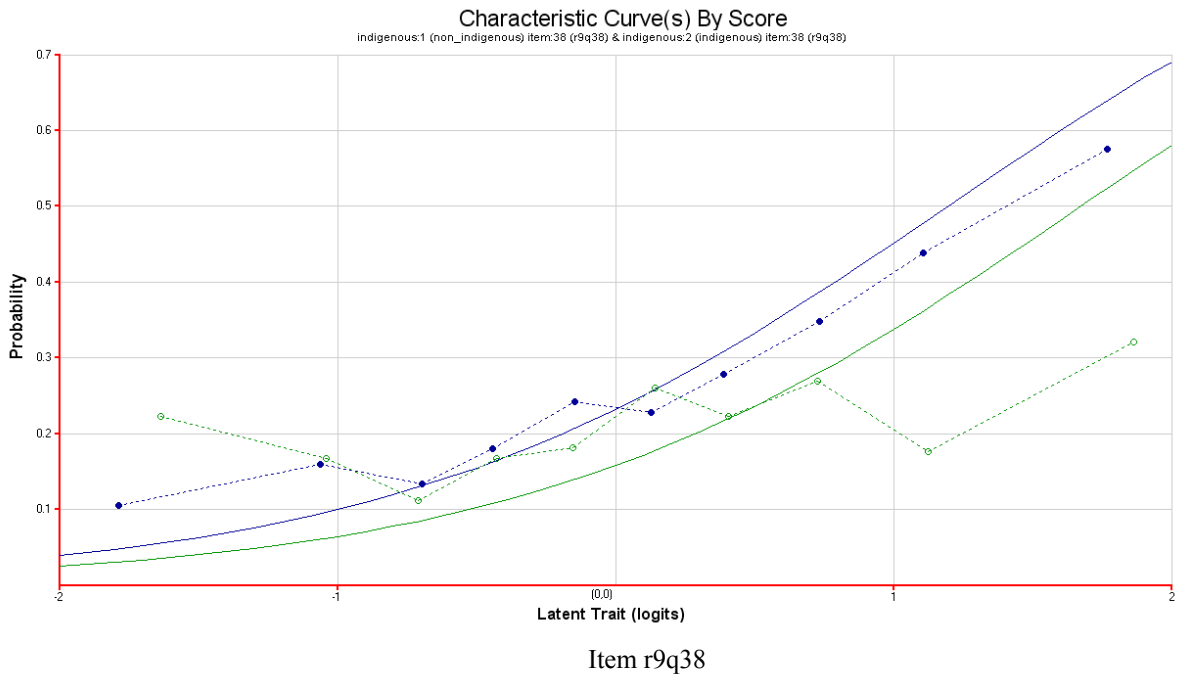
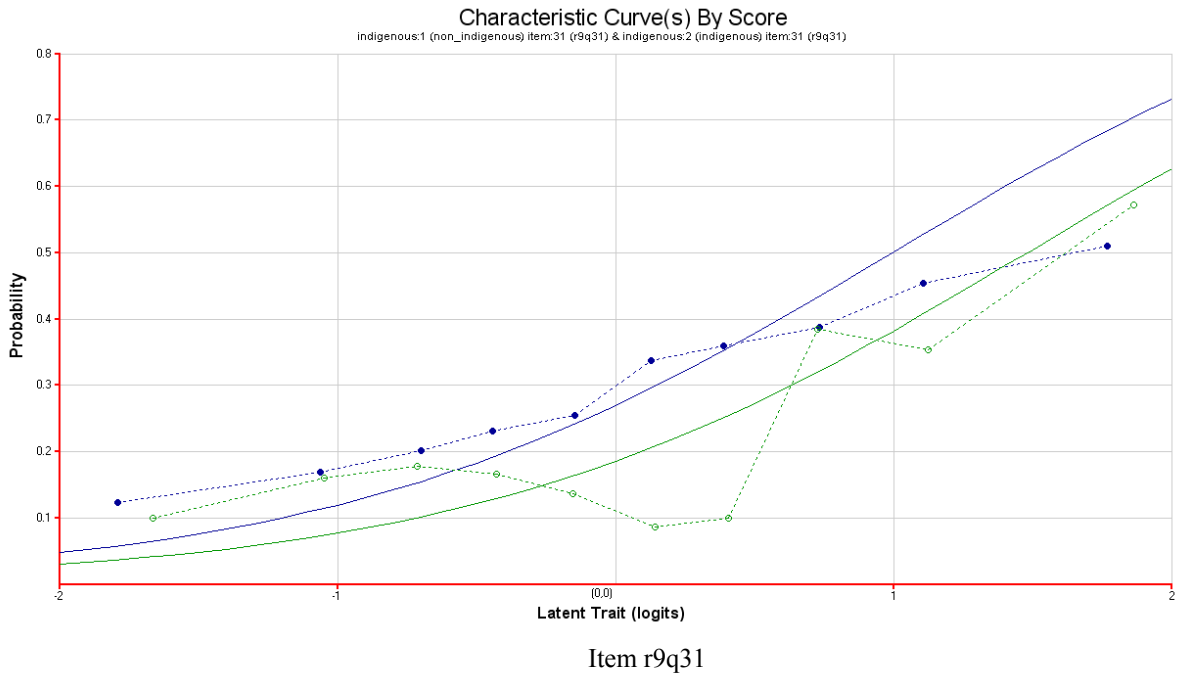




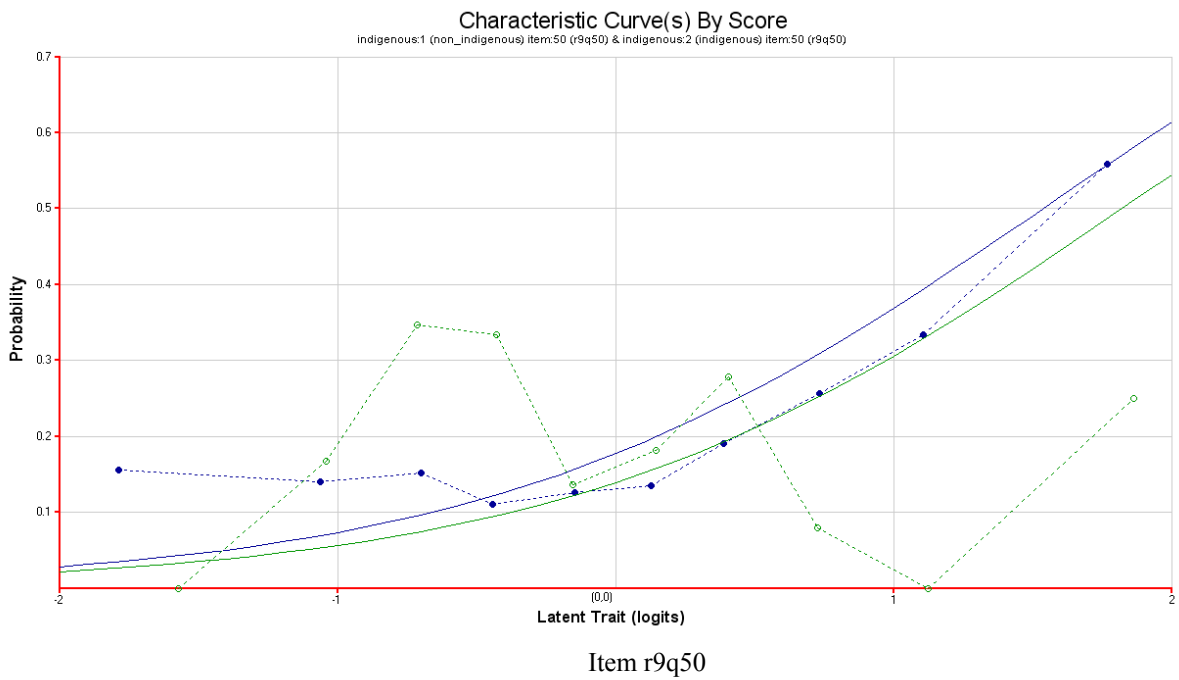
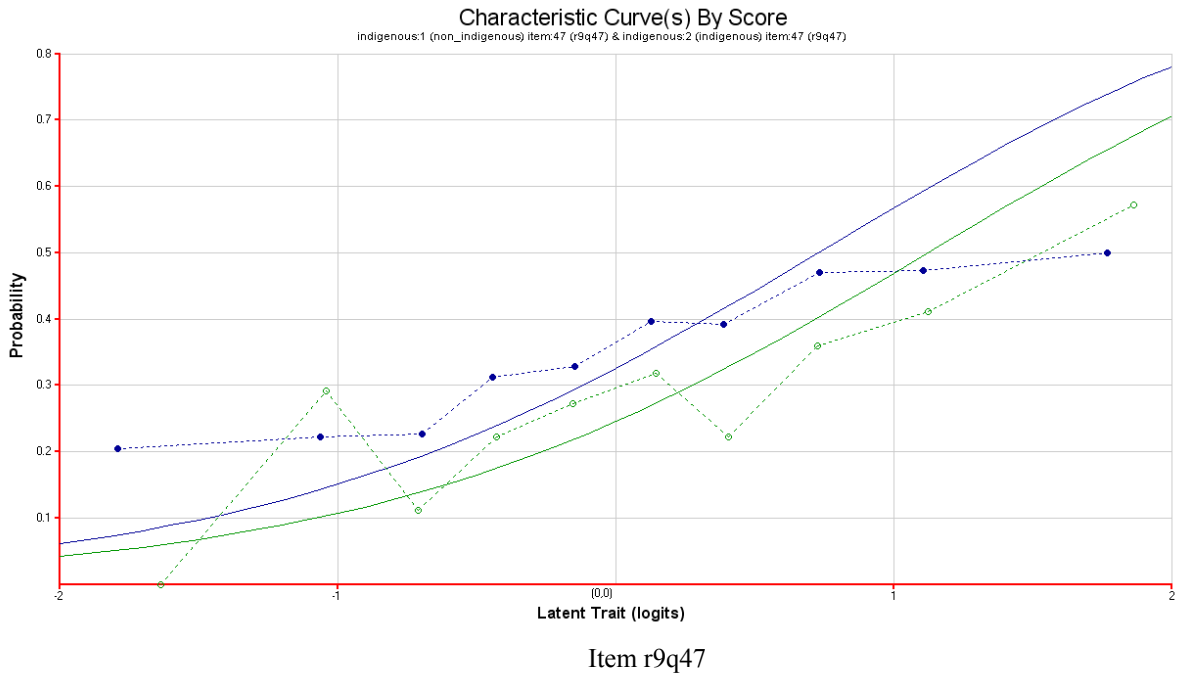












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**APPENDIX I. DIF BY DOMAIN BY YEAR LEVEL**

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**Table I.1 Year 3 G&P Item DIF: Gender, Indigenous, and LBOTE**

<b>Item Label</b>	<b>Gender Difference</b>	<b>Indigenous Difference</b>	<b>LBOTE Difference</b>
lc3q26	0.168	1.126	0.294
lc3q27	0.129	0.791	0.082
lc3q28	0.313	0.522	0.369
lc3q29	-0.138	0.767	0.257
lc3q30	0.216	0.427	0.391
lc3q31	-0.076	0.64	-0.085
lc3q32	0.185	0.019	0.421
lc3q33	0.143	0.827	0.117
lc3q34	-0.15	-0.015	0.053
lc3q35	0.312	-0.225	-0.222
lc3q36	-0.086	0.283	-0.29
lc3q37	-0.151	-0.08	0.604
lc3q38	0.225	0.078	-0.338
lc3q39	-0.074	-0.794	-0.53
lc3q40	0.275	-0.138	-0.216
lc3q41	-0.197	-0.156	-0.275
lc3q42	0.359	-0.139	-0.041
lc3q43	-0.151	-0.138	-0.16
lc3q44	0.013	-0.018	0.014
lc3q45	-0.17	-0.5	-0.118
lc3q46	-0.189	-0.593	-0.2
lc3q47	-0.472	-0.503	0.053
lc3q48	-0.093	-0.473	0.025
lc3q49	0.019	-0.607	-0.072
lc3q50	-0.229	-0.652	-0.128
lc3q51	-0.180	-0.449	-0.011

**Table I.2 Year 3 G&P Item DIF: TAA**

<b>Item_Label</b>	<b>ACT</b>	<b>NSW</b>	<b>NT</b>	<b>QLD</b>	<b>SA</b>	<b>TAS</b>	<b>VIC</b>	<b>WA</b>
lc3q26	-0.808	-0.218	0.749	-0.162	-0.121	0.218	-0.679	-0.306
lc3q27	-0.563	-0.363	0.365	0.105	-0.439	0.221	-0.016	0.165
lc3q28	-0.063	-0.427	0.437	0.053	-0.208	0.039	0.011	-0.026
lc3q29	-0.248	0.073	0.277	0.066	-0.201	0.15	-0.153	-0.076
lc3q30	-0.277	-0.284	0.22	0.169	0.028	0.1	-0.124	0.051
lc3q31	0.129	-0.058	0.209	-0.19	0.183	0.013	-0.172	-0.088
lc3q32	0.1	0.221	0.161	-0.1	-0.371	-0.061	0.195	-0.066
lc3q33	-0.303	-0.216	0.308	-0.036	0.093	0.373	-0.194	-0.105
lc3q34	0.14	-0.008	0.001	-0.079	0.13	-0.127	0.01	0.07
lc3q35	0.046	-0.104	-0.125	0	0.081	0.095	-0.008	0.143
lc3q36	-0.244	-0.036	0.05	-0.345	0.105	0.342	0.209	-0.02
lc3q37	-0.084	0.329	-0.041	-0.092	0.159	-0.228	0.066	0.008
lc3q38	-0.095	0.048	-0.05	0.274	0.048	0.131	-0.277	0.029
lc3q39	0.324	0.169	-0.523	0.291	-0.126	-0.171	0.18	-0.029
lc3q40	-0.057	-0.101	-0.051	0.24	0.112	-0.04	0.034	0.009
lc3q41	0.132	-0.014	-0.155	0.124	-0.009	0.085	0.046	-0.062
lc3q42	0.253	0.182	-0.228	0.152	0.176	-0.217	-0.023	-0.154
lc3q43	0.146	0.04	-0.209	-0.016	0.117	-0.042	0.153	-0.053
lc3q44	0.17	0.035	0.039	-0.105	0.098	-0.045	0.037	-0.056
lc3q45	0.199	0.103	-0.367	-0.36	-0.072	0.254	0.102	0.247
lc3q46	0.2	-0.183	-0.184	-0.124	0.108	-0.159	0.358	0.123
lc3q47	0.009	0.295	-0.21	-0.069	0.061	0.03	-0.118	0.125
lc3q48	0.173	0.193	-0.03	0.167	-0.016	-0.253	-0.191	0.109
lc3q49	0.233	0.038	-0.174	0.258	0.028	-0.385	0.231	-0.1
lc3q50	0.32	0.032	-0.057	-0.062	-0.038	-0.188	0.141	-0.021
lc3q51	0.168	0.253	-0.413	-0.159	0.074	-0.134	0.183	0.082

**Table I.3 Year 3 Numeracy Item DIF: Gender, Indigenous, and LBOTE**

<b>Item Label</b>	<b>Gender Difference</b>	<b>Indigenous Difference</b>	<b>LBOTE Difference</b>
n3q01	-0.005	-0.143	-0.347
n3q02	0.128	0.114	-0.503
n3q03	0.222	0.674	0.559
n3q04	-0.16	1.159	0.343
n3q05	-0.163	1.222	0.35
n3q06	0.219	0.229	-0.171
n3q07	0.176	0.24	-0.107
n3q08	0.044	-0.188	0.092
n3q09	-0.188	0.334	-0.279
n3q10	-0.093	-0.25	-0.053
n3q11	-0.032	-0.271	0.063
n3q12	-0.144	0.465	-0.297
n3q13	0.053	0.1	0.115
n3q14	0.275	0.371	-0.003
n3q15	0.309	0.304	0.288
n3q16	0.143	-0.309	-0.215
n3q17	-0.293	-0.489	-0.226
n3q18	-0.063	0.362	0.127
n3q19	-0.125	-0.529	0.116
n3q20	0.247	-0.872	0.099
n3q21	-0.085	-0.899	-0.229
n3q22	-0.009	-0.239	-0.307
n3q23	-0.253	-0.88	0.232
n3q24	0.013	0.508	0.018
n3q25	0.022	0.102	-0.032
n3q26	-0.118	-0.506	-0.107
n3q27	0.653	-0.543	-0.034
n3q28	-0.05	-0.021	0.173
n3q29	0.165	-0.063	0.044
n3q30	-0.05	-0.554	0.18
n3q31	0.2	-0.543	-0.164
n3q32	-0.448	-0.048	-0.019
n3q33	-0.082	1.044	0.036
n3q34	-0.087	-0.395	0.147
n3q35	-0.422	0.513	0.108

**Table I.4 Year 3 Numeracy Item DIF:TAA**

<b>Item_Label</b>	<b>ACT</b>	<b>NSW</b>	<b>NT</b>	<b>QLD</b>	<b>SA</b>	<b>TAS</b>	<b>VIC</b>	<b>WA</b>
n3q01	0.041	0.46	-0.125	0.321	-0.049	-0.396	-0.462	-0.121
n3q02	-0.304	0.105	0.011	0.588	0.127	-0.176	-0.332	-0.707
n3q03	-0.954	-0.113	0.245	0.041	0.116	-0.007	-0.104	-0.01
n3q04	-0.048	-0.233	0.532	-0.304	0.066	0.07	-0.848	-0.062
n3q05	-0.269	-0.251	0.6	-0.025	-0.138	0.052	-0.54	-0.243
n3q06	-0.114	-0.132	-0.21	0.071	0.266	0.121	0.173	-0.13
n3q07	-0.144	0.114	0.066	0.179	-0.159	0.122	-0.074	-0.119
n3q08	0.438	-0.116	0.029	-0.073	-0.235	-0.06	-0.21	0.216
n3q09	0.116	0.05	0.034	-0.288	0.322	-0.064	-0.132	-0.003
n3q10	0.107	0.031	-0.29	0.096	-0.028	0.021	0.278	-0.098
n3q11	-0.053	0.168	-0.332	0.085	0.123	-0.059	0.241	-0.071
n3q12	0.12	-0.101	0.092	-0.179	0.253	-0.013	-0.143	0.028
n3q13	0.075	0.106	-0.071	0.15	-0.216	-0.096	0.166	-0.026
n3q14	0.103	0.076	0.052	0.106	-0.312	0.051	0.003	0.003
n3q15	-0.142	-0.128	-0.015	-0.099	0.097	-0.034	0.19	0.221
n3q16	-0.057	0.013	-0.187	-0.108	0.043	0.154	0.185	0.043
n3q17	0.335	-0.025	-0.036	0.033	-0.061	-0.105	-0.008	-0.041
n3q18	-0.118	0.046	-0.09	0.174	0.093	0.109	-0.093	-0.03
n3q19	0.035	-0.07	0.045	0	0.034	-0.005	0.068	0.01
n3q20	0.23	-0.074	-0.234	-0.115	0.034	-0.023	0.175	0.073
n3q21	0.068	0.056	-0.588	0.308	-0.034	-0.028	0.264	0
n3q22	0.118	-0.132	-0.081	-0.256	0.167	0.141	0.094	0.052
n3q23	0.058	0.238	-0.417	0.051	-0.048	-0.092	0.074	0.156
n3q24	0.027	0.191	0.275	0.146	-0.216	-0.075	-0.135	-0.013
n3q25	0.287	0.024	-0.049	-0.219	-0.199	-0.032	0.278	-0.021
n3q26	0.005	-0.004	0.054	-0.015	0.089	0.083	0.02	-0.079
n3q27	0.264	0.004	-0.161	-0.01	-0.244	-0.116	0.189	0.116
n3q28	0.016	-0.134	0.154	0.002	-0.165	-0.007	0.291	0.004
n3q29	-0.052	-0.03	0.168	-0.115	0.017	0.092	0.201	-0.106
n3q30	-0.137	0.126	0.143	0.002	0.005	-0.182	0.082	0.129
n3q31	0.184	-0.26	0.077	-0.64	0.267	0.636	0.081	0.032
n3q32	0.207	-0.007	-0.205	0.01	0.483	-0.218	-0.148	0.08
n3q33	-0.173	-0.066	0.025	0.098	0.027	0.004	-0.022	0.318
n3q34	-0.05	0.052	0.358	-0.096	-0.43	0.152	0.081	0.234
n3q35	-0.216	0.017	0.132	0.083	-0.092	-0.019	0.118	0.167

**Table I.5 Year 3 Reading Item DIF: Gender, Indigenous, and LBOTE**

<b>Item Label</b>	<b>Gender Difference</b>	<b>Indigenous Difference</b>	<b>LBOTE Difference</b>
r3q01	0.262	0.889	-0.204
r3q02	0.595	1.016	0.185
r3q03	0.37	0.735	0.216
r3q04	0.381	0.906	0.135
r3q05	0.205	0.469	-0.092
r3q06	0.372	0.74	-0.138
r3q07	0.267	0.684	-0.004
r3q08	0.041	0.553	0.089
r3q09	0.158	0.515	0.032
r3q10	0.086	0.153	0.108
r3q11	-0.081	0.403	-0.233
r3q12	-0.12	0.199	0.156
r3q13	0.198	0.712	-0.096
r3q14	-0.136	-0.28	0.217
r3q15	-0.426	-0.544	0.061
r3q16	-0.291	0.135	0.14
r3q17	-0.071	0.638	0.212
r3q18	0.077	0.43	-0.095
r3q19	-0.196	0.105	-0.198
r3q20	-0.186	-1.193	0.056
r3q21	-0.175	-1.197	-0.142
r3q22	0.087	-0.02	0.014
r3q23	0.089	0.071	0.136
r3q24	0.231	-0.41	-0.08
r3q25	0.003	-0.21	0.111
r3q26	-0.218	0.14	-0.124
r3q27	-0.223	-0.429	0.185
r3q28	-0.063	0.102	0.31
r3q29	-0.008	-0.288	-0.035
r3q30	-0.137	-0.747	-0.001
r3q31	-0.25	-0.391	-0.024
r3q32	0.025	0.525	-0.088
r3q33	-0.319	-0.072	0.271
r3q34	0.162	-0.103	-0.197
r3q35	-0.227	-1.748	-0.34
r3q36	-0.167	-0.479	-0.03
r3q37	-0.09	-0.481	-0.194
r3q38	-0.221	-1.528	-0.322

**Table I.6 Year 3 Reading Item DIF:TAA**

<b>Item_Label</b>	<b>ACT</b>	<b>NSW</b>	<b>NT</b>	<b>QLD</b>	<b>SA</b>	<b>TAS</b>	<b>VIC</b>	<b>WA</b>
r3q01	-0.516	-0.296	0.357	0.071	0.054	0.4	-0.159	-0.692
r3q02	-0.104	-0.216	0.512	-0.155	-0.163	-0.188	0.025	-0.108
r3q03	-0.045	-0.054	0.331	-0.059	-0.147	0.039	-0.018	-0.177
r3q04	0.076	0.09	0.36	-0.331	-0.14	0.087	-0.179	-0.134
r3q05	-0.179	0.093	0.165	0.046	-0.091	0.252	-0.301	-0.119
r3q06	-0.213	-0.323	0.304	0.147	-0.233	0.009	-0.005	0.179
r3q07	-0.197	-0.226	0.221	-0.133	0.1	0.266	0.074	-0.182
r3q08	-0.102	0.165	0.163	-0.002	0.139	0.002	-0.255	-0.115
r3q09	0.021	-0.152	0.18	0.09	0.054	0.213	-0.191	-0.279
r3q10	0.156	-0.02	-0.059	0.082	0.063	-0.108	-0.059	0.048
r3q11	-0.172	-0.171	0.198	0.015	0.13	0.21	-0.046	-0.209
r3q12	-0.26	0.13	0.033	-0.047	0.04	0.005	0.1	0.054
r3q13	-0.134	-0.22	0.324	0.209	0.154	-0.117	-0.134	-0.122
r3q14	0.154	0.17	-0.094	-0.205	-0.002	0.099	-0.205	0.167
r3q15	-0.015	-0.091	-0.375	0.041	0.108	0.155	0.192	0.058
r3q16	0.04	-0.075	-0.074	0.073	0.061	0.147	-0.077	0.004
r3q17	0.065	-0.157	0.199	0.139	0.014	-0.136	-0.272	0.137
r3q18	-0.338	0.173	0.085	-0.151	0.067	0.224	-0.175	0.085
r3q19	-0.117	0.069	0.096	0.088	-0.059	0.149	-0.172	0.032
r3q20	0.015	0.117	-0.503	0.086	-0.056	-0.127	0.329	0.164
r3q21	0.172	0.411	-0.565	-0.321	0.042	0.036	0.079	0.15
r3q22	0.062	0.2	-0.107	0.041	-0.096	-0.325	0.106	0.182
r3q23	-0.082	0.012	-0.065	0.231	-0.002	0.154	-0.147	-0.023
r3q24	-0.092	0.002	-0.178	0.01	-0.043	-0.024	0.074	0.319
r3q25	-0.075	0.01	0.019	0.069	0.074	-0.178	0.206	-0.032
r3q26	0.224	-0.19	-0.223	0.088	-0.175	0	0.217	0.143
r3q27	-0.007	0.158	-0.152	0.2	-0.118	-0.08	0.01	0.052
r3q28	-0.05	0.134	0	-0.038	0.091	-0.12	0.203	-0.133
r3q29	0.132	0.02	0.142	-0.033	-0.045	-0.163	0.153	-0.073
r3q30	0.272	-0.004	-0.309	0.014	0.161	-0.177	0.08	0.021
r3q31	-0.108	0.042	0.029	-0.097	0.103	-0.12	0.077	0.2
r3q32	0.038	-0.065	0.341	0.094	-0.04	-0.15	-0.088	0.189
r3q33	0.189	0.139	0.04	-0.119	-0.053	-0.299	0.193	0.011
r3q34	0.02	0.076	-0.059	0.064	-0.101	0.132	-0.182	0.114
r3q35	0.467	-0.043	-0.692	-0.105	0.096	-0.118	0.253	0.065
r3q36	0.277	0.153	-0.095	-0.041	-0.212	-0.03	-0.005	0.04
r3q37	0.073	-0.015	-0.184	-0.137	-0.129	0.078	0.288	0.095
r3q38	0.354	-0.048	-0.365	0.077	0.355	-0.198	0.008	-0.111

**Table I.7 Year 3 Spelling Item DIF: Gender, Indigenous, and LBOTE**

<b>Item Label</b>	<b>Gender Difference</b>	<b>Indigenous Difference</b>	<b>LBOTE Difference</b>
lc3q01	0.118	0.497	0.476
lc3q02	0.008	0.211	0.162
lc3q03	0.096	-0.426	-0.061
lc3q04	0.007	0.45	0.055
lc3q05	0.313	0.264	-0.112
lc3q06	-0.013	-0.533	-0.202
lc3q07	-0.188	-0.357	-0.425
lc3q08	0.088	-0.241	-0.075
lc3q09	0.108	-0.1	0.147
lc3q10	-0.319	-0.396	0.093
lc3q11	0.547	0.092	-0.183
lc3q12	-0.22	-0.256	-0.106
lc3q13	-0.188	0.999	-0.022
lc3q14	0.421	-0.764	0.061
lc3q15	0.439	0.221	-0.151
lc3q16	-0.023	-0.498	-0.292
lc3q17	-0.241	0.395	0.328
lc3q18	-0.44	0.21	-0.027
lc3q19	-0.033	-0.119	-0.485
lc3q20	0.18	-0.172	-0.162
lc3q21	-0.241	0.505	0.537
lc3q22	-0.034	-0.453	0.19
lc3q23	-0.093	0.325	0.099
lc3q24	-0.252	-0.026	-0.114
lc3q25	-0.036	0.172	0.269



**Table I.8 Year 3 Spelling Item DIF:TAA**

<b>Item_Label</b>	<b>ACT</b>	<b>NSW</b>	<b>NT</b>	<b>QLD</b>	<b>SA</b>	<b>TAS</b>	<b>VIC</b>	<b>WA</b>
lc3q01	-0.167	-0.006	0.085	-0.393	-0.264	-0.052	0.098	0.084
lc3q02	-0.082	-0.567	0.017	0.198	0.063	0.061	-0.1	-0.132
lc3q03	-0.143	0.107	-0.332	0.273	-0.151	-0.028	-0.022	0.131
lc3q04	-0.096	-0.217	-0.023	-0.321	0.085	0.32	0.085	0.023
lc3q05	0.001	0.195	-0.075	0.115	-0.085	-0.087	-0.072	-0.052
lc3q06	0.196	0.068	-0.367	-0.045	-0.111	0.047	0.014	0.117
lc3q07	0.087	0.224	0.008	-0.534	0.397	0.064	0.158	-0.384
lc3q08	0.254	0	0.28	-0.471	0.234	0.033	0.001	-0.228
lc3q09	-0.163	-0.432	0.123	0.273	0.098	-0.038	0.005	0.274
lc3q10	0.107	0.003	0.02	0.231	-0.116	-0.074	-0.223	0.137
lc3q11	-0.205	-0.092	-0.079	0.371	0.089	-0.171	0.087	0.096
lc3q12	0.128	-0.248	0.216	-0.089	0.431	-0.08	-0.16	0.017
lc3q13	-0.196	0.474	-0.053	0.018	0.114	-0.258	-0.087	-0.009
lc3q14	0.394	0.105	0.125	0.098	-0.063	-0.033	-0.242	-0.213
lc3q15	-0.014	-0.063	-0.037	0.061	-0.099	0.137	-0.012	-0.009
lc3q16	0.171	-0.089	-0.536	-0.065	-0.016	0.117	0.221	0.068
lc3q17	0.212	-0.135	0.308	-0.367	0.033	-0.012	0.182	-0.137
lc3q18	-0.246	0.297	0.072	0.077	0.08	-0.177	-0.086	0.042
lc3q19	-0.003	-0.117	-0.157	-0.113	0.141	0.044	0.123	0.073
lc3q20	0.021	-0.142	0.047	-0.201	0.111	0.097	0.032	0.073
lc3q21	-0.316	0.316	0.281	0.304	-0.105	-0.266	-0.038	-0.034
lc3q22	0.016	0.193	-0.026	-0.303	-0.145	-0.26	0.391	0.127
lc3q23	-0.121	0.061	0.244	-0.061	-0.053	0.135	-0.093	0.032
lc3q24	-0.021	0.085	-0.268	0.42	-0.182	0.08	-0.241	0.18
lc3q25	0.184	-0.02	0.126	0.521	-0.487	0.399	-0.024	-0.276

**Table I.9 Year 5 G&P Item DIF: Gender, Indigenous, and LBOTE**

<b>Item_Label</b>	<b>Gender Difference</b>	<b>Indigenous Difference</b>	<b>LBOTE Difference</b>
lc5q26	-0.101	0.981	0.737
lc5q27	-0.187	1.086	0.513
lc5q28	0.454	0.693	0.547
lc5q29	0.295	1.402	0.412
lc5q30	-0.051	0.474	0.622
lc5q31	0.053	0.669	0.661
lc5q32	0.75	0.674	-0.068
lc5q33	-0.039	0.446	-0.164
lc5q34	-0.21	0.265	-0.343
lc5q35	0.364	0.06	-0.186
lc5q36	0.287	0.214	-0.117
lc5q37	0.047	-0.138	0.206
lc5q38	0.162	0.13	-0.189
lc5q39	0.071	0.164	-0.121
lc5q40	0.127	-0.28	0.032
lc5q41	-0.075	0.455	-0.006
lc5q42	-0.152	-0.121	-0.383
lc5q43	-0.232	-0.409	-0.307
lc5q44	0.086	-0.168	-0.286
lc5q45	-0.275	-0.745	-0.157
lc5q46	0.131	-0.131	-0.235
lc5q47	-0.136	-0.509	0.011
lc5q48	-0.31	-0.766	-0.137
lc5q49	-0.01	-0.549	-0.141
lc5q50	-0.804	-1.906	-0.729
lc5q51	-0.246	-1.993	-0.172

**Table I.10 Year 5 G&P Item DIF: TAA**

<b>Item_Label</b>	<b>ACT</b>	<b>NSW</b>	<b>NT</b>	<b>QLD</b>	<b>SA</b>	<b>TAS</b>	<b>VIC</b>	<b>WA</b>
lc5q26	-0.262	-0.261	0.417	0.065	-0.202	-0.015	0.06	-0.152

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lc5q27	-0.308	0.079	0.415	0.223	-0.184	-0.459	-0.111	0.033
lc5q28	-0.224	0.156	0.292	-0.077	-0.048	-0.118	-0.202	0.1
lc5q29	-0.8	-0.538	0.536	-0.202	-0.008	0.627	-0.601	-0.141
lc5q30	-0.363	-0.044	0.371	-0.135	-0.112	-0.002	0.083	0.102
lc5q31	-0.008	0.012	0.42	-0.038	-0.11	-0.238	-0.166	0.045
lc5q32	-0.391	0.007	0.17	0.046	0.118	0.013	-0.065	0.047
lc5q33	-0.008	0.034	0.171	0.047	-0.019	-0.205	0.029	0.057
lc5q34	0.113	-0.241	0.176	0.064	0.01	0.149	-0.093	-0.097
lc5q35	-0.22	-0.293	0.105	0.223	0.124	0.185	-0.056	-0.044
lc5q36	0.185	-0.12	-0.038	0.063	-0.004	-0.024	0.03	0.055
lc5q37	-0.245	0.129	0.025	0.206	-0.025	-0.177	0.138	0.056
lc5q38	0.338	-0.037	0.03	-0.131	-0.149	-0.02	-0.01	0.132
lc5q39	0.166	-0.048	0.279	0.017	0.079	-0.029	-0.024	-0.287
lc5q40	0.005	0.251	-0.03	-0.35	0.056	0.031	-0.045	0.183
lc5q41	-0.082	0.161	0.128	0.069	-0.004	-0.009	-0.195	0.054
lc5q42	0.168	-0.08	-0.169	-0.197	0.007	0.296	0.209	-0.112
lc5q43	0.165	-0.092	-0.215	-0.483	0.168	0.251	0.252	0.058
lc5q44	0.153	0.037	-0.043	-0.07	0.035	0.012	0.053	-0.031
lc5q45	0.208	0.063	-0.525	0.178	0.052	0.005	0.092	0.031
lc5q46	-0.009	0.183	-0.084	0.023	-0.074	0.019	0.006	0.061
lc5q47	0.102	0.103	-0.287	-0.16	0.102	-0.094	0.194	0.14
lc5q48	0.357	0.131	-0.44	-0.089	0.063	0.15	-0.022	-0.059
lc5q49	0.104	0.023	-0.051	-0.003	0.321	0.001	-0.105	-0.104
lc5q50	0.449	0.342	-0.723	0.101	-0.059	-0.137	0.19	-0.143
lc5q51	0.405	0.042	-0.931	0.612	-0.137	-0.209	0.359	0.014

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**Table I.11 Year 5 Numeracy Item DIF: Gender, Indigenous, and LBOTE**

<b>Item Label</b>	<b>Gender Difference</b>	<b>Indigenous Difference</b>	<b>LBOTE Difference</b>
n5q01	0.116	0.499	0.003
n5q02	0.239	0.671	0.215
n5q03	0.184	0.46	0.235
n5q04	0.075	0.584	0.218
n5q05	0.005	0.321	0.072
n5q06	-0.169	-0.085	0.027
n5q07	0.195	0.292	0.41
n5q08	-0.122	-0.18	-0.221
n5q09	0.189	0.096	-0.175
n5q10	0.294	0.526	-0.012
n5q11	-0.481	0.289	-0.047
n5q12	0.212	0.34	0.131
n5q13	0.14	0.019	-0.472
n5q14	0.135	-0.133	-0.237
n5q15	0.132	0.366	-0.097
n5q16	0.007	-0.165	0.199
n5q17	0.568	-0.043	0.252
n5q18	-0.141	-0.724	-0.072
n5q19	0.373	-0.363	-0.2
n5q20	-0.19	-0.387	-0.15
n5q21	-0.372	-0.176	-0.041
n5q22	-0.164	-0.313	0.237
n5q23	0.041	-0.226	0.254
n5q24	0.107	-0.127	-0.17
n5q25	0.195	-0.471	-0.009
n5q26	-0.08	-0.325	-0.12
n5q27	-0.232	0.144	-0.296
n5q28	-0.043	-0.512	-0.143
n5q29	0.214	0.43	-0.037
n5q30	0.23	-0.353	0.298
n5q31	-0.234	-0.209	-0.09
n5q32	-0.138	-0.34	-0.099
n5q33	-0.066	-0.735	0.049
n5q34	-0.149	0.453	0.078
n5q35	-0.103	0.235	0.168
n5q36	-0.228	0.092	-0.217
n5q37	-0.753	0.333	-0.173
n5q38	0.06	0.417	0.149
n5q39	0.173	0.188	-0.297
n5q40	-0.221	-0.89	0.38

**Table I.12 Year 5 Numeracy Item DIF: TAA**

<b>Item_Label</b>	<b>ACT</b>	<b>NSW</b>	<b>NT</b>	<b>QLD</b>	<b>SA</b>	<b>TAS</b>	<b>VIC</b>	<b>WA</b>
n5q01	-0.099	-0.052	0.046	0.125	-0.088	0.111	0.16	-0.402
n5q02	-0.026	-0.374	0.422	-0.172	-0.052	0.116	-0.448	-0.116
n5q03	-0.022	-0.502	0.199	-0.007	-0.058	0.148	-0.099	-0.005
n5q04	-0.204	-0.025	0.137	0.077	-0.035	-0.192	-0.043	0.132
n5q05	-0.242	0.034	0.2	0.052	0.053	-0.156	-0.105	0.015
n5q06	-0.095	0.016	-0.021	-0.147	0.123	0.066	0.036	-0.038
n5q07	-0.225	0.032	0.076	0.278	-0.014	-0.281	-0.106	0.142
n5q08	0.326	-0.548	-0.039	-0.023	-0.189	0.067	0.26	0.042
n5q09	-0.234	-0.161	-0.07	-0.235	0.201	0.206	0.257	-0.065
n5q10	-0.065	-0.252	0.215	-0.398	-0.197	0.309	0.313	-0.076
n5q11	-0.059	-0.094	-0.025	0.398	-0.233	0.069	-0.151	0.068
n5q12	0.065	-0.245	0.071	-0.367	-0.089	0.294	0.205	-0.016
n5q13	-0.151	-0.145	-0.016	0.087	0.061	0.29	-0.097	-0.056
n5q14	0.026	-0.007	0.091	0.07	-0.03	-0.082	-0.09	0.043
n5q15	-0.069	-0.041	0.115	-0.075	-0.021	0.158	0.02	-0.082
n5q16	0.014	0.248	-0.107	-0.195	-0.136	-0.056	0.291	-0.064
n5q17	0.136	0.186	-0.055	-0.076	0.049	-0.217	-0.154	0.157
n5q18	0.079	0.406	-0.586	-0.056	0.229	-0.166	0.055	0.039
n5q19	0.224	0.014	-0.208	0.093	-0.048	0.048	-0.054	-0.034
n5q20	0.199	-0.023	-0.279	0.197	0.128	-0.117	-0.038	-0.026
n5q21	0.173	-0.287	-0.117	-0.149	0.021	0.142	0.381	-0.171
n5q22	0.062	-0.056	-0.103	0.094	-0.015	-0.174	0.129	0.108
n5q23	-0.102	0.167	-0.193	0.141	0.077	-0.111	-0.072	0.118
n5q24	-0.118	0.089	-0.147	-0.425	0.112	0.288	0.299	-0.153
n5q25	0.24	0.209	-0.128	-0.095	-0.056	-0.076	-0.072	-0.013
n5q26	0.106	-0.006	-0.118	-0.084	-0.103	0.052	0.228	-0.065
n5q27	-0.179	0.031	-0.044	0.418	0.126	-0.221	-0.011	-0.02
n5q28	0.001	0.175	-0.314	0.038	-0.086	0.018	0.016	0.127
n5q29	-0.126	0.04	0.121	0.239	0.15	-0.088	-0.203	-0.016
n5q30	-0.101	0.317	-0.098	0.058	-0.044	-0.076	-0.031	0.006
n5q31	-0.002	0.113	-0.309	0.202	-0.108	-0.093	0.112	0.078
n5q32	0.409	0.337	-0.46	-0.567	-0.02	0.464	-0.12	-0.025
n5q33	0.192	0.296	-0.236	-0.065	-0.239	-0.013	-0.015	0.052
n5q34	-0.071	-0.011	0.325	0.101	0.262	-0.218	-0.182	0.047
n5q35	-0.017	0.281	0.236	-0.104	-0.187	0.126	-0.096	-0.082
n5q36	-0.151	-0.114	0.302	0.099	0.025	0.117	-0.205	0.188
n5q37	-0.107	0.161	0.248	0.092	0.199	-0.233	-0.253	0.144
n5q38	0.11	-0.125	0.555	0.295	0.026	-0.286	0.106	-0.293
n5q39	0.219	-0.226	0.126	0.139	0.049	0.232	-0.274	-0.005
n5q40	-0.121	0.143	0.187	-0.056	0.153	-0.465	0.05	0.312

**Table I.13 Year 5 Reading Item DIF: Gender, Indigenous, and LBOTE**

<b>Item Label</b>	<b>Gender Difference</b>	<b>Indigenous Difference</b>	<b>LBOTE Difference</b>
r5q01	0.282	0.625	0.002
r5q02	0.406	0.418	-0.029
r5q03	0.31	0.276	-0.223
r5q04	0.176	-0.03	0.265
r5q05	0.146	0.945	0.248
r5q06	0.051	-0.044	0.266
r5q07	-0.37	0.155	0.081
r5q08	-0.55	-0.126	0.011
r5q09	-0.231	0.53	0.356
r5q10	0.295	0.622	0.151
r5q11	0.05	1.161	0.042
r5q12	-0.153	0.03	-0.506
r5q13	0.043	-0.229	-0.033
r5q14	-0.044	-0.644	-0.259
r5q15	0.152	0.349	0.038
r5q16	0.126	0.305	-0.068
r5q17	0.13	0.478	-0.227
r5q18	0.147	0.258	-0.289
r5q19	-0.225	-0.054	0.167
r5q20	0.008	-0.44	-0.5
r5q21	-0.429	-0.348	-0.083
r5q22	-0.024	-0.087	0.218
r5q23	-0.301	-0.141	0.099
r5q24	-0.216	-0.368	0.158
r5q25	-0.034	-0.24	0.076
r5q26	0.003	-0.405	-0.139
r5q27	0.096	-0.234	-0.29
r5q28	0.105	0.102	-0.186
r5q29	-0.078	-0.832	-0.123
r5q30	0.169	-0.707	-0.128
r5q31	-0.239	-0.545	0.059
r5q32	0.015	0.392	0.312
r5q33	0.142	0.277	0.05
r5q34	0.159	0.031	0.132
r5q35	-0.022	-0.44	-0.018
r5q36	0.039	-0.5	0.243
r5q37	-0.112	-0.158	0.105
r5q38	-0.023	-0.384	0.023

Table I.14 Year 5 Reading Item DIF: TAA

Item_Label	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
r5q01	-0.689	-0.043	0.266	-0.311	0.22	-0.332	0.207	0.113
r5q02	0.058	-0.17	0.282	-0.09	-0.093	0.097	-0.466	0.111
r5q03	0.033	-0.154	0.128	0.086	-0.191	0.187	-0.363	0.152
r5q04	-0.042	0.065	-0.025	-0.26	0.304	0.097	-0.02	-0.111
r5q05	-0.704	0.02	0.458	-0.095	-0.384	0.034	-0.223	0.081
r5q06	0.077	-0.171	-0.233	-0.029	0.238	0.095	0.113	0.015
r5q07	0.24	-0.007	-0.003	-0.14	0.059	0.122	0.009	-0.176
r5q08	0.157	0.029	-0.396	0.111	0.125	0.163	0.045	-0.117
r5q09	-0.51	-0.142	0.146	0.105	-0.114	0.099	-0.032	0.198
r5q10	0.125	0.023	0.273	-0.037	-0.104	0.113	-0.919	0.017
r5q11	-0.181	-0.271	0.448	0.087	0.039	-0.284	-0.26	0.038
r5q12	-0.023	0.125	0.064	0.068	-0.058	-0.016	-0.085	-0.021
r5q13	0.025	-0.009	0.019	0.236	0.089	-0.224	0.01	0.001
r5q14	0.175	0.115	-0.047	-0.254	0.108	0.022	-0.057	0.037
r5q15	-0.08	-0.065	0.29	0.045	-0.251	-0.048	0.138	-0.009
r5q16	0.061	-0.172	0.179	0.2	-0.165	0.084	-0.253	0.027
r5q17	-0.193	-0.109	0.145	-0.001	-0.06	0.204	-0.023	0.023
r5q18	0.069	0.18	0.095	-0.179	0.032	0.019	-0.047	-0.132
r5q19	0.122	-0.166	0.396	-0.145	0.074	-0.108	0.125	-0.023
r5q20	0.287	-0.123	-0.109	0.168	-0.027	-0.056	0.004	-0.014
r5q21	0.029	0.291	-0.418	0.101	0.032	-0.064	0.283	-0.19
r5q22	0.315	0.147	-0.137	0.152	-0.12	-0.148	0.094	-0.165
r5q23	-0.141	0.092	-0.172	0.004	-0.022	0.129	0.158	0.03
r5q24	-0.15	0.154	-0.56	-0.07	0.018	0.246	0.346	0.077
r5q25	0.026	-0.001	-0.143	-0.002	0.193	0.071	0.065	-0.125
r5q26	0.01	-0.127	-0.103	0.104	0.149	0.143	0.086	-0.144
r5q27	0.272	-0.118	-0.183	0.075	0.068	-0.013	0.062	-0.051
r5q28	-0.184	-0.04	0.04	0.256	-0.041	-0.134	0.21	-0.038
r5q29	0.275	0.271	-0.378	-0.229	0.036	-0.038	0.024	0.097
r5q30	0.166	0.029	-0.322	0.063	-0.015	-0.029	0.122	0.035
r5q31	-0.158	0.076	-0.015	0.178	0.102	-0.123	-0.085	0.193
r5q32	-0.138	-0.122	0.272	0.149	0.137	-0.114	0.212	-0.117
r5q33	-0.127	0.04	0.057	0.054	-0.023	-0.001	0.069	0.036
r5q34	0.154	-0.104	0.033	-0.068	-0.242	0.068	0.147	0.121
r5q35	0.189	0.154	-0.037	-0.091	-0.053	-0.016	-0.012	-0.039
r5q36	0.108	0.036	0.071	-0.119	0.073	-0.057	0.003	0.018
r5q37	0.092	0.117	-0.238	-0.19	0.002	0.022	0.3	-0.038
r5q38	0.257	0.151	-0.145	0.065	-0.136	-0.208	0.013	0.091

**Table I.15 Year 5 Spelling Item DIF: Gender, Indigenous, and LBOTE**

<b>Item Label</b>	<b>Gender Difference</b>	<b>Indigenous Difference</b>	<b>LBOTE Difference</b>
lc5q01	0.369	0.235	0.506
lc5q02	0.183	-0.381	-0.095
lc5q03	-0.095	-0.045	-0.012
lc5q04	0.22	0.063	0.225
lc5q05	0.176	-0.363	-0.038
lc5q06	-0.177	0.223	0.037
lc5q07	-0.41	-0.172	-0.008
lc5q08	0.49	0.382	0.003
lc5q09	0.615	0.186	-0.318
lc5q10	0.132	-0.137	-0.197
lc5q11	-0.08	0.457	0.28
lc5q12	-0.413	-0.039	0.083
lc5q13	0.161	-0.137	-0.537
lc5q14	0.159	-0.678	-0.134
lc5q15	0.334	-0.198	0.233
lc5q16	-0.113	-0.053	0.149
lc5q17	-0.113	0.029	0.201
lc5q18	-0.185	0.284	0.173
lc5q19	-0.264	-0.42	-0.039
lc5q20	-0.55	0.046	-0.25
lc5q21	0.163	0.035	0.209
lc5q22	-0.135	0.045	0.469
lc5q23	-0.319	0.662	-0.516
lc5q24	-0.246	-0.302	-0.258
lc5q25	0.097	0.278	-0.166



**Table I.16 Year 5 Spelling Item DIF: TAA**

<b>Item_Label</b>	<b>ACT</b>	<b>NSW</b>	<b>NT</b>	<b>QLD</b>	<b>SA</b>	<b>TAS</b>	<b>VIC</b>	<b>WA</b>
lc5q01	-0.337	-0.313	0.255	0.357	-0.382	-0.424	0.05	-0.019
lc5q02	-0.103	0.147	-0.267	0.198	-0.141	0.188	-0.291	0.076
lc5q03	-0.103	0.108	-0.043	-0.345	0.172	0.061	-0.031	0.098
lc5q04	0.119	-0.082	0.12	-0.669	0.285	0.284	-0.05	-0.226
lc5q05	0.117	-0.057	-0.029	-0.342	0.191	-0.047	-0.003	0.147
lc5q06	0.147	0.024	0.27	-0.458	0.188	0.03	0	-0.164
lc5q07	-0.055	0.019	0.051	0.1	-0.208	0.135	0.071	-0.104
lc5q08	0.063	0	-0.164	0.274	-0.036	-0.308	-0.057	0.208
lc5q09	-0.06	-0.191	-0.268	0.281	-0.284	0.164	0.275	0.107
lc5q10	0.159	-0.175	0.112	-0.106	0.275	0.158	-0.266	-0.017
lc5q11	-0.205	0.357	-0.238	-0.13	0.234	-0.012	-0.077	0.023
lc5q12	0.274	-0.087	-0.062	-0.354	0.256	0.066	0.26	-0.262
lc5q13	0.127	-0.378	0.068	0.631	-0.263	0.131	-0.06	0.175
lc5q14	-0.091	0.118	-0.56	0.425	0.059	-0.251	0.362	-0.305
lc5q15	0.217	0.024	-0.067	0.081	0.025	-0.299	-0.027	-0.007
lc5q16	-0.233	0.099	0.221	-0.265	0.111	0.073	-0.054	0.064
lc5q17	-0.059	0.221	-0.151	0.072	-0.237	-0.194	0.128	0.198
lc5q18	-0.055	0.078	0.536	-0.51	0.18	-0.13	-0.03	0.031
lc5q19	-0.124	-0.165	0.033	0.269	0.063	-0.285	0.239	0.006
lc5q20	0.048	-0.06	-0.061	0.2	-0.236	0	-0.06	0.228
lc5q21	-0.082	0.336	-0.175	-0.003	0.235	0.157	-0.18	-0.292
lc5q22	-0.032	0.023	0.454	-0.294	-0.126	-0.172	0.134	0.207
lc5q23	-0.07	-0.07	0.294	0.517	-0.161	0.011	-0.27	0.058
lc5q24	0.043	-0.138	-0.115	0.125	0.185	0.132	-0.057	-0.056
lc5q25	0.293	0.161	-0.217	-0.055	-0.385	0.528	-0.008	-0.172

**Table I.17 Year 7 G&P Item DIF: Gender, Indigenous, and LBOTE**

<b>Item Label</b>	<b>Gender Difference</b>	<b>Indigenous Difference</b>	<b>LBOTE Difference</b>
lc7q31	0.011	1.338	0.856
lc7q32	0.424	0.997	0.387
lc7q33	0.157	0.93	1.139
lc7q34	0.009	0.647	0.872
lc7q35	0.232	0.463	0.117
lc7q36	-0.068	-0.435	0.122
lc7q37	0.223	0.503	-0.516
lc7q38	0.242	0.339	0.38
lc7q39	0.012	0.204	-0.13
lc7q40	0.227	-0.175	0.105
lc7q41	-0.054	0.087	-0.208
lc7q42	0.096	0.572	0.036
lc7q43	0.126	0.563	-0.538
lc7q44	-0.256	-0.314	0.034
lc7q45	-0.043	0.055	-0.463
lc7q46	-0.102	-0.447	-0.131
lc7q47	0.299	-0.102	-0.249
lc7q48	0.011	0.003	-0.361
lc7q49	0.002	-0.139	-0.187
lc7q50	-0.043	-0.395	-0.175
lc7q51	-0.186	-0.226	-0.155
lc7q52	0.052	-0.038	-0.093
lc7q53	-0.397	-0.785	0.012
lc7q54	-0.162	-0.277	-0.201
lc7q55	0.194	-0.294	0.092
lc7q56	-0.295	-1.192	0.086
lc7q57	0.284	-0.182	-0.401
lc7q58	-0.997	-1.7	-0.427

**Table I.18 Year 7 G&P Item DIF: TAA**

<b>Item_Label</b>	<b>ACT</b>	<b>NSW</b>	<b>NT</b>	<b>QLD</b>	<b>SA</b>	<b>TAS</b>	<b>VIC</b>	<b>WA</b>
lc7q31	-0.757	-0.105	0.658	0.371	-0.136	0.003	-0.653	-0.885
lc7q32	-0.087	-0.121	0.51	-0.014	-0.209	0.024	-0.153	-0.476
lc7q33	-0.455	-0.165	0.582	-0.164	-0.119	-0.02	-0.146	0.042
lc7q34	-0.334	-0.212	0.253	0.035	-0.032	-0.001	0.029	0.145
lc7q35	-0.17	-0.024	0.243	-0.163	-0.004	0.224	0.043	-0.257
lc7q36	0.272	-0.043	-0.17	-0.016	-0.047	-0.137	0.098	0.229
lc7q37	-0.134	0.026	0.222	-0.161	0.061	0.161	-0.027	-0.136
lc7q38	-0.494	0.006	0.18	0.188	-0.165	-0.115	0.15	0.223
lc7q39	0.125	0.014	-0.134	0.138	-0.222	0.144	-0.164	0.216
lc7q40	-0.158	0.094	-0.024	0.061	0.154	0.028	-0.019	-0.022
lc7q41	0.028	-0.185	0.25	-0.057	0.101	0.104	0.004	-0.142
lc7q42	-0.206	-0.059	0.135	0.049	-0.07	0.128	0.081	-0.001
lc7q43	-0.083	-0.178	0.348	-0.158	-0.187	0.223	0.116	-0.039
lc7q44	0.087	0.071	-0.286	0.083	0.193	-0.089	-0.027	0.113
lc7q45	0.309	0.106	-0.078	0.064	0.157	-0.086	-0.164	-0.151
lc7q46	0.506	-0.201	-0.422	-0.322	0.196	-0.013	0.113	0.239
lc7q47	0.137	0.212	-0.158	0.232	-0.071	-0.061	-0.206	0.062
lc7q48	0.206	0.013	-0.045	-0.177	0.009	0.058	0.082	-0.003
lc7q49	0.234	0.296	0.02	-0.285	-0.153	-0.058	0.095	0.014
lc7q50	0.144	-0.017	0.026	0.128	-0.043	-0.185	0.139	-0.027
lc7q51	0.249	-0.145	-0.107	0.169	0.062	-0.171	0.144	-0.055
lc7q52	-0.109	-0.056	0.11	0.025	0.07	0.051	-0.036	0.135
lc7q53	0.242	0.019	-0.312	-0.153	-0.046	-0.097	0.161	0.286
lc7q54	0.084	0.062	-0.05	-0.007	-0.081	-0.046	0.147	0.044
lc7q55	-0.078	0.036	-0.191	0.27	0.004	-0.055	-0.061	0.212
lc7q56	0.068	0.217	-0.392	0.008	0.157	-0.269	0.208	0.089
lc7q57	-0.079	-0.1	-0.014	0.124	0.218	0.082	-0.084	0.048
lc7q58	0.452	0.439	-1.156	-0.269	0.203	0.172	0.13	0.097

**Table I.19 Year 7 Numeracy Item DIF: Gender, Indigenous, and LBOTE**

<b>Item Label</b>	<b>Gender Difference</b>	<b>Indigenous Difference</b>	<b>LBOTE Difference</b>
n7CAq01	0.374	0.874	0.208
n7CAq02	0.007	1.013	0.378
n7CAq03	-0.159	0.44	-0.047
n7CAq04	-0.055	-0.154	0.026
n7CAq05	0.102	0.027	0.502
n7CAq06	0.35	-0.322	0.1
n7CAq07	0.243	-0.028	-0.329
n7CAq08	0.198	0.047	0.159
n7CAq09	0.118	-0.024	0.097
n7CAq10	-0.338	-0.362	0.091
n7CAq11	-0.336	-0.243	0.27
n7CAq12	0.067	-0.421	0.176
n7CAq13	0.033	-0.021	-0.066
n7CAq14	-0.172	-0.357	0.182
n7CAq15	-0.025	-0.341	0.262
n7CAq16	0.267	-0.026	-0.248
n7CAq17	-0.007	-0.553	0.155
n7CAq18	0.07	-0.002	-0.271
n7CAq19	-0.205	-0.398	0.013
n7CAq20	-0.034	-0.121	0.108
n7CAq21	-0.026	-0.045	-0.124
n7CAq22	0.175	-0.462	-0.176
n7CAq23	0.107	-0.044	-0.247
n7CAq24	0.12	-0.422	-0.233
n7CAq25	0.2	0.502	0.112
n7CAq26	-0.262	0.577	-0.16
n7CAq27	0.168	0.424	-0.12
n7CAq28	-0.249	0.559	-0.322
n7CAq29	0.372	-0.018	-0.047
n7CAq30	0.012	-0.212	0.229
n7CAq31	-0.261	0.06	-0.304
n7CAq32	0.277	-0.763	-0.505

**(continued)**

**Table I.19 (continued)**

<b>Item Label</b>	<b>Gender Difference</b>	<b>Indigenous Difference</b>	<b>LBOTE Difference</b>
n7NCq01	-0.046	0.128	0.267
n7NCq02	0.193	-0.082	-0.047
n7NCq03	0.171	0.1	-0.255
n7NCq04	0.113	0.384	-0.056
n7NCq05	-0.063	0.136	0.038
n7NCq06	0.129	0.746	-0.12
n7NCq07	0.081	0.292	0.158
n7NCq08	-0.059	0.021	-0.116
n7NCq09	-0.307	0.092	0.152
n7NCq10	0.046	0.269	0.016
n7NCq11	-0.44	0.238	-0.064
n7NCq12	0.238	0.369	0.08
n7NCq13	-0.019	-0.432	0.208
n7NCq14	-0.016	-0.306	0.084
n7NCq15	0.204	0.084	0.15
n7NCq16	-0.115	0.532	0.13
n7NCq17	0.205	0.076	-0.334
n7NCq18	0.143	-0.192	0.398
n7NCq19	0.006	-0.346	0.091
n7NCq20	-0.051	-0.643	-0.051
n7NCq21	-0.274	-0.433	0.208
n7NCq22	-0.228	-0.052	0.206
n7NCq23	0.26	0.45	-0.645
n7NCq24	0.153	-0.249	0.271
n7NCq25	0.158	-0.219	0.05
n7NCq26	-0.1	0.341	0.04
n7NCq27	-0.101	0.256	-0.162
n7NCq28	-0.172	-0.504	-0.36
n7NCq29	-0.126	0.967	-0.224
n7NCq30	-0.419	-0.715	0.19
n7NCq31	-0.201	-0.781	0.147
n7NCq32	-0.496	0.286	-0.318

**Table I.20 Year 7 Numeracy Item DIF: TAA**

<b>Item_Label</b>	<b>ACT</b>	<b>NSW</b>	<b>NT</b>	<b>QLD</b>	<b>SA</b>	<b>TAS</b>	<b>VIC</b>	<b>WA</b>
n7CAq01	-0.354	-0.006	0.508	-0.144	-0.356	0.089	-0.187	-0.131
n7CAq02	-0.121	0.008	0.257	0.445	-0.426	0.054	-0.343	-0.219
n7CAq03	-0.114	-0.01	0.136	0.202	0.069	-0.147	0.046	-0.384
n7CAq04	-0.036	0.152	-0.349	0.232	-0.082	-0.054	-0.005	0.15
n7CAq05	-0.131	0.209	-0.033	0.191	0.098	-0.284	-0.15	0.06
n7CAq06	0.143	-0.149	-0.097	-0.07	0.096	-0.205	0.072	0.202
n7CAq07	0.176	0.123	-0.254	0.042	-0.048	-0.063	-0.115	0.126
n7CAq08	0.095	-0.12	-0.05	0.074	0.051	0.084	0.105	-0.267
n7CAq09	-0.106	0.203	0.102	0.263	-0.048	-0.284	-0.21	0.052
n7CAq10	-0.033	-0.075	-0.316	0.243	0.11	-0.04	0.25	-0.159
n7CAq11	0.164	0.036	-0.165	0.008	0.157	-0.106	-0.01	-0.103
n7CAq12	-0.02	0.07	-0.44	-0.123	-0.027	0.126	0.202	0.183
n7CAq13	0.141	0.329	-0.019	-0.242	0.21	-0.193	-0.384	0.131
n7CAq14	-0.056	0.251	-0.046	0.192	0.061	-0.218	-0.2	0.014
n7CAq15	-0.172	-0.231	-0.186	0.411	0.262	-0.275	0.121	0.072
n7CAq16	0.06	-0.002	-0.187	-0.072	-0.062	0.24	0.085	-0.08
n7CAq17	0	-0.088	-0.353	0.096	0.214	-0.112	0.204	0
n7CAq18	0.004	-0.215	0.198	0.29	-0.465	0.203	0.262	-0.203
n7CAq19	0.119	0.051	-0.303	-0.027	-0.034	-0.04	0.13	0.046
n7CAq20	0.046	-0.038	-0.153	-0.093	0.099	-0.058	0.089	0.081
n7CAq21	0.031	0.046	0.424	0.016	-0.221	-0.159	-0.012	0.018
n7CAq22	0.061	-0.179	-0.476	0.094	0.064	-0.154	0.33	0.198
n7CAq23	0.448	-0.065	0.022	-0.123	0.024	0.018	-0.239	-0.031
n7CAq24	0.037	-0.066	-0.165	0.08	0.082	0.284	-0.1	-0.133
n7CAq25	-0.064	0.059	0.115	0.05	0.08	-0.156	-0.091	0.082
n7CAq26	0.171	-0.168	0.186	0.092	-0.067	-0.016	-0.043	-0.046
n7CAq27	-0.017	0.123	0.281	-0.095	0.115	-0.098	-0.233	0.102
n7CAq28	-0.041	0.067	0.466	-0.086	-0.061	0.18	-0.039	-0.158
n7CAq29	0.097	-0.088	-0.187	-0.533	-0.13	0.378	0.462	0.155
n7CAq30	0.058	0.166	-0.272	0.065	0.304	-0.32	-0.247	0.192
n7CAq31	-0.103	0.049	0.275	-0.344	0.088	0.17	0.331	-0.138
n7CAq32	-0.114	0.066	-0.238	0.201	0.082	0.24	-0.213	-0.005

**(continued)**

Table I.20 (continued)

Item_Label	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
n7NCq01	-0.227	-0.065	0.011	0.109	0.306	-0.325	-0.125	0.243
n7NCq02	-0.411	-0.278	0.082	-0.18	0.051	0.423	0.159	-0.175
n7NCq03	-0.179	0.048	0.115	0.1	0.064	-0.057	0.101	-0.292
n7NCq04	0.078	-0.141	0.174	0.219	-0.248	-0.052	-0.065	-0.085
n7NCq05	-0.069	0.157	0.06	0.037	0.018	-0.085	-0.154	-0.031
n7NCq06	0.035	0.03	0.217	0.144	-0.272	0.022	-0.153	-0.137
n7NCq07	-0.271	0.07	0.164	-0.127	-0.163	0.073	-0.062	0.2
n7NCq08	0.168	-0.081	0.177	-0.151	-0.017	-0.301	0.084	0.11
n7NCq09	-0.314	-0.05	0.048	-0.01	-0.167	0.227	0.055	0.109
n7NCq10	0.1	-0.31	-0.005	-0.169	-0.179	0.389	0.118	-0.023
n7NCq11	-0.145	-0.091	0.058	0.137	-0.042	-0.066	0.014	0.097
n7NCq12	-0.157	0.065	0.119	0.086	0.154	-0.122	-0.192	0.031
n7NCq13	-0.126	-0.013	-0.218	0.253	-0.096	0.048	0.031	0.099
n7NCq14	0.193	-0.094	-0.275	0.034	-0.183	0.034	0.125	0.135
n7NCq15	0.043	-0.007	0.15	-0.029	-0.011	0.013	-0.165	-0.002
n7NCq16	0.01	0.079	0.116	-0.013	0.075	0.061	-0.224	-0.118
n7NCq17	-0.118	-0.048	0.16	-0.547	0.331	0.322	0.132	-0.208
n7NCq18	-0.134	0.088	-0.109	-0.395	0.298	-0.197	0.349	0.068
n7NCq19	-0.001	-0.227	-0.283	0.139	0.104	0.058	0.228	-0.046
n7NCq20	0.189	0.328	-0.559	-0.184	-0.215	0.051	0.13	0.191
n7NCq21	-0.008	0.252	0.061	0.279	0.007	-0.414	-0.158	0.028
n7NCq22	-0.351	0.015	-0.078	0.061	-0.128	0.019	0.259	0.221
n7NCq23	-0.025	-0.259	0.067	-0.018	-0.086	0.508	-0.129	0.01
n7NCq24	0.133	0.173	-0.039	-0.035	-0.093	-0.14	0.073	-0.07
n7NCq25	0.06	0.182	0.118	-0.017	-0.217	-0.086	-0.004	0.021
n7NCq26	0.006	-0.018	0.303	0.056	0.085	-0.191	-0.149	0.04
n7NCq27	0.152	-0.01	-0.029	-0.617	0.206	0.585	-0.014	-0.012
n7NCq28	0.252	-0.125	-0.063	-0.13	-0.113	0.088	-0.078	0.186
n7NCq29	0.152	-0.011	0.634	-0.13	-0.145	-0.005	-0.114	-0.012
n7NCq30	0.131	0.022	-0.179	-0.114	-0.008	-0.025	0.108	0.021
n7NCq31	0.274	-0.075	-0.127	0.007	-0.015	-0.164	0.197	-0.11
n7NCq32	0.184	-0.111	0.444	-0.132	0.456	0.224	-0.242	-0.301

**Table I.21 Year 7 Reading Item DIF: Gender, Indigenous, and LBOTE**

<b>Item Label</b>	<b>Gender Difference</b>	<b>Indigenous Difference</b>	<b>LBOTE Difference</b>
r7q01	0.12	0.76	0.406
r7q02	0.07	0.834	0.51
r7q03	0.865	1.576	0.898
r7q04	0.282	0.39	0.289
r7q05	0.099	0.857	0.06
r7q06	0.184	0.067	0.167
r7q07	0.078	0.051	0.498
r7q08	-0.045	1.043	0.271
r7q09	-0.132	0.243	-0.2
r7q10	-0.072	0.651	0.037
r7q11	-0.251	0.009	0.098
r7q12	-0.293	-0.758	-0.359
r7q13	0.059	-0.353	-0.019
r7q14	-0.461	-0.301	0.048
r7q15	-0.009	0.216	0.186
r7q16	-0.125	0.067	0.094
r7q17	-0.196	0.123	0.382
r7q18	0.15	0.412	0.27
r7q19	0.078	0.106	-0.006
r7q20	0.031	0.125	-0.218
r7q21	0.209	0.455	0.055
r7q22	-0.222	-0.338	0.091
r7q23	-0.026	-0.233	-0.192
r7q24	0.078	-0.221	0.232
r7q25	0.253	-0.052	-0.07
r7q26	0.202	0.443	-0.048
r7q27	0.376	0.501	0.035
r7q28	-0.367	-0.397	-0.553
r7q29	0.336	-0.288	0
r7q30	-0.188	-0.26	-0.039
r7q31	0.079	-0.45	-0.048
r7q32	0.029	-1	-0.1
r7q33	-0.03	-0.159	-0.273
r7q34	-0.082	-0.095	-0.172
r7q35	0.009	-0.308	-0.419
r7q36	0.041	-0.656	-0.217
r7q37	-0.172	-0.368	0.108
r7q38	-0.043	0.48	-0.584
r7q39	0.084	-0.399	0.108
r7q40	0.08	-0.136	-0.13
r7q41	0.001	-0.312	0.06
r7q42	0.012	-0.252	-0.211
r7q43	-0.27	-0.503	0.049
r7q44	0.243	0.378	-0.164
r7q45	-0.2	-0.581	-0.23
r7q46	0.055	-0.356	-0.165
r7q47	-0.307	-0.277	-0.192
r7q48	-0.658	-0.743	-0.078
r7q49	0.092	-0.259	-0.129
r7q50	-0.046	0.268	-0.135



Table I.22 Year 7 Reading Item DIF: TAA

Item Label	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
r7q01	0.067	0.014	0.487	-0.202	-0.127	-0.081	-0.242	-0.221
r7q02	-0.215	0.164	0.33	0.037	-0.251	0.051	-0.129	-0.349
r7q03	-0.586	-0.185	0.786	-0.106	-0.148	-0.24	-0.623	-0.461
r7q04	0.129	-0.096	0.308	0.013	-0.361	-0.035	-0.104	0.114
r7q05	-0.008	-0.333	0.517	-0.031	-0.397	0.094	-0.232	-0.103
r7q06	-0.086	0.124	0.059	-0.102	-0.094	0.058	-0.056	0.131
r7q07	0.103	-0.033	0.002	-0.127	-0.05	0.3	0.107	-0.305
r7q08	-0.175	-0.043	0.564	-0.232	-0.122	-0.072	-0.112	-0.233
r7q09	-0.044	-0.052	0.05	-0.036	-0.007	0.073	0.113	-0.042
r7q10	-0.034	-0.06	0.25	-0.028	-0.108	0.287	-0.138	-0.355
r7q11	0.091	0.047	-0.175	-0.085	0.049	0.122	-0.061	0.092
r7q12	0.008	-0.004	-0.565	0.303	0.12	0.109	-0.094	0.126
r7q13	0.364	-0.063	-0.141	0.083	0.017	-0.101	-0.021	-0.042
r7q14	0.014	0.296	-0.238	-0.023	0.006	-0.051	0.15	-0.07
r7q15	-0.128	-0.092	0.155	0.172	-0.154	0.013	0.065	-0.057
r7q16	-0.172	-0.111	-0.074	-0.016	0.159	0.03	0.183	0.078
r7q17	-0.144	0.225	-0.111	-0.09	0.275	-0.206	0.24	-0.076
r7q18	-0.168	-0.143	0.263	0.238	0.003	-0.156	0.019	-0.101
r7q19	-0.059	0.089	0.073	0.019	-0.027	0.066	-0.072	0.027
r7q20	0.259	0.022	-0.067	0.13	-0.082	-0.1	-0.011	-0.05
r7q21	-0.152	-0.304	0.32	0.249	-0.081	-0.135	0.089	-0.031
r7q22	0.147	0.158	0.115	0.014	0.059	-0.205	-0.084	-0.079
r7q23	-0.108	0.077	0.033	0.124	0	-0.114	-0.001	0.098
r7q24	-0.103	0.104	-0.085	0.173	0.082	-0.054	-0.094	0.071
r7q25	0.08	0.011	0.008	-0.097	-0.008	0.056	-0.045	0.088
r7q26	-0.089	-0.039	0.211	0.027	0.122	-0.094	-0.093	0.001
r7q27	-0.083	-0.054	0.324	-0.092	0.063	-0.007	-0.004	-0.177
r7q28	0.009	-0.213	-0.222	0.073	0.155	-0.017	0.035	0.244
r7q29	-0.069	0.123	0.106	0.001	-0.062	-0.061	-0.072	0.185
r7q30	0.268	0.119	-0.15	-0.097	-0.021	0.036	0.027	-0.109
r7q31	-0.039	-0.044	-0.208	-0.049	0.041	0.04	0.151	0.172
r7q32	-0.07	0.127	-0.431	-0.14	0.222	-0.067	0.145	0.227
r7q33	0.224	-0.167	0.032	0.098	0.034	-0.008	-0.251	0.147
r7q34	0.143	0.072	-0.04	-0.045	-0.039	-0.059	-0.062	0.126
r7q35	0.056	0.062	-0.481	0.119	0.279	0.003	-0.22	0.212
r7q36	0.068	0.108	-0.253	0.012	-0.134	0.002	-0.13	0.386
r7q37	-0.057	-0.058	-0.109	-0.001	-0.029	0.158	0.091	0.092
r7q38	0.378	0.292	0.4	-0.363	-0.03	-0.067	0.476	-0.402
r7q39	0.07	0.093	-0.39	-0.054	-0.167	0.271	0.509	-0.212
r7q40	-0.061	-0.058	0.082	0.068	0.126	-0.084	0.134	-0.078
r7q41	-0.043	-0.03	-0.302	0.022	0.002	0.106	0.205	0.093
r7q42	-0.001	-0.155	-0.134	0.098	0.054	0.049	0.045	0.124
r7q43	0.044	0.013	-0.34	-0.086	0.256	-0.119	0.235	0.045
r7q44	-0.026	-0.313	0.247	0.162	-0.061	-0.028	0.021	0.047
r7q45	0.081	0.106	-0.225	-0.147	0.236	-0.075	-0.157	0.245
r7q46	-0.116	-0.05	-0.087	0.281	-0.074	0.193	-0.137	0.083
r7q47	0.177	0.039	-0.301	0.111	0.059	-0.151	-0.032	0.149
r7q48	-0.212	0.018	-0.379	-0.031	0.185	0.167	0.225	0.08
r7q49	0.196	0.069	-0.171	-0.173	-0.064	0.035	0.035	0.122
r7q50	0.075	0.131	-0.039	-0.173	0.098	0.069	-0.022	-0.05

**Table I.23 Year 7 Spelling Item DIF: Gender, Indigenous, and LBOTE**

<b>Item Label</b>	<b>Gender Difference</b>	<b>Indigenous Difference</b>	<b>LBOTE Difference</b>
lc7q01	-0.18	-0.064	0.324
lc7q02	0.103	-1.209	1
lc7q03	0.315	-0.128	0.082
lc7q04	0.188	-0.479	-0.277
lc7q05	0.27	0.102	0.11
lc7q06	0.796	-0.221	-0.381
lc7q07	0.1	0.277	-0.166
lc7q08	0.293	-0.11	-0.164
lc7q09	0.002	0.587	-0.036
lc7q10	-0.139	0.164	0.112
lc7q11	0.093	0.078	-0.216
lc7q12	-0.519	-0.118	-0.156
lc7q13	-0.197	0.455	-0.346
lc7q14	-0.087	0.67	0.251
lc7q15	-0.97	-0.041	0.241
lc7q16	-0.109	-0.221	0.162
lc7q17	0.16	-0.491	-0.26
lc7q18	-0.301	-0.378	0.088
lc7q19	0.287	0.032	-0.528
lc7q20	0.159	-0.007	0.168
lc7q21	-0.322	0.337	0.084
lc7q22	0.002	-0.127	0.218
lc7q23	0.135	-0.001	0.123
lc7q24	0.027	0.745	-0.48
lc7q25	-0.07	0.117	-0.251
lc7q26	-0.165	0.129	0.058
lc7q27	0.058	-0.433	0.443
lc7q28	0.167	0.149	0.107
lc7q29	0.133	0.412	-0.029
lc7q30	-0.228	-0.225	-0.283

**Table I.24 Year 7 Spelling Item DIF: TAA**

<b>Item_Label</b>	<b>ACT</b>	<b>NSW</b>	<b>NT</b>	<b>QLD</b>	<b>SA</b>	<b>TAS</b>	<b>VIC</b>	<b>WA</b>
lc7q01	0.046	-0.153	0.087	-0.004	-0.163	0.13	0.016	-0.294
lc7q02	0.081	-0.074	-0.012	-0.103	0.223	-0.663	0.252	0.152
lc7q03	-0.238	-0.016	-0.001	0.093	0.356	-0.18	-0.15	-0.048
lc7q04	0.115	-0.067	-0.038	0.042	-0.035	-0.181	-0.28	0.329
lc7q05	-0.049	-0.017	0.37	-0.295	0.27	-0.095	-0.156	-0.123
lc7q06	-0.299	-0.198	0.191	0.252	0.304	-0.022	-0.636	0.211
lc7q07	-0.177	0.105	-0.06	0.338	-0.155	-0.147	-0.095	0.141
lc7q08	-0.14	-0.135	-0.078	-0.085	-0.101	0.036	0.199	0.25
lc7q09	0.027	-0.182	0.251	-0.161	0.245	-0.077	-0.169	0.079
lc7q10	0.192	0.128	-0.241	-0.28	-0.018	0.154	0.154	-0.131
lc7q11	0.043	0.161	-0.118	0.122	-0.079	-0.023	-0.253	0.137
lc7q12	0.234	0.159	-0.089	-0.15	-0.106	0.093	0.187	-0.314
lc7q13	-0.003	-0.178	-0.16	0.331	0.032	-0.061	-0.049	0.085
lc7q14	0.097	0.122	0.121	0.125	-0.273	-0.008	0.254	-0.258
lc7q15	-0.731	0.14	0.586	0.193	-0.125	0.304	0.387	-0.069
lc7q16	-0.386	0.22	-0.044	0.043	-0.001	-0.095	0.029	0.091
lc7q17	0.168	0.048	-0.282	-0.259	0.269	-0.039	-0.052	0.118
lc7q18	0.031	0.052	-0.037	0.045	0.108	-0.218	-0.095	0.106
lc7q19	-0.038	-0.091	0.094	0.219	-0.053	-0.02	-0.096	0.005
lc7q20	0.082	-0.018	0.166	-0.301	0.061	0.068	0	0.003
lc7q21	0.162	-0.182	-0.312	-0.071	0.081	0.142	0.037	0.067
lc7q22	-0.037	0.068	-0.123	0.04	-0.099	-0.009	0.191	-0.046
lc7q23	0.131	0.049	0.041	-0.166	-0.229	-0.04	0.062	0.166
lc7q24	-0.193	-0.017	-0.28	0.591	-0.131	0.344	-0.232	-0.031
lc7q25	0.174	-0.187	0.054	-0.064	-0.069	0.248	0.059	-0.124
lc7q26	0.193	-0.037	0.133	-0.116	-0.04	0.118	0.112	-0.258
lc7q27	0.144	-0.054	-0.352	-0.295	0.137	0.161	-0.004	0.133
lc7q28	0.455	-0.101	-0.034	0.115	-0.232	-0.003	0.374	-0.415
lc7q29	-0.341	0.237	-0.02	0.128	-0.234	0.083	0.178	0.077
lc7q30	0.254	0.216	0.189	-0.328	0.056	0	-0.227	-0.04

**Table I.25 Year 9 G&P Item DIF: Gender, Indigenous, and LBOTE**

<b>Item Label</b>	<b>Gender Difference</b>	<b>Indigenous Difference</b>	<b>LBOTE Difference</b>
lc9q31	0.323	0.863	0.226
lc9q32	0.244	0.917	0.692
lc9q33	-0.149	0.785	0.813
lc9q34	0.442	0.283	-0.134
lc9q35	0.465	0.566	0.175
lc9q36	0.3	0.502	0.405
lc9q37	0.362	0.454	0.25
lc9q38	-0.469	0.364	0.197
lc9q39	-0.266	-0.169	0.558
lc9q40	-0.026	0.114	-0.375
lc9q41	-0.198	0.641	0.212
lc9q42	-0.113	-0.048	-0.349
lc9q43	-0.071	0.026	0.042
lc9q44	-0.03	0.101	-0.445
lc9q45	0.196	0.181	-0.235
lc9q46	0.187	-0.385	-0.227
lc9q47	-0.041	-0.045	-0.286
lc9q48	0.579	0.103	-0.366
lc9q49	0.157	-0.426	0.049
lc9q50	-0.416	-0.608	-0.154
lc9q51	-0.09	-0.503	0.131
lc9q52	0.008	-0.735	-0.349
lc9q53	-0.011	-0.068	-0.329
lc9q54	-0.345	-0.724	0.086
lc9q55	0.347	0.033	-0.3
lc9q56	-0.281	-0.305	-0.041
lc9q57	-0.482	-0.446	-0.285
lc9q58	-0.624	-1.471	0.037

**Table I.26 Year 9 G&P Item DIF: TAA**

<b>Item_Label</b>	<b>ACT</b>	<b>NSW</b>	<b>NT</b>	<b>QLD</b>	<b>SA</b>	<b>TAS</b>	<b>VIC</b>	<b>WA</b>
lc9q31	-0.177	-0.364	0.691	-0.288	-0.111	-0.054	0.088	-1.124
lc9q32	-0.187	-0.354	0.528	-0.029	0.014	-0.122	0.055	-0.378
lc9q33	-0.345	-0.172	0.578	0.141	-0.022	-0.365	-0.196	-0.088
lc9q34	0.098	-0.02	0.247	-0.309	0.054	0	0.008	-0.074
lc9q35	0.042	-0.15	0.26	-0.102	-0.18	0.116	0.127	-0.109
lc9q36	-0.03	-0.106	0.103	0.122	-0.273	-0.103	-0.026	0.354
lc9q37	0.039	-0.193	0.257	-0.142	-0.034	0.073	0.05	-0.019
lc9q38	-0.22	0.19	-0.128	-0.08	-0.136	0.194	-0.03	0.27
lc9q39	0.097	0.331	-0.1	0.182	-0.156	-0.281	-0.044	0.082
lc9q40	-0.074	0.026	0.077	0.021	-0.007	0.174	-0.129	0.029
lc9q41	-0.247	-0.039	0.014	0.212	0.16	0.056	-0.055	0.007
lc9q42	0.237	-0.207	-0.178	-0.015	0.223	0.064	-0.062	0.048
lc9q43	-0.075	0.06	0.008	-0.226	-0.162	0.252	0.165	0.053
lc9q44	0.12	-0.339	-0.032	-0.009	0.17	-0.017	0.254	-0.029
lc9q45	0.165	0.132	-0.049	0.082	-0.012	-0.109	-0.212	0.128
lc9q46	0.091	0.167	-0.078	-0.083	0.006	0.015	-0.039	0.034
lc9q47	-0.015	-0.026	-0.195	0.194	0.172	-0.133	-0.124	0.227
lc9q48	-0.093	0	0.058	0.195	0.245	-0.114	-0.002	-0.142
lc9q49	-0.141	0.192	-0.227	-0.243	0.182	0.041	0.085	0.191
lc9q50	-0.177	0.247	-0.265	0.187	0.027	-0.071	0.115	0.039
lc9q51	-0.068	-0.136	0.029	0.337	-0.013	-0.158	0.048	0.127
lc9q52	0.145	0.188	-0.319	0.074	0.096	-0.05	-0.129	0.066
lc9q53	0.196	0.172	0.109	0.036	-0.243	0.032	-0.032	-0.114
lc9q54	0.4	0.103	-0.444	0.001	0.058	0.029	-0.148	0.036
lc9q55	-0.011	0.052	0.095	-0.029	0.035	0.218	-0.158	-0.046
lc9q56	0.084	0.045	-0.125	-0.156	-0.047	0.162	-0.093	0.216
lc9q57	-0.105	0.122	-0.115	-0.008	-0.036	0.046	0.069	0.122
lc9q58	0.248	0.077	-0.803	-0.068	-0.015	0.099	0.412	0.093

**Table I.27 Year 9 Numeracy Item DIF: Gender, Indigenous, and LBOTE**

<b>Item Label</b>	<b>Gender Difference</b>	<b>Indigenous Difference</b>	<b>LBOTE Difference</b>
n9CAq01	0.259	1.356	0.711
n9CAq02	-0.061	1.076	0.878
n9CAq03	-0.06	0.907	0.567
n9CAq04	-0.623	0.288	0.29
n9CAq05	0.159	-0.54	-0.039
n9CAq06	-0.436	0.098	0.156
n9CAq07	-0.141	0.233	0.206
n9CAq08	0.037	0.254	-0.195
n9CAq09	-0.352	-0.45	0.065
n9CAq10	0.176	-0.313	0.105
n9CAq11	0.075	0.024	0.186
n9CAq12	-0.311	-0.383	0.225
n9CAq13	-0.276	-0.046	0.205
n9CAq14	0.103	-0.097	0.315
n9CAq15	0.246	-0.143	-0.308
n9CAq16	-0.03	-0.32	0.228
n9CAq17	-0.019	0.138	-0.015
n9CAq18	-0.057	-0.503	-0.421
n9CAq19	0.12	-0.233	-0.549
n9CAq20	-0.181	0.469	-0.179
n9CAq21	0.246	-0.824	0.193
n9CAq22	0.279	0.795	-0.338
n9CAq23	0.466	0.733	-0.311
n9CAq24	-0.023	-0.24	-0.082
n9CAq25	0.266	0.389	-0.454
n9CAq26	0.064	0.316	-0.086
n9CAq27	-0.138	0.312	0.138
n9CAq28	0.364	-0.63	-0.163
n9CAq29	0.626	1.333	-0.875
n9CAq30	-0.022	-0.521	-0.714
n9CAq31	-0.287	1.082	-0.147
n9CAq32	-0.013	-0.979	-0.325

**(continued)**

**Table I.27 (continued)**

<b>Item Label</b>	<b>Gender Difference</b>	<b>Indigenous Difference</b>	<b>LBOTE Difference</b>
n9NCq01	0.37	0.957	0.518
n9NCq02	-0.073	-0.014	0.231
n9NCq03	-0.115	0.02	0.137
n9NCq04	-0.237	0.045	-0.023
n9NCq05	0.342	0.388	-0.142
n9NCq06	0.113	-0.398	-0.055
n9NCq07	0.252	0.303	-0.312
n9NCq08	-0.172	-0.129	-0.012
n9NCq09	0.212	0.104	-0.209
n9NCq10	-0.033	-0.614	0.218
n9NCq11	-0.138	0.265	0.095
n9NCq12	0.042	-0.324	0.32
n9NCq13	-0.026	-0.325	0.207
n9NCq14	0.347	-0.026	-0.16
n9NCq15	-0.001	-0.302	0.363
n9NCq16	-0.405	-0.4	-0.185
n9NCq17	-0.119	-0.382	0.206
n9NCq18	-0.03	-0.362	0.11
n9NCq19	0.162	-0.622	-0.089
n9NCq20	-0.07	-0.507	0.096
n9NCq21	-0.252	-0.85	0.145
n9NCq22	0.083	-0.596	0.136
n9NCq23	0.344	-0.044	0.116
n9NCq24	0.173	0.147	-0.588
n9NCq25	0.073	0.405	0.077
n9NCq26	0.139	-0.763	0.373
n9NCq27	-0.253	-0.724	-0.42
n9NCq28	-0.233	-0.192	0.243
n9NCq29	-0.599	0.124	-0.324
n9NCq30	-0.034	0.231	-0.106
n9NCq31	-0.393	1.535	-0.379
n9NCq32	0.073	-0.528	0.147

**Table I.28 Year 9 Numeracy Item DIF: TAA**

<b>Item_Label</b>	<b>ACT</b>	<b>NSW</b>	<b>NT</b>	<b>QLD</b>	<b>SA</b>	<b>TAS</b>	<b>VIC</b>	<b>WA</b>
n9CAq01	-0.699	-0.032	0.656	-0.02	-0.43	0.042	-0.359	-0.304
n9CAq02	-0.297	0.047	0.485	-0.036	-0.388	-0.086	-0.271	-0.027
n9CAq03	-0.372	-0.181	0.531	-0.057	-0.097	0.065	-0.375	-0.117
n9CAq04	0.038	0.091	0.046	-0.016	-0.047	-0.098	0.004	-0.046
n9CAq05	0.059	-0.277	-0.199	-0.088	0.098	0.06	0.281	0.048
n9CAq06	0.028	-0.075	-0.043	0.015	0.027	0.241	-0.104	-0.147
n9CAq07	-0.192	-0.009	0.188	-0.064	0.098	-0.175	0.096	-0.042
n9CAq08	0.036	-0.312	0.091	-0.222	0.125	0.419	-0.123	-0.073
n9CAq09	0.097	0.02	-0.304	-0.02	-0.163	-0.163	0.222	0.32
n9CAq10	0.267	0.145	-0.237	-0.073	0.014	-0.348	0.28	-0.01
n9CAq11	0.077	-0.071	-0.181	-0.121	0.206	0.008	-0.023	0.093
n9CAq12	-0.011	0.174	-0.194	0.209	-0.235	-0.046	0.14	-0.036
n9CAq13	0.131	0.341	-0.145	-0.104	-0.114	-0.147	-0.013	0.054
n9CAq14	-0.027	0.31	-0.051	-0.001	0.037	-0.343	0.032	0.047
n9CAq15	-0.136	0.101	-0.005	-0.074	-0.062	0.193	0.031	-0.056
n9CAq16	-0.003	-0.127	-0.104	-0.021	-0.033	0.176	-0.028	0.129
n9CAq17	0.103	-0.025	-0.005	-0.008	0.025	0.153	-0.087	-0.138
n9CAq18	-0.066	-0.113	-0.095	0.166	0.025	0.116	0.148	-0.178
n9CAq19	0.258	0.034	-0.345	-0.139	0.034	0.086	0.109	-0.081
n9CAq20	-0.241	-0.148	0.255	0.039	0.236	0.092	-0.133	0.07
n9CAq21	0.085	-0.073	-0.131	-0.023	0.008	-0.125	0.135	0.12
n9CAq22	-0.205	-0.563	0.345	-0.018	0.163	0.254	0.237	0.017
n9CAq23	0.034	-0.928	0.1	-0.256	0.582	0.233	0.039	0.421
n9CAq24	-0.033	0.04	-0.193	0.169	-0.311	-0.028	0.152	0.192
n9CAq25	-0.102	-0.161	-0.045	-0.003	0.21	0.628	-0.16	-0.162
n9CAq26	-0.191	-0.361	0.303	0.354	0.849	-0.19	-0.111	-0.1
n9CAq27	0.134	0.12	-0.139	-0.162	-0.063	-0.162	0.054	0.166
n9CAq28	0.136	0.068	-0.333	0.284	-0.139	0.05	-0.169	0.081
n9CAq29	-0.01	-0.563	0.352	0.13	0.067	0.402	-0.009	0.11
n9CAq30	0.003	-0.041	0.006	0.03	0.105	0.212	-0.181	-0.002
n9CAq31	-0.198	-0.165	-0.209	-0.039	0.255	0.171	0.215	0.064
n9CAq32	0.037	-0.047	-0.492	0.326	0.047	0.287	-0.185	0.053

**(continued)**



Table I.28 (continued)

Item_Label	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
n9NCq01	-0.299	0.064	0.526	-0.147	-0.498	-0.241	-0.056	0.029
n9NCq02	-0.105	0.069	0.134	-0.002	-0.152	-0.267	0.11	0.137
n9NCq03	-0.069	0.1	0.191	0.073	0.029	-0.176	-0.071	-0.127
n9NCq04	0.046	-0.111	0.109	0.062	0.051	0.067	-0.033	-0.29
n9NCq05	0.214	0.3	0.147	-0.327	-0.332	0.178	-0.155	-0.142
n9NCq06	-0.177	0.223	-0.118	-0.115	0.033	0.014	-0.101	0.2
n9NCq07	0.314	-0.073	0.212	-0.199	-0.03	-0.063	0.083	-0.317
n9NCq08	0.237	-0.169	-0.068	0.207	0.147	-0.166	0.035	-0.261
n9NCq09	-0.188	-0.019	-0.032	0.196	0.023	0.142	-0.064	-0.123
n9NCq10	0.097	0.158	-0.059	0.295	-0.051	-0.295	-0.087	-0.071
n9NCq11	0.18	0.122	0.138	-0.172	-0.007	-0.018	-0.33	0.048
n9NCq12	0.097	0.046	-0.142	-0.049	-0.07	-0.305	0.381	0.06
n9NCq13	0.066	0.04	-0.236	0.188	0.059	-0.169	-0.067	0.114
n9NCq14	-0.096	-0.12	-0.017	-0.055	0.246	0.154	-0.099	-0.045
n9NCq15	-0.103	0.025	0.025	-0.187	-0.066	0.031	0.348	-0.087
n9NCq16	-0.044	0.022	-0.34	0.295	0.098	-0.093	0.002	0.044
n9NCq17	0.255	0.153	-0.347	-0.3	-0.007	0.041	0.129	0.057
n9NCq18	-0.137	0.118	-0.229	0.126	-0.12	0.092	0.145	-0.019
n9NCq19	-0.024	0.399	-0.302	0.037	0.035	-0.059	0.03	-0.145
n9NCq20	0.104	0.199	-0.267	-0.185	-0.054	-0.076	0.155	0.089
n9NCq21	0.185	0.212	-0.541	0.049	0.002	-0.206	0.115	0.127
n9NCq22	0.113	0.075	-0.397	-0.124	0.097	-0.122	0.114	0.181
n9NCq23	0.048	0.093	-0.103	-0.202	-0.02	0.123	0.059	-0.003
n9NCq24	-0.014	-0.014	0.127	0.057	-0.025	0.468	-0.284	-0.152
n9NCq25	0.061	-0.029	0.338	-0.034	-0.013	-0.07	0.066	-0.151
n9NCq26	0.236	0.33	-0.516	0.021	-0.286	-0.108	0.025	0.177
n9NCq27	0.119	0.155	-0.385	0.094	-0.218	-0.01	-0.022	0.186
n9NCq28	0.175	0.09	0.138	-0.112	0.026	-0.249	0.09	-0.054
n9NCq29	-0.033	0.09	0.244	0.316	-0.058	-0.074	-0.096	-0.136
n9NCq30	-0.085	0.28	0.342	0.045	-0.032	-0.118	-0.088	-0.095
n9NCq31	0.069	-0.293	0.144	0.222	0.274	0.149	-0.207	0.028
n9NCq32	0.023	0.248	1.381	-0.231	-0.208	-0.549	0.035	0.276

**Table I.29 Year 9 Reading Item DIF: Gender, Indigenous, and LBOTE**

<b>Item Label</b>	<b>Gender Difference</b>	<b>Indigenous Difference</b>	<b>LBOTE Difference</b>
r9q01	0.236	0.495	0.283
r9q02	0.691	1.369	0.555
r9q03	0.131	0.554	0.298
r9q04	-0.015	0.263	0.181
r9q05	-0.482	0.049	0.151
r9q06	-0.44	0.943	0.359
r9q07	-0.18	0.541	0.414
r9q08	-0.09	1.104	0.698
r9q09	-0.633	-1.009	-0.177
r9q10	-0.294	-0.589	-0.299
r9q11	-0.173	0.076	0.166
r9q12	-0.337	-0.117	0.04
r9q13	0.057	0.458	0.371
r9q14	0.252	0.247	0.04
r9q15	-0.146	-0.341	0.085
r9q16	0.029	-0.136	-0.009
r9q17	0.287	0.507	-0.066
r9q18	0.311	0.283	-0.065
r9q19	-0.128	-0.115	-0.292
r9q20	-0.061	-0.037	-0.041
r9q21	-0.288	-0.014	-0.44
r9q22	0.096	0.38	-0.096
r9q23	-0.579	0.062	0.047
r9q24	0.295	0.183	0
r9q25	0.683	0.595	0.034
r9q26	0.58	0.689	0.095
r9q27	-0.205	-0.531	-0.216
r9q28	0.399	0.139	0.086
r9q29	-0.078	-0.04	0.168
r9q30	0.327	0.047	0.157
r9q31	-0.169	-0.677	0.096
r9q32	-0.036	0.294	-0.031
r9q33	-0.181	-0.045	-0.091
r9q34	0.157	-0.445	-0.2
r9q35	0.067	-0.317	-0.034
r9q36	-0.096	-0.138	-0.027
r9q37	0.395	0.277	-0.4
r9q38	0.047	-0.683	-0.17
r9q39	0.249	-0.033	-0.101
r9q40	-0.012	-0.459	-0.163
r9q41	0.246	-0.055	0.039
r9q42	-0.146	-0.006	-0.194
r9q43	0.051	-0.373	-0.171
r9q44	0.027	-0.456	-0.222
r9q45	-0.029	0.006	-0.037
r9q46	-0.025	-0.466	-0.242
r9q47	-0.229	-0.766	-0.332
r9q48	-0.105	-0.544	-0.378
r9q49	-0.186	-0.292	0.276
r9q50	-0.27	-0.876	-0.143

Table I.30 Year 9 Reading Item DIF: TAA

Item_Label	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
r9q01	-0.453	0.158	0.295	-0.17	-0.18	-0.207	0.132	0.192
r9q02	-0.376	-0.469	0.816	-0.478	-0.386	0.23	-0.338	-0.45
r9q03	0.099	-0.289	0.303	0.042	-0.123	0.055	-0.136	-0.076
r9q04	-0.016	-0.014	0.109	-0.153	0.083	-0.011	0.027	0.045
r9q05	0.09	-0.009	0.208	-0.163	0.154	-0.039	0.106	-0.33
r9q06	-0.573	-0.291	0.383	0.136	-0.255	0.054	-0.085	0.159
r9q07	-0.191	-0.023	0.177	0.01	-0.153	-0.105	0.193	0.052
r9q08	-0.374	-0.347	0.72	-0.157	-0.439	0.194	-0.028	-0.292
r9q09	0.019	0.128	-0.578	0.03	0.353	0.236	-0.083	-0.023
r9q10	0.1	-0.149	-0.337	0.381	-0.069	0.092	-0.024	0.085
r9q11	0.233	-0.238	0.182	-0.009	0.062	-0.121	-0.008	-0.012
r9q12	0.156	0.128	-0.29	-0.001	0.072	0.012	-0.067	0.059
r9q13	0.155	-0.099	0.106	-0.113	0.096	-0.072	0.03	-0.047
r9q14	-0.147	0.085	-0.098	0.151	-0.042	-0.051	0.106	0.041
r9q15	0.02	-0.029	-0.296	0.032	0.066	-0.003	0.171	0.089
r9q16	0.113	0.078	-0.26	-0.215	0.169	-0.116	0.095	0.166
r9q17	-0.077	0.173	0.239	-0.207	-0.097	0.202	-0.023	-0.159
r9q18	0.013	-0.392	0.148	0.104	0.071	0.072	0.131	-0.063
r9q19	0.086	-0.026	-0.073	0.031	-0.085	-0.03	0.026	0.141
r9q20	-0.089	0.071	-0.148	0.004	-0.094	0.061	-0.001	0.231
r9q21	0.256	-0.125	-0.155	-0.238	0.07	-0.06	0.207	0.105
r9q22	-0.05	-0.039	-0.022	0.057	0.084	0.13	0.081	-0.218
r9q23	-0.404	0.25	0.059	0.148	0.075	0.024	-0.209	0.109
r9q24	-0.087	0.029	0.141	-0.083	0.038	-0.018	0.063	-0.029
r9q25	0.017	0.157	0.292	-0.106	0.092	0.005	-0.049	-0.515
r9q26	0.014	-0.078	0.21	0.125	0.04	0.077	-0.189	-0.287
r9q27	-0.006	0.18	-0.181	0.008	-0.072	-0.082	-0.141	0.324
r9q28	-0.065	0.16	0.021	0.076	0.013	-0.108	-0.017	0.006
r9q29	-0.038	0.011	-0.078	0.186	0.009	-0.16	0.034	0.106
r9q30	0.042	0.125	-0.018	0.019	0.007	-0.012	0.088	-0.168
r9q31	0.089	0.154	-0.428	0.14	0.031	-0.148	0.024	0.136
r9q32	-0.07	-0.05	0.153	0.093	0.147	-0.093	-0.199	0.107
r9q33	0.231	0.029	-0.108	-0.074	-0.089	-0.003	0.095	-0.004
r9q34	0.098	-0.022	-0.342	0.161	0.094	-0.089	0.015	0.119
r9q35	-0.146	0.163	0.083	0.164	-0.058	-0.186	0.009	0.05
r9q36	0.052	0.199	-0.249	0.091	-0.176	-0.071	-0.032	0.222
r9q37	0.418	0.352	0.474	0.189	-0.307	0.475	-0.01	-0.758
r9q38	0.291	0.144	-0.247	-0.196	0.436	0.029	-0.143	-0.234
r9q39	-0.234	0.135	0.221	0.193	0.028	-0.014	-0.155	-0.053
r9q40	0.104	-0.013	-0.071	-0.06	-0.097	0.006	0.105	0.09
r9q41	0.176	-0.185	0.029	0.014	-0.094	0.064	0.038	0.029
r9q42	0.009	0.008	-0.185	0.162	-0.045	0.004	-0.09	0.183
r9q43	0.157	0.026	-0.1	-0.141	0.062	-0.051	0.135	-0.024
r9q44	0.199	0.126	-0.146	-0.204	0.029	0.086	-0.014	-0.027
r9q45	-0.127	0.116	-0.156	0.041	0.016	0.136	-0.081	0.086
r9q46	0.122	-0.08	-0.139	0.014	0.036	-0.165	0.153	0.12
r9q47	0.174	-0.098	-0.052	-0.118	-0.04	-0.111	0.126	0.179
r9q48	-0.05	-0.139	0.114	0.041	0.117	-0.018	-0.075	0.125
r9q49	-0.053	0.056	-0.25	-0.056	-0.012	0.034	0.144	0.157
r9q50	0.091	-0.038	-0.478	0.099	0.364	-0.137	-0.132	0.255

**Table I.31 Year 9 Spelling Item DIF: Gender, Indigenous, and LBOTE**

<b>Item Label</b>	<b>Gender Difference</b>	<b>Indigenous Difference</b>	<b>LBOTE Difference</b>
lc9q01	0.455	-0.483	0.305
lc9q02	0.251	0.284	0.323
lc9q03	1.162	-0.741	-0.244
lc9q04	0.998	0.05	0.426
lc9q05	0.122	0.499	0.367
lc9q06	-0.401	-0.667	-0.756
lc9q07	0.03	-0.942	-0.129
lc9q08	0.141	0.154	0.039
lc9q09	-0.205	0.259	-0.254
lc9q10	-0.148	-0.211	-0.088
lc9q11	0.306	-0.654	0.429
lc9q12	0.223	0.481	-0.082
lc9q13	-1.045	0.082	0.434
lc9q14	-0.751	0.537	-0.109
lc9q15	-0.234	0.116	0.13
lc9q16	-0.164	0.695	-0.137
lc9q17	-0.254	-0.418	0.17
lc9q18	-0.004	-0.401	0.388
lc9q19	0.191	-0.066	-0.226
lc9q20	-0.41	-0.056	0.055
lc9q21	-0.022	0.117	-0.437
lc9q22	-0.094	-0.089	-0.166
lc9q23	-0.137	0.047	0.395
lc9q24	-0.22	0.167	-0.288
lc9q25	0.092	-0.055	0.199
lc9q26	-0.032	0.45	-0.207
lc9q27	0.073	0.082	-0.291
lc9q28	0.591	0.295	0.151
lc9q29	-0.42	-0.28	-0.022
lc9q30	-0.093	0.751	-0.375

**Table I.32 Year 9 Spelling Item DIF: TAA**

<b>Item_Label</b>	<b>ACT</b>	<b>NSW</b>	<b>NT</b>	<b>QLD</b>	<b>SA</b>	<b>TAS</b>	<b>VIC</b>	<b>WA</b>
lc9q01	-0.46	-0.171	-0.151	-0.301	0.208	-0.061	0.16	-0.435
lc9q02	-0.168	0.374	-0.132	-0.475	-0.048	-0.182	0.231	0.049
lc9q03	-0.031	0.046	-0.212	-0.113	0.2	0.098	-0.334	0.179
lc9q04	-0.122	0.26	0.065	-0.213	0.088	-0.132	-0.072	0.003
lc9q05	0.12	-0.29	0.364	-0.103	-0.097	0.157	-0.233	-0.061
lc9q06	0.141	-0.213	-0.319	0.048	0.214	0.067	-0.323	0.329
lc9q07	0.096	0.115	-0.42	0.152	0.018	-0.029	-0.02	0.066
lc9q08	0.116	0.061	-0.035	0.183	0.038	-0.332	0.014	0
lc9q09	0.013	0.233	-0.178	0.036	-0.34	0.446	-0.001	-0.183
lc9q10	-0.253	0.226	0.218	0.289	-0.063	-0.173	-0.195	0.056
lc9q11	0.054	0.154	-0.15	0.19	0.054	-0.217	-0.092	0.031
lc9q12	0.029	0.248	0.086	-0.013	-0.009	-0.016	-0.117	-0.106
lc9q13	-0.613	0.124	0.528	-0.051	-0.077	0.163	-0.096	0.403
lc9q14	-0.158	0.07	0.259	-0.21	-0.043	0.198	0.219	-0.119
lc9q15	0.035	0.304	0.243	-0.019	0.132	-0.13	-0.216	-0.193
lc9q16	0.013	0.304	-0.277	0.346	-0.408	-0.031	-0.155	0.304
lc9q17	-0.043	0.172	-0.159	0.266	0.15	-0.328	0.103	-0.306
lc9q18	0.032	-0.206	-0.188	0.462	0.044	-0.332	0.009	0.044
lc9q19	0.057	-0.022	0.121	-0.043	-0.099	-0.16	0.112	0.107
lc9q20	0.05	-0.5	0.239	-0.095	0.174	-0.087	0.103	0.162
lc9q21	0.284	0.01	-0.205	0.113	0.021	0.109	0.008	-0.342
lc9q22	-0.029	-0.252	-0.138	0.284	0.075	-0.315	0.198	0.18
lc9q23	-0.055	-0.051	-0.078	-0.01	0.079	-0.073	0.327	-0.08
lc9q24	0.1	-0.332	-0.253	-0.15	-0.102	0.31	0.222	0.172
lc9q25	0.151	-0.136	-0.187	0.064	-0.114	-0.104	0.37	-0.021
lc9q26	0.08	-0.306	-0.124	0.038	0.016	0.413	0.034	-0.039
lc9q27	0.097	0.02	0.134	-0.011	-0.33	0.057	-0.01	0.17
lc9q28	0.293	0.081	0.258	-0.148	0.011	0.116	-0.267	-0.139
lc9q29	0.005	-0.292	0.152	-0.333	0.345	0.394	0.223	-0.232
lc9q30	0.164	-0.029	0.541	-0.181	-0.136	0.177	-0.2	0.002

**Table I.33 Years 3, 5, 7, and 9 Writing Item DIF: Gender, Indigenous, and LBOTE**

<b>Item Label</b>	<b>Gender Difference</b>	<b>Indigenous Difference</b>	<b>LBOTE Difference</b>
WQ01	0.097	-1.754	-0.252
WQ02	-0.006	0.748	0.039
WQ03	-0.108	-1.767	0.051
WQ04	-0.018	0.655	0.026
WQ05	-0.182	0.611	0.116
WQ06	-0.119	0.389	0.175
WQ07	0.204	0.481	-0.166
WQ08	0.003	-0.88	0.425
WQ09	0.298	0.936	-0.102
WQ10	-0.168	0.58	-0.313

APPENDIX J. EXPECTED SCORE CURVES OF WRITING CRITERIA

FIGURE J.1 Criterion 1: Audience

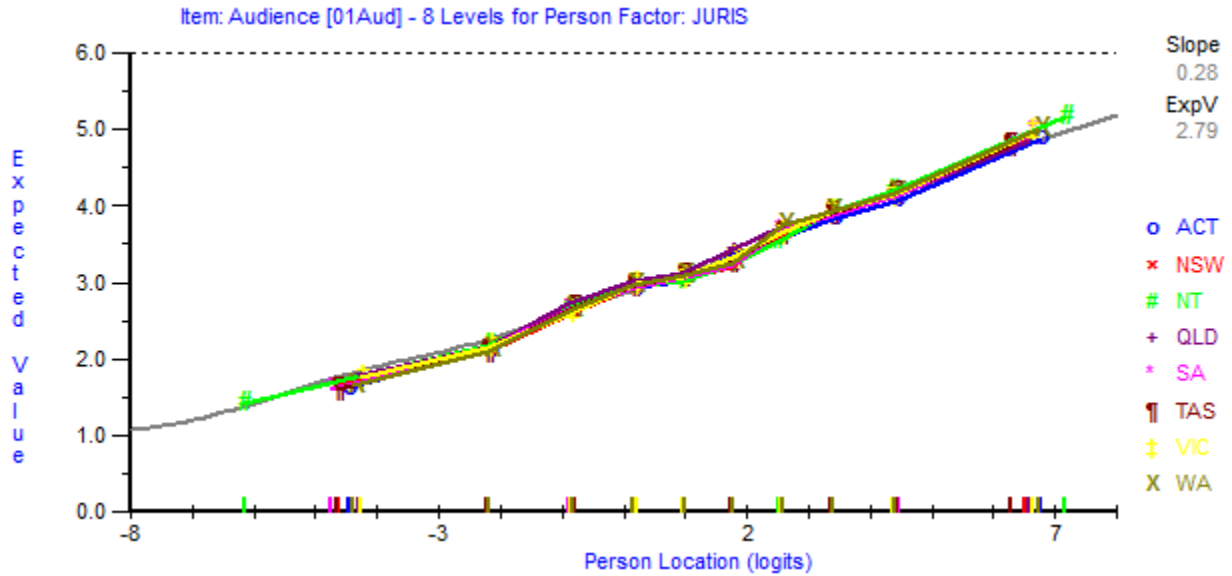
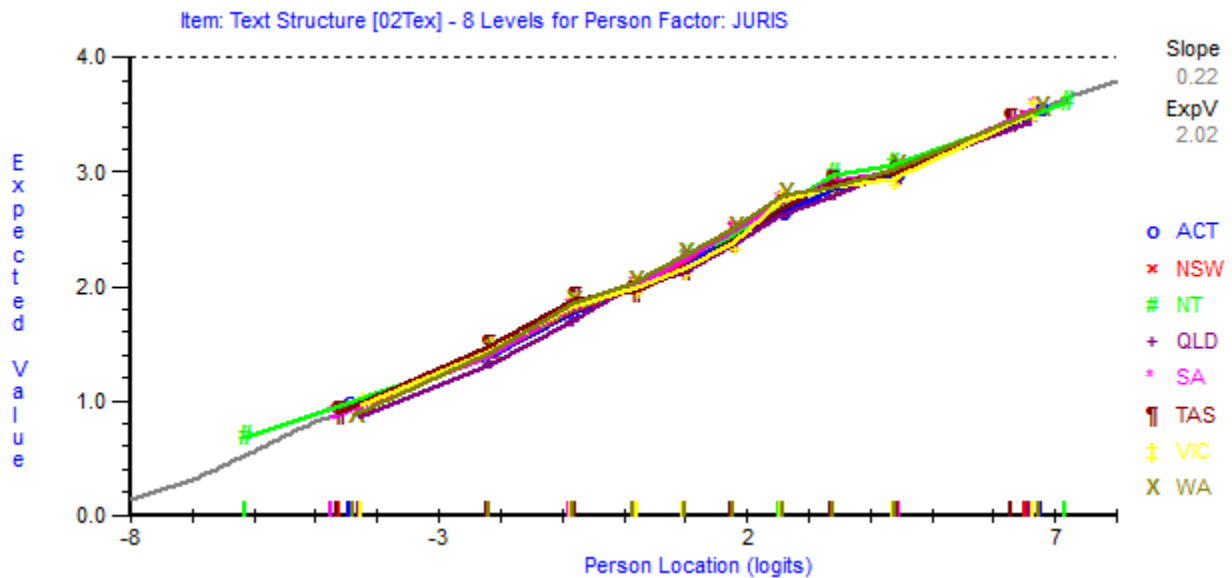
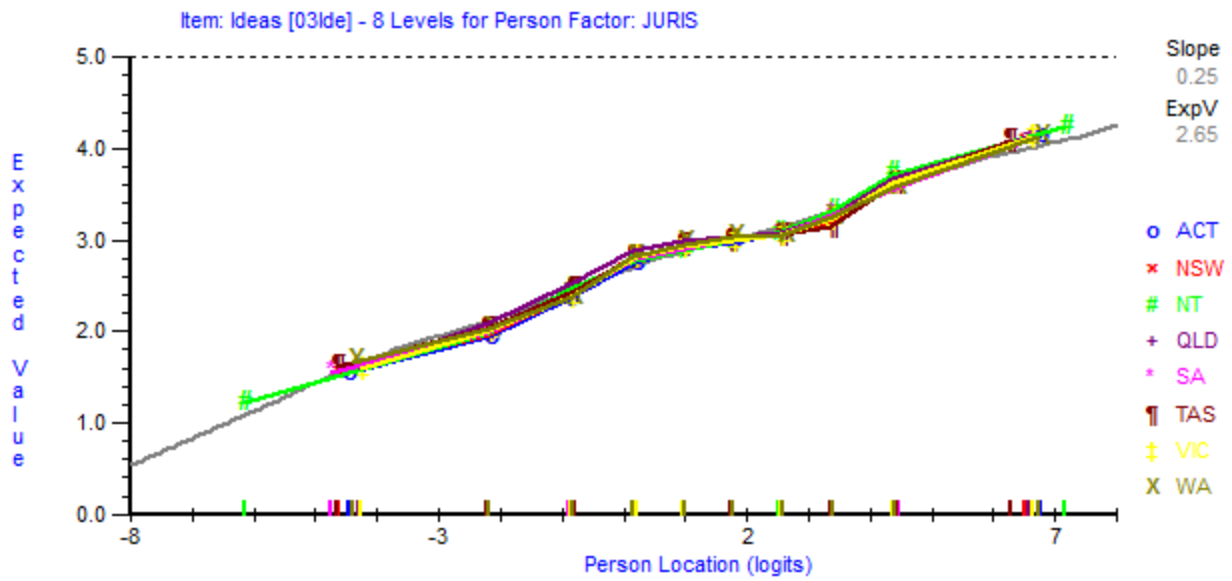


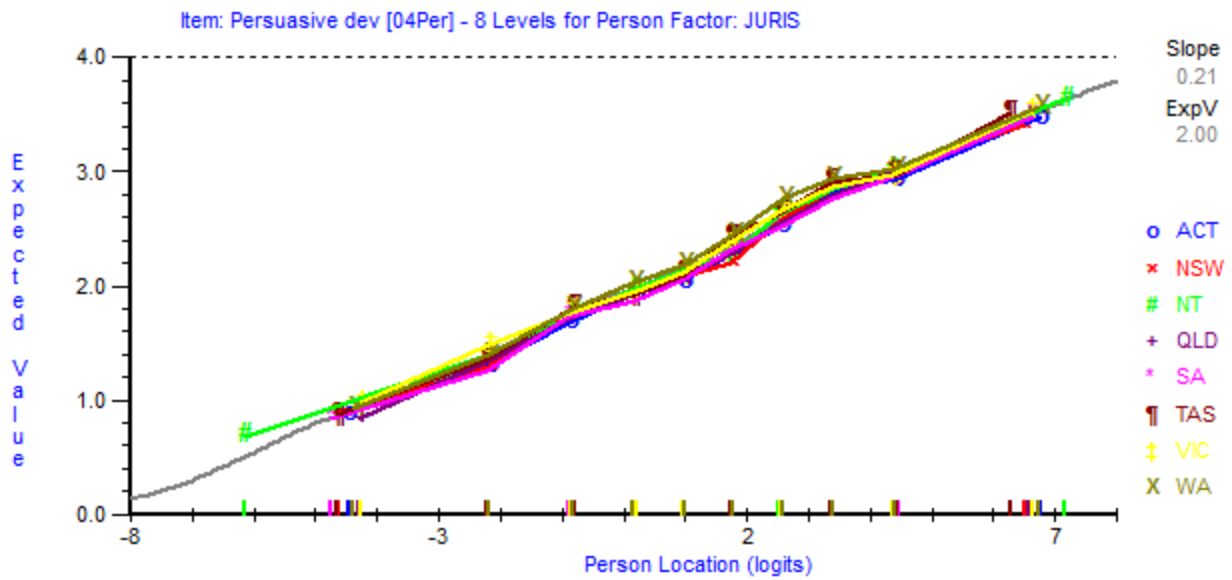
FIGURE J.2 Criterion 2: Text Structure



**FIGURE J.3 Criterion 3: Ideas**



**FIGURE J.4 Criterion 4: Persuasive Devices**

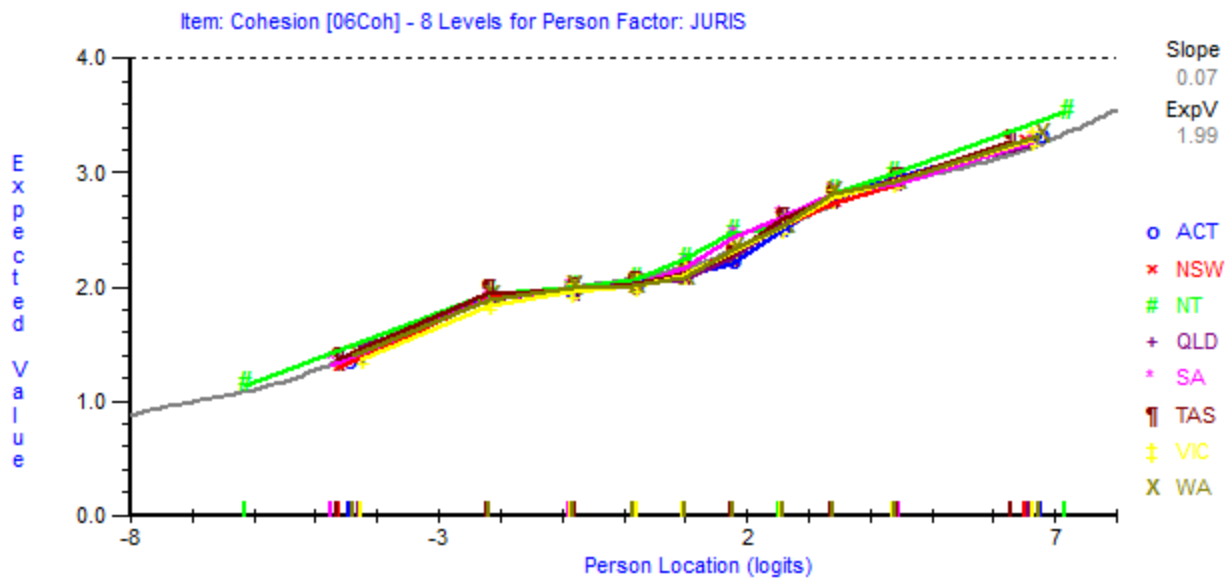




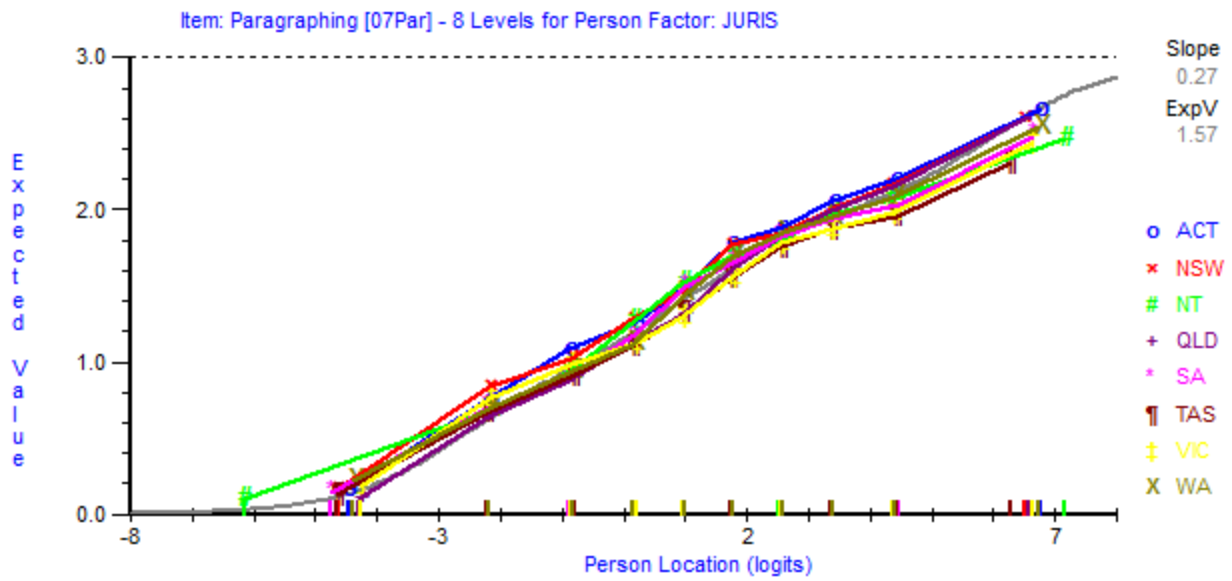
**FIGURE J.5 Criterion 5: Vocabulary**



**FIGURE J.6 Criterion 6: Cohesion**



**FIGURE J.7 Criterion 7: Paragraphing**



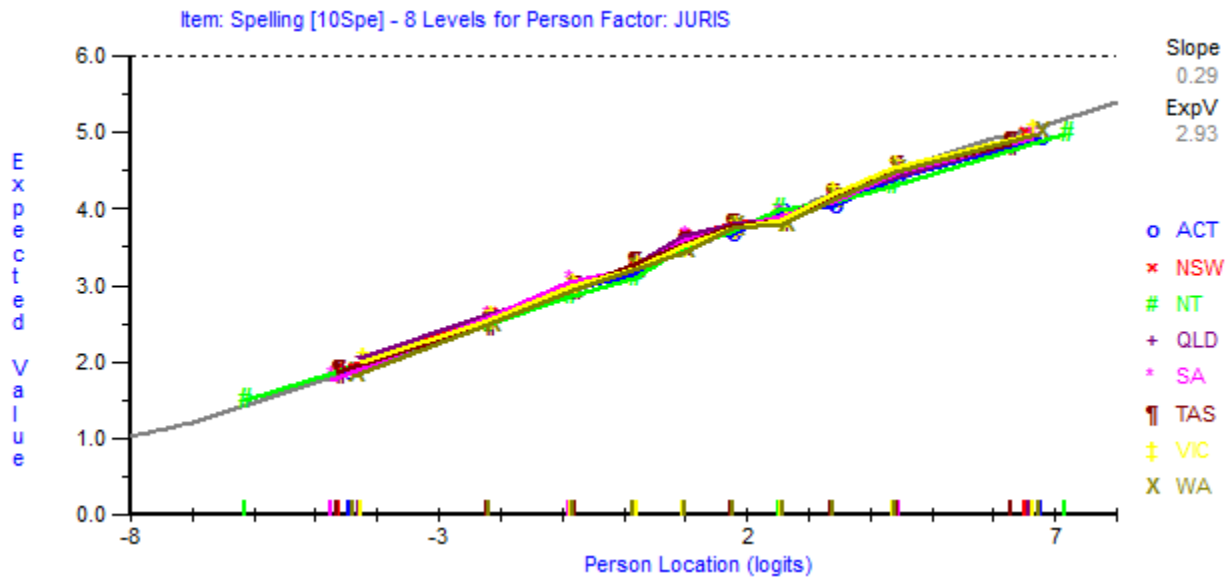
**FIGURE J.8 Criterion 8: Sentence Structure**



FIGURE J.9 Criterion 9: Punctuation



FIGURE J.10 Criterion 10: Spelling



**APPENDIX K. SCORE EQUIVALENCE TABLES**

**TABLE K.1 Year 3 Numeracy Score Equivalence Table**

<b>Year</b>	<b>Domain</b>	<b>Raw Score</b>	<b>Delta-Centered Logit</b>	<b>Logit</b>	<b>Logit SE</b>	<b>Scale Score</b>	<b>Scale SE</b>	<b>Band</b>
3	Numeracy	0	-6.05105	-7.67567	1.58045	-9.60065	94.91052	1
3	Numeracy	1	-4.76837	-6.26613	0.96799	75.04624	58.13055	1
3	Numeracy	2	-4.06675	-5.49512	0.79114	121.34759	47.51021	1
3	Numeracy	3	-3.53894	-4.91511	0.70001	156.17884	42.03759	1
3	Numeracy	4	-3.10130	-4.43419	0.64117	185.05945	38.50408	1
3	Numeracy	5	-2.72305	-4.01853	0.59813	210.02102	35.91941	1
3	Numeracy	6	-2.38867	-3.65108	0.56434	232.08744	33.89022	1
3	Numeracy	7	-2.08832	-3.32102	0.53690	251.90848	32.24237	1
3	Numeracy	8	-1.81488	-3.02054	0.51426	269.95316	30.88278	1
3	Numeracy	9	-1.56289	-2.74363	0.49543	286.58239	29.75198	2
3	Numeracy	10	-1.32809	-2.48561	0.47973	302.07723	28.80915	2
3	Numeracy	11	-1.10712	-2.24278	0.46667	316.65986	28.02486	2
3	Numeracy	12	-0.89731	-2.01222	0.45579	330.50564	27.37149	3
3	Numeracy	13	-0.69650	-1.79155	0.44679	343.75751	26.83101	3
3	Numeracy	14	-0.50293	-1.57884	0.43942	356.53135	26.38842	3
3	Numeracy	15	-0.31514	-1.37248	0.43349	368.92385	26.03231	3
3	Numeracy	16	-0.13186	-1.17107	0.42888	381.01910	25.75546	4
3	Numeracy	17	0.04797	-0.97346	0.42545	392.88614	25.54948	4
3	Numeracy	18	0.22538	-0.77850	0.42318	404.59404	25.41316	4
3	Numeracy	19	0.40125	-0.58524	0.42200	416.19986	25.34230	4
3	Numeracy	20	0.57649	-0.39267	0.42194	427.76423	25.33870	5
3	Numeracy	21	0.75203	-0.19976	0.42304	439.34903	25.40476	5
3	Numeracy	22	0.92883	-0.00548	0.42541	451.01609	25.54708	5
3	Numeracy	23	1.10799	0.19140	0.42917	462.83930	25.77288	5
3	Numeracy	24	1.29075	0.39224	0.43455	474.90031	26.09596	5
3	Numeracy	25	1.47862	0.59869	0.44182	487.29822	26.53255	6
3	Numeracy	26	1.67344	0.81277	0.45140	500.15434	27.10785	6
3	Numeracy	27	1.87760	1.03712	0.46389	513.62719	27.85791	6
3	Numeracy	28	2.09426	1.27521	0.48012	527.92517	28.83257	6
3	Numeracy	29	2.32788	1.53194	0.50126	543.34254	30.10209	6
3	Numeracy	30	2.58486	1.81433	0.52963	560.30086	31.80579	6
3	Numeracy	31	2.87540	2.13361	0.56892	579.47454	34.16527	6
3	Numeracy	32	3.21714	2.50915	0.62628	602.02678	37.60990	6
3	Numeracy	33	3.64523	2.97957	0.71878	630.27684	43.16479	6
3	Numeracy	34	4.24962	3.64374	0.89885	670.16214	53.97850	6
3	Numeracy	35	5.44449	4.95678	1.50520	749.01393	90.39154	6

**TABLE K.2 Year 3 Reading Score Equivalence Table**

<b>Year</b>	<b>Domain</b>	<b>Raw Score</b>	<b>Delta-Centered Logit</b>	<b>Logit</b>	<b>Logit SE</b>	<b>Scale Score</b>	<b>Scale SE</b>	<b>Band</b>
3	Reading	0	-5.48303	-6.57327	1.50852	-20.35851	101.46768	1
3	Reading	1	-4.28491	-5.29152	0.90241	65.85592	60.69886	1
3	Reading	2	-3.67618	-4.64030	0.72299	109.65898	48.63052	1
3	Reading	3	-3.24300	-4.17689	0.63084	140.82935	42.43223	1
3	Reading	4	-2.89568	-3.80532	0.57359	165.82229	38.58142	1
3	Reading	5	-2.59937	-3.48833	0.53430	187.14401	35.93866	1
3	Reading	6	-2.33687	-3.20751	0.50539	206.03282	33.99408	1
3	Reading	7	-2.09834	-2.95233	0.48326	223.19701	32.50555	1
3	Reading	8	-1.87769	-2.71628	0.46576	239.07446	31.32845	1
3	Reading	9	-1.67093	-2.49509	0.45153	253.95238	30.37129	1
3	Reading	10	-1.47523	-2.28573	0.43985	268.03457	29.58566	1
3	Reading	11	-1.28859	-2.08606	0.43003	281.46499	28.92514	2
3	Reading	12	-1.10946	-1.89443	0.42173	294.35461	28.36685	2
3	Reading	13	-0.93664	-1.70954	0.41470	306.79088	27.89399	2
3	Reading	14	-0.76911	-1.53032	0.40877	318.84577	27.49512	2
3	Reading	15	-0.60603	-1.35586	0.40384	330.58048	27.16352	3
3	Reading	16	-0.44659	-1.18529	0.39985	342.05354	26.89514	3
3	Reading	17	-0.29009	-1.01786	0.39674	353.31540	26.68595	3
3	Reading	18	-0.13580	-0.85280	0.39453	364.41784	26.53730	3
3	Reading	19	0.01697	-0.68937	0.39322	375.41064	26.44918	4
3	Reading	20	0.16895	-0.52678	0.39284	386.34694	26.42362	4
3	Reading	21	0.32087	-0.36426	0.39342	397.27854	26.46264	4
3	Reading	22	0.47352	-0.20095	0.39503	408.26327	26.57093	4
3	Reading	23	0.62776	-0.03595	0.39774	419.36167	26.75321	4
3	Reading	24	0.78452	0.13175	0.40166	430.64169	27.01688	5
3	Reading	25	0.94483	0.30325	0.40694	442.17731	27.37203	5
3	Reading	26	1.10994	0.47989	0.41367	454.05865	27.82471	5
3	Reading	27	1.28122	0.66312	0.42215	466.38326	28.39510	5
3	Reading	28	1.46038	0.85479	0.43262	479.27558	29.09935	6
3	Reading	29	1.64948	1.05709	0.44545	492.88290	29.96233	6
3	Reading	30	1.85113	1.27281	0.46113	507.39288	31.01702	6
3	Reading	31	2.06867	1.50554	0.48066	523.04702	32.33067	6
3	Reading	32	2.30673	1.76021	0.50507	540.17690	33.97256	6
3	Reading	33	2.57185	2.04384	0.53642	559.25473	36.08125	6
3	Reading	34	2.87413	2.36722	0.57830	581.00626	38.89823	6
3	Reading	35	3.23095	2.74895	0.63776	606.68259	42.89769	6
3	Reading	36	3.67693	3.22605	0.73176	638.77379	49.22042	6
3	Reading	37	4.30123	3.89393	0.91283	683.69745	61.39974	6
3	Reading	38	5.51696	5.19452	1.52228	771.17912	102.39322	6

**TABLE K.3 Year 3 Spelling Score Equivalence Table**

<b>Year</b>	<b>Domain</b>	<b>Raw Score</b>	<b>Delta-Centered Logit</b>	<b>Logit</b>	<b>Logit SE</b>	<b>Scale Score</b>	<b>Scale SE</b>	<b>Band</b>
3	Spelling	0	-6.08043	-7.35803	1.67845	183.75329	63.96288	1
3	Spelling	1	-4.66285	-5.89608	1.05184	239.46572	40.08384	1
3	Spelling	2	-3.81540	-5.02210	0.86934	272.77162	33.12907	2
3	Spelling	3	-3.16217	-4.34843	0.76869	298.44404	29.29347	2
3	Spelling	4	-2.62966	-3.79925	0.69988	319.37236	26.67124	2
3	Spelling	5	-2.17969	-3.33519	0.64869	337.05690	24.72048	3
3	Spelling	6	-1.78874	-2.93201	0.60919	352.42140	23.21520	3
3	Spelling	7	-1.44155	-2.57395	0.57844	366.06646	22.04337	3
3	Spelling	8	-1.12703	-2.24959	0.55469	378.42727	21.13830	4
3	Spelling	9	-0.83651	-1.94997	0.53679	389.84528	20.45616	4
3	Spelling	10	-0.56296	-1.66786	0.52401	400.59601	19.96913	4
3	Spelling	11	-0.30061	-1.39730	0.51573	410.90660	19.65360	4
3	Spelling	12	-0.04460	-1.13328	0.51147	420.96795	19.49125	4
3	Spelling	13	0.20926	-0.87147	0.51090	430.94509	19.46953	5
3	Spelling	14	0.46480	-0.60793	0.51379	440.98815	19.57967	5
3	Spelling	15	0.72563	-0.33894	0.52003	451.23890	19.81746	5
3	Spelling	16	0.99534	-0.06079	0.52960	461.83873	20.18216	5
3	Spelling	17	1.27759	0.23030	0.54261	472.93167	20.67795	5
3	Spelling	18	1.57629	0.53835	0.55936	484.67093	21.31626	6
3	Spelling	19	1.89595	0.86801	0.58051	497.23372	22.12225	6
3	Spelling	20	2.24218	1.22508	0.60760	510.84105	23.15461	6
3	Spelling	21	2.62319	1.61802	0.64382	525.81533	24.53489	6
3	Spelling	22	3.05350	2.06179	0.69632	542.72665	26.53557	6
3	Spelling	23	3.56465	2.58894	0.78194	562.81544	29.79841	6
3	Spelling	24	4.24266	3.28818	0.95491	589.46229	36.39000	6
3	Spelling	25	5.49879	4.58362	1.56124	638.82931	59.49621	6

**TABLE K.4 Year 3 Grammar & Punctuation Score Equivalence Table**

<b>Year</b>	<b>Domain</b>	<b>Raw Score</b>	<b>Delta-Centered Logit</b>	<b>Logit</b>	<b>Logit SE</b>	<b>Scale Score</b>	<b>Scale SE</b>	<b>Band</b>
3	GP	0	-4.79920	-5.85811	1.52983	-22.67622	112.44616	1
3	GP	1	-3.57603	-4.47189	0.92038	79.21426	67.65013	1
3	GP	2	-2.94367	-3.75523	0.74070	131.89048	54.44322	1
3	GP	3	-2.48804	-3.23887	0.64912	169.84417	47.71187	1
3	GP	4	-2.11929	-2.82096	0.59255	200.56156	43.55384	1
3	GP	5	-1.80231	-2.46173	0.55387	226.96582	40.71077	1
3	GP	6	-1.51949	-2.14121	0.52595	250.52481	38.65858	1
3	GP	7	-1.26078	-1.84801	0.50497	272.07571	37.11650	2
3	GP	8	-1.01977	-1.57488	0.48890	292.15141	35.93532	2
3	GP	9	-0.79202	-1.31677	0.47655	311.12312	35.02756	2
3	GP	10	-0.57425	-1.06997	0.46720	329.26351	34.34032	3
3	GP	11	-0.36385	-0.83152	0.46038	346.79015	33.83903	3
3	GP	12	-0.15867	-0.59899	0.45580	363.88166	33.50239	3
3	GP	13	0.04326	-0.37015	0.45334	380.70195	33.32157	4
3	GP	14	0.24375	-0.14293	0.45294	397.40316	33.29217	4
3	GP	15	0.44463	0.08473	0.45466	414.13671	33.41860	4
3	GP	16	0.64779	0.31497	0.45867	431.05990	33.71334	5
3	GP	17	0.85540	0.55025	0.46528	448.35355	34.19919	5
3	GP	18	1.06997	0.79342	0.47498	466.22712	34.91216	5
3	GP	19	1.29473	1.04814	0.48857	484.94965	35.91106	6
3	GP	20	1.53405	1.31937	0.50720	504.88570	37.28041	6
3	GP	21	1.79417	1.61416	0.53304	526.55347	39.17971	6
3	GP	22	2.08500	1.94376	0.56973	550.77986	41.87652	6
3	GP	23	2.42364	2.32754	0.62476	578.98861	45.92135	6
3	GP	24	2.84486	2.80491	0.71458	614.07644	52.52334	6
3	GP	25	3.43779	3.47687	0.89198	663.46711	65.56266	6
3	GP	26	4.61600	4.81214	1.49365	761.61264	109.78684	6

TABLE K.5 Year 5 Numeracy Score Equivalence Table

Year	Domain	Raw Score	Delta-Centered Logit	Logit	Logit SE	Scale Score	Scale SE	Band
5	Numeracy	0	-5.49876	-5.48427	1.49862	121.99916	89.99640	3
5	Numeracy	1	-4.31276	-4.23351	0.89469	197.11086	53.72868	3
5	Numeracy	2	-3.71424	-3.60232	0.71557	235.01561	42.97202	3
5	Numeracy	3	-3.29001	-3.15492	0.62355	261.88326	37.44595	3
5	Numeracy	4	-2.95109	-2.79750	0.56590	283.34735	33.98391	3
5	Numeracy	5	-2.66292	-2.49359	0.52628	301.59801	31.60461	3
5	Numeracy	6	-2.40855	-2.22533	0.49704	317.70778	29.84867	3
5	Numeracy	7	-2.17827	-1.98248	0.47462	332.29162	28.50228	3
5	Numeracy	8	-1.96597	-1.75859	0.45692	345.73685	27.43935	3
5	Numeracy	9	-1.76755	-1.54934	0.44266	358.30291	26.58299	3
5	Numeracy	10	-1.58009	-1.35164	0.43104	370.17535	25.88518	3
5	Numeracy	11	-1.40142	-1.16322	0.42144	381.49051	25.30867	4
5	Numeracy	12	-1.22986	-0.98229	0.41351	392.35587	24.83245	4
5	Numeracy	13	-1.06405	-0.80742	0.40698	402.85731	24.44031	4
5	Numeracy	14	-0.90292	-0.63750	0.40163	413.06149	24.11902	4
5	Numeracy	15	-0.74552	-0.47150	0.39732	423.03027	23.86020	4
5	Numeracy	16	-0.59106	-0.30861	0.39394	432.81227	23.65722	5
5	Numeracy	17	-0.43886	-0.14810	0.39138	442.45136	23.50348	5
5	Numeracy	18	-0.28828	0.01070	0.38959	451.98775	23.39599	5
5	Numeracy	19	-0.13875	0.16840	0.38852	461.45808	23.33173	5
5	Numeracy	20	0.01025	0.32553	0.38814	470.89419	23.30891	5
5	Numeracy	21	0.15923	0.48265	0.38843	480.32969	23.32633	6
5	Numeracy	22	0.30870	0.64028	0.38938	489.79582	23.38338	6
5	Numeracy	23	0.45916	0.79895	0.39102	499.32441	23.48186	6
5	Numeracy	24	0.61114	0.95923	0.39338	508.94968	23.62359	6
5	Numeracy	25	0.76520	1.12170	0.39651	518.70646	23.81155	6
5	Numeracy	26	0.92195	1.28701	0.40049	528.63380	24.05056	6
5	Numeracy	27	1.08213	1.45594	0.40542	538.77853	24.34663	7
5	Numeracy	28	1.24654	1.62932	0.41147	549.19049	24.70994	7
5	Numeracy	29	1.41619	1.80824	0.41884	559.93514	25.15253	7
5	Numeracy	30	1.59232	1.99398	0.42780	571.08936	25.69061	7
5	Numeracy	31	1.77649	2.18821	0.43874	582.75342	26.34759	8
5	Numeracy	32	1.97080	2.39313	0.45220	595.05945	27.15590	8
5	Numeracy	33	2.17800	2.61164	0.46918	608.18160	28.17559	8
5	Numeracy	34	2.40216	2.84804	0.49085	622.37809	29.47694	8
5	Numeracy	35	2.64928	3.10865	0.51939	638.02847	31.19085	8
5	Numeracy	36	2.92905	3.40370	0.55841	655.74706	33.53411	8
5	Numeracy	37	3.25845	3.75108	0.61538	676.60822	36.95532	8
5	Numeracy	38	3.67199	4.18720	0.70722	702.79846	42.47057	8
5	Numeracy	39	4.25892	4.80618	0.88600	739.96997	53.20682	8
5	Numeracy	40	5.43265	6.04400	1.48820	814.30459	89.37065	8



**TABLE K.6 Year 5 Reading Score Equivalence Table**

<b>Year</b>	<b>Domain</b>	<b>Raw Score</b>	<b>Delta-Centered Logit</b>	<b>Logit</b>	<b>Logit SE</b>	<b>Scale Score</b>	<b>Scale SE</b>	<b>Band</b>
5	Reading	0	-5.35986	-4.97880	1.50169	86.89043	101.00827	3
5	Reading	1	-4.17035	-3.77156	0.89740	168.09309	60.36188	3
5	Reading	2	-3.56822	-3.16046	0.71827	209.19755	48.31304	3
5	Reading	3	-3.14047	-2.72634	0.62616	238.39779	42.11744	3
5	Reading	4	-2.79827	-2.37904	0.56848	261.75826	38.23771	3
5	Reading	5	-2.50728	-2.08371	0.52845	281.62306	35.54517	3
5	Reading	6	-2.25055	-1.82316	0.49888	299.14845	33.55620	3
5	Reading	7	-2.01841	-1.58756	0.47612	314.99563	32.02529	3
5	Reading	8	-1.80472	-1.37068	0.45807	329.58364	30.81119	3
5	Reading	9	-1.60534	-1.16833	0.44350	343.19432	29.83117	3
5	Reading	10	-1.41728	-0.97747	0.43160	356.03215	29.03074	3
5	Reading	11	-1.23828	-0.79580	0.42179	368.25183	28.37089	3
5	Reading	12	-1.06660	-0.62157	0.41369	379.97108	27.82606	4
5	Reading	13	-0.90082	-0.45332	0.40705	391.28809	27.37943	4
5	Reading	14	-0.73977	-0.28987	0.40166	402.28224	27.01688	4
5	Reading	15	-0.58251	-0.13026	0.39735	413.01809	26.72698	4
5	Reading	16	-0.42815	0.02640	0.39406	423.55553	26.50568	4
5	Reading	17	-0.27598	0.18083	0.39164	433.94296	26.34291	5
5	Reading	18	-0.12533	0.33373	0.39006	444.22748	26.23663	5
5	Reading	19	0.02442	0.48571	0.38928	454.45012	26.18417	5
5	Reading	20	0.17387	0.63739	0.38928	464.65259	26.18417	5
5	Reading	21	0.32360	0.78935	0.39007	474.87388	26.23730	5
5	Reading	22	0.47421	0.94220	0.39167	485.15504	26.34493	6
5	Reading	23	0.62632	1.09658	0.39415	495.53911	26.51174	6
5	Reading	24	0.78063	1.25319	0.39756	506.07318	26.74110	6
5	Reading	25	0.93791	1.41281	0.40204	516.80971	27.04244	6
5	Reading	26	1.09907	1.57637	0.40773	527.81126	27.42517	6
5	Reading	27	1.26516	1.74494	0.41485	539.14979	27.90408	7
5	Reading	28	1.43753	1.91988	0.42368	550.91680	28.49802	7
5	Reading	29	1.61783	2.10286	0.43462	563.22459	29.23387	7
5	Reading	30	1.80825	2.29612	0.44822	576.22385	30.14865	7
5	Reading	31	2.01173	2.50263	0.46535	590.11435	31.30087	8
5	Reading	32	2.23238	2.72657	0.48734	605.17724	32.77998	8
5	Reading	33	2.47637	2.97419	0.51630	621.83292	34.72792	8
5	Reading	34	2.75346	3.25541	0.55596	640.74864	37.39557	8
5	Reading	35	3.08083	3.58766	0.61334	663.09679	41.25513	8
5	Reading	36	3.49296	4.00593	0.70570	691.23091	47.46755	8
5	Reading	37	4.07910	4.60080	0.88500	731.24369	59.52781	8
5	Reading	38	5.25261	5.79180	1.48760	811.35401	100.06054	8

**TABLE K.7 Year 5 Spelling Score Equivalence Table**

<b>Year</b>	<b>Domain</b>	<b>Raw Score</b>	<b>Delta-Centered Logit</b>	<b>Logit</b>	<b>Logit SE</b>	<b>Scale Score</b>	<b>Scale SE</b>	<b>Band</b>
5	Spelling	0	-5.75781	-4.73266	1.62211	283.80168	61.81586	3
5	Spelling	1	-4.41835	-3.44437	1.00092	332.89623	38.14336	3
5	Spelling	2	-3.66058	-2.71554	0.81953	360.67071	31.23090	3
5	Spelling	3	-3.09001	-2.16677	0.72409	381.58340	27.59384	4
5	Spelling	4	-2.62343	-1.71801	0.66280	398.68488	25.25818	4
5	Spelling	5	-2.22276	-1.33265	0.62017	413.37030	23.63363	4
5	Spelling	6	-1.86604	-0.98956	0.58939	426.44488	22.46065	5
5	Spelling	7	-1.53987	-0.67584	0.56669	438.40021	21.59559	5
5	Spelling	8	-1.23552	-0.38312	0.54989	449.55528	20.95538	5
5	Spelling	9	-0.94663	-0.10527	0.53783	460.14367	20.49579	5
5	Spelling	10	-0.66830	0.16243	0.52972	470.34526	20.18673	5
5	Spelling	11	-0.39644	0.42391	0.52504	480.30982	20.00838	6
5	Spelling	12	-0.12755	0.68252	0.52342	490.16501	19.94665	6
5	Spelling	13	0.14151	0.94131	0.52463	500.02706	19.99276	6
5	Spelling	14	0.41364	1.20304	0.52852	510.00114	20.14100	6
5	Spelling	15	0.69165	1.47043	0.53506	520.19092	20.39023	6
5	Spelling	16	0.97846	1.74628	0.54422	530.70310	20.73930	7
5	Spelling	17	1.27708	2.03350	0.55618	541.64857	21.19508	7
5	Spelling	18	1.59071	2.33515	0.57122	553.14394	21.76823	7
5	Spelling	19	1.92287	2.65462	0.59001	565.31839	22.48428	7
5	Spelling	20	2.27805	2.99623	0.61414	578.33657	23.40383	7
5	Spelling	21	2.66350	3.36696	0.64740	592.46446	24.67132	8
5	Spelling	22	3.09382	3.78084	0.69716	608.23673	26.56759	8
5	Spelling	23	3.60159	4.26921	0.78076	626.84768	29.75344	8
5	Spelling	24	4.27447	4.91639	0.95243	651.51061	36.29549	8
5	Spelling	25	5.52517	6.11931	1.55763	697.35185	59.35864	8

**TABLE K.8 Year 5 Grammar & Punctuation Score Equivalence Table**

<b>Year</b>	<b>Domain</b>	<b>Raw Score</b>	<b>Delta-Centered Logit</b>	<b>Logit</b>	<b>Logit SE</b>	<b>Scale Score</b>	<b>Scale SE</b>	<b>Band</b>
5	GP	0	-4.92369	-4.44065	1.52860	81.51047	112.35575	3
5	GP	1	-3.70392	-3.19965	0.92074	172.72694	67.67659	3
5	GP	2	-3.07204	-2.55678	0.74263	219.97942	54.58508	3
5	GP	3	-2.61448	-2.09126	0.65239	254.19625	47.95222	3
5	GP	4	-2.24193	-1.71223	0.59697	282.05586	43.87872	3
5	GP	5	-1.91980	-1.38449	0.55927	306.14553	41.10768	3
5	GP	6	-1.63089	-1.09055	0.53221	327.75083	39.11871	3
5	GP	7	-1.36539	-0.82043	0.51205	347.60529	37.63690	3
5	GP	8	-1.11709	-0.56781	0.49668	366.17347	36.50717	3
5	GP	9	-0.88159	-0.32822	0.48502	383.78390	35.65013	4
5	GP	10	-0.65560	-0.09829	0.47639	400.68431	35.01580	4
5	GP	11	-0.43648	0.12464	0.47035	417.07019	34.57185	4
5	GP	12	-0.22194	0.34291	0.46666	433.11356	34.30062	5
5	GP	13	-0.00989	0.55865	0.46523	448.97097	34.19552	5
5	GP	14	0.20170	0.77392	0.46606	464.79383	34.25652	5
5	GP	15	0.41494	0.99087	0.46927	480.74017	34.49247	6
5	GP	16	0.63214	1.21185	0.47510	496.98273	34.92098	6
5	GP	17	0.85594	1.43955	0.48390	513.71922	35.56781	6
5	GP	18	1.08956	1.67723	0.49631	531.18927	36.47997	7
5	GP	19	1.33714	1.92912	0.51314	549.70379	37.71702	7
5	GP	20	1.60430	2.20093	0.53557	569.68247	39.36567	7
5	GP	21	1.89889	2.50064	0.56593	591.71187	41.59721	8
5	GP	22	2.23292	2.84049	0.60780	616.69166	44.67475	8
5	GP	23	2.62601	3.24042	0.66832	646.08747	49.12312	8
5	GP	24	3.11484	3.73775	0.76365	682.64241	56.13010	8
5	GP	25	3.78823	4.42286	0.94687	732.99963	69.59721	8
5	GP	26	5.05529	5.71197	1.56290	827.75230	114.87688	8

**TABLE K.9 Year 7 Numeracy Score Equivalence Table**

<b>Year</b>	<b>Domain</b>	<b>Raw Score</b>	<b>Delta-Centered Logit</b>	<b>Logit</b>	<b>Logit SE</b>	<b>Scale Score</b>	<b>Scale SE</b>	<b>Band</b>
7	Numeracy	0	-5.68523	-3.96008	1.45805	213.53111	87.56005	4
7	Numeracy	1	-4.54311	-2.85017	0.85734	280.18436	51.48571	4
7	Numeracy	2	-3.98910	-2.31178	0.67603	312.51621	40.59753	4
7	Numeracy	3	-3.60973	-1.94311	0.58120	334.65590	34.90271	4
7	Numeracy	4	-3.31573	-1.65740	0.52114	351.81360	31.29594	4
7	Numeracy	5	-3.07253	-1.42106	0.47910	366.00649	28.77132	4
7	Numeracy	6	-2.86304	-1.21748	0.44777	378.23204	26.88986	4
7	Numeracy	7	-2.67753	-1.03720	0.42344	389.05837	25.42878	4
7	Numeracy	8	-2.50994	-0.87433	0.40390	398.83918	24.25534	4
7	Numeracy	9	-2.35623	-0.72496	0.38786	407.80927	23.29210	4
7	Numeracy	10	-2.21355	-0.58630	0.37448	416.13620	22.48859	4
7	Numeracy	11	-2.07981	-0.45633	0.36316	423.94127	21.80879	4
7	Numeracy	12	-1.95346	-0.33355	0.35349	431.31456	21.22808	5
7	Numeracy	13	-1.83329	-0.21677	0.34514	438.32753	20.72664	5
7	Numeracy	14	-1.71834	-0.10506	0.33788	445.03603	20.29066	5
7	Numeracy	15	-1.60783	0.00234	0.33159	451.48571	19.91292	5
7	Numeracy	16	-1.50113	0.10603	0.32608	457.71259	19.58203	5
7	Numeracy	17	-1.39773	0.20651	0.32123	463.74670	19.29078	5
7	Numeracy	18	-1.29716	0.30425	0.31697	469.61626	19.03495	5
7	Numeracy	19	-1.19905	0.39959	0.31324	475.34170	18.81095	5
7	Numeracy	20	-1.10308	0.49285	0.30997	480.94223	18.61458	6
7	Numeracy	21	-1.00895	0.58433	0.30712	486.43586	18.44343	6
7	Numeracy	22	-0.91640	0.67427	0.30464	491.83702	18.29450	6
7	Numeracy	23	-0.82522	0.76288	0.30250	497.15830	18.16599	6
7	Numeracy	24	-0.73518	0.85038	0.30070	502.41292	18.05789	6
7	Numeracy	25	-0.64612	0.93693	0.29919	507.61050	17.96721	6
7	Numeracy	26	-0.55785	1.02271	0.29796	512.76183	17.89335	6
7	Numeracy	27	-0.47021	1.10788	0.29699	517.87653	17.83509	6
7	Numeracy	28	-0.38306	1.19257	0.29627	522.96241	17.79186	6
7	Numeracy	29	-0.29624	1.27694	0.29579	528.02907	17.76303	6
7	Numeracy	30	-0.20962	1.36112	0.29555	533.08431	17.74862	7
7	Numeracy	31	-0.12306	1.44524	0.29554	538.13596	17.74802	7
7	Numeracy	32	-0.03643	1.52942	0.29575	543.19121	17.76063	7
7	Numeracy	33	0.05039	1.61380	0.29620	548.25847	17.78765	7
7	Numeracy	34	0.13755	1.69850	0.29687	553.34494	17.82789	7
7	Numeracy	35	0.22517	1.78365	0.29777	558.45844	17.88194	7
7	Numeracy	36	0.31341	1.86940	0.29890	563.60798	17.94980	7
7	Numeracy	37	0.40239	1.95587	0.30027	568.80074	18.03207	7
7	Numeracy	38	0.49226	2.04320	0.30190	574.04516	18.12995	7
7	Numeracy	39	0.58319	2.13157	0.30378	579.35203	18.24285	7
7	Numeracy	40	0.67533	2.22111	0.30594	584.72916	18.37257	8
7	Numeracy	41	0.76886	2.31200	0.30839	590.18736	18.51970	8
7	Numeracy	42	0.86399	2.40445	0.31116	595.73925	18.68604	8
7	Numeracy	43	0.96092	2.49865	0.31426	601.39623	18.87221	8
7	Numeracy	44	1.05989	2.59483	0.31773	607.17211	19.08059	8

<b>Year</b>	<b>Domain</b>	<b>Raw Score</b>	<b>Delta-Centered Logit</b>	<b>Logit</b>	<b>Logit SE</b>	<b>Scale Score</b>	<b>Scale SE</b>	<b>Band</b>
7	Numeracy	45	1.17772	2.77270	0.32338	617.85371	19.41989	8
7	Numeracy	46	1.28289	2.87753	0.32787	624.14905	19.68953	8
7	Numeracy	47	1.39112	2.98541	0.33283	630.62755	19.98739	8
7	Numeracy	48	1.50280	3.09674	0.33840	637.31324	20.32188	9
7	Numeracy	49	1.61837	3.21194	0.34456	644.23132	20.69181	9
7	Numeracy	50	1.73834	3.33152	0.35145	651.41244	21.10557	9
7	Numeracy	51	1.86332	3.45610	0.35919	658.89383	21.57038	9
7	Numeracy	52	1.99406	3.58642	0.36795	666.71991	22.09644	9
7	Numeracy	53	2.13150	3.72342	0.37796	674.94715	22.69757	9
7	Numeracy	54	2.27680	3.86826	0.38952	683.64521	23.39178	9
7	Numeracy	55	2.43150	4.02246	0.40303	692.90536	24.20310	9
7	Numeracy	56	2.59764	4.18807	0.41908	702.85071	25.16695	9
7	Numeracy	57	2.77804	4.36789	0.43852	713.64941	26.33437	9
7	Numeracy	58	2.97674	4.56596	0.46261	725.54408	27.78105	9
7	Numeracy	59	3.19976	4.78827	0.49375	738.89443	29.65109	9
7	Numeracy	60	3.45687	5.04455	0.53543	754.28477	32.15410	9
7	Numeracy	61	3.76518	5.35188	0.59506	772.74081	35.73505	9
7	Numeracy	62	4.15938	5.74481	0.68943	796.33738	41.40223	9
7	Numeracy	63	4.72886	6.31247	0.87048	830.42698	52.27480	9
7	Numeracy	64	5.88727	7.46718	1.47308	899.77060	88.46265	9

TABLE K.10 Year 7 Non-Calculator Score Equivalence Table

Year	Domain	Raw Score	Delta-Centered Logit	Logit	Logit SE	Scale Score	Scale SE	Band
7	NC	0	-4.82562	-3.12471	1.47956	263.69745	88.85179	4
7	NC	1	-3.66175	-1.99366	0.87891	331.62023	52.78105	4
7	NC	2	-3.08439	-1.43258	0.70012	365.31468	42.04420	4
7	NC	3	-2.67997	-1.03957	0.60823	388.91605	36.52594	4
7	NC	4	-2.35905	-0.72770	0.55164	407.64473	33.12755	4
7	NC	5	-2.08708	-0.46340	0.51303	423.51669	30.80891	4
7	NC	6	-1.84684	-0.22993	0.48538	437.53723	29.14845	5
7	NC	7	-1.62862	-0.01787	0.46462	450.27204	27.90175	5
7	NC	8	-1.42615	0.17889	0.44897	462.08804	26.96193	5
7	NC	9	-1.23538	0.36428	0.43689	473.22123	26.23649	5
7	NC	10	-1.05326	0.54127	0.42768	483.84999	25.68340	6
7	NC	11	-0.87763	0.71195	0.42067	494.09981	25.26243	6
7	NC	12	-0.70669	0.87806	0.41557	504.07519	24.95616	6
7	NC	13	-0.53904	1.04099	0.41209	513.85960	24.74718	6
7	NC	14	-0.37345	1.20191	0.41003	523.52330	24.62347	6
7	NC	15	-0.20886	1.36186	0.40927	533.12875	24.57783	7
7	NC	16	-0.04424	1.52183	0.40975	542.73541	24.60665	7
7	NC	17	0.12130	1.68271	0.41145	552.39671	24.70874	7
7	NC	18	0.28879	1.84547	0.41437	562.17091	24.88410	7
7	NC	19	0.45922	2.01110	0.41859	572.11746	25.13752	7
7	NC	20	0.63368	2.18064	0.42419	582.29882	25.47382	8
7	NC	21	0.81343	2.35532	0.43136	592.78885	25.90440	8
7	NC	22	0.99992	2.53655	0.44036	603.67223	26.44487	8
7	NC	23	1.19497	2.72610	0.45153	615.05525	27.11566	8
7	NC	24	1.40085	2.92617	0.46541	627.07002	27.94920	8
7	NC	25	1.62063	3.13975	0.48275	639.89611	28.99051	9
7	NC	26	1.85850	3.37092	0.50506	653.77853	30.33029	9
7	NC	27	2.12081	3.62583	0.53424	669.08660	32.08263	9
7	NC	28	2.41749	3.91414	0.57410	686.40043	34.47634	9
7	NC	29	2.76600	4.25282	0.63169	706.73913	37.93478	9
7	NC	30	3.20125	4.67580	0.72411	732.14028	43.48487	9
7	NC	31	3.81288	5.27018	0.90431	767.83449	54.30639	9
7	NC	32	5.01490	6.43831	1.51144	837.98403	90.76627	9

TABLE K.11 Year 7 Calculator Score Equivalence Table

Year	Domain	Raw Score	Delta-Centered		Logit SE	Scale Score	Scale SE	Band
			Logit	Logit				
7	CA	0	-5.20298	-3.49143	1.51821	241.67487	91.17283	4
7	CA	1	-3.99350	-2.31606	0.91076	312.25919	54.69373	4
7	CA	2	-3.37318	-1.71323	0.73114	348.46085	43.90704	4
7	CA	3	-2.92934	-1.28191	0.63842	374.36284	38.33894	4
7	CA	4	-2.57274	-0.93536	0.58075	395.17415	34.87569	4
7	CA	5	-2.26872	-0.63992	0.54083	412.91617	32.47838	4
7	CA	6	-1.99973	-0.37851	0.51166	428.61458	30.72664	5
7	CA	7	-1.75558	-0.14125	0.48961	442.86272	29.40247	5
7	CA	8	-1.52974	0.07822	0.47251	456.04252	28.37557	5
7	CA	9	-1.31770	0.28429	0.45910	468.41761	27.57026	5
7	CA	10	-1.11615	0.48015	0.44861	480.17956	26.94031	6
7	CA	11	-0.92260	0.66824	0.44048	491.47490	26.45208	6
7	CA	12	-0.73508	0.85048	0.43433	502.41893	26.08275	6
7	CA	13	-0.55195	1.02844	0.42991	513.10593	25.81732	6
7	CA	14	-0.37182	1.20349	0.42702	523.61818	25.64377	6
7	CA	15	-0.19346	1.37682	0.42554	534.02714	25.55489	7
7	CA	16	-0.01569	1.54958	0.42542	544.40187	25.54768	7
7	CA	17	0.16256	1.72280	0.42663	554.80423	25.62035	7
7	CA	18	0.34245	1.89762	0.42917	565.30267	25.77288	7
7	CA	19	0.52512	2.07514	0.43311	575.96325	26.00949	7
7	CA	20	0.71181	2.25656	0.43853	586.85804	26.33497	8
7	CA	21	0.90391	2.44325	0.44559	598.06930	26.75895	8
7	CA	22	1.10299	2.63671	0.45450	609.68712	27.29402	8
7	CA	23	1.31093	2.83879	0.46558	621.82260	27.95940	8
7	CA	24	1.53004	3.05172	0.47931	634.60966	28.78393	9
7	CA	25	1.76333	3.27843	0.49636	648.22424	29.80783	9
7	CA	26	2.01483	3.52284	0.51813	662.90175	31.11518	9
7	CA	27	2.29051	3.79074	0.54648	678.98991	32.81768	9
7	CA	28	2.59979	4.09130	0.58510	697.03939	35.13692	9
7	CA	29	2.95931	4.44068	0.64103	718.02066	38.49568	9
7	CA	30	3.40288	4.87174	0.73149	743.90704	43.92806	9
7	CA	31	4.01901	5.47050	0.90905	779.86428	54.59104	9
7	CA	32	5.22035	6.63796	1.51327	849.97358	90.87617	9

**TABLE K.12 Year 7 Reading Score Equivalence Table**

<b>Year</b>	<b>Domain</b>	<b>Raw Score</b>	<b>Delta-Centered Logit</b>	<b>Logit</b>	<b>Logit SE</b>	<b>Scale Score</b>	<b>Scale SE</b>	<b>Band</b>
7	Reading	0	-5.59459	-4.31032	1.49184	131.85444	100.34573	4
7	Reading	1	-4.41422	-3.10174	0.88451	213.14724	59.49485	4
7	Reading	2	-3.82612	-2.49958	0.70286	253.65037	47.27652	4
7	Reading	3	-3.41602	-2.07968	0.60787	281.89413	40.88720	4
7	Reading	4	-3.09372	-1.74968	0.54796	304.09094	36.85747	4
7	Reading	5	-2.82403	-1.47354	0.50616	322.66496	34.04587	4
7	Reading	6	-2.58942	-1.23333	0.47509	338.82222	31.95601	4
7	Reading	7	-2.37984	-1.01874	0.45095	353.25621	30.33228	4
7	Reading	8	-2.18901	-0.82335	0.43164	366.39874	29.03343	4
7	Reading	9	-2.01271	-0.64283	0.41583	378.54106	27.97000	4
7	Reading	10	-1.84798	-0.47417	0.40267	389.88565	27.08482	4
7	Reading	11	-1.69266	-0.31513	0.39155	400.58317	26.33685	4
7	Reading	12	-1.54513	-0.16408	0.38206	410.74326	25.69853	4
7	Reading	13	-1.40412	-0.01970	0.37386	420.45470	25.14697	4
7	Reading	14	-1.26864	0.11902	0.36679	429.78543	24.67142	5
7	Reading	15	-1.13789	0.25289	0.36062	438.78994	24.25641	5
7	Reading	16	-1.01120	0.38261	0.35523	447.51530	23.89386	5
7	Reading	17	-0.88801	0.50875	0.35051	455.99987	23.57638	5
7	Reading	18	-0.76787	0.63176	0.34640	464.27390	23.29993	5
7	Reading	19	-0.65033	0.75211	0.34283	472.36901	23.05980	5
7	Reading	20	-0.53506	0.87013	0.33976	480.30739	22.85330	6
7	Reading	21	-0.42169	0.98621	0.33716	488.11529	22.67842	6
7	Reading	22	-0.30994	1.10063	0.33501	495.81153	22.53380	6
7	Reading	23	-0.19951	1.21370	0.33327	503.41696	22.41676	6
7	Reading	24	-0.09012	1.32571	0.33196	510.95110	22.32865	6
7	Reading	25	0.01849	1.43691	0.33106	518.43075	22.26811	6
7	Reading	26	0.12661	1.54762	0.33059	525.87745	22.23650	6
7	Reading	27	0.23451	1.65809	0.33055	533.30800	22.23381	7
7	Reading	28	0.34247	1.76863	0.33096	540.74326	22.26138	7
7	Reading	29	0.45079	1.87954	0.33185	548.20340	22.32125	7
7	Reading	30	0.55980	1.99116	0.33324	555.71131	22.41474	7
7	Reading	31	0.66984	2.10383	0.33518	563.28984	22.54523	7
7	Reading	32	0.78129	2.21794	0.33772	570.96522	22.71608	7
7	Reading	33	0.89456	2.33392	0.34091	578.76640	22.93065	7
7	Reading	34	1.01016	2.45228	0.34485	586.72765	23.19567	8
7	Reading	35	1.12862	2.57357	0.34962	594.88599	23.51651	8
7	Reading	36	1.25061	2.69848	0.35536	603.28782	23.90260	8
7	Reading	37	1.37690	2.82779	0.36222	611.98561	24.36403	8
7	Reading	38	1.50844	2.96247	0.37041	621.04460	24.91491	8
7	Reading	39	1.64641	3.10374	0.38019	630.54685	25.57275	8
7	Reading	40	1.79232	3.25314	0.39188	640.59595	26.35905	9
7	Reading	41	1.94807	3.41261	0.40624	651.32239	27.32495	9
7	Reading	42	2.11636	3.58492	0.42378	662.91249	28.50474	9
7	Reading	43	2.30086	3.77383	0.44568	675.61916	29.97780	9
7	Reading	44	2.50697	3.98487	0.47362	689.81435	31.85713	9



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<b>Year</b>	<b>Domain</b>	<b>Raw Score</b>	<b>Delta- Centered Logit</b>	<b>Logit</b>	<b>Logit SE</b>	<b>Scale Score</b>	<b>Scale SE</b>	<b>Band</b>
7	Reading	45	2.74308	4.22662	0.51033	706.07520	34.32636	9
7	Reading	46	3.02316	4.51339	0.56086	725.36423	37.72516	9
7	Reading	47	3.37318	4.87178	0.63481	749.47064	42.69927	9
7	Reading	48	3.84863	5.35859	0.75395	782.21497	50.71299	9
7	Reading	49	4.59014	6.11782	0.98056	833.28311	65.95547	9
7	Reading	50	6.05765	7.62041	1.67651	934.35192	112.76720	9

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**TABLE K.13 Year 7 Spelling Score Equivalence Table**

<b>Year</b>	<b>Domain</b>	<b>Raw Score</b>	<b>Delta-Centered Logit</b>	<b>Logit</b>	<b>Logit SE</b>	<b>Scale Score</b>	<b>Scale SE</b>	<b>Band</b>
7	Spelling	0	-5.53846	-3.76177	1.52147	320.80066	57.98064	4
7	Spelling	1	-4.32948	-2.47880	0.91843	369.69247	34.99981	4
7	Spelling	2	-3.70309	-1.81408	0.74347	395.02382	28.33238	4
7	Spelling	3	-3.24605	-1.32907	0.65637	413.50673	25.01315	4
7	Spelling	4	-2.86971	-0.92969	0.60382	428.72642	23.01056	5
7	Spelling	5	-2.53985	-0.57965	0.56913	442.06585	21.68858	5
7	Spelling	6	-2.23982	-0.26125	0.54488	454.19954	20.76445	5
7	Spelling	7	-1.96020	0.03548	0.52733	465.50741	20.09565	5
7	Spelling	8	-1.69504	0.31687	0.51443	476.23071	19.60405	5
7	Spelling	9	-1.44032	0.58717	0.50484	486.53138	19.23860	6
7	Spelling	10	-1.19310	0.84952	0.49780	496.52910	18.97031	6
7	Spelling	11	-0.95119	1.10624	0.49269	506.31226	18.77558	6
7	Spelling	12	-0.71293	1.35908	0.48914	515.94756	18.64030	6
7	Spelling	13	-0.47710	1.60934	0.48680	525.48455	18.55112	6
7	Spelling	14	-0.24276	1.85803	0.48546	534.96170	18.50006	7
7	Spelling	15	-0.00919	2.10589	0.48501	544.40723	18.48291	7
7	Spelling	16	0.22429	2.35366	0.48545	553.84932	18.49968	7
7	Spelling	17	0.45840	2.60210	0.48685	563.31695	18.55303	7
7	Spelling	18	0.69402	2.85214	0.48941	572.84555	18.65058	7
7	Spelling	19	0.93234	3.10504	0.49336	582.48314	18.80111	8
7	Spelling	20	1.17484	3.36238	0.49907	592.28993	19.01871	8
7	Spelling	21	1.42352	3.62628	0.50693	602.34671	19.31824	8
7	Spelling	22	1.68084	3.89935	0.51750	612.75294	19.72105	8
7	Spelling	23	1.95002	4.18500	0.53147	623.63858	20.25342	8
7	Spelling	24	2.23523	4.48767	0.55012	635.17282	20.96414	9
7	Spelling	25	2.54251	4.81375	0.57540	647.59918	21.92752	9
7	Spelling	26	2.88121	5.17318	0.61097	661.29644	23.28303	9
7	Spelling	27	3.26792	5.58356	0.66405	676.93533	25.30582	9
7	Spelling	28	3.73653	6.08085	0.75177	695.88621	28.64868	9
7	Spelling	29	4.37552	6.75894	0.92753	721.72707	35.34660	9
7	Spelling	30	5.59813	8.05638	1.53246	771.17031	58.39945	9

**TABLE K.14 Year 7 Grammar & Punctuation Score Equivalence Table**

<b>Year</b>	<b>Domain</b>	<b>Raw Score</b>	<b>Delta-Centered Logit</b>	<b>Logit</b>	<b>Logit SE</b>	<b>Scale Score</b>	<b>Scale SE</b>	<b>Band</b>
7	GP	0	-5.04575	-3.89908	1.54527	121.31716	113.58104	4
7	GP	1	-3.80374	-2.67359	0.93299	211.39361	68.57699	4
7	GP	2	-3.15188	-2.03040	0.75257	258.66961	55.31569	4
7	GP	3	-2.67910	-1.56391	0.65903	292.95774	48.44028	4
7	GP	4	-2.29679	-1.18668	0.60020	320.68504	44.11613	4
7	GP	5	-1.97028	-0.86452	0.55895	344.36457	41.08416	4
7	GP	6	-1.68179	-0.57986	0.52839	365.28776	38.83793	4
7	GP	7	-1.42073	-0.32228	0.50495	384.22051	37.11503	4
7	GP	8	-1.18015	-0.08489	0.48663	401.66924	35.76847	4
7	GP	9	-0.95517	0.13709	0.47216	417.98530	34.70489	4
7	GP	10	-0.74215	0.34728	0.46080	433.43477	33.86990	5
7	GP	11	-0.53825	0.54847	0.45205	448.22271	33.22675	5
7	GP	12	-0.34118	0.74292	0.44557	462.51525	32.75046	5
7	GP	13	-0.14899	0.93255	0.44113	476.45351	32.42411	5
7	GP	14	0.04002	1.11905	0.43862	490.16171	32.23962	6
7	GP	15	0.22756	1.30409	0.43802	503.76259	32.19552	6
7	GP	16	0.41518	1.48922	0.43937	517.37008	32.29474	6
7	GP	17	0.60460	1.67612	0.44284	531.10768	32.54980	7
7	GP	18	0.79776	1.86671	0.44869	545.11650	32.97979	7
7	GP	19	0.99691	2.06321	0.45735	559.55972	33.61632	7
7	GP	20	1.20491	2.26844	0.46944	574.64462	34.50496	7
7	GP	21	1.42552	2.48612	0.48593	590.64462	35.71702	8
7	GP	22	1.66405	2.72148	0.50809	607.94414	37.34583	8
7	GP	23	1.92819	2.98210	0.53855	627.10033	39.58471	8
7	GP	24	2.23034	3.28024	0.58144	649.01433	42.73723	9
7	GP	25	2.59218	3.63726	0.64476	675.25616	47.39140	9
7	GP	26	3.05659	4.09550	0.74610	708.93789	54.84013	9
7	GP	27	3.72679	4.75678	0.94135	757.54355	69.19147	9
7	GP	28	5.03036	6.04302	1.58048	852.08526	116.16906	9

TABLE K.15 Year 9 Numeracy Score Equivalence Table

Year	Domain	Raw Score	Delta-Centered Logit	Logit	Logit SE	Scale Score	Scale SE	Band
9	Numeracy	0	-5.87732	-3.41126	1.47448	246.48931	88.54672	5
9	Numeracy	1	-4.71649	-2.31404	0.87108	312.38049	52.31083	5
9	Numeracy	2	-4.14529	-1.77414	0.68923	344.80303	41.39022	5
9	Numeracy	3	-3.75040	-1.40089	0.59383	367.21775	35.66118	5
9	Numeracy	4	-3.44255	-1.10991	0.53313	384.69193	32.01597	5
9	Numeracy	5	-3.18712	-0.86848	0.49034	399.19049	29.44631	5
9	Numeracy	6	-2.96690	-0.66033	0.45819	411.69049	27.51561	5
9	Numeracy	7	-2.77203	-0.47614	0.43305	422.75162	26.00589	5
9	Numeracy	8	-2.59630	-0.31004	0.41271	432.72640	24.78441	5
9	Numeracy	9	-2.43551	-0.15806	0.39591	441.85323	23.77552	5
9	Numeracy	10	-2.28666	-0.01737	0.38182	450.30207	22.92938	5
9	Numeracy	11	-2.14755	0.11412	0.36986	458.19841	22.21115	5
9	Numeracy	12	-2.01650	0.23799	0.35960	465.63716	21.59500	5
9	Numeracy	13	-1.89218	0.35550	0.35075	472.69397	21.06354	5
9	Numeracy	14	-1.77355	0.46762	0.34306	479.42710	20.60173	6
9	Numeracy	15	-1.65975	0.57519	0.33639	485.88698	20.20118	6
9	Numeracy	16	-1.55007	0.67886	0.33057	492.11266	19.85167	6
9	Numeracy	17	-1.44393	0.77918	0.32548	498.13716	19.54600	6
9	Numeracy	18	-1.34082	0.87664	0.32104	503.98991	19.27937	6
9	Numeracy	19	-1.24030	0.97165	0.31718	509.69553	19.04756	6
9	Numeracy	20	-1.14202	1.06455	0.31383	515.27444	18.84638	6
9	Numeracy	21	-1.04562	1.15566	0.31094	520.74586	18.67283	6
9	Numeracy	22	-0.95084	1.24525	0.30848	526.12599	18.52510	6
9	Numeracy	23	-0.85741	1.33356	0.30640	531.42926	18.40019	7
9	Numeracy	24	-0.76510	1.42081	0.30467	536.66887	18.29630	7
9	Numeracy	25	-0.67369	1.50721	0.30327	541.85743	18.21223	7
9	Numeracy	26	-0.58301	1.59292	0.30217	547.00456	18.14617	7
9	Numeracy	27	-0.49286	1.67813	0.30135	552.12167	18.09693	7
9	Numeracy	28	-0.40309	1.76298	0.30081	557.21715	18.06450	7
9	Numeracy	29	-0.31354	1.84763	0.30052	562.30062	18.04708	7
9	Numeracy	30	-0.22406	1.93220	0.30047	567.37929	18.04408	7
9	Numeracy	31	-0.13451	2.01685	0.30066	572.46277	18.05549	7
9	Numeracy	32	-0.04476	2.10168	0.30107	577.55705	18.08011	7
9	Numeracy	33	0.04533	2.18683	0.30172	582.67055	18.11914	8
9	Numeracy	34	0.13589	2.27243	0.30259	587.81107	18.17139	8
9	Numeracy	35	0.22706	2.35860	0.30368	592.98583	18.23685	8
9	Numeracy	36	0.31898	2.44548	0.30498	598.20322	18.31492	8
9	Numeracy	37	0.41176	2.53318	0.30654	603.46985	18.40860	8
9	Numeracy	38	0.50557	2.62185	0.30832	608.79474	18.51549	8
9	Numeracy	39	0.60055	2.71162	0.31036	614.18568	18.63800	8
9	Numeracy	40	0.69687	2.80267	0.31266	619.65350	18.77612	8
9	Numeracy	41	0.79469	2.89513	0.31523	625.20598	18.93046	8
9	Numeracy	42	0.89421	2.98919	0.31810	630.85455	19.10281	8
9	Numeracy	43	0.99564	3.08506	0.32130	636.61182	19.29498	9
9	Numeracy	44	1.09920	3.18295	0.32484	642.49039	19.50757	9

<b>Year</b>	<b>Domain</b>	<b>Raw Score</b>	<b>Delta-Centered Logit</b>	<b>Logit</b>	<b>Logit SE</b>	<b>Scale Score</b>	<b>Scale SE</b>	<b>Band</b>
9	Numeracy	45	1.20515	3.28309	0.32878	648.50408	19.74417	9
9	Numeracy	46	1.31379	3.38578	0.33314	654.67091	20.00601	9
9	Numeracy	47	1.42544	3.49131	0.33798	661.00829	20.29666	9
9	Numeracy	48	1.54050	3.60006	0.34343	667.53903	20.62395	9
9	Numeracy	49	1.65941	3.71246	0.34948	674.28897	20.98727	9
9	Numeracy	50	1.78270	3.82899	0.35628	681.28693	21.39563	9
9	Numeracy	51	1.91103	3.95029	0.36396	688.57134	21.85683	10
9	Numeracy	52	2.04515	4.07706	0.37268	696.18424	22.38049	10
9	Numeracy	53	2.18605	4.21024	0.38267	704.18208	22.98042	10
9	Numeracy	54	2.33493	4.35096	0.39423	712.63272	23.67463	10
9	Numeracy	55	2.49336	4.50071	0.40776	721.62563	24.48715	10
9	Numeracy	56	2.66342	4.66145	0.42385	731.27853	25.45340	10
9	Numeracy	57	2.84796	4.83588	0.44332	741.75354	26.62263	10
9	Numeracy	58	3.05103	5.02782	0.46743	753.28009	28.07050	10
9	Numeracy	59	3.27865	5.24296	0.49853	766.19986	29.93815	10
9	Numeracy	60	3.54054	5.49050	0.54010	781.06534	32.43454	10
9	Numeracy	61	3.85372	5.78652	0.59956	798.84218	36.00528	10
9	Numeracy	62	4.25271	6.16365	0.69369	821.48991	41.65806	10
9	Numeracy	63	4.82667	6.70615	0.87431	854.06858	52.50480	10
9	Numeracy	64	5.98889	7.80468	1.47686	920.03843	88.68965	10

TABLE K.16 Year 9 Non-Calculator Score Equivalence Table

Year	Domain	Raw Score	Delta-Centered Logit	Logit	Logit SE	Scale Score	Scale SE	Band
9	NC	0	-5.00653	-2.58819	1.51235	295.91701	90.82092	5
9	NC	1	-3.79903	-1.44686	0.90025	364.45712	54.06258	5
9	NC	2	-3.19077	-0.87193	0.71623	398.98331	43.01165	5
9	NC	3	-2.76471	-0.46922	0.62120	423.16719	37.30483	5
9	NC	4	-2.42886	-0.15177	0.56159	442.23096	33.72508	5
9	NC	5	-2.14649	0.11512	0.52075	458.25847	31.27252	5
9	NC	6	-1.89900	0.34905	0.49135	472.30663	29.50697	5
9	NC	7	-1.67571	0.56010	0.46925	484.98078	28.17980	6
9	NC	8	-1.46969	0.75483	0.45261	496.67487	27.18052	6
9	NC	9	-1.27636	0.93757	0.43982	507.64893	26.41244	6
9	NC	10	-1.09228	1.11156	0.43020	518.09753	25.83473	6
9	NC	11	-0.91499	1.27914	0.42304	528.16118	25.40476	6
9	NC	12	-0.74250	1.44217	0.41796	537.95160	25.09969	7
9	NC	13	-0.57318	1.60221	0.41466	547.56245	24.90151	7
9	NC	14	-0.40569	1.76053	0.41293	557.07002	24.79762	7
9	NC	15	-0.23882	1.91825	0.41263	566.54156	24.77961	7
9	NC	16	-0.07147	2.07643	0.41368	576.04072	24.84266	7
9	NC	17	0.09743	2.23608	0.41606	585.62815	24.98559	8
9	NC	18	0.26892	2.39817	0.41977	595.36212	25.20838	8
9	NC	19	0.44413	2.56378	0.42488	605.30747	25.51525	8
9	NC	20	0.62429	2.73406	0.43152	615.53327	25.91400	8
9	NC	21	0.81082	2.91037	0.43988	626.12119	26.41605	8
9	NC	22	1.00539	3.09428	0.45025	637.16551	27.03879	9
9	NC	23	1.21013	3.28780	0.46301	648.78693	27.80507	9
9	NC	24	1.42773	3.49347	0.47870	661.13800	28.74730	9
9	NC	25	1.66176	3.71468	0.49833	674.42229	29.92613	9
9	NC	26	1.91724	3.95616	0.52311	688.92385	31.41424	10
9	NC	27	2.20143	4.22478	0.55517	705.05525	33.33954	10
9	NC	28	2.52551	4.53110	0.59815	723.45064	35.92061	10
9	NC	29	2.90818	4.89280	0.65906	745.17175	39.57843	10
9	NC	30	3.38517	5.34365	0.75466	772.24658	45.31948	10
9	NC	31	4.04522	5.96753	0.93739	809.71235	56.29294	10
9	NC	32	5.29825	7.15189	1.55215	880.83654	93.21103	10

TABLE K.17 Year 9 Calculator Score Equivalence Table

Year	Domain	Raw Score	Delta-Centered Logit	Logit	Logit SE	Scale Score	Scale SE	Band
9	CA	0	-5.42305	-2.98188	1.54044	272.27480	92.50781	5
9	CA	1	-4.18653	-1.81312	0.92845	342.46217	55.75607	5
9	CA	2	-3.54075	-1.20273	0.74765	379.11782	44.89851	5
9	CA	3	-3.07447	-0.76200	0.65372	405.58491	39.25775	5
9	CA	4	-2.69891	-0.40703	0.59470	426.90187	35.71343	5
9	CA	5	-2.37914	-0.10478	0.55356	445.05285	33.24285	5
9	CA	6	-2.09702	0.16188	0.52333	461.06654	31.42746	5
9	CA	7	-1.84157	0.40333	0.50067	475.56630	30.06666	5
9	CA	8	-1.60565	0.62632	0.48317	488.95748	29.01573	6
9	CA	9	-1.38416	0.83568	0.46968	501.53015	28.20562	6
9	CA	10	-1.17334	1.03494	0.45937	513.49628	27.58648	6
9	CA	11	-0.97036	1.22680	0.45163	525.01802	27.12167	6
9	CA	12	-0.77300	1.41334	0.44601	536.22027	26.78417	7
9	CA	13	-0.57947	1.59627	0.44218	547.20574	26.55417	7
9	CA	14	-0.38830	1.77696	0.43990	558.05669	26.41725	7
9	CA	15	-0.19824	1.95661	0.43896	568.84518	26.36080	7
9	CA	16	-0.00822	2.13621	0.43925	579.63067	26.37821	7
9	CA	17	0.18274	2.31671	0.44068	590.47021	26.46409	8
9	CA	18	0.37554	2.49894	0.44321	601.41364	26.61602	8
9	CA	19	0.57111	2.68380	0.44686	612.51501	26.83521	8
9	CA	20	0.77039	2.87216	0.45174	623.82657	27.12827	8
9	CA	21	0.97449	3.06507	0.45796	635.41136	27.50180	9
9	CA	22	1.18469	3.26375	0.46578	647.34266	27.97141	9
9	CA	23	1.40261	3.46973	0.47554	659.71235	28.55753	9
9	CA	24	1.63030	3.68494	0.48778	672.63632	29.29258	9
9	CA	25	1.87055	3.91203	0.50328	686.27372	30.22340	10
9	CA	26	2.12731	4.15472	0.52334	700.84795	31.42806	10
9	CA	27	2.40647	4.41858	0.55011	716.69349	33.03567	10
9	CA	28	2.71757	4.71263	0.58734	734.35203	35.27144	10
9	CA	29	3.07758	5.05291	0.64218	754.78681	38.56474	10
9	CA	30	3.52082	5.47186	0.73188	779.94595	43.95148	10
9	CA	31	4.13631	6.05362	0.90941	814.88230	54.61266	10
9	CA	32	5.33763	7.18911	1.51328	883.07170	90.87677	10

**TABLE K.18 Year 9 Reading Score Equivalence Table**

<b>Year</b>	<b>Domain</b>	<b>Raw Score</b>	<b>Delta-Centered Logit</b>	<b>Logit</b>	<b>Logit SE</b>	<b>Scale Score</b>	<b>Scale SE</b>	<b>Band</b>
9	Reading	0	-5.48849	-3.36243	1.48468	195.61243	99.86413	5
9	Reading	1	-4.31627	-2.24156	0.87958	271.00558	59.16325	5
9	Reading	2	-3.73452	-1.68529	0.69855	308.42201	46.98661	5
9	Reading	3	-3.32953	-1.29804	0.60378	334.46963	40.61209	5
9	Reading	4	-3.01157	-0.99400	0.54393	354.92029	36.58640	5
9	Reading	5	-2.74577	-0.73984	0.50204	372.01587	33.76875	5
9	Reading	6	-2.51485	-0.51904	0.47082	386.86756	31.66880	5
9	Reading	7	-2.30895	-0.32216	0.44644	400.11031	30.02892	5
9	Reading	8	-2.12188	-0.14328	0.42683	412.14233	28.70989	5
9	Reading	9	-1.94949	0.02156	0.41069	423.22997	27.62427	5
9	Reading	10	-1.78886	0.17515	0.39718	433.56091	26.71554	5
9	Reading	11	-1.63786	0.31954	0.38571	443.27302	25.94404	5
9	Reading	12	-1.49487	0.45627	0.37581	452.46990	25.27813	5
9	Reading	13	-1.35858	0.58659	0.36738	461.23562	24.71111	5
9	Reading	14	-1.22800	0.71145	0.36004	469.63409	24.21739	5
9	Reading	15	-1.10229	0.83165	0.35365	477.71911	23.78758	5
9	Reading	16	-0.98074	0.94788	0.34810	485.53710	23.41427	6
9	Reading	17	-0.86275	1.06070	0.34329	493.12571	23.09074	6
9	Reading	18	-0.74780	1.17061	0.33914	500.51860	22.81160	6
9	Reading	19	-0.63544	1.27805	0.33561	507.74534	22.57416	6
9	Reading	20	-0.52525	1.38342	0.33264	514.83285	22.37439	6
9	Reading	21	-0.41684	1.48708	0.33021	521.80534	22.21094	6
9	Reading	22	-0.30989	1.58934	0.32828	528.68366	22.08112	6
9	Reading	23	-0.20404	1.69056	0.32683	535.49203	21.98359	7
9	Reading	24	-0.09900	1.79100	0.32586	542.24793	21.91834	7
9	Reading	25	0.00554	1.89096	0.32536	548.97155	21.88471	7
9	Reading	26	0.10990	1.99075	0.32533	555.68373	21.88269	7
9	Reading	27	0.21436	2.09063	0.32578	562.40196	21.91296	7
9	Reading	28	0.31925	2.19093	0.32671	569.14845	21.97552	7
9	Reading	29	0.42488	2.29193	0.32815	575.94202	22.07238	7
9	Reading	30	0.53159	2.39397	0.33013	582.80554	22.20556	8
9	Reading	31	0.63976	2.49740	0.33268	589.76256	22.37708	8
9	Reading	32	0.74978	2.60260	0.33585	596.83864	22.59030	8
9	Reading	33	0.86210	2.71000	0.33969	604.06269	22.84859	8
9	Reading	34	0.97721	2.82007	0.34428	611.46633	23.15733	8
9	Reading	35	1.09570	2.93337	0.34971	619.08724	23.52257	8
9	Reading	36	1.21823	3.05053	0.35609	626.96778	23.95171	8
9	Reading	37	1.34560	3.17232	0.36355	635.15975	24.45349	9
9	Reading	38	1.47875	3.29964	0.37228	643.72368	25.04069	9
9	Reading	39	1.61885	3.43361	0.38257	652.73492	25.73283	9
9	Reading	40	1.76738	3.57563	0.39471	662.28762	26.54940	9
9	Reading	41	1.92620	3.72749	0.40915	672.50219	27.52068	9
9	Reading	42	2.09780	3.89158	0.42652	683.53938	28.68904	9
9	Reading	43	2.28553	4.07109	0.44770	695.61378	30.11367	10
9	Reading	44	2.49410	4.27052	0.47401	709.02805	31.88337	10



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<b>Year</b>	<b>Domain</b>	<b>Raw Score</b>	<b>Delta-Centered Logit</b>	<b>Logit</b>	<b>Logit SE</b>	<b>Scale Score</b>	<b>Scale SE</b>	<b>Band</b>
9	Reading	45	2.73047	4.49654	0.50755	724.23085	34.13937	10
9	Reading	46	3.00546	4.75948	0.55234	741.91700	37.15208	10
9	Reading	47	3.33763	5.07710	0.61540	763.28109	41.39369	10
9	Reading	48	3.76317	5.48400	0.71365	790.65043	48.00229	10
9	Reading	49	4.37287	6.06700	0.89910	829.86480	60.47622	10
9	Reading	50	5.58069	7.22192	1.51181	907.54826	101.68898	10

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**TABLE K.19 Year 9 Spelling Score Equivalence Table**

<b>Year</b>	<b>Domain</b>	<b>Raw Score</b>	<b>Delta-Centered Logit</b>	<b>Logit</b>	<b>Logit SE</b>	<b>Scale Score</b>	<b>Scale SE</b>	<b>Band</b>
9	Spelling	0	-6.05218	-3.87516	1.60151	316.47955	61.03083	5
9	Spelling	1	-4.73527	-2.47410	0.97612	369.87158	37.19828	5
9	Spelling	2	-4.02113	-1.71432	0.79378	398.82550	30.24961	5
9	Spelling	3	-3.49318	-1.15264	0.70164	420.23017	26.73831	5
9	Spelling	4	-3.05753	-0.68915	0.64489	437.89299	24.57566	5
9	Spelling	5	-2.67721	-0.28453	0.60561	453.31237	23.07877	5
9	Spelling	6	-2.33463	0.07994	0.57630	467.20171	21.96182	5
9	Spelling	7	-2.02039	0.41426	0.55326	479.94208	21.08380	6
9	Spelling	8	-1.72856	0.72474	0.53477	491.77394	20.37918	6
9	Spelling	9	-1.45469	1.01611	0.51984	502.87756	19.81022	6
9	Spelling	10	-1.19500	1.29239	0.50802	513.40612	19.35978	6
9	Spelling	11	-0.94611	1.55719	0.49902	523.49720	19.01681	6
9	Spelling	12	-0.70502	1.81368	0.49260	533.27160	18.77215	7
9	Spelling	13	-0.46904	2.06474	0.48854	542.83907	18.61743	7
9	Spelling	14	-0.23579	2.31290	0.48666	552.29603	18.54579	7
9	Spelling	15	-0.00309	2.56047	0.48679	561.73050	18.55074	7
9	Spelling	16	0.23101	2.80953	0.48879	571.22175	18.62696	7
9	Spelling	17	0.46834	3.06202	0.49253	580.84372	18.76948	7
9	Spelling	18	0.71057	3.31973	0.49790	590.66461	18.97412	8
9	Spelling	19	0.95924	3.58429	0.50485	600.74654	19.23898	8
9	Spelling	20	1.21584	3.85729	0.51342	611.15011	19.56557	8
9	Spelling	21	1.48193	4.14038	0.52381	621.93819	19.96151	8
9	Spelling	22	1.75944	4.43562	0.53647	633.18928	20.44396	8
9	Spelling	23	2.05109	4.74591	0.55219	645.01391	21.04302	9
9	Spelling	24	2.36098	5.07560	0.57233	657.57784	21.81053	9
9	Spelling	25	2.69546	5.43146	0.59900	671.13906	22.82687	9
9	Spelling	26	3.06461	5.82419	0.63586	686.10533	24.23155	10
9	Spelling	27	3.48552	6.27200	0.68991	703.17061	26.29130	10
9	Spelling	28	3.99173	6.81056	0.77817	723.69422	29.65474	10
9	Spelling	29	4.67015	7.53233	0.95393	751.19965	36.35265	10
9	Spelling	30	5.93107	8.87382	1.56360	802.32156	59.58614	10

**TABLE K.20 Year 9 Grammar & Punctuation Score Equivalence Table**

<b>Year</b>	<b>Domain</b>	<b>Raw Score</b>	<b>Delta-Centered Logit</b>	<b>Logit</b>	<b>Logit SE</b>	<b>Scale Score</b>	<b>Scale SE</b>	<b>Band</b>
9	GP	0	-4.93209	-3.11005	1.53219	179.31275	112.61963	5
9	GP	1	-3.70575	-1.93129	0.92098	265.95443	67.69423	5
9	GP	2	-3.07085	-1.32102	0.74050	310.81073	54.42852	5
9	GP	3	-2.61456	-0.88244	0.64705	343.04741	47.55972	5
9	GP	4	-2.24733	-0.52946	0.58865	368.99228	43.26718	5
9	GP	5	-1.93426	-0.22853	0.54801	391.11136	40.28004	5
9	GP	6	-1.65766	0.03733	0.51802	410.65270	38.07571	5
9	GP	7	-1.40708	0.27819	0.49538	428.35649	36.41161	5
9	GP	8	-1.17588	0.50042	0.47768	444.69092	35.11062	5
9	GP	9	-0.95934	0.70856	0.46383	459.98971	34.09261	5
9	GP	10	-0.75397	0.90596	0.45307	474.49908	33.30173	5
9	GP	11	-0.55702	1.09527	0.44492	488.41382	32.70268	6
9	GP	12	-0.36626	1.27863	0.43905	501.89122	32.27122	6
9	GP	13	-0.17977	1.45788	0.43526	515.06652	31.99265	6
9	GP	14	0.00420	1.63471	0.43344	528.06395	31.85888	6
9	GP	15	0.18731	1.81072	0.43358	541.00110	31.86917	7
9	GP	16	0.37124	1.98751	0.43575	553.99559	32.02867	7
9	GP	17	0.55776	2.16680	0.44011	567.17383	32.34914	7
9	GP	18	0.74887	2.35049	0.44693	580.67549	32.85042	7
9	GP	19	0.94694	2.54088	0.45666	594.66961	33.56560	8
9	GP	20	1.15496	2.74082	0.46996	609.36567	34.54318	8
9	GP	21	1.37694	2.95419	0.48771	625.04888	35.84785	8
9	GP	22	1.61836	3.18624	0.51160	642.10511	37.60382	9
9	GP	23	1.88759	3.44503	0.54417	661.12679	39.99779	9
9	GP	24	2.19815	3.74354	0.58995	683.06799	43.36273	9
9	GP	25	2.57421	4.10501	0.65759	709.63690	48.33444	10
9	GP	26	3.06501	4.57676	0.76652	744.31165	56.34105	10
9	GP	27	3.78894	5.27261	0.97434	795.45829	71.61632	10
9	GP	28	5.18305	6.61262	1.63919	893.95222	120.48438	10

**TABLE K.21 Years 3, 5, 7, and 9 Persuasive Writing Score Equivalence Table**

<b>Year</b>	<b>Domain</b>	<b>Raw Score</b>	<b>Delta-Centered Logit</b>	<b>Logit</b>	<b>Logit SE</b>	<b>Scale Score</b>	<b>Scale SE</b>	<b>Band</b>
3579	Writing	0	-12.53942	-12.54000	1.76300	94.52478	52.30000	1
3579	Writing	1	-10.96010	-10.96000	1.07800	141.43828	32.00000	1
3579	Writing	2	-10.07480	-10.07000	0.86900	167.86425	25.80000	1
3579	Writing	3	-9.44963	-9.45000	0.77000	186.27335	22.90000	1
3579	Writing	4	-8.93305	-8.93300	0.71900	201.62416	21.30000	1
3579	Writing	5	-8.46266	-8.46300	0.69400	215.57944	20.60000	1
3579	Writing	6	-8.00794	-8.00800	0.68400	229.08934	20.30000	1
3579	Writing	7	-7.55131	-7.55100	0.68500	242.65863	20.30000	1
3579	Writing	8	-7.08260	-7.08300	0.69000	256.55453	20.50000	1
3579	Writing	9	-6.59984	-6.60000	0.69500	270.89581	20.60000	2
3579	Writing	10	-6.11019	-6.11000	0.69800	285.44494	20.70000	2
3579	Writing	11	-5.62191	-5.62200	0.69800	299.93468	20.70000	2
3579	Writing	12	-5.13566	-5.13600	0.69900	314.36503	20.80000	2
3579	Writing	13	-4.64673	-4.64700	0.70200	328.88447	20.80000	3
3579	Writing	14	-4.15104	-4.15100	0.70500	343.61175	20.90000	3
3579	Writing	15	-3.64855	-3.64900	0.70500	358.51718	20.90000	3
3579	Writing	16	-3.14571	-3.14600	0.70000	373.45230	20.80000	3
3579	Writing	17	-2.65476	-2.65500	0.69000	388.03112	20.50000	4
3579	Writing	18	-2.18469	-2.18500	0.67800	401.98640	20.10000	4
3579	Writing	19	-1.73507	-1.73500	0.66600	415.34784	19.80000	4
3579	Writing	20	-1.30026	-1.30000	0.65700	428.26390	19.50000	5
3579	Writing	21	-0.87509	-0.87500	0.65000	440.88304	19.30000	5
3579	Writing	22	-0.45735	-0.45700	0.64300	453.29434	19.10000	5
3579	Writing	23	-0.04732	-0.04700	0.63700	465.46810	18.90000	5
3579	Writing	24	0.35408	0.35400	0.63100	477.37463	18.70000	5
3579	Writing	25	0.74713	0.74700	0.62600	489.04362	18.60000	6
3579	Writing	26	1.13353	1.13400	0.62200	500.53446	18.50000	6
3579	Writing	27	1.51576	1.51600	0.62000	511.87684	18.40000	6
3579	Writing	28	1.89675	1.89700	0.62100	523.18952	18.40000	6
3579	Writing	29	2.28021	2.28000	0.62400	534.56160	18.50000	7
3579	Writing	30	2.67061	2.67100	0.62900	546.17120	18.70000	7
3579	Writing	31	3.07135	3.07100	0.63400	558.04804	18.80000	7
3579	Writing	32	3.48153	3.48200	0.63700	570.25149	18.90000	7
3579	Writing	33	3.89416	3.89400	0.63600	582.48463	18.90000	8
3579	Writing	34	4.30011	4.30000	0.63100	594.53962	18.70000	8
3579	Writing	35	4.69442	4.69400	0.62500	606.23831	18.60000	8
3579	Writing	36	5.07807	5.07800	0.62100	617.64007	18.40000	8
3579	Writing	37	5.45606	5.45600	0.62000	628.86368	18.40000	8
3579	Writing	38	5.83510	5.83500	0.62300	640.11699	18.50000	9
3579	Writing	39	6.22224	6.22200	0.63100	651.60783	18.70000	9
3579	Writing	40	6.62346	6.62300	0.64100	663.51436	19.00000	9
3579	Writing	41	7.04157	7.04200	0.65300	675.95534	19.40000	9
3579	Writing	42	7.47486	7.47500	0.66500	688.81202	19.70000	10
3579	Writing	43	7.92039	7.92000	0.68000	702.02500	20.20000	10
3579	Writing	44	8.38147	8.38100	0.70200	715.71306	20.90000	10

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<b>Year</b>	<b>Domain</b>	<b>Raw Score</b>	<b>Delta- Centered Logit</b>	<b>Logit</b>	<b>Logit SE</b>	<b>Scale Score</b>	<b>Scale SE</b>	<b>Band</b>
3579	Writing	45	8.87411	8.87400	0.74300	730.35126	22.10000	10
3579	Writing	46	9.43550	9.43600	0.82000	747.03821	24.30000	10
3579	Writing	47	10.15886	10.15900	0.98800	768.50560	29.30000	10
3579	Writing	48	11.46052	11.46100	1.59900	807.16470	47.50000	10

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**APPENDIX L. VERTICAL LINK ITEM STATISTICS**

**Table L.1 Reading Year 3 to Year 5**

Year 3						Year 5						Retained
Label	Loen	SE	Infit	Facil	Disc	Label	Loen	SE	Infit	Facil	Disc	
r3q14	0.433	0.038	1.12	53.82	0.73	r5q07	-0.554	0.029	-2.944	0.94	72.76	Y
r3q15	0.515	0.038	1.01	52.33	0.96	r5q08	-0.455	0.029	0.776	1.01	71.16	Y
r3q16	-0.162	0.039	0.95	64.92	1.12	r5q09	-1.74	0.032	-5.376	0.86	87.86	N
r3q17	-1.255	0.046	0.91	81.53	1.12	r5q10	-2.479	0.034	-1.512	0.93	93.31	Y
r3q18	-0.852	0.043	0.85	76.12	1.25	r5q11	-2.227	0.034	-6.412	0.83	91.75	Y
r3q19	0.23	0.038	1.04	57.8	0.92	r5q12	-0.686	0.029	-1.608	0.99	74.91	Y
r3q20	2.484	0.044	1.1	18.92	0.77	r5q13	1.547	0.028	1.576	0.99	33.52	Y
r3q21	1.989	0.041	1.25	25.92	0.48	r5q14	0.977	0.027	8.409	1.12	44.23	Y
r3q22	0.548	0.038	0.94	51.86	1.15	r5q15	-0.668	0.029	-4.497	0.91	74.65	Y
r3q23	0.229	0.038	0.97	57.94	1.08	r5q16	-1.214	0.03	-1.363	0.94	82.24	Y
r3q24	0.768	0.038	0.91	47.66	1.22	r5q17	-0.715	0.029	-7.537	0.85	75.37	Y
r3q25	0.436	0.038	0.94	54.07	1.16	r5q18	-1.019	0.03	-4.749	0.9	79.77	Y

**Table L.2 Reading Year 5 to Year 7**

Year 5						Year 7						Retained
Label	Loen	SE	Infit	Facil	Disc	Label	Loen	SE	Infit	Facil	Disc	
r5q20	0.192	0.028	1.24	59.65	0.32	r7q13	-0.33	0.038	9.597	1.19	64.39	N
r5q21	-0.027	0.028	1.07	63.79	0.87	r7q14	-0.759	0.039	-1.684	1.01	72.18	Y
r5q22	-0.884	0.03	1.03	77.96	0.97	r7q15	-1.753	0.05	-4.397	0.93	85.98	Y
r5q23	1.178	0.028	0.96	40.43	1.09	r7q16	-0.055	0.037	-6.603	0.89	59.07	Y
r5q24	2.595	0.031	0.96	17.67	1.03	r7q17	1.135	0.039	-5.128	0.91	35.18	N
r5q25	-0.474	0.029	0.99	71.68	1.05	r7q18	-1.507	0.047	-4.127	0.91	83.18	Y
r5q26	1.678	0.028	1.04	31.34	0.86	r7q19	0.583	0.037	-5.976	0.92	46.13	Y
r5q27	0.309	0.028	1.14	57.5	0.62	r7q20	-0.522	0.038	-0.676	1.01	68.06	Y
r5q28	0.03	0.028	0.95	62.8	1.15	r7q21	-1.217	0.042	-6.71	0.88	79.37	Y
r5q29	0.951	0.027	1.23	44.87	0.3	r7q22	0.322	0.037	13.636	1.2	51.48	N
r5q30	1.448	0.028	1.11	35.45	0.7	r7q23	0.523	0.037	1.005	1	47.38	Y
r5q31	1.985	0.029	1.05	26.28	0.83	r7q24	0.496	0.037	-4.396	0.93	47.92	N

**Table L.3 Reading Year 7 to Year 9**

Year 7						Year 9						Retained
Label	Locn	SE	Infit	Facil	Disc	Label	Locn	SE	Infit	Facil	Disc	
r7q25	-0.258	0.037	0.96	63.13	1.13	r9q24	-0.686	0.04	0.95	72.21	1.1	Y
r7q26	-1.164	0.044	0.89	78.63	1.18	r9q25	-1.588	0.049	0.87	84.89	1.16	Y
r7q27	-1.41	0.045	0.88	82	1.17	r9q26	-1.974	0.058	0.88	88.76	1.13	Y
r7q28	1.508	0.039	1.12	28.53	0.71	r9q27	1.205	0.037	1.08	35.64	0.75	Y
r7q29	1.397	0.04	0.96	30.47	1.05	r9q28	0.643	0.036	0.91	46.7	1.28	Y
r7q30	1.237	0.039	1.07	33.35	0.81	r9q29	0.792	0.036	1.02	43.75	0.94	Y
r7q31	0.91	0.038	0.97	39.61	1.04	r9q30	0.494	0.036	0.94	49.77	1.2	Y
r7q32	1.734	0.041	1.12	24.84	0.72	r9q31	1.522	0.038	1.12	29.9	0.71	Y
r7q33	0.538	0.037	1.04	47.14	0.88	r9q32	0.166	0.036	1.03	56.43	0.93	Y
r7q34	-0.237	0.037	1	62.83	1.02	r9q33	-0.474	0.038	0.99	68.68	1.04	Y
r7q35	0.704	0.037	1.16	43.82	0.48	r9q34	0.291	0.036	1.08	53.96	0.77	Y
r7q36	0.845	0.037	1.07	41	0.77	r9q35	0.095	0.036	0.95	57.88	1.17	Y
r7q37	0.487	0.037	1.03	48.26	0.91	r9q36	-0.153	0.037	0.94	62.76	1.17	Y
r7q38	4.715	0.145	1.02	2.16	1.02	r9q37	3.453	0.067	0.96	7.31	1.06	Y

**Table L.4 Spelling Year 3 to Year 5**

Year 3						Year 5						Retained
Label	Loen	SE	Infit	Facil	Disc	Label	Loen	SE	Infit	Facil	Disc	
lc3q06	-0.517	0.044	0.94	51.79	1.12	lc5q02	-2.41	0.054	0.93	81.04	1.04	Y
lc3q07	-0.381	0.043	0.96	49.9	1.08	lc5q03	-1.823	0.05	0.94	75	1.09	Y
lc3q10	1.31	0.047	1.07	26.94	0.87	lc5q07	-0.547	0.044	1.08	58.53	0.91	Y
lc3q11	1.276	0.047	0.95	27.45	1.07	lc5q08	-0.405	0.044	0.97	56.48	1.08	Y
lc3q13	2.909	0.063	0.96	11.8	1.02	lc5q11	1.034	0.044	0.99	35.16	1.06	Y
lc3q20	-0.267	0.044	0.98	50.24	1.07	lc5q15	-2.082	0.051	1.01	78.33	0.95	Y
lc3q22	0.527	0.045	0.95	39.25	1.13	lc5q17	-0.521	0.044	0.96	58.84	1.1	N
lc3q24	2.104	0.054	1.05	20	0.93	lc5q20	0.557	0.043	1.02	42.92	1	Y

**Table L.5 Spelling Year 5 to Year 7**

Year 5						Year 7						Retained
Label	Loen	SE	Infit	Facil	Disc	Label	Loen	SE	Infit	Facil	Disc	
lc5q05	-1.143	0.046	0.92	66.74	1.12	lc7q04	-2.462	0.055	0.87	81.85	1.11	Y
lc5q06	-0.568	0.044	1.02	58.8	1	lc7q05	-1.821	0.049	0.91	74.97	1.11	Y
lc5q18	-0.41	0.044	0.94	57.35	1.14	lc7q17	-1.605	0.047	0.95	72.97	1.05	Y
lc5q19	0.199	0.043	1.08	48.25	0.91	lc7q18	-0.908	0.044	1.06	63.44	0.92	Y
lc5q21	0.983	0.044	1	36.69	1.05	lc7q20	0.119	0.042	0.99	47.58	1.06	N
lc5q22	2.205	0.049	1.1	20.83	0.84	lc7q22	1.057	0.043	1.04	33.18	0.93	Y
lc5q23	2.397	0.051	0.89	18.94	1.16	lc7q24	1.401	0.045	0.91	28.34	1.17	Y
lc5q24	2.941	0.056	1.08	13.86	0.91	lc7q25	1.554	0.045	1.08	26.25	0.9	Y

**Table L.6 Spelling Year 7 to Year 9**

Year 7						Year 9						Retained
Label	Loen	SE	Infit	Facil	Disc	Label	Loen	SE	Infit	Facil	Disc	
lc7q06	-1.764	0.048	0.9	74.31	1.12	lc9q03	-2.481	31.233	0.87	86.63	1.07	Y
lc7q09	-0.938	0.043	0.87	63.3	1.22	lc9q05	-1.704	64.738	0.87	79.65	1.14	Y
lc7q10	-0.12	0.042	1.08	50.73	0.87	lc9q07	-0.47	21.659	1.08	63.86	0.89	Y
lc7q11	-0.347	0.042	0.92	54.32	1.19	lc9q08	-0.911	20.575	0.93	70.14	1.1	Y
lc7q13	0.945	0.043	1	34.11	1.02	lc9q10	0.41	20.485	1.03	50.13	0.97	Y
lc7q15	2.781	0.058	1.05	12.41	0.92	lc9q13	2.506	22.459	1.08	19.65	0.89	Y
lc7q16	-2.741	0.057	1.01	84.75	0.96	lc9q17	-2.963	16.574	0.97	90.34	0.97	Y
lc7q19	-0.751	0.043	0.93	61.24	1.13	lc9q19	-1.2	33.635	0.91	74.82	1.13	Y
lc7q23	0.392	0.042	1.1	43.63	0.84	lc9q23	0.081	52.218	1.19	56.83	0.67	Y
lc7q28	2.425	0.052	1.06	16.29	0.93	lc9q28	2.228	18.025	1.1	24.33	0.86	Y



**Table L.7 Grammar and Punctuation Year 3 to Year 5**

Year 3						Year 5						Retained
Label	Loen	SE	Infit	Facil	Disc	Label	Loen	SE	Infit	Facil	Disc	
lc3q29	-1.546	0.05	0.89	85.39	1.14	lc5q26	-2.769	0.08	0.95	95.11	1.04	Y
lc3q32	-0.849	0.041	1.02	76.3	0.94	lc5q28	-1.86	0.057	0.97	89.42	1.01	Y
lc3q33	-0.796	0.042	0.87	75.51	1.27	lc5q29	-2.048	0.064	0.88	90.94	1.13	Y
lc3q37	-0.23	0.038	1.04	65.93	0.92	lc5q30	-1.154	0.045	0.98	82	1.05	Y
lc3q38	0.062	0.037	0.95	60.36	1.16	lc5q32	-1.185	0.047	0.93	82.4	1.13	Y
lc3q41	0.864	0.037	1.04	44.2	0.87	lc5q34	-0.517	0.041	1.01	72.65	1	Y
lc3q44	1.104	0.038	1.02	39.49	0.91	lc5q40	0.047	0.038	0.97	62.56	1.12	Y
lc3q48	1.567	0.04	1.02	31.14	0.92	lc5q46	0.636	0.037	0.99	51.02	1.08	Y

**Table L.8 Grammar and Punctuation Year 5 to Year 7**

Year 5						Year 7						Retained
Label	Loen	SE	Infit	Facil	Disc	Label	Loen	SE	Infit	Facil	Disc	
lc5q27	-2.189	0.064	0.94	91.92	1.05	lc7q31	-2.948	0.088	0.93	96.15	1.08	Y
lc5q31	-1.662	0.053	0.96	87.67	1.05	lc7q33	-1.962	0.057	0.92	90.88	1.1	Y
lc5q37	0.174	0.038	0.97	60.1	1.14	lc7q38	-0.638	0.042	0.9	75.69	1.21	Y
lc5q39	0.208	0.038	0.94	59.42	1.23	lc7q41	-0.217	0.039	0.93	68.64	1.19	Y
lc5q41	0.222	0.037	0.94	59.19	1.18	lc7q42	-0.528	0.041	0.91	73.97	1.22	Y
lc5q42	0.662	0.037	0.94	50.38	1.23	lc7q43	-0.279	0.039	0.89	69.75	1.27	N
lc5q47	1.346	0.038	1.02	36.9	0.91	lc7q50	0.799	0.037	0.99	48.77	1.04	Y
lc5q48	1.77	0.04	1.12	29.22	0.68	lc7q51	0.838	0.037	1.01	47.98	0.96	N

**Table L.9 Grammar and Punctuation Year 7 to Year 9**

Year 7						Year 9						Retained
Label	Loen	SE	Infit	Facil	Disc	Label	Loen	SE	Infit	Facil	Disc	
lc7q37	-0.831	0.044	0.92	78.6	1.16	lc9q34	-1.527	0.05	0.91	85.48	1.12	Y
lc7q39	-0.631	0.042	0.98	75.58	1.06	lc9q36	-1.18	0.045	0.96	81.31	1.06	Y
lc7q40	-0.27	0.039	0.94	69.58	1.16	lc9q37	-1.169	0.045	0.9	81.17	1.15	Y
lc7q44	0.079	0.038	1.03	63.15	0.94	lc9q38	-0.492	0.039	0.99	70.78	1.03	Y
lc7q45	0.343	0.037	1.07	57.95	0.81	lc9q40	0.042	0.036	1	60.87	1.04	N
lc7q48	0.491	0.037	0.99	55.04	1.04	lc9q44	-0.146	0.037	0.95	64.57	1.17	Y
lc7q52	1.073	0.038	1.03	43.25	0.9	lc9q49	0.639	0.036	1.08	48.85	0.75	Y
lc7q53	1.054	0.037	1.16	43.67	0.48	lc9q50	0.751	0.036	1.1	46.55	0.68	N
lc7q57	1.713	0.04	0.95	31.11	1.08	lc9q55	0.893	0.036	0.89	43.72	1.36	Y

**Table L.10 Numeracy Year 3 to Year 5**

Year 3						Year 5						Retained
Label	Locn	SE	Infit	Facil	Disc	Label	Locn	SE	Infit	Facil	Disc	
n3q06	-1.754	0.047	0.94	82.11	1.06	n5q02	-2.794	0.067	0.93	92.72	1.04	Y
n3q09	-0.806	0.039	0.94	67.71	1.16	n5q04	-2.083	0.056	0.87	87.08	1.15	Y
n3q11	-1.081	0.041	1.05	72.4	0.9	n5q06	-2.003	0.049	1.05	86.29	0.92	Y
n3q13	-0.389	0.038	1.05	60.02	0.87	n5q07	-1.482	0.046	0.94	80.07	1.09	Y
n3q16	0.022	0.037	1.08	51.94	0.8	n5q09	-1.341	0.043	0.98	78.13	1.04	Y
n3q17	0.149	0.037	1.11	49.45	0.68	n5q11	-0.98	0.041	0.91	72.53	1.2	Y
n3q19	0.571	0.037	1.05	41.13	0.84	n5q12	-1.154	0.042	0.94	75.35	1.11	N
n3q20	0.32	0.037	1.08	46.06	0.78	n5q17	-0.378	0.038	1.12	61.7	0.64	N
n3q21	0.75	0.038	1.2	37.7	0.45	n5q19	-0.128	0.037	1.11	56.79	0.67	Y
n3q23	1.34	0.04	1.12	27.3	0.73	n5q22	0.278	0.037	1.07	48.66	0.77	Y
n3q26	1.291	0.04	1.06	28.15	0.83	n5q23	0.291	0.037	1.01	48.41	0.98	Y
n3q33	2.554	0.058	0.87	12.01	1.15	n5q29	0.765	0.038	0.93	39.04	1.2	N
n3q34	3.195	0.063	1.04	7.21	0.93	n5q35	2.082	0.046	1.02	17.79	0.93	Y

**Table L.11 Numeracy Year 5 to Year 7**

Year 5						Year 7						Retained
Label	Locn	SE	Infit	Facil	Disc	Label	Locn	SE	Infit	Facil	Disc	
n5q13	-0.656	0.039	1.01	66.9	1	n7NCq03	-1.642	0.043	1.03	77.33	0.96	Y
n5q14	-0.704	0.039	1.05	67.78	0.91	n7NCq04	-1.81	0.044	1	79.72	1.01	Y
n5q15	-0.391	0.038	0.92	61.96	1.26	n7NCq06	-1.471	0.042	0.94	74.78	1.11	Y
n5q20	0.417	0.037	1.12	45.86	0.6	n7NCq08	-0.866	0.039	1.01	64.53	0.98	Y
n5q21	-0.633	0.039	1	66.52	1.01	n7NCq09	-1.332	0.041	0.99	72.58	1.04	Y
n5q25	0.845	0.038	1.15	37.49	0.56	n7NCq19	-0.032	0.038	1.14	48.71	0.63	Y
n5q31	1.302	0.04	1.04	29.27	0.9	n7NCq21	0.499	0.039	1	38.71	0.99	Y
n5q33	1.599	0.041	1.07	24.48	0.83	n7NCq22	0.572	0.039	1.05	37.39	0.86	Y
n5q38	2.241	0.05	0.93	15.95	1.08	n7NCq25	0.835	0.04	0.96	32.79	1.07	N
n5q40	2.834	0.056	1.01	10.24	0.96	n7NCq31	1.659	0.045	1.04	20.48	0.9	Y

**Table L.12 Numeracy Year 7 to Year 9**

Label	Year 7					Label	Year 9					Retained
	Locn	SE	Infit	Facil	Disc		Locn	SE	Infit	Facil	Disc	
n7CAq01	-2.723	0.059	0.88	89.57	1.13	n9CAq01	-3.185	0.08	0.85	93.64	1.14	Y
n7CAq02	-2.06	0.048	0.87	82.82	1.16	n9CAq03	-2.489	0.056	0.89	88.68	1.1	Y
n7CAq06	-1.299	0.04	1.18	71.93	0.64	n9CAq05	-1.267	0.04	1.13	73.37	0.74	N
n7CAq11	-0.654	0.038	1.1	60.49	0.77	n9CAq12	-0.975	0.039	1.02	68.49	0.98	Y
n7CAq14	0	0.038	1	47.94	0.98	n9CAq13	-0.625	0.037	1.03	62.15	0.94	Y
n7CAq15	-0.035	0.038	1.06	48.61	0.84	n9CAq14	-0.594	0.038	0.93	61.58	1.2	Y
n7CAq19	0.528	0.039	1.03	38.03	0.89	n9CAq16	-0.043	0.037	0.99	50.96	1.02	Y
n7CAq20	0.469	0.039	1.07	39.1	0.86	n9CAq17	-0.02	0.037	0.92	50.5	1.22	Y
n7CAq30	2.649	0.058	1	10.45	0.98	n9CAq27	1.9	0.047	0.92	18.59	1.09	Y
n7CAq32	2.792	0.064	0.93	9.42	1.03	n9CAq30	2.319	0.054	0.88	14	1.09	Y
n7NCq01	-1.868	0.045	1.04	80.47	0.96	n9nCq02	-2.012	0.048	0.99	83.81	1.03	Y
n7NCq13	-0.622	0.038	1.26	60.02	0.28	n9nCq06	-0.896	0.038	1.16	67.1	0.62	Y
n7NCq14	-0.817	0.039	1.12	63.67	0.72	n9nCq10	-1.126	0.039	1.05	71.11	0.9	Y
n7NCq15	-0.426	0.038	1.05	56.33	0.88	n9nCq11	-0.959	0.038	0.99	68.25	1.01	Y
n7NCq18	-0.285	0.038	1.09	53.61	0.73	n9nCq12	-0.744	0.038	1.07	64.41	0.81	Y
n7NCq24	0.489	0.039	0.95	38.9	1.1	n9nCq19	0.47	0.038	0.93	41.1	1.14	N
n7NCq28	1.596	0.045	0.97	21.31	1	n9nCq27	1.026	0.04	0.97	31.22	1.01	Y
n7NCq32	2.65	0.067	0.82	10.5	1.17	n9nCq29	1.917	0.048	0.83	18.63	1.21	N

## APPENDIX M. REGRESSION INDICATORS TO OBTAIN PLAUSIBLE VALUES

**Table M.1 Non-Writing Regression Indicators to Obtain Plausible Values: Grade 3**

Grade	TAA	Regression Indicator
3	1	geo1, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	2	geo1, geo3, geo4, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parented, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	3	geo3, geo4, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	4	geo1, geo3, geo4, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	5	geo1, geo3, geo4, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	6	geo1, geo3, geo4, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	7	geo1, geo3, sectorc, sectori, gender2, atsi123, atsim, lbotey, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	8	geo1, geo3, geo4, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle

*Note 1.* geo=School Geolocation; sector= School Sector; ats=Indigenous Status; lbote= Indicator for Language Background Other Than English; partented=Parental Education; parentocc= Parental Occupations

*Note 2.* ReadingWLE= Reading Logit Score as continuous variable

**Table M.2 Non-Writing Regression Indicators to Obtain Plausible Values: Grade 5**

Grade	TAA	Regression Indicator
5	1	geo1, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	2	geo1, geo3, geo4, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	3	geo3, geo4, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	4	geo1, geo3, geo4, sectorc, sectori, gender2, atsi123, atsim, lbotey, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	5	geo1, geo3, geo4, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	6	geo1, geo3, geo4, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	7	geo1, geo3, sectorc, sectori, gender2, atsi123, atsim, lbotey, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	8	geo1, geo3, geo4, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle

*Note 1.* geo=School Geolocation; sector= School Sector; ats=Indigenous Status; lbotey= Indicator for Language Background Other Than English; parented=Parental Education; parentocc= Parental Occupations

*Note 2.* ReadingWLE= Reading Logit Score as continuous variable

**Table M.3 Non-Writing Regression Indicators to Obtain Plausible Values: Grade 7**

Grade	TAA	Regression Indicator
7	1	sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	2	geo1, geo3, geo4, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	3	geo3, geo4, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	4	geo1, geo3, geo4, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	5	geo1, geo3, geo4, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	6	geo1, geo3, geo4, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	7	geo1, geo3, sectorc, sectori, gender2, atsi123, atsim, lbotey, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	8	geo1, geo3, geo4, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle

*Note 1.* geo=School Geolocation; sector= School Sector; ats=Indigenous Status; lbotey= Indicator for Language Background Other Than English; parented=Parental Education; parentocc= Parental Occupations

*Note 2.* ReadingWLE= Reading Logit Score as continuous variable

**Table M.4 Non-Writing Regression Indicators to Obtain Plausible Values: Grade 9**

Grade	TAA	Regression Indicator
9	1	Sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	2	geo1, geo3, geo4, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	3	geo3, geo4, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	4	geo1, geo3, geo4, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	5	geo1, geo3, geo4, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	6	geo1, geo3, geo4, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	7	geo1, geo3, sectorc, sectori, gender2, atsi123, atsim, lbotey, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle
	8	geo1, geo3, geo4, sectorc, sectori, gender2, atsi123, atsim, lbotey, lbotem, parented3, parented4, parented5, parented6, parentedm, parentocc1, parentocc3, parentocc4, parentocc8, parentocc9, Readingwle

*Note 1.* geo=School Geolocation; sector= School Sector; ats=Indigenous Status; lbotey= Indicator for Language Background Other Than English; parented=Parental Education; parentocc= Parental Occupations

*Note 2.* ReadingWLE= Reading Logit Score as continuous variable

**Table M.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