TECHNICAL ANALYSIS

PENNSYLVANIA
SYSTEM OF SCHOOL ASSESSMENT

2004 READING AND MATHEMATICS PSSA

DATA RECOGNITION CORPORATION

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THE PENNSYLVANIA SYSTEM OF SCHOOL ASSESSMENT 2004

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Chapter 1: Introduction

PSSA: THE PENNSYLVANIA SYSTEM OF SCHOOL ASSESSMENT

The purposes of the 2004 statewide assessment component of the Pennsylvania System of School Assessment, as specified in the new Chapter 4 Regulations, include providing:

(1) an understanding of the students' and schools' achievement of the academic standards to students, parents, educators and community citizens,
(2) a measure of the degree to which school programs enable students to attain the academic standards,
(3) results to school districts, charter schools and AVTSs, Intermediate Units, Private Residential Rehabilitative Institutions, Approved Private Schools, Non-public and private schools for use in their strategic plans,
(4) information to the general public and state policymakers regarding school achievement of the academic standards, and
(5) aggregated results for all students as well as for Individualized Education Plan (IEP) and non-IEP students.

The broad purpose of the State Assessments is to provide information to teachers and schools to guide the improvement of curricula and instructional strategies to enable students to achieve the academic standards. The areas assessed in 2004 are mathematics and reading at grades 5, 8 and 11. *The Department strongly discourages the use of this testing information for "ranking" schools.*

MATHEMATICS ASSESSMENT MEASURES

The PSSA mathematics assessment employs two types of test items: multiple-choice and open-ended. These provide differing types of information about mathematics achievement.

Multiple-Choice Items

The majority of the mathematics items included in the PSSA are multiple-choice items. Multiple-choice items are also called "selected-response" since students choose their answers from the list provided. Such items are an efficient means of assessing a broad range of curriculum. They are relatively easy to develop and to administer in a group setting. They have proved particularly efficient in terms of amount of information gain per unit of testing time.

In the PSSA mathematics assessment, all multiple-choice items have only one correct response choice and the student is awarded one point for choosing it. For all items, students are provided with four response choices.

Multiple-choice items can be used to assess a variety of skill levels, from short-term recall of facts to problem solving. The great majority of the PSSA multiple-choice mathematics items require students to carry out some process to find their answers, rather than simply recalling

information from memory.

Open-Ended Tasks

Open-ended tasks require students to read a problem description and to write detailed solutions. Major components of such answers are clear presentations of the computations and explanations of the steps involved in the solution. The types of tasks utilized do not necessarily require computations. Students may also be asked to perform such tasks as drawing a graph, shading some portion of a figure or listing object combinations that meet specified criteria.

Open-ended tasks are especially useful for measuring students' problem-solving skills in mathematics. The tasks present real-life situations that require students to solve problems using math abilities learned in the classroom. Students must read the task carefully, identify the necessary information, devise a method of solution, perform the calculations, enter the solution directly in the booklet and explain the procedure to support the response. This provides insight into the students' mathematical knowledge, abilities and reasoning processes.

Open-ended tasks are scored manually on a five-point continuum of *correctness*. This continuum is defined by a *rubric*, which outlines the general requirements at each scale point. Scoring guidelines based upon the general rubric are developed to score individual items. The rubric approach to scoring has made it possible to include open-ended tasks in large-scale assessments, such as the PSSA. Readers who have received training in applying the rubric can score large numbers of student papers in a highly reliable way.

READING ASSESSMENT MEASURES

The PSSA reading assessment employs two types of test items: multiple-choice and performance tasks. They are designed to measure students' comprehension of the information contained in the reading passages.

Multiple-Choice Items

Multiple-choice items measure such concepts as how well students comprehend the overall meaning of a passage or make basic inferences about it. At times, asking students to choose a preferred answer is the best way to determine whether they have gleaned certain important information from a story. Such information may include setting, central idea or main events and their chronology.

S*ingle-response multiple-choice* items are the familiar four response choices with one correct answer type. The student is awarded one score point for choosing the correct response. Distractors appeal to some kind of misinterpretation, predisposition, unsound reasoning or casual reading.

Performance Tasks

Performance tasks are designed to address comprehension of text in ways that multiple-choice items cannot. A written response allows students to reflect on what they have read, integrate

prior knowledge with text-based information, extend meaning and express their ideas.

These tasks are scored using the **Pennsylvania Reading Assessment Rubric**. This four-point scoring rubric describes a range of performance requirements at each level from minimal to very accomplished. Each task is carefully constructed to reflect the scoring rubric and to be text-dependent. Students may have the Pennsylvania Reading Assessment Rubric when responding to a performance task.

The rubric approach to scoring has made it possible to include performance tasks in large-scale reading assessments, such as the PSSA. The rubric approach also provides a highly reliable way to score a large number of student papers by readers who have received training in applying the rubric.

The rubric describes a hierarchy of responses containing each of the following three elements:

- *Understanding of the text* is demonstrated through a response that is both text-based and factual.

- *Level of comprehension of the text* is demonstrated through levels of thinking, from literal to personal, critical or evaluative responses.

- *Connection to the text* is demonstrated through responses that make connections to and go beyond the text.

MATRIX SAMPLING ASSESSMENT DESIGN

The PSSA was originally designed as a complex matrix-sampling scheme, which was very efficient for measuring *school-level* performance but less efficient for providing *student-level* assessments and diagnostics. In this design, there are a *common* core of items to which all students respond and blocks of *matrix* items that vary by form. The matrix forms are *spiraled* within classrooms so that all forms are distributed uniformly within each classroom. This ensures that each matrix form is administered to an unbiased and sequentially random sample of students in each school. Since multiple forms are administered within each classroom, this allows the assessment to cover a wide range of topics at the classroom level.

Both the common and matrix sections of the PSSA use traditional multiple-choice items and open-ended performance tasks. Psychometrically, multiple-choice items are very useful and efficient tools for collecting information about a student's academic status. Open-ended performance tasks are less efficient in the sense that they generate fewer scoreable points in the same amount of testing time. They do, however, provide tasks that are more realistic and better sample the higher-level skills. The design of the PSSA attempts to achieve a reasonable balance between the two formats.

The design changes that began to take effect with the Spring 2000 administration shifted the focus of the measurement toward the student and away from the school. Beginning in 2000, student-level results were reported on the **Individual Student Report** (ISR) with diagnostic

results at the ***academic content standard*** level. All student-level results are based on the common items only and presented in the raw-score percent-correct metric only[1]. In order to accommodate this change in focus, the common section has been expanded to better reflect the curriculum. Unfortunately, to administer the tests in a reasonable length of time, enhancing the common sections came at the expense of the matrix sections.

The PSSA design is an attempt to have the best of both worlds:

- All student-level results are based on the common core of items that all students in a grade were administered. This ensures that all students are evaluated using the same set of items.

- School-level content area total score results are based on the mean of the student-level scaled scores. This ensures that the results used for school accountability directly reflect the student-level results.

- School-level results at the content standard (academic standards category) level, are based on the common items together with all items on the matrix forms. This insures that decisions regarding potential strengths and weaknesses better sample the entire curriculum.

Unfortunately, these dual objectives require some compromise:

- Many of the content standards are assessed with a minimal number of items. This is especially true at the student level. Consequently, scores reported for the academic standards categories in any metric would have large standard errors and are at risk of over-interpretation.

RECENT CHANGES

A minimum scale score of 700 was implemented for all PSSA reading, mathematics and writing exams in 2002. This minimum is being applied for all the PSSA scales. It affects very few students, but some schools felt they were being penalized by the presence of some exceptionally low scoring special needs students who took the regular assessment. The change was made to reduce the impact of these students on the overall school score.

The following tables show how the two item types and the content standards are distributed across forms. Form W refers to the common sections and was the given to all students. Forms A through F for reading and mathematics are the matrix sections and each student took one of these forms in reading and one in mathematics**.**

[1] While the student-level scaled scores are not reported on the ISR, they are used for many of the underlying calculations.

Table 1.1: 2004 PSSA Grade Five Reading

Distribution of Items and Tasks by Content Standards											
2003 Form	Standard	MC	Open Ended	Total Tasks	Total Points	2003 Form	Standard	MC	Open Ended	Total Tasks	Total Points
A	1	10		10	10	E	1				
	2	6		6	6		2	24	1	25	28
	3	2	1	3	6		3	2		2	2
	7	4		4	4		7				
	8	4		4	4		8				
B	1	10		10	10	F	1				
	2	6		6	6		2	24	1	25	28
	3	2	1	3	6		3	2		2	2
	7	4		4	4		7				
	8	4		4	4		8				
C	1	7		7	7	W	1	13		13	13
	2	8		8	8		2	11		11	11
	3	3	1	4	7		3	12	2	14	20
	7	4		4	4		7	8		8	8
	8	8		8	8		8	8		8	8
D	1	7		7	7						
	2	8		8	8						
	3	3	1	4	7						
	7	4		4	4						
	8	4		4	4						

Table 1.2: 2004 PSSA Grade Eight Reading

Distribution of Items and Tasks by Content Standards											
2003 Form	Standard	MC	Open Ended	Total Tasks	Total Points	2003 Form	Standard	MC	Open Ended	Total Tasks	Total Points
A	1	14		14	14	E	1				
	2	5		5	5		2	32	1	33	36
	3	6	1	7	10		3	4		4	4
	7	5		5	5		7				
	8	6		6	6		8				
B	1	14		14	14	F	1		1	1	4
	2	5		5	5		2	32		32	32
	3	6	1	7	10		3	4		4	4
	7	5		5	5		7				
	8	6		6	6		8				
C	1	14		14	14	W	1	14		14	14
	2	6		6	6		2	13		13	13
	3	4	1	5	8		3	21	2	23	29
	7	6		6	6		7	12		12	12
	8	6		6	6		8	12		12	12
D	1	14		14	14						
	2	6		6	6						
	3	4	1	5	8						
	7	6		6	6						
	8	6		6	6						

Table 1.3: 2004 PSSA Grade Eleven Reading

Distribution of Items and Tasks by Content Standards

2003 Form	Standard	MC	Open Ended	Total Tasks	Total Points	2003 Form	Standard	MC	Open Ended	Total Tasks	Total Points
A	1	13		13	13	E	1				
	2	7		7	7		2	40	1	41	44
	3	4	1	5	8		3				
	7	8		8	8		7				
	8	8		8	8		8				
B	1	13		13	13	F	1				
	2	7		7	7		2	40	1	41	44
	3	4	1	5	8		3				
	7	8		8	8		7				
	8	8		8	8		8				
C	1	15		15	15	W	1	26		26	26
	2	7		7	7		2	10		10	10
	3	3	1	4	7		3	13	2	15	21
	7	7		7	7		7	14		14	14
	8	8		8	8		8	17		17	17
D	1	15		15	15						
	2	7		7	7						
	3	3	1	4	7						
	7	7		7	7						
	8	8		8	8						

Table 1.4: 2004 PSSA Grade Five Mathematics

Distribution of Items and Tasks by Content Standards

2003 Form	Standard	MC	Open Ended	Total Tasks	Total Points	2003 Form	Standard	MC	Open Ended	Total Tasks	Total Points
A	1	4		4	4	E	1	3		3	3
	2	3		3	3		2	2		2	2
	3	2		2	2		3	2		2	2
	4						4	2		2	2
	5						5				
	6	1	1	2	6		6	1		1	1
	7	1		1	1		7				
	8	2		2	2		8	1		1	1
	9	1		1	1		9	3	1	4	6
	10						10	1		1	1
	11	1		1	1		11				
B	1	4		4	4	F	1	2		2	2
	2	3		3	3		2	3		3	3
	3	2		2	2		3	2		2	2
	4						4	1	1	2	6
	5						5				
	6	1		1	1		6	2		2	2
	7	1	1	2	6		7				
	8	2		2	2		8	1		1	1
	9	1		1	1		9	3		3	3
	10						10	1		1	1
	11	1		1	1		11				
C	1	2		2	2	W	1	15		15	15
	2	3	1	4	8		2	15		15	15
	3	2		2	2		3	5	1	6	10
	4	1		1	1		4	5		5	5
	5						5				
	6	2		2	2		6	3	1	4	8
	7	1		1	1		7	5		5	5
	8	1		1	1		8	7		7	7
	9	2		2	2		9	5	1	6	10
	10	1		1	1		10	5		5	5
	11						11	5		5	5
D	1	3		3	3						
	2	2		2	2						
	3	2		2	2						
	4	1	1	2	6						
	5										
	6	2		2	2						
	7	1		1	1						
	8	1		1	1						
	9	2		2	2						
	10	1		1	1						
	11										

Table 1.5: 2004 PSSA Grade Eight Mathematics

Distribution of Items and Tasks by Content Standards

2003 Form	Standard	MC	Open Ended	Total Tasks	Total Points	2003 Form	Standard	MC	Open Ended	Total Tasks	Total Points
A	1	4		4	4	E	1	1		1	1
	2	2	1	3	7		2	1		1	1
	3	2		2	2		3	3		3	3
	4	1		1	1		4	1		1	1
	5						5				
	6	1		1	1		6	1		1	1
	7	1		1	1		7	2		2	2
	8	3		3	3		8	2		2	2
	9						9	2	1	3	7
	10						10	1		1	1
	11	1		1	1		11	1		1	1
B	1	2		2	2	F	1	1		1	1
	2	3		3	3		2	2	1	3	7
	3	2		2	2		3	2		2	2
	4	1		1	1		4	1		1	1
	5						5				
	6	1		1	1		6	1		1	1
	7	1	1	2	6		7	1		1	1
	8	3		3	3		8	2		2	2
	9	1		1	1		9	2		2	2
	10						10	2		2	2
	11	1		1	1		11	1		1	1
C	1	1		1	1	W	1	10		10	10
	2	2		2	2		2	10		10	10
	3	2		2	2		3	5	1	6	10
	4	1		1	1		4	5		5	5
	5						5				
	6	1		1	1		6	5	1	6	10
	7	1		1	1		7	5		5	5
	8	3	1	4	8		8	10	1	11	15
	9	1		1	1		9	10		10	10
	10	2		2	2		10	5		5	5
	11	1		1	1		11	5		5	5
D	1	1		1	1						
	2	2		2	2						
	3	3		3	3						
	4										
	5										
	6	2	1	3	7						
	7	1		1	1						
	8	2		2	2						
	9	1		1	1						
	10	2		2	2						
	11	1		1	1						

Table 1.6: 2004 Grade Eleven Mathematics

Distribution of Items and Tasks by Content Standards											
2003 Form	Standard	MC	Open Ended	Total Tasks	Total Points	2003 Form	Standard	MC	Open Ended	Total Tasks	Total Points
A	1	1		1	1	E	1	2		2	2
	2	1		1	1		2	2		2	2
	3	1		1	1		3				
	4	2		2	2		4	1		1	1
	5						5				
	6	2		2	2		6	2		2	2
	7	1		1	1		7	2		2	2
	8	4		4	4		8	3		3	3
	9	2	1	3	7		9	2	1	3	7
	10						10	1		1	1
	11	1		1	1		11				
B	1	1		1	1	F	1	2		2	2
	2	2		2	2		2	2		2	2
	3	1	1	2	6		3	1		1	1
	4						4				
	5						5				
	6	2		2	2		6	3		3	3
	7	1		1	1		7	1		1	1
	8	4		4	4		8	3	1	4	8
	9	2		2	2		9	2		2	2
	10						10	1		1	1
	11	2		2	2		11				
C	1	1		1	1	W	1	5		5	5
	2	2		2	2		2	10		10	10
	3	1		1	1		3	5		5	5
	4						4	5		5	5
	5						5				
	6	3		3	3		6	5	1	6	10
	7	1		1	1		7	5		5	5
	8	4		4	4		8	14	1	15	18
	9	2	1	3	7		9	11	1	12	15
	10	1		1	1		10	5		5	5
	11						11	5		5	5
D	1	1		1	1						
	2	3	1	4	8						
	3										
	4	1		1	1						
	5										
	6	2		2	2						
	7	1		1	1						
	8	4		4	4						
	9	3		3	3						
	10										
	11										

Chapter 2: Form Analysis and Item Calibration

TEST FORM STATISTICS

The table below contains an overview of the form-level data. Test length (L), mean number of points received (P), typical test reliability (R) and typical standard error of measurement (SEM) are shown for each form by grade and content area. These statistics are based on the total test using both multiple-choice and open-ended tasks and both common and matrix sections for each form. The test lengths pertain to the data used for school-level estimates and not for student-level results.

The test reliability can be thought of as the correlation between scores if the students could be tested twice with the same instrument without the second testing being affected by the first. It is computed as the ratio of the variance associated with true scores divided by the total variance. The total variance contains a component due to the variance in true scores and a component due to the imperfections in the measurement process.

The *standard error of measurement* is another indicator of precision. If everyone being tested had the same *true score*[1], there would still be some variation in observed scores due to imperfections in the measurement process. These may be random differences in attention during instruction or concentration during testing. Or perhaps differences could arise because of problems with the wording of the items or layout of the answer sheet. The standard error is the *standard deviation*[2] of the distribution of observed scores for students with identical true scores. Both reliability and the standard error increase with test length; although, it is not the sole determinant in either case. Comparing the information in Table 2-1 and Table 2-2 should give some insight into the complexities and tendencies of these statistics.

Table 2-1: 2004 Summary Matrix Form Performances

	Mathematics				Reading			
Grade	**L**	**P**	**R**	**SEM**	**L**	**P**	**R**	**SEM**
05	105	69	.95	4.9	90	62	.94	4.0
08	105	63	.95	5.3	120	82	.95	4.7
11	105	56	.95	5.4	132	88	.96	5.1

The Student-Level Scaled Scores were estimated using the common items only. This resulted in shorter test lengths and, therefore, slightly lower form reliabilities. The following table pertains to the common-item measures.

[1] True score is the score the person deserves and would actually receive if the measurement process were perfect.

[2] The standard deviation of a distribution is a measure of the dispersion of the observations. For the normal distribution about 16% of the observations are more than one standard deviation above the mean and the same percentage are more than one standard deviation below the mean. To illustrate, using the data in table 2.1, about 68% of students with true scores of 70 will have observed scores between 65 and 75.

Table 2-2: 2004 Summary of Common Item Performances

	Mathematics				Reading			
Grade	**L**	**P**	**R**	**SEM**	**L**	**P**	**R**	**SEM**
05	85	57	.94	4.4	60	41	.91	3.3
08	85	51	.94	4.7	80	55	.93	3.8
11	85	46	.94	4.8	87	59	.95	4.2

Appendix A presents detailed descriptions of the performance of each form by grade and content area.

The standard deviation shown in the table is the standard deviation of observed scores. Assuming normally distributed scores, one would expect about two-thirds of the observations to be within one standard deviation of the mean. An estimate of the standard deviation of the true scores can be computed as the sqrt{(SD*SD) – (SE*SE)}. For grade 5 mathematics, this would be sqrt{(17.2*17.2)-(4.4*4.4)} = 16.6.

The reliability can also be computed from these data. Again for grade 5 mathematics common, R={(17.2*17.2)-(4.4*4.4)}/(17.2*17.2) = 0.93.

TRADITIONAL ITEM STATISTICS

Although all items had been reviewed several times, a thorough item analysis was conducted to ensure that the items and forms performed as expected. With any psychometric model, an item analysis is a search for unexpected results. In general, *more able*[3] students are expected to pass easy items and *less able* students are expected to fail difficult items. If either of these situations does not occur, the item should be reviewed once more to determine the nature of the problem and the characteristics of the students affected.

The most familiar indices of item performance are *proportion correct* (p-value) and item reliability. Reliability for dichotomous items is typically represented by the *point biserial correlation* coefficient. This statistic will be positive if the total test mean score is higher for the students who respond correctly to the item than for the students who respond incorrectly. Hence, the correlation will be low if there is a *more able* way to fail the item or a *less able* way to pass it.

The p-value is a subtler indicator of item quality, but the value should be appropriate for the item. If there is a *more able* way to miss an item, the item will appear more difficult than the underlying problem. Conversely, if there is a *less able* way to pass the item, it may appear surprisingly easy.

Table 2-3 gives the mean p-value and point biserial correlation (PtBis) for the multiple-choice items in each grade and content area as a frame of reference of evaluating items. The p-value is

[3] Following the Rasch literature, *ability* is used in this discussion as a generic term for the construct that is being measured by the exam. *Competence, achievement, learning* and *status* are among the alternatives that are sometimes used, but are all subject to some degree of misinterpretation.

the proportion of the students who responded correctly to an item. The point biserial correlation is the correlation between the student's score on the item (zero or one) and the score on the total test. This can be computed as the familiar Pearson product-moment correlation, but because the item score is a dichotomous variable, the formula can be written in a simpler form.

The point biserial correlation is also called the item reliability. The correlation will have a positive value when the mean score of the students answering correctly is higher than the mean score of the students answering incorrectly. This is a very reasonable requirement since it indicates that students who did well on the total test tended to do well on this item. The index will take its maximum theoretical value of 1.0 if *every* student who answered the item correctly scored better on the test than *any* student who answered incorrectly[4].

In general, with the mean p-values in the low 0.56 to .70 range, the PSSA was quite challenging to most students. With the average point biserial correlations near 0.4, the overall item quality was quite good.

Table 2-3: Typical Form Statistics by Grade and Content

	Mathematics		Reading	
Grade	**P-value**	**PtBis**	**P-value**	**PtBis**
05	.72	.43	.72	.42
08	.66	.43	.72	.38
11	.60	.42	.71	.41

The item level analyses done for the PSSA also included the percent of students selecting each incorrect response (foil) and the correlation between selecting a response and total test score. This information (included in the appendices) is useful in helping item writers and editors understand the item's behavior. The percent selecting each response is an indicator of which foils are particularly attractive.

The correlations by response are a further refinement on this idea. They indicate which responses are attractive to high scoring students and which to low scoring students. The ideal pattern would be a *strong* positive correlation for the correct response and *strong* negative correlations for the incorrect responses. This pattern would indicate that the incorrect responses tend to attract students who tended to do less well on the total test. Consequently, one could conclude that the item is measuring the same construct as is the test as a whole.

RASCH ITEM STATISTICS AND EQUATING

WINSTEPS© software implementing the Rasch model was used to obtain estimates of logit difficulties for both dichotomously- and polychotomously-scored items. The parameters estimated for polychotomous items are the *step difficulties* associated with the Masters Partial

[4] It is legitimate to view the point biserial correlations as standardized means. A positive value means students who chose that response had a higher mean score than the average student; a negative value means students who chose that response had a lower than average mean score.

Credit model. This software is capable of handling all the item types currently in use with the PSSA.

Rather than percent correct, the Rasch model expresses item difficulty (and student ability) in units typically referred to as *logits*. In the simplest case, a logit is a transformed p-value with the average p-value becoming a logit of zero. In this form, logits resemble z-scores or standard normal deviates; a very difficult item might have a logit of +4 and a very easy item might have a logit of –4. They actually have no formal relationship to the normal distribution.

The logit metric has several mathematical advantages over p-values. It is an interval scale meaning two items with logits of zero and one are the same distance apart as items with logits of +3 and +4. Logits are not dependent on the ability level of the students. A specific form will have a mean logit of zero, whether the average p-value of the sample is 0.8 or 0.3.

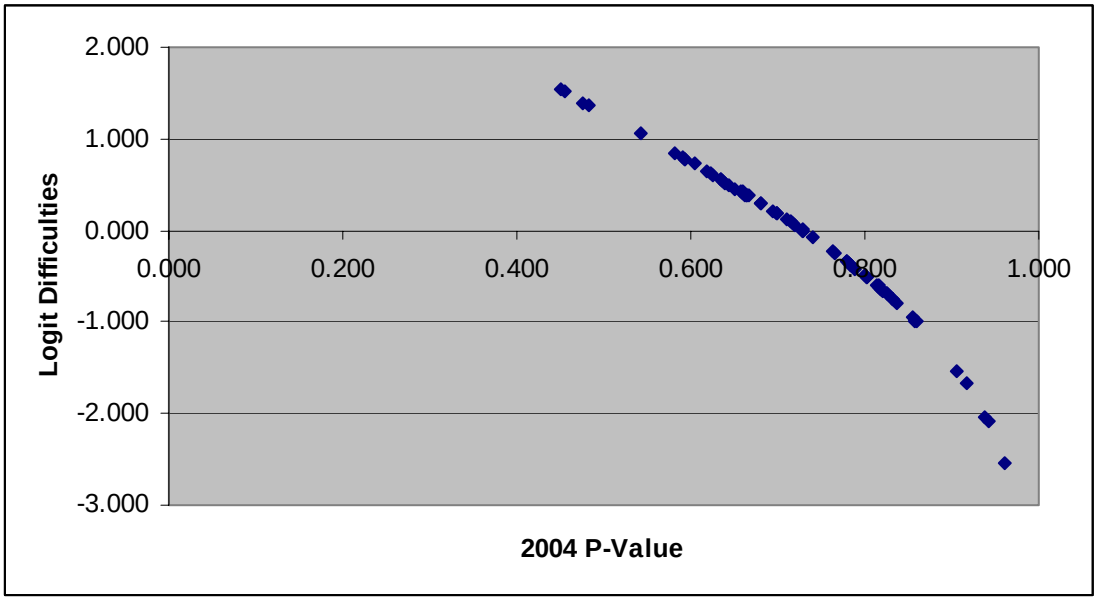
The standard Rasch calibration procedure arbitrarily sets the mean difficulty of the items on any form at zero. Any item with a p-value lower than the average item on the form receives a positive logit difficulty and any item with a p-value higher than the average receives a negative logit. Consequently, the logits for any calibration, whether it is a third grade reading test or a high school science test, relate to an arbitrary origin defined by the center of items on that form. The average third grade reading item will have a logit of zero; the average high school science item will have a logit of zero. This applies to logits for both item difficulties and student abilities.

There are any number of other arbitrary choices that could be made for centering the item difficulties. Rather than using all the items, the origin could be defined by a subset. For the PSSA, all test forms in a particular grade and content area share a common block of items. The items on all forms can then be easily adjusted to a single (but still arbitrary) origin by defining the origin as the mean of the **common** items. With this done, the origins for all the forms will be statistically equal. Items on forms A and F that are equally difficult should now have equal logit difficulties.

Since the test forms were spiraled within classrooms, there are some cross checks that are made to ensure the calibrations and links are reasonable. First, because of the spiraling, each form will be administered to a *statistically equivalent* sample of students. Any differences in performance observed among the groups should be due only to differences in form difficulty. After linking, the mean and standard deviation of the logit abilities should be statistically equal for each sample of students.

Second, because of the equivalent samples, the common items should have the same p-values regardless of which form and sample is being considered. Finally, for all items, both common and matrix, a plot of the relationship between the p-value and the logit should fall along a single, curved line. Figure 2-1 plots this relationship for the grade five mathematics assessment. The curve is nearly linear in the center, but curves towards asymptotes of zero on the left and one on the right.

Figure 2-1: 2004 Grade 5 Mathematics P-Values versus Logit Difficulties



In theory, with the Rasch model, linking the exam for the current year to the exam for previous years is just as straightforward as linking forms within year. However, the student samples can not be assumed equivalent across years and identical items can have different properties in different years because of changes in the item's context or changes in the students' experiences. Consequently, between-year linking is somewhat less certain than within-year linking.

The link between years must be from items that are used in both years in approximately the same context. The *same context* in this situation means the items are not altered in any way, they appear in about the same position in the booklet, and they are administered at about the same time of day. PDE provides a code for each item as part of the answer key file that indicates the item's appropriateness for linking. Codes between 1 and 6 represent the gradation of the item's suitability. A code of '1' means the item text is identical and its sequence number has not changed by more than 2 or 3. A code of '5' means the item has been significantly revised. A code of '6' indicates a completely new item.

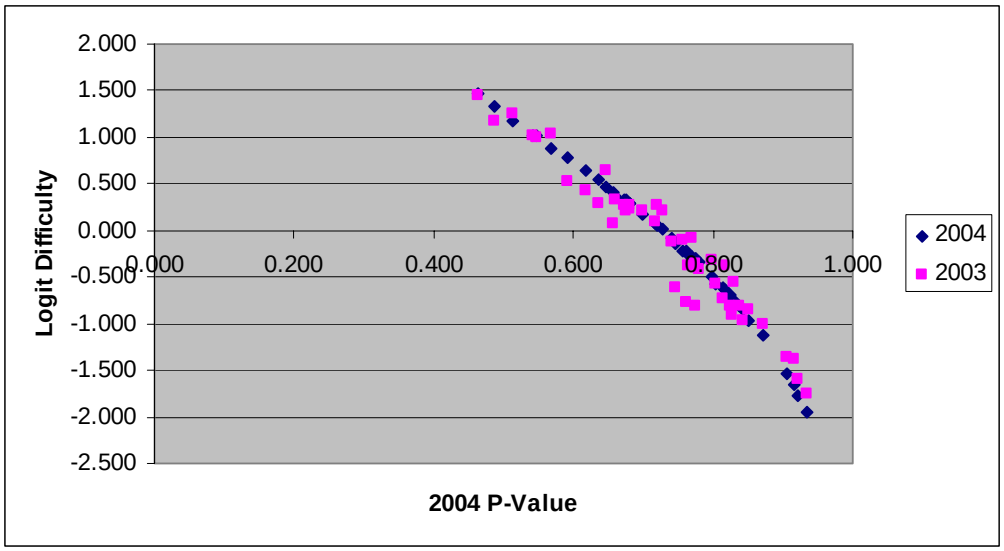
For *within-year* linking, the procedure is to link forms through the common section. The result is a bank of items with comparable logit difficulties. For *between-year* linking, the procedure is to link the current year's bank to the previous years' banks. Theoretically, the process is identical to within-year.

(1) Overlapping items are identified.
(2) Adjusting the logit difficulties (of all items) in the current year's bank so that the mean logit difficulty for the overlapping items is equal to the mean logit difficulty for the same items in the previous year's bank.
(3) Assess the validity of the link by identifying any items that do not maintain their relative position across years.

Figure 2-1 above shows the 2004 logit item difficulties for grade five mathematics plotted against their respective p-values. Since the equating process forces the 2004 logit difficulties for the linking items to have the same mean logit difficulty as the 2003 logit difficulties for these same items, the 2004 logits will be displaced from their estimates obtained from an independent calibration. The size of the displacements should correspond to the approximate size of the standard errors for the items.

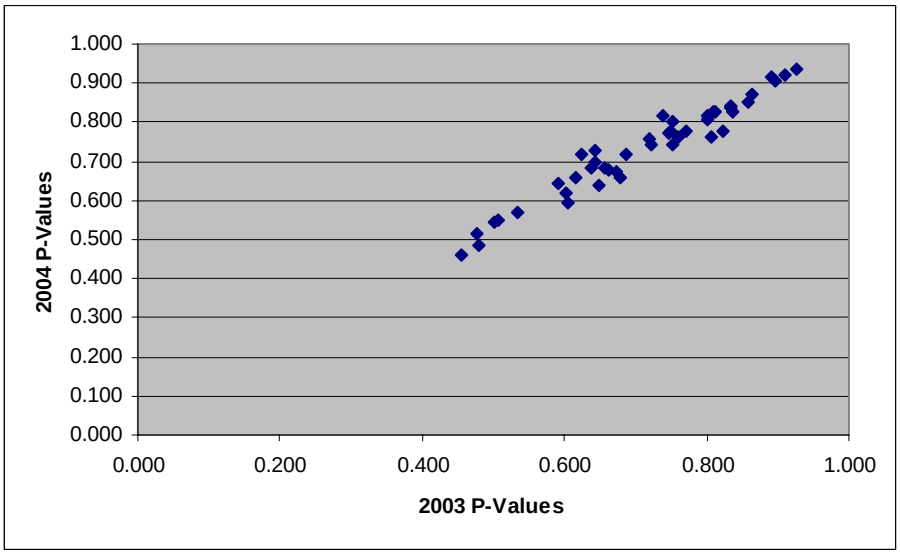
Plotting p-values against logit difficulties across year is not as reliable as it is within year. Using spiraled forms within year, a given p-value will translate to a given logit regardless of the form it is used on, within the limits of statistical precision. Within year, the p-value-to-logit plot should be a single curved line; between years, the plot could have separate lines for each year. The difference between the two lines is a reflection of the adjustment (positive or negative) that is required to equate the two item banks. This is the situation shown in Figure 2-2 (equated) with the curves using the square and the diamond plotting symbols.

Figure 2-2: 2003 versus 2004 Logit Difficulties (Equated)



The plot of the p-values for overlapping items from the two years can also be informative. If the p-values for the current year are systematically higher than for the same items last year, the scale scores should also show a systematic improvement after the two item banks have been properly linked. This is shown in Figure 2-3with the diamond-plotting symbol.

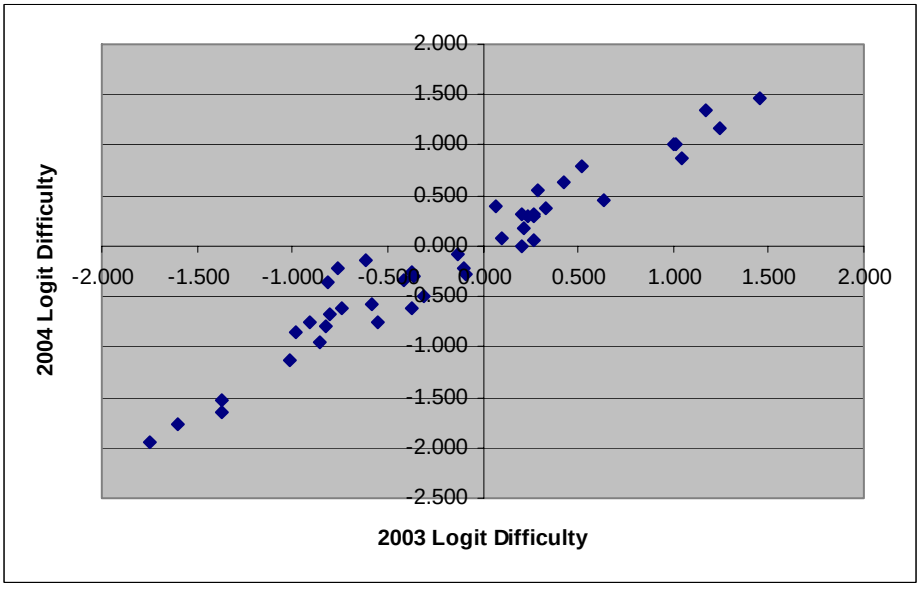
Figure 2-3: 2003 versus 2004 – Grade 5 Mathematics P-Values



There are some checks on the reasonableness of the linking process that can be performed. Item calibration should be invariant across years, except for an arbitrary location constant. When the logit difficulties of the overlapping items for the current year are plotted against their logit difficulties for a previous year, the result should be a straight line, whose width reflects the standard errors of estimation for the item difficulties. Identifying any outliers and recomputing the adjustment based on an edited set of overlapping items should improve the link.

Figure 2-4 below uses the same data as Figure 2-2 and 2-3, but focuses entirely on logit difficulties. It shows more clearly the relationship between 2003 logits and 2004 logits. There is a well-defined line with a few outliers. Since the plot shows the 2002 logits versus the *equated* 2003 logits, the line appears to pass through the origin.

Figure 2-4: 2003 versus 2004 – Grade 5 Mathematics Logit Difficulty



Chapter 3: Linking and Equating

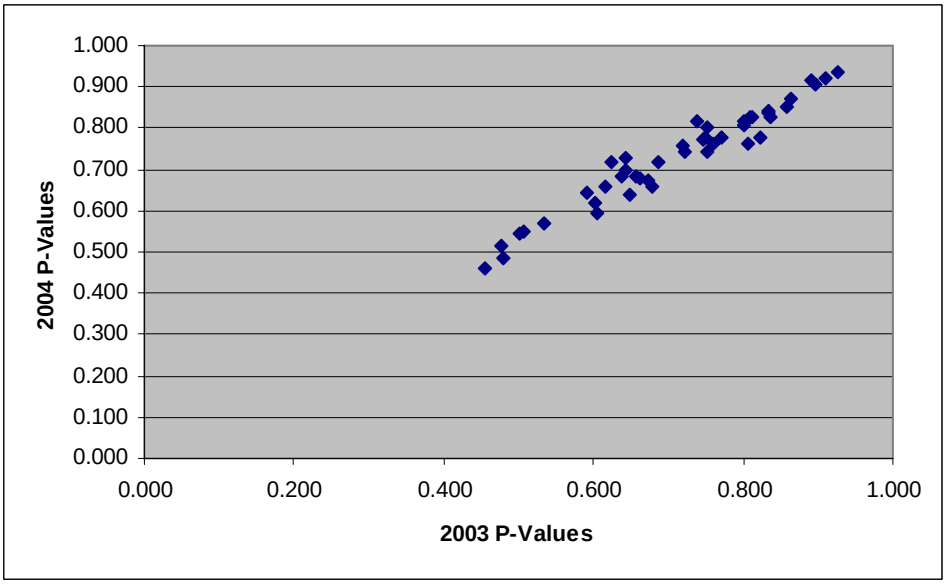
GRADE 5: MATHEMATICS

The traditional item statistics, percent correct and point biserial correlations displayed typical and reasonable distributions for Grade 5 Mathematics. These statistics were computed for each test form, with an average item p-value of 0.70 and a median point biserial correlation of 0.42.

The percent correct scores ranged from about 0.32 to about 0.97 with 84% of the p-values falling between 0.5 and 0.9, while 74% of the point biserial correlations fell between .3 and .5. Only two point biserial correlations were less than 0.2 – both of which were matrix items. It might be useful to investigate the items with correlations near 0.6 as they may be exemplars for what items should be, or they might be tapping some extracurricular experience primarily available to the better math students.

Figure 3.1 and Figure 3.2 contain several pieces of information for the items that were used to link the 2004 exam to the 2003 exam. The diagonal line, rising from left to right in Figure 3.1, shows the item p-values in the two years. One would expect the relationship to form a straight line with slope one. The extent to which the line does not pass through the origin indicates a change in student performance. For Grade 5 mathematics, there was little change in the p-values from year-to-year.

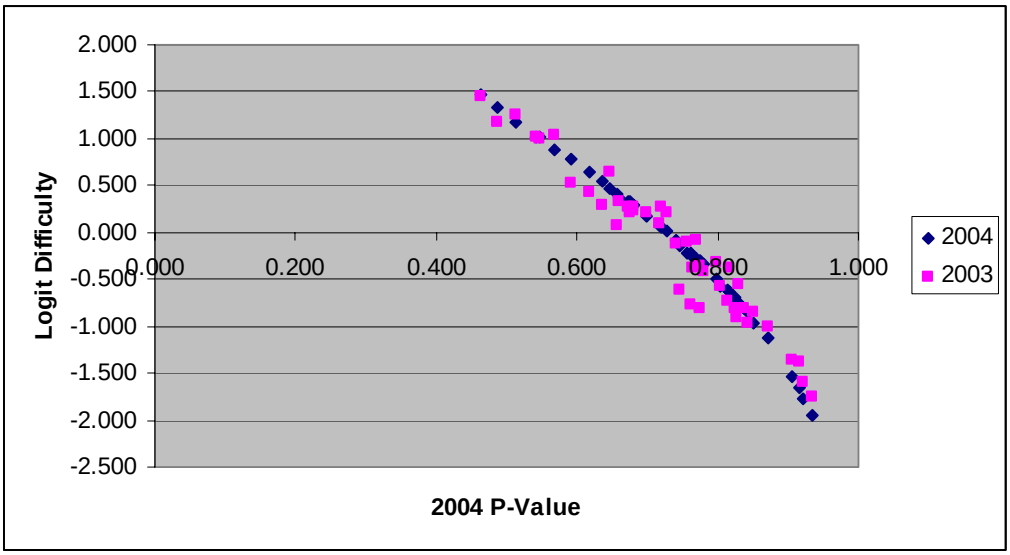
Figure 3-1: Grade Five Mathematics P-Values



In Figure 3.2, the two lines sloping downward toward the right relate item logit difficulties for the two years to the 2004 p-values. They show the curvilinear relationship required by the model with low p-values being translated into high logit difficulties and high p-values into low difficulties. The smoothness of this line indicates good agreement among the forms. Because

the forms were spiraled within classroom, the samples generated are randomly equivalent and one would expect the same p-value to translate into the same logit. This was the case with these data.

Figure 3-2: Grade Five Mathematics Logit Difficulties versus P-Values



GRADE 5: READING

The traditional item statistics, percent correct and point biserial correlations displayed typical and reasonable distributions for Grade 5 Reading. These statistics were computed for each test form, with an average item p-value of 0.71 and a median point biserial correlation of 0.43.

The percent correct scores ranged from 0.19 to 0.95, but 94% of the p-values were greater than 0.5. Most of the item point biserial correlations were between 0.3 and 0.6 with only three items with correlations below 0.2. It might be useful to investigate the items with correlations near 0.6 as they may be exemplars for what items should be, or they might be tapping some extracurricular experience primarily available to the better students. There was a consistent pattern of the lowest reliabilities being associated with the lowest p-values. Most, but not all, items in this region are matrix items.

Figure 3-3: Grade Five Reading P-Values

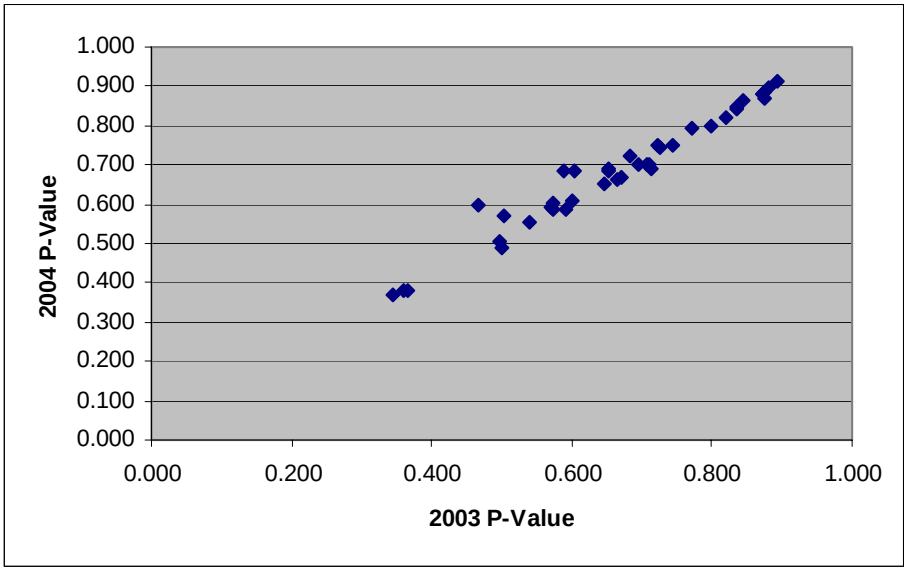
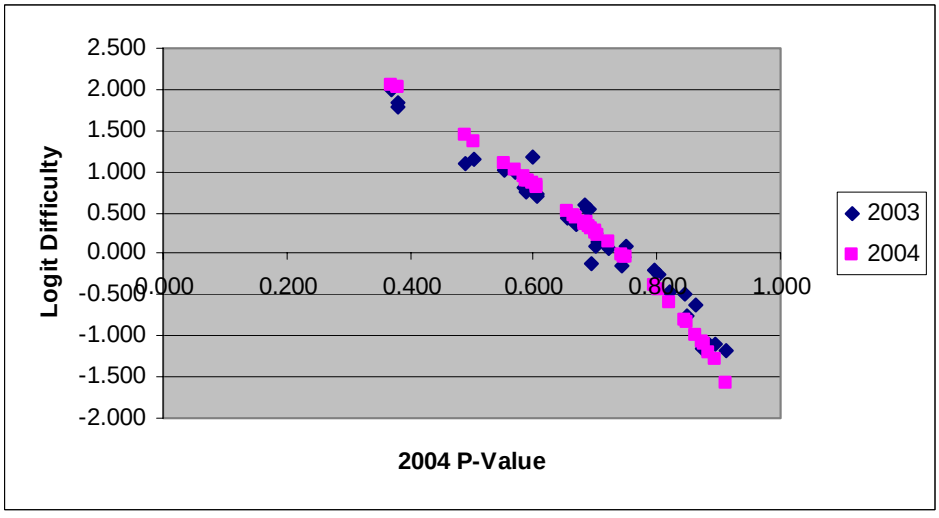


Figure 3.3 and Figure 3.4 contain several pieces of information for the items that were used to link the 2003 exam to the 2002 exam. The diagonal line, rising from left to right, shows the item p-values for the two years (the clusters of points reflect items which were used on multiple matrix forms). One would expect the relationship to form a straight line with slope one. The extent to which the line does not pass through the origin indicates a change in student performance. For Grade 5 reading, there was little change in the p-values from year to year.

Figure 3-4: Grade Five Reading Logit Difficulties versus P-Values



The two lines sloping downward toward the right relate item logit difficulties for the two years to the 2003 p-values. They show the curvilinear relationship required by the model with low p-values being translated into high logit difficulties and high p-values into low difficulties. The smoothness of this line indicates good agreement among the forms. Because the forms were

spiraled within classroom, the samples generated are randomly equivalent and one would expect the same p-value to translate into the same logit. This is the case with these data.

GRADES 8 AND 11

Across-year linking analyses were performed for Grades 8 and 11 in the same manner as for Grade 5. The results were similar to Grade 5 in the amount of noise present in the links. These studies are documented in separate link analyses in files maintained by DRC.

Chapter 4: Item Bias Review

Test item bias can present itself in a variety of ways in items: through the language, the format, the content, or the behaviors required. It can result from membership in a specific subpopulation or from factors correlated to the subpopulation. It can affect all members of the subpopulation, or it may affect only those in specific ranges of ability. How bias arises and how it presents itself clearly will affect how best to detect and correct it.

LIMITATIONS OF STATISTICAL DETECTION

No statistical procedure should be used as a substitute for rigorous, hands-on reviews by content and bias specialists. The statistical results can help to organize the review so the effort is concentrated on the most problematic cases; however, no items should be automatically rejected simply because some statistical method flagged them or accepted because they were not flagged.

Statistical detection of item bias is at best an inexact science. There has been a variety of methods proposed for detecting bias, but no one statistic to date can be considered either necessary or sufficient. Different methods are more or less successful depending on the situation and circumstances. No analysis can guarantee that a test is free of bias and almost any thoughtful analysis will uncover the most flagrant problems.

A fundamental shortcoming of all of the statistical methods is that all are intrinsic to the test being evaluated. If a test, overall, is unbiased but with one or two biased items, most methods will locate the problems. If, however, the test itself is biased against one or more subpopulations, a statistical analysis of the items will not be able to separate bias effects from true differences in achievement.

MANTEL-HAENSZEL PROCEDURE FOR DIFFERENTIAL ITEM FUNCTIONING

The *Mantel-Haenszel* procedure for detecting differential item functioning is the most commonly used technique in educational testing. It does not depend on the application or the fit of any specific measurement model. It does have some philosophical overlap with the Rasch model since it uses total score to organize the analysis.

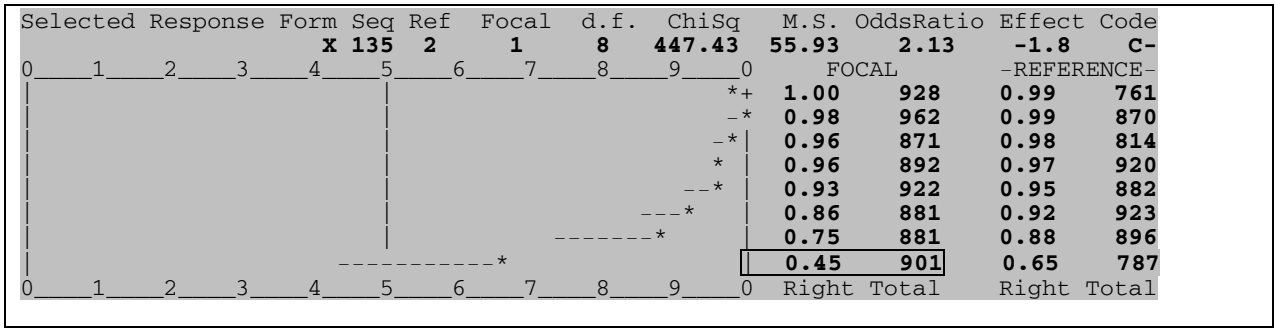
Differential item functioning is present when examinees of equal ability do not have the same chance of passing the item. If this inequity is associated with gender or ethnic groups, the item could be described as biased. The Mantel-Haenszel procedure looks for items that meet this idea of differential functioning.

The procedure as implemented by DRC contrasts a focal group with a reference group. While it makes no practical difference in the analysis which group is defined as the focal group, the protected class or the group most apt to be disadvantaged by a biased measurement is typically defined as the focal group. The Mantel-Haenszel statistic (MH) for each item is computed from a two-by-two-by-eight contingency table. It has two groups (focal and reference), two outcomes (right or wrong) and eight ability groupings. The ability groups are defined by the octiles of the score distribution for the total examinee populations.

The basic MH statistic is a single degree of freedom chi-square that compares the observed number in each cell to the expected number. The expected counts are computed to ensure that the analysis is not confounded with differences in the achievement level of the two groups. For constructed response items, a comparable statistic is computed based on the standardized mean difference computed as the differences in mean scores for the focal and reference groups, if both groups had the same score distribution.

To assist the review committees in interpreting the analyses, the items are assigned a severity code based on the magnitude of the MH statistic. Items classified as A+ or A- have no statistical indication of differential item functioning. Items classified as B+ or B- have some indication and may not require revision. Items classified as C+ or C- have strong evidence of a problem and should be reviewed and revised if they are to be used again. The plus sign indicates the item favors the focal group and a minus sign indicates the item disfavors the focal group.

The complete results of the DIF analysis are listed in appendices Q through V. The results include the MH statistics and codes for all matrix items as well as displays such as the following for all items given the C classification. This display identifies the item by form and sequence number and provides all the descriptive statistics. For each score grouping, the display gives the number in each group and the percentage of the group who answered the item correctly. For example, for the item shown, there were 901 students from the focal group in the lowest group and 45% of them answered the item correctly.



Selected Response	Form	Seq	Ref	Focal	d.f.	ChiSq	M.S.	OddsRatio	Effect	Code
	X	**135**	**2**	**1**	**8**	**447.43**	**55.93**	**2.13**	**-1.8**	**C-**
0 1 2 3 4 5 6 7 8 9 0							FOCAL		-REFERENCE-	
						*+	**1.00**	**928**	**0.99**	**761**
						-*	**0.98**	**962**	**0.99**	**870**
						-*|	**0.96**	**871**	**0.98**	**814**
						* |	**0.96**	**892**	**0.97**	**920**
					--* |		**0.93**	**922**	**0.95**	**882**
					---*			**0.86**	**881**	**0.92**	**923**
				-------*				**0.75**	**881**	**0.88**	**896**
			----------*					**0.45**	**901**	**0.65**	**787**
0 1 2 3 4 5 6 7 8 9 0							Right	Total	Right	Total

The following tables provide counts of the number of items from each grade and content area that were assigned to each severity code. Overall, there were relatively few items that showed strong evidence of differential item functioning.

Table 4-1: 2004 Counts of Gender Item Severity Codes by Grade

Mathematics						Reading					
		Grade						Grade			
Form	Code	5	8	11	Total	Form	Code	5	8	11	Total
A	A					A	A			1	1
	A-	8	7	4	19		A-	15	16	19	50
	A+	7	7	11	25		A+	9	17	18	44
	B-		1		1		B-	2	2	2	6
	B+						B+				
	C-						C-		1		1
	C+						C+				
B	A					B	A				
	A-	6	8	9	23		A-	15	16	23	54
	A+	8	6	5	19		A+	8	14	16	38
	B-	1		1	2		B-	2	3	1	6
	B+						B+				
	C-		1		1		C-		1		1
	C+						C+				
C	A					C	A				
	A-	6	5	8	19		A-	16	16	17	49
	A+	8	9	7	24		A+	10	14	17	41
	B-	1	1		2		B-		3	2	5
	B+						B+			1	1
	C-						C-		3	1	4
	C+						C+				
D	A					D	A				
	A-	7	7	5	19		A-	17	9	21	47
	A+	8	8	9	25		A+	9	17	16	42
	B-			1	1		B-		5	2	7
	B+						B+		2		2
	C-						C-		2	1	3
	C+						C+				
E	A		1	1	2	E	A				
	A-	9	8	5	22		A-	16	19	21	56
	A+	6	5	7	18		A+	9	13	16	38
	B-		1	1	2		B-		3	2	5
	B+						B+		1	1	2
	C-			1	1		C-				
	C+						C+				
F	A					F	A				
	A-	9	9	8	26		A-	17	19	20	56
	A+	6	6	5	17		A+	9	13	15	37
	B-			2	2		B-		2	3	5
	B+						B+		1	1	2
	C-						C-			1	1
	C+						C+				

Table 4-2: 2004 Counts of Item Severity Codes by Ethnicity (White vs. African American)

Mathematics						Reading					
		Grade						Grade			
Form	Code	5	8	11	Total	Form	Code	5	8	11	Total
A	A					A	A	1	1	1	3
	A-	3	7	7	17		A-	12	17	20	49
	A+	12	7	8	27		A+	11	16	18	45
	B-		1		1		B-	2	2	1	5
	B+						B+				
	C-						C-				
	C+						C+				
B	A					B	A				
	A-	9	5	7	21		A-	15	17	18	50
	A+	6	9	8	23		A+	8	18	22	48
	B-		1		1		B-	2	1		3
	B+						B+				
	C-						C-	1			1
	C+						C+				
C	A					C	A				
	A-	9	5	9	23		A-	13	10	17	40
	A+	6	8	5	19		A+	11	23	21	55
	B-		1		1		B-	1	3		4
	B+		1	1	2		B+			1	1
	C-						C-	1		1	2
	C+						C+				
D	A					D	A				
	A-	2	5	9	16		A-	15	12	19	46
	A+	12	10	6	28		A+	10	22	19	51
	B-						B-		2		2
	B+	1			1		B+			1	1
	C-						C-	1		1	2
	C+						C+				
E	A					E	A				
	A-	8	8	10	26		A-	10	18	17	45
	A+	7	7	4	18		A+	13	17	23	53
	B-			1	1		B-	2			2
	B+						B+		1	1	2
	C-						C-	1			1
	C+						C+				
F	A					F	A				
	A-	6	9	13	28		A-	11	15	16	42
	A+	8	6	1	15		A+	12	18	24	54
	B-	1			1		B-	2			2
	B+						B+				
	C-						C-	1			1
	C+						C+				

Table 4-3: 2004 Counts of Item Severity by Ethnicity (White vs. Hispanic)

Mathematics						Reading					
		Grade						Grade			
Form	Code	5	8	11	Total	Form	Code	5	8	11	Total
A	A					A	A		1		1
	A-	5	8	4	17		A-	14	20	28	62
	A+	10	7	11	28		A+	10	14	12	36
	B-						B-	2	1		3
	B+						B+				
	C-						C-				
	C+						C+				
B	A					B	A				
	A-	8	4	5	17		A-	12	19	21	52
	A+	7	10	10	27		A+	10	14	19	43
	B-		1		1		B-	4	3		7
	B+						B+				
	C-						C-				
	C+						C+				
C	A					C	A				
	A-	8	7	6	21		A-	15	15	12	42
	A+	7	7	9	23		A+	9	18	27	54
	B-		1		1		B-	1	2		3
	B+						B+		1		1
	C-						C-	1			1
	C+						C+				
D	A		1		1	D	A				
	A-	4	6	10	20		A-	17	14	15	46
	A+	9	7	5	21		A+	8	21	23	52
	B-						B-		1	1	2
	B+						B+			1	1
	C-						C-	1			1
	C+						C+				
E	A					E	A	1	1		2
	A-	6	4	8	18		A-	11	19	17	47
	A+	9	11	7	27		A+	12	16	23	51
	B-						B-				
	B+						B+				
	C-						C-	2			2
	C+						C+				
F	A	1		2	3	F	A	2		1	3
	A-	5	9	7	21		A-	11	17	11	39
	A+	8	5	6	19		A+	10	19	26	55
	B-		1		1		B-	1			1
	B+						B+			2	2
	C-	1			1		C-	2			2
	C+						C+				

Chapter 5: Student and School Level Scaling

Prior to 2000 testing, when the PSSA design was more heavily matrix sampling, estimating school-level scaled scores presented some statistical and psychometric challenges. For example, the statistically efficient method to compute the school-level scaled score often gave an answer different from what would be obtained by averaging student ability estimates. To avoid this source of misunderstanding, the school-level scores were forced to equal the average of the appropriate students. The matrix sampling component of the design, together with items from the common section, was used at the academic standard category level to estimate relative strengths and weaknesses for the school.

Beginning in 2000, with the new reporting design, content area total scores for students and for schools were based exclusively on the common sections. Thus, greater emphasis was placed on the common sections to possess optimal balance at the content standard level and yield reliable estimates of student-level abilities, as indicated by the standard errors. It was then possible to aggregate all scaled scores to the school, district and state levels without resorting to any complex algorithms, making the results simpler to explain and interpret.

Because the original design of the PSSA was intended to produce school-level estimates only, the reporting metric was defined at the school level. For the base year, the mean of all schools in the norming sample was set at 1300 and the standard deviation at 100. The distribution to which these apply is the content area scaled score with all schools weighted equally. Consequently, the expectation in 2000 was for state-level means near 1300 and standard deviations near 100. The state mean of student level scaled scores is, in general, somewhat different. This difference occurs because the mean of the school-level scores counts schools equally, regardless of size, while the mean of the student-level scores counts students equally.

A minimum scale score of 700 was implemented for all PSSA reading, mathematics, and writing exams beginning in 2002. This minimum is applied to all the PSSA scales.

Although it affects very few students, some schools felt they were being penalized by the presence of extremely low scoring special needs students who took the regular assessment. The change was made to reduce the impact of these students on the overall school score.

One would not expect large changes from year to year at the state level. Any change would typically be in the same direction and proportional to changes in the p-values for the linking items. One would also expect schools that put more resources into effecting changes to show relatively more progress than those that do not. This type of information is not available in a systematic way and any evaluation of this type would depend on anecdotal information.

Table 5.1 gives the transformations that were used to convert 2004 logits (X) into the scaled scores. These translation constants included the adjustments to equate 2004 to prior years as well as the rescaling needed to convert to the appropriate metric. These transformations are used for all scaled score calculations.

Table 5-1: Transformation to Scaled Scores

Grade	Mathematics	Reading
Five	190X + 1134	199X + 1095
Eight	178X + 1182	235X + 1114
Eleven	206X + 1203	245X + 1115

COMMON ITEMS AND MATRIX SAMPLED ITEMS

Beginning with the design changes implemented for the 2000 PSSA, student-level scores were based on the common items only. This ensures that any decision made about students will be done in the most equitable manner. School-level scaled scores for the content areas are based on the mean of the student-level scaled scores. This ensures that the scaled scores used for school accountability directly reflect the student-level results. It is a simple matter to aggregate up to the school, district, and state levels.

For the purpose of providing school-level results at the content standard (academic standards category) level, all items on all matrix forms plus the common items are utilized. This insures that decisions about potential strengths and weaknesses are based on the widest possible sampling of the curriculum.

SCALED SCORES FOR CONTENT STANDARDS

Beginning in 2003, school-level scaled scores are no longer reported for the academic content standards (academic standards categories). Instead, school results are presented as the percent of total points achieved as compared to district and state level results.

Chapter 6: Interpreting Scaled Scores and Performance Levels

A *Scaled Score*, in the simplest sense, is a transformed number correct score[1]. When all students take the same items, as in the common sections of the PSSA, the more points the student earns, the higher the scaled score received will be. The value of switching to the more abstract scaled score metric is to produce a more general result.

A raw score of, say, 30 is almost meaningless unless the reader is also told how many points were possible. The same score has quite different meanings if it is based on a thirty-item test or on a sixty-item test. *Number correct scores are transformed to percent correct scores to remove the effect of test length.* In the same way, a score based on sixty difficult items is quite different from the same score based on sixty easy items. *Number correct scores are transformed to scaled scores to remove the effects of test length and item difficulty*.

On the surface, a scaled score of, say, 1300 does not appear to have any more meaning than a raw score of 30. A temperature of 37 degrees does not provide useful information unless the scale is anchored to some known points. Useful anchors might be the freezing point of water or perhaps the normal body temperature for humans.[2] To be meaningful, the new metric must be related to known objects and situations, in other words, to some sort of *measurement standard*.

SCHOOL-LEVEL SCALED SCORES

The PSSA scaled score metric has been anchored to the *mean school level scaled score* for a base year and that point has been arbitrarily labeled 1300. The point on the scale that is one standard deviation above the mean was labeled 1400. These labels are completely arbitrary; they could have be called zero and one or any other ordered pair without affecting any of the relationships among schools, years, students or items. It would simply be changing the labels on the axis of a graph without moving any of the points.

The 1300-metric was chosen so that negative or fractional scaled scores are not needed and so that the PSSA scaled scores are not easily confused with the results from any other testing program. Like the temperature scales of Fahrenheit and Celsius, the new scale will acquire meaning only with experience.

A scaled score of 1300, or any other value, should have the same absolute meaning in the current year as it had in previous years, when properly equated across years. A school with a scaled score above 1300 performed better than did the average school in the base year.

More importantly, an increase in the scaled score from last year to the current year means the students' performance has improved; it does not say anything about whether the exam is easier or harder. To make these interpretations requires no information about the length or the difficulty of the test in either year, although all of those are essential information for deriving the scaled scores.

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[1] This is done in two steps. First, there is a nonlinear transformation that converts number correct scores to logits and then a linear transformation to convert logits to scaled scores.

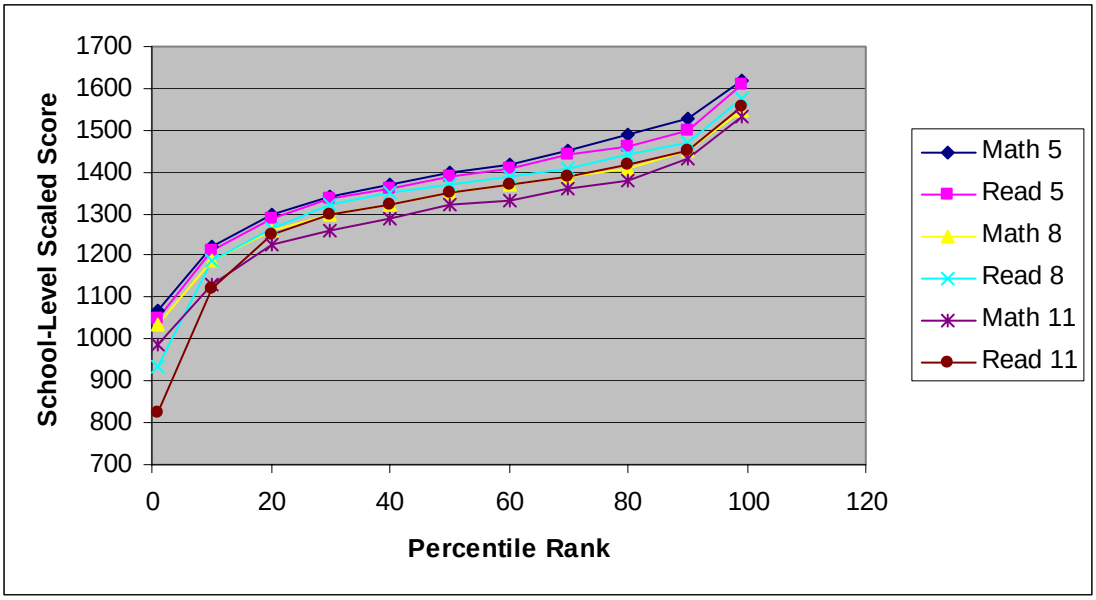
[2] Most adults have enough experience with temperature scales that being told the temperature is on the Fahrenheit scale or on the Celsius scale is enough information to render the measure useful.

In the base year, the standard deviation of the school-level scaled scores was set to a value of 100. If school scores are approximately normally distributed, a scaled score of 1400, one standard deviation above the base year mean, means the school did better than about 5/6 of the schools in the base year. About two thirds of the schools will have scaled scores between 1200 and 1400. Conversely, about 16% of the schools will be below 1200. Scaled scores of 1000 and 1600 are three standard deviations from the mean and so are extreme scores.

The best guide for giving meaning to the scaled scores is experience. Knowing the typical school had a scaled score of 1300 in the base year provides a beginning for understanding the metric. Most importantly, comparing a school's score to its scores in previous years should be a good indicator of progress.

Another approach to understanding the meaning of the scores is the percentile rank as shown in Figure 6.1 below. This plot converts the school level scaled score into a percentile rank that describes the distribution of scores for all schools in the norming sample for the current year. This chart applies only to school-level scaled scores computed from the common sections of the exam and can not be used for student level scores. A complete table of school-level percentile ranks is given in Appendix W.

Figure 6-1: 2004 School-Level Percentile Rank



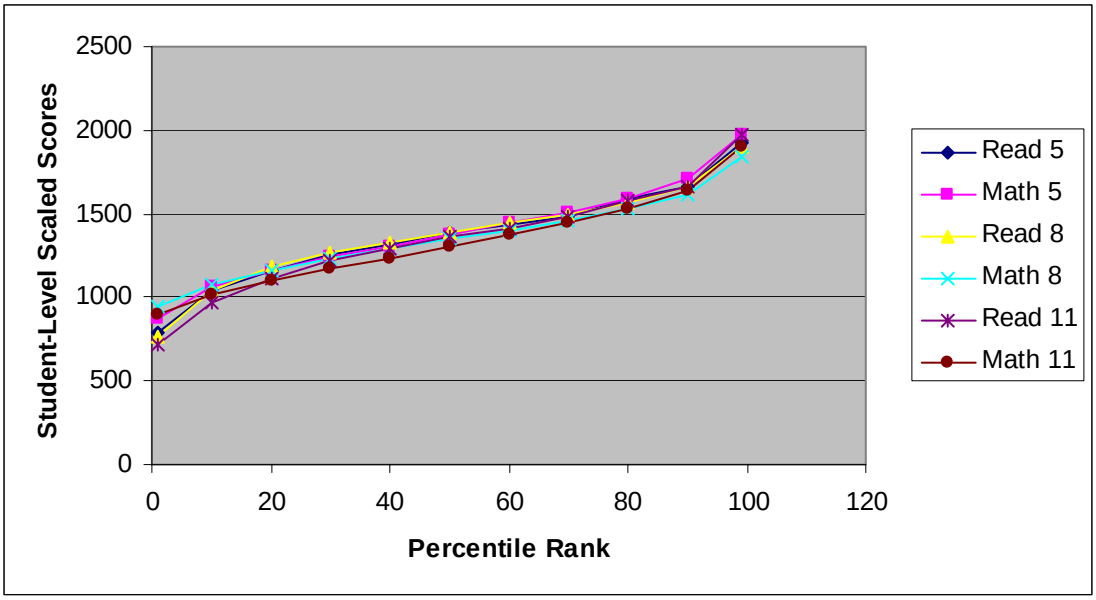
STUDENT-LEVEL SCALED SCORES

This discussion has been focused on the meaning of the metric at the school level. For the students, the mean scaled score will also be close to 1300, but the standard deviation will about twice as large.

In interpreting a student-level scaled score, the student's measure can be compared to the mean of the school or to other students in the state. Another approach is to examine the percentile rank of a students score. Figure 6.2 plots the student-level scaled scores against a percentile rank that describes the distribution of scores for all students in the norming sample for the current year. This table applies only to student-level scaled scores computed from the common sections of the exam and cannot be used for school-level scores.

A complete percentile rank table that includes conversions for points received as well as scaled scores is included in Appendix X.

Figure 6-2: 2004 Student-Level Percentile Rank



PSSA PERFORMANCE LEVELS FOR MATHEMATICS AND READING

- **Advanced:** Superior academic performance indicating an in-depth understanding and exemplary display of the skills included in Pennsylvania's Academic Standards;

- **Proficient:** Satisfactory academic performance indicating a solid understanding and adequate display of the skills included in Pennsylvania's Academic Standards**;**

- **Basic:** Marginal academic performance, work approaching, but not yet reaching, satisfactory performance. Performance indicates a partial understanding and limited display of the skills included in Pennsylvania's Academic Standards. The student may need additional instructional opportunities and/or increased student academic commitment to achieve the Proficient Level;

- **Below Basic:** Inadequate academic performance that indicates little understanding and minimal display of the skills included in the Pennsylvania Academic Content Standards. There is a major need for additional instructional opportunities and/or increased student academic commitment to achieve the Proficient Level.

The scores that correspond with each performance level are located in Table 6.5.

Performance Levels for Each Grade and Subject		
	Mathematics	**Reading**
Grade 5		
Advanced	1460 and above	1480 and above
Proficient	1300 -- 1459	1300 - 1479
Basic	1170 -- 1299	1160 - 1299
Below Basic	1169 and below	1159 and below
Grade 8		
Advanced	1510 and above	1490 and above
Proficient	1300 -- 1509	1280 -- 1489
Basic	1180 -- 1299	1130 -- 1279
Below Basic	1179 and below	1129 and below
Grade 11		
Advanced	1490 and above	1520 and above
Proficient	1310 -- 1489	1290 -- 1519
Basic	1180 -- 1309	1140 -- 1289
Below Basic	1179 and below	1139 and below

Table 6.5: Scores Associated With Performance Levels

PSSA RELIABILITY OF PERFORMANCE LEVELS

Indicators of Consistency

Criterion-referenced tests are often used to place the examinees into two or more performance classifications. It is then useful to have some indication of how consistent such classifications are. Livingston (1972) argued that a measure of consistency should be a function of the reliability of the test increases and the distance between the performance standard and the mean of the distribution. Livingston's coefficient, which was formulated from the perspective of True Score Theory, is defined by:

1. $$\kappa^2(X,T) = [\ \sigma^2_T + (\mu_T - C)^2\ ] / [\ \sigma^2_X + (\mu_X - C)^2\ ]$$

If the expressions in parenthesis are zero, equation 1 is the ratio of the true score variance to the observed score variance, which is a standard definition of reliability. The numerator is increased by adding the squared difference between the true score mean and the cut score. The denominator is increased by the difference between the observed score mean and the cut score.

The coefficient is normally computed, from data, by setting the true score mean equal to the observed score mean and multiplying the observed score variance by the KR-20 reliability coefficient to obtain a value for the true score variance.

2. $$\kappa^2(X,T) = [\, r\, \sigma^2_X + (\mu_X - C)^2 \,] / [\, \sigma^2_X + (\mu_X - C)^2 \,]$$

If $(\mu_X - C)$ is zero, expression 2 will return the value of the KR-20; if it is non-zero, the value will be larger than the KR-20.

For the 2004 PSSA, values for the Livingston Coefficient of Consistency are given in the table below.

Table 6-1: 2004 Reliability of Performance Levels for the PSSA

GRADE	CONTENT	BASIC	PROFICIENT	ADVANCED
Five	**Reading**	.94	.91	.93
	Math	.96	.94	.96
Eight	**Reading**	.96	.93	.95
	Math	.96	.94	.97
Eleven	**Reading**	.96	.95	.97
	Math	.95	.94	.97

Livingston, S.A. 1972. Criterion Referenced Applications of Classical Test Theory. *Journal of Educational Measurement* 9: 13-26.

Appendix A: 2004 PSSA Distribution Summaries by Form

Mathematics and Reading

Grade	Content	Form	Number of Examinees	Number of Score Points	Number of Points Received			Test Reliability	Percent of Points Received				
					Mean	Std Dev	Std Error of Meas		Min Score	25 %ile	Median	75 %ile	Max Score
5	Math	A	23,691	105	69.1	20.9	4.89	0.95	0	55.0	73.1	86.1	105
		B	23,652	105	70.3	20.9	4.99	0.94	0	57.0	74.2	87.0	105
		C	23,619	105	69.0	21.0	4.89	0.95	0	54.8	72.8	86.0	105
		D	23,751	105	69.6	20.5	4.84	0.94	0	56.4	73.3	85.8	105
		E	23,609	105	67.5	21.0	4.85	0.95	0	53.4	71.1	84.4	104
		F	23,515	105	68.9	21.0	4.87	0.95	0	54.6	72.5	86.1	105
		Common	141,837	85	56.8	17.2	4.36	0.94	0	45.4	60.1	70.8	85
8	Math	A	25,313	105	62.8	23.0	5.35	0.95	0	45.4	64.9	82.2	105
		B	25,214	105	62.8	22.7	5.29	0.95	0	45.8	65.3	81.6	105
		C	25,220	105	62.7	22.3	5.26	0.94	0	46.0	64.8	81.1	105
		D	25,278	105	62.1	22.3	5.25	0.94	0	45.6	64.0	80.3	104
		E	25,217	105	62.7	22.9	5.31	0.95	0	45.4	65.1	81.8	105
		F	25,217	105	62.6	22.9	5.35	0.95	0	45.5	64.8	81.5	105
		Common	151,459	85	51.4	18.4	4.68	0.94	0	37.7	53.4	66.6	85
11	Math	A	22,280	105	55.2	22.7	5.35	0.94	0	37.5	54.2	72.8	105
		B	22,248	105	56.1	23.4	5.51	0.94	0	37.6	55.5	74.6	105
		C	22,273	105	55.5	23.7	5.47	0.95	0	36.8	54.4	74.5	105
		D	22,326	105	57.4	23.6	5.45	0.95	0	38.7	57.4	76.7	105
		E	22,182	105	55.2	23.1	5.31	0.95	0	37.3	54.3	73.4	105
		F	22,201	105	55.4	23.2	5.35	0.95	0	37.1	54.7	73.9	105
		Common	133,510	85	45.7	19.0	4.84	0.94	0	30.8	45.1	60.8	85
5	Reading	A	23,691	90	61.5	17.2	4.05	0.94	0	52.4	64.8	74.4	90
		B	23,652	90	61.6	16.9	4.03	0.94	0	53.0	65.7	74.3	90
		C	23,619	90	62.8	17.1	4.01	0.94	0	54.6	67.4	75.4	90
		D	23,751	90	62.3	17.2	4.03	0.95	0	53.8	66.8	75.0	90
		E	23,609	90	60.8	16.3	4.00	0.94	0	52.8	64.8	72.7	87
		F	23,515	90	60.8	16.3	4.01	0.94	0	52.7	64.9	72.9	88
		Common	141,837	60	41.1	11.3	3.28	0.91	0	35.5	43.7	49.3	60
8	Reading	A	25,313	120	81.7	22.3	4.74	0.95	0	71.3	87.4	97.8	118
		B	25,214	120	82.5	21.9	4.68	0.95	0	72.9	88.0	98.1	117
		C	25,220	120	83.8	22.0	4.67	0.95	0	73.9	89.3	99.7	118
		D	25,278	120	83.7	22.3	4.67	0.96	0	73.9	89.6	99.8	118
		E	25,217	120	80.4	21.7	4.76	0.95	0	69.7	85.4	96.1	118
		F	25,217	120	80.4	21.8	4.75	0.95	0	70.2	85.5	96.0	117
		Common	151,459	80	55.1	14.6	3.84	0.93	0	48.7	58.6	65.4	80
11	Reading	A	22,280	131	86.7	26.2	5.12	0.96	0	73.5	92.7	106.1	129
		B	22,248	131	86.9	26.5	5.13	0.96	0	73.9	93.3	106.4	130
		C	22,273	131	89.1	27.0	5.11	0.96	0	75.9	96.1	109.3	130
		D	22,326	131	89.4	26.8	5.11	0.96	0	76.3	96.6	109.3	130
		E	22,182	131	88.4	26.5	5.08	0.96	0	75.7	94.8	107.8	130
		F	22,201	131	88.5	26.6	5.11	0.96	0	75.7	95.2	108.1	130
		Common	133,510	87	58.8	17.8	4.17	0.95	0	50.2	63.2	71.8	87

Appendix B: 2004 PSSA Grade Five Item Analysis

Multiple Choice Items for Mathematics

Form	Seq	Key	Logit	LSE	P-Value	PtBis	%A	%B	%C	%D	Blank	Invalid	R(A)	R(B)	R(C)	R(D)
A	53	D	-0.143	0.017	0.745	0.259	0.020	0.217	0.017	0.745	0.001	0.000	-0.098	-0.227	-0.153	0.259
A	54	D	-1.764	0.025	0.920	0.378	0.024	0.024	0.030	0.920	0.001	0.000	-0.226	-0.238	-0.222	0.378
A	55	D	-0.746	0.019	0.828	0.421	0.074	0.047	0.050	0.828	0.001	0.000	-0.260	-0.309	-0.298	0.421
A	56	C	-0.959	0.020	0.852	0.487	0.062	0.025	0.852	0.060	0.001	0.000	-0.371	-0.234	0.487	-0.351
A	57	C	-0.573	0.018	0.805	0.408	0.076	0.058	0.805	0.060	0.001	0.000	-0.237	-0.303	0.408	-0.305
A	58	B	-0.213	0.017	0.756	0.261	0.008	0.756	0.218	0.017	0.000	0.000	-0.186	0.261	-0.207	-0.195
A	59	B	-0.352	0.017	0.775	0.434	0.159	0.775	0.043	0.022	0.001	0.000	-0.417	0.434	-0.194	-0.176
A	60	B	-0.761	0.019	0.829	0.442	0.063	0.829	0.079	0.028	0.001	0.000	-0.283	0.442	-0.344	-0.265
A	61	A	0.400	0.015	0.657	0.273	0.657	0.086	0.109	0.146	0.001	0.000	0.273	-0.146	-0.151	-0.285
A	62	C	0.458	0.015	0.646	0.455	0.067	0.106	0.646	0.180	0.001	0.000	-0.451	-0.298	0.455	-0.379
A	63	C	0.874	0.015	0.569	0.584	0.067	0.243	0.569	0.120	0.001	0.000	-0.285	-0.599	0.584	-0.542
A	64	A	1.016	0.015	0.542	0.357	0.542	0.164	0.145	0.145	0.003	0.000	0.357	-0.205	-0.386	-0.333
A	65	D	-0.269	0.017	0.764	0.331	0.076	0.057	0.102	0.764	0.001	0.000	-0.282	-0.249	-0.177	0.331
A	66	C	1.176	0.015	0.513	0.402	0.415	0.030	0.513	0.041	0.001	0.000	-0.385	-0.324	0.402	-0.271
A	67	C	0.372	0.015	0.660	0.316	0.025	0.265	0.660	0.048	0.002	0.000	-0.291	-0.219	0.316	-0.332
B	53	C	-0.852	0.019	0.844	0.324	0.022	0.106	0.844	0.028	0.001	0.000	-0.228	-0.219	0.324	-0.228
B	54	A	-1.949	0.028	0.934	0.349	0.934	0.031	0.019	0.016	0.000	0.000	0.349	-0.187	-0.256	-0.205
B	55	D	0.320	0.016	0.676	0.291	0.112	0.057	0.154	0.676	0.001	0.000	-0.308	-0.267	-0.123	0.291
B	56	B	-0.307	0.017	0.776	0.387	0.038	0.776	0.095	0.091	0.001	0.000	-0.322	0.387	-0.277	-0.252
B	57	B	-1.653	0.025	0.916	0.368	0.028	0.916	0.021	0.035	0.001	0.000	-0.200	0.368	-0.189	-0.286
B	58	D	0.286	0.016	0.682	0.354	0.087	0.177	0.053	0.682	0.001	0.000	-0.227	-0.293	-0.285	0.354
B	59	A	0.322	0.016	0.674	0.390	0.674	0.119	0.072	0.133	0.002	0.000	0.390	-0.303	-0.272	-0.323
B	60	C	-0.277	0.017	0.771	0.503	0.074	0.100	0.771	0.055	0.001	0.000	-0.440	-0.347	0.503	-0.330
B	61	C	0.637	0.015	0.619	0.365	0.171	0.119	0.619	0.090	0.001	0.000	-0.310	-0.236	0.365	-0.342
B	62	B	-0.805	0.019	0.838	0.405	0.096	0.838	0.031	0.034	0.001	0.000	-0.348	0.405	-0.254	-0.181
B	63	B	1.017	0.015	0.548	0.264	0.320	0.548	0.101	0.030	0.001	0.000	-0.080	0.264	-0.526	-0.296
B	64	C	1.337	0.015	0.487	0.307	0.046	0.294	0.487	0.172	0.001	0.000	-0.339	-0.214	0.307	-0.365
B	65	D	-1.124	0.021	0.872	0.458	0.040	0.036	0.050	0.872	0.001	0.000	-0.318	-0.345	-0.263	0.458
B	66	D	1.467	0.015	0.462	0.449	0.346	0.106	0.084	0.462	0.001	0.000	-0.452	-0.442	-0.310	0.449
B	67	A	-0.089	0.017	0.742	0.266	0.742	0.013	0.228	0.015	0.001	0.000	0.266	-0.210	-0.203	-0.257

Appendix B: 2004 PSSA Grade Five Item Analysis

Multiple Choice Items for Mathematics

Form	Seq	Key	Logit	LSE	P-Value	PtBis	%A	%B	%C	%D	Blank	Invalid	R(A)	R(B)	R(C)	R(D)
C	53	A	-1.344	0.023	0.893	0.385	0.893	0.023	0.012	0.073	0.000	0.000	0.385	-0.177	-0.166	-0.329
C	54	C	0.754	0.015	0.601	0.402	0.162	0.063	0.601	0.173	0.001	0.000	-0.249	-0.326	0.402	-0.424
C	55	C	0.383	0.016	0.667	0.423	0.191	0.044	0.667	0.098	0.000	0.000	-0.399	-0.327	0.423	-0.231
C	56	D	-0.180	0.017	0.757	0.466	0.161	0.035	0.047	0.757	0.001	0.000	-0.399	-0.285	-0.304	0.466
C	57	C	-0.328	0.017	0.779	0.447	0.042	0.049	0.779	0.130	0.000	0.000	-0.264	-0.378	0.447	-0.330
C	58	B	-0.646	0.019	0.821	0.398	0.103	0.821	0.051	0.024	0.001	0.000	-0.300	0.398	-0.269	-0.240
C	59	C	-0.067	0.017	0.740	0.501	0.089	0.139	0.740	0.031	0.001	0.000	-0.445	-0.407	0.501	-0.212
C	60	C	2.220	0.016	0.333	0.338	0.226	0.358	0.333	0.082	0.001	0.000	-0.405	-0.262	0.338	-0.546
C	61	D	0.666	0.015	0.618	0.336	0.171	0.112	0.098	0.618	0.001	0.000	-0.239	-0.298	-0.280	0.336
C	62	C	0.643	0.015	0.622	0.412	0.123	0.176	0.622	0.077	0.001	0.000	-0.369	-0.336	0.412	-0.300
C	63	D	0.778	0.015	0.597	0.457	0.030	0.105	0.267	0.597	0.001	0.000	-0.362	-0.402	-0.395	0.457
C	64	B	-0.527	0.018	0.805	0.454	0.086	0.805	0.065	0.042	0.001	0.000	-0.365	0.454	-0.296	-0.276
C	65	A	-1.186	0.021	0.878	0.407	0.878	0.021	0.035	0.064	0.001	0.000	0.407	-0.200	-0.267	-0.306
C	66	A	0.805	0.015	0.591	0.411	0.591	0.234	0.109	0.065	0.002	0.000	0.411	-0.342	-0.356	-0.329
C	67	D	0.810	0.015	0.590	0.488	0.069	0.257	0.082	0.590	0.002	0.000	-0.425	-0.415	-0.426	0.488
D	53	D	0.341	0.015	0.670	0.501	0.048	0.065	0.215	0.670	0.002	0.000	-0.256	-0.272	-0.510	0.501
D	54	B	1.627	0.015	0.432	0.007	0.338	0.432	0.195	0.034	0.001	0.000	0.077	0.007	-0.078	-0.140
D	55	B	-1.250	0.022	0.884	0.450	0.052	0.884	0.032	0.032	0.001	0.000	-0.302	0.450	-0.277	-0.303
D	56	A	0.139	0.016	0.705	0.389	0.705	0.232	0.048	0.013	0.001	0.000	0.389	-0.355	-0.229	-0.212
D	57	B	0.238	0.016	0.690	0.123	0.260	0.690	0.041	0.009	0.000	0.000	-0.033	0.123	-0.259	-0.158
D	58	A	0.867	0.015	0.575	0.306	0.575	0.034	0.123	0.266	0.001	0.000	0.306	-0.207	-0.278	-0.262
D	59	B	0.598	0.015	0.626	0.474	0.065	0.626	0.082	0.227	0.001	0.000	-0.363	0.474	-0.395	-0.395
D	60	D	0.011	0.016	0.726	0.540	0.122	0.077	0.074	0.726	0.001	0.000	-0.449	-0.412	-0.376	0.540
D	61	D	1.198	0.015	0.513	0.134	0.131	0.220	0.134	0.513	0.001	0.000	-0.115	-0.027	-0.232	0.134
D	62	C	1.100	0.015	0.530	0.477	0.081	0.115	0.530	0.274	0.001	0.000	-0.418	-0.472	0.477	-0.419
D	63	D	-0.935	0.020	0.853	0.491	0.062	0.047	0.037	0.853	0.001	0.000	-0.399	-0.307	-0.274	0.491
D	64	B	0.007	0.016	0.726	0.458	0.201	0.726	0.034	0.039	0.001	0.000	-0.460	0.458	-0.189	-0.193
D	65	C	-0.726	0.019	0.829	0.394	0.036	0.041	0.829	0.093	0.001	0.000	-0.176	-0.313	0.394	-0.302
D	66	B	-1.125	0.021	0.872	0.478	0.022	0.872	0.076	0.030	0.001	0.000	-0.221	0.478	-0.460	-0.177
D	67	A	1.147	0.015	0.520	0.276	0.520	0.219	0.109	0.148	0.004	0.000	0.276	-0.233	-0.265	-0.214

Appendix B: 2004 PSSA Grade Five Item Analysis

Multiple Choice Items for Mathematics

Form	Seq	Key	Logit	LSE	P-Value	PtBis	%A	%B	%C	%D	Blank	Invalid	R(A)	R(B)	R(C)	R(D)
E	53	C	0.341	0.015	0.740	0.481	0.098	0.103	0.740	0.058	0.000	0.000	-0.412	-0.371	0.481	-0.275
E	54	C	1.627	0.015	0.753	0.410	0.111	0.063	0.753	0.072	0.001	0.000	-0.241	-0.304	0.410	-0.363
E	55	A	-1.250	0.022	0.590	0.408	0.590	0.334	0.061	0.015	0.000	0.000	0.408	-0.415	-0.177	-0.265
E	56	C	0.139	0.016	0.455	0.402	0.040	0.288	0.455	0.216	0.001	0.000	-0.382	-0.327	0.402	-0.433
E	57	B	0.238	0.016	0.360	0.382	0.178	0.360	0.195	0.265	0.001	0.000	-0.452	0.382	-0.508	-0.265
E	58	A	0.867	0.015	0.588	0.434	0.588	0.078	0.141	0.191	0.001	0.000	0.434	-0.388	-0.382	-0.331
E	59	B	0.598	0.015	0.603	0.503	0.107	0.603	0.060	0.229	0.001	0.000	-0.327	0.503	-0.366	-0.509
E	60	C	0.011	0.016	0.597	0.336	0.217	0.095	0.597	0.090	0.001	0.000	-0.257	-0.306	0.336	-0.271
E	61	D	1.198	0.015	0.545	0.395	0.108	0.121	0.224	0.545	0.002	0.000	-0.332	-0.328	-0.360	0.395
E	62	A	1.100	0.015	0.643	0.474	0.643	0.286	0.046	0.023	0.001	0.000	0.474	-0.420	-0.362	-0.375
E	63	D	-0.935	0.020	0.710	0.490	0.132	0.100	0.057	0.710	0.001	0.000	-0.394	-0.386	-0.328	0.490
E	64	A	0.007	0.016	0.722	0.490	0.722	0.099	0.083	0.095	0.001	0.000	0.490	-0.357	-0.354	-0.395
E	65	B	-0.726	0.019	0.437	0.266	0.289	0.437	0.177	0.097	0.001	0.000	-0.231	0.266	-0.184	-0.401
E	66	D	-1.125	0.021	0.668	0.396	0.153	0.079	0.099	0.668	0.001	0.000	-0.294	-0.332	-0.310	0.396
E	67	B	1.147	0.015	0.778	0.441	0.130	0.778	0.051	0.039	0.002	0.000	-0.344	0.441	-0.313	-0.282
F	53	D	-1.147	0.021	0.876	0.361	0.018	0.022	0.084	0.876	0.000	0.000	-0.220	-0.211	-0.263	0.361
F	54	B	1.681	0.015	0.429	0.259	0.337	0.429	0.148	0.082	0.004	0.000	-0.271	0.259	-0.197	-0.225
F	55	C	-0.100	0.017	0.748	0.466	0.094	0.097	0.748	0.060	0.001	0.000	-0.401	-0.342	0.466	-0.276
F	56	B	1.129	0.015	0.533	0.457	0.302	0.533	0.076	0.087	0.001	0.000	-0.405	0.457	-0.340	-0.473
F	57	C	-0.445	0.018	0.797	0.489	0.100	0.051	0.797	0.052	0.000	0.000	-0.360	-0.336	0.489	-0.347
F	58	C	0.315	0.016	0.681	0.355	0.173	0.113	0.681	0.032	0.002	0.000	-0.230	-0.352	0.355	-0.230
F	59	D	-0.747	0.019	0.835	0.208	0.066	0.025	0.073	0.835	0.001	0.000	-0.064	-0.185	-0.161	0.208
F	60	C	1.292	0.015	0.503	0.385	0.194	0.065	0.503	0.237	0.001	0.000	-0.317	-0.357	0.385	-0.354
F	61	B	0.466	0.016	0.654	0.482	0.131	0.654	0.107	0.107	0.001	0.000	-0.400	0.482	-0.250	-0.511
F	62	C	0.613	0.015	0.627	0.494	0.238	0.086	0.627	0.048	0.001	0.000	-0.472	-0.401	0.494	-0.222
F	63	A	0.645	0.015	0.623	0.522	0.623	0.298	0.060	0.019	0.000	0.000	0.522	-0.530	-0.259	-0.257
F	64	D	-0.186	0.017	0.761	0.306	0.194	0.025	0.020	0.761	0.001	0.000	-0.225	-0.236	-0.241	0.306
F	65	A	0.849	0.015	0.586	0.498	0.586	0.263	0.064	0.087	0.001	0.000	0.498	-0.517	-0.349	-0.302
F	66	C	1.168	0.015	0.526	0.400	0.181	0.232	0.526	0.060	0.001	0.000	-0.345	-0.424	0.400	-0.178
F	67	C	-0.102	0.017	0.748	0.419	0.075	0.088	0.748	0.088	0.002	0.000	-0.382	-0.309	0.419	-0.230

Appendix B: 2004 PSSA Grade Five Item Analysis

Multiple Choice Items for Mathematics

Form	Seq	Key	Logit	LSE	P-Value	PtBis	%A	%B	%C	%D	Blank	Invalid	R(A)	R(B)	R(C)	R(D)
W	1	C	-0.658	0.008	0.822	0.469	0.026	0.101	0.822	0.051	0.000	0.000	-0.257	-0.367	0.469	-0.338
W	2	A	-0.489	0.007	0.800	0.482	0.800	0.047	0.087	0.065	0.001	0.000	0.482	-0.305	-0.285	-0.445
W	3	D	-0.336	0.007	0.779	0.497	0.126	0.045	0.050	0.779	0.001	0.000	-0.397	-0.373	-0.314	0.497
W	4	C	0.420	0.006	0.659	0.388	0.128	0.111	0.659	0.102	0.001	0.000	-0.415	-0.273	0.388	-0.222
W	5	B	0.187	0.007	0.699	0.494	0.032	0.699	0.164	0.104	0.001	0.000	-0.353	0.494	-0.328	-0.509
W	6	B	-0.338	0.007	0.780	0.357	0.096	0.780	0.080	0.043	0.001	0.000	-0.323	0.357	-0.274	-0.099
W	7	D	-0.686	0.008	0.825	0.447	0.078	0.054	0.043	0.825	0.001	0.000	-0.288	-0.317	-0.335	0.447
W	8	C	-0.609	0.008	0.815	0.225	0.023	0.021	0.815	0.140	0.001	0.000	-0.195	-0.143	0.225	-0.145
W	9	B	-2.033	0.012	0.939	0.325	0.011	0.939	0.045	0.004	0.001	0.000	-0.127	0.325	-0.270	-0.123
W	10	B	-0.220	0.007	0.762	0.245	0.087	0.762	0.085	0.064	0.002	0.000	-0.199	0.245	-0.118	-0.177
W	11	C	0.615	0.006	0.624	0.439	0.129	0.166	0.624	0.079	0.002	0.000	-0.406	-0.392	0.439	-0.244
W	12	D	0.847	0.006	0.582	0.555	0.034	0.265	0.119	0.582	0.001	0.000	-0.436	-0.525	-0.460	0.555
W	13	C	0.122	0.007	0.709	0.431	0.092	0.082	0.709	0.116	0.001	0.000	-0.319	-0.310	0.431	-0.349
W	14	B	0.456	0.006	0.652	0.493	0.182	0.652	0.070	0.094	0.002	0.000	-0.459	0.493	-0.252	-0.422
W	15	A	-2.090	0.012	0.942	0.297	0.942	0.015	0.035	0.006	0.001	0.001	0.297	-0.181	-0.191	-0.147
W	16	B	-0.002	0.007	0.729	0.429	0.144	0.729	0.098	0.027	0.001	0.000	-0.313	0.429	-0.360	-0.293
W	17	B	0.526	0.006	0.640	0.552	0.131	0.640	0.030	0.198	0.001	0.000	-0.515	0.552	-0.314	-0.484
W	18	A	-0.754	0.008	0.832	0.467	0.832	0.031	0.044	0.091	0.001	0.000	0.467	-0.270	-0.281	-0.383
W	19	B	0.645	0.006	0.618	0.402	0.101	0.618	0.202	0.077	0.002	0.000	-0.374	0.402	-0.304	-0.317
W	20	A	-1.536	0.010	0.907	0.426	0.907	0.022	0.036	0.035	0.001	0.000	0.426	-0.243	-0.288	-0.269
W	21	C	-0.359	0.007	0.782	0.398	0.113	0.030	0.782	0.074	0.001	0.000	-0.238	-0.315	0.398	-0.333
W	22	B	0.389	0.006	0.663	0.540	0.103	0.663	0.131	0.101	0.003	0.000	-0.360	0.540	-0.539	-0.397
W	23	B	1.368	0.006	0.484	0.324	0.069	0.484	0.098	0.347	0.002	0.000	-0.266	0.324	-0.261	-0.311
W	24	C	-0.425	0.007	0.790	0.473	0.022	0.065	0.790	0.120	0.003	0.000	-0.231	-0.264	0.473	-0.437
W	111	D	-0.981	0.008	0.858	0.287	0.026	0.042	0.074	0.858	0.000	0.000	-0.168	-0.234	-0.162	0.287
W	112	B	-0.376	0.007	0.785	0.411	0.053	0.785	0.062	0.099	0.001	0.000	-0.249	0.411	-0.295	-0.315
W	113	C	0.007	0.007	0.728	0.455	0.059	0.124	0.728	0.088	0.001	0.000	-0.348	-0.327	0.455	-0.350
W	114	D	-0.592	0.008	0.813	0.427	0.099	0.020	0.067	0.813	0.001	0.000	-0.313	-0.226	-0.330	0.427
W	115	A	0.416	0.006	0.660	0.424	0.660	0.083	0.126	0.130	0.001	0.000	0.424	-0.283	-0.395	-0.310
W	116	D	-0.790	0.008	0.838	0.531	0.028	0.021	0.113	0.838	0.000	0.000	-0.215	-0.253	-0.503	0.531
W	117	D	1.054	0.006	0.543	0.433	0.233	0.073	0.150	0.543	0.001	0.000	-0.330	-0.472	-0.402	0.433
W	118	C	-0.683	0.008	0.825	0.298	0.035	0.112	0.825	0.027	0.001	0.000	-0.247	-0.178	0.298	-0.208
W	119	C	0.432	0.006	0.657	0.292	0.052	0.133	0.657	0.156	0.001	0.000	-0.281	-0.231	0.292	-0.188
W	120	B	-0.501	0.007	0.802	0.455	0.083	0.802	0.059	0.056	0.001	0.000	-0.330	0.455	-0.268	-0.367
W	121	C	0.217	0.007	0.694	0.405	0.136	0.073	0.694	0.097	0.000	0.000	-0.342	-0.302	0.405	-0.273
W	122	B	0.381	0.006	0.666	0.421	0.183	0.666	0.088	0.062	0.001	0.000	-0.302	0.421	-0.361	-0.363

Appendix B: 2004 PSSA Grade Five Item Analysis

Multiple Choice Items for Mathematics

Form	Seq	Key	Logit	LSE	P-Value	PtBis	%A	%B	%C	%D	Blank	Invalid	R(A)	R(B)	R(C)	R(D)
W	123	C	-0.078	0.007	0.741	0.402	0.105	0.089	0.741	0.064	0.001	0.000	-0.336	-0.272	0.402	-0.263
W	124	C	-0.633	0.008	0.819	0.346	0.137	0.023	0.819	0.021	0.001	0.000	-0.254	-0.252	0.346	-0.222
W	125	A	-0.640	0.008	0.819	0.415	0.819	0.128	0.039	0.013	0.001	0.000	0.415	-0.316	-0.305	-0.241
W	126	C	0.791	0.006	0.592	0.500	0.102	0.232	0.592	0.073	0.001	0.000	-0.400	-0.494	0.500	-0.316
W	127	C	1.543	0.006	0.451	0.392	0.180	0.316	0.451	0.052	0.001	0.000	-0.470	-0.336	0.392	-0.289
W	128	A	-0.508	0.007	0.802	0.423	0.802	0.100	0.054	0.043	0.001	0.000	0.423	-0.328	-0.348	-0.188
W	129	C	0.179	0.007	0.700	0.506	0.119	0.095	0.700	0.085	0.001	0.000	-0.437	-0.391	0.506	-0.346
W	130	D	0.555	0.006	0.635	0.457	0.106	0.149	0.108	0.635	0.002	0.000	-0.368	-0.358	-0.386	0.457
W	131	B	-2.537	0.014	0.961	0.313	0.010	0.961	0.023	0.005	0.001	0.000	-0.154	0.313	-0.242	-0.097
W	132	C	0.726	0.006	0.604	0.553	0.058	0.295	0.604	0.043	0.001	0.000	-0.424	-0.531	0.553	-0.350
W	133	C	0.782	0.006	0.594	0.367	0.078	0.088	0.594	0.239	0.001	0.000	-0.294	-0.297	0.367	-0.317
W	134	B	0.783	0.006	0.593	0.298	0.095	0.593	0.222	0.088	0.001	0.000	-0.297	0.298	-0.183	-0.299
W	163	A	-0.950	0.008	0.855	0.282	0.855	0.109	0.012	0.023	0.000	0.000	0.282	-0.161	-0.208	-0.269
W	164	C	0.293	0.006	0.681	0.511	0.088	0.101	0.681	0.130	0.001	0.000	-0.380	-0.374	0.511	-0.445
W	165	B	0.288	0.006	0.682	0.441	0.078	0.682	0.155	0.085	0.001	0.000	-0.259	0.441	-0.365	-0.388
W	166	B	1.517	0.006	0.455	0.397	0.110	0.455	0.295	0.138	0.001	0.000	-0.414	0.397	-0.322	-0.437
W	167	A	0.070	0.007	0.717	0.590	0.717	0.137	0.031	0.114	0.001	0.000	0.590	-0.544	-0.304	-0.456
W	168	D	0.554	0.006	0.634	0.513	0.073	0.130	0.161	0.634	0.001	0.000	-0.435	-0.433	-0.410	0.513
W	169	D	-0.246	0.007	0.766	0.501	0.081	0.100	0.052	0.766	0.001	0.000	-0.321	-0.437	-0.332	0.501
W	170	B	-0.993	0.008	0.859	0.470	0.080	0.859	0.023	0.037	0.000	0.000	-0.403	0.470	-0.258	-0.241
W	171	C	0.383	0.006	0.665	0.539	0.055	0.237	0.665	0.042	0.001	0.000	-0.256	-0.527	0.539	-0.412
W	172	A	-0.624	0.008	0.817	0.434	0.817	0.060	0.060	0.062	0.001	0.000	0.434	-0.316	-0.272	-0.305
W	173	C	0.610	0.006	0.625	0.437	0.152	0.129	0.625	0.092	0.001	0.000	-0.368	-0.371	0.437	-0.324
W	174	D	0.095	0.007	0.714	0.365	0.035	0.211	0.039	0.714	0.001	0.000	-0.270	-0.288	-0.281	0.365
W	175	A	-1.669	0.010	0.917	0.433	0.917	0.025	0.025	0.032	0.000	0.000	0.433	-0.215	-0.263	-0.329
W	176	B	-0.005	0.007	0.729	0.421	0.073	0.729	0.129	0.066	0.002	0.000	-0.329	0.421	-0.307	-0.299
W	177	C	-0.749	0.008	0.832	0.496	0.029	0.069	0.832	0.070	0.001	0.000	-0.306	-0.367	0.496	-0.355
W	178	C	0.497	0.006	0.645	0.534	0.178	0.093	0.645	0.084	0.001	0.000	-0.524	-0.438	0.534	-0.295
W	179	D	0.184	0.007	0.698	0.520	0.066	0.128	0.106	0.698	0.002	0.000	-0.412	-0.422	-0.387	0.520
W	180	D	0.547	0.006	0.637	0.353	0.031	0.131	0.199	0.637	0.001	0.000	-0.329	-0.181	-0.352	0.353
W	181	B	0.051	0.007	0.720	0.492	0.074	0.720	0.146	0.057	0.002	0.000	-0.367	0.492	-0.382	-0.382
W	182	C	-0.388	0.007	0.785	0.474	0.127	0.041	0.785	0.046	0.002	0.000	-0.382	-0.287	0.474	-0.337
W	183	C	0.391	0.006	0.664	0.549	0.086	0.207	0.664	0.043	0.002	0.000	-0.406	-0.540	0.549	-0.255
W	184	B	1.400	0.006	0.476	0.388	0.037	0.476	0.130	0.353	0.004	0.000	-0.431	0.388	-0.400	-0.318

Appendix C: 2004 PSSA Grade Eight Item Analysis

Multiple Choice Items for Mathematics

Form	Seq	Key	Logit	LSE	P-Value	PtBis	%A	%B	%C	%D	Blank	Invalid	R(A)	R(B)	R(C)	R(D)
A	63	A	1.146	0.014	0.457	0.365	0.457	0.089	0.216	0.235	0.002	0.000	0.365	-0.468	-0.348	-0.247
A	64	B	-0.891	0.017	0.810	0.493	0.051	0.810	0.105	0.033	0.002	0.000	-0.350	0.493	-0.386	-0.246
A	65	C	-0.354	0.016	0.732	0.488	0.103	0.094	0.732	0.069	0.002	0.000	-0.349	-0.351	0.488	-0.368
A	66	A	0.006	0.015	0.672	0.331	0.672	0.041	0.057	0.229	0.001	0.000	0.331	-0.271	-0.285	-0.241
A	67	C	0.408	0.014	0.598	0.402	0.196	0.148	0.598	0.055	0.002	0.000	-0.245	-0.409	0.402	-0.357
A	68	D	-0.341	0.016	0.730	0.522	0.184	0.063	0.022	0.730	0.001	0.000	-0.400	-0.462	-0.318	0.522
A	69	B	-0.539	0.016	0.760	0.458	0.088	0.760	0.107	0.043	0.002	0.000	-0.266	0.458	-0.375	-0.334
A	70	B	0.157	0.015	0.645	0.530	0.028	0.645	0.206	0.120	0.001	0.000	-0.266	0.530	-0.479	-0.428
A	71	A	-0.819	0.017	0.801	0.373	0.801	0.066	0.044	0.088	0.001	0.000	0.373	-0.310	-0.238	-0.212
A	72	B	-0.779	0.017	0.796	0.523	0.019	0.796	0.146	0.037	0.001	0.000	-0.239	0.523	-0.440	-0.364
A	73	B	0.771	0.014	0.528	0.427	0.205	0.528	0.184	0.077	0.005	0.000	-0.404	0.427	-0.341	-0.316
A	74	C	-0.411	0.016	0.743	0.454	0.112	0.058	0.743	0.087	0.001	0.000	-0.267	-0.401	0.454	-0.349
A	75	C	0.256	0.015	0.626	0.388	0.057	0.124	0.626	0.192	0.002	0.000	-0.335	-0.329	0.388	-0.275
A	76	D	0.729	0.014	0.538	0.457	0.147	0.171	0.143	0.538	0.001	0.000	-0.380	-0.383	-0.415	0.457
A	77	D	0.606	0.014	0.560	0.393	0.145	0.162	0.130	0.560	0.003	0.000	-0.331	-0.325	-0.315	0.393
B	63	D	0.434	0.014	0.597	0.486	0.143	0.164	0.095	0.597	0.001	0.000	-0.354	-0.443	-0.406	0.486
B	64	A	0.290	0.015	0.623	0.444	0.623	0.260	0.086	0.027	0.004	0.000	0.444	-0.357	-0.400	-0.322
B	65	A	-1.385	0.020	0.872	0.357	0.872	0.011	0.036	0.080	0.000	0.000	0.357	-0.181	-0.244	-0.245
B	66	D	-0.152	0.015	0.705	0.336	0.088	0.099	0.107	0.705	0.001	0.000	-0.304	-0.221	-0.213	0.336
B	67	D	0.307	0.015	0.623	0.648	0.141	0.144	0.091	0.623	0.001	0.000	-0.631	-0.562	-0.412	0.648
B	68	C	1.221	0.014	0.445	0.240	0.185	0.216	0.445	0.149	0.004	0.000	-0.159	-0.253	0.240	-0.222
B	69	D	-0.015	0.015	0.679	0.424	0.050	0.113	0.156	0.679	0.002	0.000	-0.251	-0.360	-0.328	0.424
B	70	B	0.835	0.014	0.520	0.294	0.217	0.520	0.142	0.117	0.003	0.000	-0.261	0.294	-0.270	-0.192
B	71	C	0.658	0.014	0.555	0.219	0.088	0.222	0.555	0.134	0.001	0.000	-0.253	-0.102	0.219	-0.211
B	72	B	0.051	0.015	0.669	0.481	0.087	0.669	0.133	0.110	0.002	0.000	-0.407	0.481	-0.360	-0.355
B	73	C	0.835	0.014	0.521	0.351	0.247	0.124	0.521	0.107	0.002	0.000	-0.325	-0.307	0.351	-0.258
B	74	D	0.048	0.015	0.669	0.437	0.064	0.199	0.066	0.669	0.001	0.000	-0.384	-0.271	-0.427	0.437
B	75	B	-0.098	0.015	0.695	0.503	0.034	0.695	0.118	0.151	0.001	0.000	-0.270	0.503	-0.336	-0.477
B	76	D	0.346	0.015	0.613	0.503	0.125	0.100	0.159	0.613	0.002	0.000	-0.513	-0.456	-0.304	0.503
B	77	C	-0.011	0.015	0.679	0.462	0.146	0.112	0.679	0.060	0.003	0.000	-0.407	-0.352	0.462	-0.257

Appendix C: 2004 PSSA Grade Eight Item Analysis

Multiple Choice Items for Mathematics

Form	Seq	Key	Logit	LSE	P-Value	PtBis	%A	%B	%C	%D	Blank	Invalid	R(A)	R(B)	R(C)	R(D)
C	63	B	-1.448	0.021	0.878	0.212	0.031	0.878	0.021	0.069	0.001	0.000	-0.161	0.212	-0.157	-0.082
C	64	C	-0.830	0.017	0.807	0.394	0.154	0.021	0.807	0.017	0.001	0.000	-0.311	-0.256	0.394	-0.226
C	65	C	1.531	0.015	0.388	0.225	0.285	0.128	0.388	0.196	0.003	0.000	-0.065	-0.382	0.225	-0.295
C	66	D	-0.439	0.016	0.751	0.510	0.089	0.066	0.093	0.751	0.001	0.000	-0.410	-0.313	-0.376	0.510
C	67	C	0.420	0.014	0.600	0.490	0.016	0.353	0.600	0.030	0.001	0.000	-0.270	-0.457	0.490	-0.364
C	68	B	0.274	0.015	0.628	0.466	0.156	0.628	0.110	0.103	0.003	0.000	-0.322	0.466	-0.387	-0.403
C	69	C	1.089	0.014	0.471	0.431	0.141	0.212	0.471	0.174	0.002	0.000	-0.366	-0.319	0.431	-0.478
C	70	D	0.240	0.015	0.635	0.285	0.082	0.047	0.235	0.635	0.001	0.000	-0.334	-0.339	-0.123	0.285
C	71	D	1.640	0.015	0.368	0.376	0.214	0.181	0.234	0.368	0.003	0.000	-0.397	-0.404	-0.325	0.376
C	72	B	0.944	0.014	0.500	0.428	0.107	0.500	0.134	0.257	0.002	0.000	-0.458	0.428	-0.341	-0.360
C	73	B	1.473	0.015	0.398	0.292	0.388	0.398	0.172	0.038	0.004	0.000	-0.194	0.292	-0.413	-0.322
C	74	C	0.043	0.015	0.670	0.494	0.090	0.145	0.670	0.094	0.001	0.000	-0.346	-0.452	0.494	-0.315
C	75	D	0.110	0.015	0.657	0.445	0.076	0.085	0.179	0.657	0.003	0.000	-0.314	-0.386	-0.331	0.445
C	76	B	0.129	0.015	0.655	0.524	0.116	0.655	0.136	0.091	0.002	0.000	-0.378	0.524	-0.435	-0.421
C	77	D	-0.249	0.016	0.720	0.518	0.059	0.074	0.145	0.720	0.002	0.000	-0.406	-0.409	-0.373	0.518
D	63	B	-2.022	0.025	0.924	0.350	0.027	0.924	0.035	0.013	0.001	0.000	-0.172	0.350	-0.268	-0.174
D	64	B	1.747	0.015	0.352	0.386	0.019	0.352	0.098	0.529	0.002	0.000	-0.316	0.386	-0.468	-0.363
D	65	D	0.094	0.015	0.663	0.403	0.031	0.043	0.262	0.663	0.001	0.000	-0.339	-0.260	-0.336	0.403
D	66	B	-0.993	0.018	0.827	0.420	0.076	0.827	0.066	0.028	0.002	0.000	-0.312	0.420	-0.258	-0.276
D	67	A	0.014	0.015	0.675	0.353	0.675	0.062	0.170	0.089	0.004	0.000	0.353	-0.267	-0.266	-0.257
D	68	B	-0.152	0.015	0.705	0.526	0.129	0.705	0.030	0.135	0.001	0.000	-0.333	0.526	-0.269	-0.536
D	69	D	1.931	0.015	0.320	0.370	0.115	0.196	0.368	0.320	0.002	0.000	-0.595	-0.449	-0.292	0.370
D	70	B	0.153	0.015	0.652	0.314	0.038	0.652	0.239	0.070	0.001	0.000	-0.072	0.314	-0.303	-0.215
D	71	D	1.769	0.015	0.347	0.431	0.372	0.130	0.147	0.347	0.004	0.000	-0.459	-0.419	-0.417	0.431
D	72	B	-0.040	0.015	0.685	0.450	0.216	0.685	0.068	0.030	0.001	0.000	-0.327	0.450	-0.461	-0.263
D	73	B	2.089	0.016	0.293	0.274	0.176	0.293	0.315	0.213	0.002	0.000	-0.371	0.274	-0.359	-0.085
D	74	C	0.164	0.015	0.650	0.352	0.061	0.190	0.650	0.098	0.001	0.000	-0.318	-0.145	0.352	-0.446
D	75	D	-0.407	0.016	0.747	0.547	0.129	0.039	0.083	0.747	0.001	0.000	-0.497	-0.311	-0.348	0.547
D	76	D	0.680	0.014	0.553	0.421	0.052	0.321	0.071	0.553	0.002	0.000	-0.388	-0.329	-0.452	0.421
D	77	C	-0.934	0.018	0.821	0.458	0.069	0.073	0.821	0.036	0.001	0.000	-0.289	-0.339	0.458	-0.309

Appendix C: 2004 PSSA Grade Eight Item Analysis

Multiple Choice Items for Mathematics

Form	Seq	Key	Logit	LSE	P-Value	PtBis	%A	%B	%C	%D	Blank	Invalid	R(A)	R(B)	R(C)	R(D)
E	63	D	-0.472	0.016	0.755	0.387	0.085	0.045	0.113	0.755	0.002	0.000	-0.411	-0.240	-0.175	0.387
E	64	B	0.756	0.014	0.538	0.559	0.242	0.538	0.054	0.165	0.001	0.000	-0.630	0.559	-0.303	-0.397
E	65	C	1.112	0.014	0.467	0.211	0.166	0.178	0.467	0.185	0.004	0.000	-0.029	-0.291	0.211	-0.220
E	66	A	0.366	0.015	0.611	0.205	0.611	0.187	0.167	0.034	0.001	0.000	0.205	-0.231	-0.047	-0.255
E	67	B	1.568	0.015	0.383	0.354	0.095	0.383	0.239	0.281	0.002	0.000	-0.394	0.354	-0.270	-0.388
E	68	A	0.359	0.015	0.613	0.436	0.613	0.207	0.113	0.065	0.002	0.000	0.436	-0.335	-0.374	-0.370
E	69	D	0.224	0.015	0.639	0.601	0.143	0.123	0.094	0.639	0.002	0.000	-0.563	-0.513	-0.389	0.601
E	70	C	-0.331	0.016	0.733	0.497	0.063	0.121	0.733	0.081	0.001	0.000	-0.376	-0.357	0.497	-0.370
E	71	C	-0.261	0.016	0.722	0.535	0.053	0.095	0.722	0.128	0.002	0.000	-0.383	-0.411	0.535	-0.405
E	72	C	-0.271	0.016	0.724	0.554	0.081	0.089	0.724	0.105	0.001	0.000	-0.394	-0.404	0.554	-0.442
E	73	B	0.929	0.014	0.502	0.446	0.129	0.502	0.201	0.163	0.004	0.000	-0.389	0.446	-0.501	-0.259
E	74	C	0.180	0.015	0.645	0.312	0.104	0.111	0.645	0.137	0.002	0.000	-0.205	-0.291	0.312	-0.217
E	75	C	0.414	0.015	0.602	0.539	0.148	0.192	0.602	0.056	0.002	0.000	-0.528	-0.412	0.539	-0.398
E	76	A	-0.359	0.016	0.738	0.514	0.738	0.080	0.094	0.086	0.001	0.000	0.514	-0.308	-0.390	-0.431
E	77	A	0.975	0.014	0.495	0.328	0.495	0.179	0.171	0.153	0.002	0.000	0.328	-0.294	-0.239	-0.341
F	63	C	-1.301	0.020	0.863	0.464	0.018	0.065	0.863	0.052	0.001	0.000	-0.213	-0.308	0.464	-0.368
F	64	D	0.290	0.015	0.626	0.603	0.114	0.177	0.079	0.626	0.004	0.000	-0.511	-0.545	-0.409	0.603
F	65	D	-0.988	0.018	0.829	0.411	0.017	0.015	0.138	0.829	0.000	0.000	-0.247	-0.190	-0.344	0.411
F	66	B	1.029	0.014	0.484	0.210	0.313	0.484	0.132	0.066	0.006	0.000	-0.192	0.210	-0.160	-0.159
F	67	A	-0.087	0.015	0.695	0.461	0.695	0.056	0.163	0.085	0.001	0.000	0.461	-0.363	-0.398	-0.270
F	68	D	0.434	0.015	0.601	0.499	0.093	0.238	0.068	0.601	0.001	0.000	-0.484	-0.468	-0.210	0.499
F	69	B	1.679	0.015	0.365	0.383	0.390	0.365	0.104	0.138	0.002	0.000	-0.362	0.383	-0.204	-0.557
F	70	A	0.561	0.014	0.577	0.577	0.577	0.137	0.222	0.064	0.001	0.000	0.577	-0.467	-0.522	-0.495
F	71	D	1.564	0.015	0.386	0.348	0.277	0.256	0.080	0.386	0.002	0.000	-0.275	-0.372	-0.432	0.348
F	72	C	1.150	0.014	0.463	0.394	0.268	0.130	0.463	0.137	0.002	0.000	-0.415	-0.327	0.394	-0.287
F	73	A	1.305	0.014	0.434	0.409	0.434	0.277	0.145	0.143	0.001	0.000	0.409	-0.237	-0.430	-0.584
F	74	B	0.942	0.014	0.503	0.390	0.161	0.503	0.184	0.150	0.001	0.000	-0.190	0.390	-0.486	-0.318
F	75	D	0.454	0.014	0.597	0.426	0.162	0.185	0.055	0.597	0.001	0.000	-0.323	-0.360	-0.427	0.426
F	76	C	-0.360	0.016	0.740	0.480	0.040	0.146	0.740	0.072	0.001	0.000	-0.287	-0.363	0.480	-0.388
F	77	A	-0.957	0.018	0.824	0.500	0.824	0.038	0.080	0.057	0.001	0.000	0.500	-0.283	-0.340	-0.398

Appendix C: 2004 PSSA Grade Eight Item Analysis

Multiple Choice Items for Mathematics

Form	Seq	Key	Logit	LSE	P-Value	PtBis	%A	%B	%C	%D	Blank	Invalid	R(A)	R(B)	R(C)	R(D)
W	1	A	-0.934	0.007	0.820	0.271	0.820	0.074	0.098	0.007	0.000	0.000	0.271	-0.186	-0.203	-0.104
W	2	B	0.077	0.006	0.664	0.401	0.050	0.664	0.274	0.011	0.001	0.000	-0.300	0.401	-0.355	-0.186
W	3	D	-0.009	0.006	0.679	0.498	0.082	0.155	0.083	0.679	0.002	0.000	-0.258	-0.500	-0.325	0.498
W	4	C	0.582	0.006	0.570	0.352	0.106	0.283	0.570	0.040	0.001	0.000	-0.231	-0.346	0.352	-0.205
W	5	A	1.123	0.006	0.466	0.463	0.466	0.321	0.073	0.138	0.001	0.000	0.463	-0.439	-0.440	-0.400
W	6	B	1.109	0.006	0.469	0.463	0.167	0.469	0.236	0.127	0.001	0.000	-0.274	0.463	-0.520	-0.454
W	7	D	-0.684	0.007	0.787	0.473	0.058	0.063	0.091	0.787	0.001	0.000	-0.265	-0.364	-0.354	0.473
W	8	C	-1.260	0.008	0.858	0.396	0.017	0.114	0.858	0.010	0.001	0.000	-0.198	-0.347	0.396	-0.122
W	9	A	-0.390	0.007	0.740	0.368	0.740	0.124	0.104	0.028	0.004	0.000	0.368	-0.293	-0.240	-0.235
W	10	D	-0.725	0.007	0.792	0.490	0.076	0.084	0.046	0.792	0.001	0.000	-0.385	-0.296	-0.364	0.490
W	11	A	-0.417	0.007	0.747	0.532	0.747	0.161	0.031	0.060	0.001	0.000	0.532	-0.453	-0.338	-0.344
W	12	C	0.177	0.006	0.646	0.534	0.116	0.103	0.646	0.134	0.002	0.000	-0.405	-0.385	0.534	-0.478
W	13	B	-0.045	0.006	0.685	0.397	0.231	0.685	0.041	0.041	0.001	0.000	-0.300	0.397	-0.378	-0.257
W	14	C	0.132	0.006	0.654	0.435	0.188	0.093	0.654	0.063	0.002	0.000	-0.269	-0.412	0.435	-0.400
W	15	A	0.206	0.006	0.641	0.382	0.641	0.229	0.075	0.054	0.001	0.000	0.382	-0.259	-0.398	-0.299
W	16	A	-0.469	0.007	0.755	0.403	0.755	0.097	0.064	0.084	0.001	0.000	0.403	-0.323	-0.272	-0.238
W	17	B	0.059	0.006	0.667	0.228	0.175	0.667	0.052	0.105	0.001	0.000	-0.099	0.228	-0.227	-0.225
W	18	D	0.424	0.006	0.600	0.589	0.033	0.150	0.216	0.600	0.001	0.000	-0.397	-0.487	-0.548	0.589
W	19	B	0.539	0.006	0.578	0.441	0.205	0.578	0.096	0.119	0.003	0.000	-0.337	0.441	-0.363	-0.425
W	20	D	1.753	0.006	0.349	0.465	0.100	0.448	0.101	0.349	0.001	0.000	-0.453	-0.490	-0.416	0.465
W	21	B	0.854	0.006	0.517	0.323	0.121	0.517	0.216	0.144	0.001	0.000	-0.498	0.323	-0.185	-0.201
W	22	B	0.440	0.006	0.597	0.433	0.055	0.597	0.246	0.100	0.002	0.000	-0.368	0.433	-0.405	-0.237
W	23	D	0.748	0.006	0.538	0.217	0.069	0.365	0.026	0.538	0.002	0.000	-0.247	-0.147	-0.259	0.217
W	24	C	-1.022	0.007	0.830	0.427	0.058	0.057	0.830	0.053	0.002	0.000	-0.292	-0.270	0.427	-0.289
W	131	C	-1.259	0.008	0.857	0.420	0.025	0.043	0.857	0.074	0.001	0.000	-0.236	-0.263	0.420	-0.307
W	132	B	0.687	0.006	0.550	0.372	0.043	0.550	0.059	0.347	0.001	0.000	-0.334	0.372	-0.353	-0.305
W	133	A	-0.893	0.007	0.815	0.423	0.815	0.049	0.072	0.064	0.001	0.000	0.423	-0.240	-0.323	-0.283
W	134	A	0.308	0.006	0.622	0.440	0.622	0.173	0.122	0.082	0.001	0.000	0.440	-0.322	-0.340	-0.416
W	135	B	1.108	0.006	0.468	0.399	0.067	0.468	0.235	0.228	0.003	0.000	-0.352	0.399	-0.403	-0.326
W	136	A	-0.035	0.006	0.684	0.456	0.684	0.216	0.052	0.048	0.000	0.000	0.456	-0.368	-0.352	-0.326
W	137	A	-0.173	0.006	0.707	0.374	0.707	0.063	0.087	0.142	0.001	0.000	0.374	-0.265	-0.293	-0.267
W	138	B	-0.935	0.007	0.820	0.409	0.055	0.820	0.085	0.039	0.001	0.000	-0.313	0.409	-0.236	-0.293
W	139	C	0.790	0.006	0.530	0.475	0.136	0.167	0.530	0.165	0.002	0.000	-0.409	-0.356	0.475	-0.474
W	140	A	-0.720	0.007	0.791	0.518	0.791	0.046	0.069	0.093	0.001	0.000	0.518	-0.333	-0.361	-0.394
W	141	B	-0.344	0.006	0.736	0.180	0.211	0.736	0.031	0.022	0.000	0.000	-0.073	0.180	-0.208	-0.255
W	142	B	0.013	0.006	0.675	0.477	0.122	0.675	0.069	0.133	0.001	0.000	-0.341	0.477	-0.433	-0.349

Appendix C: 2004 PSSA Grade Eight Item Analysis

Multiple Choice Items for Mathematics

Form	Seq	Key	Logit	LSE	P-Value	PtBis	%A	%B	%C	%D	Blank	Invalid	R(A)	R(B)	R(C)	R(D)
W	143	C	0.247	0.006	0.633	0.352	0.264	0.063	0.633	0.039	0.001	0.000	-0.245	-0.391	0.352	-0.261
W	144	D	-0.068	0.006	0.689	0.488	0.080	0.120	0.110	0.689	0.001	0.000	-0.307	-0.383	-0.403	0.488
W	145	B	0.708	0.006	0.546	0.340	0.075	0.546	0.288	0.090	0.001	0.000	-0.319	0.340	-0.241	-0.358
W	146	B	0.413	0.006	0.602	0.402	0.143	0.602	0.225	0.030	0.001	0.000	-0.381	0.402	-0.329	-0.241
W	147	D	0.078	0.006	0.664	0.416	0.040	0.055	0.239	0.664	0.001	0.000	-0.350	-0.394	-0.303	0.416
W	148	B	0.673	0.006	0.553	0.388	0.091	0.553	0.180	0.175	0.001	0.000	-0.156	0.388	-0.394	-0.357
W	149	B	0.779	0.006	0.532	0.401	0.090	0.532	0.243	0.134	0.001	0.000	-0.365	0.401	-0.299	-0.404
W	150	A	0.264	0.006	0.630	0.540	0.630	0.105	0.062	0.202	0.001	0.000	0.540	-0.431	-0.413	-0.469
W	151	B	-1.150	0.008	0.846	0.408	0.022	0.846	0.087	0.044	0.000	0.000	-0.239	0.408	-0.272	-0.303
W	152	A	-0.245	0.006	0.719	0.490	0.719	0.157	0.066	0.057	0.001	0.000	0.490	-0.410	-0.417	-0.237
W	153	B	-0.528	0.007	0.764	0.407	0.107	0.764	0.084	0.043	0.001	0.000	-0.291	0.407	-0.323	-0.230
W	154	D	0.694	0.006	0.549	0.554	0.272	0.134	0.044	0.549	0.001	0.000	-0.559	-0.410	-0.404	0.554
W	193	B	0.194	0.006	0.643	0.586	0.038	0.643	0.190	0.129	0.000	0.000	-0.339	0.586	-0.520	-0.512
W	194	C	-0.364	0.006	0.738	0.566	0.069	0.173	0.738	0.018	0.002	0.000	-0.421	-0.516	0.566	-0.181
W	195	C	0.085	0.006	0.662	0.431	0.179	0.066	0.662	0.090	0.002	0.000	-0.341	-0.288	0.431	-0.353
W	196	D	-0.802	0.007	0.802	0.414	0.036	0.048	0.113	0.802	0.002	0.000	-0.205	-0.270	-0.333	0.414
W	197	D	0.258	0.006	0.631	0.595	0.140	0.160	0.068	0.631	0.001	0.000	-0.441	-0.574	-0.437	0.595
W	198	A	0.465	0.006	0.593	0.351	0.593	0.106	0.087	0.213	0.001	0.000	0.351	-0.274	-0.194	-0.333
W	199	C	0.684	0.006	0.550	0.273	0.087	0.269	0.550	0.091	0.002	0.000	-0.310	-0.238	0.273	-0.116
W	200	D	-0.242	0.006	0.719	0.466	0.133	0.060	0.086	0.719	0.001	0.000	-0.362	-0.381	-0.305	0.466
W	201	D	0.280	0.006	0.627	0.508	0.090	0.150	0.131	0.627	0.001	0.000	-0.365	-0.453	-0.407	0.508
W	202	B	-2.087	0.010	0.927	0.294	0.021	0.927	0.030	0.021	0.001	0.000	-0.153	0.294	-0.187	-0.163
W	203	B	0.313	0.006	0.621	0.444	0.139	0.621	0.148	0.091	0.001	0.000	-0.356	0.444	-0.340	-0.381
W	204	D	0.300	0.006	0.623	0.507	0.132	0.111	0.133	0.623	0.002	0.000	-0.363	-0.436	-0.429	0.507
W	205	B	0.519	0.006	0.582	0.436	0.253	0.582	0.099	0.064	0.001	0.000	-0.315	0.436	-0.429	-0.389
W	206	B	-0.556	0.007	0.768	0.435	0.137	0.768	0.069	0.025	0.001	0.000	-0.329	0.435	-0.338	-0.237
W	207	C	-0.062	0.006	0.688	0.462	0.022	0.256	0.688	0.032	0.001	0.000	-0.289	-0.394	0.462	-0.364
W	208	C	0.776	0.006	0.533	0.334	0.138	0.222	0.533	0.105	0.002	0.000	-0.306	-0.217	0.334	-0.364
W	209	B	-0.205	0.006	0.712	0.420	0.173	0.712	0.074	0.040	0.001	0.000	-0.306	0.420	-0.371	-0.249
W	210	C	-0.668	0.007	0.784	0.406	0.071	0.097	0.784	0.047	0.001	0.000	-0.236	-0.336	0.406	-0.260
W	211	D	0.380	0.006	0.608	0.549	0.208	0.103	0.079	0.608	0.001	0.000	-0.455	-0.483	-0.440	0.549
W	212	B	-0.846	0.007	0.808	0.505	0.029	0.808	0.061	0.100	0.001	0.000	-0.262	0.505	-0.354	-0.403
W	213	A	0.284	0.006	0.626	0.312	0.626	0.159	0.163	0.051	0.001	0.000	0.312	-0.277	-0.197	-0.273
W	214	B	0.499	0.006	0.585	0.414	0.217	0.585	0.138	0.057	0.003	0.000	-0.314	0.414	-0.397	-0.302

Appendix D: 2004 PSSA Grade Eleven Item Analysis

Multiple Choice Items for Mathematics

Form	Seq	Key	Logit	LSE	P-Value	PtBis	%A	%B	%C	%D	Blank	Invalid	R(A)	R(B)	R(C)	R(D)
A	67	B	-1.314	0.019	0.821	0.267	0.085	0.821	0.064	0.028	0.002	0.000	-0.121	0.267	-0.235	-0.149
A	68	B	-2.520	0.028	0.934	0.308	0.005	0.934	0.017	0.044	0.001	0.000	-0.092	0.308	-0.130	-0.248
A	69	C	-0.844	0.017	0.754	0.309	0.124	0.052	0.754	0.068	0.002	0.000	-0.108	-0.298	0.309	-0.291
A	70	D	-0.860	0.017	0.758	0.331	0.027	0.061	0.153	0.758	0.001	0.000	-0.229	-0.325	-0.178	0.331
A	71	C	1.231	0.016	0.362	0.330	0.214	0.137	0.362	0.281	0.007	0.000	-0.240	-0.298	0.330	-0.397
A	72	C	0.828	0.015	0.440	0.623	0.276	0.126	0.440	0.155	0.003	0.000	-0.656	-0.523	0.623	-0.518
A	73	A	0.544	0.015	0.496	0.411	0.496	0.146	0.278	0.077	0.003	0.000	0.411	-0.108	-0.509	-0.394
A	74	B	0.725	0.015	0.459	0.440	0.066	0.459	0.311	0.158	0.006	0.000	-0.361	0.440	-0.405	-0.385
A	75	B	-0.130	0.015	0.625	0.455	0.085	0.625	0.126	0.156	0.008	0.000	-0.289	0.455	-0.332	-0.418
A	76	C	0.073	0.015	0.590	0.158	0.122	0.069	0.590	0.216	0.002	0.000	-0.038	-0.183	0.158	-0.143
A	77	D	1.184	0.016	0.373	0.435	0.204	0.278	0.142	0.373	0.002	0.000	-0.479	-0.470	-0.265	0.435
A	78	D	-0.254	0.016	0.650	0.425	0.104	0.097	0.143	0.650	0.006	0.000	-0.303	-0.323	-0.344	0.425
A	79	D	-0.096	0.015	0.624	0.238	0.023	0.093	0.258	0.624	0.002	0.000	-0.247	-0.162	-0.182	0.238
A	80	A	0.771	0.015	0.452	0.297	0.452	0.194	0.176	0.173	0.004	0.000	0.297	-0.304	-0.282	-0.207
A	81	A	1.694	0.017	0.281	0.257	0.281	0.271	0.319	0.115	0.014	0.000	0.257	-0.252	-0.277	-0.297
B	67	A	-1.109	0.018	0.795	0.431	0.795	0.105	0.060	0.036	0.003	0.000	0.431	-0.338	-0.285	-0.206
B	68	D	-1.221	0.019	0.812	0.277	0.050	0.101	0.035	0.812	0.002	0.000	-0.207	-0.150	-0.185	0.277
B	69	B	-0.470	0.016	0.694	0.434	0.039	0.694	0.157	0.106	0.003	0.000	-0.282	0.434	-0.385	-0.253
B	70	C	-0.053	0.015	0.617	0.240	0.049	0.291	0.617	0.041	0.003	0.000	-0.275	-0.155	0.240	-0.196
B	71	A	-0.366	0.016	0.677	0.421	0.677	0.247	0.030	0.044	0.001	0.000	0.421	-0.341	-0.280	-0.321
B	72	D	-1.169	0.018	0.805	0.485	0.021	0.045	0.126	0.805	0.002	0.000	-0.220	-0.317	-0.393	0.485
B	73	B	0.655	0.015	0.479	0.518	0.220	0.479	0.196	0.102	0.003	0.000	-0.442	0.518	-0.463	-0.531
B	74	B	1.656	0.017	0.296	0.247	0.022	0.296	0.050	0.630	0.001	0.000	-0.234	0.247	-0.350	-0.224
B	75	C	0.932	0.015	0.422	0.426	0.216	0.302	0.422	0.051	0.008	0.000	-0.463	-0.361	0.426	-0.301
B	76	C	-0.104	0.016	0.627	0.483	0.022	0.301	0.627	0.048	0.002	0.000	-0.297	-0.471	0.483	-0.185
B	77	A	1.309	0.016	0.355	0.255	0.355	0.320	0.236	0.087	0.003	0.000	0.255	-0.315	-0.134	-0.278
B	78	A	0.680	0.015	0.474	0.349	0.474	0.261	0.188	0.075	0.002	0.000	0.349	-0.239	-0.378	-0.366
B	79	B	0.891	0.015	0.433	0.296	0.102	0.433	0.176	0.287	0.003	0.000	-0.196	0.296	-0.261	-0.303
B	80	D	1.324	0.016	0.351	0.309	0.153	0.132	0.359	0.351	0.006	0.000	-0.267	-0.292	-0.316	0.309
B	81	D	1.409	0.016	0.335	0.426	0.223	0.219	0.214	0.335	0.009	0.000	-0.437	-0.409	-0.449	0.426

Appendix D: 2004 PSSA Grade Eleven Item Analysis

Multiple Choice Items for Mathematics

Form	Seq	Key	Logit	LSE	P-Value	PtBis	%A	%B	%C	%D	Blank	Invalid	R(A)	R(B)	R(C)	R(D)
C	67	C	-1.532	0.020	0.849	0.403	0.046	0.069	0.849	0.033	0.002	0.000	-0.263	-0.266	0.403	-0.224
C	68	C	-0.280	0.016	0.659	0.537	0.216	0.112	0.659	0.011	0.003	0.000	-0.481	-0.407	0.537	-0.229
C	69	B	0.290	0.015	0.549	0.480	0.127	0.549	0.174	0.146	0.004	0.000	-0.319	0.480	-0.463	-0.403
C	70	C	-0.462	0.016	0.691	0.487	0.105	0.137	0.691	0.066	0.001	0.000	-0.452	-0.401	0.487	-0.158
C	71	C	0.069	0.015	0.591	0.272	0.051	0.271	0.591	0.085	0.003	0.000	-0.213	-0.238	0.272	-0.154
C	72	B	0.808	0.015	0.448	0.500	0.317	0.448	0.105	0.128	0.002	0.000	-0.527	0.500	-0.277	-0.446
C	73	C	-0.868	0.017	0.758	0.482	0.068	0.143	0.758	0.029	0.002	0.000	-0.266	-0.420	0.482	-0.285
C	74	B	-0.179	0.016	0.640	0.388	0.068	0.640	0.247	0.044	0.002	0.000	-0.271	0.388	-0.329	-0.236
C	75	B	0.716	0.015	0.456	0.230	0.207	0.456	0.165	0.151	0.021	0.000	-0.170	0.230	-0.241	-0.193
C	76	A	0.715	0.015	0.464	0.485	0.464	0.210	0.165	0.157	0.005	0.000	0.485	-0.487	-0.400	-0.398
C	77	D	1.431	0.016	0.332	0.389	0.241	0.228	0.189	0.332	0.010	0.000	-0.307	-0.456	-0.417	0.389
C	78	D	-0.510	0.016	0.700	0.468	0.090	0.097	0.112	0.700	0.002	0.000	-0.314	-0.362	-0.349	0.468
C	79	A	0.955	0.015	0.421	0.462	0.421	0.162	0.265	0.150	0.002	0.000	0.462	-0.525	-0.292	-0.559
C	80	D	-0.365	0.016	0.673	0.557	0.083	0.055	0.185	0.673	0.004	0.000	-0.410	-0.390	-0.458	0.557
C	81	A	-0.010	0.015	0.608	0.533	0.608	0.172	0.088	0.128	0.004	0.000	0.533	-0.426	-0.449	-0.407
D	67	C	-1.435	0.020	0.836	0.381	0.020	0.076	0.836	0.065	0.003	0.000	-0.173	-0.273	0.381	-0.242
D	68	D	-0.469	0.016	0.693	0.549	0.106	0.099	0.099	0.693	0.003	0.000	-0.454	-0.459	-0.317	0.549
D	69	C	0.894	0.015	0.429	0.337	0.155	0.307	0.429	0.094	0.014	0.000	-0.372	-0.347	0.337	-0.082
D	70	D	0.306	0.015	0.547	0.496	0.033	0.225	0.190	0.547	0.005	0.000	-0.305	-0.456	-0.435	0.496
D	71	C	0.547	0.015	0.500	0.397	0.091	0.327	0.500	0.078	0.003	0.000	-0.428	-0.286	0.397	-0.397
D	72	A	1.267	0.016	0.365	0.193	0.365	0.336	0.081	0.215	0.003	0.000	0.193	-0.007	-0.318	-0.386
D	73	B	-0.502	0.016	0.698	0.560	0.084	0.698	0.128	0.087	0.003	0.000	-0.395	0.560	-0.434	-0.421
D	74	D	-0.376	0.016	0.677	0.524	0.067	0.156	0.096	0.677	0.003	0.000	-0.363	-0.508	-0.266	0.524
D	75	B	-0.123	0.016	0.629	0.456	0.148	0.629	0.144	0.077	0.003	0.000	-0.401	0.456	-0.339	-0.291
D	76	D	-1.168	0.018	0.803	0.478	0.077	0.039	0.079	0.803	0.002	0.000	-0.399	-0.301	-0.259	0.478
D	77	B	-1.094	0.018	0.792	0.509	0.052	0.792	0.134	0.020	0.002	0.000	-0.235	0.509	-0.474	-0.206
D	78	B	0.153	0.015	0.577	0.472	0.222	0.577	0.139	0.059	0.003	0.000	-0.392	0.472	-0.392	-0.348
D	79	D	0.890	0.015	0.433	0.457	0.242	0.182	0.132	0.433	0.010	0.000	-0.413	-0.414	-0.447	0.457
D	80	C	-0.238	0.016	0.652	0.463	0.120	0.123	0.652	0.103	0.003	0.000	-0.308	-0.365	0.463	-0.375
D	81	C	-1.435	0.020	0.835	0.456	0.056	0.044	0.835	0.062	0.004	0.000	-0.300	-0.281	0.456	-0.288

Appendix D: 2004 PSSA Grade Eleven Item Analysis

Multiple Choice Items for Mathematics

Form	Seq	Key	Logit	LSE	P-Value	PtBis	%A	%B	%C	%D	Blank	Invalid	R(A)	R(B)	R(C)	R(D)
E	67	C	-1.609	0.021	0.857	0.440	0.074	0.041	0.857	0.026	0.001	0.000	-0.372	-0.235	0.440	-0.190
E	68	A	0.018	0.016	0.602	0.434	0.602	0.199	0.073	0.120	0.005	0.000	0.434	-0.385	-0.310	-0.319
E	69	D	0.173	0.015	0.575	0.465	0.054	0.081	0.288	0.575	0.002	0.000	-0.461	-0.478	-0.333	0.465
E	70	D	1.589	0.017	0.305	0.234	0.065	0.358	0.259	0.305	0.013	0.000	-0.322	-0.181	-0.294	0.234
E	71	C	-0.728	0.017	0.738	0.531	0.048	0.162	0.738	0.050	0.002	0.000	-0.305	-0.467	0.531	-0.315
E	72	A	1.356	0.016	0.346	0.242	0.346	0.301	0.161	0.186	0.006	0.000	0.242	-0.269	-0.229	-0.200
E	73	D	0.244	0.015	0.558	0.541	0.142	0.149	0.147	0.558	0.004	0.000	-0.473	-0.435	-0.465	0.541
E	74	C	-1.220	0.019	0.810	0.536	0.089	0.069	0.810	0.030	0.002	0.000	-0.423	-0.365	0.536	-0.283
E	75	B	0.418	0.015	0.522	0.392	0.241	0.522	0.159	0.068	0.009	0.000	-0.274	0.392	-0.399	-0.330
E	76	D	-1.718	0.021	0.868	0.468	0.022	0.044	0.064	0.868	0.002	0.000	-0.247	-0.309	-0.327	0.468
E	77	B	2.175	0.018	0.220	0.223	0.228	0.220	0.025	0.525	0.002	0.000	-0.323	0.223	-0.286	-0.204
E	78	C	0.280	0.015	0.551	0.491	0.133	0.196	0.551	0.116	0.005	0.000	-0.344	-0.493	0.491	-0.343
E	79	A	-0.594	0.017	0.714	0.534	0.714	0.095	0.155	0.032	0.003	0.000	0.534	-0.444	-0.402	-0.308
E	80	A	1.834	0.017	0.269	0.428	0.269	0.078	0.408	0.243	0.002	0.000	0.428	-0.274	-0.575	-0.342
E	81	C	-1.522	0.020	0.847	0.333	0.034	0.026	0.847	0.091	0.001	0.000	-0.236	-0.231	0.333	-0.190
F	67	A	-1.133	0.018	0.797	0.433	0.797	0.061	0.078	0.059	0.004	0.000	0.433	-0.301	-0.337	-0.223
F	68	C	-0.116	0.016	0.626	0.428	0.076	0.236	0.626	0.057	0.005	0.000	-0.318	-0.350	0.428	-0.311
F	69	C	-0.376	0.016	0.676	0.547	0.163	0.085	0.676	0.072	0.003	0.000	-0.413	-0.450	0.547	-0.389
F	70	B	-0.500	0.016	0.698	0.528	0.076	0.698	0.147	0.076	0.003	0.000	-0.361	0.528	-0.436	-0.366
F	71	D	0.851	0.015	0.440	0.412	0.481	0.051	0.027	0.440	0.001	0.000	-0.366	-0.428	-0.371	0.412
F	72	B	0.970	0.015	0.417	0.362	0.387	0.417	0.089	0.105	0.002	0.000	-0.283	0.362	-0.416	-0.406
F	73	B	0.428	0.015	0.521	0.388	0.131	0.521	0.257	0.087	0.004	0.000	-0.269	0.388	-0.352	-0.329
F	74	C	0.629	0.015	0.482	0.394	0.166	0.254	0.482	0.094	0.004	0.000	-0.369	-0.294	0.394	-0.408
F	75	B	-0.014	0.015	0.609	0.437	0.133	0.609	0.099	0.157	0.001	0.000	-0.363	0.437	-0.452	-0.248
F	76	A	-0.214	0.016	0.645	0.418	0.645	0.151	0.099	0.099	0.006	0.000	0.418	-0.354	-0.289	-0.293
F	77	C	0.043	0.015	0.594	0.327	0.068	0.213	0.594	0.115	0.009	0.000	-0.297	-0.278	0.327	-0.193
F	78	A	0.337	0.015	0.539	0.179	0.539	0.271	0.095	0.090	0.005	0.000	0.179	-0.046	-0.164	-0.355
F	79	C	1.144	0.016	0.383	0.402	0.120	0.288	0.383	0.200	0.008	0.000	-0.382	-0.443	0.402	-0.301
F	80	C	0.584	0.015	0.493	0.521	0.058	0.260	0.493	0.188	0.001	0.000	-0.509	-0.554	0.521	-0.319
F	81	A	-0.435	0.016	0.686	0.400	0.686	0.150	0.104	0.057	0.003	0.000	0.400	-0.332	-0.307	-0.193

Appendix D: 2004 PSSA Grade Eleven Item Analysis

Multiple Choice Items for Mathematics

Form	Seq	Key	Logit	LSE	P-Value	PtBis	%A	%B	%C	%D	Blank	Invalid	R(A)	R(B)	R(C)	R(D)
W	1	A	-1.847	0.009	0.882	0.343	0.882	0.043	0.062	0.011	0.001	0.000	0.343	-0.231	-0.228	-0.137
W	2	C	-0.288	0.006	0.661	0.439	0.060	0.155	0.661	0.123	0.001	0.000	-0.251	-0.288	0.439	-0.441
W	3	D	0.390	0.006	0.531	0.399	0.039	0.135	0.293	0.531	0.002	0.000	-0.183	-0.362	-0.362	0.399
W	4	C	0.853	0.006	0.439	0.187	0.073	0.331	0.439	0.155	0.003	0.000	-0.265	-0.077	0.187	-0.263
W	5	A	-0.782	0.007	0.746	0.453	0.746	0.117	0.088	0.048	0.002	0.000	0.453	-0.301	-0.353	-0.302
W	6	C	-0.145	0.006	0.635	0.371	0.244	0.080	0.635	0.039	0.001	0.000	-0.215	-0.413	0.371	-0.347
W	7	D	-0.152	0.006	0.635	0.552	0.115	0.109	0.138	0.635	0.003	0.000	-0.435	-0.469	-0.406	0.552
W	8	C	1.434	0.007	0.332	0.312	0.191	0.267	0.332	0.206	0.004	0.000	-0.323	-0.287	0.312	-0.320
W	9	C	-0.132	0.006	0.632	0.417	0.128	0.098	0.632	0.140	0.001	0.000	-0.326	-0.337	0.417	-0.298
W	10	B	-0.200	0.006	0.644	0.460	0.147	0.644	0.120	0.085	0.005	0.000	-0.374	0.460	-0.404	-0.241
W	11	C	0.233	0.006	0.561	0.251	0.033	0.369	0.561	0.035	0.001	0.000	-0.232	-0.205	0.251	-0.170
W	12	B	0.011	0.006	0.600	0.199	0.208	0.600	0.115	0.068	0.009	0.000	-0.032	0.199	-0.286	-0.225
W	13	C	-0.498	0.007	0.698	0.373	0.033	0.227	0.698	0.041	0.001	0.000	-0.301	-0.287	0.373	-0.241
W	14	C	0.389	0.006	0.528	0.431	0.086	0.125	0.528	0.254	0.008	0.000	-0.283	-0.279	0.431	-0.447
W	15	D	-0.286	0.006	0.661	0.356	0.099	0.078	0.161	0.661	0.001	0.000	-0.400	-0.228	-0.185	0.356
W	16	C	-0.359	0.007	0.674	0.503	0.284	0.023	0.674	0.018	0.001	0.000	-0.476	-0.237	0.503	-0.213
W	17	B	-1.363	0.008	0.830	0.440	0.097	0.830	0.054	0.018	0.001	0.000	-0.347	0.440	-0.280	-0.186
W	18	D	0.895	0.006	0.431	0.317	0.086	0.330	0.149	0.431	0.003	0.000	-0.407	-0.165	-0.414	0.317
W	19	A	0.457	0.006	0.514	0.458	0.514	0.151	0.155	0.169	0.010	0.000	0.458	-0.408	-0.376	-0.375
W	20	B	-0.720	0.007	0.736	0.379	0.080	0.736	0.100	0.082	0.002	0.000	-0.294	0.379	-0.238	-0.253
W	21	B	-0.035	0.006	0.612	0.453	0.109	0.612	0.218	0.057	0.004	0.000	-0.390	0.453	-0.349	-0.312
W	22	C	0.133	0.006	0.578	0.156	0.164	0.182	0.578	0.070	0.007	0.000	-0.133	-0.066	0.156	-0.178
W	23	C	0.268	0.006	0.554	0.312	0.286	0.084	0.554	0.073	0.002	0.000	-0.237	-0.314	0.312	-0.213
W	24	D	-1.445	0.008	0.839	0.388	0.063	0.019	0.076	0.839	0.002	0.000	-0.222	-0.211	-0.297	0.388
W	141	B	-0.911	0.007	0.767	0.505	0.016	0.767	0.204	0.012	0.000	0.000	-0.140	0.505	-0.478	-0.226
W	142	A	0.590	0.006	0.491	0.272	0.491	0.116	0.380	0.010	0.003	0.000	0.272	-0.332	-0.207	-0.120
W	143	B	-0.912	0.007	0.766	0.285	0.044	0.766	0.049	0.139	0.001	0.000	-0.275	0.285	-0.267	-0.109
W	144	D	0.008	0.006	0.605	0.448	0.146	0.108	0.139	0.605	0.002	0.000	-0.424	-0.291	-0.338	0.448
W	145	C	-0.616	0.007	0.717	0.555	0.169	0.084	0.717	0.026	0.003	0.000	-0.502	-0.373	0.555	-0.251
W	146	A	-0.416	0.007	0.681	0.514	0.681	0.116	0.128	0.069	0.005	0.000	0.514	-0.424	-0.393	-0.314
W	147	B	-0.883	0.007	0.762	0.463	0.113	0.762	0.090	0.034	0.001	0.000	-0.346	0.463	-0.343	-0.240
W	148	B	1.102	0.006	0.391	0.329	0.312	0.391	0.185	0.106	0.007	0.000	-0.275	0.329	-0.285	-0.404
W	149	A	-0.165	0.006	0.638	0.462	0.638	0.132	0.079	0.149	0.002	0.000	0.462	-0.431	-0.410	-0.248
W	150	D	0.658	0.006	0.478	0.495	0.216	0.171	0.133	0.478	0.003	0.000	-0.357	-0.537	-0.450	0.495
W	151	C	0.260	0.006	0.554	0.384	0.119	0.206	0.554	0.116	0.006	0.000	-0.366	-0.339	0.384	-0.208
W	152	B	-0.085	0.006	0.622	0.423	0.106	0.622	0.134	0.133	0.003	0.000	-0.204	0.423	-0.426	-0.324

Appendix D: 2004 PSSA Grade Eleven Item Analysis

Multiple Choice Items for Mathematics

Form	Seq	Key	Logit	LSE	P-Value	PtBis	%A	%B	%C	%D	Blank	Invalid	R(A)	R(B)	R(C)	R(D)
W	153	A	-0.447	0.007	0.689	0.552	0.689	0.117	0.151	0.041	0.002	0.000	0.552	-0.381	-0.504	-0.308
W	154	A	0.651	0.006	0.478	0.533	0.478	0.149	0.245	0.123	0.005	0.000	0.533	-0.519	-0.495	-0.392
W	155	C	-0.562	0.007	0.710	0.595	0.102	0.070	0.710	0.117	0.001	0.000	-0.501	-0.353	0.595	-0.471
W	156	C	-0.325	0.006	0.668	0.435	0.162	0.086	0.668	0.083	0.001	0.000	-0.343	-0.343	0.435	-0.289
W	157	A	0.787	0.006	0.451	0.307	0.451	0.253	0.187	0.104	0.005	0.000	0.307	-0.272	-0.286	-0.252
W	158	A	0.600	0.006	0.487	0.489	0.487	0.148	0.287	0.071	0.007	0.000	0.489	-0.503	-0.393	-0.412
W	159	B	0.020	0.006	0.603	0.577	0.139	0.603	0.108	0.148	0.002	0.000	-0.392	0.577	-0.518	-0.499
W	160	C	0.437	0.006	0.517	0.293	0.076	0.177	0.517	0.221	0.008	0.000	-0.301	-0.341	0.293	-0.135
W	161	D	-0.202	0.006	0.645	0.521	0.039	0.098	0.216	0.645	0.002	0.000	-0.355	-0.470	-0.403	0.521
W	162	C	0.089	0.006	0.588	0.475	0.145	0.221	0.588	0.042	0.004	0.000	-0.392	-0.409	0.475	-0.285
W	163	D	0.628	0.006	0.484	0.451	0.100	0.089	0.325	0.484	0.002	0.000	-0.374	-0.404	-0.408	0.451
W	164	A	0.839	0.006	0.442	0.428	0.442	0.270	0.191	0.091	0.006	0.000	0.428	-0.372	-0.400	-0.390
W	207	C	-2.377	0.011	0.924	0.341	0.014	0.032	0.924	0.029	0.000	0.000	-0.175	-0.222	0.341	-0.183
W	208	B	0.107	0.006	0.586	0.514	0.068	0.586	0.072	0.272	0.001	0.000	-0.392	0.514	-0.241	-0.508
W	209	D	0.538	0.006	0.498	0.550	0.135	0.171	0.187	0.498	0.009	0.000	-0.375	-0.542	-0.528	0.550
W	210	A	0.037	0.006	0.600	0.437	0.600	0.037	0.051	0.311	0.001	0.000	0.437	-0.366	-0.397	-0.347
W	211	C	0.570	0.006	0.495	0.483	0.217	0.120	0.495	0.166	0.003	0.000	-0.498	-0.441	0.483	-0.327
W	212	C	0.804	0.006	0.450	0.401	0.102	0.433	0.450	0.014	0.001	0.000	-0.540	-0.322	0.401	-0.281
W	213	D	0.441	0.006	0.521	0.471	0.161	0.157	0.159	0.521	0.002	0.000	-0.383	-0.418	-0.408	0.471
W	214	C	-0.250	0.006	0.654	0.374	0.128	0.097	0.654	0.119	0.002	0.000	-0.322	-0.302	0.374	-0.214
W	215	A	-0.218	0.006	0.647	0.521	0.647	0.239	0.067	0.044	0.003	0.000	0.521	-0.463	-0.366	-0.315
W	216	C	-1.050	0.007	0.786	0.479	0.055	0.106	0.786	0.051	0.002	0.000	-0.339	-0.316	0.479	-0.337
W	217	B	-0.015	0.006	0.609	0.452	0.267	0.609	0.075	0.046	0.003	0.000	-0.371	0.452	-0.362	-0.323
W	218	B	0.463	0.006	0.517	0.518	0.115	0.517	0.242	0.124	0.002	0.000	-0.303	0.518	-0.533	-0.424
W	219	C	0.348	0.006	0.538	0.360	0.116	0.223	0.538	0.118	0.005	0.000	-0.257	-0.336	0.360	-0.264
W	220	C	0.999	0.006	0.408	0.241	0.196	0.291	0.408	0.095	0.012	0.000	-0.224	-0.205	0.241	-0.270
W	221	B	-0.920	0.007	0.767	0.439	0.056	0.767	0.092	0.083	0.002	0.000	-0.313	0.439	-0.242	-0.356
W	222	D	-0.022	0.006	0.611	0.589	0.190	0.083	0.114	0.611	0.002	0.000	-0.468	-0.485	-0.495	0.589
W	223	A	0.959	0.006	0.419	0.415	0.419	0.329	0.130	0.117	0.006	0.000	0.415	-0.383	-0.426	-0.323
W	224	B	0.006	0.006	0.605	0.541	0.233	0.605	0.124	0.035	0.003	0.000	-0.430	0.541	-0.505	-0.335
W	225	D	0.001	0.006	0.605	0.468	0.115	0.097	0.178	0.605	0.005	0.000	-0.373	-0.417	-0.348	0.468
W	226	B	0.084	0.006	0.590	0.472	0.115	0.590	0.196	0.095	0.004	0.000	-0.321	0.472	-0.457	-0.302
W	227	B	0.026	0.006	0.600	0.436	0.167	0.600	0.150	0.080	0.004	0.000	-0.322	0.436	-0.392	-0.289
W	228	C	0.506	0.006	0.507	0.378	0.184	0.167	0.507	0.138	0.004	0.000	-0.344	-0.298	0.378	-0.300

Appendix E: 2004 PSSA Grade Five Task Analysis

Open-Ended Tasks for Mathematics

Form	Item	Step	Logit	S.E.	Mean	Corr	% 0	% 1	% 2	% 3	% 4	% 5	R(0)	R(1)	R(2)	R(3)	R(4)	R(5)
A	75	1	-0.24	0.02	1.690	0.614	0.130	0.187	0.345	0.194	0.057	0.086	-0.450	-0.559	-0.455	-0.335	-0.284	0.284
		2	0.21	0.02														
		3	2.10	0.02														
		4	3.37	0.02														
		5	2.32	0.03														
B	75	1	0.20	0.02	1.792	0.571	0.148	0.127	0.108	0.143	0.255	0.219	-0.414	-0.481	-0.517	-0.509	-0.384	0.384
		2	0.69	0.02														
		3	0.71	0.02														
		4	0.92	0.02														
		5	2.26	0.02														
C	75	1	1.05	0.02	1.748	0.593	0.243	0.121	0.345	0.115	0.148	0.028	-0.490	-0.521	-0.451	-0.392	-0.174	0.174
		2	-0.02	0.02														
		3	2.77	0.02														
		4	2.07	0.02														
		5	4.63	0.04														
D	75	1	-1.52	0.06	2.342	0.495	0.016	0.047	0.393	0.240	0.197	0.107	-0.216	-0.332	-0.405	-0.389	-0.275	0.275
		2	-1.88	0.03														
		3	1.49	0.02														
		4	1.91	0.02														
		5	2.99	0.02														
E	75	1	0.82	0.02	1.414	0.542	0.285	0.221	0.316	0.144	0.033	0.001	-0.471	-0.479	-0.348	-0.185	-0.039	0.039
		2	0.97	0.02														
		3	2.86	0.02														
		4	4.27	0.04														
		5	6.70	0.18														
F	75	1	-1.13	0.03	1.871	0.667	0.086	0.321	0.222	0.214	0.117	0.041	-0.450	-0.621	-0.530	-0.361	-0.202	0.202
		2	1.27	0.02														
		3	1.65	0.02														
		4	2.87	0.02														
		5	3.93	0.04														
W	25	1	-0.93	0.01	1.797	0.633	0.108	0.335	0.233	0.225	0.081	0.019	-0.495	-0.565	-0.469	-0.295	-0.135	0.135
		2	1.34	0.01														
		3	1.78	0.01														
		4	3.49	0.01														
		5	4.63	0.02														
W	135	1	-0.98	0.01	1.867	0.637	0.099	0.309	0.242	0.255	0.078	0.018	-0.470	-0.567	-0.492	-0.286	-0.144	0.144
		2	1.16	0.01														
		3	1.63	0.01														
		4	3.63	0.01														
		5	4.65	0.02														
W	185	1	-0.09	0.01	2.060	0.665	0.106	0.100	0.163	0.145	0.300	0.186	-0.458	-0.549	-0.594	-0.566	-0.402	0.402
		2	-0.13	0.01														
		3	1.02	0.01														
		4	0.78	0.01														
		5	2.70	0.01														

Appendix F: 2004 PSSA Grade Eight Task Analysis

Open-Ended Tasks for Mathematics

Form	Item	Step	Logit	S.E.	Mean	Corr	% 0	% 1	% 2	% 3	% 4	% 5	R(0)	R(1)	R(2)	R(3)	R(4)	R(5)
A	85	1	1.12	0.02	1.258	0.692	0.319	0.118	0.127	0.199	0.073	0.165	-0.573	-0.618	-0.619	-0.520	-0.447	0.447
		2	0.56	0.02														
		3	0.67	0.02														
		4	2.61	0.02														
		5	1.30	0.02														
B	85	1	0.05	0.02	1.655	0.636	0.191	0.183	0.212	0.154	0.147	0.113	-0.506	-0.582	-0.501	-0.454	-0.324	0.324
		2	0.40	0.02														
		3	1.40	0.02														
		4	1.66	0.02														
		5	2.42	0.02														
C	85	1	0.58	0.02	1.782	0.631	0.232	0.134	0.131	0.282	0.135	0.086	-0.519	-0.562	-0.552	-0.414	-0.289	0.289
		2	0.54	0.02														
		3	0.28	0.02														
		4	2.35	0.02														
		5	2.67	0.03														
D	85	1	0.92	0.02	1.199	0.616	0.372	0.216	0.102	0.140	0.090	0.080	-0.509	-0.575	-0.533	-0.417	-0.294	0.294
		2	1.71	0.02														
		3	1.14	0.02														
		4	2.36	0.02														
		5	2.50	0.03														
E	85	1	0.28	0.02	1.591	0.672	0.194	0.142	0.228	0.139	0.144	0.153	-0.513	-0.553	-0.591	-0.525	-0.407	0.407
		2	0.01	0.02														
		3	1.51	0.02														
		4	1.49	0.02														
		5	2.01	0.02														
F	85	1	0.62	0.02	1.328	0.684	0.262	0.154	0.117	0.169	0.108	0.189	-0.573	-0.622	-0.608	-0.506	-0.436	0.436
		2	0.86	0.02														
		3	0.69	0.02														
		4	1.97	0.02														
		5	1.48	0.02														
W	25	1	-0.13	0.01	2.015	0.626	0.140	0.137	0.240	0.343	0.092	0.048	-0.443	-0.539	-0.516	-0.371	-0.230	0.230
		2	-0.17	0.01														
		3	0.70	0.01														
		4	3.07	0.01														
		5	3.12	0.01														
W	155	1	0.42	0.01	1.448	0.672	0.287	0.232	0.165	0.050	0.184	0.082	-0.580	-0.616	-0.540	-0.519	-0.314	0.314
		2	1.13	0.01														
		3	2.50	0.01														
		4	0.49	0.01														
		5	3.13	0.01														
W	215	1	1.08	0.01	1.609	0.664	0.313	0.129	0.229	0.205	0.102	0.022	-0.584	-0.593	-0.529	-0.375	-0.180	0.180
		2	0.20	0.01														
		3	1.50	0.01														
		4	2.70	0.01														
		5	4.18	0.02														

Appendix G: 2004 PSSA Grade Eleven Task Analysis

Open-Ended Tasks for Mathematics

Form	Item	Step	Logit	S.E.	Mean	Corr	% 0	% 1	% 2	% 3	% 4	% 5	R(0)	R(1)	R(2)	R(3)	R(4)	R(5)
A	91	1	0.75	0.02	0.903	0.737	0.417	0.217	0.238	0.035	0.026	0.066	-0.633	-0.680	-0.494	-0.437	-0.378	0.378
		2	0.65	0.02														
		3	3.26	0.03														
		4	2.11	0.03														
		5	1.33	0.04														
B	91	1	0.32	0.02	1.254	0.747	0.253	0.138	0.137	0.163	0.089	0.220	-0.610	-0.668	-0.657	-0.581	-0.516	0.516
		2	0.14	0.02														
		3	0.40	0.02														
		4	1.65	0.02														
		5	0.65	0.02														
C	91	1	1.98	0.02	0.901	0.719	0.517	0.081	0.087	0.072	0.107	0.083	-0.687	-0.673	-0.631	-0.564	-0.395	0.395
		2	0.61	0.02														
		3	1.33	0.02														
		4	1.18	0.03														
		5	2.31	0.03														
D	91	1	-1.08	0.02	1.516	0.656	0.125	0.245	0.096	0.114	0.184	0.133	-0.384	-0.633	-0.620	-0.560	-0.386	0.386
		2	0.99	0.02														
		3	0.38	0.02														
		4	0.61	0.02														
		5	1.99	0.02														
E	91	1	1.45	0.02	0.848	0.739	0.552	0.171	0.139	0.054	0.060	0.024	-0.725	-0.663	-0.506	-0.426	-0.239	0.239
		2	1.18	0.02														
		3	2.51	0.03														
		4	1.95	0.03														
		5	3.48	0.05														
F	91	1	-0.35	0.02	1.258	0.723	0.264	0.359	0.185	0.087	0.067	0.037	-0.553	-0.646	-0.546	-0.437	-0.268	0.268
		2	1.26	0.02														
		3	2.00	0.02														
		4	2.07	0.03														
		5	2.92	0.04														
W	25	1	1.36	0.01	0.972	0.719	0.518	0.153	0.054	0.089	0.111	0.075	-0.676	-0.655	-0.634	-0.550	-0.367	0.367
		2	1.74	0.01														
		3	0.69	0.01														
		4	1.39	0.01														
		5	2.52	0.01														
W	164	1	1.39	0.01	0.817	0.639	0.567	0.186	0.049	0.058	0.090	0.050	-0.597	-0.580	-0.541	-0.478	-0.292	0.292
		2	2.24	0.01														
		3	1.23	0.01														
		4	1.41	0.01														
		5	2.92	0.02														
W	229	1	0.09	0.01	1.994	0.647	0.134	0.074	0.375	0.198	0.144	0.075	-0.425	-0.465	-0.557	-0.507	-0.372	0.372
		2	-1.66	0.01														
		3	1.21	0.01														
		4	1.56	0.01														
		5	2.61	0.01														

Appendix H: 2004 PSSA Grade Five Item Analysis

Multiple Choice Items for Reading

Form	Seq	Key	Logit	LSE	P-Value	PtBis	%A	%B	%C	%D	Blank	Invalid	R(A)	R(B)	R(C)	R(D)
A	84	A	-1.576	0.025	0.913	0.384	0.913	0.048	0.023	0.015	0.001	0.000	0.384	-0.255	-0.235	-0.217
A	85	D	2.046	0.015	0.370	0.346	0.177	0.295	0.155	0.370	0.003	0.000	-0.436	-0.178	-0.586	0.346
A	86	A	-0.433	0.018	0.801	0.578	0.801	0.030	0.046	0.121	0.002	0.000	0.578	-0.339	-0.423	-0.489
A	87	B	0.320	0.016	0.690	0.543	0.096	0.690	0.068	0.145	0.001	0.000	-0.499	0.543	-0.429	-0.406
A	88	B	0.273	0.016	0.699	0.479	0.049	0.699	0.119	0.131	0.001	0.000	-0.412	0.479	-0.350	-0.390
A	89	D	-0.045	0.017	0.747	0.437	0.119	0.091	0.040	0.747	0.002	0.000	-0.350	-0.263	-0.390	0.437
A	90	C	-0.988	0.021	0.864	0.481	0.049	0.047	0.864	0.039	0.001	0.000	-0.384	-0.291	0.481	-0.284
A	91	D	-0.844	0.020	0.849	0.397	0.032	0.083	0.035	0.849	0.001	0.000	-0.249	-0.259	-0.305	0.397
A	92	C	-0.599	0.019	0.822	0.507	0.066	0.042	0.822	0.069	0.001	0.000	-0.388	-0.324	0.507	-0.362
A	93	C	1.084	0.015	0.553	0.392	0.164	0.073	0.553	0.208	0.002	0.000	-0.437	-0.464	0.392	-0.200
A	94	B	-0.392	0.018	0.796	0.516	0.070	0.796	0.074	0.058	0.002	0.000	-0.387	0.516	-0.363	-0.369
A	95	A	0.250	0.016	0.701	0.421	0.701	0.085	0.084	0.129	0.001	0.000	0.421	-0.371	-0.330	-0.282
A	96	D	-0.051	0.017	0.748	0.466	0.073	0.095	0.083	0.748	0.001	0.000	-0.355	-0.354	-0.339	0.466
A	97	A	-1.070	0.021	0.872	0.411	0.872	0.046	0.052	0.027	0.002	0.001	0.411	-0.261	-0.240	-0.319
A	98	C	0.524	0.016	0.655	0.415	0.058	0.098	0.655	0.187	0.002	0.000	-0.417	-0.383	0.415	-0.273
A	99	D	0.892	0.015	0.589	0.438	0.097	0.236	0.076	0.589	0.002	0.000	-0.466	-0.308	-0.411	0.438
A	100	B	-1.203	0.022	0.884	0.537	0.059	0.884	0.029	0.026	0.002	0.000	-0.408	0.537	-0.310	-0.351
A	101	C	0.235	0.016	0.704	0.444	0.204	0.035	0.704	0.055	0.002	0.000	-0.293	-0.430	0.444	-0.444
A	102	D	0.475	0.016	0.664	0.555	0.194	0.050	0.089	0.664	0.002	0.000	-0.511	-0.417	-0.424	0.555
A	103	A	0.884	0.015	0.591	0.414	0.591	0.089	0.116	0.201	0.003	0.000	0.414	-0.319	-0.349	-0.361
A	104	C	0.368	0.016	0.682	0.413	0.082	0.088	0.682	0.145	0.002	0.000	-0.297	-0.336	0.413	-0.330
A	105	A	0.307	0.016	0.693	0.218	0.693	0.080	0.128	0.096	0.003	0.000	0.218	-0.181	-0.200	-0.075
A	106	A	0.802	0.015	0.607	0.428	0.607	0.311	0.036	0.044	0.003	0.000	0.428	-0.343	-0.466	-0.406
A	107	B	0.444	0.016	0.669	0.497	0.140	0.669	0.043	0.146	0.003	0.000	-0.488	0.497	-0.403	-0.333
A	108	A	-0.800	0.020	0.843	0.557	0.843	0.064	0.053	0.037	0.002	0.000	0.557	-0.412	-0.378	-0.392
A	109	D	-0.028	0.017	0.744	0.386	0.040	0.093	0.120	0.744	0.003	0.000	-0.325	-0.274	-0.275	0.386

Appendix H: 2004 PSSA Grade Five Item Analysis

Multiple Choice Items for Reading

Form	Seq	Key	Logit	LSE	P-Value	PtBis	%A	%B	%C	%D	Blank	Invalid	R(A)	R(B)	R(C)	R(D)
B	84	A	-1.313	0.023	0.896	0.383	0.896	0.040	0.040	0.021	0.001	0.001	0.383	-0.236	-0.212	-0.306
B	85	C	0.446	0.016	0.674	0.411	0.053	0.100	0.674	0.171	0.001	0.000	-0.402	-0.377	0.411	-0.266
B	86	D	0.896	0.015	0.594	0.412	0.096	0.236	0.072	0.594	0.001	0.000	-0.436	-0.286	-0.387	0.412
B	87	B	-1.347	0.023	0.899	0.509	0.054	0.899	0.024	0.022	0.001	0.000	-0.401	0.509	-0.260	-0.331
B	88	C	0.222	0.016	0.711	0.442	0.205	0.030	0.711	0.053	0.001	0.000	-0.300	-0.418	0.442	-0.450
B	89	D	0.307	0.016	0.697	0.523	0.169	0.045	0.087	0.697	0.001	0.000	-0.469	-0.361	-0.395	0.523
B	90	A	0.669	0.015	0.634	0.400	0.634	0.083	0.109	0.172	0.001	0.000	0.400	-0.288	-0.322	-0.341
B	91	C	0.309	0.016	0.697	0.382	0.075	0.086	0.697	0.141	0.001	0.000	-0.252	-0.326	0.382	-0.296
B	92	A	0.140	0.016	0.725	0.240	0.725	0.067	0.119	0.088	0.001	0.000	0.240	-0.173	-0.224	-0.102
B	93	A	0.603	0.015	0.647	0.436	0.647	0.284	0.030	0.038	0.001	0.000	0.436	-0.362	-0.403	-0.384
B	94	B	0.437	0.016	0.676	0.489	0.139	0.676	0.037	0.146	0.002	0.000	-0.476	0.489	-0.417	-0.328
B	95	A	-0.990	0.021	0.867	0.527	0.867	0.049	0.047	0.035	0.001	0.000	0.527	-0.364	-0.356	-0.371
B	96	D	-0.244	0.018	0.781	0.372	0.030	0.071	0.117	0.781	0.001	0.000	-0.277	-0.265	-0.266	0.372
B	97	A	-1.238	0.023	0.890	0.442	0.890	0.058	0.031	0.020	0.001	0.000	0.442	-0.317	-0.278	-0.268
B	98	D	1.916	0.015	0.399	0.335	0.157	0.300	0.142	0.399	0.002	0.000	-0.420	-0.174	-0.551	0.335
B	99	A	-0.417	0.018	0.803	0.580	0.803	0.038	0.054	0.103	0.001	0.000	0.580	-0.385	-0.439	-0.464
B	100	B	0.389	0.016	0.683	0.515	0.098	0.683	0.073	0.145	0.001	0.000	-0.460	0.515	-0.421	-0.381
B	101	B	0.271	0.016	0.703	0.476	0.057	0.703	0.110	0.129	0.001	0.000	-0.446	0.476	-0.344	-0.365
B	102	D	-0.028	0.017	0.750	0.463	0.116	0.091	0.042	0.750	0.001	0.000	-0.351	-0.308	-0.427	0.463
B	103	C	-0.786	0.020	0.847	0.504	0.054	0.058	0.847	0.040	0.001	0.000	-0.405	-0.329	0.504	-0.313
B	104	D	-0.688	0.019	0.836	0.411	0.040	0.085	0.037	0.836	0.001	0.000	-0.312	-0.250	-0.318	0.411
B	105	C	-0.589	0.019	0.824	0.511	0.060	0.049	0.824	0.065	0.001	0.000	-0.378	-0.345	0.511	-0.370
B	106	C	1.131	0.015	0.549	0.384	0.157	0.078	0.549	0.213	0.002	0.000	-0.439	-0.481	0.384	-0.177
B	107	B	-0.303	0.018	0.788	0.482	0.070	0.788	0.077	0.063	0.002	0.000	-0.364	0.482	-0.328	-0.357
B	108	A	0.030	0.017	0.741	0.436	0.741	0.086	0.094	0.077	0.002	0.000	0.436	-0.347	-0.330	-0.297
B	109	D	0.035	0.017	0.739	0.465	0.075	0.102	0.081	0.739	0.002	0.000	-0.360	-0.367	-0.335	0.465

Appendix H: 2004 PSSA Grade Five Item Analysis

Multiple Choice Items for Reading

Form	Seq	Key	Logit	LSE	P-Value	PtBis	%A	%B	%C	%D	Blank	Invalid	R(A)	R(B)	R(C)	R(D)
C	84	A	-1.146	0.022	0.884	0.446	0.884	0.052	0.046	0.018	0.001	0.000	0.446	-0.334	-0.295	-0.218
C	85	D	0.354	0.016	0.694	0.503	0.107	0.098	0.099	0.694	0.001	0.000	-0.427	-0.347	-0.446	0.503
C	86	C	-0.648	0.019	0.834	0.479	0.063	0.048	0.834	0.054	0.001	0.000	-0.373	-0.315	0.479	-0.316
C	87	A	-0.118	0.017	0.767	0.448	0.767	0.090	0.072	0.071	0.001	0.000	0.448	-0.353	-0.349	-0.294
C	88	C	-0.063	0.017	0.758	0.483	0.059	0.051	0.758	0.131	0.001	0.000	-0.396	-0.396	0.483	-0.342
C	89	C	-0.112	0.017	0.764	0.527	0.092	0.069	0.764	0.074	0.001	0.000	-0.342	-0.403	0.527	-0.460
C	90	D	-1.122	0.022	0.881	0.504	0.029	0.053	0.036	0.881	0.001	0.000	-0.326	-0.368	-0.320	0.504
C	91	A	-0.335	0.018	0.796	0.519	0.796	0.051	0.097	0.055	0.001	0.000	0.519	-0.388	-0.365	-0.402
C	92	C	0.190	0.016	0.720	0.399	0.069	0.129	0.720	0.080	0.001	0.000	-0.329	-0.253	0.399	-0.339
C	93	D	0.576	0.016	0.657	0.480	0.076	0.096	0.171	0.657	0.001	0.000	-0.371	-0.427	-0.391	0.480
C	94	A	0.450	0.016	0.677	0.447	0.677	0.062	0.054	0.205	0.001	0.000	0.447	-0.437	-0.346	-0.352
C	95	D	0.531	0.016	0.664	0.392	0.159	0.077	0.099	0.664	0.001	0.000	-0.256	-0.344	-0.367	0.392
C	96	B	0.074	0.017	0.738	0.365	0.188	0.738	0.044	0.029	0.001	0.000	-0.243	0.365	-0.346	-0.332
C	97	B	0.343	0.016	0.696	0.463	0.058	0.696	0.137	0.108	0.001	0.000	-0.437	0.463	-0.349	-0.344
C	98	B	-0.592	0.019	0.827	0.584	0.034	0.827	0.070	0.068	0.001	0.000	-0.410	0.584	-0.399	-0.472
C	99	A	-0.436	0.018	0.808	0.493	0.808	0.068	0.071	0.052	0.001	0.000	0.493	-0.383	-0.329	-0.340
C	100	C	0.233	0.016	0.713	0.423	0.083	0.157	0.713	0.046	0.001	0.000	-0.402	-0.263	0.423	-0.352
C	101	D	0.066	0.017	0.739	0.547	0.064	0.141	0.055	0.739	0.001	0.000	-0.451	-0.426	-0.443	0.547
C	102	A	0.415	0.016	0.684	0.444	0.684	0.101	0.099	0.114	0.001	0.000	0.444	-0.347	-0.329	-0.378
C	103	D	-0.375	0.018	0.800	0.484	0.141	0.033	0.024	0.800	0.002	0.000	-0.344	-0.400	-0.407	0.484
C	104	A	-1.034	0.021	0.873	0.566	0.873	0.051	0.038	0.037	0.001	0.000	0.566	-0.404	-0.424	-0.348
C	105	B	-0.876	0.021	0.858	0.446	0.093	0.858	0.032	0.016	0.002	0.000	-0.285	0.446	-0.371	-0.312
C	106	C	-0.176	0.017	0.773	0.491	0.042	0.120	0.773	0.063	0.002	0.000	-0.385	-0.332	0.491	-0.420
C	107	B	0.164	0.016	0.724	0.289	0.059	0.724	0.037	0.178	0.002	0.000	-0.365	0.289	-0.345	-0.090
C	108	D	0.258	0.016	0.708	0.460	0.083	0.096	0.111	0.708	0.002	0.000	-0.354	-0.354	-0.374	0.460
C	109	D	0.349	0.016	0.694	0.408	0.220	0.046	0.038	0.694	0.003	0.000	-0.335	-0.287	-0.353	0.408

Appendix H: 2004 PSSA Grade Five Item Analysis

Multiple Choice Items for Reading

Form	Seq	Key	Logit	LSE	P-Value	PtBis	%A	%B	%C	%D	Blank	Invalid	R(A)	R(B)	R(C)	R(D)
D	84	B	0.234	0.016	0.710	0.469	0.053	0.710	0.124	0.111	0.002	0.000	-0.393	0.469	-0.361	-0.355
D	85	B	-0.695	0.019	0.836	0.568	0.026	0.836	0.070	0.066	0.001	0.000	-0.382	0.568	-0.398	-0.447
D	86	A	-0.760	0.020	0.844	0.469	0.844	0.056	0.057	0.042	0.001	0.000	0.469	-0.356	-0.291	-0.310
D	87	C	0.056	0.017	0.738	0.442	0.074	0.147	0.738	0.039	0.002	0.000	-0.409	-0.290	0.442	-0.333
D	88	D	-0.069	0.017	0.757	0.534	0.060	0.130	0.051	0.757	0.001	0.000	-0.439	-0.402	-0.422	0.534
D	89	A	0.168	0.016	0.721	0.433	0.721	0.083	0.083	0.112	0.001	0.000	0.433	-0.323	-0.291	-0.369
D	90	D	-0.474	0.018	0.812	0.453	0.141	0.028	0.018	0.812	0.001	0.000	-0.331	-0.349	-0.363	0.453
D	91	A	-1.189	0.022	0.885	0.564	0.885	0.048	0.035	0.031	0.001	0.000	0.564	-0.401	-0.418	-0.333
D	92	B	-1.045	0.021	0.873	0.416	0.086	0.873	0.028	0.013	0.001	0.000	-0.260	0.416	-0.331	-0.299
D	93	C	-0.280	0.018	0.786	0.481	0.035	0.117	0.786	0.060	0.001	0.000	-0.340	-0.328	0.481	-0.417
D	94	B	0.351	0.016	0.692	0.259	0.068	0.692	0.037	0.202	0.001	0.000	-0.374	0.259	-0.341	-0.057
D	95	D	0.181	0.016	0.720	0.413	0.072	0.081	0.126	0.720	0.001	0.000	-0.297	-0.310	-0.329	0.413
D	96	D	0.138	0.016	0.726	0.426	0.193	0.045	0.034	0.726	0.001	0.000	-0.344	-0.317	-0.328	0.426
D	97	A	-1.200	0.022	0.886	0.474	0.886	0.047	0.045	0.020	0.001	0.000	0.474	-0.358	-0.308	-0.243
D	98	D	0.314	0.016	0.697	0.523	0.101	0.093	0.107	0.697	0.002	0.000	-0.417	-0.362	-0.474	0.523
D	99	C	-0.397	0.018	0.801	0.494	0.079	0.063	0.801	0.055	0.002	0.000	-0.398	-0.345	0.494	-0.323
D	100	A	0.138	0.016	0.725	0.449	0.725	0.110	0.089	0.074	0.002	0.000	0.449	-0.364	-0.354	-0.308
D	101	C	0.093	0.017	0.732	0.487	0.063	0.057	0.732	0.146	0.002	0.000	-0.410	-0.426	0.487	-0.341
D	102	C	0.045	0.017	0.739	0.516	0.103	0.082	0.739	0.074	0.003	0.000	-0.341	-0.414	0.516	-0.447
D	103	D	-0.912	0.021	0.859	0.535	0.034	0.062	0.043	0.859	0.003	0.000	-0.354	-0.396	-0.359	0.535
D	104	A	-0.270	0.018	0.785	0.530	0.785	0.057	0.097	0.059	0.002	0.000	0.530	-0.398	-0.368	-0.417
D	105	C	0.480	0.016	0.669	0.427	0.084	0.149	0.669	0.096	0.002	0.000	-0.359	-0.305	0.427	-0.358
D	106	D	0.684	0.015	0.634	0.493	0.079	0.102	0.183	0.634	0.002	0.000	-0.385	-0.464	-0.401	0.493
D	107	A	0.545	0.016	0.658	0.416	0.658	0.066	0.053	0.220	0.003	0.000	0.416	-0.422	-0.348	-0.310
D	108	D	0.577	0.015	0.653	0.393	0.155	0.086	0.104	0.653	0.002	0.000	-0.266	-0.349	-0.349	0.393
D	109	B	-0.035	0.017	0.751	0.340	0.163	0.751	0.049	0.033	0.003	0.000	-0.213	0.340	-0.300	-0.295

Appendix H: 2004 PSSA Grade Five Item Analysis

Multiple Choice Items for Reading

Form	Seq	Key	Logit	LSE	P-Value	PtBis	%A	%B	%C	%D	Blank	Invalid	R(A)	R(B)	R(C)	R(D)
E	84	C	0.355	0.016	0.692	0.473	0.160	0.020	0.692	0.127	0.001	0.000	-0.457	-0.317	0.473	-0.326
E	85	B	-0.314	0.018	0.793	0.417	0.051	0.793	0.066	0.089	0.001	0.000	-0.318	0.417	-0.311	-0.263
E	86	B	-0.396	0.018	0.804	0.488	0.126	0.804	0.028	0.042	0.001	0.000	-0.393	0.488	-0.331	-0.329
E	87	C	-0.641	0.019	0.834	0.497	0.054	0.055	0.834	0.056	0.001	0.000	-0.331	-0.355	0.497	-0.358
E	88	C	0.268	0.016	0.706	0.429	0.043	0.146	0.706	0.104	0.001	0.000	-0.333	-0.352	0.429	-0.320
E	89	A	0.442	0.016	0.676	0.319	0.676	0.236	0.042	0.045	0.002	0.000	0.319	-0.175	-0.395	-0.346
E	90	C	-0.565	0.019	0.825	0.475	0.048	0.056	0.825	0.071	0.001	0.000	-0.368	-0.329	0.475	-0.319
E	91	D	0.559	0.015	0.656	0.461	0.111	0.091	0.141	0.656	0.001	0.000	-0.343	-0.369	-0.420	0.461
E	92	A	1.606	0.015	0.455	0.281	0.455	0.165	0.110	0.269	0.001	0.000	0.281	-0.357	-0.449	-0.098
E	93	D	1.306	0.015	0.514	0.268	0.078	0.216	0.191	0.514	0.001	0.000	-0.333	-0.176	-0.251	0.268
E	94	A	-0.034	0.017	0.753	0.422	0.753	0.092	0.087	0.066	0.002	0.000	0.422	-0.317	-0.342	-0.276
E	95	A	-0.997	0.021	0.871	0.497	0.871	0.047	0.052	0.028	0.001	0.000	0.497	-0.371	-0.334	-0.298
E	96	D	0.502	0.015	0.667	0.361	0.154	0.078	0.100	0.667	0.001	0.000	-0.223	-0.318	-0.333	0.361
E	97	B	-1.418	0.024	0.907	0.423	0.032	0.907	0.046	0.013	0.001	0.000	-0.319	0.423	-0.238	-0.275
E	98	B	-0.445	0.018	0.810	0.500	0.060	0.810	0.046	0.083	0.001	0.000	-0.346	0.500	-0.342	-0.386
E	99	A	0.858	0.015	0.601	0.304	0.601	0.210	0.083	0.103	0.002	0.000	0.304	-0.132	-0.302	-0.406
E	100	?					0.151	0.028	0.269	0.550	0.001	0.000				
E	101	B	1.582	0.015	0.460	0.291	0.350	0.460	0.162	0.026	0.001	0.000	-0.171	0.291	-0.419	-0.430
E	102	C	2.421	0.016	0.302	0.060	0.026	0.607	0.302	0.063	0.002	0.000	-0.408	0.012	0.060	-0.311
E	103	B	0.261	0.016	0.707	0.488	0.177	0.707	0.052	0.062	0.002	0.000	-0.346	0.488	-0.397	-0.464
E	104	C	-1.062	0.022	0.877	0.478	0.043	0.036	0.877	0.042	0.001	0.000	-0.324	-0.328	0.478	-0.307
E	105	A	-0.289	0.018	0.790	0.517	0.790	0.047	0.045	0.116	0.002	0.000	0.517	-0.396	-0.425	-0.365
E	106	C	-0.577	0.019	0.826	0.509	0.043	0.060	0.826	0.069	0.002	0.000	-0.378	-0.349	0.509	-0.367
E	107	B	0.032	0.017	0.744	0.313	0.150	0.744	0.024	0.079	0.002	0.000	-0.148	0.313	-0.340	-0.297
E	108	D	0.122	0.016	0.728	0.526	0.073	0.142	0.054	0.728	0.002	0.000	-0.438	-0.412	-0.415	0.526
E	109	B	-0.676	0.019	0.837	0.442	0.103	0.837	0.036	0.021	0.003	0.000	-0.277	0.442	-0.365	-0.355

Appendix H: 2004 PSSA Grade Five Item Analysis

Multiple Choice Items for Reading

Form	Seq	Key	Logit	LSE	P-Value	PtBis	%A	%B	%C	%D	Blank	Invalid	R(A)	R(B)	R(C)	R(D)
F	84	B	-1.680	0.026	0.924	0.382	0.022	0.924	0.040	0.012	0.001	0.000	-0.259	0.382	-0.220	-0.249
F	85	B	-0.505	0.019	0.818	0.496	0.060	0.818	0.038	0.083	0.001	0.000	-0.368	0.496	-0.323	-0.369
F	86	A	0.795	0.015	0.614	0.294	0.614	0.212	0.077	0.096	0.001	0.000	0.294	-0.121	-0.289	-0.404
F	87	?					0.158	0.025	0.260	0.556	0.001	0.000				
F	88	B	1.446	0.015	0.487	0.307	0.336	0.487	0.154	0.021	0.001	0.000	-0.193	0.307	-0.426	-0.420
F	89	C	2.468	0.016	0.295	0.095	0.022	0.623	0.295	0.058	0.001	0.000	-0.422	-0.035	0.095	-0.344
F	90	B	0.096	0.017	0.734	0.471	0.176	0.734	0.042	0.046	0.001	0.000	-0.351	0.471	-0.352	-0.424
F	91	C	-1.388	0.024	0.905	0.435	0.030	0.025	0.905	0.039	0.001	0.000	-0.262	-0.283	0.435	-0.289
F	92	A	-0.443	0.018	0.809	0.492	0.809	0.043	0.037	0.109	0.001	0.000	0.492	-0.357	-0.401	-0.347
F	93	C	-0.723	0.020	0.844	0.470	0.034	0.052	0.844	0.070	0.001	0.000	-0.348	-0.307	0.470	-0.336
F	94	B	0.047	0.017	0.742	0.277	0.167	0.742	0.018	0.072	0.001	0.000	-0.127	0.277	-0.308	-0.288
F	95	D	0.002	0.017	0.749	0.534	0.068	0.130	0.052	0.749	0.001	0.000	-0.444	-0.413	-0.400	0.534
F	96	B	-0.857	0.020	0.857	0.421	0.094	0.857	0.031	0.017	0.001	0.000	-0.255	0.421	-0.356	-0.326
F	97	C	0.418	0.016	0.681	0.480	0.170	0.028	0.681	0.120	0.001	0.000	-0.474	-0.403	0.480	-0.289
F	98	B	0.014	0.017	0.747	0.456	0.080	0.747	0.085	0.086	0.001	0.000	-0.378	0.456	-0.354	-0.281
F	99	B	-0.181	0.017	0.776	0.482	0.126	0.776	0.039	0.058	0.001	0.000	-0.359	0.482	-0.378	-0.348
F	100	C	-0.432	0.018	0.809	0.509	0.066	0.062	0.809	0.062	0.001	0.000	-0.372	-0.363	0.509	-0.364
F	101	C	0.108	0.016	0.733	0.441	0.043	0.130	0.733	0.093	0.001	0.000	-0.350	-0.363	0.441	-0.299
F	102	A	0.620	0.015	0.646	0.337	0.646	0.248	0.051	0.053	0.002	0.000	0.337	-0.193	-0.422	-0.358
F	103	C	-0.313	0.018	0.794	0.475	0.058	0.073	0.794	0.072	0.002	0.000	-0.372	-0.334	0.475	-0.331
F	104	D	0.677	0.015	0.635	0.473	0.104	0.097	0.162	0.635	0.002	0.000	-0.357	-0.398	-0.426	0.473
F	105	A	1.674	0.015	0.443	0.308	0.443	0.192	0.125	0.238	0.002	0.000	0.308	-0.380	-0.455	-0.114
F	106	D	1.121	0.015	0.552	0.335	0.077	0.184	0.185	0.552	0.002	0.000	-0.379	-0.234	-0.297	0.335
F	107	A	0.190	0.016	0.719	0.429	0.719	0.105	0.100	0.074	0.003	0.000	0.429	-0.330	-0.328	-0.328
F	108	A	-0.916	0.021	0.863	0.529	0.863	0.048	0.059	0.028	0.002	0.000	0.529	-0.386	-0.375	-0.324
F	109	D	0.519	0.016	0.662	0.360	0.160	0.080	0.095	0.662	0.003	0.000	-0.225	-0.329	-0.328	0.360

Appendix H: 2004 PSSA Grade Five Item Analysis

Multiple Choice Items for Reading

Form	Seq	Key	Logit	LSE	P-Value	PtBis	%A	%B	%C	%D	Blank	Invalid	R(A)	R(B)	R(C)	R(D)
W	26	B	-1.114	0.009	0.880	0.477	0.078	0.880	0.018	0.023	0.000	0.000	-0.386	0.477	-0.204	-0.329
W	27	D	-1.381	0.010	0.903	0.471	0.026	0.058	0.014	0.903	0.000	0.000	-0.309	-0.348	-0.251	0.471
W	28	A	2.200	0.006	0.346	0.263	0.346	0.333	0.142	0.178	0.001	0.000	0.263	-0.264	-0.315	-0.250
W	29	C	-0.327	0.007	0.793	0.491	0.026	0.074	0.793	0.106	0.001	0.000	-0.302	-0.388	0.491	-0.369
W	30	A	0.452	0.006	0.674	0.365	0.674	0.048	0.171	0.106	0.001	0.000	0.365	-0.290	-0.302	-0.269
W	31	A	3.223	0.007	0.188	0.142	0.188	0.488	0.301	0.021	0.001	0.000	0.142	-0.225	-0.013	-0.486
W	32	D	-1.367	0.010	0.902	0.415	0.034	0.048	0.015	0.902	0.000	0.000	-0.313	-0.244	-0.250	0.415
W	33	C	-1.246	0.009	0.892	0.457	0.042	0.031	0.892	0.035	0.001	0.000	-0.293	-0.288	0.457	-0.313
W	34	D	-0.767	0.008	0.846	0.409	0.100	0.026	0.027	0.846	0.001	0.000	-0.295	-0.267	-0.282	0.409
W	35	B	-0.121	0.007	0.764	0.550	0.079	0.764	0.113	0.043	0.001	0.000	-0.364	0.550	-0.485	-0.389
W	36	D	-0.753	0.008	0.844	0.505	0.078	0.046	0.031	0.844	0.000	0.000	-0.380	-0.350	-0.323	0.505
W	37	A	-0.099	0.007	0.761	0.468	0.761	0.061	0.071	0.106	0.001	0.000	0.468	-0.340	-0.359	-0.343
W	38	B	0.033	0.007	0.742	0.467	0.060	0.742	0.104	0.093	0.001	0.000	-0.338	0.467	-0.312	-0.409
W	39	A	-1.292	0.009	0.895	0.398	0.895	0.063	0.017	0.024	0.001	0.000	0.398	-0.266	-0.252	-0.257
W	40	C	0.843	0.006	0.604	0.462	0.114	0.132	0.604	0.149	0.001	0.000	-0.460	-0.365	0.462	-0.367
W	41	A	1.439	0.006	0.490	0.332	0.490	0.025	0.281	0.203	0.001	0.000	0.332	-0.391	-0.289	-0.313
W	42	C	0.151	0.007	0.723	0.389	0.131	0.058	0.723	0.086	0.002	0.000	-0.270	-0.365	0.389	-0.258
W	43	C	0.381	0.006	0.686	0.356	0.163	0.074	0.686	0.075	0.001	0.000	-0.172	-0.328	0.356	-0.388
W	44	B	-1.094	0.009	0.878	0.473	0.036	0.878	0.047	0.039	0.001	0.000	-0.308	0.473	-0.284	-0.354
W	45	C	0.392	0.006	0.684	0.442	0.117	0.113	0.684	0.085	0.001	0.000	-0.432	-0.310	0.442	-0.287
W	46	B	0.861	0.006	0.600	0.385	0.150	0.600	0.075	0.173	0.002	0.000	-0.366	0.385	-0.390	-0.248
W	47	A	1.021	0.006	0.570	0.365	0.570	0.033	0.165	0.230	0.001	0.000	0.365	-0.445	-0.367	-0.246
W	48	C	0.940	0.006	0.586	0.383	0.213	0.056	0.586	0.144	0.001	0.000	-0.364	-0.369	0.383	-0.260
W	49	C	2.019	0.006	0.379	0.215	0.142	0.315	0.379	0.163	0.002	0.000	-0.177	-0.234	0.215	-0.207
W	50	D	1.367	0.006	0.504	0.295	0.289	0.173	0.032	0.504	0.001	0.000	-0.236	-0.273	-0.397	0.295
W	51	A	2.017	0.006	0.379	0.325	0.379	0.069	0.434	0.117	0.002	0.000	0.325	-0.376	-0.298	-0.381
W	136	D	-1.009	0.009	0.870	0.474	0.084	0.024	0.022	0.870	0.000	0.000	-0.331	-0.335	-0.334	0.474
W	137	A	-2.242	0.013	0.952	0.418	0.952	0.018	0.017	0.013	0.000	0.000	0.418	-0.239	-0.278	-0.228
W	138	B	-0.706	0.008	0.839	0.461	0.097	0.839	0.040	0.023	0.000	0.000	-0.346	0.461	-0.295	-0.336
W	139	C	-0.297	0.007	0.789	0.506	0.027	0.123	0.789	0.060	0.000	0.000	-0.327	-0.468	0.506	-0.272
W	140	A	-1.167	0.009	0.885	0.489	0.885	0.029	0.053	0.033	0.001	0.000	0.489	-0.305	-0.334	-0.349
W	141	D	-1.007	0.009	0.870	0.494	0.028	0.057	0.044	0.870	0.000	0.000	-0.298	-0.355	-0.343	0.494
W	142	B	0.210	0.007	0.714	0.411	0.132	0.714	0.126	0.027	0.000	0.000	-0.332	0.411	-0.309	-0.324
W	143	C	-0.002	0.007	0.747	0.408	0.128	0.096	0.747	0.028	0.001	0.000	-0.253	-0.389	0.408	-0.284
W	144	D	0.745	0.006	0.622	0.454	0.180	0.133	0.064	0.622	0.001	0.000	-0.498	-0.272	-0.314	0.454
W	145	C	0.403	0.006	0.682	0.344	0.107	0.174	0.682	0.034	0.002	0.000	-0.272	-0.269	0.344	-0.256

Appendix H: 2004 PSSA Grade Five Item Analysis

Multiple Choice Items for Reading

Form	Seq	Key	Logit	LSE	P-Value	PtBis	%A	%B	%C	%D	Blank	Invalid	R(A)	R(B)	R(C)	R(D)
W	146	C	-0.480	0.008	0.813	0.536	0.096	0.039	0.813	0.051	0.001	0.000	-0.423	-0.351	0.536	-0.384
W	147	D	1.077	0.006	0.560	0.347	0.282	0.063	0.094	0.560	0.001	0.000	-0.216	-0.433	-0.394	0.347
W	148	D	-0.233	0.007	0.781	0.445	0.050	0.056	0.112	0.781	0.001	0.000	-0.370	-0.301	-0.316	0.445
W	149	A	0.348	0.006	0.692	0.348	0.692	0.081	0.148	0.078	0.001	0.000	0.348	-0.417	-0.191	-0.222
W	150	A	-1.138	0.009	0.882	0.492	0.882	0.040	0.044	0.033	0.001	0.000	0.492	-0.357	-0.349	-0.274
W	151	C	-0.341	0.007	0.795	0.461	0.052	0.065	0.795	0.087	0.001	0.000	-0.335	-0.366	0.461	-0.300
W	152	A	0.313	0.007	0.697	0.424	0.697	0.132	0.081	0.088	0.001	0.000	0.424	-0.324	-0.376	-0.291
W	153	C	0.674	0.006	0.635	0.351	0.119	0.109	0.635	0.136	0.001	0.000	-0.277	-0.320	0.351	-0.247
W	154	A	0.009	0.007	0.745	0.421	0.745	0.165	0.042	0.047	0.001	0.000	0.421	-0.305	-0.373	-0.314
W	155	B	-0.976	0.009	0.867	0.537	0.074	0.867	0.035	0.024	0.001	0.000	-0.403	0.537	-0.358	-0.349
W	156	D	-0.728	0.008	0.842	0.331	0.049	0.072	0.037	0.842	0.001	0.000	-0.206	-0.201	-0.258	0.331
W	157	B	0.498	0.006	0.666	0.406	0.126	0.666	0.125	0.082	0.001	0.000	-0.309	0.406	-0.331	-0.316
W	158	A	-0.044	0.007	0.753	0.400	0.753	0.145	0.044	0.057	0.001	0.000	0.400	-0.260	-0.396	-0.289
W	159	A	-0.187	0.007	0.774	0.379	0.774	0.138	0.044	0.043	0.001	0.000	0.379	-0.237	-0.348	-0.296
W	160	D	0.094	0.007	0.732	0.522	0.167	0.052	0.047	0.732	0.001	0.000	-0.396	-0.461	-0.428	0.522
W	161	C	0.634	0.006	0.642	0.439	0.048	0.270	0.642	0.037	0.002	0.000	-0.403	-0.352	0.439	-0.421

Appendix I: 2004 PSSA Grade Eight Item Analysis

Multiple Choice Items for Reading

Form	Seq	Key	Logit	LSE	P-Value	PtBis	%A	%B	%C	%D	Blank	Invalid	R(A)	R(B)	R(C)	R(D)
A	94	B	1.380	0.014	0.436	0.416	0.209	0.436	0.218	0.133	0.003	0.000	-0.424	0.416	-0.356	-0.482
A	95	B	1.256	0.014	0.463	0.273	0.130	0.463	0.192	0.213	0.003	0.000	-0.277	0.273	-0.211	-0.266
A	96	D	0.296	0.015	0.654	0.435	0.157	0.068	0.119	0.654	0.003	0.000	-0.306	-0.362	-0.415	0.435
A	97	D	-1.008	0.019	0.849	0.583	0.045	0.043	0.062	0.849	0.001	0.000	-0.352	-0.433	-0.470	0.583
A	98	B	-0.591	0.017	0.798	0.366	0.154	0.798	0.022	0.024	0.001	0.000	-0.254	0.366	-0.320	-0.280
A	99	C	-0.256	0.016	0.747	0.451	0.096	0.092	0.747	0.062	0.003	0.000	-0.366	-0.342	0.451	-0.297
A	100	A	-0.202	0.016	0.739	0.296	0.739	0.041	0.200	0.018	0.002	0.000	0.296	-0.308	-0.178	-0.297
A	101	C	-0.771	0.018	0.820	0.553	0.064	0.070	0.820	0.044	0.002	0.000	-0.387	-0.461	0.553	-0.340
A	102	D	-1.119	0.020	0.860	0.420	0.020	0.052	0.066	0.860	0.001	0.000	-0.305	-0.290	-0.275	0.420
A	103	C	0.557	0.014	0.605	0.301	0.111	0.059	0.605	0.224	0.001	0.000	-0.300	-0.341	0.301	-0.176
A	104	B	0.733	0.014	0.570	0.378	0.085	0.570	0.279	0.064	0.003	0.000	-0.374	0.378	-0.302	-0.334
A	105	B	-1.345	0.021	0.882	0.426	0.045	0.882	0.051	0.021	0.001	0.000	-0.318	0.426	-0.249	-0.271
A	106	A	-0.208	0.016	0.741	0.370	0.741	0.176	0.041	0.041	0.002	0.000	0.370	-0.288	-0.315	-0.248
A	107	D	-0.074	0.016	0.720	0.340	0.040	0.145	0.094	0.720	0.001	0.000	-0.377	-0.221	-0.250	0.340
A	108	A	1.551	0.014	0.403	0.116	0.403	0.240	0.143	0.210	0.003	0.000	0.116	-0.032	-0.232	-0.097
A	109	D	-0.706	0.018	0.813	0.474	0.068	0.084	0.034	0.813	0.001	0.000	-0.332	-0.330	-0.369	0.474
A	110	C	-1.007	0.019	0.849	0.375	0.069	0.019	0.849	0.062	0.001	0.000	-0.227	-0.334	0.375	-0.248
A	111	A	-0.376	0.016	0.767	0.457	0.767	0.184	0.037	0.011	0.001	0.000	0.457	-0.370	-0.395	-0.273
A	112	D	-0.311	0.016	0.757	0.588	0.064	0.077	0.100	0.757	0.003	0.000	-0.372	-0.503	-0.499	0.588
A	113	C	0.755	0.014	0.566	0.348	0.044	0.042	0.566	0.346	0.002	0.000	-0.392	-0.462	0.348	-0.248
A	114	A	-1.850	0.025	0.921	0.454	0.921	0.023	0.018	0.036	0.001	0.000	0.454	-0.297	-0.306	-0.266
A	115	B	0.375	0.015	0.639	0.445	0.256	0.639	0.069	0.034	0.002	0.000	-0.352	0.445	-0.429	-0.412
A	116	A	-1.039	0.019	0.852	0.485	0.852	0.044	0.030	0.072	0.002	0.000	0.485	-0.353	-0.349	-0.306
A	117	D	0.709	0.014	0.573	0.334	0.109	0.162	0.152	0.573	0.003	0.000	-0.332	-0.202	-0.329	0.334
A	118	C	0.107	0.015	0.688	0.510	0.063	0.112	0.688	0.134	0.003	0.000	-0.454	-0.455	0.510	-0.343
A	119	A	-1.495	0.022	0.895	0.518	0.895	0.049	0.035	0.019	0.002	0.000	0.518	-0.370	-0.346	-0.313
A	120	B	0.581	0.014	0.600	0.398	0.043	0.600	0.288	0.068	0.002	0.000	-0.490	0.398	-0.243	-0.524
A	121	C	-1.142	0.020	0.863	0.489	0.019	0.035	0.863	0.082	0.002	0.000	-0.309	-0.317	0.489	-0.372
A	122	C	0.602	0.014	0.595	0.520	0.105	0.201	0.595	0.097	0.002	0.000	-0.458	-0.451	0.520	-0.461
A	123	D	0.621	0.014	0.592	0.359	0.110	0.222	0.073	0.592	0.002	0.000	-0.306	-0.261	-0.420	0.359
A	124	C	-0.955	0.019	0.842	0.529	0.046	0.074	0.842	0.035	0.002	0.000	-0.321	-0.423	0.529	-0.353
A	125	A	-0.179	0.016	0.736	0.468	0.736	0.065	0.048	0.148	0.003	0.000	0.468	-0.354	-0.355	-0.361
A	126	C	1.582	0.014	0.397	0.249	0.337	0.132	0.397	0.132	0.003	0.000	-0.215	-0.328	0.249	-0.214
A	127	D	0.339	0.015	0.646	0.388	0.064	0.205	0.082	0.646	0.003	0.000	-0.360	-0.270	-0.388	0.388
A	128	A	-0.864	0.018	0.832	0.489	0.832	0.101	0.042	0.023	0.002	0.000	0.489	-0.322	-0.406	-0.353
A	129	D	-0.949	0.019	0.842	0.543	0.106	0.025	0.025	0.842	0.002	0.000	-0.420	-0.393	-0.361	0.543

Appendix I: 2004 PSSA Grade Eight Item Analysis

Multiple Choice Items for Reading

Form	Seq	Key	Logit	LSE	P-Value	PtBis	%A	%B	%C	%D	Blank	Invalid	R(A)	R(B)	R(C)	R(D)
B	94	D	-0.474	0.017	0.786	0.567	0.061	0.060	0.091	0.786	0.002	0.000	-0.348	-0.462	-0.479	0.567
B	95	C	0.914	0.014	0.539	0.309	0.039	0.039	0.539	0.381	0.001	0.000	-0.369	-0.437	0.309	-0.222
B	96	A	-2.197	0.029	0.944	0.406	0.944	0.017	0.011	0.028	0.001	0.000	0.406	-0.237	-0.256	-0.241
B	97	B	0.387	0.015	0.643	0.451	0.277	0.643	0.056	0.022	0.001	0.000	-0.377	0.451	-0.442	-0.385
B	98	A	-1.159	0.020	0.869	0.455	0.869	0.036	0.019	0.075	0.001	0.000	0.455	-0.324	-0.309	-0.299
B	99	D	0.642	0.014	0.592	0.333	0.106	0.146	0.152	0.592	0.004	0.000	-0.329	-0.188	-0.326	0.333
B	100	C	-0.035	0.015	0.717	0.486	0.042	0.108	0.717	0.129	0.003	0.000	-0.387	-0.422	0.486	-0.339
B	101	A	-1.746	0.024	0.917	0.466	0.917	0.036	0.028	0.018	0.001	0.000	0.466	-0.296	-0.292	-0.304
B	102	B	0.430	0.015	0.635	0.377	0.033	0.635	0.274	0.056	0.001	0.000	-0.434	0.377	-0.231	-0.503
B	103	C	-1.522	0.023	0.901	0.466	0.012	0.026	0.901	0.059	0.001	0.000	-0.264	-0.288	0.466	-0.349
B	104	C	0.580	0.014	0.606	0.504	0.101	0.196	0.606	0.096	0.002	0.000	-0.438	-0.433	0.504	-0.451
B	105	D	0.475	0.014	0.626	0.353	0.097	0.214	0.061	0.626	0.002	0.000	-0.298	-0.258	-0.378	0.353
B	106	C	-1.144	0.020	0.867	0.510	0.040	0.064	0.867	0.028	0.002	0.000	-0.288	-0.409	0.510	-0.324
B	107	A	-0.398	0.017	0.775	0.461	0.775	0.051	0.036	0.138	0.001	0.000	0.461	-0.334	-0.316	-0.358
B	108	C	1.899	0.015	0.339	0.215	0.367	0.129	0.339	0.162	0.002	0.000	-0.202	-0.279	0.215	-0.200
B	109	D	0.473	0.014	0.627	0.358	0.061	0.229	0.082	0.627	0.001	0.000	-0.335	-0.253	-0.376	0.358
B	110	A	-1.146	0.020	0.867	0.457	0.867	0.081	0.030	0.020	0.001	0.000	0.457	-0.293	-0.353	-0.321
B	111	D	-0.997	0.019	0.852	0.522	0.105	0.022	0.020	0.852	0.001	0.000	-0.401	-0.384	-0.341	0.522
B	112	B	1.297	0.014	0.459	0.401	0.195	0.459	0.231	0.111	0.003	0.000	-0.395	0.401	-0.353	-0.428
B	113	B	1.188	0.014	0.482	0.272	0.129	0.482	0.194	0.192	0.003	0.000	-0.275	0.272	-0.212	-0.248
B	114	D	0.380	0.015	0.644	0.434	0.152	0.072	0.128	0.644	0.003	0.000	-0.302	-0.377	-0.407	0.434
B	115	D	-0.937	0.019	0.845	0.577	0.053	0.044	0.057	0.845	0.001	0.000	-0.340	-0.443	-0.471	0.577
B	116	B	-0.508	0.017	0.791	0.389	0.153	0.791	0.029	0.026	0.002	0.000	-0.265	0.389	-0.351	-0.290
B	117	C	-0.307	0.016	0.761	0.461	0.082	0.094	0.761	0.060	0.002	0.000	-0.350	-0.347	0.461	-0.324
B	118	A	-0.024	0.015	0.717	0.309	0.717	0.046	0.214	0.021	0.002	0.000	0.309	-0.349	-0.172	-0.326
B	119	C	-0.724	0.018	0.820	0.564	0.065	0.072	0.820	0.042	0.002	0.000	-0.410	-0.465	0.564	-0.329
B	120	D	-1.028	0.019	0.855	0.468	0.026	0.053	0.064	0.855	0.002	0.000	-0.356	-0.325	-0.300	0.468
B	121	C	0.664	0.014	0.590	0.298	0.121	0.061	0.590	0.226	0.002	0.000	-0.315	-0.354	0.298	-0.153
B	122	B	0.780	0.014	0.565	0.359	0.087	0.565	0.280	0.064	0.003	0.000	-0.356	0.359	-0.279	-0.329
B	123	B	-1.279	0.021	0.879	0.458	0.046	0.879	0.049	0.023	0.002	0.000	-0.329	0.458	-0.281	-0.297
B	124	A	-0.301	0.016	0.760	0.380	0.760	0.155	0.042	0.040	0.003	0.000	0.380	-0.270	-0.337	-0.266
B	125	D	-0.154	0.016	0.737	0.376	0.037	0.145	0.078	0.737	0.003	0.000	-0.374	-0.235	-0.307	0.376
B	126	A	1.460	0.014	0.426	0.106	0.426	0.245	0.125	0.200	0.003	0.000	0.106	-0.017	-0.221	-0.089
B	127	D	-0.776	0.018	0.826	0.512	0.048	0.090	0.034	0.826	0.002	0.000	-0.368	-0.363	-0.381	0.512
B	128	C	-0.932	0.019	0.844	0.378	0.072	0.024	0.844	0.057	0.002	0.000	-0.211	-0.341	0.378	-0.256
B	129	A	-0.252	0.016	0.753	0.459	0.753	0.187	0.040	0.018	0.002	0.000	0.459	-0.356	-0.397	-0.351

Appendix I: 2004 PSSA Grade Eight Item Analysis

Multiple Choice Items for Reading

Form	Seq	Key	Logit	LSE	P-Value	PtBis	%A	%B	%C	%D	Blank	Invalid	R(A)	R(B)	R(C)	R(D)
C	94	A	-2.879	0.038	0.969	0.328	0.969	0.012	0.010	0.007	0.001	0.000	0.328	-0.188	-0.171	-0.155
C	95	C	-1.635	0.023	0.909	0.481	0.022	0.031	0.909	0.037	0.001	0.000	-0.312	-0.371	0.481	-0.250
C	96	C	-0.908	0.019	0.842	0.483	0.036	0.026	0.842	0.095	0.002	0.000	-0.343	-0.276	0.483	-0.371
C	97	B	-2.570	0.033	0.959	0.392	0.018	0.959	0.014	0.008	0.001	0.000	-0.236	0.392	-0.219	-0.213
C	98	D	-1.283	0.021	0.880	0.517	0.055	0.025	0.039	0.880	0.001	0.000	-0.344	-0.361	-0.347	0.517
C	99	C	-0.625	0.018	0.806	0.323	0.043	0.063	0.806	0.084	0.003	0.000	-0.201	-0.295	0.323	-0.160
C	100	B	0.316	0.015	0.658	0.459	0.100	0.658	0.109	0.130	0.002	0.000	-0.442	0.459	-0.361	-0.342
C	101	A	0.327	0.015	0.656	0.430	0.656	0.046	0.139	0.156	0.003	0.000	0.430	-0.322	-0.416	-0.302
C	102	D	-0.328	0.016	0.766	0.371	0.183	0.033	0.017	0.766	0.001	0.000	-0.239	-0.388	-0.347	0.371
C	103	D	0.165	0.015	0.685	0.424	0.074	0.070	0.169	0.685	0.002	0.000	-0.358	-0.315	-0.334	0.424
C	104	D	0.456	0.015	0.632	0.427	0.055	0.119	0.192	0.632	0.002	0.000	-0.368	-0.395	-0.332	0.427
C	105	B	0.898	0.014	0.546	0.354	0.155	0.546	0.226	0.071	0.002	0.000	-0.282	0.354	-0.313	-0.339
C	106	B	0.264	0.015	0.668	0.486	0.117	0.668	0.190	0.023	0.002	0.000	-0.426	0.486	-0.410	-0.350
C	107	A	-0.643	0.018	0.810	0.475	0.810	0.091	0.034	0.064	0.002	0.000	0.475	-0.391	-0.346	-0.278
C	108	B	-0.742	0.018	0.823	0.379	0.058	0.823	0.067	0.050	0.001	0.000	-0.243	0.379	-0.302	-0.225
C	109	C	-0.184	0.016	0.744	0.494	0.034	0.035	0.744	0.186	0.001	0.000	-0.369	-0.370	0.494	-0.409
C	110	A	-0.059	0.016	0.724	0.342	0.724	0.067	0.131	0.076	0.002	0.000	0.342	-0.308	-0.265	-0.181
C	111	B	-0.098	0.016	0.731	0.386	0.067	0.731	0.165	0.036	0.001	0.000	-0.313	0.386	-0.287	-0.282
C	112	D	-0.323	0.016	0.764	0.587	0.065	0.075	0.094	0.764	0.003	0.000	-0.372	-0.497	-0.497	0.587
C	113	A	-0.489	0.017	0.789	0.530	0.789	0.080	0.087	0.041	0.002	0.000	0.530	-0.405	-0.404	-0.363
C	114	D	0.454	0.015	0.633	0.479	0.053	0.179	0.133	0.633	0.002	0.000	-0.369	-0.378	-0.452	0.479
C	115	A	-0.004	0.015	0.714	0.442	0.714	0.189	0.053	0.041	0.003	0.000	0.442	-0.289	-0.438	-0.423
C	116	A	-1.121	0.020	0.865	0.486	0.865	0.032	0.034	0.067	0.002	0.000	0.486	-0.303	-0.331	-0.340
C	117	D	0.364	0.015	0.649	0.396	0.078	0.190	0.080	0.649	0.003	0.000	-0.316	-0.288	-0.377	0.396
C	118	C	-1.221	0.021	0.874	0.503	0.042	0.038	0.874	0.044	0.002	0.000	-0.319	-0.393	0.503	-0.308
C	119	B	-0.088	0.016	0.728	0.431	0.033	0.728	0.158	0.077	0.002	0.000	-0.311	0.431	-0.286	-0.422
C	120	C	-0.244	0.016	0.753	0.507	0.099	0.096	0.753	0.049	0.002	0.000	-0.377	-0.386	0.507	-0.401
C	121	B	0.095	0.015	0.698	0.465	0.044	0.698	0.154	0.102	0.002	0.000	-0.371	0.465	-0.311	-0.443
C	122	C	-0.058	0.016	0.723	0.410	0.031	0.136	0.723	0.106	0.003	0.000	-0.365	-0.326	0.410	-0.278
C	123	B	0.582	0.014	0.608	0.399	0.121	0.608	0.074	0.194	0.003	0.000	-0.321	0.399	-0.407	-0.300
C	124	B	-0.439	0.017	0.781	0.322	0.139	0.781	0.038	0.039	0.003	0.000	-0.103	0.322	-0.349	-0.381
C	125	A	0.306	0.015	0.660	0.357	0.660	0.113	0.038	0.186	0.003	0.000	0.357	-0.350	-0.411	-0.198
C	126	D	0.409	0.015	0.641	0.465	0.163	0.091	0.102	0.641	0.003	0.000	-0.306	-0.399	-0.505	0.465
C	127	C	0.223	0.015	0.675	0.326	0.075	0.159	0.675	0.088	0.003	0.000	-0.222	-0.294	0.326	-0.213
C	128	B	-0.164	0.016	0.740	0.500	0.038	0.740	0.187	0.032	0.002	0.000	-0.404	0.500	-0.408	-0.350
C	129	C	-0.592	0.017	0.802	0.451	0.040	0.075	0.802	0.080	0.003	0.000	-0.354	-0.349	0.451	-0.275

Appendix I: 2004 PSSA Grade Eight Item Analysis

Multiple Choice Items for Reading

Form	Seq	Key	Logit	LSE	P-Value	PtBis	%A	%B	%C	%D	Blank	Invalid	R(A)	R(B)	R(C)	R(D)
D	94	D	-0.511	0.017	0.792	0.558	0.062	0.060	0.084	0.792	0.003	0.000	-0.366	-0.448	-0.453	0.558
D	95	A	-0.546	0.017	0.798	0.522	0.798	0.075	0.082	0.043	0.002	0.000	0.522	-0.384	-0.407	-0.354
D	96	D	0.361	0.015	0.652	0.462	0.046	0.170	0.131	0.652	0.002	0.000	-0.313	-0.361	-0.439	0.462
D	97	A	-0.172	0.016	0.743	0.413	0.743	0.184	0.039	0.031	0.003	0.000	0.413	-0.275	-0.399	-0.387
D	98	A	-1.343	0.021	0.886	0.458	0.886	0.024	0.027	0.062	0.001	0.000	0.458	-0.260	-0.285	-0.339
D	99	D	0.354	0.015	0.652	0.369	0.063	0.212	0.069	0.652	0.003	0.000	-0.293	-0.275	-0.352	0.369
D	100	C	-1.331	0.021	0.885	0.486	0.040	0.032	0.885	0.042	0.002	0.000	-0.283	-0.372	0.486	-0.317
D	101	B	-0.185	0.016	0.745	0.419	0.026	0.745	0.150	0.077	0.002	0.000	-0.270	0.419	-0.264	-0.434
D	102	C	-0.379	0.017	0.775	0.480	0.092	0.093	0.775	0.038	0.001	0.000	-0.371	-0.335	0.480	-0.380
D	103	B	-0.076	0.016	0.728	0.437	0.034	0.728	0.142	0.095	0.001	0.000	-0.316	0.437	-0.281	-0.417
D	104	C	-0.245	0.016	0.754	0.373	0.025	0.118	0.754	0.101	0.002	0.000	-0.311	-0.286	0.373	-0.252
D	105	B	0.618	0.014	0.602	0.387	0.126	0.602	0.066	0.204	0.003	0.000	-0.307	0.387	-0.394	-0.309
D	106	B	-0.869	0.019	0.838	0.373	0.089	0.838	0.034	0.038	0.002	0.000	-0.129	0.373	-0.363	-0.362
D	107	A	0.306	0.015	0.662	0.363	0.662	0.128	0.040	0.168	0.002	0.000	0.363	-0.366	-0.401	-0.193
D	108	D	0.454	0.015	0.634	0.448	0.167	0.080	0.116	0.634	0.002	0.000	-0.280	-0.375	-0.507	0.448
D	109	C	0.120	0.015	0.695	0.312	0.067	0.140	0.695	0.095	0.002	0.000	-0.168	-0.286	0.312	-0.233
D	110	B	-0.095	0.016	0.730	0.498	0.036	0.730	0.201	0.031	0.001	0.000	-0.391	0.498	-0.425	-0.336
D	111	C	-0.763	0.018	0.824	0.455	0.035	0.073	0.824	0.066	0.002	0.000	-0.346	-0.357	0.455	-0.266
D	112	A	-2.214	0.029	0.944	0.406	0.944	0.023	0.018	0.014	0.001	0.000	0.406	-0.249	-0.249	-0.223
D	113	C	-1.367	0.022	0.888	0.503	0.027	0.033	0.888	0.051	0.001	0.000	-0.333	-0.395	0.503	-0.293
D	114	C	-0.868	0.019	0.837	0.528	0.041	0.036	0.837	0.084	0.002	0.000	-0.391	-0.353	0.528	-0.385
D	115	B	-2.249	0.029	0.946	0.447	0.023	0.946	0.018	0.012	0.001	0.000	-0.279	0.447	-0.276	-0.256
D	116	D	-1.136	0.020	0.866	0.558	0.059	0.028	0.044	0.866	0.002	0.000	-0.380	-0.407	-0.394	0.558
D	117	C	-0.797	0.018	0.829	0.384	0.037	0.064	0.829	0.067	0.002	0.000	-0.220	-0.318	0.384	-0.231
D	118	B	0.372	0.015	0.650	0.451	0.102	0.650	0.116	0.130	0.002	0.000	-0.454	0.451	-0.366	-0.313
D	119	A	0.493	0.015	0.627	0.420	0.627	0.055	0.150	0.166	0.002	0.000	0.420	-0.388	-0.423	-0.261
D	120	D	-0.263	0.016	0.757	0.400	0.181	0.035	0.024	0.757	0.002	0.000	-0.251	-0.415	-0.393	0.400
D	121	D	0.263	0.015	0.670	0.456	0.086	0.076	0.166	0.670	0.002	0.000	-0.384	-0.381	-0.358	0.456
D	122	D	0.576	0.014	0.611	0.447	0.065	0.130	0.191	0.611	0.003	0.000	-0.410	-0.403	-0.360	0.447
D	123	B	0.948	0.014	0.537	0.341	0.156	0.537	0.229	0.075	0.003	0.000	-0.267	0.341	-0.300	-0.338
D	124	B	0.249	0.015	0.672	0.484	0.111	0.672	0.188	0.026	0.003	0.000	-0.436	0.484	-0.397	-0.333
D	125	A	-0.486	0.017	0.789	0.490	0.789	0.094	0.042	0.073	0.003	0.000	0.490	-0.408	-0.382	-0.294
D	126	B	-0.734	0.018	0.821	0.426	0.077	0.821	0.059	0.040	0.002	0.000	-0.291	0.426	-0.327	-0.279
D	127	C	-0.219	0.016	0.750	0.495	0.045	0.047	0.750	0.155	0.002	0.000	-0.376	-0.418	0.495	-0.374
D	128	A	0.016	0.015	0.712	0.377	0.712	0.070	0.140	0.076	0.002	0.000	0.377	-0.360	-0.298	-0.203
D	129	B	-0.158	0.016	0.740	0.394	0.046	0.740	0.171	0.041	0.003	0.000	-0.343	0.394	-0.280	-0.308

Appendix I: 2004 PSSA Grade Eight Item Analysis

Multiple Choice Items for Reading

Form	Seq	Key	Logit	LSE	P-Value	PtBis	%A	%B	%C	%D	Blank	Invalid	R(A)	R(B)	R(C)	R(D)
E	94	B	-1.144	0.020	0.867	0.376	0.045	0.867	0.043	0.044	0.002	0.000	-0.324	0.376	-0.241	-0.168
E	95	C	-0.120	0.016	0.731	0.327	0.042	0.072	0.731	0.154	0.001	0.000	-0.145	-0.121	0.327	-0.360
E	96	A	0.993	0.014	0.518	0.223	0.518	0.211	0.108	0.160	0.003	0.000	0.223	-0.206	-0.263	-0.133
E	97	B	-0.693	0.018	0.815	0.307	0.016	0.815	0.153	0.015	0.001	0.000	-0.290	0.307	-0.203	-0.281
E	98	D	-0.297	0.016	0.759	0.379	0.095	0.099	0.045	0.759	0.002	0.000	-0.261	-0.269	-0.316	0.379
E	99	B	-2.482	0.032	0.956	0.396	0.017	0.956	0.017	0.008	0.001	0.000	-0.265	0.396	-0.235	-0.190
E	100	B	0.100	0.015	0.693	0.481	0.079	0.693	0.104	0.122	0.002	0.000	-0.466	0.481	-0.362	-0.350
E	101	C	-0.172	0.016	0.739	0.475	0.033	0.034	0.739	0.193	0.001	0.000	-0.356	-0.345	0.475	-0.394
E	102	A	-0.122	0.016	0.731	0.321	0.731	0.064	0.126	0.078	0.001	0.000	0.321	-0.289	-0.249	-0.167
E	103	D	0.239	0.015	0.668	0.307	0.074	0.117	0.139	0.668	0.001	0.000	-0.313	-0.139	-0.283	0.307
E	104	C	-0.837	0.018	0.834	0.374	0.031	0.018	0.834	0.116	0.001	0.000	-0.232	-0.322	0.374	-0.265
E	105	D	0.289	0.015	0.659	0.438	0.133	0.066	0.141	0.659	0.002	0.000	-0.421	-0.375	-0.287	0.438
E	106	C	0.184	0.015	0.678	0.365	0.021	0.269	0.678	0.031	0.001	0.000	-0.363	-0.282	0.365	-0.339
E	107	D	-1.160	0.020	0.869	0.524	0.034	0.056	0.040	0.869	0.001	0.000	-0.364	-0.378	-0.335	0.524
E	108	B	-0.031	0.015	0.715	0.372	0.092	0.715	0.156	0.035	0.002	0.000	-0.290	0.372	-0.289	-0.265
E	109	B	0.055	0.015	0.701	0.439	0.227	0.701	0.035	0.035	0.002	0.000	-0.334	0.439	-0.409	-0.381
E	110	D	-1.823	0.025	0.923	0.514	0.019	0.030	0.027	0.923	0.001	0.000	-0.308	-0.360	-0.322	0.514
E	111	B	0.895	0.014	0.539	0.353	0.192	0.539	0.192	0.075	0.002	0.000	-0.293	0.353	-0.303	-0.337
E	112	D	1.000	0.014	0.517	0.383	0.134	0.145	0.202	0.517	0.002	0.000	-0.294	-0.398	-0.339	0.383
E	113	C	-0.793	0.018	0.827	0.359	0.044	0.063	0.827	0.064	0.002	0.000	-0.247	-0.278	0.359	-0.198
E	114	B	-0.091	0.016	0.725	0.414	0.027	0.725	0.157	0.087	0.003	0.000	-0.312	0.414	-0.246	-0.434
E	115	D	2.958	0.018	0.167	0.150	0.107	0.685	0.040	0.167	0.002	0.000	-0.388	-0.108	-0.549	0.150
E	116	D	0.399	0.014	0.638	0.512	0.054	0.162	0.144	0.638	0.002	0.000	-0.406	-0.400	-0.476	0.512
E	117	A	0.029	0.015	0.704	0.404	0.704	0.199	0.044	0.049	0.004	0.000	0.404	-0.255	-0.390	-0.411
E	118	A	-0.121	0.016	0.731	0.500	0.731	0.061	0.121	0.085	0.002	0.000	0.500	-0.419	-0.393	-0.341
E	119	B	-0.026	0.015	0.715	0.487	0.048	0.715	0.122	0.113	0.002	0.000	-0.346	0.487	-0.331	-0.446
E	120	B	-0.658	0.017	0.809	0.344	0.106	0.809	0.039	0.043	0.002	0.000	-0.121	0.344	-0.341	-0.346
E	121	C	0.664	0.014	0.586	0.412	0.057	0.184	0.586	0.171	0.002	0.000	-0.425	-0.338	0.412	-0.321
E	122	B	1.324	0.014	0.450	0.383	0.305	0.450	0.134	0.108	0.003	0.000	-0.387	0.383	-0.357	-0.306
E	123	D	0.540	0.014	0.610	0.458	0.167	0.091	0.129	0.610	0.003	0.000	-0.297	-0.403	-0.492	0.458
E	124	D	0.027	0.015	0.706	0.502	0.033	0.104	0.154	0.706	0.002	0.000	-0.450	-0.405	-0.387	0.502
E	125	D	0.332	0.015	0.650	0.416	0.103	0.195	0.049	0.650	0.003	0.000	-0.342	-0.302	-0.424	0.416
E	126	B	2.696	0.017	0.201	-0.058	0.443	0.201	0.173	0.178	0.004	0.000	0.158	-0.058	-0.057	-0.011
E	127	B	1.577	0.014	0.398	0.224	0.469	0.398	0.028	0.103	0.003	0.000	-0.124	0.224	-0.433	-0.405
E	128	D	1.611	0.014	0.392	0.227	0.162	0.285	0.159	0.392	0.003	0.000	-0.248	-0.221	-0.189	0.227
E	129	A	0.902	0.014	0.537	0.374	0.537	0.289	0.060	0.111	0.003	0.000	0.374	-0.339	-0.423	-0.258

Appendix I: 2004 PSSA Grade Eight Item Analysis

Multiple Choice Items for Reading

Form	Seq	Key	Logit	LSE	P-Value	PtBis	%A	%B	%C	%D	Blank	Invalid	R(A)	R(B)	R(C)	R(D)
F	94	B	-0.170	0.016	0.739	0.371	0.021	0.739	0.149	0.088	0.002	0.000	-0.239	0.371	-0.189	-0.427
F	95	D	3.016	0.018	0.160	0.174	0.073	0.733	0.032	0.160	0.001	0.000	-0.449	-0.148	-0.557	0.174
F	96	D	0.304	0.015	0.656	0.481	0.046	0.154	0.141	0.656	0.002	0.000	-0.316	-0.370	-0.457	0.481
F	97	A	-0.293	0.016	0.758	0.380	0.758	0.175	0.030	0.034	0.003	0.000	0.380	-0.250	-0.323	-0.365
F	98	A	-0.413	0.017	0.777	0.510	0.777	0.043	0.102	0.076	0.001	0.000	0.510	-0.386	-0.398	-0.353
F	99	B	-0.301	0.016	0.761	0.459	0.038	0.761	0.093	0.106	0.001	0.000	-0.303	0.459	-0.283	-0.411
F	100	B	-0.707	0.018	0.818	0.327	0.105	0.818	0.035	0.040	0.002	0.000	-0.091	0.327	-0.344	-0.345
F	101	C	0.483	0.014	0.623	0.430	0.048	0.158	0.623	0.169	0.002	0.000	-0.399	-0.346	0.430	-0.348
F	102	B	1.261	0.014	0.464	0.377	0.288	0.464	0.145	0.100	0.002	0.000	-0.396	0.377	-0.317	-0.300
F	103	D	0.370	0.015	0.645	0.451	0.160	0.079	0.114	0.645	0.002	0.000	-0.288	-0.358	-0.496	0.451
F	104	D	-0.043	0.015	0.719	0.458	0.024	0.105	0.150	0.719	0.001	0.000	-0.403	-0.345	-0.361	0.458
F	105	D	0.362	0.015	0.647	0.398	0.101	0.217	0.034	0.647	0.001	0.000	-0.325	-0.311	-0.387	0.398
F	106	B	2.785	0.017	0.190	-0.018	0.492	0.190	0.162	0.151	0.003	0.000	0.114	-0.018	-0.103	-0.120
F	107	B	1.568	0.014	0.402	0.236	0.471	0.402	0.017	0.108	0.001	0.000	-0.144	0.236	-0.380	-0.429
F	108	D	1.658	0.014	0.384	0.189	0.136	0.296	0.181	0.384	0.002	0.000	-0.241	-0.185	-0.126	0.189
F	109	A	0.863	0.014	0.547	0.386	0.547	0.309	0.058	0.084	0.002	0.000	0.386	-0.328	-0.439	-0.307
F	110	B	-0.968	0.019	0.848	0.405	0.047	0.848	0.052	0.051	0.003	0.000	-0.365	0.405	-0.274	-0.170
F	111	C	0.132	0.015	0.689	0.289	0.056	0.090	0.689	0.163	0.002	0.000	-0.128	-0.120	0.289	-0.328
F	112	A	1.150	0.014	0.487	0.206	0.487	0.211	0.089	0.211	0.003	0.000	0.206	-0.222	-0.302	-0.079
F	113	B	-0.344	0.016	0.767	0.328	0.018	0.767	0.194	0.019	0.002	0.000	-0.320	0.328	-0.220	-0.332
F	114	D	-0.291	0.016	0.759	0.423	0.096	0.091	0.051	0.759	0.002	0.000	-0.289	-0.290	-0.375	0.423
F	115	B	-2.220	0.029	0.945	0.444	0.023	0.945	0.018	0.012	0.002	0.000	-0.289	0.444	-0.260	-0.240
F	116	B	0.117	0.015	0.691	0.494	0.073	0.691	0.104	0.130	0.003	0.000	-0.474	0.494	-0.387	-0.358
F	117	C	-0.127	0.016	0.733	0.477	0.035	0.039	0.733	0.191	0.002	0.000	-0.366	-0.382	0.477	-0.381
F	118	A	-0.100	0.016	0.728	0.360	0.728	0.065	0.130	0.075	0.002	0.000	0.360	-0.322	-0.274	-0.201
F	119	D	0.421	0.014	0.635	0.344	0.093	0.126	0.143	0.635	0.002	0.000	-0.349	-0.193	-0.301	0.344
F	120	C	-0.612	0.017	0.805	0.394	0.043	0.027	0.805	0.123	0.002	0.000	-0.236	-0.376	0.394	-0.269
F	121	D	0.415	0.014	0.637	0.447	0.146	0.071	0.144	0.637	0.002	0.000	-0.426	-0.389	-0.304	0.447
F	122	C	0.271	0.015	0.664	0.385	0.028	0.273	0.664	0.033	0.003	0.000	-0.385	-0.290	0.385	-0.366
F	123	D	-0.966	0.019	0.848	0.555	0.040	0.064	0.045	0.848	0.002	0.000	-0.400	-0.415	-0.353	0.555
F	124	B	0.084	0.015	0.696	0.384	0.093	0.696	0.166	0.041	0.003	0.000	-0.301	0.384	-0.294	-0.298
F	125	B	0.107	0.015	0.692	0.447	0.220	0.692	0.046	0.038	0.003	0.000	-0.325	0.447	-0.435	-0.395
F	126	D	-1.526	0.023	0.901	0.556	0.026	0.039	0.031	0.901	0.002	0.000	-0.356	-0.397	-0.349	0.556
F	127	B	0.919	0.014	0.536	0.356	0.192	0.536	0.193	0.076	0.003	0.000	-0.291	0.356	-0.317	-0.321
F	128	D	1.076	0.014	0.503	0.382	0.141	0.150	0.204	0.503	0.003	0.000	-0.296	-0.402	-0.337	0.382
F	129	C	-0.779	0.018	0.826	0.409	0.045	0.061	0.826	0.065	0.002	0.000	-0.283	-0.306	0.409	-0.245

Appendix I: 2004 PSSA Grade Eight Item Analysis

Multiple Choice Items for Reading

Form	Seq	Key	Logit	LSE	P-Value	PtBis	%A	%B	%C	%D	Blank	Invalid	R(A)	R(B)	R(C)	R(D)
W	26	D	-0.870	0.008	0.837	0.393	0.059	0.024	0.079	0.837	0.001	0.000	-0.206	-0.324	-0.299	0.393
W	27	D	-1.759	0.010	0.917	0.411	0.016	0.043	0.022	0.917	0.002	0.000	-0.251	-0.268	-0.257	0.411
W	28	A	-0.914	0.008	0.842	0.354	0.842	0.065	0.070	0.021	0.001	0.000	0.354	-0.245	-0.228	-0.256
W	29	C	0.451	0.006	0.631	0.314	0.012	0.350	0.631	0.007	0.000	0.000	-0.222	-0.286	0.314	-0.219
W	30	C	0.412	0.006	0.638	0.384	0.068	0.140	0.638	0.153	0.001	0.000	-0.349	-0.298	0.384	-0.313
W	31	C	1.352	0.006	0.448	0.260	0.308	0.111	0.448	0.130	0.003	0.000	-0.252	-0.375	0.260	-0.109
W	32	C	0.227	0.006	0.672	0.203	0.011	0.150	0.672	0.165	0.001	0.000	-0.285	-0.158	0.203	-0.130
W	33	A	-0.925	0.008	0.843	0.498	0.843	0.101	0.035	0.020	0.001	0.000	0.498	-0.378	-0.350	-0.332
W	34	B	-1.165	0.008	0.869	0.354	0.036	0.869	0.072	0.023	0.001	0.000	-0.252	0.354	-0.260	-0.161
W	35	C	0.584	0.006	0.605	0.297	0.336	0.019	0.605	0.040	0.001	0.000	-0.213	-0.328	0.297	-0.394
W	36	B	0.195	0.006	0.678	0.365	0.054	0.678	0.217	0.050	0.001	0.000	-0.343	0.365	-0.227	-0.424
W	37	C	0.853	0.006	0.551	0.300	0.106	0.213	0.551	0.129	0.001	0.000	-0.259	-0.249	0.300	-0.266
W	38	A	-0.775	0.007	0.826	0.471	0.826	0.037	0.057	0.079	0.001	0.000	0.471	-0.324	-0.377	-0.303
W	39	A	0.783	0.006	0.565	0.309	0.565	0.270	0.082	0.082	0.002	0.000	0.309	-0.288	-0.198	-0.278
W	40	C	-1.362	0.009	0.888	0.434	0.065	0.038	0.888	0.009	0.000	0.000	-0.287	-0.339	0.434	-0.225
W	41	B	0.005	0.006	0.712	0.429	0.105	0.712	0.022	0.160	0.001	0.000	-0.284	0.429	-0.373	-0.381
W	42	B	0.765	0.006	0.569	0.105	0.021	0.569	0.331	0.078	0.001	0.000	-0.300	0.105	0.082	-0.419
W	43	C	-1.233	0.008	0.876	0.353	0.045	0.056	0.876	0.022	0.001	0.000	-0.221	-0.223	0.353	-0.248
W	44	B	-0.830	0.007	0.832	0.392	0.082	0.832	0.067	0.018	0.001	0.000	-0.250	0.392	-0.305	-0.256
W	45	B	-0.160	0.006	0.738	0.300	0.037	0.738	0.208	0.016	0.002	0.000	-0.373	0.300	-0.170	-0.316
W	46	B	1.287	0.006	0.462	0.297	0.230	0.462	0.042	0.265	0.002	0.000	-0.338	0.297	-0.388	-0.192
W	47	C	-1.383	0.009	0.889	0.510	0.072	0.022	0.889	0.016	0.001	0.000	-0.391	-0.335	0.510	-0.292
W	48	B	0.016	0.006	0.710	0.336	0.050	0.710	0.216	0.023	0.001	0.000	-0.333	0.336	-0.214	-0.378
W	49	C	0.892	0.006	0.543	0.314	0.138	0.259	0.543	0.058	0.002	0.000	-0.197	-0.269	0.314	-0.406
W	50	A	1.314	0.006	0.456	0.236	0.456	0.203	0.106	0.234	0.002	0.000	0.236	-0.122	-0.311	-0.250
W	51	B	-1.155	0.008	0.868	0.386	0.049	0.868	0.072	0.010	0.001	0.000	-0.215	0.386	-0.308	-0.247
W	52	A	-1.956	0.011	0.930	0.500	0.930	0.026	0.017	0.026	0.001	0.000	0.500	-0.301	-0.303	-0.343
W	53	A	-0.521	0.007	0.792	0.500	0.792	0.129	0.031	0.046	0.002	0.000	0.500	-0.413	-0.297	-0.368
W	54	B	-0.326	0.007	0.764	0.436	0.081	0.764	0.090	0.063	0.002	0.000	-0.275	0.436	-0.391	-0.281
W	55	B	0.455	0.006	0.630	0.212	0.083	0.630	0.149	0.137	0.002	0.000	-0.156	0.212	-0.204	-0.109
W	56	C	-0.277	0.007	0.757	0.463	0.147	0.048	0.757	0.047	0.001	0.000	-0.307	-0.396	0.463	-0.413
W	57	D	-0.317	0.007	0.763	0.492	0.073	0.088	0.074	0.763	0.001	0.000	-0.334	-0.325	-0.461	0.492
W	58	D	1.196	0.006	0.481	0.267	0.179	0.232	0.107	0.481	0.002	0.000	-0.324	-0.186	-0.227	0.267
W	59	D	-0.659	0.007	0.811	0.451	0.083	0.068	0.037	0.811	0.001	0.000	-0.282	-0.344	-0.350	0.451
W	60	B	-0.439	0.007	0.781	0.415	0.036	0.781	0.065	0.116	0.001	0.000	-0.373	0.415	-0.369	-0.225
W	61	B	-1.018	0.008	0.853	0.417	0.054	0.853	0.041	0.051	0.001	0.000	-0.300	0.417	-0.327	-0.217

Appendix I: 2004 PSSA Grade Eight Item Analysis

Multiple Choice Items for Reading

Form	Seq	Key	Logit	LSE	P-Value	PtBis	%A	%B	%C	%D	Blank	Invalid	R(A)	R(B)	R(C)	R(D)
W	156	C	-0.414	0.007	0.777	0.398	0.065	0.113	0.777	0.042	0.002	0.000	-0.289	-0.269	0.398	-0.319
W	157	B	1.233	0.006	0.473	0.297	0.119	0.473	0.328	0.079	0.002	0.000	-0.268	0.297	-0.242	-0.390
W	158	D	0.306	0.006	0.658	0.418	0.253	0.050	0.038	0.658	0.001	0.000	-0.343	-0.365	-0.357	0.418
W	159	C	-0.234	0.007	0.751	0.325	0.029	0.027	0.751	0.193	0.001	0.000	-0.321	-0.370	0.325	-0.192
W	160	D	-0.585	0.007	0.801	0.443	0.049	0.026	0.123	0.801	0.001	0.000	-0.289	-0.385	-0.324	0.443
W	161	D	0.896	0.006	0.542	0.222	0.175	0.245	0.037	0.542	0.002	0.000	-0.292	-0.079	-0.317	0.222
W	162	D	0.609	0.006	0.600	0.316	0.091	0.276	0.032	0.600	0.001	0.000	-0.302	-0.214	-0.412	0.316
W	163	A	-1.064	0.008	0.858	0.544	0.858	0.075	0.032	0.034	0.001	0.000	0.544	-0.415	-0.384	-0.340
W	164	C	-0.147	0.006	0.736	0.421	0.044	0.102	0.736	0.118	0.001	0.000	-0.340	-0.363	0.421	-0.273
W	165	C	-1.517	0.009	0.900	0.378	0.044	0.042	0.900	0.013	0.001	0.000	-0.215	-0.275	0.378	-0.239
W	166	C	-0.434	0.007	0.780	0.303	0.022	0.155	0.780	0.042	0.001	0.000	-0.338	-0.174	0.303	-0.244
W	167	D	0.760	0.006	0.570	0.402	0.081	0.189	0.159	0.570	0.001	0.000	-0.350	-0.331	-0.374	0.402
W	168	A	0.033	0.006	0.707	0.355	0.707	0.037	0.079	0.176	0.001	0.000	0.355	-0.327	-0.311	-0.235
W	169	D	0.050	0.006	0.703	0.447	0.098	0.080	0.117	0.703	0.002	0.000	-0.349	-0.402	-0.318	0.447
W	170	A	-0.241	0.007	0.751	0.281	0.751	0.100	0.039	0.108	0.001	0.000	0.281	-0.236	-0.336	-0.096
W	171	B	-1.869	0.010	0.925	0.446	0.033	0.925	0.025	0.015	0.000	0.000	-0.287	0.446	-0.293	-0.258
W	172	B	0.374	0.006	0.645	0.335	0.103	0.645	0.122	0.129	0.001	0.000	-0.307	0.335	-0.301	-0.197
W	173	B	1.511	0.006	0.416	0.315	0.432	0.416	0.073	0.077	0.001	0.000	-0.243	0.315	-0.444	-0.389
W	174	A	-1.062	0.008	0.858	0.394	0.858	0.068	0.028	0.044	0.001	0.000	0.394	-0.307	-0.267	-0.209
W	175	B	-0.570	0.007	0.799	0.398	0.035	0.799	0.107	0.057	0.001	0.000	-0.329	0.398	-0.252	-0.299
W	176	A	0.897	0.006	0.542	0.259	0.542	0.307	0.059	0.089	0.002	0.000	0.259	-0.136	-0.420	-0.299
W	177	A	-1.214	0.008	0.873	0.488	0.873	0.045	0.051	0.029	0.001	0.000	0.488	-0.276	-0.379	-0.336
W	178	B	0.479	0.006	0.625	0.456	0.246	0.625	0.075	0.052	0.002	0.000	-0.372	0.456	-0.423	-0.393
W	179	C	0.918	0.006	0.538	0.275	0.106	0.286	0.538	0.068	0.002	0.000	-0.330	-0.137	0.275	-0.420
W	180	B	-0.162	0.006	0.738	0.364	0.179	0.738	0.061	0.020	0.002	0.000	-0.260	0.364	-0.299	-0.321
W	181	C	-0.635	0.007	0.808	0.490	0.073	0.050	0.808	0.068	0.001	0.000	-0.378	-0.347	0.490	-0.336
W	182	A	-1.287	0.009	0.880	0.512	0.880	0.047	0.049	0.023	0.001	0.000	0.512	-0.342	-0.373	-0.318
W	183	C	0.410	0.006	0.638	0.320	0.131	0.028	0.638	0.201	0.002	0.000	-0.168	-0.410	0.320	-0.291
W	184	D	-0.819	0.007	0.831	0.523	0.034	0.030	0.104	0.831	0.001	0.000	-0.401	-0.399	-0.370	0.523
W	185	B	-0.925	0.008	0.843	0.424	0.079	0.843	0.037	0.040	0.001	0.000	-0.317	0.424	-0.304	-0.233
W	186	B	-1.206	0.008	0.873	0.472	0.050	0.873	0.036	0.040	0.001	0.000	-0.303	0.472	-0.357	-0.289
W	187	D	-0.079	0.006	0.725	0.418	0.028	0.075	0.170	0.725	0.002	0.000	-0.398	-0.297	-0.325	0.418
W	188	D	-0.750	0.007	0.822	0.525	0.044	0.052	0.081	0.822	0.001	0.000	-0.370	-0.410	-0.361	0.525
W	189	C	-1.427	0.009	0.892	0.503	0.055	0.029	0.892	0.022	0.001	0.000	-0.345	-0.385	0.503	-0.269
W	190	D	1.159	0.006	0.488	0.358	0.292	0.166	0.053	0.488	0.002	0.000	-0.253	-0.414	-0.413	0.358
W	191	A	1.143	0.006	0.491	0.358	0.491	0.299	0.099	0.109	0.002	0.000	0.358	-0.260	-0.448	-0.363

Appendix J: 2004 PSSA Grade Eleven Item Analysis

Multiple Choice Items for Reading

Form	Seq	Key	Logit	LSE	P-Value	PtBis	%A	%B	%C	%D	Blank	Invalid	R(A)	R(B)	R(C)	R(D)
A	100	D	2.177	0.017	0.260	0.258	0.314	0.078	0.342	0.260	0.005	0.000	-0.268	-0.418	-0.258	0.258
A	101	C	-1.152	0.020	0.843	0.413	0.027	0.066	0.843	0.061	0.002	0.000	-0.262	-0.297	0.413	-0.266
A	102	B	0.531	0.015	0.574	0.395	0.154	0.574	0.045	0.223	0.004	0.000	-0.412	0.395	-0.489	-0.239
A	103	C	-0.255	0.017	0.719	0.356	0.075	0.034	0.719	0.169	0.003	0.000	-0.248	-0.268	0.356	-0.273
A	104	D	-1.255	0.021	0.853	0.511	0.036	0.072	0.036	0.853	0.003	0.000	-0.349	-0.389	-0.306	0.511
A	105	D	0.510	0.015	0.580	0.465	0.106	0.282	0.030	0.580	0.002	0.000	-0.504	-0.367	-0.406	0.465
A	106	B	-0.269	0.017	0.720	0.382	0.097	0.720	0.133	0.047	0.003	0.000	-0.245	0.382	-0.298	-0.330
A	107	D	1.096	0.015	0.461	0.457	0.050	0.447	0.039	0.461	0.003	0.000	-0.493	-0.415	-0.499	0.457
A	108	A	1.324	0.015	0.415	0.325	0.415	0.313	0.150	0.115	0.006	0.000	0.325	-0.257	-0.394	-0.314
A	109	C	-1.468	0.022	0.875	0.415	0.033	0.068	0.875	0.022	0.002	0.000	-0.303	-0.268	0.415	-0.245
A	110	C	-1.314	0.021	0.861	0.420	0.047	0.067	0.861	0.023	0.002	0.000	-0.280	-0.293	0.420	-0.251
A	111	A	0.530	0.015	0.574	0.407	0.574	0.179	0.072	0.171	0.004	0.000	0.407	-0.314	-0.388	-0.369
A	112	D	-1.720	0.024	0.897	0.547	0.026	0.025	0.051	0.897	0.002	0.000	-0.314	-0.347	-0.412	0.547
A	113	B	1.461	0.015	0.390	0.195	0.236	0.390	0.134	0.237	0.003	0.000	-0.169	0.195	-0.271	-0.143
A	114	B	0.698	0.015	0.542	0.232	0.210	0.542	0.113	0.133	0.003	0.000	-0.221	0.232	-0.106	-0.239
A	115	A	-1.688	0.024	0.894	0.427	0.894	0.031	0.022	0.051	0.003	0.000	0.427	-0.269	-0.302	-0.262
A	116	B	1.987	0.016	0.294	0.212	0.073	0.294	0.050	0.581	0.002	0.000	-0.397	0.212	-0.407	-0.155
A	117	D	-1.212	0.021	0.850	0.513	0.045	0.067	0.036	0.850	0.002	0.000	-0.324	-0.403	-0.318	0.513
A	118	A	-0.641	0.018	0.778	0.320	0.778	0.068	0.140	0.012	0.002	0.000	0.320	-0.276	-0.200	-0.248
A	119	A	-0.049	0.016	0.684	0.298	0.684	0.106	0.043	0.165	0.002	0.000	0.298	-0.241	-0.374	-0.147
A	120	D	0.995	0.015	0.483	0.210	0.047	0.092	0.374	0.483	0.004	0.000	-0.463	-0.326	-0.076	0.210
A	121	A	-0.338	0.017	0.732	0.507	0.732	0.096	0.132	0.037	0.003	0.000	0.507	-0.415	-0.380	-0.389
A	122	C	-0.659	0.018	0.780	0.532	0.085	0.088	0.780	0.043	0.003	0.000	-0.383	-0.420	0.532	-0.367
A	123	B	-0.450	0.017	0.748	0.444	0.061	0.748	0.164	0.023	0.004	0.000	-0.381	0.444	-0.316	-0.349
A	124	C	-0.593	0.018	0.771	0.481	0.074	0.122	0.771	0.030	0.003	0.000	-0.444	-0.306	0.481	-0.322
A	125	C	-1.061	0.020	0.833	0.610	0.077	0.042	0.833	0.046	0.002	0.000	-0.488	-0.432	0.610	-0.387
A	126	A	0.178	0.016	0.641	0.402	0.641	0.229	0.088	0.037	0.004	0.000	0.402	-0.281	-0.395	-0.364
A	127	D	-0.274	0.017	0.721	0.263	0.080	0.064	0.131	0.721	0.005	0.000	-0.190	-0.181	-0.200	0.263
A	128	B	-0.302	0.017	0.724	0.496	0.101	0.724	0.061	0.109	0.005	0.000	-0.339	0.496	-0.354	-0.425
A	129	A	-1.427	0.022	0.871	0.515	0.871	0.055	0.042	0.028	0.003	0.000	0.515	-0.374	-0.343	-0.310
A	130	B	0.476	0.015	0.585	0.432	0.096	0.585	0.228	0.087	0.004	0.000	-0.370	0.432	-0.333	-0.409
A	131	A	0.295	0.016	0.620	0.398	0.620	0.113	0.141	0.122	0.004	0.000	0.398	-0.283	-0.328	-0.356
A	132	C	-0.378	0.017	0.737	0.329	0.056	0.125	0.737	0.079	0.004	0.000	-0.323	-0.283	0.329	-0.107
A	133	A	1.066	0.015	0.467	0.460	0.467	0.178	0.134	0.217	0.004	0.000	0.460	-0.430	-0.484	-0.394
A	134	A	0.329	0.016	0.614	0.331	0.614	0.049	0.155	0.178	0.004	0.000	0.331	-0.341	-0.309	-0.198
A	135	D	0.462	0.015	0.589	0.414	0.058	0.274	0.076	0.589	0.004	0.000	-0.300	-0.349	-0.404	0.414
A	136	D	0.845	0.015	0.513	0.324	0.097	0.098	0.288	0.513	0.004	0.000	-0.183	-0.341	-0.311	0.324
A	137	C	-1.543	0.023	0.882	0.453	0.034	0.044	0.882	0.036	0.003	0.000	-0.277	-0.338	0.453	-0.253
A	138	B	1.235	0.015	0.434	0.300	0.131	0.434	0.208	0.223	0.004	0.000	-0.289	0.300	-0.328	-0.233
A	139	B	-1.463	0.022	0.874	0.495	0.059	0.874	0.047	0.016	0.003	0.000	-0.375	0.495	-0.306	-0.297

Appendix J: 2004 PSSA Grade Eleven Item Analysis

Multiple Choice Items for Reading

Form	Seq	Key	Logit	LSE	P-Value	PtBis	%A	%B	%C	%D	Blank	Invalid	R(A)	R(B)	R(C)	R(D)
B	100	D	0.740	0.015	0.539	0.213	0.040	0.095	0.322	0.539	0.004	0.000	-0.430	-0.300	-0.075	0.213
B	101	A	-0.630	0.018	0.780	0.480	0.780	0.078	0.112	0.027	0.003	0.000	0.480	-0.369	-0.352	-0.349
B	102	C	-0.829	0.019	0.806	0.525	0.081	0.077	0.806	0.032	0.003	0.000	-0.398	-0.395	0.525	-0.334
B	103	B	-0.546	0.018	0.766	0.422	0.059	0.766	0.150	0.020	0.005	0.000	-0.370	0.422	-0.292	-0.316
B	104	C	-0.773	0.019	0.799	0.471	0.071	0.102	0.799	0.025	0.003	0.000	-0.431	-0.281	0.471	-0.311
B	105	C	-1.249	0.021	0.856	0.596	0.073	0.031	0.856	0.038	0.002	0.000	-0.483	-0.381	0.596	-0.376
B	106	A	0.276	0.016	0.629	0.387	0.629	0.251	0.083	0.033	0.004	0.000	0.387	-0.281	-0.382	-0.362
B	107	D	-0.477	0.017	0.756	0.239	0.068	0.054	0.119	0.756	0.004	0.000	-0.162	-0.134	-0.189	0.239
B	108	B	-0.230	0.017	0.715	0.508	0.093	0.715	0.057	0.128	0.007	0.000	-0.336	0.508	-0.327	-0.477
B	109	A	-1.610	0.023	0.890	0.475	0.890	0.047	0.038	0.022	0.002	0.000	0.475	-0.341	-0.317	-0.256
B	110	B	0.569	0.015	0.571	0.448	0.095	0.571	0.230	0.099	0.004	0.000	-0.378	0.448	-0.357	-0.438
B	111	A	0.149	0.016	0.652	0.412	0.652	0.091	0.135	0.119	0.003	0.000	0.412	-0.295	-0.330	-0.358
B	112	C	-0.311	0.017	0.731	0.281	0.062	0.114	0.731	0.090	0.003	0.000	-0.255	-0.254	0.281	-0.094
B	113	A	1.091	0.015	0.468	0.471	0.468	0.189	0.113	0.226	0.004	0.000	0.471	-0.442	-0.494	-0.420
B	114	A	0.480	0.015	0.591	0.318	0.591	0.046	0.161	0.199	0.003	0.000	0.318	-0.330	-0.307	-0.204
B	115	D	0.592	0.015	0.568	0.400	0.056	0.283	0.091	0.568	0.002	0.000	-0.267	-0.353	-0.374	0.400
B	116	D	0.885	0.015	0.511	0.295	0.116	0.088	0.282	0.511	0.003	0.000	-0.116	-0.324	-0.312	0.295
B	117	C	-1.074	0.020	0.838	0.391	0.034	0.043	0.838	0.083	0.002	0.000	-0.226	-0.339	0.391	-0.236
B	118	B	1.151	0.015	0.457	0.310	0.129	0.457	0.206	0.206	0.002	0.000	-0.291	0.310	-0.341	-0.236
B	119	B	-1.547	0.023	0.886	0.468	0.059	0.886	0.043	0.011	0.002	0.000	-0.359	0.468	-0.288	-0.252
B	120	D	2.086	0.017	0.280	0.231	0.304	0.078	0.333	0.280	0.006	0.000	-0.212	-0.384	-0.232	0.231
B	121	C	-0.889	0.019	0.814	0.465	0.039	0.077	0.814	0.067	0.003	0.000	-0.319	-0.341	0.465	-0.312
B	122	B	0.436	0.015	0.597	0.394	0.152	0.597	0.046	0.201	0.004	0.000	-0.410	0.394	-0.483	-0.210
B	123	C	-0.428	0.017	0.750	0.415	0.056	0.044	0.750	0.146	0.003	0.000	-0.299	-0.318	0.415	-0.302
B	124	D	-1.038	0.020	0.832	0.546	0.044	0.071	0.049	0.832	0.004	0.000	-0.409	-0.406	-0.345	0.546
B	125	D	0.504	0.015	0.586	0.484	0.109	0.264	0.039	0.586	0.003	0.000	-0.510	-0.375	-0.462	0.484
B	126	B	-0.117	0.016	0.699	0.402	0.102	0.699	0.143	0.052	0.004	0.000	-0.268	0.402	-0.322	-0.348
B	127	D	1.229	0.015	0.441	0.444	0.053	0.462	0.041	0.441	0.003	0.000	-0.516	-0.396	-0.530	0.444
B	128	A	1.316	0.015	0.422	0.340	0.422	0.296	0.165	0.110	0.007	0.000	0.340	-0.261	-0.399	-0.361
B	129	C	-1.345	0.022	0.865	0.461	0.035	0.071	0.865	0.026	0.003	0.000	-0.328	-0.310	0.461	-0.290
B	130	C	-1.159	0.020	0.847	0.453	0.050	0.074	0.847	0.026	0.003	0.000	-0.306	-0.315	0.453	-0.299
B	131	A	0.651	0.015	0.556	0.384	0.556	0.169	0.062	0.209	0.003	0.000	0.384	-0.279	-0.422	-0.340
B	132	D	-1.427	0.022	0.874	0.561	0.037	0.033	0.052	0.874	0.003	0.000	-0.364	-0.372	-0.407	0.561
B	133	B	1.385	0.015	0.409	0.215	0.248	0.409	0.127	0.212	0.004	0.000	-0.184	0.215	-0.312	-0.146
B	134	B	0.734	0.015	0.540	0.237	0.183	0.540	0.121	0.152	0.003	0.000	-0.242	0.237	-0.118	-0.219
B	135	A	-1.509	0.023	0.881	0.479	0.881	0.036	0.028	0.051	0.003	0.000	0.479	-0.313	-0.341	-0.300
B	136	B	2.021	0.016	0.292	0.220	0.062	0.292	0.055	0.589	0.003	0.000	-0.436	0.220	-0.483	-0.151
B	137	D	-1.110	0.020	0.841	0.560	0.054	0.071	0.031	0.841	0.002	0.000	-0.383	-0.425	-0.380	0.560
B	138	A	-0.516	0.018	0.763	0.339	0.763	0.069	0.150	0.015	0.003	0.000	0.339	-0.287	-0.216	-0.298
B	139	A	-0.061	0.016	0.690	0.326	0.690	0.100	0.043	0.164	0.003	0.000	0.326	-0.254	-0.397	-0.178

Appendix J: 2004 PSSA Grade Eleven Item Analysis

Multiple Choice Items for Reading

Form	Seq	Key	Logit	LSE	P-Value	PtBis	%A	%B	%C	%D	Blank	Invalid	R(A)	R(B)	R(C)	R(D)
C	100	C	-0.834	0.019	0.808	0.385	0.042	0.048	0.808	0.101	0.002	0.000	-0.313	-0.378	0.385	-0.161
C	101	C	0.440	0.015	0.599	0.503	0.079	0.241	0.599	0.078	0.003	0.000	-0.459	-0.451	0.503	-0.383
C	102	A	-0.740	0.018	0.793	0.365	0.793	0.107	0.070	0.027	0.004	0.000	0.365	-0.263	-0.252	-0.233
C	103	D	-0.117	0.016	0.700	0.423	0.180	0.083	0.035	0.700	0.003	0.000	-0.273	-0.398	-0.406	0.423
C	104	C	-0.262	0.017	0.724	0.374	0.076	0.031	0.724	0.167	0.002	0.000	-0.269	-0.295	0.374	-0.277
C	105	D	-1.224	0.021	0.853	0.522	0.037	0.069	0.038	0.853	0.003	0.000	-0.367	-0.388	-0.316	0.522
C	106	D	0.557	0.015	0.578	0.459	0.110	0.280	0.031	0.578	0.002	0.000	-0.515	-0.352	-0.409	0.459
C	107	B	0.016	0.016	0.676	0.357	0.125	0.676	0.131	0.064	0.004	0.000	-0.213	0.357	-0.317	-0.300
C	108	A	-0.312	0.017	0.732	0.386	0.732	0.102	0.020	0.143	0.002	0.000	0.386	-0.282	-0.314	-0.297
C	109	A	0.276	0.016	0.629	0.229	0.629	0.124	0.193	0.050	0.004	0.000	0.229	-0.272	-0.068	-0.266
C	110	D	0.037	0.016	0.672	0.412	0.063	0.178	0.082	0.672	0.005	0.000	-0.357	-0.273	-0.391	0.412
C	111	A	-0.739	0.018	0.795	0.484	0.795	0.062	0.069	0.071	0.003	0.000	0.484	-0.288	-0.396	-0.344
C	112	A	-0.510	0.018	0.762	0.437	0.762	0.026	0.109	0.100	0.002	0.000	0.437	-0.406	-0.342	-0.271
C	113	B	-1.337	0.021	0.865	0.464	0.029	0.865	0.041	0.062	0.003	0.000	-0.281	0.464	-0.302	-0.328
C	114	D	1.197	0.015	0.448	0.299	0.156	0.266	0.126	0.448	0.004	0.000	-0.329	-0.275	-0.236	0.299
C	115	A	0.136	0.016	0.655	0.490	0.655	0.059	0.093	0.190	0.003	0.000	0.490	-0.470	-0.336	-0.420
C	116	C	0.298	0.016	0.626	0.228	0.220	0.117	0.626	0.034	0.002	0.000	-0.181	-0.193	0.228	-0.137
C	117	D	-1.028	0.020	0.831	0.463	0.109	0.037	0.020	0.831	0.002	0.000	-0.298	-0.385	-0.341	0.463
C	118	D	0.239	0.016	0.637	0.504	0.147	0.107	0.105	0.637	0.004	0.000	-0.404	-0.421	-0.442	0.504
C	119	B	-1.450	0.022	0.876	0.483	0.053	0.876	0.051	0.018	0.003	0.000	-0.287	0.483	-0.370	-0.299
C	120	B	0.191	0.016	0.644	0.475	0.187	0.644	0.090	0.075	0.004	0.000	-0.469	0.475	-0.328	-0.293
C	121	A	-0.675	0.018	0.785	0.347	0.785	0.095	0.040	0.076	0.003	0.000	0.347	-0.264	-0.308	-0.162
C	122	B	0.231	0.016	0.637	0.460	0.274	0.637	0.052	0.033	0.004	0.000	-0.390	0.460	-0.430	-0.333
C	123	C	-1.294	0.021	0.861	0.543	0.028	0.067	0.861	0.041	0.003	0.000	-0.355	-0.444	0.543	-0.291
C	124	D	-0.439	0.017	0.751	0.598	0.092	0.049	0.105	0.751	0.003	0.000	-0.452	-0.435	-0.506	0.598
C	125	C	-0.624	0.018	0.778	0.554	0.104	0.054	0.778	0.060	0.003	0.000	-0.419	-0.439	0.554	-0.372
C	126	B	0.610	0.015	0.565	0.294	0.273	0.565	0.077	0.080	0.005	0.000	-0.163	0.294	-0.345	-0.345
C	127	A	-0.480	0.017	0.757	0.497	0.757	0.105	0.043	0.092	0.003	0.000	0.497	-0.303	-0.371	-0.454
C	128	D	0.315	0.016	0.622	0.495	0.051	0.192	0.130	0.622	0.004	0.000	-0.432	-0.444	-0.372	0.495
C	129	A	-1.448	0.022	0.874	0.530	0.874	0.056	0.041	0.026	0.003	0.000	0.530	-0.385	-0.358	-0.310
C	130	D	0.011	0.016	0.674	0.500	0.068	0.134	0.115	0.674	0.008	0.000	-0.402	-0.424	-0.380	0.500
C	131	C	0.226	0.016	0.639	0.232	0.036	0.138	0.639	0.185	0.003	0.000	-0.333	-0.033	0.232	-0.242
C	132	D	-0.348	0.017	0.737	0.582	0.066	0.067	0.126	0.737	0.003	0.000	-0.416	-0.504	-0.461	0.582
C	133	B	-0.349	0.017	0.737	0.416	0.081	0.737	0.061	0.117	0.004	0.000	-0.331	0.416	-0.448	-0.198
C	134	C	-0.811	0.019	0.803	0.534	0.037	0.096	0.803	0.061	0.004	0.000	-0.409	-0.433	0.534	-0.307
C	135	B	-0.938	0.019	0.820	0.496	0.097	0.820	0.042	0.037	0.004	0.000	-0.340	0.496	-0.383	-0.331
C	136	A	-1.483	0.022	0.878	0.463	0.878	0.039	0.028	0.051	0.003	0.000	0.463	-0.367	-0.294	-0.249
C	137	D	-0.339	0.017	0.736	0.406	0.173	0.037	0.050	0.736	0.003	0.000	-0.226	-0.406	-0.414	0.406
C	138	B	-0.621	0.018	0.779	0.479	0.033	0.779	0.156	0.029	0.003	0.000	-0.340	0.479	-0.366	-0.383
C	139	A	-0.743	0.018	0.795	0.525	0.795	0.151	0.027	0.023	0.004	0.000	0.525	-0.425	-0.388	-0.338

Appendix J: 2004 PSSA Grade Eleven Item Analysis

Multiple Choice Items for Reading

Form	Seq	Key	Logit	LSE	P-Value	PtBis	%A	%B	%C	%D	Blank	Invalid	R(A)	R(B)	R(C)	R(D)
D	100	B	0.229	0.016	0.638	0.482	0.205	0.638	0.078	0.074	0.005	0.000	-0.505	0.482	-0.300	-0.260
D	101	A	-0.841	0.019	0.808	0.294	0.808	0.093	0.032	0.065	0.003	0.000	0.294	-0.199	-0.257	-0.122
D	102	B	0.046	0.016	0.671	0.460	0.250	0.671	0.043	0.030	0.006	0.000	-0.391	0.460	-0.398	-0.302
D	103	C	-1.455	0.022	0.876	0.534	0.025	0.061	0.876	0.036	0.003	0.000	-0.333	-0.443	0.534	-0.253
D	104	D	-0.574	0.018	0.771	0.597	0.077	0.037	0.112	0.771	0.003	0.000	-0.435	-0.388	-0.517	0.597
D	105	C	-0.724	0.018	0.793	0.548	0.106	0.043	0.793	0.056	0.002	0.000	-0.427	-0.392	0.548	-0.365
D	106	B	0.454	0.015	0.595	0.310	0.258	0.595	0.073	0.069	0.005	0.000	-0.185	0.310	-0.322	-0.350
D	107	A	-0.508	0.018	0.762	0.487	0.762	0.102	0.035	0.097	0.004	0.000	0.487	-0.263	-0.325	-0.481
D	108	D	0.328	0.016	0.619	0.476	0.051	0.192	0.132	0.619	0.005	0.000	-0.400	-0.440	-0.344	0.476
D	109	A	-1.645	0.023	0.893	0.480	0.893	0.049	0.037	0.019	0.002	0.000	0.480	-0.325	-0.314	-0.250
D	110	D	-0.258	0.017	0.720	0.480	0.066	0.107	0.099	0.720	0.009	0.000	-0.389	-0.386	-0.332	0.480
D	111	C	0.318	0.016	0.622	0.200	0.038	0.173	0.622	0.164	0.003	0.000	-0.332	0.049	0.200	-0.277
D	112	D	-0.819	0.019	0.805	0.558	0.047	0.048	0.097	0.805	0.003	0.000	-0.340	-0.442	-0.426	0.558
D	113	B	-0.157	0.017	0.707	0.389	0.085	0.707	0.062	0.142	0.003	0.000	-0.307	0.389	-0.423	-0.205
D	114	C	-0.678	0.018	0.786	0.541	0.035	0.109	0.786	0.067	0.003	0.000	-0.403	-0.453	0.541	-0.322
D	115	B	-0.889	0.019	0.814	0.488	0.108	0.814	0.040	0.035	0.003	0.000	-0.343	0.488	-0.363	-0.324
D	116	A	-1.724	0.024	0.899	0.410	0.899	0.033	0.022	0.044	0.002	0.000	0.410	-0.309	-0.237	-0.199
D	117	D	-0.366	0.017	0.741	0.381	0.172	0.028	0.056	0.741	0.002	0.000	-0.201	-0.360	-0.391	0.381
D	118	B	-0.658	0.018	0.784	0.480	0.031	0.784	0.153	0.029	0.002	0.000	-0.326	0.480	-0.374	-0.348
D	119	A	-0.921	0.019	0.818	0.518	0.818	0.134	0.023	0.021	0.003	0.000	0.518	-0.420	-0.331	-0.316
D	120	C	-0.884	0.019	0.815	0.434	0.042	0.052	0.815	0.089	0.003	0.000	-0.335	-0.383	0.434	-0.193
D	121	C	0.518	0.015	0.585	0.499	0.089	0.235	0.585	0.087	0.003	0.000	-0.468	-0.447	0.499	-0.367
D	122	A	-0.604	0.018	0.775	0.408	0.775	0.099	0.090	0.031	0.004	0.000	0.408	-0.295	-0.278	-0.277
D	123	D	0.159	0.016	0.652	0.454	0.190	0.107	0.046	0.652	0.004	0.000	-0.310	-0.403	-0.485	0.454
D	124	C	-0.610	0.018	0.776	0.477	0.060	0.037	0.776	0.124	0.003	0.000	-0.364	-0.364	0.477	-0.319
D	125	D	-1.016	0.020	0.828	0.566	0.040	0.075	0.052	0.828	0.005	0.000	-0.398	-0.426	-0.378	0.566
D	126	D	0.602	0.015	0.570	0.476	0.126	0.263	0.038	0.570	0.003	0.000	-0.520	-0.366	-0.438	0.476
D	127	B	0.094	0.016	0.665	0.380	0.131	0.665	0.135	0.064	0.005	0.000	-0.244	0.380	-0.326	-0.310
D	128	A	-0.037	0.016	0.687	0.415	0.687	0.115	0.028	0.166	0.003	0.000	0.415	-0.307	-0.399	-0.317
D	129	A	0.322	0.016	0.622	0.265	0.622	0.121	0.201	0.052	0.004	0.000	0.265	-0.299	-0.094	-0.298
D	130	D	0.064	0.016	0.668	0.446	0.073	0.163	0.091	0.668	0.006	0.000	-0.370	-0.312	-0.404	0.446
D	131	A	-0.389	0.017	0.743	0.501	0.743	0.073	0.083	0.097	0.004	0.000	0.501	-0.325	-0.412	-0.375
D	132	A	-0.544	0.018	0.767	0.440	0.767	0.034	0.106	0.089	0.004	0.000	0.440	-0.424	-0.314	-0.251
D	133	B	-0.989	0.020	0.826	0.503	0.038	0.826	0.053	0.080	0.004	0.000	-0.317	0.503	-0.366	-0.347
D	134	D	1.213	0.015	0.447	0.306	0.154	0.274	0.120	0.447	0.006	0.000	-0.321	-0.284	-0.250	0.306
D	135	A	0.436	0.015	0.599	0.463	0.599	0.060	0.112	0.224	0.005	0.000	0.463	-0.513	-0.330	-0.397
D	136	C	0.097	0.016	0.664	0.272	0.182	0.113	0.664	0.037	0.004	0.000	-0.196	-0.223	0.272	-0.175
D	137	D	-0.913	0.019	0.817	0.491	0.109	0.044	0.027	0.817	0.004	0.000	-0.291	-0.423	-0.381	0.491
D	138	D	0.233	0.016	0.638	0.512	0.133	0.117	0.107	0.638	0.005	0.000	-0.412	-0.418	-0.453	0.512
D	139	B	-1.286	0.021	0.857	0.520	0.061	0.857	0.054	0.023	0.005	0.000	-0.329	0.520	-0.382	-0.330

Appendix J: 2004 PSSA Grade Eleven Item Analysis

Multiple Choice Items for Reading

Form	Seq	Key	Logit	LSE	P-Value	PtBis	%A	%B	%C	%D	Blank	Invalid	R(A)	R(B)	R(C)	R(D)
E	100	C	-1.235	0.021	0.854	0.409	0.046	0.034	0.854	0.065	0.002	0.000	-0.282	-0.277	0.409	-0.259
E	101	C	-0.935	0.019	0.815	0.350	0.031	0.048	0.815	0.099	0.007	0.000	-0.180	-0.311	0.350	-0.221
E	102	D	-0.009	0.016	0.680	0.490	0.106	0.188	0.024	0.680	0.002	0.000	-0.489	-0.356	-0.360	0.490
E	103	B	0.383	0.016	0.605	0.250	0.101	0.605	0.195	0.094	0.005	0.000	-0.152	0.250	-0.237	-0.167
E	104	B	2.185	0.017	0.263	0.120	0.118	0.263	0.318	0.299	0.003	0.000	-0.382	0.120	-0.129	0.006
E	105	C	-1.684	0.024	0.894	0.451	0.028	0.034	0.894	0.040	0.003	0.000	-0.305	-0.322	0.451	-0.249
E	106	C	0.562	0.015	0.572	0.477	0.102	0.216	0.572	0.106	0.004	0.000	-0.436	-0.396	0.477	-0.432
E	107	C	-0.980	0.019	0.824	0.425	0.042	0.045	0.824	0.086	0.003	0.000	-0.328	-0.389	0.425	-0.203
E	108	B	-1.375	0.022	0.867	0.439	0.031	0.867	0.036	0.064	0.003	0.000	-0.279	0.439	-0.291	-0.298
E	109	A	-1.606	0.023	0.889	0.449	0.889	0.036	0.049	0.024	0.002	0.000	0.449	-0.302	-0.307	-0.254
E	110	A	-0.056	0.016	0.686	0.254	0.686	0.098	0.149	0.063	0.003	0.000	0.254	-0.254	-0.090	-0.275
E	111	A	-0.097	0.016	0.695	0.374	0.695	0.106	0.024	0.172	0.002	0.000	0.374	-0.251	-0.359	-0.307
E	112	C	-0.644	0.018	0.781	0.519	0.064	0.099	0.781	0.055	0.002	0.000	-0.405	-0.426	0.519	-0.303
E	113	C	0.907	0.015	0.503	0.346	0.033	0.172	0.503	0.289	0.002	0.000	-0.408	-0.336	0.346	-0.280
E	114	B	0.899	0.015	0.504	0.385	0.201	0.504	0.158	0.133	0.003	0.000	-0.237	0.385	-0.510	-0.308
E	115	D	-1.334	0.021	0.863	0.507	0.030	0.064	0.040	0.863	0.003	0.000	-0.343	-0.371	-0.322	0.507
E	116	C	-1.673	0.024	0.894	0.458	0.026	0.038	0.894	0.039	0.002	0.000	-0.342	-0.309	0.458	-0.247
E	117	A	-0.685	0.018	0.785	0.392	0.785	0.089	0.081	0.043	0.003	0.000	0.392	-0.273	-0.287	-0.271
E	118	C	-0.583	0.018	0.772	0.449	0.050	0.032	0.772	0.144	0.002	0.000	-0.330	-0.348	0.449	-0.327
E	119	B	-0.224	0.017	0.716	0.358	0.126	0.716	0.099	0.057	0.002	0.000	-0.217	0.358	-0.320	-0.278
E	120	D	-1.007	0.020	0.827	0.453	0.110	0.036	0.025	0.827	0.002	0.000	-0.288	-0.373	-0.355	0.453
E	121	A	-0.649	0.018	0.780	0.429	0.780	0.117	0.041	0.058	0.003	0.000	0.429	-0.261	-0.324	-0.381
E	122	C	-0.164	0.017	0.705	0.390	0.065	0.069	0.705	0.157	0.005	0.000	-0.354	-0.400	0.390	-0.205
E	123	C	-0.566	0.018	0.768	0.367	0.158	0.046	0.768	0.025	0.004	0.000	-0.221	-0.374	0.367	-0.272
E	124	A	0.569	0.015	0.569	0.382	0.569	0.225	0.123	0.079	0.004	0.000	0.382	-0.292	-0.316	-0.413
E	125	B	-0.151	0.017	0.703	0.551	0.092	0.703	0.113	0.089	0.003	0.000	-0.432	0.551	-0.441	-0.425
E	126	D	0.401	0.016	0.604	0.432	0.278	0.064	0.051	0.604	0.003	0.000	-0.336	-0.425	-0.442	0.432
E	127	A	-1.580	0.023	0.886	0.482	0.886	0.030	0.025	0.056	0.002	0.000	0.482	-0.340	-0.322	-0.301
E	128	A	-0.427	0.017	0.746	0.482	0.746	0.057	0.083	0.109	0.006	0.000	0.482	-0.424	-0.379	-0.308
E	129	C	-0.650	0.018	0.781	0.422	0.062	0.131	0.781	0.022	0.003	0.000	-0.425	-0.235	0.422	-0.326
E	130	A	1.085	0.015	0.468	0.346	0.468	0.282	0.027	0.221	0.003	0.000	0.346	-0.289	-0.492	-0.338
E	131	A	1.579	0.016	0.369	0.343	0.369	0.255	0.214	0.156	0.006	0.000	0.343	-0.309	-0.380	-0.360
E	132	B	0.507	0.015	0.582	0.327	0.293	0.582	0.057	0.064	0.004	0.000	-0.234	0.327	-0.325	-0.339
E	133	A	0.051	0.016	0.668	0.442	0.668	0.080	0.108	0.141	0.004	0.000	0.442	-0.426	-0.403	-0.260
E	134	D	-1.212	0.021	0.850	0.452	0.032	0.080	0.034	0.850	0.004	0.000	-0.316	-0.282	-0.357	0.452
E	135	D	-0.903	0.019	0.814	0.615	0.045	0.044	0.094	0.814	0.003	0.000	-0.403	-0.431	-0.510	0.615
E	136	D	0.533	0.015	0.577	0.473	0.064	0.209	0.145	0.577	0.004	0.000	-0.440	-0.433	-0.354	0.473
E	137	B	-0.058	0.016	0.687	0.480	0.213	0.687	0.065	0.031	0.004	0.000	-0.374	0.480	-0.448	-0.355
E	138	A	-1.249	0.021	0.854	0.457	0.854	0.047	0.034	0.061	0.004	0.000	0.457	-0.363	-0.311	-0.258
E	139	D	-0.301	0.017	0.728	0.397	0.162	0.035	0.071	0.728	0.004	0.000	-0.219	-0.365	-0.401	0.397

Appendix J: 2004 PSSA Grade Eleven Item Analysis

Multiple Choice Items for Reading

Form	Seq	Key	Logit	LSE	P-Value	PtBis	%A	%B	%C	%D	Blank	Invalid	R(A)	R(B)	R(C)	R(D)
F	100	A	-0.642	0.018	0.780	0.401	0.780	0.113	0.034	0.068	0.005	0.000	0.401	-0.215	-0.279	-0.392
F	101	C	-0.570	0.018	0.770	0.399	0.052	0.058	0.770	0.116	0.004	0.000	-0.330	-0.366	0.399	-0.209
F	102	C	-0.701	0.018	0.790	0.350	0.152	0.035	0.790	0.020	0.003	0.000	-0.232	-0.324	0.350	-0.221
F	103	A	0.542	0.015	0.577	0.379	0.577	0.249	0.103	0.066	0.005	0.000	0.379	-0.288	-0.326	-0.407
F	104	B	-0.236	0.017	0.719	0.536	0.082	0.719	0.100	0.096	0.003	0.000	-0.421	0.536	-0.396	-0.426
F	105	D	0.270	0.016	0.630	0.422	0.262	0.058	0.046	0.630	0.003	0.000	-0.327	-0.381	-0.428	0.422
F	106	A	-1.867	0.025	0.911	0.419	0.911	0.021	0.017	0.049	0.002	0.000	0.419	-0.269	-0.269	-0.256
F	107	A	-0.425	0.017	0.748	0.453	0.748	0.049	0.081	0.117	0.006	0.000	0.453	-0.388	-0.355	-0.291
F	108	C	-0.797	0.019	0.803	0.394	0.056	0.125	0.803	0.013	0.003	0.000	-0.411	-0.213	0.394	-0.263
F	109	A	1.116	0.015	0.463	0.332	0.463	0.278	0.020	0.236	0.002	0.000	0.332	-0.271	-0.452	-0.344
F	110	A	1.380	0.015	0.409	0.349	0.409	0.269	0.178	0.138	0.006	0.000	0.349	-0.304	-0.376	-0.370
F	111	B	0.409	0.015	0.604	0.321	0.276	0.604	0.059	0.057	0.004	0.000	-0.219	0.321	-0.329	-0.327
F	112	A	0.111	0.016	0.660	0.415	0.660	0.069	0.105	0.163	0.003	0.000	0.415	-0.376	-0.391	-0.261
F	113	D	-1.378	0.022	0.870	0.433	0.029	0.072	0.027	0.870	0.002	0.000	-0.304	-0.260	-0.328	0.433
F	114	D	-1.056	0.020	0.835	0.608	0.040	0.033	0.090	0.835	0.002	0.000	-0.392	-0.389	-0.507	0.608
F	115	D	0.521	0.015	0.583	0.458	0.060	0.211	0.143	0.583	0.003	0.000	-0.409	-0.424	-0.341	0.458
F	116	B	-0.190	0.017	0.712	0.472	0.205	0.712	0.052	0.029	0.003	0.000	-0.377	0.472	-0.409	-0.343
F	117	A	-1.354	0.022	0.867	0.442	0.867	0.045	0.031	0.054	0.002	0.000	0.442	-0.364	-0.301	-0.219
F	118	D	-0.290	0.017	0.728	0.380	0.163	0.032	0.074	0.728	0.003	0.000	-0.195	-0.372	-0.391	0.380
F	119	C	-1.107	0.020	0.841	0.434	0.049	0.044	0.841	0.064	0.002	0.000	-0.297	-0.318	0.434	-0.265
F	120	C	-0.759	0.019	0.794	0.391	0.033	0.060	0.794	0.105	0.007	0.000	-0.250	-0.342	0.391	-0.235
F	121	D	0.006	0.016	0.679	0.505	0.114	0.175	0.030	0.679	0.003	0.000	-0.501	-0.362	-0.380	0.505
F	122	B	0.581	0.015	0.570	0.246	0.104	0.570	0.223	0.098	0.004	0.000	-0.139	0.246	-0.246	-0.163
F	123	B	2.066	0.017	0.284	0.101	0.123	0.284	0.294	0.296	0.004	0.000	-0.353	0.101	-0.100	0.030
F	124	C	-1.401	0.022	0.871	0.510	0.036	0.045	0.871	0.045	0.003	0.000	-0.366	-0.374	0.510	-0.287
F	125	C	0.697	0.015	0.547	0.459	0.108	0.223	0.547	0.118	0.004	0.000	-0.424	-0.394	0.459	-0.405
F	126	C	-0.890	0.019	0.814	0.467	0.049	0.052	0.814	0.081	0.003	0.000	-0.366	-0.416	0.467	-0.224
F	127	B	-1.045	0.020	0.833	0.484	0.041	0.833	0.045	0.077	0.004	0.000	-0.326	0.484	-0.339	-0.337
F	128	A	-1.325	0.021	0.863	0.502	0.863	0.045	0.058	0.030	0.003	0.000	0.502	-0.349	-0.356	-0.300
F	129	A	0.064	0.016	0.666	0.279	0.666	0.105	0.163	0.062	0.004	0.000	0.279	-0.300	-0.105	-0.295
F	130	A	0.184	0.016	0.647	0.389	0.647	0.123	0.030	0.197	0.003	0.000	0.389	-0.280	-0.411	-0.317
F	131	C	-0.701	0.018	0.789	0.545	0.058	0.092	0.789	0.058	0.004	0.000	-0.431	-0.426	0.545	-0.338
F	132	C	1.134	0.015	0.460	0.358	0.045	0.193	0.460	0.299	0.003	0.000	-0.490	-0.357	0.358	-0.288
F	133	B	0.917	0.015	0.502	0.374	0.198	0.502	0.160	0.135	0.005	0.000	-0.246	0.374	-0.490	-0.268
F	134	D	-1.001	0.020	0.828	0.536	0.041	0.073	0.054	0.828	0.003	0.000	-0.394	-0.386	-0.365	0.536
F	135	C	-1.403	0.022	0.871	0.492	0.034	0.046	0.871	0.046	0.003	0.000	-0.365	-0.324	0.492	-0.296
F	136	A	-0.531	0.018	0.764	0.415	0.764	0.091	0.098	0.043	0.004	0.000	0.415	-0.312	-0.289	-0.294
F	137	C	-0.566	0.018	0.770	0.465	0.051	0.042	0.770	0.133	0.003	0.000	-0.348	-0.372	0.465	-0.321
F	138	B	-0.089	0.016	0.693	0.378	0.134	0.693	0.110	0.058	0.004	0.000	-0.247	0.378	-0.336	-0.284
F	139	D	-0.787	0.019	0.801	0.449	0.119	0.048	0.028	0.801	0.004	0.000	-0.269	-0.389	-0.373	0.449

Appendix J: 2004 PSSA Grade Eleven Item Analysis

Multiple Choice Items for Reading

Form	Seq	Key	Logit	LSE	P-Value	PtBis	%A	%B	%C	%D	Blank	Invalid	R(A)	R(B)	R(C)	R(D)
W	26	C	0.657	0.006	0.555	0.344	0.329	0.022	0.555	0.092	0.002	0.000	-0.307	-0.287	0.344	-0.302
W	27	B	0.358	0.006	0.613	0.375	0.059	0.613	0.192	0.133	0.003	0.000	-0.420	0.375	-0.220	-0.372
W	28	D	-0.882	0.008	0.815	0.489	0.080	0.065	0.041	0.815	0.001	0.000	-0.324	-0.338	-0.403	0.489
W	29	D	0.254	0.006	0.633	0.404	0.031	0.252	0.081	0.633	0.002	0.000	-0.287	-0.397	-0.230	0.404
W	30	C	-0.922	0.008	0.818	0.449	0.064	0.088	0.818	0.028	0.002	0.000	-0.197	-0.422	0.449	-0.300
W	31	C	-0.580	0.007	0.773	0.406	0.070	0.033	0.773	0.123	0.001	0.000	-0.238	-0.337	0.406	-0.315
W	32	B	-1.431	0.009	0.870	0.406	0.051	0.870	0.054	0.018	0.006	0.000	-0.323	0.406	-0.221	-0.278
W	33	C	-1.077	0.008	0.838	0.483	0.033	0.071	0.838	0.057	0.001	0.000	-0.392	-0.288	0.483	-0.350
W	34	C	0.919	0.006	0.503	0.400	0.218	0.239	0.503	0.039	0.001	0.000	-0.328	-0.401	0.400	-0.432
W	35	D	-0.666	0.007	0.784	0.448	0.061	0.090	0.062	0.784	0.003	0.000	-0.296	-0.287	-0.398	0.448
W	36	B	0.519	0.006	0.582	0.369	0.226	0.582	0.054	0.135	0.003	0.000	-0.266	0.369	-0.420	-0.312
W	37	C	0.165	0.006	0.649	0.438	0.134	0.109	0.649	0.106	0.003	0.000	-0.444	-0.335	0.438	-0.250
W	38	A	-2.053	0.011	0.923	0.330	0.923	0.021	0.027	0.028	0.001	0.000	0.330	-0.240	-0.239	-0.107
W	39	C	-1.405	0.009	0.872	0.313	0.079	0.020	0.872	0.028	0.001	0.000	-0.171	-0.259	0.313	-0.208
W	40	A	-1.858	0.010	0.910	0.392	0.910	0.020	0.033	0.036	0.001	0.000	0.392	-0.273	-0.225	-0.236
W	41	D	-0.386	0.007	0.743	0.323	0.076	0.111	0.068	0.743	0.001	0.000	-0.209	-0.185	-0.324	0.323
W	42	?					0.225	0.046	0.701	0.026	0.001	0.000				
W	43	D	-0.121	0.007	0.701	0.499	0.154	0.046	0.099	0.701	0.001	0.000	-0.342	-0.427	-0.456	0.499
W	44	C	0.070	0.007	0.667	0.472	0.214	0.082	0.667	0.036	0.001	0.000	-0.419	-0.334	0.472	-0.379
W	45	B	-0.986	0.008	0.826	0.518	0.096	0.826	0.031	0.046	0.001	0.000	-0.368	0.518	-0.333	-0.408
W	46	C	1.957	0.007	0.302	0.288	0.089	0.091	0.302	0.512	0.006	0.000	-0.405	-0.273	0.288	-0.277
W	47	B	-0.731	0.008	0.794	0.472	0.151	0.794	0.032	0.022	0.001	0.000	-0.358	0.472	-0.378	-0.312
W	48	C	-0.556	0.007	0.768	0.473	0.095	0.099	0.768	0.035	0.004	0.000	-0.385	-0.312	0.473	-0.357
W	49	C	-0.177	0.007	0.707	0.297	0.142	0.037	0.707	0.109	0.006	0.000	-0.209	-0.297	0.297	-0.197
W	50	A	0.812	0.006	0.524	0.390	0.524	0.181	0.192	0.100	0.004	0.000	0.390	-0.318	-0.363	-0.379
W	51	B	-0.385	0.007	0.743	0.377	0.155	0.743	0.071	0.029	0.002	0.000	-0.265	0.377	-0.295	-0.295
W	52	D	0.216	0.006	0.640	0.408	0.197	0.050	0.110	0.640	0.002	0.000	-0.269	-0.445	-0.367	0.408
W	53	A	-0.485	0.007	0.758	0.458	0.758	0.058	0.104	0.077	0.002	0.000	0.458	-0.376	-0.308	-0.339
W	54	A	-0.475	0.007	0.757	0.465	0.757	0.079	0.084	0.078	0.003	0.000	0.465	-0.321	-0.328	-0.377
W	55	C	-0.894	0.008	0.815	0.500	0.054	0.089	0.815	0.039	0.002	0.000	-0.386	-0.335	0.500	-0.344
W	56	D	0.137	0.006	0.654	0.373	0.050	0.109	0.183	0.654	0.004	0.000	-0.352	-0.272	-0.290	0.373
W	57	C	0.507	0.006	0.584	0.337	0.065	0.108	0.584	0.240	0.002	0.000	-0.353	-0.290	0.337	-0.241
W	58	B	1.282	0.006	0.430	0.322	0.322	0.430	0.113	0.133	0.002	0.000	-0.255	0.322	-0.412	-0.305
W	59	C	-0.519	0.007	0.763	0.423	0.075	0.106	0.763	0.053	0.003	0.000	-0.355	-0.297	0.423	-0.261
W	60	B	0.160	0.006	0.650	0.359	0.160	0.650	0.121	0.067	0.002	0.000	-0.239	0.359	-0.308	-0.311
W	61	C	0.271	0.006	0.629	0.219	0.224	0.045	0.629	0.100	0.002	0.000	-0.057	-0.396	0.219	-0.223
W	62	C	1.456	0.006	0.396	0.138	0.342	0.185	0.396	0.074	0.004	0.000	-0.022	-0.201	0.138	-0.311
W	63	B	-0.141	0.007	0.703	0.385	0.071	0.703	0.071	0.153	0.002	0.000	-0.382	0.385	-0.289	-0.237
W	64	C	0.990	0.006	0.489	0.334	0.309	0.117	0.489	0.083	0.002	0.000	-0.198	-0.420	0.334	-0.401
W	65	A	-0.696	0.007	0.788	0.454	0.788	0.113	0.053	0.043	0.003	0.000	0.454	-0.321	-0.350	-0.316

Appendix J: 2004 PSSA Grade Eleven Item Analysis

Multiple Choice Items for Reading

Form	Seq	Key	Logit	LSE	P-Value	PtBis	%A	%B	%C	%D	Blank	Invalid	R(A)	R(B)	R(C)	R(D)
W	166	B	-2.073	0.011	0.925	0.343	0.051	0.925	0.015	0.008	0.000	0.000	-0.215	0.343	-0.224	-0.199
W	167	B	-0.894	0.008	0.814	0.492	0.060	0.814	0.106	0.017	0.002	0.000	-0.293	0.492	-0.429	-0.292
W	168	B	1.187	0.006	0.450	0.216	0.420	0.450	0.098	0.030	0.002	0.000	-0.106	0.216	-0.383	-0.400
W	169	D	0.294	0.006	0.625	0.212	0.039	0.304	0.030	0.625	0.001	0.000	-0.287	-0.101	-0.347	0.212
W	170	D	-0.141	0.007	0.703	0.433	0.111	0.050	0.134	0.703	0.002	0.000	-0.258	-0.372	-0.387	0.433
W	171	D	-0.045	0.007	0.687	0.448	0.058	0.135	0.118	0.687	0.002	0.000	-0.332	-0.388	-0.338	0.448
W	172	D	-0.183	0.007	0.708	0.420	0.075	0.136	0.075	0.708	0.005	0.000	-0.345	-0.283	-0.345	0.420
W	173	C	-1.058	0.008	0.834	0.580	0.051	0.068	0.834	0.045	0.002	0.000	-0.419	-0.440	0.580	-0.377
W	174	B	0.994	0.006	0.488	0.296	0.079	0.488	0.246	0.185	0.002	0.000	-0.352	0.296	-0.264	-0.210
W	175	D	0.143	0.006	0.654	0.402	0.228	0.071	0.046	0.654	0.002	0.000	-0.261	-0.446	-0.370	0.402
W	176	A	0.762	0.006	0.534	0.374	0.534	0.272	0.142	0.050	0.002	0.000	0.374	-0.294	-0.402	-0.315
W	177	C	-1.466	0.009	0.877	0.559	0.051	0.027	0.877	0.044	0.001	0.000	-0.403	-0.370	0.559	-0.366
W	178	A	-1.544	0.009	0.885	0.466	0.885	0.039	0.056	0.019	0.001	0.000	0.466	-0.324	-0.319	-0.260
W	179	B	0.612	0.006	0.563	0.452	0.239	0.563	0.098	0.096	0.004	0.000	-0.379	0.452	-0.508	-0.295
W	180	B	0.350	0.006	0.615	0.391	0.310	0.615	0.031	0.043	0.001	0.000	-0.303	0.391	-0.444	-0.367
W	181	A	0.569	0.006	0.573	0.375	0.573	0.141	0.158	0.127	0.001	0.000	0.375	-0.301	-0.275	-0.386
W	182	C	-0.947	0.008	0.822	0.484	0.040	0.026	0.822	0.111	0.001	0.000	-0.399	-0.384	0.484	-0.310
W	183	A	-0.138	0.007	0.703	0.337	0.703	0.052	0.048	0.195	0.001	0.000	0.337	-0.231	-0.280	-0.259
W	184	A	-0.898	0.008	0.815	0.498	0.815	0.063	0.072	0.048	0.001	0.000	0.498	-0.358	-0.385	-0.303
W	185	D	-0.939	0.008	0.820	0.377	0.082	0.066	0.029	0.820	0.002	0.000	-0.231	-0.236	-0.347	0.377
W	186	A	-0.966	0.008	0.823	0.428	0.823	0.097	0.045	0.032	0.003	0.000	0.428	-0.313	-0.360	-0.195
W	187	A	-1.652	0.010	0.893	0.564	0.893	0.046	0.036	0.023	0.002	0.000	0.564	-0.408	-0.393	-0.313
W	188	C	-0.873	0.008	0.812	0.426	0.027	0.095	0.812	0.064	0.002	0.000	-0.377	-0.249	0.426	-0.319
W	189	A	-0.310	0.007	0.729	0.505	0.729	0.067	0.072	0.127	0.005	0.000	0.505	-0.414	-0.409	-0.366
W	190	B	-0.206	0.007	0.715	0.527	0.153	0.715	0.059	0.072	0.002	0.000	-0.481	0.527	-0.357	-0.354
W	191	A	-0.374	0.007	0.740	0.543	0.740	0.066	0.135	0.055	0.003	0.000	0.543	-0.478	-0.421	-0.367
W	192	C	-1.103	0.008	0.839	0.395	0.072	0.050	0.839	0.037	0.003	0.000	-0.274	-0.250	0.395	-0.266
W	193	B	-1.555	0.009	0.884	0.523	0.028	0.884	0.051	0.033	0.003	0.000	-0.320	0.523	-0.373	-0.350
W	194	B	-1.753	0.010	0.901	0.537	0.031	0.901	0.041	0.025	0.002	0.000	-0.344	0.537	-0.372	-0.331
W	195	C	0.169	0.006	0.648	0.294	0.047	0.035	0.648	0.266	0.003	0.000	-0.413	-0.424	0.294	-0.130
W	196	B	0.973	0.006	0.492	0.161	0.111	0.492	0.132	0.263	0.002	0.000	-0.272	0.161	-0.272	0.019
W	197	B	-1.703	0.010	0.896	0.531	0.033	0.896	0.050	0.017	0.003	0.000	-0.340	0.531	-0.393	-0.302
W	198	C	1.257	0.006	0.435	0.137	0.233	0.310	0.435	0.019	0.002	0.000	-0.224	-0.014	0.137	-0.310
W	199	D	-0.354	0.007	0.737	0.577	0.119	0.109	0.032	0.737	0.003	0.000	-0.475	-0.448	-0.461	0.577
W	200	B	0.936	0.006	0.499	0.331	0.159	0.499	0.105	0.234	0.003	0.000	-0.330	0.331	-0.399	-0.218
W	201	B	-0.496	0.007	0.759	0.420	0.133	0.759	0.054	0.052	0.003	0.000	-0.293	0.420	-0.354	-0.283
W	202	C	0.112	0.007	0.659	0.403	0.082	0.076	0.659	0.180	0.002	0.000	-0.411	-0.327	0.403	-0.259
W	203	D	-0.172	0.007	0.708	0.507	0.138	0.061	0.090	0.708	0.002	0.000	-0.409	-0.461	-0.352	0.507
W	204	D	-0.567	0.007	0.770	0.536	0.141	0.047	0.040	0.770	0.002	0.000	-0.382	-0.464	-0.423	0.536
W	205	B	-0.558	0.007	0.768	0.454	0.071	0.768	0.067	0.091	0.002	0.000	-0.391	0.454	-0.369	-0.241

Appendix K: 2004 PSSA Grade Five Task Analysis

Open-Ended Tasks for Reading

Form	Item	Step	Logit	S.E.	Mean	Corr	% 0	% 1	% 2	% 3	% 4	R(0)	R(1)	R(2)	R(3)	R(4)
A	110	1	-1.78	0.05	2.177	0.483	0.023	0.095	0.584	0.277	0.021	-0.294	-0.429	-0.324	-0.110	0.110
		2	-1.19	0.02												
		3	2.41	0.02												
		4	5.16	0.05												
B	110	1	-2.47	0.04	1.747	0.478	0.026	0.333	0.511	0.126	0.003	-0.281	-0.415	-0.281	-0.059	0.059
		2	0.70	0.02												
		3	3.47	0.02												
		4	6.64	0.12												
C	110	1	-2.51	0.05	2.092	0.501	0.016	0.155	0.571	0.235	0.022	-0.280	-0.449	-0.327	-0.124	0.124
		2	-0.51	0.02												
		3	2.68	0.02												
		4	5.00	0.05												
D	110	1	-1.96	0.04	1.812	0.538	0.039	0.298	0.488	0.160	0.015	-0.332	-0.485	-0.320	-0.115	0.115
		2	0.60	0.02												
		3	3.10	0.02												
		4	5.20	0.06												
E	110	1	-2.97	0.06	2.026	0.557	0.012	0.203	0.548	0.220	0.017	-0.245	-0.511	-0.368	-0.114	0.114
		2	-0.11	0.02												
		3	2.70	0.02												
		4	5.12	0.05												
F	110	1	-1.89	0.04	2.032	0.560	0.031	0.193	0.504	0.259	0.014	-0.313	-0.510	-0.370	-0.107	0.107
		2	-0.06	0.02												
		3	2.43	0.02												
		4	5.45	0.06												
W	52	1	-2.33	0.02	2.115	0.539	0.021	0.174	0.507	0.266	0.033	-0.264	-0.472	-0.388	-0.161	0.161
		2	-0.28	0.01												
		3	2.37	0.01												
		4	4.69	0.02												
W	162	1	-2.40	0.02	2.125	0.523	0.019	0.166	0.515	0.269	0.030	-0.288	-0.502	-0.334	-0.135	0.135
		2	-0.35	0.01												
		3	2.37	0.01												
		4	4.78	0.02												

Appendix L: 2004 PSSA Grade Eight Task Analysis

Open-Ended Tasks for Reading

Form	Item	Step	Logit	S.E.	Mean	Corr	% 0	% 1	% 2	% 3	% 4	R(0)	R(1)	R(2)	R(3)	R(4)
A	130	1	-2.54	0.04	1.955	0.623	0.023	0.258	0.470	0.237	0.012	-0.314	-0.567	-0.419	-0.114	0.114
		2	0.14	0.02												
		3	2.14	0.02												
		4	5.04	0.06												
B	130	1	-1.80	0.05	2.091	0.548	0.023	0.101	0.649	0.215	0.012	-0.315	-0.492	-0.346	-0.109	0.109
		2	-1.26	0.02												
		3	2.51	0.02												
		4	4.92	0.06												
C	130	1	-1.85	0.05	2.064	0.554	0.023	0.109	0.660	0.194	0.013	-0.308	-0.513	-0.337	-0.112	0.112
		2	-1.18	0.02												
		3	2.68	0.02												
		4	4.83	0.06												
D	130	1	-2.25	0.05	1.978	0.515	0.021	0.159	0.644	0.168	0.006	-0.296	-0.456	-0.307	-0.075	0.075
		2	-0.69	0.02												
		3	2.87	0.02												
		4	5.50	0.08												
E	130	1	-1.67	0.04	2.068	0.660	0.037	0.179	0.472	0.300	0.012	-0.343	-0.610	-0.457	-0.116	0.116
		2	-0.29	0.02												
		3	1.83	0.02												
		4	5.22	0.06												
F	130	1	-2.07	0.05	2.136	0.561	0.020	0.122	0.578	0.263	0.018	-0.275	-0.503	-0.382	-0.133	0.133
		2	-0.95	0.02												
		3	2.14	0.02												
		4	4.66	0.05												
W	62	1	-2.15	0.02	2.201	0.547	0.019	0.115	0.533	0.312	0.021	-0.270	-0.491	-0.383	-0.131	0.131
		2	-0.99	0.01												
		3	1.85	0.01												
		4	4.69	0.02												
W	192	1	-2.01	0.02	1.983	0.552	0.029	0.186	0.569	0.204	0.012	-0.345	-0.497	-0.332	-0.112	0.112
		2	-0.39	0.01												
		3	2.48	0.01												
		4	4.92	0.02												

Appendix M: 2004 PSSA Grade Eleven Task Analysis

Open-Ended Tasks for Reading

Form	Item	Step	Logit	S.E.	Mean	Corr	% 0	% 1	% 2	% 3	% 4	R(0)	R(1)	R(2)	R(3)	R(4)
A	140	1	-1.28	0.03	2.100	0.622	0.054	0.133	0.491	0.296	0.024	-0.377	-0.547	-0.448	-0.157	0.157
		2	-0.88	0.02												
		3	1.71	0.02												
		4	4.46	0.05												
B	140	1	-1.12	0.03	2.055	0.654	0.071	0.168	0.415	0.320	0.024	-0.462	-0.593	-0.449	-0.152	0.152
		2	-0.39	0.02												
		3	1.51	0.02												
		4	4.51	0.05												
C	140	1	-1.02	0.03	2.016	0.617	0.072	0.147	0.488	0.271	0.020	-0.392	-0.554	-0.433	-0.139	0.139
		2	-0.69	0.02												
		3	1.89	0.02												
		4	4.64	0.05												
D	140	1	-0.88	0.03	2.041	0.669	0.084	0.154	0.421	0.311	0.028	-0.489	-0.603	-0.460	-0.167	0.167
		2	-0.48	0.02												
		3	1.57	0.02												
		4	4.36	0.04												
E	140	1	-1.36	0.04	2.075	0.634	0.049	0.126	0.548	0.252	0.024	-0.370	-0.571	-0.434	-0.167	0.167
		2	-1.03	0.02												
		3	2.03	0.02												
		4	4.34	0.05												
F	140	1	-0.96	0.03	2.184	0.656	0.066	0.120	0.414	0.359	0.040	-0.437	-0.574	-0.493	-0.196	0.196
		2	-0.84	0.02												
		3	1.29	0.02												
		4	4.05	0.04												
W	66	1	-1.12	0.01	2.204	0.649	0.059	0.116	0.422	0.369	0.034	-0.384	-0.569	-0.500	-0.186	0.186
		2	-0.93	0.01												
		3	1.28	0.01												
		4	4.28	0.02												
W	206	1	-0.89	0.01	2.354	0.608	0.055	0.079	0.373	0.440	0.052	-0.378	-0.519	-0.484	-0.207	0.207
		2	-1.31	0.01												
		3	0.86	0.01												
		4	3.91	0.01												

Appendix N: 2004 PSSA Grade Five Across Year Linking

Grade Five Mathematics								
2004		2003		2004			2003	2004
Form	Sequence	Diff 1	SE 1	Diff 2	SE 2	t-test	Pvalue	Pvalue
W	2	-0.31	0.01	-0.48	0.01	16.24	0.75	0.80
W	11	-0.58	0.03	-0.56	0.02	-0.49	0.60	0.63
W	12	-0.10	0.02	-0.20	0.02	3.69	0.60	0.58
W	13	-0.55	0.03	-0.75	0.02	6.37	0.69	0.71
W	15	0.07	0.02	0.41	0.02	-12.66	0.93	0.94
W	17	0.64	0.02	0.47	0.02	6.50	0.60	0.64
W	19	-0.37	0.02	-0.26	0.02	-3.84	0.58	0.62
W	21	0.33	0.02	0.38	0.02	-2.14	0.76	0.78
W	113	0.52	0.02	0.63	0.01	-4.68	0.64	0.73
W	114	-0.98	0.03	-0.84	0.02	-3.96	0.77	0.81
W	117	-1.75	0.04	-1.94	0.03	4.16	0.50	0.54
W	118	0.67	0.02	0.86	0.01	-9.20	0.81	0.83
W	125	0.20	0.02	0.33	0.02	-4.63	0.75	0.82
W	126	0.14	0.02	0.13	0.01	0.14	0.61	0.59
W	128	-0.36	0.02	-0.30	0.02	-2.18	0.77	0.80
W	129	-2.08	0.04	-2.08	0.01	0.06	0.64	0.70
W	130	-1.37	0.03	-1.64	0.03	6.74	0.59	0.64
W	163	0.24	0.02	0.30	0.02	-2.23	0.86	0.86
W	166	0.27	0.02	0.33	0.02	-2.35	0.42	0.46
W	167	0.68	0.02	0.54	0.01	6.69	0.69	0.72
W	168	-0.09	0.02	-0.27	0.02	6.20	0.58	0.64
W	171	0.43	0.02	0.65	0.02	-8.44	0.64	0.67
W	172	0.54	0.02	0.66	0.01	-5.41	0.74	0.82
W	173	-0.82	0.03	-0.79	0.02	-0.74	0.57	0.63
W	176	1.00	0.02	1.03	0.02	-0.99	0.74	0.73
W	178	1.17	0.02	1.35	0.02	-6.98	0.59	0.65
W	179	-1.01	0.03	-1.11	0.02	2.99	0.68	0.70
W	180	-0.13	0.02	-0.35	0.01	9.62	0.65	0.64
W	181	0.20	0.01	0.02	0.01	20.66	0.62	0.72
W	184	1.46	0.02	1.48	0.02	-0.78	0.51	0.48
A	56	-0.27	0.02	-0.58	0.01	12.48	0.86	0.85
A	57	1.05	0.02	1.06	0.01	-0.76	0.80	0.81
A	58	-0.80	0.01	-0.67	0.01	-12.35	0.72	0.76
A	60	-0.17	0.02	-0.63	0.01	19.16	0.81	0.83
A	61	0.52	0.01	0.80	0.01	-32.60	0.68	0.66
A	62	-0.43	0.02	-0.50	0.01	2.60	0.59	0.65
A	65	0.21	0.01	0.19	0.01	2.61	0.76	0.76
A	67	0.64	0.02	0.56	0.01	3.33	0.62	0.66
B	53	-1.03	0.03	-0.94	0.01	-3.20	0.84	0.84
B	54	1.39	0.02	1.53	0.01	-6.41	0.93	0.94
B	55	0.10	0.01	0.08	0.01	1.90	0.66	0.68
B	56	0.68	0.02	0.56	0.01	5.64	0.77	0.78
B	57	0.38	0.02	0.39	0.01	-0.67	0.89	0.92
B	58	-0.37	0.01	-0.61	0.01	23.15	0.66	0.68
B	59	0.54	0.02	0.62	0.01	-3.74	0.67	0.68
B	60	-0.35	0.02	0.01	0.01	-15.04	0.75	0.77
B	61	0.63	0.02	0.51	0.01	5.40	0.60	0.62
B	62	0.26	0.02	0.19	0.01	2.67	0.83	0.84
B	63	0.29	0.01	0.56	0.01	-30.60	0.51	0.55
B	64	0.27	0.01	0.06	0.01	23.03	0.48	0.49
B	65	0.91	0.02	1.41	0.01	-22.88	0.87	0.87
B	66	-0.86	0.03	-0.95	0.02	2.70	0.45	0.46

Appendix N: 2004 PSSA Grade Five Across Year Linking

Grade Five Reading								
2004		2003		2004			2003	2004
Form	Sequence	Diff 1	SE 1	Diff 2	SE 2	t-test	Pvalue	Pvalue
W	39	-1.10	0.01	-1.29	0.01	15.63	0.88	0.90
W	40	0.73	0.01	0.84	0.01	-12.53	0.57	0.61
W	41	1.09	0.01	1.44	0.01	-41.31	0.50	0.49
W	42	0.08	0.01	0.15	0.01	-8.10	0.68	0.72
W	43	0.53	0.01	0.38	0.01	16.96	0.60	0.69
W	44	-1.12	0.01	-1.09	0.01	-1.78	0.87	0.88
W	45	0.35	0.01	0.39	0.01	-4.42	0.65	0.69
W	46	1.17	0.01	0.86	0.01	36.03	0.47	0.60
W	47	1.00	0.01	1.02	0.01	-2.09	0.50	0.57
W	48	0.80	0.01	0.94	0.01	-15.83	0.57	0.59
W	49	1.77	0.01	2.02	0.01	-28.03	0.37	0.38
W	50	1.15	0.01	1.37	0.01	-24.86	0.50	0.51
W	51	1.85	0.01	2.02	0.01	-19.01	0.36	0.38
B	97	-1.18	0.03	-1.24	0.02	1.51	0.89	0.89
B	98	2.01	0.02	1.92	0.02	3.38	0.34	0.40
B	99	-0.25	0.02	-0.42	0.02	5.60	0.80	0.80
B	100	0.55	0.02	0.39	0.02	6.02	0.65	0.69
B	101	0.26	0.02	0.27	0.02	-0.26	0.71	0.70
B	102	-0.05	0.02	-0.03	0.02	-0.80	0.74	0.75
B	103	-0.62	0.03	-0.79	0.02	4.84	0.84	0.85
B	104	-0.75	0.03	-0.69	0.02	-1.73	0.83	0.84
B	105	-0.45	0.03	-0.59	0.02	4.25	0.82	0.83
B	106	1.02	0.02	1.13	0.02	-4.15	0.54	0.55
B	107	-0.20	0.02	-0.30	0.02	3.38	0.77	0.79
B	108	0.09	0.02	0.03	0.02	2.24	0.70	0.74
B	109	0.09	0.02	0.03	0.02	1.92	0.72	0.74
A	97	-1.16	0.03	-1.07	0.02	-2.55	0.88	0.87
A	98	0.44	0.02	0.52	0.02	-3.35	0.65	0.66
A	99	0.76	0.02	0.89	0.02	-4.85	0.59	0.59
A	100	-1.10	0.03	-1.20	0.02	2.81	0.88	0.88
A	101	0.14	0.02	0.23	0.02	-3.54	0.71	0.70
A	102	0.43	0.02	0.47	0.02	-1.71	0.67	0.67
A	103	0.82	0.02	0.88	0.02	-2.36	0.57	0.59
A	104	0.61	0.02	0.37	0.02	9.00	0.59	0.68
A	105	-0.13	0.02	0.31	0.02	-15.57	0.71	0.69
A	106	0.70	0.02	0.80	0.02	-3.71	0.60	0.61
A	107	0.35	0.02	0.44	0.02	-3.33	0.67	0.67
A	108	-0.50	0.03	-0.80	0.02	9.45	0.84	0.84
A	109	-0.14	0.02	-0.03	0.02	-3.76	0.73	0.74
W	136	-0.96	0.01	-1.01	0.01	4.05	0.84	0.87
W	137	-2.09	0.01	-2.24	0.01	8.29	0.94	0.95
W	138	-0.69	0.01	-0.71	0.01	1.56	0.82	0.84
W	139	-0.35	0.01	-0.30	0.01	-4.81	0.77	0.79
W	140	-1.19	0.01	-1.17	0.01	-1.52	0.87	0.89
W	141	-0.97	0.01	-1.01	0.01	3.39	0.84	0.87
W	142	0.24	0.01	0.21	0.01	3.73	0.67	0.72
W	143	0.00	0.01	0.00	0.01	0.61	0.74	0.75
W	144	0.87	0.01	0.74	0.01	13.94	0.53	0.62
W	145	0.29	0.01	0.40	0.01	-12.57	0.64	0.68
W	147	0.99	0.01	1.08	0.01	-9.63	0.53	0.56
W	148	-0.21	0.01	-0.23	0.01	2.29	0.75	0.78
W	150	-1.08	0.01	-1.14	0.01	5.27	0.87	0.88

Appendix N: 2004 PSSA Grade Five Across Year Linking

Grade Five Reading								
2004		2003		2004			2003	2004
Form	Sequence	Diff 1	SE 1	Diff 2	SE 2	t-test	Pvalue	Pvalue
W	151	-0.33	0.01	-0.34	0.01	1.32	0.76	0.80
W	152	0.29	0.01	0.31	0.01	-2.77	0.66	0.70
W	154	-0.12	0.01	0.01	0.01	-13.35	0.71	0.75
W	155	-0.87	0.01	-0.98	0.01	9.41	0.84	0.87
W	156	-0.97	0.01	-0.73	0.01	-21.00	0.83	0.84
W	157	0.70	0.01	0.50	0.01	23.21	0.56	0.67
W	158	-0.15	0.01	-0.04	0.01	-10.65	0.74	0.75
W	159	-0.43	0.01	-0.19	0.01	-24.55	0.74	0.77
W	160	-0.01	0.01	0.09	0.01	-10.82	0.71	0.73
W	161	0.63	0.01	0.63	0.01	-0.26	0.61	0.64
W	26	-0.96	0.03	-1.11	0.01	5.58	0.86	0.88
W	27	-1.26	0.03	-1.38	0.01	3.77	0.88	0.90
W	28	2.04	0.02	2.20	0.01	-7.09	0.31	0.35
W	29	-0.16	0.02	-0.33	0.01	6.81	0.75	0.79
W	30	0.39	0.02	0.45	0.01	-2.96	0.62	0.68
W	31	2.77	0.02	3.22	0.01	-18.15	0.20	0.19
W	32	-1.11	0.03	-1.37	0.01	8.61	0.86	0.90
W	33	-0.98	0.03	-1.25	0.01	9.25	0.85	0.89
W	34	-0.70	0.03	-0.77	0.01	2.63	0.82	0.85
W	35	-0.06	0.02	-0.12	0.01	2.57	0.74	0.77
W	36	-0.56	0.03	-0.75	0.01	7.23	0.78	0.85
W	37	0.04	0.02	-0.10	0.01	5.83	0.72	0.76
W	38	0.09	0.02	0.03	0.01	2.45	0.71	0.74

Appendix O: 2004 PSSA Grade Eight Across Year Linking

Grade Eight Mathematics								
2004		2003		2004			2003	2004
Form	Sequence	Diff 1	SE 1	Diff 2	SE 2	t-test	Pvalue	Pvalue
A	63	1.08	0.02	1.13	0.01	-2.00	0.43	0.46
A	64	-0.88	0.02	-0.91	0.02	1.11	0.81	0.81
A	67	0.40	0.02	0.39	0.01	0.37	0.56	0.60
A	68	-0.33	0.02	-0.36	0.02	1.30	0.71	0.73
A	69	-0.55	0.02	-0.56	0.02	0.21	0.74	0.76
A	70	0.43	0.02	0.14	0.01	11.90	0.60	0.65
A	71	-0.56	0.02	-0.84	0.02	10.07	0.76	0.80
A	72	-0.63	0.02	-0.80	0.02	5.89	0.79	0.80
A	73	0.79	0.02	0.75	0.01	1.57	0.49	0.53
A	74	-0.28	0.02	-0.43	0.02	5.70	0.69	0.74
A	76	0.92	0.02	0.71	0.01	8.46	0.51	0.54
B	63	0.54	0.02	0.41	0.01	4.98	0.57	0.60
B	64	0.01	0.02	0.27	0.01	-10.18	0.63	0.62
B	65	-1.34	0.03	-1.41	0.02	2.00	0.86	0.87
B	67	0.56	0.02	0.29	0.01	11.22	0.58	0.62
B	68	0.78	0.02	1.20	0.01	-17.11	0.45	0.45
B	70	0.55	0.02	0.81	0.01	-10.93	0.51	0.52
B	71	0.31	0.02	0.64	0.01	-13.31	0.51	0.56
B	72	0.02	0.02	0.03	0.02	-0.26	0.65	0.67
B	75	0.02	0.02	-0.12	0.02	5.17	0.66	0.70
B	76	0.17	0.02	0.33	0.01	-6.19	0.63	0.61
B	77	-0.23	0.02	-0.03	0.02	-7.58	0.66	0.68
W	11	-0.15	0.02	-0.44	0.01	12.65	0.70	0.75
W	13	-0.16	0.01	-0.07	0.01	-10.52	0.66	0.69
W	18	0.55	0.01	0.40	0.01	17.02	0.56	0.60
W	20	1.80	0.02	1.73	0.01	2.98	0.33	0.35
W	24	-0.95	0.02	-1.04	0.01	3.56	0.82	0.83
W	132	0.43	0.01	0.67	0.01	-28.20	0.58	0.55
W	139	0.80	0.01	0.77	0.01	4.15	0.51	0.53
W	140	-0.22	0.01	-0.74	0.01	56.46	0.68	0.79
W	141	-0.71	0.02	-0.36	0.01	-14.48	0.71	0.74
W	143	0.18	0.02	0.23	0.01	-2.09	0.60	0.63
W	148	0.58	0.01	0.65	0.01	-8.91	0.56	0.55
W	151	-1.26	0.01	-1.17	0.01	-8.17	0.84	0.85
W	152	-0.08	0.01	-0.27	0.01	20.78	0.69	0.72
W	193	0.20	0.02	0.17	0.01	1.35	0.63	0.64
W	194	-0.19	0.02	-0.38	0.01	8.62	0.70	0.74
W	198	0.20	0.02	0.44	0.01	-11.76	0.57	0.59
W	201	0.41	0.01	0.26	0.01	17.31	0.56	0.63
W	203	0.20	0.02	0.29	0.01	-4.07	0.62	0.62
W	205	0.23	0.02	0.50	0.01	-12.76	0.59	0.58
W	206	-0.48	0.01	-0.58	0.01	11.16	0.73	0.77
W	207	-0.10	0.02	-0.08	0.01	-0.70	0.66	0.69
W	208	0.63	0.02	0.75	0.01	-5.80	0.50	0.53
W	212	-1.18	0.03	-0.87	0.01	-11.72	0.85	0.81

Appendix O: 2004 PSSA Grade Eight Across Year Linking

Grade Eight Reading								
2004		2003		2004			2003	2004
Form	Sequence	Diff 1	SE 1	Diff 2	SE 2	t-test	Pvalue	Pvalue
W	26	-0.62	0.02	-0.88	0.01	10.51	0.82	0.84
W	27	-1.49	0.03	-1.77	0.01	8.64	0.89	0.92
W	28	-0.90	0.03	-0.93	0.01	0.90	0.83	0.84
W	29	0.32	0.02	0.44	0.01	-5.28	0.61	0.63
W	30	0.28	0.02	0.40	0.01	-5.54	0.64	0.64
W	31	1.07	0.02	1.34	0.01	-13.04	0.43	0.45
W	32	-0.06	0.02	0.21	0.01	-12.08	0.65	0.67
W	33	-0.74	0.03	-0.94	0.01	7.76	0.81	0.84
W	34	-0.95	0.03	-1.18	0.01	8.31	0.85	0.87
W	35	0.50	0.02	0.57	0.01	-3.66	0.60	0.61
W	36	0.30	0.02	0.18	0.01	5.32	0.66	0.68
W	37	0.65	0.02	0.84	0.01	-8.98	0.53	0.55
W	38	-0.66	0.02	-0.79	0.01	5.10	0.81	0.83
W	39	0.69	0.02	0.77	0.01	-3.81	0.57	0.57
W	40	-1.10	0.03	-1.38	0.01	9.62	0.86	0.89
W	41	0.12	0.02	-0.01	0.01	6.03	0.68	0.71
W	42	0.69	0.02	0.75	0.01	-2.91	0.56	0.57
W	43	-1.37	0.03	-1.25	0.01	-3.95	0.87	0.88
W	44	-1.00	0.01	-0.84	0.01	-14.66	0.84	0.83
W	45	-0.25	0.01	-0.17	0.01	-8.29	0.72	0.74
W	46	0.93	0.01	1.27	0.01	-41.83	0.50	0.46
W	47	-1.17	0.01	-1.40	0.01	19.05	0.88	0.89
W	48	-0.03	0.01	0.00	0.01	-3.30	0.70	0.71
W	49	0.69	0.01	0.88	0.01	-22.79	0.53	0.54
W	50	1.04	0.01	1.30	0.01	-31.28	0.48	0.46
W	51	-1.12	0.01	-1.17	0.01	4.32	0.86	0.87
W	52	-1.74	0.01	-1.97	0.01	15.62	0.92	0.93
W	53	-0.64	0.01	-0.53	0.01	-10.85	0.80	0.79
W	54	-0.39	0.01	-0.34	0.01	-5.35	0.75	0.76
W	55	0.51	0.01	0.44	0.01	8.00	0.58	0.63
W	56	-0.20	0.01	-0.29	0.01	9.79	0.75	0.76
W	57	-0.11	0.01	-0.33	0.01	24.07	0.71	0.76
W	58	1.01	0.01	1.18	0.01	-20.60	0.47	0.48
W	59	-0.84	0.01	-0.67	0.01	-16.50	0.83	0.81
W	60	-0.24	0.01	-0.45	0.01	23.06	0.74	0.78
W	61	-0.92	0.01	-1.03	0.01	10.81	0.84	0.85
W	156	-0.63	0.01	-0.43	0.01	-21.28	0.77	0.78
W	157	1.03	0.01	1.22	0.01	-23.50	0.45	0.47
W	158	0.22	0.01	0.29	0.01	-8.26	0.64	0.66
W	159	-0.39	0.01	-0.25	0.01	-15.30	0.74	0.75
W	160	-0.56	0.01	-0.60	0.01	3.64	0.79	0.80
W	161	0.68	0.01	0.88	0.01	-24.95	0.53	0.54
W	162	0.47	0.01	0.60	0.01	-14.65	0.59	0.60
W	163	-0.85	0.01	-1.08	0.01	21.02	0.84	0.86
W	164	-0.09	0.01	-0.16	0.01	7.61	0.73	0.74
W	165	-1.65	0.01	-1.53	0.01	-9.54	0.88	0.90
W	166	-0.31	0.01	-0.45	0.01	13.66	0.72	0.78
W	167	0.83	0.01	0.75	0.01	10.23	0.53	0.57

Appendix O: 2004 PSSA Grade Eight Across Year Linking

Grade Eight Reading								
2004		2003		2004			2003	2004
Form	Sequence	Diff 1	SE 1	Diff 2	SE 2	t-test	Pvalue	Pvalue
W	168	-0.16	0.01	0.02	0.01	-20.93	0.69	0.71
W	169	-0.04	0.01	0.04	0.01	-9.33	0.71	0.70
W	170	-0.37	0.01	-0.25	0.01	-12.37	0.75	0.75
W	171	-1.77	0.01	-1.88	0.01	7.58	0.92	0.93
W	172	0.54	0.01	0.36	0.01	21.10	0.50	0.65
W	173	1.24	0.01	1.50	0.01	-31.14	0.43	0.42
W	175	-0.51	0.01	-0.58	0.01	6.81	0.79	0.80
W	176	0.70	0.01	0.88	0.01	-22.06	0.55	0.54
W	178	0.54	0.01	0.47	0.01	9.17	0.61	0.63
W	179	0.71	0.01	0.91	0.01	-23.40	0.54	0.54
W	180	-0.17	0.01	-0.17	0.01	0.89	0.72	0.74
W	182	-1.08	0.01	-1.30	0.01	18.81	0.86	0.88
W	183	0.14	0.01	0.40	0.01	-30.15	0.66	0.64
W	184	-0.71	0.01	-0.83	0.01	11.55	0.82	0.83
W	185	-0.64	0.01	-0.94	0.01	28.50	0.83	0.84
W	186	-1.12	0.01	-1.22	0.01	8.88	0.86	0.87
W	187	-0.15	0.01	-0.09	0.01	-6.24	0.70	0.73
W	188	-0.56	0.01	-0.76	0.01	20.44	0.81	0.82
W	189	-1.28	0.01	-1.44	0.01	13.24	0.88	0.89
W	190	0.88	0.01	1.15	0.01	-31.92	0.50	0.49
W	191	1.07	0.01	1.13	0.01	-7.37	0.47	0.49
A	94	1.15	0.02	1.37	0.01	-8.98	0.45	0.44
A	95	1.24	0.02	1.24	0.01	-0.36	0.42	0.46
A	96	0.27	0.02	0.28	0.01	-0.37	0.64	0.65
A	97	-0.71	0.02	-1.02	0.02	9.94	0.84	0.85
A	98	-0.55	0.02	-0.60	0.02	2.02	0.80	0.80
A	99	-0.13	0.02	-0.27	0.02	5.24	0.75	0.75
A	100	-0.19	0.02	-0.21	0.02	0.77	0.72	0.74
A	101	-0.45	0.02	-0.78	0.02	11.31	0.82	0.82
A	103	0.45	0.02	0.54	0.01	-3.76	0.59	0.61
A	104	0.79	0.02	0.72	0.01	2.71	0.55	0.57
A	105	-1.36	0.03	-1.36	0.02	0.06	0.89	0.88
A	106	-0.19	0.02	-0.22	0.02	1.08	0.72	0.74
A	107	0.03	0.02	-0.09	0.02	4.38	0.72	0.72
A	108	1.32	0.02	1.54	0.01	-8.93	0.38	0.40
A	109	-0.85	0.03	-0.72	0.02	-4.11	0.82	0.81
A	110	-1.00	0.03	-1.02	0.02	0.68	0.85	0.85
A	111	-0.37	0.02	-0.39	0.02	0.85	0.77	0.77
B	94	-0.24	0.02	-0.49	0.02	8.78	0.79	0.79
B	95	0.96	0.02	0.90	0.01	2.48	0.51	0.54
B	96	-2.01	0.04	-2.21	0.03	4.41	0.94	0.94
B	97	0.38	0.02	0.37	0.01	0.41	0.65	0.64
B	98	-0.92	0.03	-1.17	0.02	7.58	0.85	0.87
B	99	0.40	0.02	0.63	0.01	-9.40	0.62	0.59
B	100	0.06	0.02	-0.05	0.02	4.11	0.69	0.72
B	101	-1.62	0.03	-1.76	0.02	3.35	0.92	0.92
B	102	0.11	0.02	0.42	0.01	-11.91	0.64	0.64
B	103	-1.43	0.03	-1.53	0.02	2.79	0.90	0.90
B	104	0.63	0.02	0.57	0.01	2.40	0.59	0.61

Appendix O: 2004 PSSA Grade Eight Across Year Linking

Grade Eight Reading								
2004		2003		2004			2003	2004
Form	Sequence	Diff 1	SE 1	Diff 2	SE 2	t-test	Pvalue	Pvalue
B	105	0.45	0.02	0.46	0.01	-0.53	0.61	0.63
B	107	-0.45	0.02	-0.41	0.02	-1.41	0.78	0.78
B	108	1.62	0.02	1.89	0.01	-10.64	0.36	0.34
B	109	0.14	0.02	0.46	0.01	-12.40	0.67	0.63
B	110	-0.89	0.03	-1.16	0.02	8.20	0.85	0.87
B	111	-1.09	0.03	-1.01	0.02	-2.38	0.86	0.85

Appendix P: 2004 PSSA Grade Eleven Across Year Linking

Grade Eleven Mathematics								
2004		2003		2004			2003	2004
Form	Sequence	Diff 1	SE 1	Diff 2	SE 2	t-test	Pvalue	Pvalue
W	7	-0.23	0.02	-0.15	0.01	-3.46	0.65	0.34
W	11	0.27	0.01	0.23	0.01	4.03	0.55	0.56
W	13	-0.34	0.02	-0.50	0.01	6.44	0.67	0.70
W	15	-0.41	0.02	-0.29	0.01	-5.27	0.67	0.66
W	16	-0.07	0.02	-0.36	0.01	12.47	0.62	0.67
W	20	-0.79	0.01	-0.72	0.01	-7.52	0.75	0.74
W	22	0.20	0.02	0.13	0.01	2.72	0.57	0.58
W	23	0.00	0.02	0.27	0.01	-11.78	0.57	0.55
W	142	0.58	0.02	0.59	0.01	-0.29	0.49	0.49
W	143	-0.96	0.01	-0.91	0.01	-5.06	0.76	0.77
W	144	0.18	0.01	0.01	0.01	19.85	0.54	0.61
W	146	-0.42	0.02	-0.41	0.01	-0.29	0.68	0.68
W	150	0.72	0.01	0.66	0.01	7.43	0.44	0.48
W	151	0.30	0.01	0.26	0.01	4.31	0.54	0.55
W	154	0.54	0.01	0.65	0.01	-12.97	0.48	0.48
W	157	0.83	0.02	0.79	0.01	2.02	0.44	0.45
W	158	0.94	0.02	0.60	0.01	14.71	0.49	0.49
W	159	-0.03	0.01	0.02	0.01	-5.52	0.59	0.60
W	161	-0.26	0.01	-0.20	0.01	-6.44	0.64	0.65
W	164	0.98	0.02	0.84	0.01	5.92	0.41	0.44
W	208	-0.04	0.01	0.11	0.01	-17.20	0.63	0.59
W	212	1.12	0.02	0.80	0.01	13.86	0.37	0.45
W	213	-0.18	0.02	0.44	0.01	-27.34	0.51	0.52
W	215	-0.07	0.02	-0.22	0.01	6.41	0.61	0.65
W	217	0.03	0.02	-0.01	0.01	1.86	0.59	0.61
W	220	0.94	0.02	1.00	0.01	-2.60	0.40	0.41
W	225	0.07	0.01	0.00	0.01	7.48	0.58	0.60
A	67	-1.24	0.03	-1.31	0.02	2.29	0.81	0.82
A	68	-2.40	0.04	-2.52	0.03	2.58	0.93	0.93
A	69	-0.97	0.02	-0.84	0.02	-4.25	0.77	0.75
A	70	-0.98	0.02	-0.86	0.02	-3.94	0.77	0.76
A	71	1.24	0.02	1.23	0.02	0.28	0.35	0.36
A	73	0.45	0.02	0.55	0.02	-3.70	0.51	0.50
A	74	0.64	0.02	0.73	0.02	-3.17	0.46	0.46
A	75	-0.02	0.02	-0.13	0.02	4.05	0.61	0.62
A	76	0.09	0.02	0.07	0.02	0.68	0.59	0.59
A	77	1.16	0.02	1.18	0.02	-0.81	0.37	0.37
A	78	-0.28	0.02	-0.25	0.02	-0.85	0.65	0.65
A	79	-0.24	0.02	-0.09	0.02	-5.29	0.64	0.62
A	80	0.78	0.02	0.77	0.02	0.20	0.44	0.45
A	81	1.68	0.02	1.70	0.02	-0.51	0.27	0.28
B	67	-1.12	0.03	-1.11	0.02	-0.29	0.79	0.80
B	68	-1.05	0.03	-1.22	0.02	5.37	0.79	0.81
B	69	-0.40	0.02	-0.47	0.02	2.40	0.67	0.69
B	70	-0.03	0.02	-0.05	0.02	0.80	0.61	0.62
B	71	-0.30	0.02	-0.36	0.02	2.29	0.66	0.68
B	72	-1.05	0.03	-1.17	0.02	3.56	0.79	0.81
B	73	0.31	0.02	0.66	0.02	-12.95	0.54	0.48
B	74	1.81	0.03	1.66	0.02	5.14	0.26	0.30
B	76	-0.12	0.02	-0.10	0.02	-0.74	0.62	0.42
B	77	1.19	0.02	1.31	0.02	-4.42	0.36	0.63
B	78	0.85	0.02	0.68	0.02	6.32	0.42	0.35
B	79	0.95	0.02	0.89	0.02	2.35	0.41	0.47
B	80	1.29	0.02	1.33	0.02	-1.18	0.35	0.43
B	81	1.38	0.02	1.41	0.02	-1.11	0.33	0.35

Appendix P: 2004 PSSA Grade Eleven Across Year Linking

Grade Eleven Reading								
2004		2003		2004			2003	2004
Form	Sequence	Diff 1	SE 1	Diff 2	SE 2	t-test	Pvalue	Pvalue
W	26	0.71	0.02	0.65	0.01	2.71	0.52	0.55
W	27	0.20	0.02	0.35	0.01	-6.69	0.63	0.61
W	28	-0.77	0.03	-0.89	0.01	4.46	0.79	0.81
W	29	0.24	0.02	0.25	0.01	-0.42	0.62	0.63
W	30	-0.75	0.03	-0.93	0.01	6.68	0.79	0.82
W	31	-0.62	0.03	-0.59	0.01	-1.37	0.76	0.77
W	32	-1.22	0.03	-1.44	0.01	7.26	0.85	0.87
W	33	-1.01	0.03	-1.09	0.01	2.44	0.82	0.84
W	34	1.03	0.02	0.91	0.01	5.09	0.46	0.50
W	36	0.38	0.02	0.51	0.01	-5.69	0.59	0.78
W	37	0.15	0.02	0.16	0.01	-0.36	0.63	0.58
W	38	-1.83	0.04	-2.06	0.01	6.33	0.90	0.65
W	39	-1.32	0.03	-1.41	0.01	3.13	0.86	0.92
W	40	-1.66	0.03	-1.87	0.01	5.72	0.89	0.87
W	41	-0.47	0.03	-0.39	0.01	-2.70	0.74	0.91
W	43	-0.13	0.02	-0.13	0.01	0.05	0.68	0.74
W	46	1.41	0.01	1.95	0.01	-59.71	0.37	0.30
W	47	-0.79	0.01	-0.74	0.01	-4.74	0.79	0.79
W	48	-0.56	0.01	-0.56	0.01	0.25	0.76	0.77
W	49	-0.13	0.01	-0.19	0.01	5.58	0.70	0.71
W	50	0.69	0.01	0.80	0.01	-13.58	0.52	0.52
W	51	-0.38	0.01	-0.39	0.01	1.53	0.73	0.74
W	52	0.18	0.01	0.21	0.01	-3.07	0.62	0.64
W	53	-0.58	0.01	-0.49	0.01	-8.65	0.76	0.76
W	54	-0.57	0.01	-0.48	0.01	-8.67	0.76	0.76
W	55	-0.80	0.01	-0.90	0.01	9.10	0.79	0.81
W	56	0.37	0.01	0.13	0.01	27.35	0.58	0.65
W	57	0.47	0.01	0.50	0.01	-3.02	0.58	0.58
W	58	1.12	0.01	1.27	0.01	-17.13	0.43	0.43
W	59	-0.49	0.01	-0.53	0.01	3.57	0.75	0.76
W	60	0.05	0.01	0.15	0.01	-11.45	0.66	0.65
W	61	0.66	0.01	0.26	0.01	45.28	0.52	0.63
W	62	1.50	0.01	1.45	0.01	5.65	0.36	0.40
W	63	-0.18	0.01	-0.15	0.01	-3.12	0.70	0.70
W	64	0.78	0.01	0.98	0.01	-23.04	0.49	0.49
W	65	-0.64	0.01	-0.70	0.01	5.99	0.78	0.79
W	166	-2.04	0.01	-2.08	0.01	2.78	0.92	0.92
W	167	-0.92	0.01	-0.90	0.01	-1.05	0.81	0.81
W	168	0.95	0.01	1.18	0.01	-26.58	0.47	0.45
W	169	0.21	0.01	0.28	0.01	-8.19	0.61	0.63
W	170	-0.05	0.01	-0.15	0.01	10.65	0.66	0.70
W	171	-0.10	0.01	-0.05	0.01	-4.56	0.68	0.69
W	172	-0.20	0.01	-0.19	0.01	-0.72	0.69	0.71
W	173	-1.04	0.01	-1.07	0.01	1.88	0.83	0.83
W	174	0.89	0.01	0.98	0.01	-10.76	0.47	0.49
W	175	0.23	0.01	0.13	0.01	10.32	0.63	0.65
W	176	0.70	0.01	0.75	0.01	-5.68	0.52	0.53
W	177	-1.42	0.01	-1.48	0.01	4.05	0.87	0.88
W	178	-1.48	0.01	-1.55	0.01	5.80	0.87	0.88
W	179	0.55	0.01	0.60	0.01	-6.04	0.55	0.56
W	180	0.25	0.01	0.34	0.01	-10.53	0.61	0.61
W	181	0.44	0.01	0.56	0.01	-14.37	0.57	0.57
W	182	-0.98	0.01	-0.96	0.01	-1.79	0.82	0.82
W	183	-0.09	0.01	-0.15	0.01	6.12	0.71	0.70
W	184	-0.99	0.01	-0.91	0.01	-7.20	0.82	0.82

Appendix P: 2004 PSSA Grade Eleven Across Year Linking

Grade Eleven Reading								
2004		2003		2004			2003	2004
Form	Sequence	Diff 1	SE 1	Diff 2	SE 2	t-test	Pvalue	Pvalue
W	185	-1.05	0.01	-0.95	0.01	-9.39	0.83	0.82
W	186	-0.99	0.01	-0.97	0.01	-1.21	0.82	0.82
W	187	-1.61	0.01	-1.66	0.01	3.98	0.88	0.89
W	188	-0.90	0.01	-0.88	0.01	-1.45	0.82	0.81
W	189	-0.26	0.01	-0.32	0.01	6.28	0.70	0.73
W	190	-0.22	0.01	-0.21	0.01	-0.62	0.69	0.71
W	191	-0.37	0.01	-0.38	0.01	1.15	0.74	0.74
W	192	-1.13	0.01	-1.11	0.01	-1.79	0.83	0.84
W	193	-1.53	0.01	-1.56	0.01	2.54	0.88	0.88
W	194	-1.74	0.01	-1.76	0.01	1.23	0.89	0.90
W	195	0.24	0.01	0.16	0.01	9.51	0.62	0.65
W	196	0.76	0.01	0.96	0.01	-23.28	0.52	0.49
W	197	-1.68	0.01	-1.71	0.01	1.93	0.89	0.90
W	198	1.12	0.01	1.25	0.01	-14.82	0.43	0.44
W	199	-0.39	0.01	-0.36	0.01	-2.98	0.73	0.74
W	200	0.69	0.01	0.93	0.01	-26.95	0.53	0.50
W	201	-0.51	0.01	-0.50	0.01	-0.62	0.75	0.76
W	202	0.08	0.01	0.10	0.01	-2.20	0.64	0.66
W	203	-0.16	0.01	-0.18	0.01	2.62	0.70	0.71
W	204	-0.58	0.01	-0.58	0.01	-0.27	0.76	0.77
W	205	-0.61	0.01	-0.57	0.01	-4.00	0.77	0.77
A	120	0.92	0.02	0.99	0.02	-2.74	0.49	0.48
A	121	-0.30	0.02	-0.35	0.02	1.77	0.73	0.73
A	122	-0.74	0.03	-0.67	0.02	-2.37	0.79	0.78
A	123	-0.41	0.02	-0.46	0.02	1.49	0.74	0.75
A	124	-0.53	0.02	-0.60	0.02	2.39	0.76	0.77
A	125	-1.25	0.03	-1.07	0.02	-5.06	0.85	0.83
A	126	0.08	0.02	0.17	0.02	-3.13	0.66	0.64
A	127	-0.32	0.02	-0.28	0.02	-1.44	0.72	0.72
A	128	-0.32	0.02	-0.31	0.02	-0.40	0.73	0.72
A	129	-1.31	0.03	-1.44	0.02	3.55	0.86	0.87
A	130	0.67	0.02	0.47	0.02	7.87	0.54	0.58
A	131	0.37	0.02	0.29	0.02	3.29	0.60	0.62
A	132	-0.10	0.02	-0.39	0.02	10.22	0.69	0.74
A	133	1.07	0.02	1.06	0.02	0.45	0.45	0.47
A	134	0.43	0.02	0.32	0.02	4.36	0.58	0.61
A	135	0.64	0.02	0.45	0.02	7.36	0.54	0.59
A	136	0.98	0.02	0.84	0.02	5.53	0.47	0.51
A	137	-1.31	0.03	-1.55	0.02	6.63	0.86	0.88
A	138	1.13	0.02	1.23	0.02	-3.67	0.44	0.43
A	139	-1.51	0.03	-1.47	0.02	-1.00	0.88	0.87
B	120	1.86	0.02	2.08	0.02	-7.88	0.29	0.28
B	121	-0.88	0.03	-0.90	0.02	0.55	0.81	0.81
B	122	0.31	0.02	0.43	0.02	-4.42	0.60	0.60
B	123	-0.64	0.03	-0.44	0.02	-6.66	0.77	0.75
B	124	-1.00	0.03	-1.05	0.02	1.54	0.82	0.83
B	125	0.36	0.02	0.50	0.02	-5.23	0.60	0.59
B	126	-0.07	0.02	-0.13	0.02	2.10	0.68	0.70
B	127	1.09	0.02	1.22	0.02	-5.07	0.44	0.44
B	128	1.15	0.02	1.31	0.02	-6.08	0.43	0.42
B	129	-1.25	0.03	-1.35	0.02	2.78	0.85	0.87
B	130	-1.15	0.03	-1.17	0.02	0.62	0.84	0.85
B	131	0.89	0.02	0.64	0.02	9.49	0.48	0.56
B	132	-1.37	0.03	-1.44	0.02	1.70	0.87	0.87
B	133	1.35	0.02	1.38	0.02	-1.13	0.39	0.41

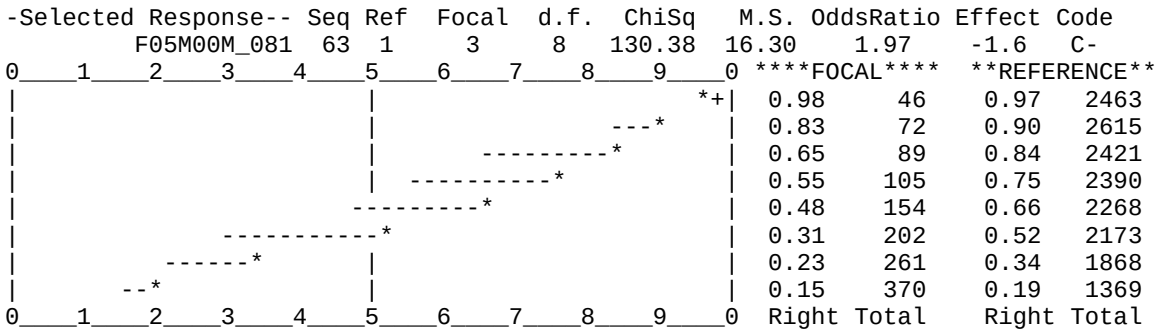
Appendix P: 2004 PSSA Grade Eleven Across Year Linking

Grade Eleven Reading								
2004		2003		2004			2003	2004
Form	Sequence	Diff 1	SE 1	Diff 2	SE 2	t-test	Pvalue	Pvalue
B	134	0.65	0.02	0.72	0.02	-2.77	0.54	0.54
B	135	-1.46	0.03	-1.52	0.02	1.46	0.88	0.88
B	136	2.07	0.02	2.01	0.02	1.87	0.25	0.29
B	137	-1.34	0.03	-1.12	0.02	-6.14	0.86	0.84
B	138	-0.39	0.02	-0.52	0.02	4.41	0.74	0.76
B	139	-0.09	0.02	-0.07	0.02	-0.56	0.68	0.69

Appendix Q(a): Grade Five Mathematics
Between Group DIF Analysis – Multiple Choice Items

Item Characteristic Curves C+/- Items

Reference Group = White, Focal Group = Hispanic



Appendix Q(a): Grade Five Mathematics

Between Group DIF Analysis -- Multiple Choice Items

Form	Seq	Group Reference	Focal	d.f.	Chi Squared	Mean Square	Odds Ratio	Effect	Code
A	53	Male	Female	8	182.97	22.87	1.26	-0.5	A-
		White	Black	8	100.84	12.60	0.72	0.8	A+
		White	Hispanic	8	24.23	3.03	0.76	0.6	A+
A	54	Male	Female	8	56.46	7.06	0.77	0.6	A+
		White	Black	8	41.23	5.15	0.79	0.6	A+
		White	Hispanic	8	15.24	1.90	0.76	0.6	A+
A	55	Male	Female	8	65.69	8.21	1.17	-0.4	A-
		White	Black	8	15.06	1.88	0.89	0.3	A+
		White	Hispanic	8	5.68	0.71	0.99	0.0	A+
A	56	Male	Female	8	62.83	7.85	1.23	-0.5	A-
		White	Black	8	80.66	10.08	1.36	-0.7	A-
		White	Hispanic	8	32.32	4.04	1.23	-0.5	A-
A	57	Male	Female	8	16.51	2.06	1.01	0.0	A-
		White	Black	8	21.01	2.63	0.86	0.3	A+
		White	Hispanic	8	9.68	1.21	1.14	-0.3	A-
A	58	Male	Female	8	84.24	10.53	0.82	0.5	A+
		White	Black	8	12.54	1.57	0.96	0.1	A+
		White	Hispanic	8	10.77	1.35	0.94	0.1	A+
A	59	Male	Female	8	30.89	3.86	0.89	0.3	A+
		White	Black	8	83.42	10.43	0.84	0.4	A+
		White	Hispanic	8	17.62	2.20	0.84	0.4	A+
A	60	Male	Female	8	9.88	1.24	1.01	0.0	A-
		White	Black	8	13.52	1.69	1.06	-0.1	A-
		White	Hispanic	8	5.28	0.66	1.13	-0.3	A-
A	61	Male	Female	8	44.60	5.57	0.90	0.3	A+
		White	Black	8	11.78	1.47	0.94	0.1	A+
		White	Hispanic	8	14.88	1.86	0.85	0.4	A+
A	62	Male	Female	8	124.33	15.54	1.23	-0.5	A-
		White	Black	8	17.46	2.18	0.91	0.2	A+
		White	Hispanic	8	6.33	0.79	1.02	0.0	A-
A	63	Male	Female	8	37.37	4.67	0.94	0.1	A+
		White	Black	8	68.45	8.56	0.76	0.7	A+
		White	Hispanic	8	10.10	1.26	0.93	0.2	A+
A	64	Male	Female	8	21.97	2.75	0.95	0.1	A+
		White	Black	8	31.99	4.00	0.89	0.3	A+
		White	Hispanic	8	43.96	5.49	0.74	0.7	A+
A	65	Male	Female	8	72.46	9.06	1.02	-0.1	A-
		White	Black	8	25.19	3.15	0.87	0.3	A+
		White	Hispanic	8	25.98	3.25	0.80	0.5	A+
A	66	Male	Female	8	94.24	11.78	1.19	-0.4	A-
		White	Black	8	31.78	3.97	1.17	-0.4	A-
		White	Hispanic	8	10.35	1.29	1.02	0.0	A-
A	67	Male	Female	8	58.55	7.32	0.87	0.3	A+
		White	Black	8	94.62	11.83	0.77	0.6	A+
		White	Hispanic	8	38.49	4.81	0.72	0.8	A+
B	53	Male	Female	8	54.89	6.86	0.82	0.5	A+
		White	Black	8	11.42	1.43	0.98	0.0	A+
		White	Hispanic	8	6.74	0.84	0.89	0.3	A+

Appendix Q(a): Grade Five Mathematics

Between Group DIF Analysis -- Multiple Choice Items

Form	Seq	Group Reference	Focal	d.f.	Chi Squared	Mean Square	Odds Ratio	Effect	Code
B	54	Male	Female	8	15.34	1.92	0.96	0.1	A+
		White	Black	8	9.38	1.17	0.96	0.1	A+
		White	Hispanic	8	11.72	1.46	0.84	0.4	A+
B	55	Male	Female	8	240.10	30.01	1.32	-0.7	A-
		White	Black	8	55.02	6.88	1.25	-0.5	A-
		White	Hispanic	8	26.85	3.36	1.29	-0.6	A-
B	56	Male	Female	8	23.32	2.92	0.94	0.2	A+
		White	Black	8	15.64	1.96	1.10	-0.2	A-
		White	Hispanic	8	11.99	1.50	0.88	0.3	A+
B	57	Male	Female	8	38.97	4.87	1.13	-0.3	A-
		White	Black	8	14.20	1.77	0.85	0.4	A+
		White	Hispanic	8	10.95	1.37	0.83	0.4	A+
B	58	Male	Female	8	75.14	9.39	0.83	0.4	A+
		White	Black	8	27.83	3.48	1.14	-0.3	A-
		White	Hispanic	8	18.68	2.34	1.24	-0.5	A-
B	59	Male	Female	8	33.70	4.21	0.90	0.2	A+
		White	Black	8	12.46	1.56	1.08	-0.2	A-
		White	Hispanic	8	11.77	1.47	1.18	-0.4	A-
B	60	Male	Female	8	406.40	50.80	1.60	-1.1	B-
		White	Black	8	57.87	7.23	0.95	0.1	A+
		White	Hispanic	8	20.88	2.61	1.11	-0.3	A-
B	61	Male	Female	8	9.93	1.24	1.02	0.0	A-
		White	Black	8	60.56	7.57	0.78	0.6	A+
		White	Hispanic	8	22.31	2.79	0.77	0.6	A+
B	62	Male	Female	8	158.85	19.86	1.30	-0.6	A-
		White	Black	8	33.38	4.17	1.15	-0.3	A-
		White	Hispanic	8	17.65	2.21	1.15	-0.3	A-
B	63	Male	Female	8	263.57	32.95	1.36	-0.7	A-
		White	Black	8	77.54	9.69	1.32	-0.7	A-
		White	Hispanic	8	25.71	3.21	1.29	-0.6	A-
B	64	Male	Female	8	47.98	6.00	0.90	0.2	A+
		White	Black	8	18.96	2.37	1.13	-0.3	A-
		White	Hispanic	8	7.78	0.97	0.91	0.2	A+
B	65	Male	Female	8	102.63	12.83	0.72	0.8	A+
		White	Black	8	9.72	1.21	1.08	-0.2	A-
		White	Hispanic	8	9.68	1.21	1.21	-0.5	A-
B	66	Male	Female	8	66.61	8.33	1.15	-0.3	A-
		White	Black	8	27.39	3.42	1.20	-0.4	A-
		White	Hispanic	8	12.14	1.52	1.04	-0.1	A-
B	67	Male	Female	8	177.29	22.16	0.75	0.7	A+
		White	Black	8	6.15	0.77	0.97	0.1	A+
		White	Hispanic	8	13.95	1.74	0.83	0.5	A+
C	53	Male	Female	8	96.49	12.06	1.26	-0.5	A-
		White	Black	8	6.45	0.81	1.01	0.0	A-
		White	Hispanic	8	6.84	0.86	0.93	0.2	A+
C	54	Male	Female	8	43.01	5.38	0.95	0.1	A+
		White	Black	8	133.20	16.65	0.68	0.9	A+
		White	Hispanic	8	49.51	6.19	0.66	1.0	A+

Appendix Q(a): Grade Five Mathematics

Between Group DIF Analysis -- Multiple Choice Items

Form	Seq	Group Reference	Focal	d.f.	Chi Squared	Mean Square	Odds Ratio	Effect	Code
C	55	Male	Female	8	27.40	3.42	1.10	-0.2	A-
		White	Black	8	36.04	4.50	0.85	0.4	A+
		White	Hispanic	8	39.22	4.90	0.79	0.6	A+
C	56	Male	Female	8	47.11	5.89	1.07	-0.1	A-
		White	Black	8	37.36	4.67	1.22	-0.5	A-
		White	Hispanic	8	13.45	1.68	1.14	-0.3	A-
C	57	Male	Female	8	434.65	54.33	1.56	-1.0	B-
		White	Black	8	7.82	0.98	1.04	-0.1	A-
		White	Hispanic	8	13.73	1.72	1.21	-0.4	A-
C	58	Male	Female	8	87.74	10.97	1.20	-0.4	A-
		White	Black	8	53.69	6.71	1.18	-0.4	A-
		White	Hispanic	8	22.05	2.76	1.12	-0.3	A-
C	59	Male	Female	8	15.05	1.88	1.01	0.0	A-
		White	Black	8	36.81	4.60	1.20	-0.4	A-
		White	Hispanic	8	17.28	2.16	1.13	-0.3	A-
C	60	Male	Female	8	78.01	9.75	1.19	-0.4	A-
		White	Black	8	12.13	1.52	0.95	0.1	A+
		White	Hispanic	8	9.53	1.19	1.05	-0.1	A-
C	61	Male	Female	8	97.66	12.21	0.85	0.4	A+
		White	Black	8	38.80	4.85	0.86	0.4	A+
		White	Hispanic	8	22.29	2.79	0.81	0.5	A+
C	62	Male	Female	8	34.01	4.25	0.91	0.2	A+
		White	Black	8	13.09	1.64	1.10	-0.2	A-
		White	Hispanic	8	16.03	2.00	1.09	-0.2	A-
C	63	Male	Female	8	128.82	16.10	0.80	0.5	A+
		White	Black	8	65.86	8.23	0.75	0.7	A+
		White	Hispanic	8	22.65	2.83	0.77	0.6	A+
C	64	Male	Female	8	64.01	8.00	0.83	0.5	A+
		White	Black	8	19.54	2.44	1.05	-0.1	A-
		White	Hispanic	8	3.80	0.47	0.95	0.1	A+
C	65	Male	Female	8	49.34	6.17	0.82	0.5	A+
		White	Black	8	112.63	14.08	1.49	-0.9	A-
		White	Hispanic	8	25.01	3.13	1.26	-0.5	A-
C	66	Male	Female	8	29.54	3.69	0.97	0.1	A+
		White	Black	8	26.38	3.30	0.96	0.1	A+
		White	Hispanic	8	13.02	1.63	0.89	0.3	A+
C	67	Male	Female	8	72.09	9.01	0.84	0.4	A+
		White	Black	8	30.06	3.76	1.12	-0.3	A-
		White	Hispanic	8	16.63	2.08	1.20	-0.4	A-
D	53	Male	Female	8	412.08	51.51	1.50	-1.0	A-
		White	Black	8	294.99	36.87	0.54	1.5	B+
		White	Hispanic	8	51.17	6.40	0.64	1.1	B+
D	54	Male	Female	8	37.71	4.71	0.93	0.2	A+
		White	Black	8	40.66	5.08	0.84	0.4	A+
		White	Hispanic	8	35.56	4.45	0.78	0.6	A+
D	55	Male	Female	8	196.84	24.61	1.37	-0.7	A-
		White	Black	8	50.24	6.28	1.23	-0.5	A-
		White	Hispanic	8	89.50	11.19	1.62	-1.1	B-

Appendix Q(a): Grade Five Mathematics

Between Group DIF Analysis -- Multiple Choice Items

Form	Seq	Group Reference	Focal	d.f.	Chi Squared	Mean Square	Odds Ratio	Effect	Code
D	56	Male	Female	8	26.64	3.33	1.05	-0.1	A-
		White	Black	8	29.95	3.74	1.13	-0.3	A-
		White	Hispanic	8	16.42	2.05	1.21	-0.4	A-
D	57	Male	Female	8	78.00	9.75	1.15	-0.3	A-
		White	Black	8	17.37	2.17	0.91	0.2	A+
		White	Hispanic	8	4.63	0.58	0.91	0.2	A+
D	58	Male	Female	8	22.94	2.87	0.92	0.2	A+
		White	Black	8	12.12	1.52	0.92	0.2	A+
		White	Hispanic	8	27.53	3.44	0.81	0.5	A+
D	59	Male	Female	8	641.21	80.15	1.53	-1.0	A-
		White	Black	8	105.24	13.15	0.74	0.7	A+
		White	Hispanic	8	33.81	4.23	0.75	0.7	A+
D	60	Male	Female	8	20.36	2.54	0.93	0.2	A+
		White	Black	8	39.55	4.94	0.82	0.5	A+
		White	Hispanic	8	16.70	2.09	0.83	0.4	A+
D	61	Male	Female	8	30.50	3.81	0.97	0.1	A+
		White	Black	8	45.68	5.71	0.82	0.5	A+
		White	Hispanic	8	16.08	2.01	0.81	0.5	A+
D	62	Male	Female	8	18.88	2.36	0.95	0.1	A+
		White	Black	8	51.28	6.41	0.82	0.5	A+
		White	Hispanic	8	7.68	0.96	0.91	0.2	A+
D	63	Male	Female	8	82.29	10.29	1.22	-0.5	A-
		White	Black	8	19.09	2.39	0.97	0.1	A+
		White	Hispanic	8	25.51	3.19	0.94	0.1	A+
D	64	Male	Female	8	15.90	1.99	0.94	0.2	A+
		White	Black	8	41.24	5.15	0.96	0.1	A+
		White	Hispanic	8	12.33	1.54	1.17	-0.4	A-
D	65	Male	Female	8	118.16	14.77	0.76	0.6	A+
		White	Black	8	8.00	1.00	0.98	0.1	A+
		White	Hispanic	8	7.74	0.97	1.01	0.0	A-
D	66	Male	Female	8	41.87	5.23	1.08	-0.2	A-
		White	Black	8	2.41	0.30	0.96	0.1	A+
		White	Hispanic	8	10.04	1.26	1.09	-0.2	A-
D	67	Male	Female	8	162.10	20.26	0.84	0.4	A+
		White	Black	8	133.29	16.66	0.70	0.8	A+
		White	Hispanic	8	16.70	2.09	0.84	0.4	A+
E	53	Male	Female	8	41.84	5.23	1.11	-0.2	A-
		White	Black	8	23.09	2.89	1.17	-0.4	A-
		White	Hispanic	8	8.51	1.06	1.00	0.0	A+
E	54	Male	Female	8	19.18	2.40	1.05	-0.1	A-
		White	Black	8	24.85	3.11	0.88	0.3	A+
		White	Hispanic	8	6.68	0.84	0.93	0.2	A+
E	55	Male	Female	8	4.36	0.54	0.97	0.1	A+
		White	Black	8	14.05	1.76	0.94	0.2	A+
		White	Hispanic	8	14.73	1.84	0.94	0.1	A+
E	56	Male	Female	8	89.58	11.20	1.19	-0.4	A-
		White	Black	8	29.35	3.67	1.18	-0.4	A-
		White	Hispanic	8	14.40	1.80	1.18	-0.4	A-

Appendix Q(a): Grade Five Mathematics

Between Group DIF Analysis -- Multiple Choice Items

Form	Seq	Group Reference	Focal	d.f.	Chi Squared	Mean Square	Odds Ratio	Effect	Code
E	57	Male	Female	8	210.29	26.29	1.36	-0.7	A-
		White	Black	8	21.37	2.67	1.14	-0.3	A-
		White	Hispanic	8	12.28	1.54	0.96	0.1	A+
E	58	Male	Female	8	38.84	4.86	0.94	0.1	A+
		White	Black	8	8.55	1.07	0.98	0.1	A+
		White	Hispanic	8	8.21	1.03	0.96	0.1	A+
E	59	Male	Female	8	114.85	14.36	1.18	-0.4	A-
		White	Black	8	2.33	0.29	1.02	-0.1	A-
		White	Hispanic	8	10.93	1.37	1.01	0.0	A-
E	60	Male	Female	8	30.68	3.84	1.09	-0.2	A-
		White	Black	8	6.65	0.83	1.01	0.0	A-
		White	Hispanic	8	6.56	0.82	1.01	0.0	A-
E	61	Male	Female	8	15.64	1.96	1.04	-0.1	A-
		White	Black	8	21.20	2.65	1.01	0.0	A-
		White	Hispanic	8	9.64	1.20	1.09	-0.2	A-
E	62	Male	Female	8	15.31	1.91	0.96	0.1	A+
		White	Black	8	32.82	4.10	1.18	-0.4	A-
		White	Hispanic	8	34.46	4.31	1.35	-0.7	A-
E	63	Male	Female	8	16.90	2.11	0.95	0.1	A+
		White	Black	8	82.13	10.27	0.71	0.8	A+
		White	Hispanic	8	7.86	0.98	0.88	0.3	A+
E	64	Male	Female	8	93.88	11.74	0.80	0.5	A+
		White	Black	8	14.05	1.76	0.89	0.3	A+
		White	Hispanic	8	33.32	4.16	1.20	-0.4	A-
E	65	Male	Female	8	68.86	8.61	1.18	-0.4	A-
		White	Black	8	16.20	2.03	0.92	0.2	A+
		White	Hispanic	8	10.13	1.27	0.96	0.1	A+
E	66	Male	Female	8	23.58	2.95	0.96	0.1	A+
		White	Black	8	59.58	7.45	0.77	0.6	A+
		White	Hispanic	8	9.45	1.18	0.92	0.2	A+
E	67	Male	Female	8	159.33	19.92	1.32	-0.7	A-
		White	Black	8	14.48	1.81	1.06	-0.1	A-
		White	Hispanic	8	23.68	2.96	0.78	0.6	A+
F	53	Male	Female	8	58.81	7.35	1.16	-0.4	A-
		White	Black	8	49.64	6.20	1.29	-0.6	A-
		White	Hispanic	8	19.54	2.44	1.28	-0.6	A-
F	54	Male	Female	8	90.21	11.28	1.17	-0.4	A-
		White	Black	8	47.07	5.88	0.83	0.4	A+
		White	Hispanic	8	10.28	1.29	0.86	0.4	A+
F	55	Male	Female	8	34.78	4.35	1.13	-0.3	A-
		White	Black	8	61.55	7.69	1.31	-0.6	A-
		White	Hispanic	8	10.39	1.30	1.13	-0.3	A-
F	56	Male	Female	8	49.77	6.22	1.09	-0.2	A-
		White	Black	8	32.13	4.02	0.82	0.5	A+
		White	Hispanic	8	8.73	1.09	0.89	0.3	A+
F	57	Male	Female	8	13.63	1.70	1.03	-0.1	A-
		White	Black	8	68.24	8.53	1.29	-0.6	A-
		White	Hispanic	8	6.32	0.79	1.06	-0.1	A-

Appendix Q(a): Grade Five Mathematics

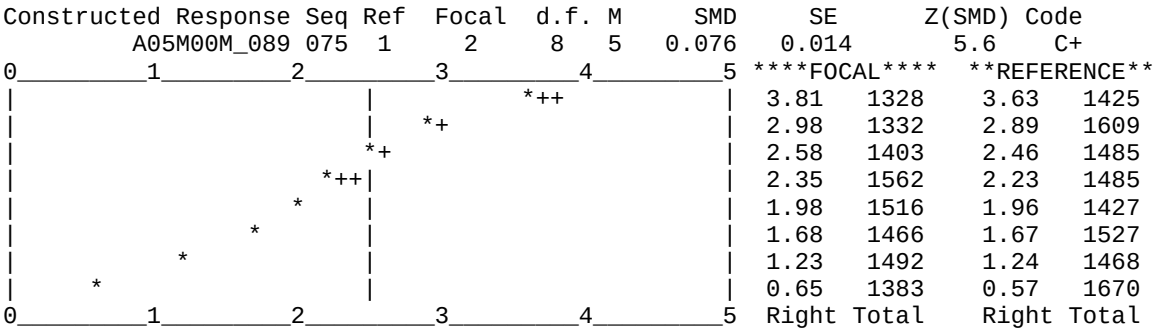
Between Group DIF Analysis -- Multiple Choice Items

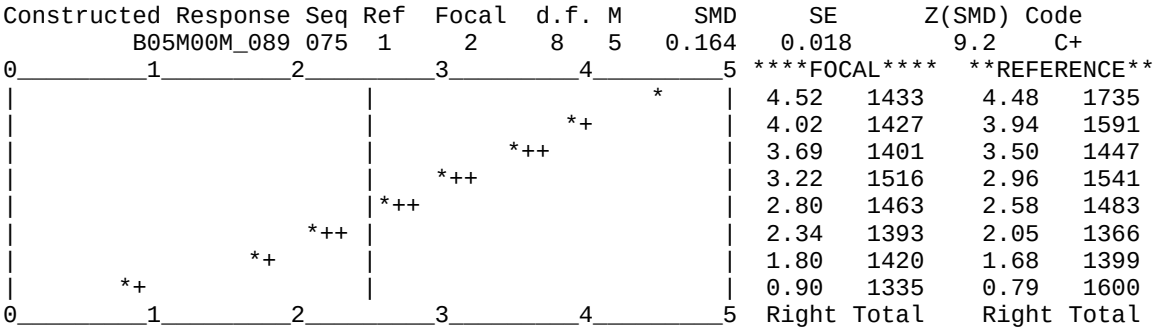
Form	Seq	Group Reference	Focal	d.f.	Chi Squared	Mean Square	Odds Ratio	Effect	Code
F	58	Male	Female	8	14.79	1.85	0.96	0.1	A+
		White	Black	8	56.31	7.04	0.82	0.5	A+
		White	Hispanic	8	15.84	1.98	0.91	0.2	A+
F	59	Male	Female	8	91.59	11.45	0.80	0.5	A+
		White	Black	8	56.67	7.08	0.76	0.6	A+
		White	Hispanic	8	24.81	3.10	0.73	0.8	A+
F	60	Male	Female	8	52.87	6.61	0.99	0.0	A+
		White	Black	8	40.68	5.08	0.88	0.3	A+
		White	Hispanic	8	24.31	3.04	0.82	0.5	A+
F	61	Male	Female	8	11.30	1.41	0.97	0.1	A+
		White	Black	8	7.43	0.93	1.00	0.0	A+
		White	Hispanic	8	25.77	3.22	1.00	0.0	A
F	62	Male	Female	8	98.57	12.32	0.87	0.3	A+
		White	Black	8	26.03	3.25	0.86	0.3	A+
		White	Hispanic	8	30.25	3.78	0.73	0.7	A+
F	63	Male	Female	8	36.70	4.59	1.09	-0.2	A-
		White	Black	8	221.97	27.75	1.70	-1.3	B-
		White	Hispanic	8	130.38	16.30	1.97	-1.6	C-
F	64	Male	Female	8	146.72	18.34	1.24	-0.5	A-
		White	Black	8	62.32	7.79	1.26	-0.6	A-
		White	Hispanic	8	8.65	1.08	1.01	0.0	A-
F	65	Male	Female	8	46.71	5.84	1.13	-0.3	A-
		White	Black	8	10.63	1.33	0.91	0.2	A+
		White	Hispanic	8	4.70	0.59	0.93	0.2	A+
F	66	Male	Female	8	22.45	2.81	0.95	0.1	A+
		White	Black	8	19.30	2.41	1.05	-0.1	A-
		White	Hispanic	8	7.69	0.96	0.97	0.1	A+
F	67	Male	Female	8	18.46	2.31	1.06	-0.1	A-
		White	Black	8	94.30	11.79	1.32	-0.7	A-
		White	Hispanic	8	74.08	9.26	1.49	-0.9	A-

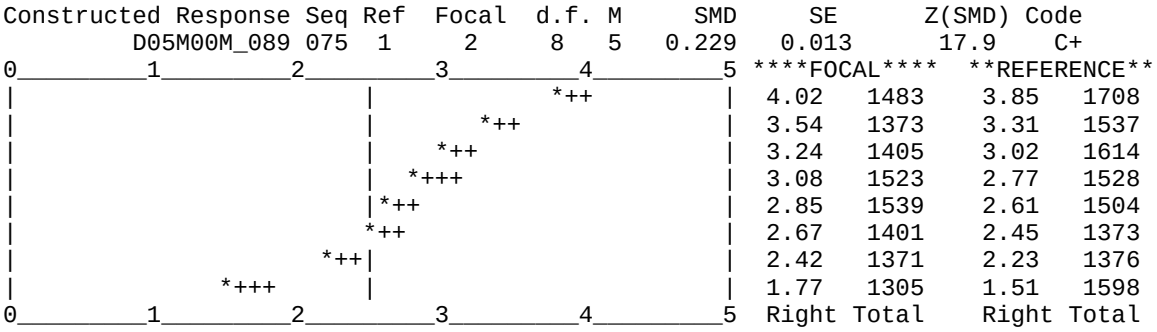
Appendix Q(b): Grade Five Mathematics
Between Group DIF Analysis – Constructed Response Items

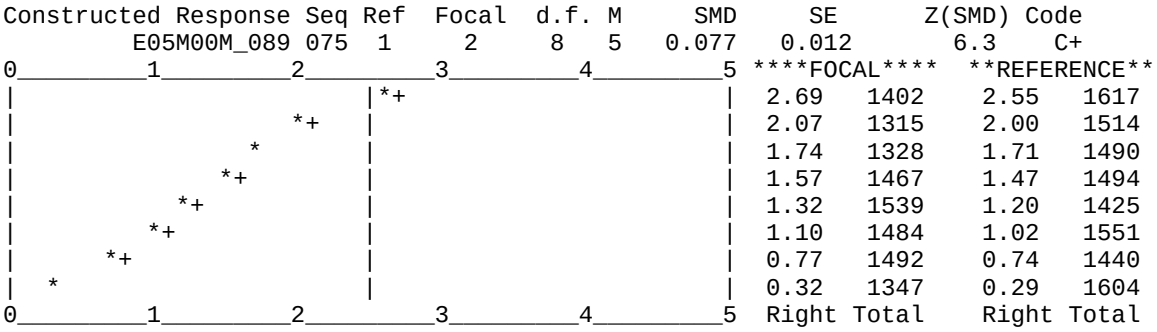
Item Characteristic Curves – C+/- Items

Reference Group = Male, Focal Group = Female

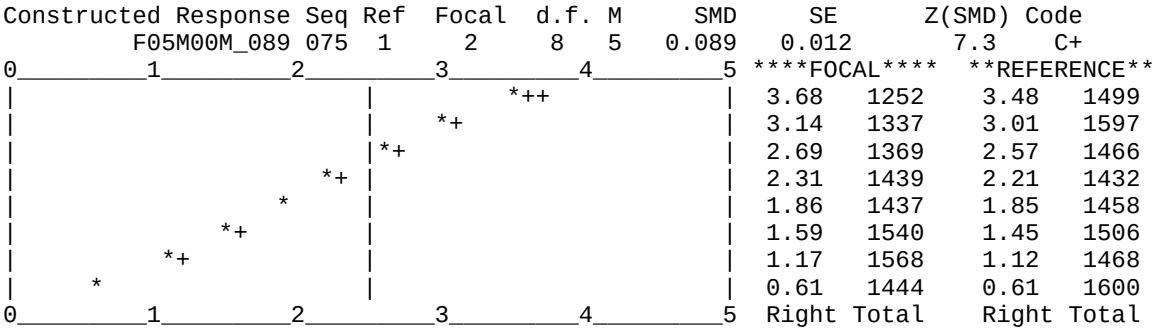




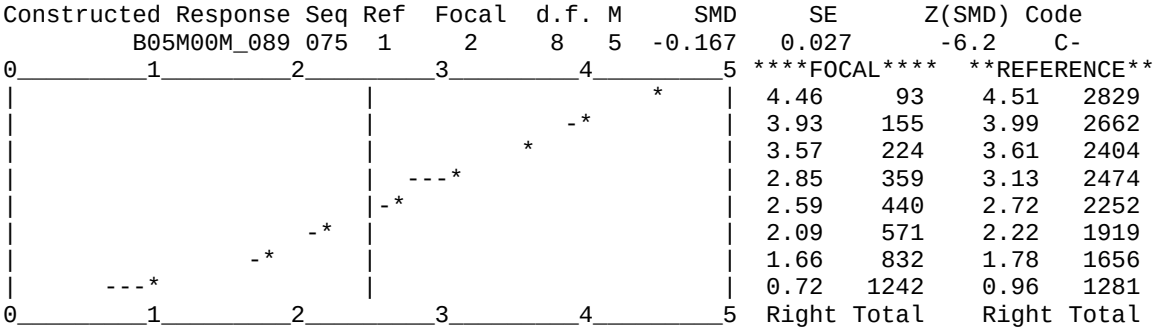


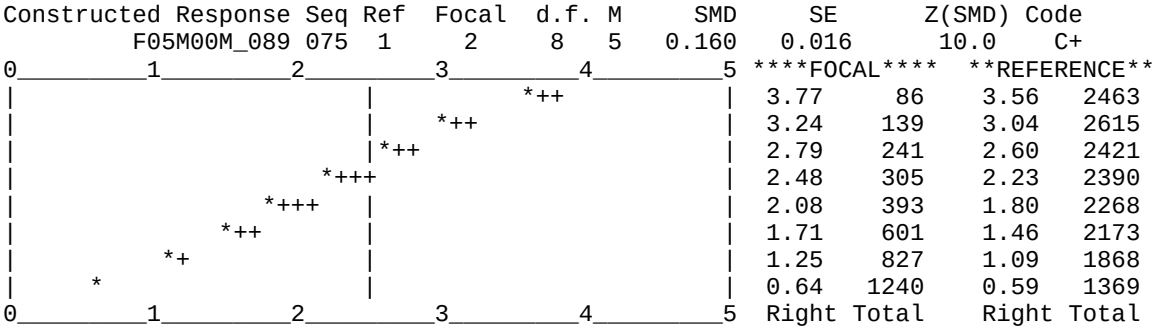


Appendix Q(b): Grade Five Mathematics
Between Group DIF Analysis – Constructed Response Items



Reference Group = White, Focal Group = Black





Appendix Q(b): Grade Five Mathematics

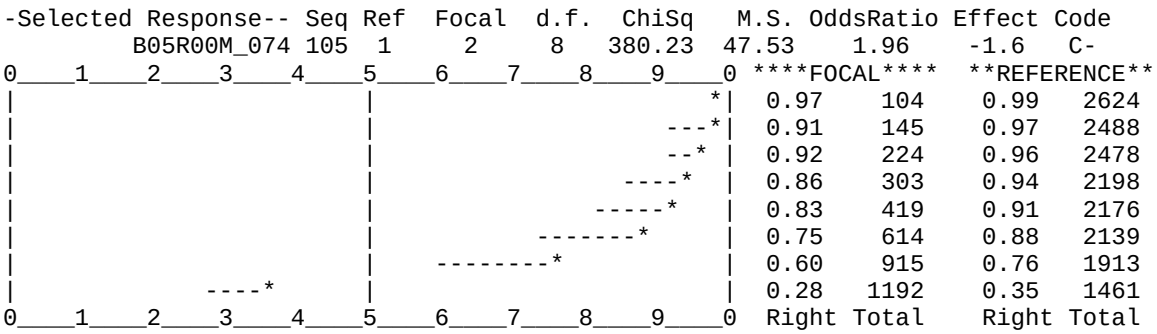
Between Group DIF Analysis -- Constructed Response Items

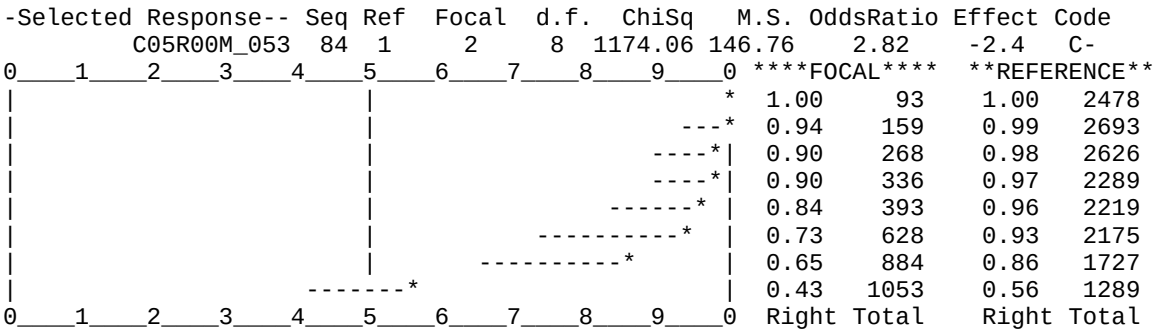
Form	Seq	Reference	Focal	d.f.	Max Score	SMD	S.E.	Effect	Code
A	75	Male	Female	8	5	0.076	0.014	5.6	CC+
		White	Black	8	5	-0.020	0.018	-1.1	AA-
		White	Hispanic	8	5	0.065	0.029	2.3	BB+
B	75	Male	Female	8	5	0.164	0.018	9.2	CC+
		White	Black	8	5	-0.167	0.027	-6.2	CC-
		White	Hispanic	8	5	-0.049	0.040	-1.2	AA-
C	75	Male	Female	8	5	-0.041	0.014	-2.9	BB-
		White	Black	8	5	-0.024	0.020	-1.2	AA-
		White	Hispanic	8	5	-0.038	0.029	-1.3	AA-
D	75	Male	Female	8	5	0.229	0.013	17.9	CC+
		White	Black	8	5	-0.038	0.018	-2.1	BB-
		White	Hispanic	8	5	-0.060	0.028	-2.1	BB-
E	75	Male	Female	8	5	0.077	0.012	6.3	CC+
		White	Black	8	5	0.036	0.016	2.2	BB+
		White	Hispanic	8	5	0.077	0.025	3.1	BB+
F	75	Male	Female	8	5	0.089	0.012	7.3	CC+
		White	Black	8	5	0.160	0.016	10.0	CC+
		White	Hispanic	8	5	0.116	0.025	4.6	BB+

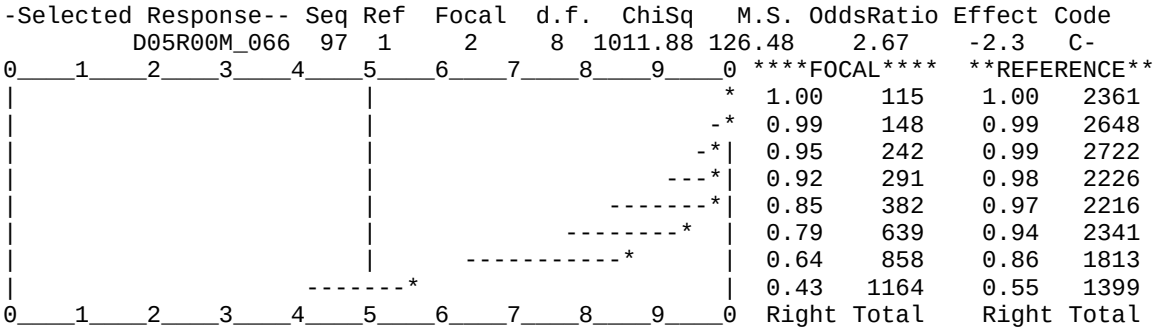
Appendix R(a): Grade Five Reading
Between Group DIF Analysis – Multiple Choice Items

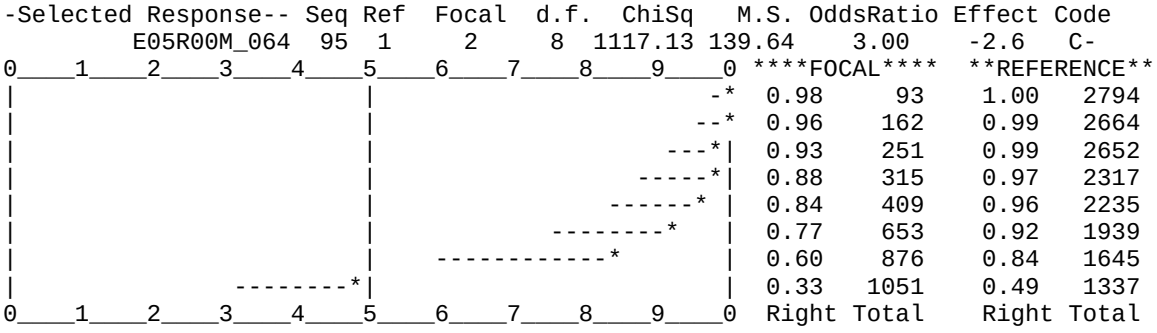
Item Characteristic Curves – C+/- Items

Reference Group = White, Focal Group = Black

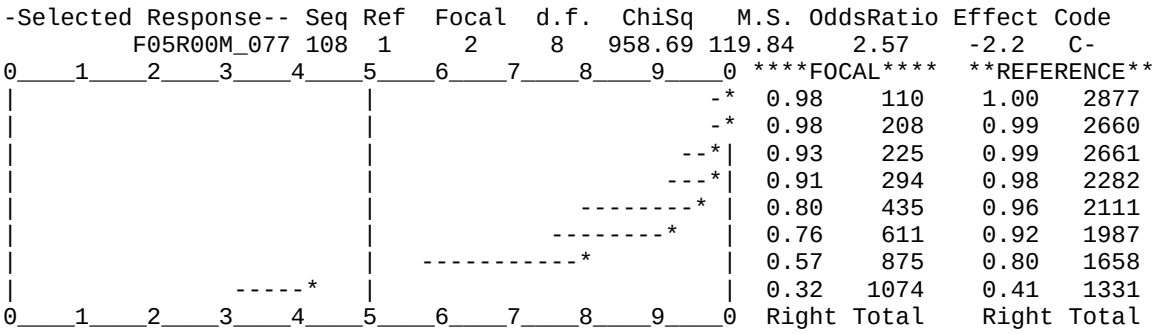




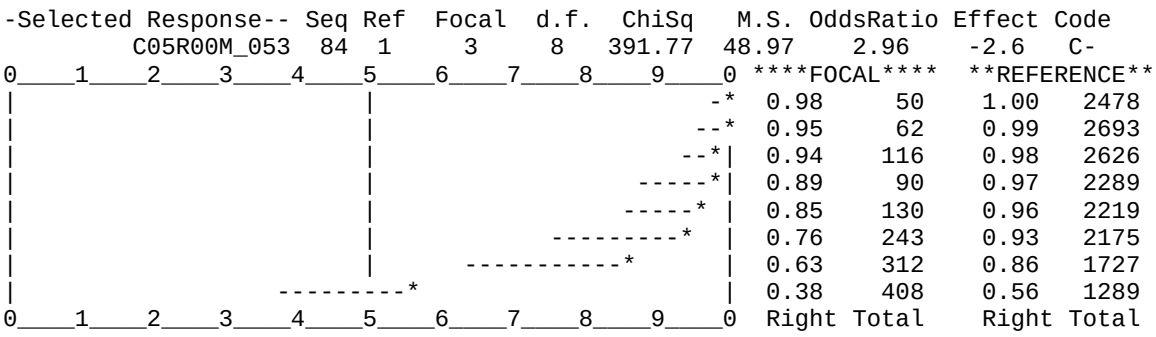


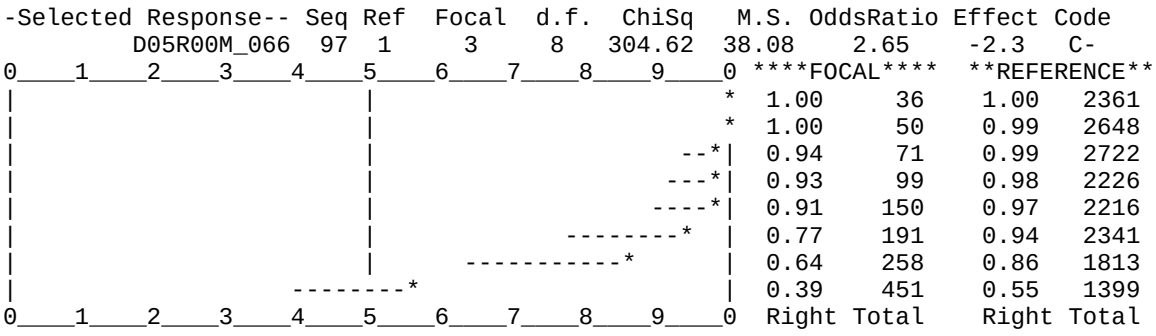


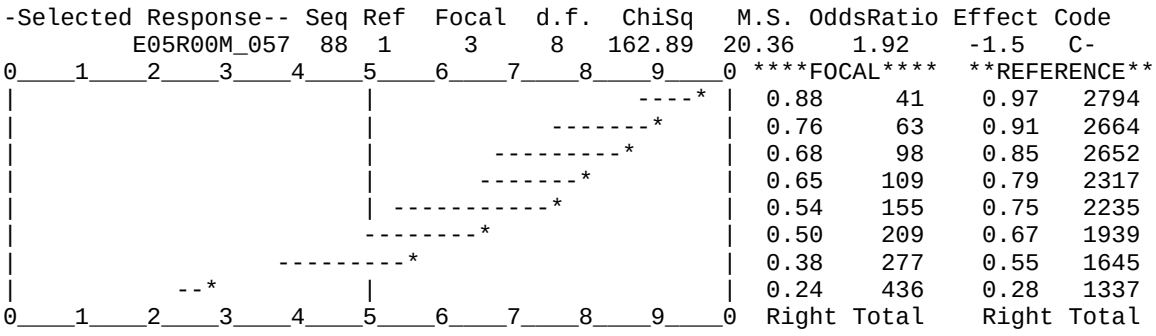
Appendix R(a): Grade Five Reading
Between Group DIF Analysis – Multiple Choice Items



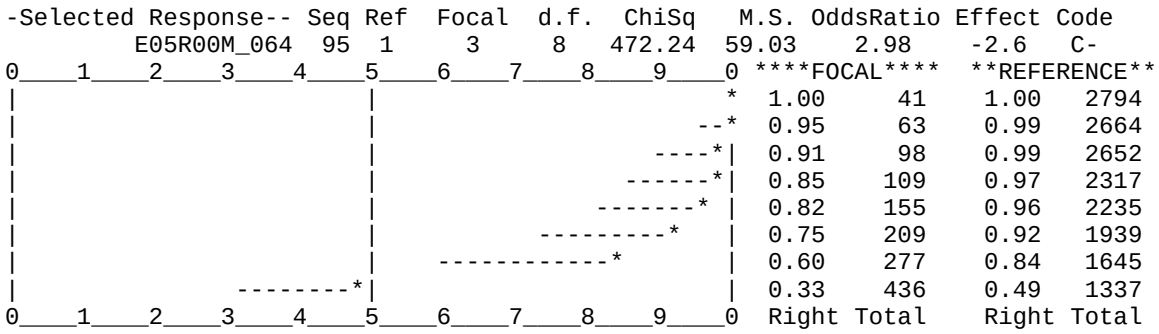
Reference Group = White, Focal Group = Hispanic

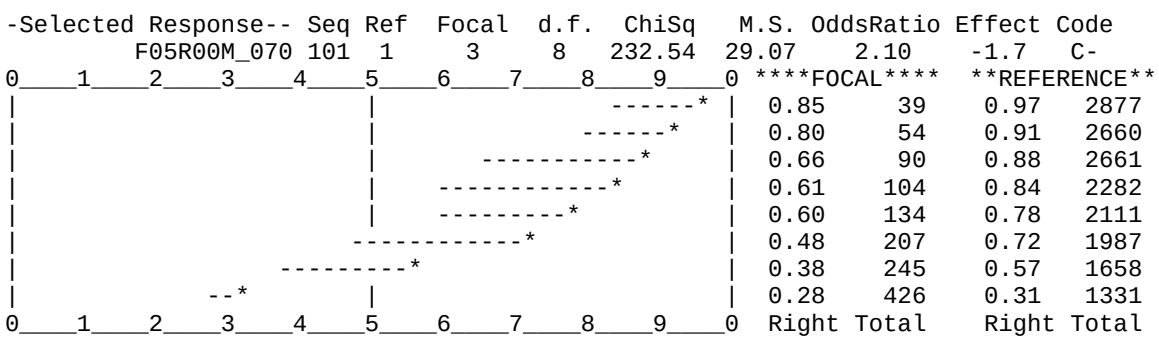


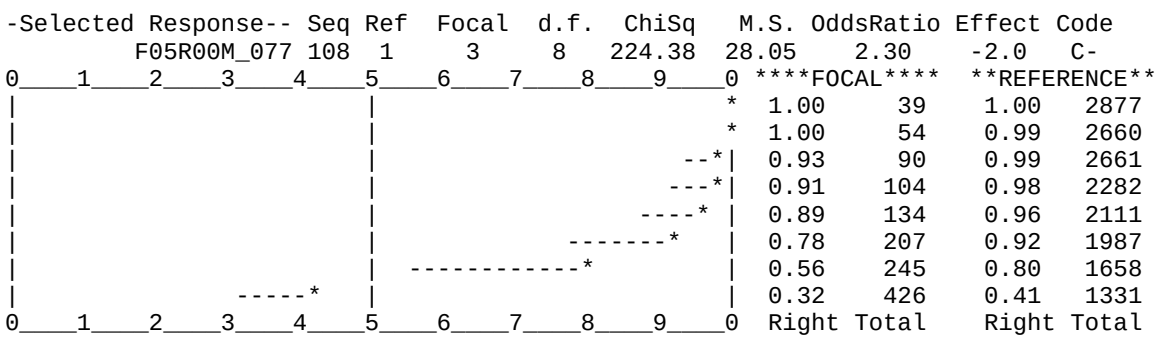




Appendix R(a): Grade Five Reading
Between Group DIF Analysis – Multiple Choice Items







Appendix R(a): Grade Five Reading

Between Group DIF Analysis -- Multiple Choice Items

Form	Seq	Group Reference	Focal	d.f.	Chi Squared	Mean Square	Odds Ratio	Effect	Code
A	84	Male	Female	8	52.59	6.57	1.16	-0.3	A-
		White	Black	8	22.79	2.85	1.08	-0.2	A-
		White	Hispanic	8	10.26	1.28	0.96	0.1	A+
A	85	Male	Female	8	54.84	6.86	1.14	-0.3	A-
		White	Black	8	18.09	2.26	0.90	0.2	A+
		White	Hispanic	8	14.84	1.85	1.09	-0.2	A-
A	86	Male	Female	8	427.21	53.40	1.73	-1.3	B-
		White	Black	8	111.64	13.95	1.45	-0.9	A-
		White	Hispanic	8	26.76	3.35	1.24	-0.5	A-
A	87	Male	Female	8	38.20	4.78	0.92	0.2	A+
		White	Black	8	22.39	2.80	0.88	0.3	A+
		White	Hispanic	8	6.15	0.77	0.99	0.0	A+
A	88	Male	Female	8	740.58	92.57	1.79	-1.4	B-
		White	Black	8	244.62	30.58	1.70	-1.3	B-
		White	Hispanic	8	71.41	8.93	1.67	-1.2	B-
A	89	Male	Female	8	8.94	1.12	1.03	-0.1	A-
		White	Black	8	20.64	2.58	1.14	-0.3	A-
		White	Hispanic	8	8.49	1.06	1.04	-0.1	A-
A	90	Male	Female	8	114.73	14.34	1.23	-0.5	A-
		White	Black	8	47.61	5.95	1.24	-0.5	A-
		White	Hispanic	8	22.99	2.87	1.35	-0.7	A-
A	91	Male	Female	8	54.24	6.78	1.01	0.0	A-
		White	Black	8	24.95	3.12	1.17	-0.4	A-
		White	Hispanic	8	8.14	1.02	1.05	-0.1	A-
A	92	Male	Female	8	131.37	16.42	1.34	-0.7	A-
		White	Black	8	437.89	54.74	1.89	-1.5	B-
		White	Hispanic	8	97.70	12.21	1.78	-1.4	B-
A	93	Male	Female	8	120.08	15.01	1.25	-0.5	A-
		White	Black	8	7.87	0.98	0.99	0.0	A+
		White	Hispanic	8	6.05	0.76	1.01	0.0	A-
A	94	Male	Female	8	52.41	6.55	1.12	-0.3	A-
		White	Black	8	17.90	2.24	1.09	-0.2	A-
		White	Hispanic	8	20.48	2.56	0.93	0.2	A+
A	95	Male	Female	8	10.02	1.25	0.97	0.1	A+
		White	Black	8	22.71	2.84	0.93	0.2	A+
		White	Hispanic	8	21.97	2.75	0.82	0.5	A+
A	96	Male	Female	8	106.54	13.32	0.79	0.6	A+
		White	Black	8	32.10	4.01	1.00	0.0	A
		White	Hispanic	8	5.94	0.74	1.03	-0.1	A-
A	97	Male	Female	8	15.78	1.97	0.96	0.1	A+
		White	Black	8	13.28	1.66	0.89	0.3	A+
		White	Hispanic	8	6.31	0.79	0.96	0.1	A+
A	98	Male	Female	8	459.99	57.50	1.47	-0.9	A-
		White	Black	8	14.50	1.81	0.99	0.0	A+
		White	Hispanic	8	9.77	1.22	1.04	-0.1	A-
A	99	Male	Female	8	374.39	46.80	1.46	-0.9	A-
		White	Black	8	49.82	6.23	1.21	-0.5	A-
		White	Hispanic	8	41.07	5.13	1.30	-0.6	A-

Appendix R(a): Grade Five Reading

Between Group DIF Analysis -- Multiple Choice Items

Form	Seq	Group Reference	Focal	d.f.	Chi Squared	Mean Square	Odds Ratio	Effect	Code
A	100	Male	Female	8	16.68	2.09	0.99	0.0	A+
		White	Black	8	16.04	2.01	0.88	0.3	A+
		White	Hispanic	8	3.11	0.39	1.03	-0.1	A-
A	101	Male	Female	8	109.25	13.66	1.22	-0.5	A-
		White	Black	8	61.89	7.74	1.27	-0.6	A-
		White	Hispanic	8	16.34	2.04	0.94	0.1	A+
A	102	Male	Female	8	214.39	26.80	1.38	-0.8	A-
		White	Black	8	107.61	13.45	1.43	-0.8	A-
		White	Hispanic	8	24.34	3.04	1.31	-0.6	A-
A	103	Male	Female	8	18.18	2.27	0.96	0.1	A+
		White	Black	8	19.22	2.40	0.91	0.2	A+
		White	Hispanic	8	18.52	2.32	0.90	0.2	A+
A	104	Male	Female	8	45.06	5.63	0.87	0.3	A+
		White	Black	8	45.50	5.69	0.82	0.5	A+
		White	Hispanic	8	7.76	0.97	0.91	0.2	A+
A	105	Male	Female	8	21.40	2.68	0.92	0.2	A+
		White	Black	8	4.54	0.57	0.96	0.1	A+
		White	Hispanic	8	9.46	1.18	0.88	0.3	A+
A	106	Male	Female	8	143.67	17.96	1.20	-0.4	A-
		White	Black	8	70.85	8.86	1.30	-0.6	A-
		White	Hispanic	8	26.19	3.27	1.29	-0.6	A-
A	107	Male	Female	8	39.08	4.89	1.11	-0.2	A-
		White	Black	8	59.30	7.41	1.14	-0.3	A-
		White	Hispanic	8	24.98	3.12	1.20	-0.4	A-
A	108	Male	Female	8	24.24	3.03	1.01	0.0	A-
		White	Black	8	62.59	7.82	1.36	-0.7	A-
		White	Hispanic	8	9.22	1.15	1.12	-0.3	A-
A	109	Male	Female	8	36.86	4.61	0.89	0.3	A+
		White	Black	8	27.20	3.40	0.86	0.3	A+
		White	Hispanic	8	27.59	3.45	0.74	0.7	A+
B	84	Male	Female	8	47.32	5.91	0.84	0.4	A+
		White	Black	8	34.03	4.25	0.80	0.5	A+
		White	Hispanic	8	5.24	0.65	1.06	-0.1	A-
B	85	Male	Female	8	471.59	58.95	1.50	-1.0	A-
		White	Black	8	29.53	3.69	1.07	-0.2	A-
		White	Hispanic	8	15.37	1.92	0.99	0.0	A+
B	86	Male	Female	8	409.90	51.24	1.47	-0.9	A-
		White	Black	8	64.48	8.06	1.24	-0.5	A-
		White	Hispanic	8	51.77	6.47	1.18	-0.4	A-
B	87	Male	Female	8	10.11	1.26	0.97	0.1	A+
		White	Black	8	9.34	1.17	0.94	0.2	A+
		White	Hispanic	8	12.20	1.52	1.14	-0.3	A-
B	88	Male	Female	8	124.88	15.61	1.25	-0.5	A-
		White	Black	8	66.63	8.33	1.24	-0.5	A-
		White	Hispanic	8	21.53	2.69	1.24	-0.5	A-
B	89	Male	Female	8	294.76	36.85	1.45	-0.9	A-
		White	Black	8	73.82	9.23	1.34	-0.7	A-
		White	Hispanic	8	48.42	6.05	1.33	-0.7	A-

Appendix R(a): Grade Five Reading

Between Group DIF Analysis -- Multiple Choice Items

Form	Seq	Group Reference	Focal	d.f.	Chi Squared	Mean Square	Odds Ratio	Effect	Code
B	90	Male	Female	8	23.48	2.93	1.03	-0.1	A-
		White	Black	8	55.61	6.95	0.81	0.5	A+
		White	Hispanic	8	12.46	1.56	0.89	0.3	A+
B	91	Male	Female	8	62.54	7.82	0.85	0.4	A+
		White	Black	8	66.00	8.25	0.80	0.5	A+
		White	Hispanic	8	17.59	2.20	0.87	0.3	A+
B	92	Male	Female	8	33.72	4.21	0.90	0.2	A+
		White	Black	8	35.71	4.46	0.88	0.3	A+
		White	Hispanic	8	13.78	1.72	0.87	0.3	A+
B	93	Male	Female	8	105.30	13.16	1.12	-0.3	A-
		White	Black	8	49.95	6.24	1.26	-0.5	A-
		White	Hispanic	8	44.20	5.52	1.32	-0.7	A-
B	94	Male	Female	8	16.99	2.12	1.07	-0.2	A-
		White	Black	8	43.72	5.46	1.19	-0.4	A-
		White	Hispanic	8	15.37	1.92	1.11	-0.3	A-
B	95	Male	Female	8	15.92	1.99	1.05	-0.1	A-
		White	Black	8	114.30	14.29	1.40	-0.8	A-
		White	Hispanic	8	12.67	1.58	1.14	-0.3	A-
B	96	Male	Female	8	20.83	2.60	0.91	0.2	A+
		White	Black	8	36.53	4.57	0.88	0.3	A+
		White	Hispanic	8	39.21	4.90	0.67	0.9	A+
B	97	Male	Female	8	16.99	2.12	1.02	-0.1	A-
		White	Black	8	11.73	1.47	1.03	-0.1	A-
		White	Hispanic	8	9.31	1.16	0.88	0.3	A+
B	98	Male	Female	8	37.49	4.69	1.08	-0.2	A-
		White	Black	8	15.09	1.89	1.05	-0.1	A-
		White	Hispanic	8	3.97	0.50	0.97	0.1	A+
B	99	Male	Female	8	285.39	35.67	1.58	-1.1	B-
		White	Black	8	145.80	18.22	1.55	-1.0	B-
		White	Hispanic	8	44.85	5.61	1.56	-1.0	B-
B	100	Male	Female	8	36.68	4.58	0.89	0.3	A+
		White	Black	8	16.10	2.01	0.94	0.2	A+
		White	Hispanic	8	7.40	0.93	1.06	-0.1	A-
B	101	Male	Female	8	534.86	66.86	1.67	-1.2	B-
		White	Black	8	200.91	25.11	1.57	-1.1	B-
		White	Hispanic	8	78.11	9.76	1.56	-1.1	B-
B	102	Male	Female	8	16.04	2.00	0.95	0.1	A+
		White	Black	8	53.28	6.66	1.27	-0.6	A-
		White	Hispanic	8	13.49	1.69	1.18	-0.4	A-
B	103	Male	Female	8	75.63	9.45	1.22	-0.5	A-
		White	Black	8	128.91	16.11	1.48	-0.9	A-
		White	Hispanic	8	77.05	9.63	1.80	-1.4	B-
B	104	Male	Female	8	53.08	6.64	1.02	0.0	A-
		White	Black	8	20.38	2.55	1.09	-0.2	A-
		White	Hispanic	8	10.92	1.36	0.97	0.1	A+
B	105	Male	Female	8	122.67	15.33	1.30	-0.6	A-
		White	Black	8	380.23	47.53	1.96	-1.6	C-
		White	Hispanic	8	118.00	14.75	1.77	-1.3	B-

Appendix R(a): Grade Five Reading

Between Group DIF Analysis -- Multiple Choice Items

Form	Seq	Group Reference	Focal	d.f.	Chi Squared	Mean Square	Odds Ratio	Effect	Code
B	106	Male	Female	8	96.55	12.07	1.21	-0.4	A-
		White	Black	8	18.80	2.35	1.06	-0.1	A-
		White	Hispanic	8	12.01	1.50	1.03	-0.1	A-
B	107	Male	Female	8	38.08	4.76	1.08	-0.2	A-
		White	Black	8	40.06	5.01	1.13	-0.3	A-
		White	Hispanic	8	13.43	1.68	0.93	0.2	A+
B	108	Male	Female	8	36.04	4.50	1.00	0.0	A-
		White	Black	8	24.35	3.04	0.99	0.0	A+
		White	Hispanic	8	8.78	1.10	0.93	0.2	A+
B	109	Male	Female	8	67.32	8.42	0.83	0.4	A+
		White	Black	8	31.94	3.99	1.08	-0.2	A-
		White	Hispanic	8	15.31	1.91	1.09	-0.2	A-
C	84	Male	Female	8	170.18	21.27	1.40	-0.8	A-
		White	Black	8	1174.06	146.76	2.82	-2.4	C-
		White	Hispanic	8	391.77	48.97	2.96	-2.6	C-
C	85	Male	Female	8	101.18	12.65	1.25	-0.5	A-
		White	Black	8	33.86	4.23	1.18	-0.4	A-
		White	Hispanic	8	9.46	1.18	1.13	-0.3	A-
C	86	Male	Female	8	15.23	1.90	0.99	0.0	A+
		White	Black	8	8.27	1.03	1.04	-0.1	A-
		White	Hispanic	8	8.11	1.01	1.02	0.0	A-
C	87	Male	Female	8	184.86	23.11	1.34	-0.7	A-
		White	Black	8	34.87	4.36	1.05	-0.1	A-
		White	Hispanic	8	27.31	3.41	1.03	-0.1	A-
C	88	Male	Female	8	290.24	36.28	1.46	-0.9	A-
		White	Black	8	209.15	26.14	1.67	-1.2	B-
		White	Hispanic	8	66.37	8.30	1.56	-1.0	B-
C	89	Male	Female	8	73.47	9.18	1.21	-0.5	A-
		White	Black	8	9.40	1.18	1.03	-0.1	A-
		White	Hispanic	8	10.38	1.30	0.91	0.2	A+
C	90	Male	Female	8	37.54	4.69	0.97	0.1	A+
		White	Black	8	12.76	1.60	0.98	0.0	A+
		White	Hispanic	8	21.32	2.66	1.23	-0.5	A-
C	91	Male	Female	8	111.52	13.94	1.28	-0.6	A-
		White	Black	8	12.70	1.59	1.11	-0.2	A-
		White	Hispanic	8	50.85	6.36	1.40	-0.8	A-
C	92	Male	Female	8	235.21	29.40	1.23	-0.5	A-
		White	Black	8	29.09	3.64	0.93	0.2	A+
		White	Hispanic	8	18.39	2.30	0.91	0.2	A+
C	93	Male	Female	8	43.42	5.43	1.09	-0.2	A-
		White	Black	8	10.80	1.35	0.95	0.1	A+
		White	Hispanic	8	52.96	6.62	1.24	-0.5	A-
C	94	Male	Female	8	155.75	19.47	1.29	-0.6	A-
		White	Black	8	118.04	14.76	1.45	-0.9	A-
		White	Hispanic	8	47.59	5.95	1.45	-0.9	A-
C	95	Male	Female	8	17.31	2.16	1.00	0.0	A+
		White	Black	8	47.75	5.97	0.83	0.4	A+
		White	Hispanic	8	31.36	3.92	0.75	0.7	A+

Appendix R(a): Grade Five Reading

Between Group DIF Analysis -- Multiple Choice Items

Form	Seq	Group Reference	Focal	d.f.	Chi Squared	Mean Square	Odds Ratio	Effect	Code
C	96	Male	Female	8	66.40	8.30	0.84	0.4	A+
		White	Black	8	22.54	2.82	1.03	-0.1	A-
		White	Hispanic	8	13.04	1.63	0.93	0.2	A+
C	97	Male	Female	8	45.75	5.72	1.14	-0.3	A-
		White	Black	8	24.27	3.03	0.89	0.3	A+
		White	Hispanic	8	33.76	4.22	1.25	-0.5	A-
C	98	Male	Female	8	21.52	2.69	1.01	0.0	A-
		White	Black	8	94.50	11.81	1.27	-0.6	A-
		White	Hispanic	8	16.61	2.08	1.16	-0.3	A-
C	99	Male	Female	8	20.22	2.53	0.89	0.3	A+
		White	Black	8	38.00	4.75	0.83	0.4	A+
		White	Hispanic	8	9.50	1.19	0.87	0.3	A+
C	100	Male	Female	8	18.88	2.36	1.03	-0.1	A-
		White	Black	8	14.20	1.78	1.03	-0.1	A-
		White	Hispanic	8	11.68	1.46	1.10	-0.2	A-
C	101	Male	Female	8	64.70	8.09	0.81	0.5	A+
		White	Black	8	13.23	1.65	0.95	0.1	A+
		White	Hispanic	8	2.30	0.29	1.03	-0.1	A-
C	102	Male	Female	8	86.93	10.87	0.86	0.3	A+
		White	Black	8	17.97	2.25	0.90	0.3	A+
		White	Hispanic	8	13.41	1.68	0.95	0.1	A+
C	103	Male	Female	8	159.44	19.93	1.28	-0.6	A-
		White	Black	8	17.22	2.15	0.89	0.3	A+
		White	Hispanic	8	23.98	3.00	0.79	0.6	A+
C	104	Male	Female	8	40.50	5.06	1.17	-0.4	A-
		White	Black	8	84.06	10.51	1.34	-0.7	A-
		White	Hispanic	8	36.32	4.54	1.39	-0.8	A-
C	105	Male	Female	8	109.15	13.64	1.16	-0.4	A-
		White	Black	8	47.80	5.97	1.21	-0.5	A-
		White	Hispanic	8	7.23	0.90	1.19	-0.4	A-
C	106	Male	Female	8	374.39	46.80	1.40	-0.8	A-
		White	Black	8	67.54	8.44	1.27	-0.6	A-
		White	Hispanic	8	12.80	1.60	1.15	-0.3	A-
C	107	Male	Female	8	141.54	17.69	0.82	0.5	A+
		White	Black	8	36.74	4.59	1.21	-0.4	A-
		White	Hispanic	8	12.13	1.52	1.17	-0.4	A-
C	108	Male	Female	8	29.95	3.74	0.94	0.2	A+
		White	Black	8	15.12	1.89	0.93	0.2	A+
		White	Hispanic	8	16.54	2.07	0.79	0.6	A+
C	109	Male	Female	8	62.06	7.76	0.86	0.4	A+
		White	Black	8	12.31	1.54	0.94	0.1	A+
		White	Hispanic	8	17.29	2.16	0.85	0.4	A+
D	84	Male	Female	8	59.64	7.46	1.15	-0.3	A-
		White	Black	8	45.64	5.71	0.89	0.3	A+
		White	Hispanic	8	33.32	4.16	1.32	-0.6	A-
D	85	Male	Female	8	4.68	0.59	1.02	-0.1	A-
		White	Black	8	44.58	5.57	1.23	-0.5	A-
		White	Hispanic	8	14.75	1.84	1.20	-0.4	A-

Appendix R(a): Grade Five Reading

Between Group DIF Analysis -- Multiple Choice Items

Form	Seq	Group Reference	Focal	d.f.	Chi Squared	Mean Square	Odds Ratio	Effect	Code
D	86	Male	Female	8	73.84	9.23	0.79	0.6	A+
		White	Black	8	76.04	9.51	0.73	0.7	A+
		White	Hispanic	8	20.11	2.51	0.83	0.4	A+
D	87	Male	Female	8	20.57	2.57	1.05	-0.1	A-
		White	Black	8	9.88	1.24	1.07	-0.2	A-
		White	Hispanic	8	6.42	0.80	1.05	-0.1	A-
D	88	Male	Female	8	45.72	5.72	0.85	0.4	A+
		White	Black	8	13.75	1.72	0.89	0.3	A+
		White	Hispanic	8	26.32	3.29	0.84	0.4	A+
D	89	Male	Female	8	98.77	12.35	0.81	0.5	A+
		White	Black	8	17.66	2.21	0.89	0.3	A+
		White	Hispanic	8	13.31	1.66	0.88	0.3	A+
D	90	Male	Female	8	141.94	17.74	1.24	-0.5	A-
		White	Black	8	54.64	6.83	0.78	0.6	A+
		White	Hispanic	8	24.86	3.11	0.85	0.4	A+
D	91	Male	Female	8	38.22	4.78	1.13	-0.3	A-
		White	Black	8	45.78	5.72	1.24	-0.5	A-
		White	Hispanic	8	28.13	3.52	1.43	-0.8	A-
D	92	Male	Female	8	59.01	7.38	1.12	-0.3	A-
		White	Black	8	18.88	2.36	1.08	-0.2	A-
		White	Hispanic	8	4.46	0.56	1.06	-0.1	A-
D	93	Male	Female	8	250.05	31.26	1.27	-0.6	A-
		White	Black	8	56.01	7.00	1.13	-0.3	A-
		White	Hispanic	8	22.02	2.75	1.11	-0.2	A-
D	94	Male	Female	8	142.78	17.85	0.83	0.4	A+
		White	Black	8	46.57	5.82	1.22	-0.5	A-
		White	Hispanic	8	7.24	0.90	1.12	-0.3	A-
D	95	Male	Female	8	8.48	1.06	0.97	0.1	A+
		White	Black	8	42.60	5.33	0.83	0.4	A+
		White	Hispanic	8	10.15	1.27	0.85	0.4	A+
D	96	Male	Female	8	20.19	2.52	0.92	0.2	A+
		White	Black	8	9.12	1.14	0.94	0.2	A+
		White	Hispanic	8	7.19	0.90	0.88	0.3	A+
D	97	Male	Female	8	114.12	14.27	1.39	-0.8	A-
		White	Black	8	1011.88	126.48	2.67	-2.3	C-
		White	Hispanic	8	304.62	38.08	2.65	-2.3	C-
D	98	Male	Female	8	44.33	5.54	1.14	-0.3	A-
		White	Black	8	11.82	1.48	1.05	-0.1	A-
		White	Hispanic	8	9.11	1.14	1.17	-0.4	A-
D	99	Male	Female	8	10.37	1.30	0.99	0.0	A+
		White	Black	8	23.26	2.91	1.12	-0.3	A-
		White	Hispanic	8	14.95	1.87	1.13	-0.3	A-
D	100	Male	Female	8	189.19	23.65	1.32	-0.6	A-
		White	Black	8	31.36	3.92	1.11	-0.3	A-
		White	Hispanic	8	25.89	3.24	1.21	-0.5	A-
D	101	Male	Female	8	141.00	17.63	1.29	-0.6	A-
		White	Black	8	123.48	15.43	1.48	-0.9	A-
		White	Hispanic	8	10.07	1.26	1.15	-0.3	A-

Appendix R(a): Grade Five Reading

Between Group DIF Analysis -- Multiple Choice Items

Form	Seq	Group Reference	Focal	d.f.	Chi Squared	Mean Square	Odds Ratio	Effect	Code
D	102	Male	Female	8	43.24	5.40	1.11	-0.2	A-
		White	Black	8	11.24	1.40	1.03	-0.1	A-
		White	Hispanic	8	8.39	1.05	1.07	-0.2	A-
D	103	Male	Female	8	35.47	4.43	1.01	0.0	A-
		White	Black	8	17.23	2.15	1.02	-0.1	A-
		White	Hispanic	8	6.02	0.75	1.13	-0.3	A-
D	104	Male	Female	8	38.86	4.86	1.11	-0.3	A-
		White	Black	8	25.72	3.22	1.04	-0.1	A-
		White	Hispanic	8	20.20	2.52	1.24	-0.5	A-
D	105	Male	Female	8	368.48	46.06	1.30	-0.6	A-
		White	Black	8	39.61	4.95	0.96	0.1	A+
		White	Hispanic	8	12.84	1.61	1.01	0.0	A-
D	106	Male	Female	8	51.42	6.43	1.14	-0.3	A-
		White	Black	8	7.47	0.93	1.08	-0.2	A-
		White	Hispanic	8	45.44	5.68	1.44	-0.9	A-
D	107	Male	Female	8	138.65	17.33	1.26	-0.5	A-
		White	Black	8	157.03	19.63	1.53	-1.0	A-
		White	Hispanic	8	23.46	2.93	1.29	-0.6	A-
D	108	Male	Female	8	26.32	3.29	0.98	0.0	A+
		White	Black	8	22.30	2.79	0.92	0.2	A+
		White	Hispanic	8	11.51	1.44	0.84	0.4	A+
D	109	Male	Female	8	190.87	23.86	0.72	0.8	A+
		White	Black	8	31.29	3.91	0.95	0.1	A+
		White	Hispanic	8	4.22	0.53	0.98	0.1	A+
E	84	Male	Female	8	102.87	12.86	1.16	-0.4	A-
		White	Black	8	11.31	1.41	1.01	0.0	A-
		White	Hispanic	8	5.48	0.68	0.91	0.2	A+
E	85	Male	Female	8	78.62	9.83	1.13	-0.3	A-
		White	Black	8	35.96	4.49	0.99	0.0	A+
		White	Hispanic	8	13.57	1.70	1.00	0.0	A
E	86	Male	Female	8	106.93	13.37	1.20	-0.4	A-
		White	Black	8	20.42	2.55	1.13	-0.3	A-
		White	Hispanic	8	18.55	2.32	1.21	-0.5	A-
E	87	Male	Female	8	119.95	14.99	1.32	-0.7	A-
		White	Black	8	69.06	8.63	1.29	-0.6	A-
		White	Hispanic	8	39.06	4.88	1.43	-0.8	A-
E	88	Male	Female	8	311.82	38.98	1.47	-0.9	A-
		White	Black	8	281.37	35.17	1.68	-1.2	B-
		White	Hispanic	8	162.89	20.36	1.92	-1.5	C-
E	89	Male	Female	8	82.91	10.36	1.08	-0.2	A-
		White	Black	8	18.19	2.27	1.03	-0.1	A-
		White	Hispanic	8	5.55	0.69	1.00	0.0	A+
E	90	Male	Female	8	20.79	2.60	0.94	0.1	A+
		White	Black	8	31.47	3.93	0.99	0.0	A+
		White	Hispanic	8	44.49	5.56	1.19	-0.4	A-
E	91	Male	Female	8	87.08	10.88	1.21	-0.4	A-
		White	Black	8	7.87	0.98	1.06	-0.1	A-
		White	Hispanic	8	25.00	3.13	1.20	-0.4	A-

Appendix R(a): Grade Five Reading

Between Group DIF Analysis -- Multiple Choice Items

Form	Seq	Group Reference	Focal	d.f.	Chi Squared	Mean Square	Odds Ratio	Effect	Code
E	92	Male	Female	8	60.41	7.55	1.15	-0.3	A-
		White	Black	8	6.17	0.77	0.93	0.2	A+
		White	Hispanic	8	6.81	0.85	0.98	0.0	A+
E	93	Male	Female	8	156.92	19.62	0.78	0.6	A+
		White	Black	8	43.08	5.38	0.91	0.2	A+
		White	Hispanic	8	42.79	5.35	0.81	0.5	A+
E	94	Male	Female	8	152.33	19.04	1.23	-0.5	A-
		White	Black	8	22.54	2.82	0.96	0.1	A+
		White	Hispanic	8	6.44	0.80	1.06	-0.1	A-
E	95	Male	Female	8	130.55	16.32	1.34	-0.7	A-
		White	Black	8	1117.13	139.64	3.00	-2.6	C-
		White	Hispanic	8	472.24	59.03	2.98	-2.6	C-
E	96	Male	Female	8	17.16	2.14	1.05	-0.1	A-
		White	Black	8	37.44	4.68	0.91	0.2	A+
		White	Hispanic	8	21.55	2.69	0.79	0.6	A+
E	97	Male	Female	8	6.78	0.85	0.97	0.1	A+
		White	Black	8	15.95	1.99	1.07	-0.2	A-
		White	Hispanic	8	10.44	1.31	0.95	0.1	A+
E	98	Male	Female	8	19.45	2.43	0.92	0.2	A+
		White	Black	8	80.74	10.09	1.22	-0.5	A-
		White	Hispanic	8	20.25	2.53	1.05	-0.1	A-
E	99	Male	Female	8	67.64	8.46	0.90	0.2	A+
		White	Black	8	34.16	4.27	0.94	0.2	A+
		White	Hispanic	8	11.51	1.44	0.92	0.2	A+
E	100	Male	Female	8	#NAME?	#NAME?	#NAME?	0.0	A+
		White	Black	8	#NAME?	#NAME?	#NAME?	0.0	A+
		White	Hispanic	8	#NAME?	#NAME?	#NAME?	0.0	A+
E	101	Male	Female	8	12.68	1.58	1.06	-0.1	A-
		White	Black	8	12.21	1.53	0.96	0.1	A+
		White	Hispanic	8	8.03	1.00	1.07	-0.2	A-
E	102	Male	Female	8	18.51	2.31	1.01	0.0	A-
		White	Black	8	165.16	20.64	1.65	-1.2	B-
		White	Hispanic	8	51.25	6.41	1.53	-1.0	A-
E	103	Male	Female	8	43.48	5.43	1.07	-0.1	A-
		White	Black	8	38.68	4.83	1.21	-0.4	A-
		White	Hispanic	8	6.59	0.82	1.15	-0.3	A-
E	104	Male	Female	8	51.89	6.49	0.82	0.5	A+
		White	Black	8	11.44	1.43	0.89	0.3	A+
		White	Hispanic	8	9.96	1.25	0.88	0.3	A+
E	105	Male	Female	8	48.77	6.10	1.14	-0.3	A-
		White	Black	8	21.44	2.68	0.89	0.3	A+
		White	Hispanic	8	8.44	1.06	0.84	0.4	A+
E	106	Male	Female	8	46.42	5.80	1.13	-0.3	A-
		White	Black	8	9.81	1.23	1.01	0.0	A-
		White	Hispanic	8	17.25	2.16	1.21	-0.4	A-
E	107	Male	Female	8	14.31	1.79	0.96	0.1	A+
		White	Black	8	13.72	1.71	0.90	0.3	A+
		White	Hispanic	8	4.42	0.55	0.96	0.1	A+

Appendix R(a): Grade Five Reading

Between Group DIF Analysis -- Multiple Choice Items

Form	Seq	Group Reference	Focal	d.f.	Chi Squared	Mean Square	Odds Ratio	Effect	Code
E	108	Male	Female	8	87.90	10.99	0.81	0.5	A+
		White	Black	8	14.17	1.77	0.88	0.3	A+
		White	Hispanic	8	5.90	0.74	0.98	0.0	A+
E	109	Male	Female	8	84.82	10.60	1.24	-0.5	A-
		White	Black	8	83.77	10.47	1.34	-0.7	A-
		White	Hispanic	8	9.34	1.17	1.17	-0.4	A-
F	84	Male	Female	8	22.05	2.76	0.91	0.2	A+
		White	Black	8	25.28	3.16	0.94	0.2	A+
		White	Hispanic	8	5.45	0.68	1.00	0.0	A
F	85	Male	Female	8	18.75	2.34	1.03	-0.1	A-
		White	Black	8	52.32	6.54	1.24	-0.5	A-
		White	Hispanic	8	9.97	1.25	1.10	-0.2	A-
F	86	Male	Female	8	32.92	4.12	1.01	0.0	A-
		White	Black	8	9.38	1.17	1.00	0.0	A+
		White	Hispanic	8	22.10	2.76	0.98	0.0	A+
F	87	Male	Female	8	#NAME?	#NAME?	#NAME?	0.0	A+
		White	Black	8	#NAME?	#NAME?	#NAME?	0.0	A+
		White	Hispanic	8	#NAME?	#NAME?	#NAME?	0.0	A+
F	88	Male	Female	8	35.99	4.50	1.11	-0.2	A-
		White	Black	8	11.45	1.43	0.94	0.1	A+
		White	Hispanic	8	10.87	1.36	0.92	0.2	A+
F	89	Male	Female	8	20.14	2.52	0.97	0.1	A+
		White	Black	8	141.76	17.72	1.56	-1.0	B-
		White	Hispanic	8	46.44	5.81	1.54	-1.0	B-
F	90	Male	Female	8	15.91	1.99	1.02	-0.1	A-
		White	Black	8	31.81	3.98	1.13	-0.3	A-
		White	Hispanic	8	9.43	1.18	1.10	-0.2	A-
F	91	Male	Female	8	47.45	5.93	0.77	0.6	A+
		White	Black	8	72.58	9.07	0.72	0.8	A+
		White	Hispanic	8	3.55	0.44	0.93	0.2	A+
F	92	Male	Female	8	27.06	3.38	1.10	-0.2	A-
		White	Black	8	36.63	4.58	0.83	0.4	A+
		White	Hispanic	8	4.86	0.61	1.00	0.0	A
F	93	Male	Female	8	49.73	6.22	1.16	-0.3	A-
		White	Black	8	22.07	2.76	0.91	0.2	A+
		White	Hispanic	8	13.12	1.64	1.18	-0.4	A-
F	94	Male	Female	8	11.34	1.42	0.99	0.0	A+
		White	Black	8	12.88	1.61	0.92	0.2	A+
		White	Hispanic	8	19.20	2.40	0.82	0.5	A+
F	95	Male	Female	8	32.75	4.09	0.89	0.3	A+
		White	Black	8	19.26	2.41	0.88	0.3	A+
		White	Hispanic	8	4.03	0.50	0.98	0.1	A+
F	96	Male	Female	8	114.67	14.33	1.22	-0.5	A-
		White	Black	8	28.70	3.59	1.13	-0.3	A-
		White	Hispanic	8	8.68	1.09	1.18	-0.4	A-
F	97	Male	Female	8	60.88	7.61	1.07	-0.2	A-
		White	Black	8	24.96	3.12	1.06	-0.1	A-
		White	Hispanic	8	11.10	1.39	0.90	0.2	A+

Appendix R(a): Grade Five Reading

Between Group DIF Analysis -- Multiple Choice Items

Form	Seq	Group Reference	Focal	d.f.	Chi Squared	Mean Square	Odds Ratio	Effect	Code
F	98	Male	Female	8	175.54	21.94	1.27	-0.6	A-
		White	Black	8	15.68	1.96	0.98	0.1	A+
		White	Hispanic	8	11.09	1.39	0.95	0.1	A+
F	99	Male	Female	8	63.62	7.95	1.08	-0.2	A-
		White	Black	8	7.47	0.93	1.04	-0.1	A-
		White	Hispanic	8	17.37	2.17	0.88	0.3	A+
F	100	Male	Female	8	96.30	12.04	1.19	-0.4	A-
		White	Black	8	66.32	8.29	1.28	-0.6	A-
		White	Hispanic	8	7.16	0.90	1.14	-0.3	A-
F	101	Male	Female	8	136.56	17.07	1.28	-0.6	A-
		White	Black	8	204.10	25.51	1.59	-1.1	B-
		White	Hispanic	8	232.54	29.07	2.10	-1.7	C-
F	102	Male	Female	8	110.66	13.83	1.22	-0.5	A-
		White	Black	8	23.58	2.95	1.09	-0.2	A-
		White	Hispanic	8	8.69	1.09	1.08	-0.2	A-
F	103	Male	Female	8	5.64	0.71	0.97	0.1	A+
		White	Black	8	4.24	0.53	1.05	-0.1	A-
		White	Hispanic	8	14.13	1.77	1.14	-0.3	A-
F	104	Male	Female	8	147.19	18.40	1.27	-0.6	A-
		White	Black	8	5.68	0.71	0.97	0.1	A+
		White	Hispanic	8	2.09	0.26	1.04	-0.1	A-
F	105	Male	Female	8	73.44	9.18	1.18	-0.4	A-
		White	Black	8	3.03	0.38	1.04	-0.1	A-
		White	Hispanic	8	12.38	1.55	1.12	-0.3	A-
F	106	Male	Female	8	165.77	20.72	0.78	0.6	A+
		White	Black	8	17.01	2.13	1.02	0.0	A-
		White	Hispanic	8	11.21	1.40	1.07	-0.2	A-
F	107	Male	Female	8	99.41	12.43	1.22	-0.5	A-
		White	Black	8	13.67	1.71	1.10	-0.2	A-
		White	Hispanic	8	26.80	3.35	1.16	-0.3	A-
F	108	Male	Female	8	57.92	7.24	1.26	-0.5	A-
		White	Black	8	958.69	119.84	2.57	-2.2	C-
		White	Hispanic	8	224.38	28.05	2.30	-2.0	C-
F	109	Male	Female	8	17.99	2.25	0.97	0.1	A+
		White	Black	8	23.29	2.91	0.94	0.2	A+
		White	Hispanic	8	12.69	1.59	0.83	0.4	A+

Appendix R(b): Grade Five Reading
Between Group DIF Analysis – Constructed Response Items

Item Characteristic Curves – C+/- Items

Reference Group = Male, Focal Group = Female

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Constructed Response Seq Ref  Focal  d.f. M     SMD     SE      Z(SMD) Code
         A05R00M_081 110  1     2     8   4   0.111   0.008      13.7    C+
0____________1___________2____________3___________4 ****FOCAL****  **REFERENCE**
|                         |       *+                |  2.75   1624    2.63   1372
|                         |    *+                   |  2.49   1500    2.41   1340
|                         |   *+                    |  2.41   1473    2.29   1429
|                         | *++                     |  2.32   1552    2.19   1677
|                         | *+                      |  2.24   1496    2.14   1585
|                        *++                        |  2.13   1412    2.03   1513
|                     *+|                           |  1.95   1373    1.86   1472
|              *+       |                           |  1.30   1052    1.17   1708
0____________1___________2____________3___________4  Right Total    Right Total
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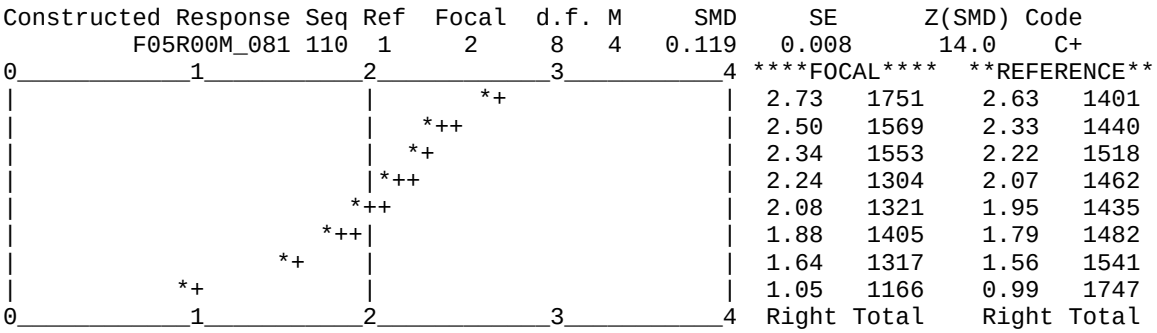
Constructed Response Seq Ref  Focal  d.f. M     SMD     SE      Z(SMD) Code
         B05R00M_081 110  1     2     8   4   0.086   0.008      10.6    C+
0____________1___________2____________3___________4 ****FOCAL****  **REFERENCE**
|                         |   *+                    |  2.40   1563    2.34   1343
|                        *++                        |  2.12   1443    2.02   1380
|                       *+                         |  1.98   1452    1.89   1423
|                     *+ |                          |  1.84   1338    1.77   1358
|                    *+  |                          |  1.77   1342    1.67   1482
|                  *+    |                          |  1.63   1511    1.54   1550
|                *+      |                          |  1.47   1499    1.40   1698
|           *+           |                          |  1.07   1240    0.97   1928
0____________1___________2____________3___________4  Right Total    Right Total
```

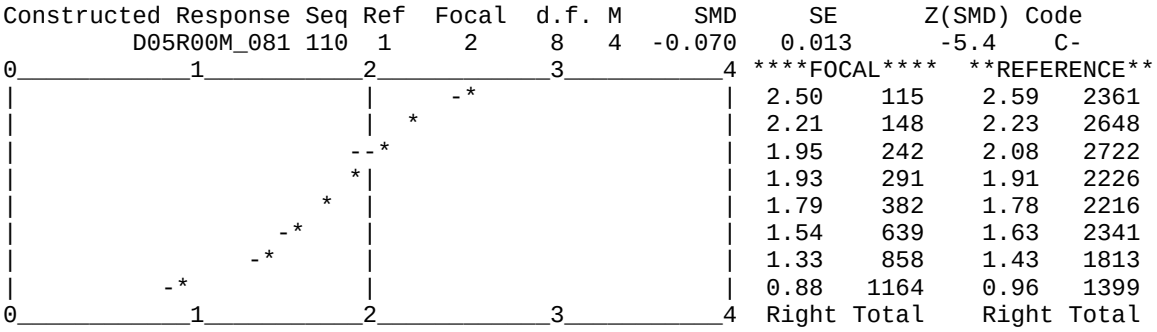
```
Constructed Response Seq Ref  Focal  d.f. M     SMD     SE      Z(SMD) Code
         C05R00M_081 110  1     2     8   4   0.136   0.008      16.5    C+
0____________1___________2____________3___________4 ****FOCAL****  **REFERENCE**
|                         |       *++               |  2.78   1557    2.62   1187
|                         |   *++                   |  2.48   1552    2.35   1466
|                         | *++                     |  2.35   1597    2.20   1521
|                         |*++                      |  2.24   1396    2.10   1410
|                         *++                       |  2.14   1335    2.01   1497
|                        *+                         |  2.00   1476    1.90   1663
|                     *+ |                          |  1.85   1365    1.72   1652
|              *++       |                          |  1.26   1078    1.14   1762
0____________1___________2____________3___________4  Right Total    Right Total
```

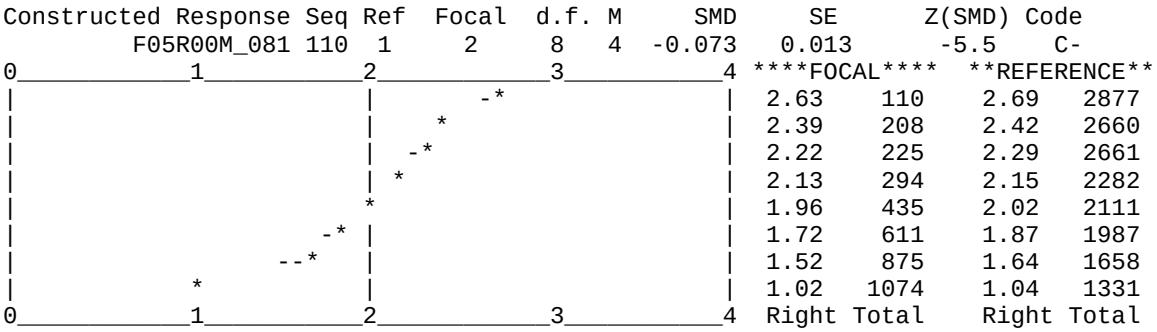
```
Constructed Response Seq Ref  Focal  d.f. M     SMD     SE      Z(SMD) Code
         E05R00M_081 110  1     2     8   4   0.148   0.008      18.7    C+
0____________1___________2____________3___________4 ****FOCAL****  **REFERENCE**
|                         |      *+++               |  2.77   1756    2.58   1320
|                         |   *++                   |  2.51   1543    2.31   1451
|                         | *++                     |  2.30   1580    2.16   1506
|                         *++                       |  2.18   1364    2.03   1460
|                        *+                         |  2.04   1398    1.89   1468
|                     *+ |                          |  1.88   1327    1.77   1560
|                   *+   |                          |  1.69   1329    1.58   1552
|           *+           |                          |  1.15   1077    1.07   1818
0____________1___________2____________3___________4  Right Total    Right Total
```

Appendix R(b): Grade Five Reading
Between Group DIF Analysis – Constructed Response Items



Reference Group = White, Focal Group = Black





Appendix R(b): Grade Five Reading

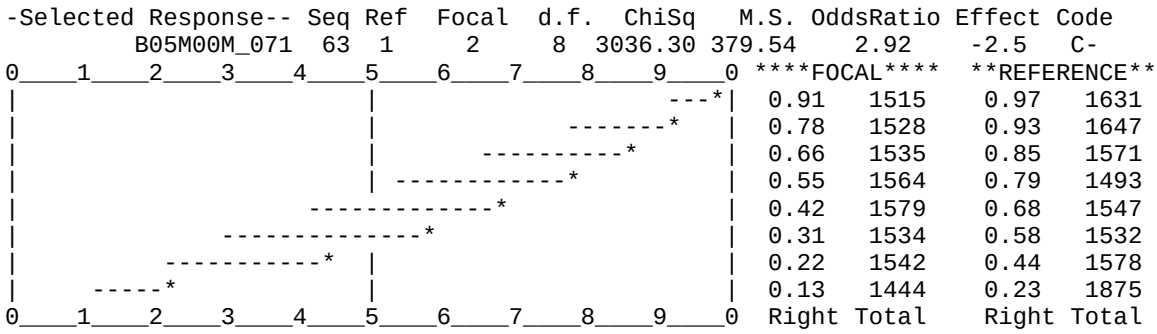
Between Group DIF Analysis -- Constructed Response Items

Form	Seq	Reference	Focal	d.f.	Max Score	SMD	S.E.	Effect	Code
A	110	Male	Female	8	4	0.111	0.008	13.7	CC+
		White	Black	8	4	-0.026	0.013	-1.9	AA-
		White	Hispanic	8	4	-0.007	0.020	-0.4	AA-
B	110	Male	Female	8	4	0.086	0.008	10.6	CC+
		White	Black	8	4	-0.018	0.012	-1.5	AA-
		White	Hispanic	8	4	0.003	0.018	0.2	AA+
C	110	Male	Female	8	4	0.136	0.008	16.5	CC+
		White	Black	8	4	-0.016	0.013	-1.2	AA-
		White	Hispanic	8	4	0.021	0.019	1.1	AA+
D	110	Male	Female	8	4	0.010	0.009	1.2	AA+
		White	Black	8	4	-0.070	0.013	-5.4	CC-
		White	Hispanic	8	4	-0.089	0.020	-4.4	BB-
E	110	Male	Female	8	4	0.148	0.008	18.7	CC+
		White	Black	8	4	0.026	0.012	2.2	BB+
		White	Hispanic	8	4	-0.020	0.018	-1.1	AA-
F	110	Male	Female	8	4	0.119	0.008	14.0	CC+
		White	Black	8	4	-0.073	0.013	-5.5	CC-
		White	Hispanic	8	4	-0.041	0.021	-2.0	AA-

Appendix S(a): Grade Eight Mathematics
Between Group DIF Analysis – Multiple Choice Items

Item Characteristic Curves – C+/- Items

Reference Group = Male, Focal Group = Female



Appendix S(a): Grade Eight Mathematics

Between Group DIF Analysis -- Multiple Choice Items

Form	Seq	Group Reference	Focal	d.f.	Chi Squared	Mean Square	Odds Ratio	Effect	Code
A	63	Male	Female	8	31.43	3.93	0.97	0.1	A+
		White	Black	8	71.18	8.90	1.33	-0.7	A-
		White	Hispanic	8	25.34	3.17	1.25	-0.5	A-
A	64	Male	Female	8	476.03	59.50	1.66	-1.2	B-
		White	Black	8	70.06	8.76	1.19	-0.4	A-
		White	Hispanic	8	8.74	1.09	1.13	-0.3	A-
A	65	Male	Female	8	49.04	6.13	1.04	-0.1	A-
		White	Black	8	14.58	1.82	1.11	-0.2	A-
		White	Hispanic	8	6.98	0.87	1.04	-0.1	A-
A	66	Male	Female	8	193.32	24.16	0.75	0.7	A+
		White	Black	8	11.31	1.41	0.95	0.1	A+
		White	Hispanic	8	5.51	0.69	0.97	0.1	A+
A	67	Male	Female	8	64.16	8.02	0.88	0.3	A+
		White	Black	8	64.17	8.02	0.76	0.7	A+
		White	Hispanic	8	34.60	4.33	0.72	0.8	A+
A	68	Male	Female	8	79.64	9.96	0.86	0.4	A+
		White	Black	8	14.44	1.80	0.93	0.2	A+
		White	Hispanic	8	13.99	1.75	0.88	0.3	A+
A	69	Male	Female	8	280.19	35.02	1.41	-0.8	A-
		White	Black	8	36.80	4.60	1.09	-0.2	A-
		White	Hispanic	8	10.42	1.30	0.98	0.0	A+
A	70	Male	Female	8	43.11	5.39	0.91	0.2	A+
		White	Black	8	15.99	2.00	0.89	0.3	A+
		White	Hispanic	8	8.56	1.07	0.88	0.3	A+
A	71	Male	Female	8	130.25	16.28	0.77	0.6	A+
		White	Black	8	14.09	1.76	1.03	-0.1	A-
		White	Hispanic	8	13.64	1.70	1.12	-0.3	A-
A	72	Male	Female	8	114.75	14.34	1.18	-0.4	A-
		White	Black	8	44.42	5.55	1.26	-0.5	A-
		White	Hispanic	8	19.89	2.49	1.19	-0.4	A-
A	73	Male	Female	8	33.71	4.21	1.10	-0.2	A-
		White	Black	8	10.69	1.34	0.97	0.1	A+
		White	Hispanic	8	13.36	1.67	0.97	0.1	A+
A	74	Male	Female	8	35.86	4.48	0.98	0.0	A+
		White	Black	8	18.29	2.29	1.07	-0.2	A-
		White	Hispanic	8	6.36	0.79	1.11	-0.2	A-
A	75	Male	Female	8	120.44	15.05	1.25	-0.5	A-
		White	Black	8	17.20	2.15	0.91	0.2	A+
		White	Hispanic	8	13.34	1.67	0.83	0.4	A+
A	76	Male	Female	8	70.68	8.84	1.18	-0.4	A-
		White	Black	8	160.02	20.00	1.61	-1.1	B-
		White	Hispanic	8	38.54	4.82	1.41	-0.8	A-
A	77	Male	Female	8	231.12	28.89	1.24	-0.5	A-
		White	Black	8	7.64	0.96	0.98	0.0	A+
		White	Hispanic	8	9.37	1.17	1.04	-0.1	A-
B	63	Male	Female	8	3036.30	379.54	2.92	-2.5	C-
		White	Black	8	145.67	18.21	1.55	-1.0	B-
		White	Hispanic	8	37.89	4.74	1.36	-0.7	A-

Appendix S(a): Grade Eight Mathematics

Between Group DIF Analysis -- Multiple Choice Items

Form	Seq	Group Reference	Focal	d.f.	Chi Squared	Mean Square	Odds Ratio	Effect	Code
B	64	Male	Female	8	59.49	7.44	1.12	-0.3	A-
		White	Black	8	12.32	1.54	1.07	-0.2	A-
		White	Hispanic	8	8.40	1.05	0.90	0.3	A+
B	65	Male	Female	8	94.14	11.77	1.22	-0.5	A-
		White	Black	8	71.74	8.97	1.38	-0.7	A-
		White	Hispanic	8	53.67	6.71	1.56	-1.0	B-
B	66	Male	Female	8	133.95	16.74	0.79	0.5	A+
		White	Black	8	12.82	1.60	0.96	0.1	A+
		White	Hispanic	8	20.47	2.56	0.77	0.6	A+
B	67	Male	Female	8	31.29	3.91	1.08	-0.2	A-
		White	Black	8	31.78	3.97	1.23	-0.5	A-
		White	Hispanic	8	16.50	2.06	1.29	-0.6	A-
B	68	Male	Female	8	52.41	6.55	0.94	0.2	A+
		White	Black	8	23.23	2.90	0.97	0.1	A+
		White	Hispanic	8	7.03	0.88	1.10	-0.2	A-
B	69	Male	Female	8	52.29	6.54	0.91	0.2	A+
		White	Black	8	69.35	8.67	0.85	0.4	A+
		White	Hispanic	8	27.46	3.43	0.77	0.6	A+
B	70	Male	Female	8	110.15	13.77	1.17	-0.4	A-
		White	Black	8	39.45	4.93	0.93	0.2	A+
		White	Hispanic	8	6.12	0.77	0.93	0.2	A+
B	71	Male	Female	8	49.58	6.20	1.03	-0.1	A-
		White	Black	8	26.50	3.31	0.86	0.4	A+
		White	Hispanic	8	14.30	1.79	0.91	0.2	A+
B	72	Male	Female	8	61.65	7.71	0.89	0.3	A+
		White	Black	8	71.77	8.97	0.74	0.7	A+
		White	Hispanic	8	11.90	1.49	0.96	0.1	A+
B	73	Male	Female	8	25.40	3.18	0.97	0.1	A+
		White	Black	8	67.32	8.41	0.76	0.6	A+
		White	Hispanic	8	28.16	3.52	0.80	0.5	A+
B	74	Male	Female	8	73.34	9.17	0.84	0.4	A+
		White	Black	8	8.17	1.02	0.92	0.2	A+
		White	Hispanic	8	17.66	2.21	0.81	0.5	A+
B	75	Male	Female	8	159.00	19.88	1.31	-0.6	A-
		White	Black	8	121.47	15.18	1.44	-0.9	A-
		White	Hispanic	8	7.25	0.91	1.01	0.0	A-
B	76	Male	Female	8	41.62	5.20	1.11	-0.3	A-
		White	Black	8	23.07	2.88	1.14	-0.3	A-
		White	Hispanic	8	6.09	0.76	0.94	0.1	A+
B	77	Male	Female	8	18.11	2.26	1.02	0.0	A-
		White	Black	8	91.79	11.47	0.70	0.8	A+
		White	Hispanic	8	18.64	2.33	0.78	0.6	A+
C	63	Male	Female	8	43.10	5.39	0.99	0.0	A+
		White	Black	8	12.94	1.62	0.92	0.2	A+
		White	Hispanic	8	4.10	0.51	0.95	0.1	A+
C	64	Male	Female	8	68.56	8.57	1.19	-0.4	A-
		White	Black	8	24.71	3.09	1.15	-0.3	A-
		White	Hispanic	8	21.93	2.74	1.26	-0.5	A-

Appendix S(a): Grade Eight Mathematics

Between Group DIF Analysis -- Multiple Choice Items

Form	Seq	Group Reference	Focal	d.f.	Chi Squared	Mean Square	Odds Ratio	Effect	Code
C	65	Male	Female	8	49.45	6.18	0.95	0.1	A+
		White	Black	8	12.28	1.53	0.90	0.2	A+
		White	Hispanic	8	6.02	0.75	1.07	-0.2	A-
C	66	Male	Female	8	380.22	47.53	1.57	-1.1	B-
		White	Black	8	22.02	2.75	1.17	-0.4	A-
		White	Hispanic	8	5.70	0.71	1.06	-0.1	A-
C	67	Male	Female	8	60.20	7.53	1.13	-0.3	A-
		White	Black	8	188.50	23.56	1.59	-1.1	B-
		White	Hispanic	8	87.33	10.92	1.69	-1.2	B-
C	68	Male	Female	8	35.32	4.41	0.93	0.2	A+
		White	Black	8	11.71	1.46	0.95	0.1	A+
		White	Hispanic	8	9.18	1.15	1.02	-0.1	A-
C	69	Male	Female	8	53.53	6.69	1.07	-0.2	A-
		White	Black	8	133.99	16.75	1.46	-0.9	A-
		White	Hispanic	8	52.09	6.51	1.43	-0.8	A-
C	70	Male	Female	8	62.12	7.76	0.90	0.3	A+
		White	Black	8	29.82	3.73	0.84	0.4	A+
		White	Hispanic	8	12.27	1.53	0.94	0.1	A+
C	71	Male	Female	8	187.89	23.49	1.29	-0.6	A-
		White	Black	8	6.43	0.80	0.94	0.1	A+
		White	Hispanic	8	9.84	1.23	0.89	0.3	A+
C	72	Male	Female	8	46.97	5.87	0.98	0.0	A+
		White	Black	8	22.77	2.85	1.03	-0.1	A-
		White	Hispanic	8	5.27	0.66	0.93	0.2	A+
C	73	Male	Female	8	415.47	51.93	1.46	-0.9	A-
		White	Black	8	7.04	0.88	0.96	0.1	A+
		White	Hispanic	8	4.65	0.58	1.00	0.0	A+
C	74	Male	Female	8	48.24	6.03	0.92	0.2	A+
		White	Black	8	40.88	5.11	1.21	-0.4	A-
		White	Hispanic	8	33.38	4.17	1.34	-0.7	A-
C	75	Male	Female	8	89.64	11.20	0.83	0.5	A+
		White	Black	8	141.45	17.68	0.65	1.0	B+
		White	Hispanic	8	23.75	2.97	0.85	0.4	A+
C	76	Male	Female	8	26.56	3.32	0.96	0.1	A+
		White	Black	8	18.02	2.25	0.94	0.1	A+
		White	Hispanic	8	11.35	1.42	1.13	-0.3	A-
C	77	Male	Female	8	274.76	34.34	0.68	0.9	A+
		White	Black	8	47.17	5.90	0.78	0.6	A+
		White	Hispanic	8	5.70	0.71	0.91	0.2	A+
D	63	Male	Female	8	10.75	1.34	0.94	0.1	A+
		White	Black	8	25.61	3.20	1.20	-0.4	A-
		White	Hispanic	8	8.13	1.02	1.17	-0.4	A-
D	64	Male	Female	8	81.63	10.20	1.08	-0.2	A-
		White	Black	8	86.92	10.87	0.84	0.4	A+
		White	Hispanic	8	35.19	4.40	0.80	0.5	A+
D	65	Male	Female	8	130.74	16.34	0.80	0.5	A+
		White	Black	8	15.46	1.93	0.99	0.0	A+
		White	Hispanic	8	17.00	2.12	1.13	-0.3	A-

Appendix S(a): Grade Eight Mathematics

Between Group DIF Analysis -- Multiple Choice Items

Form	Seq	Group Reference	Focal	d.f.	Chi Squared	Mean Square	Odds Ratio	Effect	Code
D	66	Male	Female	8	40.77	5.10	0.88	0.3	A+
		White	Black	8	22.31	2.79	0.95	0.1	A+
		White	Hispanic	8	8.08	1.01	1.11	-0.2	A-
D	67	Male	Female	8	128.88	16.11	0.81	0.5	A+
		White	Black	8	38.97	4.87	0.89	0.3	A+
		White	Hispanic	8	38.79	4.85	1.04	-0.1	A-
D	68	Male	Female	8	37.98	4.75	0.89	0.3	A+
		White	Black	8	35.62	4.45	0.83	0.4	A+
		White	Hispanic	8	2.52	0.32	1.00	0.0	A
D	69	Male	Female	8	48.98	6.12	0.96	0.1	A+
		White	Black	8	14.24	1.78	0.95	0.1	A+
		White	Hispanic	8	9.46	1.18	0.91	0.2	A+
D	70	Male	Female	8	116.48	14.56	1.21	-0.5	A-
		White	Black	8	37.38	4.67	1.18	-0.4	A-
		White	Hispanic	8	7.02	0.88	0.99	0.0	A+
D	71	Male	Female	8	11.03	1.38	1.05	-0.1	A-
		White	Black	8	18.07	2.26	0.85	0.4	A+
		White	Hispanic	8	7.62	0.95	0.86	0.3	A+
D	72	Male	Female	8	69.40	8.67	0.87	0.3	A+
		White	Black	8	61.18	7.65	1.26	-0.6	A-
		White	Hispanic	8	19.96	2.50	1.28	-0.6	A-
D	73	Male	Female	8	70.71	8.84	1.18	-0.4	A-
		White	Black	8	20.44	2.56	0.91	0.2	A+
		White	Hispanic	8	8.13	1.02	0.87	0.3	A+
D	74	Male	Female	8	27.75	3.47	1.04	-0.1	A-
		White	Black	8	8.36	1.04	1.04	-0.1	A-
		White	Hispanic	8	17.60	2.20	1.23	-0.5	A-
D	75	Male	Female	8	135.07	16.88	0.75	0.7	A+
		White	Black	8	50.60	6.33	1.24	-0.5	A-
		White	Hispanic	8	5.54	0.69	1.08	-0.2	A-
D	76	Male	Female	8	19.04	2.38	1.03	-0.1	A-
		White	Black	8	30.56	3.82	0.85	0.4	A+
		White	Hispanic	8	10.27	1.28	0.89	0.3	A+
D	77	Male	Female	8	13.02	1.63	1.03	-0.1	A-
		White	Black	8	19.83	2.48	0.88	0.3	A+
		White	Hispanic	8	16.19	2.02	0.76	0.6	A+
E	63	Male	Female	8	154.37	19.30	0.78	0.6	A+
		White	Black	8	9.22	1.15	1.02	0.0	A-
		White	Hispanic	8	10.03	1.25	0.94	0.1	A+
E	64	Male	Female	8	62.46	7.81	1.17	-0.4	A-
		White	Black	8	27.77	3.47	1.16	-0.4	A-
		White	Hispanic	8	21.02	2.63	1.34	-0.7	A-
E	65	Male	Female	8	66.87	8.36	1.15	-0.3	A-
		White	Black	8	17.36	2.17	0.93	0.2	A+
		White	Hispanic	8	18.10	2.26	0.96	0.1	A+
E	66	Male	Female	8	64.38	8.05	0.88	0.3	A+
		White	Black	8	57.21	7.15	0.79	0.6	A+
		White	Hispanic	8	10.74	1.34	0.89	0.3	A+

Appendix S(a): Grade Eight Mathematics

Between Group DIF Analysis -- Multiple Choice Items

Form	Seq	Group Reference	Focal	d.f.	Chi Squared	Mean Square	Odds Ratio	Effect	Code
E	67	Male	Female	8	58.81	7.35	1.12	-0.3	A-
		White	Black	8	21.06	2.63	1.01	0.0	A-
		White	Hispanic	8	23.91	2.99	0.84	0.4	A+
E	68	Male	Female	8	37.17	4.65	1.02	0.0	A-
		White	Black	8	17.52	2.19	1.06	-0.1	A-
		White	Hispanic	8	22.25	2.78	0.76	0.6	A+
E	69	Male	Female	8	426.73	53.34	1.62	-1.1	B-
		White	Black	8	29.09	3.64	0.80	0.5	A+
		White	Hispanic	8	5.23	0.65	0.91	0.2	A+
E	70	Male	Female	8	19.65	2.46	1.07	-0.2	A-
		White	Black	8	18.65	2.33	0.87	0.3	A+
		White	Hispanic	8	16.43	2.05	0.98	0.0	A+
E	71	Male	Female	8	265.68	33.21	1.36	-0.7	A-
		White	Black	8	9.21	1.15	1.07	-0.2	A-
		White	Hispanic	8	7.53	0.94	0.96	0.1	A+
E	72	Male	Female	8	36.22	4.53	0.97	0.1	A+
		White	Black	8	80.79	10.10	1.32	-0.7	A-
		White	Hispanic	8	27.93	3.49	1.30	-0.6	A-
E	73	Male	Female	8	24.36	3.05	1.00	0.0	A
		White	Black	8	13.21	1.65	0.92	0.2	A+
		White	Hispanic	8	7.54	0.94	0.97	0.1	A+
E	74	Male	Female	8	66.23	8.28	0.86	0.4	A+
		White	Black	8	60.18	7.52	0.80	0.5	A+
		White	Hispanic	8	15.63	1.95	0.84	0.4	A+
E	75	Male	Female	8	74.82	9.35	1.18	-0.4	A-
		White	Black	8	4.60	0.57	1.02	-0.1	A-
		White	Hispanic	8	11.20	1.40	1.11	-0.2	A-
E	76	Male	Female	8	93.84	11.73	0.81	0.5	A+
		White	Black	8	21.56	2.69	0.87	0.3	A+
		White	Hispanic	8	29.63	3.70	0.73	0.7	A+
E	77	Male	Female	8	68.89	8.61	1.09	-0.2	A-
		White	Black	8	31.90	3.99	1.20	-0.4	A-
		White	Hispanic	8	17.39	2.17	1.10	-0.2	A-
F	63	Male	Female	8	16.17	2.02	0.95	0.1	A+
		White	Black	8	38.34	4.79	1.21	-0.4	A-
		White	Hispanic	8	33.12	4.14	1.49	-0.9	A-
F	64	Male	Female	8	99.15	12.39	0.81	0.5	A+
		White	Black	8	13.05	1.63	0.92	0.2	A+
		White	Hispanic	8	5.37	0.67	0.95	0.1	A+
F	65	Male	Female	8	43.52	5.44	1.05	-0.1	A-
		White	Black	8	121.75	15.22	1.45	-0.9	A-
		White	Hispanic	8	73.49	9.19	1.67	-1.2	B-
F	66	Male	Female	8	27.86	3.48	0.94	0.1	A+
		White	Black	8	44.07	5.51	0.83	0.5	A+
		White	Hispanic	8	20.27	2.53	0.86	0.4	A+
F	67	Male	Female	8	69.63	8.70	0.86	0.4	A+
		White	Black	8	20.93	2.62	1.04	-0.1	A-
		White	Hispanic	8	5.06	0.63	1.03	-0.1	A-

Appendix S(a): Grade Eight Mathematics

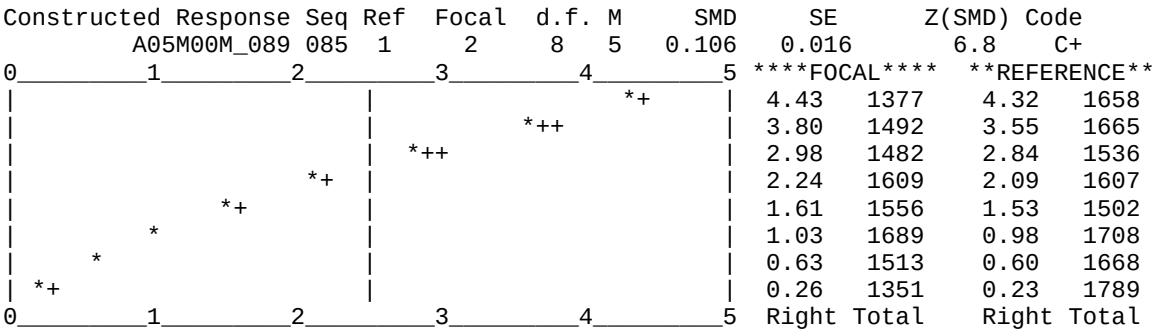
Between Group DIF Analysis -- Multiple Choice Items

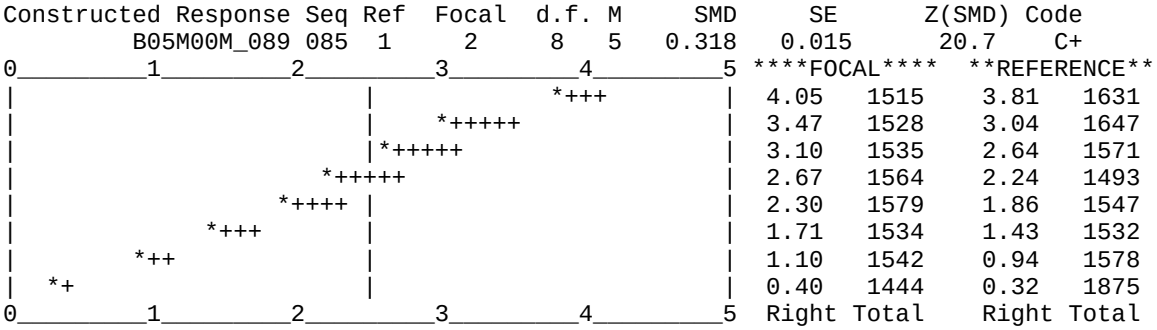
Form	Seq	Group Reference	Focal	d.f.	Chi Squared	Mean Square	Odds Ratio	Effect	Code
F	68	Male	Female	8	62.20	7.78	1.17	-0.4	A-
		White	Black	8	66.06	8.26	1.26	-0.6	A-
		White	Hispanic	8	33.55	4.19	1.41	-0.8	A-
F	69	Male	Female	8	119.51	14.94	0.85	0.4	A+
		White	Black	8	51.06	6.38	0.77	0.6	A+
		White	Hispanic	8	29.99	3.75	0.79	0.6	A+
F	70	Male	Female	8	39.41	4.93	0.91	0.2	A+
		White	Black	8	11.29	1.41	1.06	-0.1	A-
		White	Hispanic	8	15.18	1.90	1.25	-0.5	A-
F	71	Male	Female	8	294.58	36.82	1.42	-0.8	A-
		White	Black	8	20.93	2.62	0.89	0.3	A+
		White	Hispanic	8	6.24	0.78	1.06	-0.1	A-
F	72	Male	Female	8	138.73	17.34	1.22	-0.5	A-
		White	Black	8	4.25	0.53	1.03	-0.1	A-
		White	Hispanic	8	20.78	2.60	1.02	-0.1	A-
F	73	Male	Female	8	181.09	22.64	1.29	-0.6	A-
		White	Black	8	18.49	2.31	1.07	-0.2	A-
		White	Hispanic	8	18.57	2.32	1.25	-0.5	A-
F	74	Male	Female	8	30.63	3.83	1.10	-0.2	A-
		White	Black	8	51.74	6.47	0.78	0.6	A+
		White	Hispanic	8	17.54	2.19	0.81	0.5	A+
F	75	Male	Female	8	139.83	17.48	1.26	-0.5	A-
		White	Black	8	33.76	4.22	1.16	-0.3	A-
		White	Hispanic	8	5.17	0.65	1.12	-0.3	A-
F	76	Male	Female	8	12.03	1.50	1.03	-0.1	A-
		White	Black	8	27.72	3.47	1.18	-0.4	A-
		White	Hispanic	8	12.97	1.62	1.07	-0.2	A-
F	77	Male	Female	8	57.12	7.14	1.10	-0.2	A-
		White	Black	8	36.38	4.55	0.89	0.3	A+
		White	Hispanic	8	6.83	0.85	0.88	0.3	A+

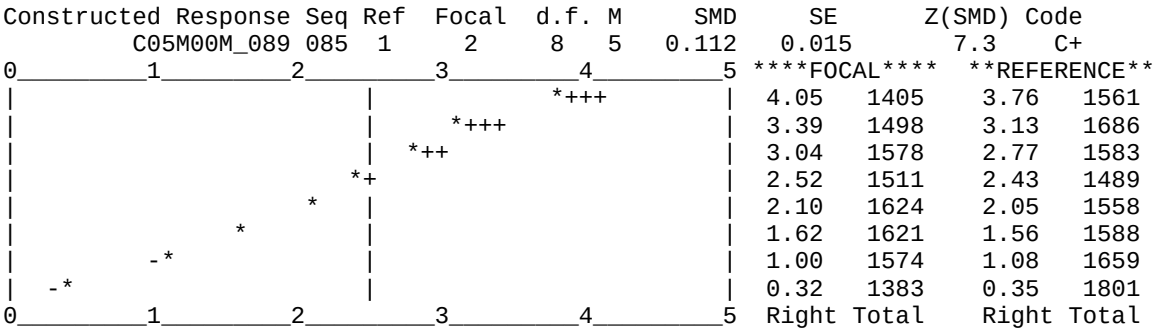
Appendix S(b): Grade Eight Mathematics
Between Group DIF Analysis – Constructed Response Items

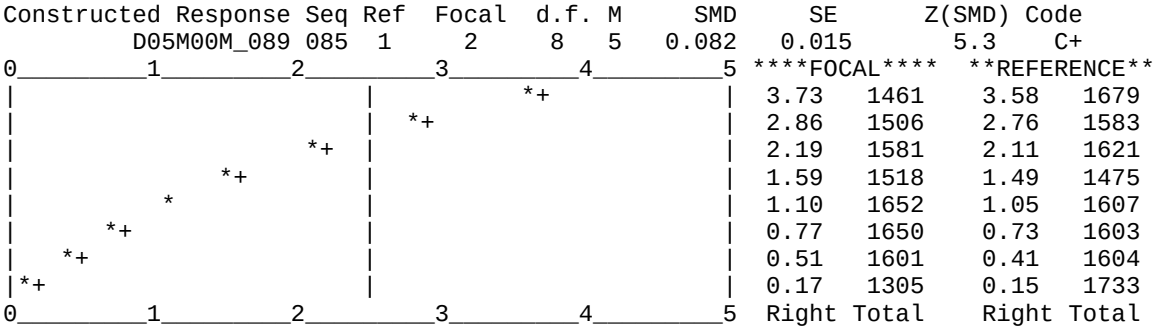
Item Characteristic Curves – C+/- Items

Reference Group = Male, Focal Group = Female

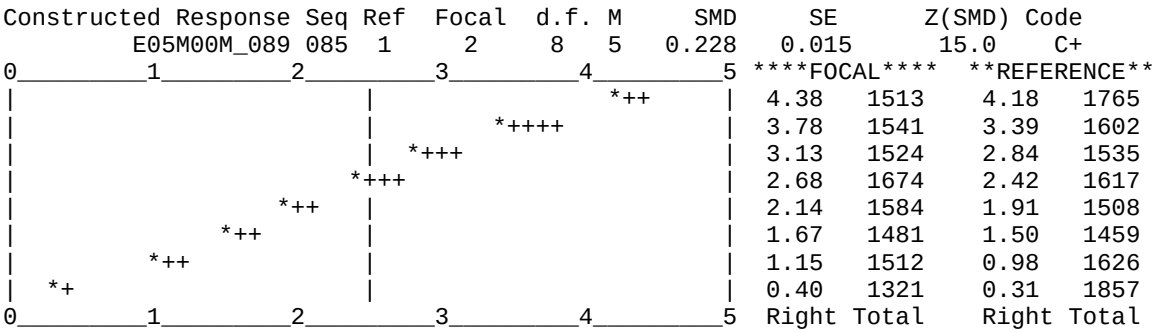




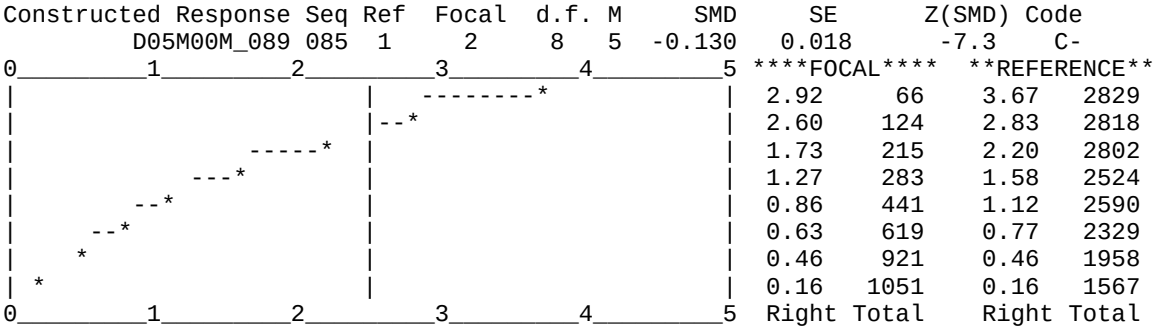


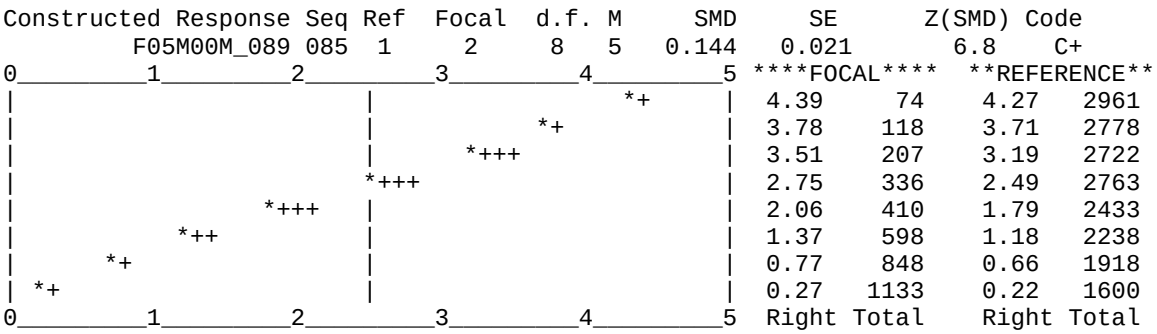


Appendix S(b): Grade Eight Mathematics
Between Group DIF Analysis – Constructed Response Items

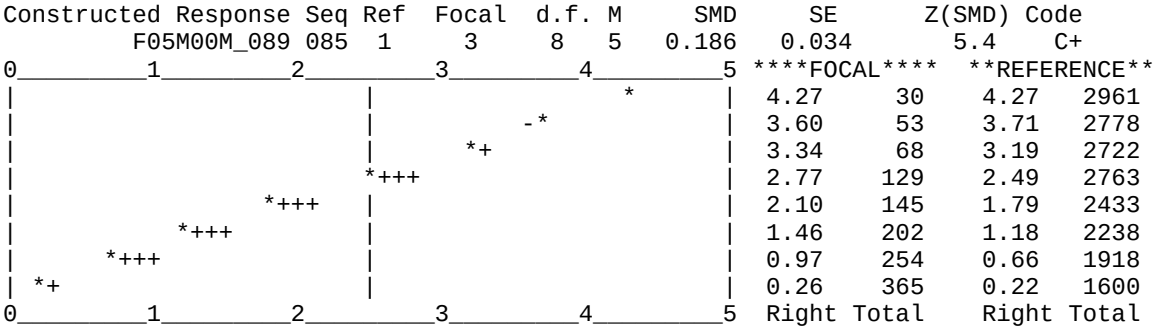


Reference Group = White, Focal Group = Black





Reference Group = White, Focal Group = Hispanic



Appendix S(b): Grade Eight Mathematics

Between Group DIF Analysis -- Constructed Response Items

Form	Seq	Reference	Focal	d.f.	Max Score	SMD	S.E.	Effect	Code
A	85	Male	Female	8	5	0.106	0.016	6.8	CC+
		White	Black	8	5	0.039	0.020	1.9	AA+
		White	Hispanic	8	5	0.041	0.033	1.2	AA+
B	85	Male	Female	8	5	0.318	0.015	20.7	CC+
		White	Black	8	5	-0.005	0.020	-0.2	AA-
		White	Hispanic	8	5	0.072	0.032	2.3	BB+
C	85	Male	Female	8	5	0.112	0.015	7.3	CC+
		White	Black	8	5	0.096	0.022	4.4	BB+
		White	Hispanic	8	5	0.158	0.034	4.7	BB+
D	85	Male	Female	8	5	0.082	0.015	5.3	CC+
		White	Black	8	5	-0.130	0.018	-7.3	CC-
		White	Hispanic	8	5	-0.074	0.029	-2.5	BB-
E	85	Male	Female	8	5	0.228	0.015	15.0	CC+
		White	Black	8	5	-0.082	0.020	-4.1	BB-
		White	Hispanic	8	5	0.005	0.032	0.2	AA+
F	85	Male	Female	8	5	0.058	0.016	3.6	BB+
		White	Black	8	5	0.144	0.021	6.8	CC+
		White	Hispanic	8	5	0.186	0.034	5.4	CC+

Appendix T(a): Grade Eight Reading
Between Group DIF Analysis – Multiple Choice Items

Item Characteristic Curves – C+/- Items

Reference Group = Male, Focal Group = Female

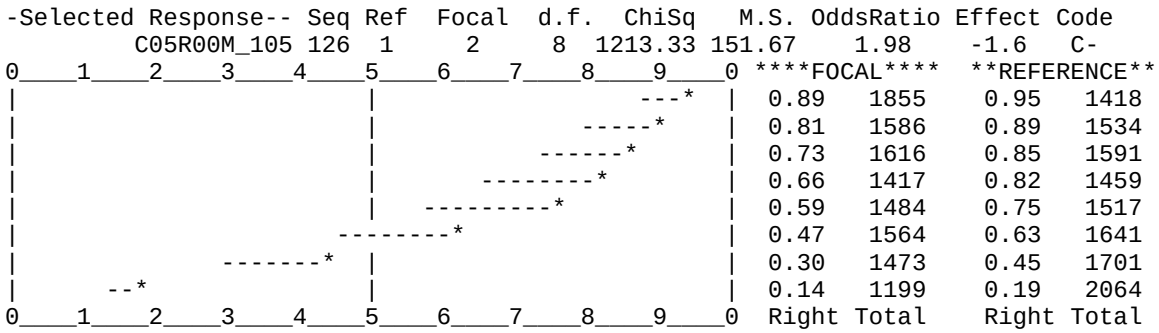
```
-Selected Response-- Seq Ref  Focal  d.f.  ChiSq   M.S. OddsRatio Effect Code
         A05R00M_103 124  1     2     8   836.76 104.59    1.90    -1.5   C-
0____1____2____3____4____5____6____7____8____9____0 ****FOCAL****  **REFERENCE**
|                         |                          *  0.99   1668    1.00   1343
|                         |                        -*  0.98   1441    0.99   1440
|                         |                      -*|  0.96   1565    0.99   1572
|                         |                   ---*|  0.93   1742    0.97   1766
|                         |               ---*   |  0.88   1611    0.94   1704
|                         |          -----*      |  0.78   1495    0.89   1524
|                         |    -------*          |  0.59   1422    0.71   1795
|              ---*       |                      |  0.28   1125    0.34   1989
0____1____2____3____4____5____6____7____8____9____0  Right Total    Right Total
```

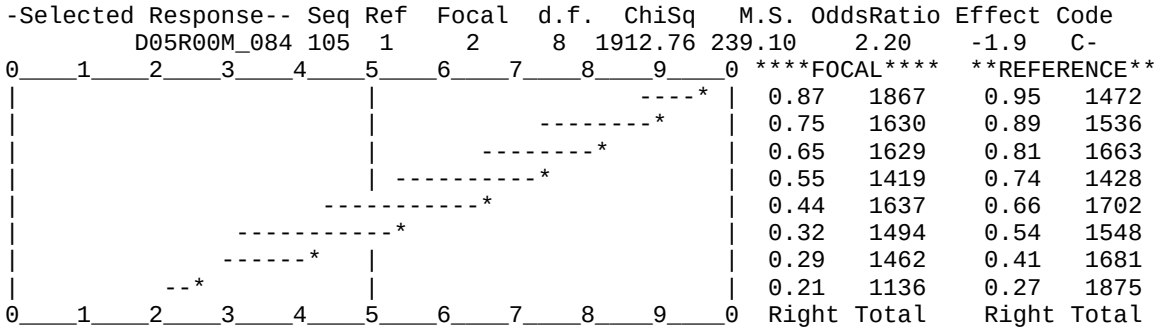
```
-Selected Response-- Seq Ref  Focal  d.f.  ChiSq   M.S. OddsRatio Effect Code
         B05R00M_085 106  1     2     8  1126.49 140.81    1.94    -1.6   C-
0____1____2____3____4____5____6____7____8____9____0 ****FOCAL****  **REFERENCE**
|                         |                          *  1.00   1753    1.00   1291
|                         |                        -*  0.99   1555    1.00   1427
|                         |                      --*  0.96   1668    0.99   1588
|                         |                    --*|  0.94   1492    0.99   1524
|                         |                ---*  |  0.91   1572    0.96   1580
|                         |           ------*    |  0.80   1561    0.91   1669
|                         |      --------*       |  0.65   1490    0.80   1755
|                  --*    |                      |  0.37   1150    0.39   2040
0____1____2____3____4____5____6____7____8____9____0  Right Total    Right Total
```

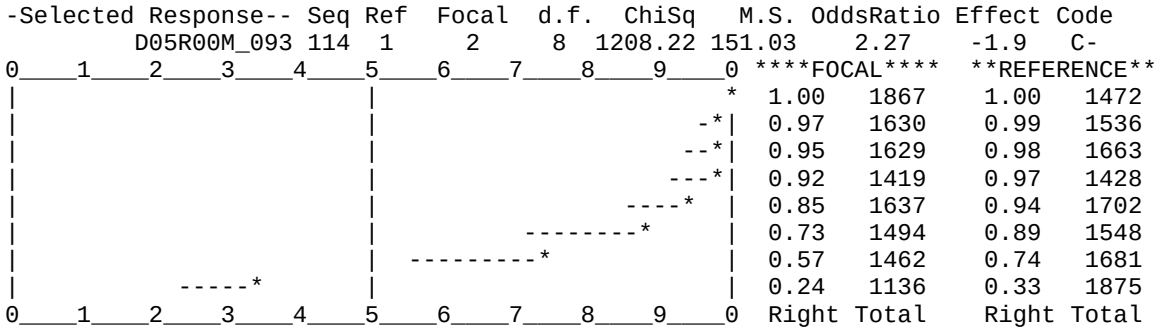
```
-Selected Response-- Seq Ref  Focal  d.f.  ChiSq   M.S. OddsRatio Effect Code
         C05R00M_075  96  1     2     8  1320.16 165.02    2.31    -2.0   C-
0____1____2____3____4____5____6____7____8____9____0 ****FOCAL****  **REFERENCE**
|                         |                        *|  0.99   1855    0.99   1418
|                         |                      -*|  0.97   1586    0.99   1534
|                         |                    --*|  0.94   1616    0.98   1591
|                         |                ---*  |  0.90   1417    0.97   1459
|                         |             -----*   |  0.83   1484    0.93   1517
|                         |         -------*     |  0.75   1564    0.89   1641
|                         |    -----------*      |  0.60   1473    0.79   1701
|               -----*    |                      |  0.31   1199    0.42   2064
0____1____2____3____4____5____6____7____8____9____0  Right Total    Right Total
```

```
-Selected Response-- Seq Ref  Focal  d.f.  ChiSq   M.S. OddsRatio Effect Code
         C05R00M_102 123  1     2     8  1491.03 186.38    2.02    -1.7   C-
0____1____2____3____4____5____6____7____8____9____0 ****FOCAL****  **REFERENCE**
|                         |                ---*  |  0.90   1855    0.96   1418
|                         |           -------*   |  0.77   1586    0.89   1534
|                         |       ---------*     |  0.66   1616    0.83   1591
|                         |  -----------*        |  0.57   1417    0.75   1459
|                      --------*                  |  0.48   1484    0.65   1517
|                ----------*                      |  0.36   1564    0.55   1641
|              -----*     |                      |  0.30   1473    0.41   1701
|          ---*           |                      |  0.23   1199    0.28   2064
0____1____2____3____4____5____6____7____8____9____0  Right Total    Right Total
```

Appendix T(a): Grade Eight Reading
Between Group DIF Analysis – Multiple Choice Items







Appendix T(a): Grade Eight Reading

Between Group DIF Analysis -- Multiple Choice Items

Form	Seq	Group Reference	Focal	d.f.	Chi Squared	Mean Square	Odds Ratio	Effect	Code
A	94	Male	Female	8	74.71	9.34	1.16	-0.4	A-
		White	Black	8	16.79	2.10	0.87	0.3	A+
		White	Hispanic	8	7.81	0.98	1.10	-0.2	A-
A	95	Male	Female	8	26.64	3.33	1.06	-0.1	A-
		White	Black	8	25.94	3.24	0.97	0.1	A+
		White	Hispanic	8	29.13	3.64	0.78	0.6	A+
A	96	Male	Female	8	42.11	5.26	1.14	-0.3	A-
		White	Black	8	44.92	5.62	0.80	0.5	A+
		White	Hispanic	8	13.26	1.66	0.86	0.4	A+
A	97	Male	Female	8	30.36	3.80	0.95	0.1	A+
		White	Black	8	22.63	2.83	0.85	0.4	A+
		White	Hispanic	8	7.91	0.99	0.89	0.3	A+
A	98	Male	Female	8	74.30	9.29	0.89	0.3	A+
		White	Black	8	113.41	14.18	1.41	-0.8	A-
		White	Hispanic	8	6.66	0.83	1.07	-0.2	A-
A	99	Male	Female	8	49.12	6.14	0.87	0.3	A+
		White	Black	8	11.19	1.40	1.08	-0.2	A-
		White	Hispanic	8	10.13	1.27	1.11	-0.2	A-
A	100	Male	Female	8	165.23	20.65	1.18	-0.4	A-
		White	Black	8	71.05	8.88	0.84	0.4	A+
		White	Hispanic	8	8.38	1.05	0.91	0.2	A+
A	101	Male	Female	8	101.13	12.64	1.28	-0.6	A-
		White	Black	8	27.82	3.48	1.13	-0.3	A-
		White	Hispanic	8	101.33	12.67	1.89	-1.5	B-
A	102	Male	Female	8	60.97	7.62	0.83	0.4	A+
		White	Black	8	52.27	6.53	1.19	-0.4	A-
		White	Hispanic	8	15.99	2.00	1.15	-0.3	A-
A	103	Male	Female	8	48.13	6.02	0.89	0.3	A+
		White	Black	8	34.35	4.29	0.85	0.4	A+
		White	Hispanic	8	7.83	0.98	0.90	0.2	A+
A	104	Male	Female	8	58.47	7.31	1.13	-0.3	A-
		White	Black	8	14.65	1.83	0.94	0.2	A+
		White	Hispanic	8	19.87	2.48	0.88	0.3	A+
A	105	Male	Female	8	77.25	9.66	0.94	0.2	A+
		White	Black	8	15.81	1.98	0.86	0.4	A+
		White	Hispanic	8	10.92	1.36	0.78	0.6	A+
A	106	Male	Female	8	149.61	18.70	1.30	-0.6	A-
		White	Black	8	49.76	6.22	1.08	-0.2	A-
		White	Hispanic	8	12.54	1.57	1.11	-0.2	A-
A	107	Male	Female	8	820.34	102.54	1.73	-1.3	B-
		White	Black	8	288.33	36.04	1.67	-1.2	B-
		White	Hispanic	8	65.10	8.14	1.48	-0.9	A-
A	108	Male	Female	8	246.78	30.85	0.77	0.6	A+
		White	Black	8	12.77	1.60	0.94	0.1	A+
		White	Hispanic	8	14.81	1.85	0.86	0.4	A+
A	109	Male	Female	8	56.75	7.09	0.86	0.3	A+
		White	Black	8	13.20	1.65	1.00	0.0	A
		White	Hispanic	8	22.23	2.78	0.83	0.4	A+

Appendix T(a): Grade Eight Reading

Between Group DIF Analysis -- Multiple Choice Items

Form	Seq	Group Reference	Focal	d.f.	Chi Squared	Mean Square	Odds Ratio	Effect	Code
A	110	Male	Female	8	80.30	10.04	0.79	0.5	A+
		White	Black	8	30.92	3.86	0.91	0.2	A+
		White	Hispanic	8	12.46	1.56	1.00	0.0	A
A	111	Male	Female	8	79.22	9.90	0.86	0.4	A+
		White	Black	8	17.87	2.23	1.12	-0.3	A-
		White	Hispanic	8	13.84	1.73	1.17	-0.4	A-
A	112	Male	Female	8	161.12	20.14	1.40	-0.8	A-
		White	Black	8	122.62	15.33	1.50	-1.0	A-
		White	Hispanic	8	25.63	3.20	1.39	-0.8	A-
A	113	Male	Female	8	237.41	29.68	1.26	-0.5	A-
		White	Black	8	40.19	5.02	1.16	-0.4	A-
		White	Hispanic	8	6.00	0.75	1.12	-0.3	A-
A	114	Male	Female	8	24.85	3.11	0.83	0.4	A+
		White	Black	8	12.06	1.51	0.88	0.3	A+
		White	Hispanic	8	10.78	1.35	1.23	-0.5	A-
A	115	Male	Female	8	67.99	8.50	0.84	0.4	A+
		White	Black	8	15.06	1.88	1.06	-0.1	A-
		White	Hispanic	8	4.74	0.59	1.05	-0.1	A-
A	116	Male	Female	8	41.51	5.19	1.00	0.0	A+
		White	Black	8	4.07	0.51	0.98	0.0	A+
		White	Hispanic	8	21.37	2.67	1.10	-0.2	A-
A	117	Male	Female	8	175.27	21.91	1.29	-0.6	A-
		White	Black	8	17.22	2.15	1.11	-0.2	A-
		White	Hispanic	8	20.62	2.58	1.03	-0.1	A-
A	118	Male	Female	8	407.52	50.94	1.53	-1.0	B-
		White	Black	8	5.23	0.65	0.97	0.1	A+
		White	Hispanic	8	9.29	1.16	0.97	0.1	A+
A	119	Male	Female	8	35.79	4.47	1.16	-0.3	A-
		White	Black	8	11.62	1.45	1.10	-0.2	A-
		White	Hispanic	8	9.65	1.21	1.19	-0.4	A-
A	120	Male	Female	8	32.81	4.10	0.90	0.2	A+
		White	Black	8	29.36	3.67	0.94	0.1	A+
		White	Hispanic	8	10.75	1.34	0.86	0.3	A+
A	121	Male	Female	8	21.50	2.69	0.94	0.2	A+
		White	Black	8	6.08	0.76	0.99	0.0	A+
		White	Hispanic	8	15.55	1.94	1.14	-0.3	A-
A	122	Male	Female	8	291.70	36.46	1.43	-0.8	A-
		White	Black	8	16.06	2.01	0.91	0.2	A+
		White	Hispanic	8	3.76	0.47	0.98	0.0	A+
A	123	Male	Female	8	166.09	20.76	0.82	0.5	A+
		White	Black	8	17.23	2.15	1.09	-0.2	A-
		White	Hispanic	8	8.35	1.04	1.01	0.0	A-
A	124	Male	Female	8	836.76	104.59	1.90	-1.5	C-
		White	Black	8	191.78	23.97	1.61	-1.1	B-
		White	Hispanic	8	34.83	4.35	1.46	-0.9	A-
A	125	Male	Female	8	69.63	8.70	1.20	-0.4	A-
		White	Black	8	23.86	2.98	1.04	-0.1	A-
		White	Hispanic	8	22.12	2.77	0.88	0.3	A+

Appendix T(a): Grade Eight Reading

Between Group DIF Analysis -- Multiple Choice Items

Form	Seq	Group Reference	Focal	d.f.	Chi Squared	Mean Square	Odds Ratio	Effect	Code
A	126	Male	Female	8	17.27	2.16	0.98	0.1	A+
		White	Black	8	14.47	1.81	1.09	-0.2	A-
		White	Hispanic	8	26.62	3.33	0.97	0.1	A+
A	127	Male	Female	8	118.12	14.77	1.22	-0.5	A-
		White	Black	8	29.89	3.74	1.16	-0.4	A-
		White	Hispanic	8	20.14	2.52	1.11	-0.2	A-
A	128	Male	Female	8	88.54	11.07	1.16	-0.3	A-
		White	Black	8	119.68	14.96	1.51	-1.0	A-
		White	Hispanic	8	14.68	1.84	1.18	-0.4	A-
A	129	Male	Female	8	20.93	2.62	1.01	0.0	A-
		White	Black	8	41.58	5.20	1.20	-0.4	A-
		White	Hispanic	8	11.93	1.49	1.15	-0.3	A-
B	94	Male	Female	8	303.24	37.90	1.59	-1.1	B-
		White	Black	8	98.07	12.26	1.49	-0.9	A-
		White	Hispanic	8	41.02	5.13	1.43	-0.8	A-
B	95	Male	Female	8	296.75	37.09	1.29	-0.6	A-
		White	Black	8	13.84	1.73	1.07	-0.2	A-
		White	Hispanic	8	14.36	1.80	1.10	-0.2	A-
B	96	Male	Female	8	25.61	3.20	0.82	0.5	A+
		White	Black	8	10.61	1.33	0.91	0.2	A+
		White	Hispanic	8	42.07	5.26	1.54	-1.0	B-
B	97	Male	Female	8	53.87	6.73	0.87	0.3	A+
		White	Black	8	17.53	2.19	1.13	-0.3	A-
		White	Hispanic	8	17.18	2.15	1.08	-0.2	A-
B	98	Male	Female	8	33.00	4.12	1.01	0.0	A-
		White	Black	8	6.55	0.82	1.02	-0.1	A-
		White	Hispanic	8	6.99	0.87	0.91	0.2	A+
B	99	Male	Female	8	110.27	13.78	1.22	-0.5	A-
		White	Black	8	25.43	3.18	1.11	-0.3	A-
		White	Hispanic	8	19.19	2.40	1.07	-0.2	A-
B	100	Male	Female	8	541.55	67.69	1.61	-1.1	B-
		White	Black	8	34.90	4.36	0.82	0.5	A+
		White	Hispanic	8	6.69	0.84	0.97	0.1	A+
B	101	Male	Female	8	38.52	4.81	1.16	-0.4	A-
		White	Black	8	22.40	2.80	1.02	-0.1	A-
		White	Hispanic	8	3.69	0.46	1.04	-0.1	A-
B	102	Male	Female	8	78.39	9.80	0.86	0.4	A+
		White	Black	8	83.64	10.46	0.83	0.4	A+
		White	Hispanic	8	27.30	3.41	0.79	0.6	A+
B	103	Male	Female	8	14.70	1.84	0.93	0.2	A+
		White	Black	8	8.55	1.07	0.92	0.2	A+
		White	Hispanic	8	23.67	2.96	1.15	-0.3	A-
B	104	Male	Female	8	309.33	38.67	1.43	-0.8	A-
		White	Black	8	41.22	5.15	0.84	0.4	A+
		White	Hispanic	8	5.01	0.63	1.05	-0.1	A-
B	105	Male	Female	8	56.30	7.04	0.90	0.2	A+
		White	Black	8	12.21	1.53	1.00	0.0	A+
		White	Hispanic	8	9.28	1.16	0.93	0.2	A+

Appendix T(a): Grade Eight Reading

Between Group DIF Analysis -- Multiple Choice Items

Form	Seq	Group Reference	Focal	d.f.	Chi Squared	Mean Square	Odds Ratio	Effect	Code
B	106	Male	Female	8	1126.49	140.81	1.94	-1.6	C-
		White	Black	8	97.22	12.15	1.39	-0.8	A-
		White	Hispanic	8	58.88	7.36	1.66	-1.2	B-
B	107	Male	Female	8	67.45	8.43	1.21	-0.5	A-
		White	Black	8	12.73	1.59	0.99	0.0	A+
		White	Hispanic	8	9.06	1.13	0.92	0.2	A+
B	108	Male	Female	8	36.80	4.60	0.99	0.0	A+
		White	Black	8	17.24	2.16	1.12	-0.3	A-
		White	Hispanic	8	3.29	0.41	1.00	0.0	A+
B	109	Male	Female	8	232.95	29.12	1.29	-0.6	A-
		White	Black	8	11.52	1.44	1.06	-0.1	A-
		White	Hispanic	8	8.47	1.06	1.03	-0.1	A-
B	110	Male	Female	8	74.01	9.25	1.15	-0.3	A-
		White	Black	8	91.90	11.49	1.42	-0.8	A-
		White	Hispanic	8	15.22	1.90	1.17	-0.4	A-
B	111	Male	Female	8	44.42	5.55	1.11	-0.2	A-
		White	Black	8	14.01	1.75	0.98	0.1	A+
		White	Hispanic	8	17.61	2.20	1.24	-0.5	A-
B	112	Male	Female	8	69.13	8.64	1.16	-0.3	A-
		White	Black	8	14.64	1.83	0.91	0.2	A+
		White	Hispanic	8	5.33	0.67	1.03	-0.1	A-
B	113	Male	Female	8	23.29	2.91	1.01	0.0	A-
		White	Black	8	16.41	2.05	0.92	0.2	A+
		White	Hispanic	8	24.76	3.10	0.83	0.4	A+
B	114	Male	Female	8	24.22	3.03	1.07	-0.2	A-
		White	Black	8	41.08	5.13	0.80	0.5	A+
		White	Hispanic	8	11.13	1.39	0.86	0.3	A+
B	115	Male	Female	8	19.28	2.41	0.91	0.2	A+
		White	Black	8	14.25	1.78	0.94	0.2	A+
		White	Hispanic	8	8.95	1.12	0.97	0.1	A+
B	116	Male	Female	8	85.52	10.69	0.84	0.4	A+
		White	Black	8	84.85	10.61	1.39	-0.8	A-
		White	Hispanic	8	8.07	1.01	1.12	-0.3	A-
B	117	Male	Female	8	68.01	8.50	0.85	0.4	A+
		White	Black	8	3.92	0.49	0.98	0.0	A+
		White	Hispanic	8	9.81	1.23	1.04	-0.1	A-
B	118	Male	Female	8	91.40	11.43	1.16	-0.3	A-
		White	Black	8	32.10	4.01	0.94	0.1	A+
		White	Hispanic	8	12.39	1.55	1.01	0.0	A-
B	119	Male	Female	8	54.23	6.78	1.11	-0.3	A-
		White	Black	8	78.43	9.80	1.32	-0.7	A-
		White	Hispanic	8	64.61	8.08	1.59	-1.1	B-
B	120	Male	Female	8	96.80	12.10	0.78	0.6	A+
		White	Black	8	75.37	9.42	1.15	-0.3	A-
		White	Hispanic	8	19.11	2.39	1.04	-0.1	A-
B	121	Male	Female	8	52.39	6.55	0.88	0.3	A+
		White	Black	8	9.51	1.19	0.95	0.1	A+
		White	Hispanic	8	6.32	0.79	0.90	0.2	A+

Appendix T(a): Grade Eight Reading

Between Group DIF Analysis -- Multiple Choice Items

Form	Seq	Group Reference	Focal	d.f.	Chi Squared	Mean Square	Odds Ratio	Effect	Code
B	122	Male	Female	8	68.71	8.59	1.16	-0.4	A-
		White	Black	8	11.77	1.47	0.94	0.1	A+
		White	Hispanic	8	19.09	2.39	0.99	0.0	A+
B	123	Male	Female	8	45.85	5.73	0.95	0.1	A+
		White	Black	8	4.59	0.57	1.01	0.0	A-
		White	Hispanic	8	7.60	0.95	0.93	0.2	A+
B	124	Male	Female	8	117.40	14.67	1.23	-0.5	A-
		White	Black	8	20.19	2.52	0.92	0.2	A+
		White	Hispanic	8	18.35	2.29	0.92	0.2	A+
B	125	Male	Female	8	648.86	81.11	1.63	-1.2	B-
		White	Black	8	192.59	24.07	1.59	-1.1	B-
		White	Hispanic	8	59.54	7.44	1.41	-0.8	A-
B	126	Male	Female	8	148.42	18.55	0.81	0.5	A+
		White	Black	8	22.50	2.81	0.92	0.2	A+
		White	Hispanic	8	13.17	1.65	0.91	0.2	A+
B	127	Male	Female	8	81.82	10.23	0.79	0.6	A+
		White	Black	8	9.72	1.22	1.01	0.0	A-
		White	Hispanic	8	5.67	0.71	1.02	0.0	A-
B	128	Male	Female	8	39.66	4.96	0.91	0.2	A+
		White	Black	8	27.01	3.38	1.04	-0.1	A-
		White	Hispanic	8	6.15	0.77	1.08	-0.2	A-
B	129	Male	Female	8	45.82	5.73	0.87	0.3	A+
		White	Black	8	26.20	3.28	1.20	-0.4	A-
		White	Hispanic	8	9.57	1.20	1.17	-0.4	A-
C	94	Male	Female	8	35.54	4.44	0.80	0.5	A+
		White	Black	8	30.64	3.83	0.71	0.8	A+
		White	Hispanic	8	14.19	1.77	0.67	0.9	A+
C	95	Male	Female	8	17.70	2.21	1.13	-0.3	A-
		White	Black	8	7.72	0.97	0.91	0.2	A+
		White	Hispanic	8	24.70	3.09	0.92	0.2	A+
C	96	Male	Female	8	1320.16	165.02	2.31	-2.0	C-
		White	Black	8	27.09	3.39	0.82	0.5	A+
		White	Hispanic	8	9.61	1.20	0.82	0.5	A+
C	97	Male	Female	8	46.73	5.84	0.74	0.7	A+
		White	Black	8	27.43	3.43	0.79	0.6	A+
		White	Hispanic	8	8.00	1.00	0.84	0.4	A+
C	98	Male	Female	8	88.85	11.11	0.73	0.7	A+
		White	Black	8	23.77	2.97	0.85	0.4	A+
		White	Hispanic	8	4.79	0.60	0.85	0.4	A+
C	99	Male	Female	8	93.02	11.63	1.08	-0.2	A-
		White	Black	8	128.54	16.07	1.33	-0.7	A-
		White	Hispanic	8	6.01	0.75	1.05	-0.1	A-
C	100	Male	Female	8	74.12	9.27	0.90	0.3	A+
		White	Black	8	16.73	2.09	0.96	0.1	A+
		White	Hispanic	8	7.81	0.98	1.00	0.0	A+
C	101	Male	Female	8	45.02	5.63	1.01	0.0	A-
		White	Black	8	10.29	1.29	0.92	0.2	A+
		White	Hispanic	8	10.74	1.34	0.86	0.3	A+

Appendix T(a): Grade Eight Reading

Between Group DIF Analysis -- Multiple Choice Items

Form	Seq	Group Reference	Focal	d.f.	Chi Squared	Mean Square	Odds Ratio	Effect	Code
C	102	Male	Female	8	40.53	5.07	0.91	0.2	A+
		White	Black	8	12.37	1.55	1.00	0.0	A+
		White	Hispanic	8	23.63	2.95	0.83	0.4	A+
C	103	Male	Female	8	12.11	1.51	1.00	0.0	A-
		White	Black	8	72.84	9.10	0.74	0.7	A+
		White	Hispanic	8	18.61	2.33	1.03	-0.1	A-
C	104	Male	Female	8	52.03	6.50	0.98	0.0	A+
		White	Black	8	96.88	12.11	0.71	0.8	A+
		White	Hispanic	8	77.36	9.67	0.60	1.2	B+
C	105	Male	Female	8	112.50	14.06	0.83	0.4	A+
		White	Black	8	66.83	8.35	0.75	0.7	A+
		White	Hispanic	8	9.43	1.18	0.85	0.4	A+
C	106	Male	Female	8	82.20	10.28	1.09	-0.2	A-
		White	Black	8	57.52	7.19	0.76	0.6	A+
		White	Hispanic	8	7.38	0.92	0.91	0.2	A+
C	107	Male	Female	8	619.38	77.42	1.73	-1.3	B-
		White	Black	8	27.68	3.46	0.83	0.4	A+
		White	Hispanic	8	5.34	0.67	1.12	-0.3	A-
C	108	Male	Female	8	887.31	110.91	1.81	-1.4	B-
		White	Black	8	49.66	6.21	0.76	0.6	A+
		White	Hispanic	8	15.68	1.96	0.80	0.5	A+
C	109	Male	Female	8	21.48	2.68	0.94	0.1	A+
		White	Black	8	10.39	1.30	1.09	-0.2	A-
		White	Hispanic	8	14.28	1.79	0.96	0.1	A+
C	110	Male	Female	8	53.41	6.68	0.86	0.4	A+
		White	Black	8	9.12	1.14	1.01	0.0	A-
		White	Hispanic	8	8.23	1.03	1.08	-0.2	A-
C	111	Male	Female	8	5.11	0.64	1.03	-0.1	A-
		White	Black	8	11.50	1.44	1.06	-0.1	A-
		White	Hispanic	8	15.13	1.89	1.14	-0.3	A-
C	112	Male	Female	8	185.14	23.14	1.43	-0.8	A-
		White	Black	8	142.33	17.79	1.54	-1.0	B-
		White	Hispanic	8	52.94	6.62	1.61	-1.1	B-
C	113	Male	Female	8	384.86	48.11	1.54	-1.0	B-
		White	Black	8	218.11	27.26	1.67	-1.2	B-
		White	Hispanic	8	28.51	3.56	1.24	-0.5	A-
C	114	Male	Female	8	444.97	55.62	1.50	-0.9	A-
		White	Black	8	7.19	0.90	0.99	0.0	A+
		White	Hispanic	8	4.35	0.54	1.00	0.0	A+
C	115	Male	Female	8	42.72	5.34	1.06	-0.1	A-
		White	Black	8	16.09	2.01	0.95	0.1	A+
		White	Hispanic	8	15.82	1.98	0.99	0.0	A+
C	116	Male	Female	8	39.63	4.95	1.15	-0.3	A-
		White	Black	8	13.81	1.73	0.96	0.1	A+
		White	Hispanic	8	4.98	0.62	1.09	-0.2	A-
C	117	Male	Female	8	298.59	37.32	1.34	-0.7	A-
		White	Black	8	54.90	6.86	1.26	-0.5	A-
		White	Hispanic	8	10.92	1.36	1.14	-0.3	A-

Appendix T(a): Grade Eight Reading

Between Group DIF Analysis -- Multiple Choice Items

Form	Seq	Group Reference	Focal	d.f.	Chi Squared	Mean Square	Odds Ratio	Effect	Code
C	118	Male	Female	8	133.30	16.66	1.38	-0.8	A-
		White	Black	8	63.07	7.88	1.17	-0.4	A-
		White	Hispanic	8	14.83	1.85	1.27	-0.6	A-
C	119	Male	Female	8	31.79	3.97	1.10	-0.2	A-
		White	Black	8	44.20	5.53	0.80	0.5	A+
		White	Hispanic	8	7.13	0.89	0.91	0.2	A+
C	120	Male	Female	8	14.42	1.80	1.04	-0.1	A-
		White	Black	8	21.27	2.66	0.95	0.1	A+
		White	Hispanic	8	5.31	0.66	1.01	0.0	A-
C	121	Male	Female	8	107.52	13.44	1.25	-0.5	A-
		White	Black	8	16.03	2.00	1.08	-0.2	A-
		White	Hispanic	8	4.55	0.57	0.94	0.1	A+
C	122	Male	Female	8	129.21	16.15	1.27	-0.6	A-
		White	Black	8	11.17	1.40	0.92	0.2	A+
		White	Hispanic	8	20.19	2.52	1.05	-0.1	A-
C	123	Male	Female	8	1491.03	186.38	2.02	-1.7	C-
		White	Black	8	305.33	38.17	1.75	-1.3	B-
		White	Hispanic	8	63.28	7.91	1.59	-1.1	B-
C	124	Male	Female	8	95.56	11.94	0.83	0.4	A+
		White	Black	8	23.97	3.00	0.84	0.4	A+
		White	Hispanic	8	11.13	1.39	1.01	0.0	A-
C	125	Male	Female	8	16.51	2.06	0.97	0.1	A+
		White	Black	8	14.77	1.85	0.94	0.1	A+
		White	Hispanic	8	21.10	2.64	0.83	0.4	A+
C	126	Male	Female	8	1213.33	151.67	1.98	-1.6	C-
		White	Black	8	26.82	3.35	1.17	-0.4	A-
		White	Hispanic	8	19.52	2.44	1.17	-0.4	A-
C	127	Male	Female	8	60.78	7.60	0.87	0.3	A+
		White	Black	8	10.32	1.29	1.04	-0.1	A-
		White	Hispanic	8	16.23	2.03	1.24	-0.5	A-
C	128	Male	Female	8	17.71	2.21	0.95	0.1	A+
		White	Black	8	6.23	0.78	1.05	-0.1	A-
		White	Hispanic	8	7.34	0.92	0.92	0.2	A+
C	129	Male	Female	8	61.34	7.67	0.83	0.4	A+
		White	Black	8	8.60	1.08	0.93	0.2	A+
		White	Hispanic	8	9.20	1.15	1.16	-0.4	A-
D	94	Male	Female	8	257.98	32.25	1.47	-0.9	A-
		White	Black	8	117.98	14.75	1.52	-1.0	A-
		White	Hispanic	8	64.79	8.10	1.62	-1.1	B-
D	95	Male	Female	8	527.11	65.89	1.60	-1.1	B-
		White	Black	8	188.15	23.52	1.68	-1.2	B-
		White	Hispanic	8	6.46	0.81	1.13	-0.3	A-
D	96	Male	Female	8	530.16	66.27	1.58	-1.1	B-
		White	Black	8	20.41	2.55	0.91	0.2	A+
		White	Hispanic	8	8.46	1.06	0.92	0.2	A+
D	97	Male	Female	8	24.33	3.04	0.93	0.2	A+
		White	Black	8	34.29	4.29	0.81	0.5	A+
		White	Hispanic	8	13.52	1.69	0.85	0.4	A+

Appendix T(a): Grade Eight Reading

Between Group DIF Analysis -- Multiple Choice Items

Form	Seq	Group Reference	Focal	d.f.	Chi Squared	Mean Square	Odds Ratio	Effect	Code
D	98	Male	Female	8	23.84	2.98	1.13	-0.3	A-
		White	Black	8	18.10	2.26	1.04	-0.1	A-
		White	Hispanic	8	11.89	1.49	1.10	-0.2	A-
D	99	Male	Female	8	400.89	50.11	1.41	-0.8	A-
		White	Black	8	78.44	9.81	1.22	-0.5	A-
		White	Hispanic	8	12.18	1.52	1.12	-0.3	A-
D	100	Male	Female	8	269.44	33.68	1.56	-1.0	B-
		White	Black	8	58.11	7.26	1.15	-0.3	A-
		White	Hispanic	8	18.59	2.32	1.23	-0.5	A-
D	101	Male	Female	8	82.29	10.29	1.14	-0.3	A-
		White	Black	8	92.63	11.58	0.70	0.8	A+
		White	Hispanic	8	10.25	1.28	0.88	0.3	A+
D	102	Male	Female	8	9.70	1.21	1.04	-0.1	A-
		White	Black	8	21.53	2.69	0.97	0.1	A+
		White	Hispanic	8	8.78	1.10	1.08	-0.2	A-
D	103	Male	Female	8	189.83	23.73	1.35	-0.7	A-
		White	Black	8	11.27	1.41	1.02	-0.1	A-
		White	Hispanic	8	8.00	1.00	0.96	0.1	A+
D	104	Male	Female	8	140.57	17.57	1.22	-0.5	A-
		White	Black	8	65.57	8.20	0.83	0.4	A+
		White	Hispanic	8	16.14	2.02	1.01	0.0	A-
D	105	Male	Female	8	1912.76	239.10	2.20	-1.9	C-
		White	Black	8	254.23	31.78	1.68	-1.2	B-
		White	Hispanic	8	54.57	6.82	1.45	-0.9	A-
D	106	Male	Female	8	76.81	9.60	0.82	0.5	A+
		White	Black	8	16.55	2.07	0.86	0.4	A+
		White	Hispanic	8	7.15	0.89	0.94	0.2	A+
D	107	Male	Female	8	23.41	2.93	0.98	0.1	A+
		White	Black	8	15.66	1.96	1.07	-0.1	A-
		White	Hispanic	8	14.60	1.83	1.12	-0.3	A-
D	108	Male	Female	8	875.63	109.45	1.77	-1.3	B-
		White	Black	8	32.63	4.08	1.20	-0.4	A-
		White	Hispanic	8	8.43	1.05	1.16	-0.3	A-
D	109	Male	Female	8	55.16	6.89	0.87	0.3	A+
		White	Black	8	21.05	2.63	0.91	0.2	A+
		White	Hispanic	8	6.16	0.77	0.98	0.0	A+
D	110	Male	Female	8	30.31	3.79	0.97	0.1	A+
		White	Black	8	7.38	0.92	0.99	0.0	A+
		White	Hispanic	8	8.79	1.10	1.00	0.0	A+
D	111	Male	Female	8	53.80	6.72	0.83	0.4	A+
		White	Black	8	6.78	0.85	0.94	0.1	A+
		White	Hispanic	8	4.60	0.58	1.06	-0.1	A-
D	112	Male	Female	8	53.32	6.67	0.74	0.7	A+
		White	Black	8	42.53	5.32	0.70	0.8	A+
		White	Hispanic	8	15.47	1.93	0.76	0.7	A+
D	113	Male	Female	8	21.25	2.66	0.95	0.1	A+
		White	Black	8	19.55	2.44	0.85	0.4	A+
		White	Hispanic	8	8.46	1.06	0.92	0.2	A+

Appendix T(a): Grade Eight Reading

Between Group DIF Analysis -- Multiple Choice Items

Form	Seq	Group Reference	Focal	d.f.	Chi Squared	Mean Square	Odds Ratio	Effect	Code
D	114	Male	Female	8	1208.22	151.03	2.27	-1.9	C-
		White	Black	8	4.80	0.60	0.92	0.2	A+
		White	Hispanic	8	15.47	1.93	0.76	0.6	A+
D	115	Male	Female	8	135.98	17.00	0.59	1.3	B+
		White	Black	8	39.92	4.99	0.76	0.6	A+
		White	Hispanic	8	10.27	1.28	0.92	0.2	A+
D	116	Male	Female	8	221.09	27.64	0.59	1.2	B+
		White	Black	8	13.26	1.66	0.92	0.2	A+
		White	Hispanic	8	6.19	0.77	0.91	0.2	A+
D	117	Male	Female	8	128.36	16.04	1.05	-0.1	A-
		White	Black	8	85.07	10.63	1.24	-0.5	A-
		White	Hispanic	8	18.25	2.28	1.06	-0.1	A-
D	118	Male	Female	8	52.96	6.62	0.90	0.2	A+
		White	Black	8	13.91	1.74	0.93	0.2	A+
		White	Hispanic	8	9.72	1.21	0.84	0.4	A+
D	119	Male	Female	8	37.99	4.75	1.03	-0.1	A-
		White	Black	8	4.91	0.61	0.96	0.1	A+
		White	Hispanic	8	7.56	0.95	0.96	0.1	A+
D	120	Male	Female	8	90.56	11.32	0.86	0.3	A+
		White	Black	8	34.38	4.30	1.01	0.0	A-
		White	Hispanic	8	33.10	4.14	0.81	0.5	A+
D	121	Male	Female	8	41.73	5.22	0.92	0.2	A+
		White	Black	8	103.33	12.92	0.72	0.8	A+
		White	Hispanic	8	15.99	2.00	0.95	0.1	A+
D	122	Male	Female	8	26.29	3.29	0.92	0.2	A+
		White	Black	8	72.50	9.06	0.74	0.7	A+
		White	Hispanic	8	33.87	4.23	0.74	0.7	A+
D	123	Male	Female	8	200.36	25.05	0.78	0.6	A+
		White	Black	8	47.11	5.89	0.79	0.6	A+
		White	Hispanic	8	10.58	1.32	0.86	0.3	A+
D	124	Male	Female	8	33.72	4.22	1.00	0.0	A+
		White	Black	8	27.20	3.40	0.85	0.4	A+
		White	Hispanic	8	8.15	1.02	0.96	0.1	A+
D	125	Male	Female	8	766.31	95.79	1.76	-1.3	B-
		White	Black	8	21.66	2.71	0.88	0.3	A+
		White	Hispanic	8	28.60	3.57	0.98	0.0	A+
D	126	Male	Female	8	633.52	79.19	1.55	-1.0	B-
		White	Black	8	33.95	4.24	0.79	0.5	A+
		White	Hispanic	8	12.36	1.55	0.88	0.3	A+
D	127	Male	Female	8	28.33	3.54	0.93	0.2	A+
		White	Black	8	3.44	0.43	1.04	-0.1	A-
		White	Hispanic	8	9.60	1.20	1.05	-0.1	A-
D	128	Male	Female	8	70.36	8.80	0.84	0.4	A+
		White	Black	8	14.78	1.85	1.04	-0.1	A-
		White	Hispanic	8	20.29	2.54	1.18	-0.4	A-
D	129	Male	Female	8	25.85	3.23	0.97	0.1	A+
		White	Black	8	24.09	3.01	1.09	-0.2	A-
		White	Hispanic	8	17.68	2.21	1.17	-0.4	A-

Appendix T(a): Grade Eight Reading

Between Group DIF Analysis -- Multiple Choice Items

Form	Seq	Group Reference	Focal	d.f.	Chi Squared	Mean Square	Odds Ratio	Effect	Code
E	94	Male	Female	8	76.03	9.50	1.19	-0.4	A-
		White	Black	8	20.66	2.58	0.97	0.1	A+
		White	Hispanic	8	10.64	1.33	1.03	-0.1	A-
E	95	Male	Female	8	62.81	7.85	1.17	-0.4	A-
		White	Black	8	19.42	2.43	1.01	0.0	A-
		White	Hispanic	8	27.08	3.39	1.16	-0.3	A-
E	96	Male	Female	8	96.92	12.11	0.86	0.4	A+
		White	Black	8	96.44	12.06	0.73	0.8	A+
		White	Hispanic	8	31.86	3.98	0.78	0.6	A+
E	97	Male	Female	8	118.55	14.82	0.77	0.6	A+
		White	Black	8	85.09	10.64	0.67	0.9	A+
		White	Hispanic	8	24.25	3.03	0.81	0.5	A+
E	98	Male	Female	8	231.25	28.91	0.70	0.9	A+
		White	Black	8	167.74	20.97	0.62	1.1	B+
		White	Hispanic	8	18.65	2.33	0.80	0.5	A+
E	99	Male	Female	8	75.56	9.45	0.63	1.1	B+
		White	Black	8	22.17	2.77	0.76	0.7	A+
		White	Hispanic	8	9.33	1.17	1.08	-0.2	A-
E	100	Male	Female	8	51.13	6.39	0.89	0.3	A+
		White	Black	8	20.33	2.54	1.02	0.0	A-
		White	Hispanic	8	5.77	0.72	1.06	-0.1	A-
E	101	Male	Female	8	36.73	4.59	0.94	0.1	A+
		White	Black	8	10.44	1.30	1.05	-0.1	A-
		White	Hispanic	8	2.00	0.25	0.98	0.0	A+
E	102	Male	Female	8	42.67	5.33	0.92	0.2	A+
		White	Black	8	30.07	3.76	1.14	-0.3	A-
		White	Hispanic	8	26.40	3.30	1.18	-0.4	A-
E	103	Male	Female	8	101.25	12.66	0.84	0.4	A+
		White	Black	8	55.80	6.98	0.80	0.5	A+
		White	Hispanic	8	11.82	1.48	0.87	0.3	A+
E	104	Male	Female	8	34.25	4.28	0.92	0.2	A+
		White	Black	8	4.89	0.61	0.97	0.1	A+
		White	Hispanic	8	13.57	1.70	0.99	0.0	A+
E	105	Male	Female	8	74.81	9.35	1.13	-0.3	A-
		White	Black	8	13.34	1.67	1.06	-0.1	A-
		White	Hispanic	8	8.77	1.10	1.01	0.0	A-
E	106	Male	Female	8	105.85	13.23	1.21	-0.4	A-
		White	Black	8	34.12	4.27	0.99	0.0	A+
		White	Hispanic	8	7.31	0.91	1.00	0.0	A
E	107	Male	Female	8	162.30	20.29	1.41	-0.8	A-
		White	Black	8	73.03	9.13	1.31	-0.6	A-
		White	Hispanic	8	14.25	1.78	1.25	-0.5	A-
E	108	Male	Female	8	24.00	3.00	1.07	-0.2	A-
		White	Black	8	9.17	1.15	1.09	-0.2	A-
		White	Hispanic	8	10.13	1.27	1.16	-0.4	A-
E	109	Male	Female	8	122.89	15.36	1.25	-0.5	A-
		White	Black	8	38.75	4.84	0.81	0.5	A+
		White	Hispanic	8	9.56	1.19	0.93	0.2	A+

Appendix T(a): Grade Eight Reading

Between Group DIF Analysis -- Multiple Choice Items

Form	Seq	Group Reference	Focal	d.f.	Chi Squared	Mean Square	Odds Ratio	Effect	Code
E	110	Male	Female	8	95.24	11.91	1.21	-0.5	A-
		White	Black	8	38.11	4.76	0.88	0.3	A+
		White	Hispanic	8	11.20	1.40	0.81	0.5	A+
E	111	Male	Female	8	198.89	24.86	0.80	0.5	A+
		White	Black	8	64.03	8.00	0.78	0.6	A+
		White	Hispanic	8	21.47	2.68	0.79	0.6	A+
E	112	Male	Female	8	18.34	2.29	0.98	0.0	A+
		White	Black	8	27.95	3.49	1.07	-0.2	A-
		White	Hispanic	8	24.01	3.00	0.97	0.1	A+
E	113	Male	Female	8	72.96	9.12	0.94	0.1	A+
		White	Black	8	185.65	23.21	1.41	-0.8	A-
		White	Hispanic	8	16.56	2.07	1.15	-0.3	A-
E	114	Male	Female	8	73.25	9.16	1.08	-0.2	A-
		White	Black	8	18.67	2.33	0.87	0.3	A+
		White	Hispanic	8	8.90	1.11	1.06	-0.1	A-
E	115	Male	Female	8	44.89	5.61	1.16	-0.3	A-
		White	Black	8	21.00	2.62	1.25	-0.5	A-
		White	Hispanic	8	10.35	1.29	1.06	-0.1	A-
E	116	Male	Female	8	417.00	52.12	1.48	-0.9	A-
		White	Black	8	11.39	1.42	1.05	-0.1	A-
		White	Hispanic	8	11.94	1.49	0.96	0.1	A+
E	117	Male	Female	8	20.34	2.54	1.00	0.0	A+
		White	Black	8	31.06	3.88	0.88	0.3	A+
		White	Hispanic	8	18.86	2.36	1.11	-0.2	A-
E	118	Male	Female	8	54.37	6.80	1.19	-0.4	A-
		White	Black	8	10.40	1.30	1.07	-0.2	A-
		White	Hispanic	8	5.03	0.63	1.00	0.0	A+
E	119	Male	Female	8	66.63	8.33	1.15	-0.3	A-
		White	Black	8	9.45	1.18	1.04	-0.1	A-
		White	Hispanic	8	6.96	0.87	1.08	-0.2	A-
E	120	Male	Female	8	68.02	8.50	0.82	0.5	A+
		White	Black	8	19.48	2.44	0.97	0.1	A+
		White	Hispanic	8	1.26	0.16	1.03	-0.1	A-
E	121	Male	Female	8	42.14	5.27	1.02	-0.1	A-
		White	Black	8	54.31	6.79	0.83	0.4	A+
		White	Hispanic	8	8.98	1.12	0.94	0.1	A+
E	122	Male	Female	8	867.38	108.42	1.75	-1.3	B-
		White	Black	8	6.18	0.77	0.96	0.1	A+
		White	Hispanic	8	8.98	1.12	1.07	-0.1	A-
E	123	Male	Female	8	770.62	96.33	1.71	-1.3	B-
		White	Black	8	43.96	5.50	1.23	-0.5	A-
		White	Hispanic	8	3.55	0.44	1.05	-0.1	A-
E	124	Male	Female	8	126.67	15.83	1.22	-0.5	A-
		White	Black	8	18.77	2.35	1.12	-0.3	A-
		White	Hispanic	8	2.90	0.36	0.96	0.1	A+
E	125	Male	Female	8	253.00	31.63	1.30	-0.6	A-
		White	Black	8	47.77	5.97	1.10	-0.2	A-
		White	Hispanic	8	20.05	2.51	1.12	-0.3	A-

Appendix T(a): Grade Eight Reading

Between Group DIF Analysis -- Multiple Choice Items

Form	Seq	Group Reference	Focal	d.f.	Chi Squared	Mean Square	Odds Ratio	Effect	Code
E	126	Male	Female	8	112.12	14.01	1.27	-0.6	A-
		White	Black	8	7.27	0.91	0.99	0.0	A+
		White	Hispanic	8	15.48	1.94	0.89	0.3	A+
E	127	Male	Female	8	143.15	17.89	1.25	-0.5	A-
		White	Black	8	35.48	4.43	1.18	-0.4	A-
		White	Hispanic	8	25.34	3.17	1.13	-0.3	A-
E	128	Male	Female	8	700.18	87.52	1.55	-1.0	B-
		White	Black	8	28.02	3.50	0.94	0.1	A+
		White	Hispanic	8	11.20	1.40	0.88	0.3	A+
E	129	Male	Female	8	92.68	11.58	1.17	-0.4	A-
		White	Black	8	10.28	1.29	1.07	-0.2	A-
		White	Hispanic	8	19.34	2.42	1.04	-0.1	A-
F	94	Male	Female	8	70.50	8.81	1.07	-0.2	A-
		White	Black	8	40.39	5.05	0.80	0.5	A+
		White	Hispanic	8	4.02	0.50	1.04	-0.1	A-
F	95	Male	Female	8	71.20	8.90	1.17	-0.4	A-
		White	Black	8	17.32	2.17	1.22	-0.5	A-
		White	Hispanic	8	11.00	1.37	1.35	-0.7	A-
F	96	Male	Female	8	409.90	51.24	1.47	-0.9	A-
		White	Black	8	27.72	3.46	1.06	-0.1	A-
		White	Hispanic	8	3.52	0.44	0.99	0.0	A+
F	97	Male	Female	8	49.98	6.25	1.00	0.0	A+
		White	Black	8	16.31	2.04	0.88	0.3	A+
		White	Hispanic	8	13.19	1.65	0.95	0.1	A+
F	98	Male	Female	8	153.46	19.18	1.32	-0.7	A-
		White	Black	8	38.20	4.77	1.14	-0.3	A-
		White	Hispanic	8	17.06	2.13	1.14	-0.3	A-
F	99	Male	Female	8	98.76	12.35	1.22	-0.5	A-
		White	Black	8	21.71	2.71	0.89	0.3	A+
		White	Hispanic	8	5.42	0.68	0.88	0.3	A+
F	100	Male	Female	8	43.83	5.48	0.87	0.3	A+
		White	Black	8	33.37	4.17	0.81	0.5	A+
		White	Hispanic	8	7.79	0.97	1.01	0.0	A-
F	101	Male	Female	8	32.28	4.03	0.96	0.1	A+
		White	Black	8	55.18	6.90	0.79	0.5	A+
		White	Hispanic	8	8.06	1.01	0.89	0.3	A+
F	102	Male	Female	8	958.98	119.87	1.78	-1.4	B-
		White	Black	8	3.51	0.44	1.05	-0.1	A-
		White	Hispanic	8	22.73	2.84	1.12	-0.3	A-
F	103	Male	Female	8	766.60	95.83	1.76	-1.3	B-
		White	Black	8	25.96	3.25	1.19	-0.4	A-
		White	Hispanic	8	8.28	1.04	1.13	-0.3	A-
F	104	Male	Female	8	235.21	29.40	1.29	-0.6	A-
		White	Black	8	9.22	1.15	1.00	0.0	A-
		White	Hispanic	8	13.02	1.63	0.95	0.1	A+
F	105	Male	Female	8	403.84	50.48	1.43	-0.8	A-
		White	Black	8	46.58	5.82	1.17	-0.4	A-
		White	Hispanic	8	26.19	3.27	1.03	-0.1	A-

Appendix T(a): Grade Eight Reading

Between Group DIF Analysis -- Multiple Choice Items

Form	Seq	Group Reference	Focal	d.f.	Chi Squared	Mean Square	Odds Ratio	Effect	Code
F	106	Male	Female	8	145.07	18.13	1.31	-0.6	A-
		White	Black	8	16.27	2.03	0.89	0.3	A+
		White	Hispanic	8	4.85	0.61	0.97	0.1	A+
F	107	Male	Female	8	164.25	20.53	1.26	-0.5	A-
		White	Black	8	57.39	7.17	1.17	-0.4	A-
		White	Hispanic	8	41.93	5.24	1.09	-0.2	A-
F	108	Male	Female	8	713.49	89.19	1.56	-1.0	B-
		White	Black	8	22.50	2.81	0.96	0.1	A+
		White	Hispanic	8	14.42	1.80	0.92	0.2	A+
F	109	Male	Female	8	119.17	14.90	1.19	-0.4	A-
		White	Black	8	15.22	1.90	1.11	-0.2	A-
		White	Hispanic	8	3.52	0.44	1.03	-0.1	A-
F	110	Male	Female	8	38.37	4.80	1.05	-0.1	A-
		White	Black	8	13.93	1.74	1.11	-0.3	A-
		White	Hispanic	8	20.12	2.52	0.94	0.1	A+
F	111	Male	Female	8	141.26	17.66	1.25	-0.5	A-
		White	Black	8	23.95	2.99	1.11	-0.3	A-
		White	Hispanic	8	21.99	2.75	1.29	-0.6	A-
F	112	Male	Female	8	65.57	8.20	0.94	0.2	A+
		White	Black	8	139.33	17.42	0.68	0.9	A+
		White	Hispanic	8	18.65	2.33	0.82	0.5	A+
F	113	Male	Female	8	121.09	15.14	0.78	0.6	A+
		White	Black	8	93.59	11.70	0.69	0.9	A+
		White	Hispanic	8	27.82	3.48	0.72	0.8	A+
F	114	Male	Female	8	305.13	38.14	0.65	1.0	B+
		White	Black	8	85.35	10.67	0.71	0.8	A+
		White	Hispanic	8	26.81	3.35	0.72	0.8	A+
F	115	Male	Female	8	75.57	9.45	0.68	0.9	A+
		White	Black	8	11.89	1.49	0.84	0.4	A+
		White	Hispanic	8	6.13	0.77	0.90	0.3	A+
F	116	Male	Female	8	94.44	11.80	0.85	0.4	A+
		White	Black	8	10.59	1.32	0.97	0.1	A+
		White	Hispanic	8	6.82	0.85	0.97	0.1	A+
F	117	Male	Female	8	39.69	4.96	0.93	0.2	A+
		White	Black	8	10.89	1.36	1.00	0.0	A-
		White	Hispanic	8	10.21	1.28	1.04	-0.1	A-
F	118	Male	Female	8	29.22	3.65	0.92	0.2	A+
		White	Black	8	14.35	1.79	1.11	-0.3	A-
		White	Hispanic	8	7.76	0.97	1.07	-0.2	A-
F	119	Male	Female	8	155.67	19.46	0.79	0.6	A+
		White	Black	8	15.09	1.89	0.90	0.2	A+
		White	Hispanic	8	19.56	2.45	0.83	0.4	A+
F	120	Male	Female	8	41.67	5.21	0.90	0.2	A+
		White	Black	8	13.94	1.74	0.94	0.1	A+
		White	Hispanic	8	9.34	1.17	0.92	0.2	A+
F	121	Male	Female	8	49.82	6.23	1.09	-0.2	A-
		White	Black	8	17.45	2.18	1.13	-0.3	A-
		White	Hispanic	8	11.28	1.41	1.19	-0.4	A-

Appendix T(a): Grade Eight Reading

Between Group DIF Analysis -- Multiple Choice Items

Form	Seq	Group Reference	Focal	d.f.	Chi Squared	Mean Square	Odds Ratio	Effect	Code
F	122	Male	Female	8	158.08	19.76	1.23	-0.5	A-
		White	Black	8	24.05	3.01	1.00	0.0	A+
		White	Hispanic	8	11.61	1.45	0.93	0.2	A+
F	123	Male	Female	8	87.08	10.88	1.29	-0.6	A-
		White	Black	8	58.38	7.30	1.20	-0.4	A-
		White	Hispanic	8	24.31	3.04	1.38	-0.7	A-
F	124	Male	Female	8	8.31	1.04	1.00	0.0	A-
		White	Black	8	7.51	0.94	1.06	-0.1	A-
		White	Hispanic	8	9.21	1.15	1.06	-0.1	A-
F	125	Male	Female	8	115.18	14.40	1.18	-0.4	A-
		White	Black	8	28.04	3.51	0.84	0.4	A+
		White	Hispanic	8	4.86	0.61	0.88	0.3	A+
F	126	Male	Female	8	8.61	1.08	1.04	-0.1	A-
		White	Black	8	56.28	7.03	0.87	0.3	A+
		White	Hispanic	8	12.19	1.52	0.79	0.6	A+
F	127	Male	Female	8	180.69	22.59	0.80	0.5	A+
		White	Black	8	45.19	5.65	0.82	0.5	A+
		White	Hispanic	8	25.31	3.16	0.79	0.5	A+
F	128	Male	Female	8	19.93	2.49	1.01	0.0	A-
		White	Black	8	15.96	1.99	1.00	0.0	A-
		White	Hispanic	8	22.95	2.87	1.02	0.0	A-
F	129	Male	Female	8	127.27	15.91	0.82	0.5	A+
		White	Black	8	80.35	10.04	1.17	-0.4	A-
		White	Hispanic	8	36.33	4.54	1.05	-0.1	A-

Appendix T(b): Grade Eight Reading
Between Group DIF Analysis – Constructed Response Items

Item Characteristic Curves – C+/- Items

Reference Group = Male, Focal Group = Female

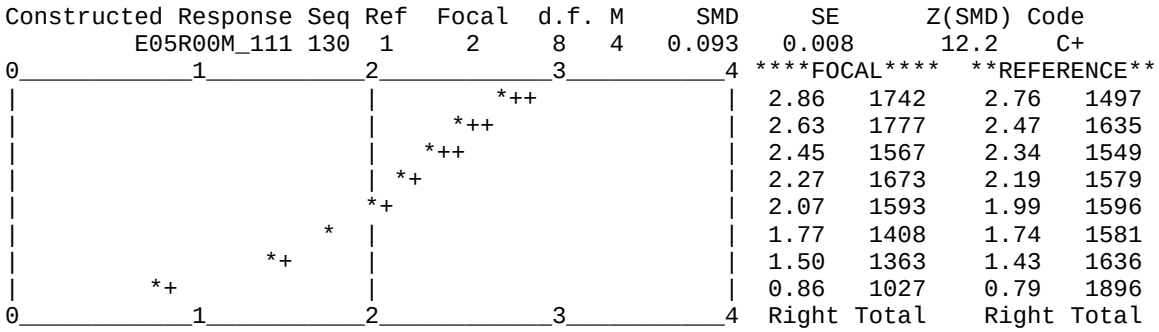
```
Constructed Response Seq Ref  Focal  d.f. M     SMD     SE      Z(SMD) Code
         A05R00M_111 130  1     2     8   4   0.068   0.008       8.6    C+
0____________1___________2____________3___________4 ****FOCAL****  **REFERENCE**
|                         |       *++               |  2.79   1668    2.67   1343
|                         |    *++                  |  2.52   1441    2.42   1440
|                         |  *+                     |  2.31   1565    2.22   1572
|                         |*+                       |  2.12   1742    2.07   1766
|                       *+|                         |  1.91   1611    1.85   1704
|                     *   |                         |  1.70   1495    1.67   1524
|                  *      |                         |  1.45   1422    1.41   1795
|            *            |                         |  0.87   1125    0.86   1989
0____________1___________2____________3___________4  Right Total    Right Total
```

```
Constructed Response Seq Ref  Focal  d.f. M     SMD     SE      Z(SMD) Code
         B05R00M_111 130  1     2     8   4   0.193   0.007      26.9    C+
0____________1___________2____________3___________4 ****FOCAL****  **REFERENCE**
|                         |     *+++                |  2.74   1753    2.49   1291
|                         |  *+++                   |  2.49   1555    2.28   1427
|                         | *+++                    |  2.36   1668    2.18   1588
|                         |*++                      |  2.26   1492    2.11   1524
|                         *++                       |  2.16   1572    2.00   1580
|                       *++                         |  2.10   1561    1.90   1669
|                     *++|                         |  1.93   1490    1.74   1755
|             *++         |                         |  1.22   1150    1.05   2040
0____________1___________2____________3___________4  Right Total    Right Total
```

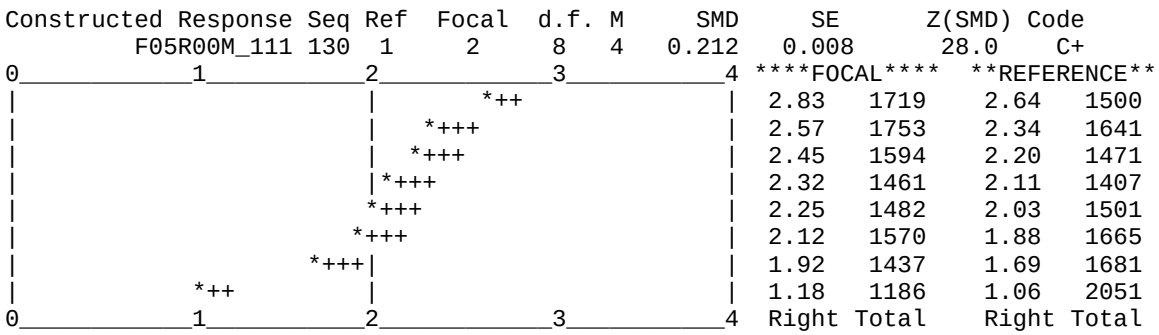
```
Constructed Response Seq Ref  Focal  d.f. M     SMD     SE      Z(SMD) Code
         C05R00M_111 130  1     2     8   4   0.116   0.007      16.4    C+
0____________1___________2____________3___________4 ****FOCAL****  **REFERENCE**
|                         |      *++                |  2.69   1855    2.53   1418
|                         |   *+                    |  2.41   1586    2.29   1534
|                         | *+                      |  2.28   1616    2.17   1591
|                         |*+                       |  2.18   1417    2.08   1459
|                         *++                       |  2.13   1484    2.00   1517
|                       *++                         |  2.04   1564    1.91   1641
|                     *+ |                         |  1.85   1473    1.75   1701
|              *          |                         |  1.13   1199    1.11   2064
0____________1___________2____________3___________4  Right Total    Right Total
```

```
Constructed Response Seq Ref  Focal  d.f. M     SMD     SE      Z(SMD) Code
         D05R00M_111 130  1     2     8   4   0.159   0.007      22.0    C+
0____________1___________2____________3___________4 ****FOCAL****  **REFERENCE**
|                         |     *+                  |  2.56   1867    2.44   1472
|                         | *++                     |  2.32   1630    2.15   1536
|                         |*++                      |  2.21   1629    2.04   1663
|                         *++                       |  2.13   1419    1.97   1428
|                       *++                         |  2.02   1637    1.88   1702
|                     *++|                         |  1.92   1494    1.76   1548
|                   *++  |                         |  1.80   1462    1.62   1681
|            *+++         |                         |  1.17   1136    0.98   1875
0____________1___________2____________3___________4  Right Total    Right Total
```

Appendix T(b): Grade Eight Reading
Between Group DIF Analysis – Constructed Response Items



2.86	1742	2.76	1497	
2.63	1777	2.47	1635	
2.45	1567	2.34	1549	
2.27	1673	2.19	1579	
2.07	1593	1.99	1596	
1.77	1408	1.74	1581	
1.50	1363	1.43	1636	
0.86	1027	0.79	1896	



2.83	1719	2.64	1500	
2.57	1753	2.34	1641	
2.45	1594	2.20	1471	
2.32	1461	2.11	1407	
2.25	1482	2.03	1501	
2.12	1570	1.88	1665	
1.92	1437	1.69	1681	
1.18	1186	1.06	2051	

Appendix T(b): Grade Eight Reading

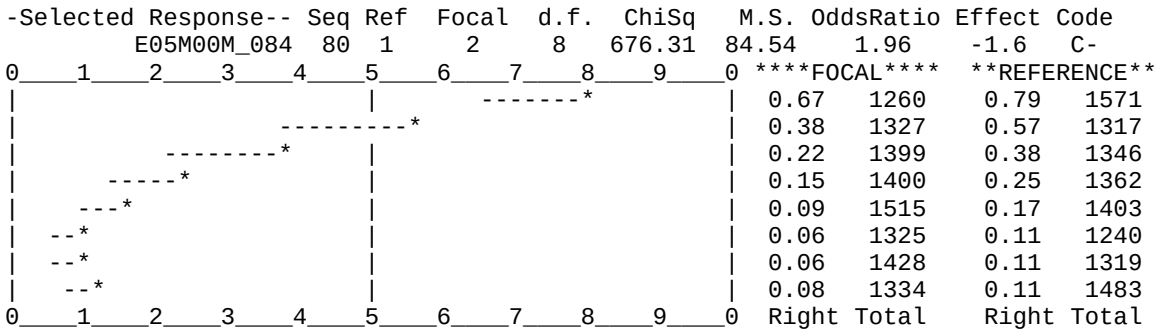
Between Group DIF Analysis -- Constructed Response Items

Form	Seq	Reference	Focal	d.f.	Max Score	SMD	S.E.	Effect	Code
A	130	Male	Female	8	4	0.068	0.008	8.6	CC+
		White	Black	8	4	0.007	0.012	0.6	AA+
		White	Hispanic	8	4	0.049	0.019	2.6	BB+
B	130	Male	Female	8	4	0.193	0.007	26.9	CC+
		White	Black	8	4	0.035	0.012	2.8	BB+
		White	Hispanic	8	4	0.040	0.019	2.1	BB+
C	130	Male	Female	8	4	0.116	0.007	16.4	CC+
		White	Black	8	4	-0.028	0.012	-2.4	BB-
		White	Hispanic	8	4	-0.022	0.019	-1.2	AA-
D	130	Male	Female	8	4	0.159	0.007	22.0	CC+
		White	Black	8	4	0.015	0.012	1.2	AA+
		White	Hispanic	8	4	0.058	0.019	3.1	BB+
E	130	Male	Female	8	4	0.093	0.008	12.2	CC+
		White	Black	8	4	-0.022	0.012	-1.8	AA-
		White	Hispanic	8	4	-0.033	0.020	-1.7	AA-
F	130	Male	Female	8	4	0.212	0.008	28.0	CC+
		White	Black	8	4	0.008	0.012	0.6	AA+
		White	Hispanic	8	4	0.038	0.020	1.9	AA+

Appendix U(a): Grade Eleven Mathematics
Between Group DIF Analysis – Multiple Choice Items

Item Characteristic Curve – C+/- Items

Reference Group = Male, Focal Group = Female



Appendix U(a): Grade Eleven Mathematics

Between Group DIF Analysis -- Multiple Choice Items

Form	Seq	Group Reference	Focal	d.f.	Chi Squared	Mean Square	Odds Ratio	Effect	Code
A	67	Male	Female	8	15.54	1.94	0.97	0.1	A+
		White	Black	8	27.09	3.39	1.06	-0.1	A-
		White	Hispanic	8	11.54	1.44	0.95	0.1	A+
A	68	Male	Female	8	26.31	3.29	0.85	0.4	A+
		White	Black	8	21.62	2.70	0.96	0.1	A+
		White	Hispanic	8	22.67	2.83	1.39	-0.8	A-
A	69	Male	Female	8	36.13	4.52	0.90	0.2	A+
		White	Black	8	15.10	1.89	1.05	-0.1	A-
		White	Hispanic	8	7.09	0.89	0.99	0.0	A+
A	70	Male	Female	8	69.24	8.65	1.13	-0.3	A-
		White	Black	8	23.47	2.93	1.18	-0.4	A-
		White	Hispanic	8	14.43	1.80	1.11	-0.2	A-
A	71	Male	Female	8	56.47	7.06	0.90	0.3	A+
		White	Black	8	13.89	1.74	0.86	0.3	A+
		White	Hispanic	8	8.47	1.06	0.87	0.3	A+
A	72	Male	Female	8	12.00	1.50	1.02	0.0	A-
		White	Black	8	17.76	2.22	0.89	0.3	A+
		White	Hispanic	8	10.79	1.35	0.96	0.1	A+
A	73	Male	Female	8	414.53	51.82	1.52	-1.0	A-
		White	Black	8	30.74	3.84	1.24	-0.5	A-
		White	Hispanic	8	7.20	0.90	1.17	-0.4	A-
A	74	Male	Female	8	87.90	10.99	0.83	0.4	A+
		White	Black	8	21.46	2.68	0.88	0.3	A+
		White	Hispanic	8	12.78	1.60	0.94	0.1	A+
A	75	Male	Female	8	105.05	13.13	0.88	0.3	A+
		White	Black	8	10.42	1.30	0.92	0.2	A+
		White	Hispanic	8	18.40	2.30	0.87	0.3	A+
A	76	Male	Female	8	23.61	2.95	0.99	0.0	A+
		White	Black	8	41.76	5.22	1.08	-0.2	A-
		White	Hispanic	8	17.38	2.17	0.96	0.1	A+
A	77	Male	Female	8	14.00	1.75	0.99	0.0	A+
		White	Black	8	69.48	8.68	0.80	0.5	A+
		White	Hispanic	8	32.75	4.09	0.67	0.9	A+
A	78	Male	Female	8	21.79	2.72	0.98	0.0	A+
		White	Black	8	20.76	2.59	1.13	-0.3	A-
		White	Hispanic	8	4.16	0.52	0.94	0.1	A+
A	79	Male	Female	8	14.66	1.83	1.02	0.0	A-
		White	Black	8	16.81	2.10	1.02	0.0	A-
		White	Hispanic	8	7.52	0.94	0.87	0.3	A+
A	80	Male	Female	8	35.41	4.43	0.91	0.2	A+
		White	Black	8	9.97	1.25	0.94	0.2	A+
		White	Hispanic	8	7.19	0.90	1.07	-0.2	A-
A	81	Male	Female	8	58.57	7.32	0.97	0.1	A+
		White	Black	8	11.82	1.48	0.93	0.2	A+
		White	Hispanic	8	8.99	1.12	0.85	0.4	A+
B	67	Male	Female	8	46.72	5.84	0.89	0.3	A+
		White	Black	8	10.24	1.28	1.02	0.0	A-
		White	Hispanic	8	8.28	1.03	1.09	-0.2	A-

Appendix U(a): Grade Eleven Mathematics

Between Group DIF Analysis -- Multiple Choice Items

Form	Seq	Group Reference	Focal	d.f.	Chi Squared	Mean Square	Odds Ratio	Effect	Code
B	68	Male	Female	8	69.85	8.73	0.98	0.0	A+
		White	Black	8	25.72	3.21	1.09	-0.2	A-
		White	Hispanic	8	6.67	0.83	1.09	-0.2	A-
B	69	Male	Female	8	59.88	7.48	1.09	-0.2	A-
		White	Black	8	25.66	3.21	0.96	0.1	A+
		White	Hispanic	8	14.52	1.81	0.94	0.1	A+
B	70	Male	Female	8	575.70	71.96	1.57	-1.1	B-
		White	Black	8	29.71	3.71	1.07	-0.2	A-
		White	Hispanic	8	10.56	1.32	1.07	-0.2	A-
B	71	Male	Female	8	138.13	17.27	1.20	-0.4	A-
		White	Black	8	30.10	3.76	1.18	-0.4	A-
		White	Hispanic	8	11.58	1.45	1.12	-0.3	A-
B	72	Male	Female	8	222.09	27.76	1.39	-0.8	A-
		White	Black	8	24.85	3.11	1.04	-0.1	A-
		White	Hispanic	8	2.72	0.34	0.98	0.1	A+
B	73	Male	Female	8	51.62	6.45	1.16	-0.3	A-
		White	Black	8	7.46	0.93	0.91	0.2	A+
		White	Hispanic	8	17.61	2.20	0.90	0.3	A+
B	74	Male	Female	8	32.35	4.04	1.06	-0.1	A-
		White	Black	8	17.86	2.23	1.18	-0.4	A-
		White	Hispanic	8	11.98	1.50	0.84	0.4	A+
B	75	Male	Female	8	119.82	14.98	0.85	0.4	A+
		White	Black	8	22.64	2.83	0.88	0.3	A+
		White	Hispanic	8	5.64	0.70	0.86	0.4	A+
B	76	Male	Female	8	88.50	11.06	1.19	-0.4	A-
		White	Black	8	19.17	2.40	0.86	0.3	A+
		White	Hispanic	8	12.08	1.51	0.84	0.4	A+
B	77	Male	Female	8	56.99	7.12	1.09	-0.2	A-
		White	Black	8	98.70	12.34	0.76	0.7	A+
		White	Hispanic	8	23.83	2.98	0.77	0.6	A+
B	78	Male	Female	8	352.42	44.05	1.46	-0.9	A-
		White	Black	8	19.44	2.43	1.12	-0.3	A-
		White	Hispanic	8	11.93	1.49	1.03	-0.1	A-
B	79	Male	Female	8	71.58	8.95	1.02	-0.1	A-
		White	Black	8	14.56	1.82	0.94	0.1	A+
		White	Hispanic	8	19.11	2.39	0.83	0.5	A+
B	80	Male	Female	8	47.08	5.89	0.88	0.3	A+
		White	Black	8	22.42	2.80	0.85	0.4	A+
		White	Hispanic	8	15.59	1.95	0.83	0.4	A+
B	81	Male	Female	8	37.06	4.63	0.92	0.2	A+
		White	Black	8	64.70	8.09	0.73	0.7	A+
		White	Hispanic	8	17.48	2.19	0.98	0.0	A+
C	67	Male	Female	8	21.29	2.66	1.07	-0.2	A-
		White	Black	8	32.39	4.05	1.19	-0.4	A-
		White	Hispanic	8	23.75	2.97	1.19	-0.4	A-
C	68	Male	Female	8	25.24	3.16	1.09	-0.2	A-
		White	Black	8	35.16	4.39	1.13	-0.3	A-
		White	Hispanic	8	24.96	3.12	1.04	-0.1	A-

Appendix U(a): Grade Eleven Mathematics

Between Group DIF Analysis -- Multiple Choice Items

Form	Seq	Group Reference	Focal	d.f.	Chi Squared	Mean Square	Odds Ratio	Effect	Code
C	69	Male	Female	8	101.03	12.63	1.23	-0.5	A-
		White	Black	8	17.65	2.21	1.11	-0.2	A-
		White	Hispanic	8	12.08	1.51	1.09	-0.2	A-
C	70	Male	Female	8	417.85	52.23	1.38	-0.8	A-
		White	Black	8	17.56	2.19	1.04	-0.1	A-
		White	Hispanic	8	14.60	1.83	1.04	-0.1	A-
C	71	Male	Female	8	17.37	2.17	0.99	0.0	A+
		White	Black	8	15.45	1.93	0.92	0.2	A+
		White	Hispanic	8	12.81	1.60	0.93	0.2	A+
C	72	Male	Female	8	95.63	11.95	1.20	-0.4	A-
		White	Black	8	125.78	15.72	0.62	1.1	B+
		White	Hispanic	8	13.19	1.65	0.85	0.4	A+
C	73	Male	Female	8	24.74	3.09	1.06	-0.1	A-
		White	Black	8	49.90	6.24	1.27	-0.6	A-
		White	Hispanic	8	4.93	0.62	1.02	-0.1	A-
C	74	Male	Female	8	131.11	16.39	1.22	-0.5	A-
		White	Black	8	56.40	7.05	1.12	-0.3	A-
		White	Hispanic	8	13.79	1.72	1.04	-0.1	A-
C	75	Male	Female	8	59.08	7.38	0.87	0.3	A+
		White	Black	8	67.01	8.38	0.74	0.7	A+
		White	Hispanic	8	9.25	1.16	0.83	0.4	A+
C	76	Male	Female	8	77.80	9.72	0.86	0.4	A+
		White	Black	8	29.62	3.70	0.78	0.6	A+
		White	Hispanic	8	9.06	1.13	0.81	0.5	A+
C	77	Male	Female	8	19.83	2.48	0.96	0.1	A+
		White	Black	8	22.63	2.83	0.84	0.4	A+
		White	Hispanic	8	8.43	1.05	0.95	0.1	A+
C	78	Male	Female	8	57.79	7.22	0.89	0.3	A+
		White	Black	8	23.01	2.88	0.97	0.1	A+
		White	Hispanic	8	25.87	3.23	0.88	0.3	A+
C	79	Male	Female	8	19.78	2.47	1.04	-0.1	A-
		White	Black	8	18.33	2.29	1.01	0.0	A-
		White	Hispanic	8	8.45	1.06	0.99	0.0	A+
C	80	Male	Female	8	35.91	4.49	0.96	0.1	A+
		White	Black	8	39.93	4.99	1.19	-0.4	A-
		White	Hispanic	8	4.39	0.55	0.95	0.1	A+
C	81	Male	Female	8	231.38	28.92	0.72	0.8	A+
		White	Black	8	48.84	6.11	1.15	-0.3	A-
		White	Hispanic	8	15.72	1.97	0.89	0.3	A+
D	67	Male	Female	8	23.84	2.98	0.92	0.2	A+
		White	Black	8	45.71	5.71	0.84	0.4	A+
		White	Hispanic	8	28.90	3.61	0.73	0.7	A+
D	68	Male	Female	8	27.94	3.49	0.91	0.2	A+
		White	Black	8	6.96	0.87	0.94	0.1	A+
		White	Hispanic	8	8.30	1.04	1.07	-0.2	A-
D	69	Male	Female	8	76.04	9.51	1.05	-0.1	A-
		White	Black	8	2.20	0.28	1.01	0.0	A-
		White	Hispanic	8	7.26	0.91	0.88	0.3	A+

Appendix U(a): Grade Eleven Mathematics

Between Group DIF Analysis -- Multiple Choice Items

Form	Seq	Group Reference	Focal	d.f.	Chi Squared	Mean Square	Odds Ratio	Effect	Code
D	70	Male	Female	8	123.81	15.48	1.26	-0.5	A-
		White	Black	8	40.48	5.06	1.22	-0.5	A-
		White	Hispanic	8	9.25	1.16	1.13	-0.3	A-
D	71	Male	Female	8	156.52	19.56	0.85	0.4	A+
		White	Black	8	14.04	1.76	1.04	-0.1	A-
		White	Hispanic	8	15.01	1.88	1.03	-0.1	A-
D	72	Male	Female	8	81.09	10.14	1.17	-0.4	A-
		White	Black	8	14.29	1.79	0.99	0.0	A+
		White	Hispanic	8	7.50	0.94	1.11	-0.2	A-
D	73	Male	Female	8	25.17	3.15	0.99	0.0	A+
		White	Black	8	27.06	3.38	1.11	-0.3	A-
		White	Hispanic	8	9.61	1.20	0.85	0.4	A+
D	74	Male	Female	8	20.78	2.60	1.08	-0.2	A-
		White	Black	8	68.89	8.61	1.40	-0.8	A-
		White	Hispanic	8	14.45	1.81	1.14	-0.3	A-
D	75	Male	Female	8	906.03	113.25	1.81	-1.4	B-
		White	Black	8	23.73	2.97	1.03	-0.1	A-
		White	Hispanic	8	11.66	1.46	1.22	-0.5	A-
D	76	Male	Female	8	40.74	5.09	0.86	0.4	A+
		White	Black	8	18.36	2.30	0.84	0.4	A+
		White	Hispanic	8	3.35	0.42	1.04	-0.1	A-
D	77	Male	Female	8	22.45	2.81	0.90	0.3	A+
		White	Black	8	12.31	1.54	1.07	-0.2	A-
		White	Hispanic	8	5.75	0.72	1.11	-0.2	A-
D	78	Male	Female	8	186.79	23.35	1.31	-0.6	A-
		White	Black	8	87.96	11.00	1.30	-0.6	A-
		White	Hispanic	8	27.46	3.43	1.39	-0.8	A-
D	79	Male	Female	8	73.04	9.13	0.85	0.4	A+
		White	Black	8	63.98	8.00	0.72	0.8	A+
		White	Hispanic	8	6.17	0.77	0.91	0.2	A+
D	80	Male	Female	8	20.28	2.53	0.92	0.2	A+
		White	Black	8	18.40	2.30	1.13	-0.3	A-
		White	Hispanic	8	14.61	1.83	1.13	-0.3	A-
D	81	Male	Female	8	183.03	22.88	0.69	0.9	A+
		White	Black	8	29.73	3.72	0.89	0.3	A+
		White	Hispanic	8	9.47	1.18	0.98	0.1	A+
E	67	Male	Female	8	23.64	2.95	0.98	0.0	A+
		White	Black	8	27.13	3.39	1.25	-0.5	A-
		White	Hispanic	8	9.62	1.20	1.27	-0.6	A-
E	68	Male	Female	8	72.70	9.09	0.85	0.4	A+
		White	Black	8	29.27	3.66	1.12	-0.3	A-
		White	Hispanic	8	6.30	0.79	1.07	-0.2	A-
E	69	Male	Female	8	281.48	35.19	0.69	0.9	A+
		White	Black	8	10.96	1.37	1.10	-0.2	A-
		White	Hispanic	8	4.64	0.58	1.03	-0.1	A-
E	70	Male	Female	8	32.84	4.10	1.00	0.0	A
		White	Black	8	48.95	6.12	0.79	0.5	A+
		White	Hispanic	8	3.15	0.39	0.95	0.1	A+

Appendix U(a): Grade Eleven Mathematics

Between Group DIF Analysis -- Multiple Choice Items

Form	Seq	Group Reference	Focal	d.f.	Chi Squared	Mean Square	Odds Ratio	Effect	Code
E	71	Male	Female	8	75.66	9.46	1.15	-0.3	A-
		White	Black	8	151.00	18.87	1.69	-1.2	B-
		White	Hispanic	8	31.85	3.98	1.32	-0.7	A-
E	72	Male	Female	8	32.31	4.04	1.08	-0.2	A-
		White	Black	8	3.18	0.40	1.00	0.0	A+
		White	Hispanic	8	10.59	1.32	0.85	0.4	A+
E	73	Male	Female	8	490.46	61.31	1.60	-1.1	B-
		White	Black	8	15.49	1.94	1.16	-0.3	A-
		White	Hispanic	8	5.74	0.72	1.14	-0.3	A-
E	74	Male	Female	8	136.65	17.08	0.70	0.8	A+
		White	Black	8	12.04	1.51	1.10	-0.2	A-
		White	Hispanic	8	8.52	1.07	1.22	-0.5	A-
E	75	Male	Female	8	123.08	15.38	0.83	0.4	A+
		White	Black	8	11.86	1.48	1.03	-0.1	A-
		White	Hispanic	8	4.64	0.58	0.95	0.1	A+
E	76	Male	Female	8	116.27	14.53	1.35	-0.7	A-
		White	Black	8	13.47	1.68	1.16	-0.3	A-
		White	Hispanic	8	4.11	0.51	0.89	0.3	A+
E	77	Male	Female	8	42.41	5.30	1.06	-0.1	A-
		White	Black	8	34.13	4.27	0.83	0.4	A+
		White	Hispanic	8	12.29	1.54	0.77	0.6	A+
E	78	Male	Female	8	22.14	2.77	1.06	-0.1	A-
		White	Black	8	52.92	6.62	0.81	0.5	A+
		White	Hispanic	8	6.67	0.83	0.85	0.4	A+
E	79	Male	Female	8	232.47	29.06	0.68	0.9	A+
		White	Black	8	24.77	3.10	1.14	-0.3	A-
		White	Hispanic	8	8.22	1.03	1.06	-0.1	A-
E	80	Male	Female	8	676.31	84.54	1.96	-1.6	C-
		White	Black	8	38.84	4.85	1.37	-0.7	A-
		White	Hispanic	8	9.78	1.22	0.96	0.1	A+
E	81	Male	Female	8	111.94	13.99	0.74	0.7	A+
		White	Black	8	33.87	4.23	1.25	-0.5	A-
		White	Hispanic	8	19.03	2.38	1.33	-0.7	A-
F	67	Male	Female	8	126.91	15.86	0.76	0.6	A+
		White	Black	8	14.56	1.82	0.90	0.2	A+
		White	Hispanic	8	11.98	1.50	0.98	0.0	A+
F	68	Male	Female	8	47.33	5.92	1.08	-0.2	A-
		White	Black	8	12.87	1.61	1.06	-0.1	A-
		White	Hispanic	8	5.79	0.72	0.96	0.1	A+
F	69	Male	Female	8	27.47	3.43	0.93	0.2	A+
		White	Black	8	11.90	1.49	1.11	-0.2	A-
		White	Hispanic	8	5.32	0.66	1.09	-0.2	A-
F	70	Male	Female	8	375.69	46.96	1.54	-1.0	B-
		White	Black	8	90.64	11.33	1.42	-0.8	A-
		White	Hispanic	8	37.04	4.63	1.15	-0.3	A-
F	71	Male	Female	8	858.03	107.25	1.78	-1.4	B-
		White	Black	8	18.77	2.35	1.06	-0.1	A-
		White	Hispanic	8	19.52	2.44	0.96	0.1	A+

Appendix U(a): Grade Eleven Mathematics

Between Group DIF Analysis -- Multiple Choice Items

Form	Seq	Group Reference	Focal	d.f.	Chi Squared	Mean Square	Odds Ratio	Effect	Code
F	72	Male	Female	8	103.77	12.97	0.91	0.2	A+
		White	Black	8	21.19	2.65	1.17	-0.4	A-
		White	Hispanic	8	9.78	1.22	0.91	0.2	A+
F	73	Male	Female	8	8.90	1.11	1.01	0.0	A-
		White	Black	8	8.09	1.01	0.92	0.2	A+
		White	Hispanic	8	6.79	0.85	0.89	0.3	A+
F	74	Male	Female	8	144.56	18.07	1.27	-0.6	A-
		White	Black	8	44.61	5.58	1.12	-0.3	A-
		White	Hispanic	8	7.02	0.88	1.07	-0.2	A-
F	75	Male	Female	8	87.21	10.90	1.22	-0.5	A-
		White	Black	8	6.27	0.78	1.01	0.0	A-
		White	Hispanic	8	6.58	0.82	0.83	0.4	A+
F	76	Male	Female	8	35.80	4.47	1.10	-0.2	A-
		White	Black	8	65.98	8.25	1.34	-0.7	A-
		White	Hispanic	8	17.37	2.17	1.17	-0.4	A-
F	77	Male	Female	8	152.79	19.10	1.15	-0.3	A-
		White	Black	8	12.60	1.57	1.08	-0.2	A-
		White	Hispanic	8	10.69	1.34	1.00	0.0	A
F	78	Male	Female	8	47.02	5.88	1.03	-0.1	A-
		White	Black	8	60.62	7.58	1.34	-0.7	A-
		White	Hispanic	8	14.60	1.82	1.20	-0.4	A-
F	79	Male	Female	8	69.90	8.74	1.02	0.0	A-
		White	Black	8	15.01	1.88	1.10	-0.2	A-
		White	Hispanic	8	6.28	0.78	1.00	0.0	A
F	80	Male	Female	8	174.93	21.87	0.82	0.5	A+
		White	Black	8	6.13	0.77	1.05	-0.1	A-
		White	Hispanic	8	11.64	1.45	1.11	-0.2	A-
F	81	Male	Female	8	155.02	19.38	0.78	0.6	A+
		White	Black	8	34.01	4.25	1.11	-0.2	A-
		White	Hispanic	8	11.97	1.50	1.11	-0.2	A-

Appendix U(b): Grade Eleven Mathematics
Between Group DIF Analysis – Constructed Response Items

Item Characteristic Curve – C+/- Items

Reference Group = Male, Focal Group = Female

```
Constructed Response Seq Ref  Focal  d.f. M     SMD     SE      Z(SMD) Code
         A05M00M_089 091  1     2     8   5   0.072   0.012       5.9    C+
0_________1_________2_________3_________4_________5 ****FOCAL****  **REFERENCE**
|                         |         *               |  3.45   1204    3.50   1523
|                      *+ |                         |  2.25   1417    2.19   1475
|                *+       |                         |  1.56   1489    1.45   1364
|           *+            |                         |  1.10   1398    0.95   1435
|      *+                 |                         |  0.69   1378    0.59   1229
|   *+                    |                         |  0.48   1359    0.37   1335
| *                       |                         |  0.22   1354    0.17   1435
*+                        |                         |  0.06   1231    0.04   1492
0_________1_________2_________3_________4_________5  Right Total    Right Total
```

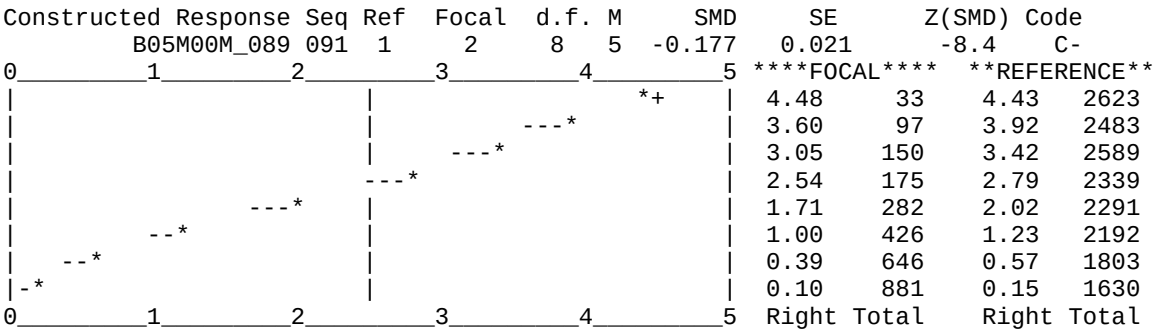
```
Constructed Response Seq Ref  Focal  d.f. M     SMD     SE      Z(SMD) Code
         B05M00M_089 091  1     2     8   5   0.173   0.016      10.9    C+
0_________1_________2_________3_________4_________5 ****FOCAL****  **REFERENCE**
|                         |                    *+   |  4.47   1269    4.39   1582
|                         |              *++        |  4.02   1272    3.80   1442
|                         |         *++             |  3.48   1448    3.28   1418
|                         | *+                      |  2.84   1338    2.68   1306
|                  *+++   |                         |  2.12   1434    1.83   1299
|           *+++          |                         |  1.29   1503    1.05   1316
|   *++                   |                         |  0.56   1378    0.45   1319
|*                        |                         |  0.15   1327    0.11   1466
0_________1_________2_________3_________4_________5  Right Total    Right Total
```

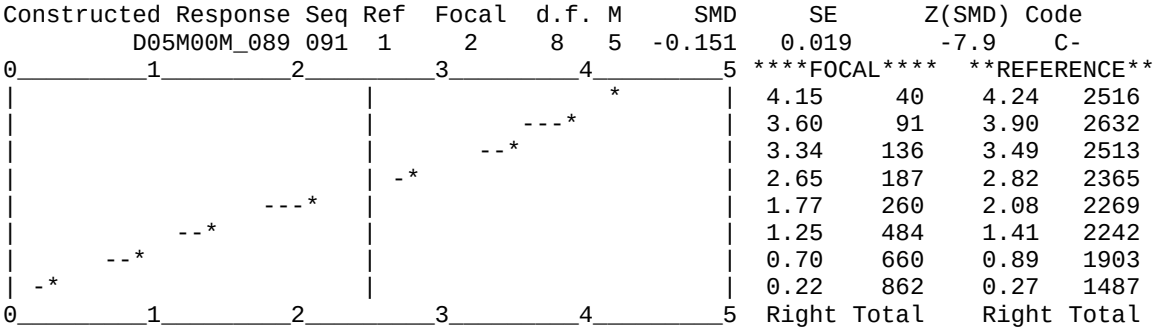
```
Constructed Response Seq Ref  Focal  d.f. M     SMD     SE      Z(SMD) Code
         C05M00M_089 091  1     2     8   5   0.107   0.014       7.6    C+
0_________1_________2_________3_________4_________5 ****FOCAL****  **REFERENCE**
|                         |                 *+      |  4.19   1211    4.07   1533
|                         |    *+++                 |  3.18   1415    2.94   1384
|                   *++   |                         |  2.08   1360    1.94   1284
|         *++             |                         |  1.08   1421    0.87   1434
|   *+                    |                         |  0.47   1411    0.37   1389
| *                       |                         |  0.16   1509    0.16   1369
|*                        |                         |  0.09   1384    0.06   1362
*                         |                         |  0.02   1227    0.01   1421
0_________1_________2_________3_________4_________5  Right Total    Right Total
```

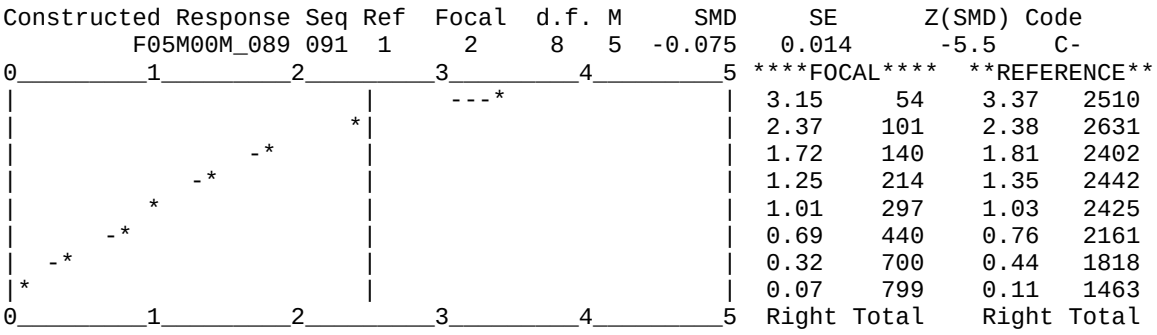
```
Constructed Response Seq Ref  Focal  d.f. M     SMD     SE      Z(SMD) Code
         D05M00M_089 091  1     2     8   5   0.090   0.014       6.3    C+
0_________1_________2_________3_________4_________5 ****FOCAL****  **REFERENCE**
|                         |                  *+     |  4.32   1215    4.18   1540
|                         |              *++        |  3.97   1403    3.82   1463
|                         |          *++            |  3.59   1394    3.35   1382
|                         |  *                      |  2.80   1330    2.78   1347
|                    -*   |                         |  2.03   1396    2.06   1289
|             *+          |                         |  1.38   1520    1.35   1420
|        *+               |                         |  0.88   1426    0.79   1414
| *+                      |                         |  0.29   1240    0.22   1399
0_________1_________2_________3_________4_________5  Right Total    Right Total
```

Appendix U(b): Grade Eleven Mathematics
Between Group DIF Analysis – Constructed Response Items

Reference Group = White, Focal Group = Black







Appendix U(b): Grade Eleven Mathematics

Between Group DIF Analysis -- Constructed Response Items

Form	Seq	Reference	Focal	d.f.	Max Score	SMD	S.E.	Effect	Code
A	91	Male	Female	8	5	0.072	0.012	5.9	CC+
		White	Black	8	5	-0.037	0.013	-2.9	BB-
		White	Hispanic	8	5	-0.020	0.023	-0.9	AA-
B	91	Male	Female	8	5	0.173	0.016	10.9	CC+
		White	Black	8	5	-0.177	0.021	-8.4	CC-
		White	Hispanic	8	5	-0.175	0.037	-4.7	BB-
C	91	Male	Female	8	5	0.107	0.014	7.6	CC+
		White	Black	8	5	0.047	0.015	3.2	BB+
		White	Hispanic	8	5	0.054	0.025	2.1	BB+
D	91	Male	Female	8	5	0.090	0.014	6.3	CC+
		White	Black	8	5	-0.151	0.019	-7.9	CC-
		White	Hispanic	8	5	-0.094	0.033	-2.8	BB-
E	91	Male	Female	8	5	-0.041	0.011	-3.9	BB-
		White	Black	8	5	0.015	0.010	1.5	AA+
		White	Hispanic	8	5	-0.004	0.018	-0.2	AA-
F	91	Male	Female	8	5	0.036	0.012	3.0	BB+
		White	Black	8	5	-0.075	0.014	-5.5	CC-
		White	Hispanic	8	5	-0.093	0.024	-3.9	BB-

Appendix V(a): Grade Eleven Reading
Between Group DIF Statistics – Multiple Choice Items

Item Characteristic Curve – C+/-

Reference Group = Male, Focal Group = Female

```
-Selected Response-- Seq Ref  Focal  d.f.  ChiSq   M.S. OddsRatio Effect Code
         C05R00M_120 139  1     2     8  1060.54 132.57    2.12    -1.8   C-
0____1____2____3____4____5____6____7____8____9____0 ****FOCAL****  **REFERENCE**
|                         |                          *|  0.98   1430    0.98   1333
|                         |                       --*|  0.95   1425    0.97   1251
|                         |                       -* |  0.94   1363    0.96   1310
|                         |                    ---*  |  0.88   1440    0.95   1356
|                         |                ------*   |  0.80   1382    0.92   1334
|                         |       ----------*        |  0.67   1465    0.85   1421
|                        ---------*                  |  0.48   1396    0.67   1419
|         ---*            |                          |  0.20   1037    0.26   1752
0____1____2____3____4____5____6____7____8____9____0  Right Total    Right Total
```

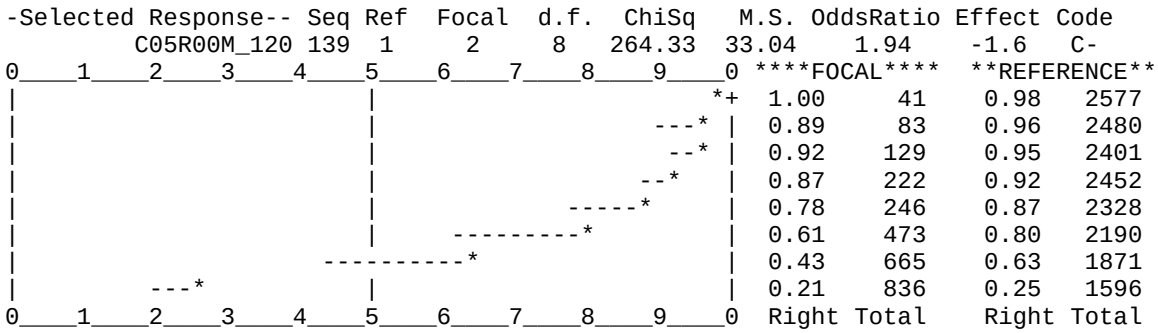
```
-Selected Response-- Seq Ref  Focal  d.f.  ChiSq   M.S. OddsRatio Effect Code
         D05R00M_100 119  1     2     8  1647.61 205.95    2.55    -2.2   C-
0____1____2____3____4____5____6____7____8____9____0 ****FOCAL****  **REFERENCE**
|                         |                          *|  0.98   1417    0.98   1271
|                         |                        * |  0.96   1470    0.97   1303
|                         |                       --*|  0.95   1391    0.98   1357
|                         |                    ----* |  0.88   1467    0.96   1476
|                         |                ------*   |  0.81   1322    0.93   1337
|                         |        -----------*      |  0.69   1422    0.88   1387
|                         -------------*             |  0.50   1340    0.76   1452
|          -----*         |                          |  0.22   1095    0.32   1671
0____1____2____3____4____5____6____7____8____9____0  Right Total    Right Total
```

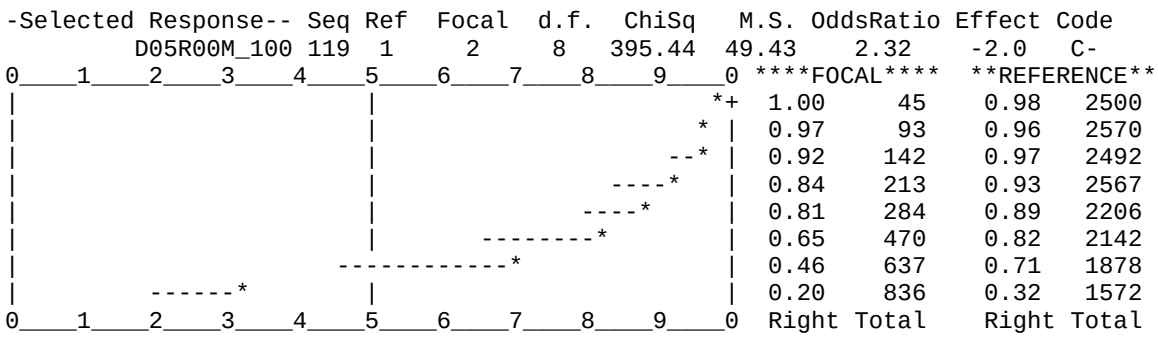
```
-Selected Response-- Seq Ref  Focal  d.f.  ChiSq   M.S. OddsRatio Effect Code
         E05R00M_106 125  1     2     8   827.06 103.38    1.92    -1.5   C-
0____1____2____3____4____5____6____7____8____9____0 ****FOCAL****  **REFERENCE**
|                         |                          *  0.99   1498    0.99   1247
|                         |                       -*|  0.96   1491    0.99   1410
|                         |                    ---*  |  0.88   1359    0.95   1354
|                         |                -----*    |  0.78   1440    0.88   1364
|                         |     --------*            |  0.62   1404    0.76   1322
|                     ----------*                     |  0.43   1352    0.60   1341
|             --------*   |                          |  0.25   1367    0.41   1363
|         --*             |                          |  0.20   1077    0.23   1640
0____1____2____3____4____5____6____7____8____9____0  Right Total    Right Total
```

```
-Selected Response-- Seq Ref  Focal  d.f.  ChiSq   M.S. OddsRatio Effect Code
         F05R00M_085 104  1     2     8  1077.72 134.72    2.12    -1.8   C-
0____1____2____3____4____5____6____7____8____9____0 ****FOCAL****  **REFERENCE**
|                         |                          -*  0.99   1416    0.99   1310
|                         |                        -*|  0.96   1314    0.98   1292
|                         |                     ---* |  0.91   1356    0.96   1316
|                         |                -----*    |  0.81   1488    0.90   1407
|                         |     -----------*         |  0.63   1387    0.81   1356
|                     -----------*                    |  0.44   1406    0.67   1352
|                --------* |                          |  0.32   1394    0.46   1456
|         ---*            |                          |  0.20   1090    0.26   1698
0____1____2____3____4____5____6____7____8____9____0  Right Total    Right Total
```

Appendix V(a): Grade Eleven Reading
Between Group DIF Statistics – Multiple Choice Items

Reference Group = White, Focal Group = Black





Appendix V(a): Grade Eleven Reading

Between Group DIF Analysis -- Multiple Choice Items

Form	Seq	Group Reference	Focal	d.f.	Chi Squared	Mean Square	Odds Ratio	Effect	Code
A	100	Male	Female	8	31.12	3.89	0.96	0.1	A+
		White	Black	8	11.84	1.48	0.91	0.2	A+
		White	Hispanic	8	15.22	1.90	0.76	0.6	A+
A	101	Male	Female	8	73.63	9.20	1.27	-0.6	A-
		White	Black	8	23.39	2.92	1.12	-0.3	A-
		White	Hispanic	8	2.82	0.35	1.08	-0.2	A-
A	102	Male	Female	8	227.47	28.43	1.35	-0.7	A-
		White	Black	8	17.73	2.22	1.10	-0.2	A-
		White	Hispanic	8	8.74	1.09	1.16	-0.4	A-
A	103	Male	Female	8	36.95	4.62	0.95	0.1	A+
		White	Black	8	25.97	3.25	0.82	0.5	A+
		White	Hispanic	8	16.72	2.09	1.19	-0.4	A-
A	104	Male	Female	8	251.60	31.45	1.54	-1.0	B-
		White	Black	8	25.00	3.12	1.15	-0.3	A-
		White	Hispanic	8	3.34	0.42	1.04	-0.1	A-
A	105	Male	Female	8	314.94	39.37	1.45	-0.9	A-
		White	Black	8	7.35	0.92	1.05	-0.1	A-
		White	Hispanic	8	3.41	0.43	1.01	0.0	A-
A	106	Male	Female	8	53.45	6.68	1.10	-0.2	A-
		White	Black	8	44.97	5.62	1.26	-0.5	A-
		White	Hispanic	8	18.28	2.29	1.15	-0.3	A-
A	107	Male	Female	8	24.69	3.09	1.01	0.0	A-
		White	Black	8	8.81	1.10	0.98	0.0	A+
		White	Hispanic	8	6.95	0.87	0.91	0.2	A+
A	108	Male	Female	8	683.79	85.47	1.66	-1.2	B-
		White	Black	8	26.51	3.31	1.12	-0.3	A-
		White	Hispanic	8	9.80	1.23	1.02	-0.1	A-
A	109	Male	Female	8	62.53	7.82	1.21	-0.4	A-
		White	Black	8	21.82	2.73	1.14	-0.3	A-
		White	Hispanic	8	24.34	3.04	1.29	-0.6	A-
A	110	Male	Female	8	185.73	23.22	1.42	-0.8	A-
		White	Black	8	59.85	7.48	1.29	-0.6	A-
		White	Hispanic	8	16.14	2.02	1.27	-0.6	A-
A	111	Male	Female	8	35.56	4.45	1.00	0.0	A
		White	Black	8	32.46	4.06	0.99	0.0	A+
		White	Hispanic	8	11.09	1.39	1.13	-0.3	A-
A	112	Male	Female	8	37.54	4.69	0.84	0.4	A+
		White	Black	8	13.02	1.63	0.84	0.4	A+
		White	Hispanic	8	7.74	0.97	0.86	0.4	A+
A	113	Male	Female	8	31.70	3.96	1.07	-0.2	A-
		White	Black	8	20.19	2.52	0.91	0.2	A+
		White	Hispanic	8	3.70	0.46	1.14	-0.3	A-
A	114	Male	Female	8	20.31	2.54	1.00	0.0	A+
		White	Black	8	21.01	2.63	1.06	-0.1	A-
		White	Hispanic	8	30.10	3.76	1.42	-0.8	A-
A	115	Male	Female	8	42.79	5.35	1.07	-0.2	A-
		White	Black	8	33.16	4.15	1.12	-0.3	A-
		White	Hispanic	8	8.41	1.05	1.10	-0.2	A-

Appendix V(a): Grade Eleven Reading

Between Group DIF Analysis -- Multiple Choice Items

Form	Seq	Group Reference	Focal	d.f.	Chi Squared	Mean Square	Odds Ratio	Effect	Code
A	116	Male	Female	8	23.66	2.96	0.96	0.1	A+
		White	Black	8	42.53	5.32	1.00	0.0	A
		White	Hispanic	8	10.37	1.30	0.80	0.5	A+
A	117	Male	Female	8	20.56	2.57	0.91	0.2	A+
		White	Black	8	15.71	1.96	0.99	0.0	A+
		White	Hispanic	8	6.90	0.86	1.17	-0.4	A-
A	118	Male	Female	8	8.28	1.03	0.99	0.0	A+
		White	Black	8	135.99	17.00	1.57	-1.1	B-
		White	Hispanic	8	29.34	3.67	1.43	-0.8	A-
A	119	Male	Female	8	42.86	5.36	0.89	0.3	A+
		White	Black	8	12.31	1.54	0.89	0.3	A+
		White	Hispanic	8	6.34	0.79	1.12	-0.3	A-
A	120	Male	Female	8	178.84	22.35	0.79	0.6	A+
		White	Black	8	16.22	2.03	0.85	0.4	A+
		White	Hispanic	8	17.62	2.20	0.86	0.3	A+
A	121	Male	Female	8	86.54	10.82	1.14	-0.3	A-
		White	Black	8	30.92	3.87	1.16	-0.3	A-
		White	Hispanic	8	31.70	3.96	1.42	-0.8	A-
A	122	Male	Female	8	92.25	11.53	0.82	0.5	A+
		White	Black	8	38.83	4.85	1.16	-0.3	A-
		White	Hispanic	8	13.72	1.72	1.15	-0.3	A-
A	123	Male	Female	8	64.23	8.03	0.84	0.4	A+
		White	Black	8	21.89	2.74	0.84	0.4	A+
		White	Hispanic	8	3.42	0.43	0.98	0.1	A+
A	124	Male	Female	8	9.25	1.16	0.99	0.0	A+
		White	Black	8	19.48	2.44	1.09	-0.2	A-
		White	Hispanic	8	26.18	3.27	0.73	0.8	A+
A	125	Male	Female	8	21.60	2.70	1.02	0.0	A-
		White	Black	8	4.48	0.56	0.99	0.0	A+
		White	Hispanic	8	22.83	2.85	1.31	-0.6	A-
A	126	Male	Female	8	79.81	9.98	1.18	-0.4	A-
		White	Black	8	6.20	0.77	0.97	0.1	A+
		White	Hispanic	8	4.44	0.56	1.06	-0.1	A-
A	127	Male	Female	8	72.38	9.05	1.13	-0.3	A-
		White	Black	8	14.58	1.82	1.07	-0.2	A-
		White	Hispanic	8	12.86	1.61	0.99	0.0	A+
A	128	Male	Female	8	308.42	38.55	1.47	-0.9	A-
		White	Black	8	61.80	7.73	1.18	-0.4	A-
		White	Hispanic	8	17.01	2.13	0.99	0.0	A+
A	129	Male	Female	8	8.40	1.05	0.93	0.2	A+
		White	Black	8	3.87	0.48	0.99	0.0	A+
		White	Hispanic	8	10.78	1.35	0.77	0.6	A+
A	130	Male	Female	8	337.33	42.17	0.71	0.8	A+
		White	Black	8	9.65	1.21	0.96	0.1	A+
		White	Hispanic	8	5.56	0.69	1.16	-0.3	A-
A	131	Male	Female	8	45.59	5.70	0.90	0.3	A+
		White	Black	8	37.31	4.66	0.82	0.5	A+
		White	Hispanic	8	25.20	3.15	0.79	0.6	A+

Appendix V(a): Grade Eleven Reading

Between Group DIF Analysis -- Multiple Choice Items

Form	Seq	Group Reference	Focal	d.f.	Chi Squared	Mean Square	Odds Ratio	Effect	Code
A	132	Male	Female	8	59.88	7.49	1.08	-0.2	A-
		White	Black	8	11.58	1.45	0.97	0.1	A+
		White	Hispanic	8	30.45	3.81	1.33	-0.7	A-
A	133	Male	Female	8	43.21	5.40	1.06	-0.1	A-
		White	Black	8	12.20	1.53	1.05	-0.1	A-
		White	Hispanic	8	6.84	0.86	1.04	-0.1	A-
A	134	Male	Female	8	199.02	24.88	0.79	0.6	A+
		White	Black	8	26.85	3.36	0.89	0.3	A+
		White	Hispanic	8	15.50	1.94	0.86	0.3	A+
A	135	Male	Female	8	325.99	40.75	1.38	-0.8	A-
		White	Black	8	14.62	1.83	1.09	-0.2	A-
		White	Hispanic	8	18.27	2.28	1.03	-0.1	A-
A	136	Male	Female	8	22.74	2.84	0.97	0.1	A+
		White	Black	8	12.21	1.53	0.93	0.2	A+
		White	Hispanic	8	2.58	0.32	1.02	0.0	A-
A	137	Male	Female	8	16.40	2.05	0.97	0.1	A+
		White	Black	8	73.76	9.22	1.32	-0.7	A-
		White	Hispanic	8	8.47	1.06	1.09	-0.2	A-
A	138	Male	Female	8	405.15	50.64	1.51	-1.0	A-
		White	Black	8	27.83	3.48	1.23	-0.5	A-
		White	Hispanic	8	9.89	1.24	1.16	-0.4	A-
A	139	Male	Female	8	32.48	4.06	1.18	-0.4	A-
		White	Black	8	89.03	11.13	1.39	-0.8	A-
		White	Hispanic	8	24.50	3.06	1.28	-0.6	A-
B	100	Male	Female	8	174.06	21.76	0.77	0.6	A+
		White	Black	8	30.71	3.84	0.81	0.5	A+
		White	Hispanic	8	11.12	1.39	0.84	0.4	A+
B	101	Male	Female	8	65.97	8.25	1.13	-0.3	A-
		White	Black	8	29.72	3.72	1.14	-0.3	A-
		White	Hispanic	8	21.00	2.63	1.25	-0.5	A-
B	102	Male	Female	8	51.26	6.41	0.89	0.3	A+
		White	Black	8	41.56	5.20	1.28	-0.6	A-
		White	Hispanic	8	22.66	2.83	1.22	-0.5	A-
B	103	Male	Female	8	48.36	6.04	0.92	0.2	A+
		White	Black	8	21.81	2.73	0.87	0.3	A+
		White	Hispanic	8	11.84	1.48	0.91	0.2	A+
B	104	Male	Female	8	25.10	3.14	1.03	-0.1	A-
		White	Black	8	9.17	1.15	0.94	0.1	A+
		White	Hispanic	8	18.43	2.30	0.79	0.6	A+
B	105	Male	Female	8	20.80	2.60	1.07	-0.2	A-
		White	Black	8	4.84	0.60	1.06	-0.1	A-
		White	Hispanic	8	25.27	3.16	1.20	-0.4	A-
B	106	Male	Female	8	137.09	17.14	1.25	-0.5	A-
		White	Black	8	18.50	2.31	0.96	0.1	A+
		White	Hispanic	8	8.16	1.02	1.05	-0.1	A-
B	107	Male	Female	8	46.98	5.87	1.15	-0.3	A-
		White	Black	8	13.32	1.66	1.05	-0.1	A-
		White	Hispanic	8	12.49	1.56	0.85	0.4	A+

Appendix V(a): Grade Eleven Reading

Between Group DIF Analysis -- Multiple Choice Items

Form	Seq	Group Reference	Focal	d.f.	Chi Squared	Mean Square	Odds Ratio	Effect	Code
B	108	Male	Female	8	283.89	35.49	1.46	-0.9	A-
		White	Black	8	75.68	9.46	1.23	-0.5	A-
		White	Hispanic	8	23.09	2.89	1.21	-0.4	A-
B	109	Male	Female	8	58.46	7.31	1.23	-0.5	A-
		White	Black	8	7.91	0.99	0.92	0.2	A+
		White	Hispanic	8	22.16	2.77	0.83	0.4	A+
B	110	Male	Female	8	337.50	42.19	0.68	0.9	A+
		White	Black	8	11.61	1.45	0.91	0.2	A+
		White	Hispanic	8	6.15	0.77	0.94	0.1	A+
B	111	Male	Female	8	31.51	3.94	0.91	0.2	A+
		White	Black	8	38.05	4.76	0.79	0.6	A+
		White	Hispanic	8	12.03	1.50	0.78	0.6	A+
B	112	Male	Female	8	62.75	7.84	1.14	-0.3	A-
		White	Black	8	19.18	2.40	0.96	0.1	A+
		White	Hispanic	8	36.43	4.55	1.06	-0.1	A-
B	113	Male	Female	8	26.20	3.27	1.01	0.0	A-
		White	Black	8	10.78	1.35	0.95	0.1	A+
		White	Hispanic	8	4.37	0.55	1.13	-0.3	A-
B	114	Male	Female	8	224.77	28.10	0.75	0.7	A+
		White	Black	8	28.06	3.51	0.82	0.5	A+
		White	Hispanic	8	23.42	2.93	0.73	0.7	A+
B	115	Male	Female	8	305.53	38.19	1.34	-0.7	A-
		White	Black	8	21.03	2.63	0.95	0.1	A+
		White	Hispanic	8	4.75	0.59	1.03	-0.1	A-
B	116	Male	Female	8	12.68	1.58	1.00	0.0	A-
		White	Black	8	11.29	1.41	0.96	0.1	A+
		White	Hispanic	8	10.15	1.27	0.97	0.1	A+
B	117	Male	Female	8	10.32	1.29	1.01	0.0	A-
		White	Black	8	154.06	19.26	1.46	-0.9	A-
		White	Hispanic	8	16.30	2.04	1.06	-0.1	A-
B	118	Male	Female	8	340.71	42.59	1.47	-0.9	A-
		White	Black	8	63.17	7.90	1.35	-0.7	A-
		White	Hispanic	8	15.26	1.91	1.01	0.0	A-
B	119	Male	Female	8	79.27	9.91	1.27	-0.6	A-
		White	Black	8	83.67	10.46	1.42	-0.8	A-
		White	Hispanic	8	16.86	2.11	1.26	-0.5	A-
B	120	Male	Female	8	41.60	5.20	0.98	0.0	A+
		White	Black	8	38.19	4.77	0.81	0.5	A+
		White	Hispanic	8	26.68	3.34	0.85	0.4	A+
B	121	Male	Female	8	135.27	16.91	1.31	-0.6	A-
		White	Black	8	37.99	4.75	1.15	-0.3	A-
		White	Hispanic	8	11.72	1.46	1.25	-0.5	A-
B	122	Male	Female	8	127.98	16.00	1.23	-0.5	A-
		White	Black	8	23.47	2.93	0.98	0.0	A+
		White	Hispanic	8	10.32	1.29	0.92	0.2	A+
B	123	Male	Female	8	58.27	7.28	0.89	0.3	A+
		White	Black	8	47.70	5.96	0.84	0.4	A+
		White	Hispanic	8	9.22	1.15	0.90	0.3	A+

Appendix V(a): Grade Eleven Reading

Between Group DIF Analysis -- Multiple Choice Items

Form	Seq	Group Reference	Focal	d.f.	Chi Squared	Mean Square	Odds Ratio	Effect	Code
B	124	Male	Female	8	123.13	15.39	1.38	-0.8	A-
		White	Black	8	25.12	3.14	1.02	0.0	A-
		White	Hispanic	8	2.77	0.35	0.95	0.1	A+
B	125	Male	Female	8	239.80	29.98	1.39	-0.8	A-
		White	Black	8	20.95	2.62	1.10	-0.2	A-
		White	Hispanic	8	6.05	0.76	0.86	0.3	A+
B	126	Male	Female	8	27.28	3.41	1.00	0.0	A+
		White	Black	8	14.56	1.82	1.11	-0.3	A-
		White	Hispanic	8	4.51	0.56	1.14	-0.3	A-
B	127	Male	Female	8	38.19	4.77	0.99	0.0	A+
		White	Black	8	12.86	1.61	0.91	0.2	A+
		White	Hispanic	8	10.78	1.35	1.05	-0.1	A-
B	128	Male	Female	8	843.36	105.42	1.73	-1.3	B-
		White	Black	8	65.11	8.14	1.27	-0.6	A-
		White	Hispanic	8	18.03	2.25	1.02	-0.1	A-
B	129	Male	Female	8	58.09	7.26	1.12	-0.3	A-
		White	Black	8	40.69	5.09	1.16	-0.3	A-
		White	Hispanic	8	29.13	3.64	1.31	-0.6	A-
B	130	Male	Female	8	50.56	6.32	1.14	-0.3	A-
		White	Black	8	84.73	10.59	1.36	-0.7	A-
		White	Hispanic	8	7.57	0.95	1.03	-0.1	A-
B	131	Male	Female	8	48.95	6.12	1.04	-0.1	A-
		White	Black	8	8.88	1.11	1.01	0.0	A-
		White	Hispanic	8	11.73	1.47	1.17	-0.4	A-
B	132	Male	Female	8	15.67	1.96	0.90	0.2	A+
		White	Black	8	42.06	5.26	0.72	0.8	A+
		White	Hispanic	8	12.98	1.62	0.70	0.8	A+
B	133	Male	Female	8	30.65	3.83	1.07	-0.2	A-
		White	Black	8	10.36	1.30	0.95	0.1	A+
		White	Hispanic	8	12.13	1.52	0.88	0.3	A+
B	134	Male	Female	8	22.24	2.78	0.95	0.1	A+
		White	Black	8	5.49	0.69	0.96	0.1	A+
		White	Hispanic	8	9.45	1.18	1.06	-0.1	A-
B	135	Male	Female	8	26.47	3.31	0.99	0.0	A+
		White	Black	8	24.57	3.07	0.95	0.1	A+
		White	Hispanic	8	4.91	0.61	1.13	-0.3	A-
B	136	Male	Female	8	44.57	5.57	1.00	0.0	A+
		White	Black	8	39.12	4.89	0.84	0.4	A+
		White	Hispanic	8	6.54	0.82	0.85	0.4	A+
B	137	Male	Female	8	24.11	3.01	0.90	0.2	A+
		White	Black	8	27.28	3.41	1.16	-0.3	A-
		White	Hispanic	8	20.27	2.53	0.96	0.1	A+
B	138	Male	Female	8	21.86	2.73	1.02	0.0	A-
		White	Black	8	76.38	9.55	1.32	-0.6	A-
		White	Hispanic	8	15.51	1.94	1.22	-0.5	A-
B	139	Male	Female	8	41.96	5.25	0.92	0.2	A+
		White	Black	8	5.45	0.68	0.96	0.1	A+
		White	Hispanic	8	4.65	0.58	0.96	0.1	A+

Appendix V(a): Grade Eleven Reading

Between Group DIF Analysis -- Multiple Choice Items

Form	Seq	Group Reference	Focal	d.f.	Chi Squared	Mean Square	Odds Ratio	Effect	Code
C	100	Male	Female	8	307.36	38.42	1.42	-0.8	A-
		White	Black	8	26.21	3.28	0.88	0.3	A+
		White	Hispanic	8	11.91	1.49	0.84	0.4	A+
C	101	Male	Female	8	21.39	2.67	1.10	-0.2	A-
		White	Black	8	36.91	4.61	0.78	0.6	A+
		White	Hispanic	8	3.97	0.50	0.99	0.0	A+
C	102	Male	Female	8	24.78	3.10	1.03	-0.1	A-
		White	Black	8	5.73	0.72	0.97	0.1	A+
		White	Hispanic	8	22.69	2.84	0.83	0.4	A+
C	103	Male	Female	8	305.36	38.17	0.67	0.9	A+
		White	Black	8	37.46	4.68	0.79	0.6	A+
		White	Hispanic	8	4.38	0.55	0.90	0.3	A+
C	104	Male	Female	8	52.78	6.60	0.92	0.2	A+
		White	Black	8	37.10	4.64	0.79	0.6	A+
		White	Hispanic	8	24.39	3.05	0.88	0.3	A+
C	105	Male	Female	8	324.78	40.60	1.62	-1.1	B-
		White	Black	8	15.81	1.98	1.04	-0.1	A-
		White	Hispanic	8	16.07	2.01	1.03	-0.1	A-
C	106	Male	Female	8	310.97	38.87	1.44	-0.9	A-
		White	Black	8	14.67	1.83	1.12	-0.3	A-
		White	Hispanic	8	14.28	1.78	0.86	0.4	A+
C	107	Male	Female	8	57.79	7.22	1.10	-0.2	A-
		White	Black	8	35.39	4.42	1.17	-0.4	A-
		White	Hispanic	8	6.43	0.80	1.11	-0.2	A-
C	108	Male	Female	8	96.86	12.11	0.88	0.3	A+
		White	Black	8	83.36	10.42	0.67	0.9	A+
		White	Hispanic	8	18.59	2.32	0.79	0.6	A+
C	109	Male	Female	8	84.99	10.62	1.08	-0.2	A-
		White	Black	8	8.33	1.04	1.01	0.0	A-
		White	Hispanic	8	24.69	3.09	1.08	-0.2	A-
C	110	Male	Female	8	270.03	33.75	0.69	0.9	A+
		White	Black	8	4.66	0.58	1.00	0.0	A-
		White	Hispanic	8	7.33	0.92	0.97	0.1	A+
C	111	Male	Female	8	183.74	22.97	0.71	0.8	A+
		White	Black	8	88.25	11.03	0.66	1.0	A+
		White	Hispanic	8	20.27	2.53	0.72	0.8	A+
C	112	Male	Female	8	14.09	1.76	1.07	-0.2	A-
		White	Black	8	31.33	3.92	0.87	0.3	A+
		White	Hispanic	8	25.73	3.22	0.69	0.9	A+
C	113	Male	Female	8	96.95	12.12	0.74	0.7	A+
		White	Black	8	112.36	14.04	0.59	1.2	B+
		White	Hispanic	8	23.61	2.95	0.69	0.9	A+
C	114	Male	Female	8	15.23	1.90	1.00	0.0	A+
		White	Black	8	16.85	2.11	1.06	-0.1	A-
		White	Hispanic	8	4.33	0.54	1.07	-0.2	A-
C	115	Male	Female	8	161.60	20.20	1.27	-0.6	A-
		White	Black	8	80.14	10.02	1.43	-0.8	A-
		White	Hispanic	8	44.28	5.53	1.47	-0.9	A-

Appendix V(a): Grade Eleven Reading

Between Group DIF Analysis -- Multiple Choice Items

Form	Seq	Group Reference	Focal	d.f.	Chi Squared	Mean Square	Odds Ratio	Effect	Code
C	116	Male	Female	8	81.89	10.24	0.87	0.3	A+
		White	Black	8	88.60	11.08	0.69	0.9	A+
		White	Hispanic	8	20.57	2.57	0.73	0.7	A+
C	117	Male	Female	8	42.86	5.36	0.87	0.3	A+
		White	Black	8	30.57	3.82	1.12	-0.3	A-
		White	Hispanic	8	5.41	0.68	0.95	0.1	A+
C	118	Male	Female	8	56.35	7.04	0.92	0.2	A+
		White	Black	8	16.47	2.06	0.86	0.4	A+
		White	Hispanic	8	7.41	0.93	0.87	0.3	A+
C	119	Male	Female	8	77.28	9.66	0.76	0.7	A+
		White	Black	8	29.51	3.69	1.04	-0.1	A-
		White	Hispanic	8	11.76	1.47	1.16	-0.4	A-
C	120	Male	Female	8	114.04	14.26	1.24	-0.5	A-
		White	Black	8	61.54	7.69	1.29	-0.6	A-
		White	Hispanic	8	8.93	1.12	1.16	-0.3	A-
C	121	Male	Female	8	72.80	9.10	1.08	-0.2	A-
		White	Black	8	21.19	2.65	1.08	-0.2	A-
		White	Hispanic	8	27.53	3.44	1.39	-0.8	A-
C	122	Male	Female	8	458.17	57.27	1.55	-1.0	B-
		White	Black	8	25.99	3.25	0.95	0.1	A+
		White	Hispanic	8	5.94	0.74	0.91	0.2	A+
C	123	Male	Female	8	35.68	4.46	0.88	0.3	A+
		White	Black	8	3.52	0.44	0.94	0.1	A+
		White	Hispanic	8	5.05	0.63	0.87	0.3	A+
C	124	Male	Female	8	36.07	4.51	1.05	-0.1	A-
		White	Black	8	6.79	0.85	1.03	-0.1	A-
		White	Hispanic	8	4.20	0.52	1.07	-0.2	A-
C	125	Male	Female	8	31.72	3.96	0.90	0.2	A+
		White	Black	8	12.79	1.60	1.00	0.0	A+
		White	Hispanic	8	9.14	1.14	1.00	0.0	A
C	126	Male	Female	8	31.79	3.97	1.06	-0.1	A-
		White	Black	8	6.23	0.78	1.00	0.0	A-
		White	Hispanic	8	8.85	1.11	0.82	0.5	A+
C	127	Male	Female	8	56.97	7.12	1.17	-0.4	A-
		White	Black	8	48.42	6.05	1.30	-0.6	A-
		White	Hispanic	8	7.14	0.89	1.03	-0.1	A-
C	128	Male	Female	8	92.33	11.54	0.82	0.5	A+
		White	Black	8	19.13	2.39	0.88	0.3	A+
		White	Hispanic	8	26.49	3.31	0.73	0.7	A+
C	129	Male	Female	8	58.83	7.35	1.07	-0.2	A-
		White	Black	8	5.72	0.71	0.99	0.0	A+
		White	Hispanic	8	8.19	1.02	0.92	0.2	A+
C	130	Male	Female	8	33.26	4.16	1.06	-0.1	A-
		White	Black	8	49.55	6.19	0.85	0.4	A+
		White	Hispanic	8	8.66	1.08	0.93	0.2	A+
C	131	Male	Female	8	46.29	5.79	0.99	0.0	A+
		White	Black	8	13.67	1.71	0.94	0.1	A+
		White	Hispanic	8	18.30	2.29	0.93	0.2	A+

Appendix V(a): Grade Eleven Reading

Between Group DIF Analysis -- Multiple Choice Items

Form	Seq	Group Reference	Focal	d.f.	Chi Squared	Mean Square	Odds Ratio	Effect	Code
C	132	Male	Female	8	236.80	29.60	0.65	1.0	B+
		White	Black	8	36.43	4.55	0.76	0.7	A+
		White	Hispanic	8	26.25	3.28	0.67	0.9	A+
C	133	Male	Female	8	68.32	8.54	1.20	-0.4	A-
		White	Black	8	5.88	0.74	1.08	-0.2	A-
		White	Hispanic	8	15.98	2.00	0.92	0.2	A+
C	134	Male	Female	8	33.38	4.17	1.05	-0.1	A-
		White	Black	8	16.26	2.03	1.09	-0.2	A-
		White	Hispanic	8	15.83	1.98	0.79	0.5	A+
C	135	Male	Female	8	16.79	2.10	0.97	0.1	A+
		White	Black	8	28.82	3.60	0.86	0.4	A+
		White	Hispanic	8	38.20	4.78	0.71	0.8	A+
C	136	Male	Female	8	48.05	6.01	0.98	0.0	A+
		White	Black	8	14.58	1.82	0.83	0.4	A+
		White	Hispanic	8	17.70	2.21	0.88	0.3	A+
C	137	Male	Female	8	21.09	2.64	1.03	-0.1	A-
		White	Black	8	33.25	4.16	1.15	-0.3	A-
		White	Hispanic	8	15.09	1.89	0.95	0.1	A+
C	138	Male	Female	8	46.52	5.82	0.88	0.3	A+
		White	Black	8	18.90	2.36	0.98	0.1	A+
		White	Hispanic	8	16.88	2.11	1.22	-0.5	A-
C	139	Male	Female	8	1060.54	132.57	2.12	-1.8	C-
		White	Black	8	264.33	33.04	1.94	-1.6	C-
		White	Hispanic	8	33.33	4.17	1.49	-0.9	A-
D	100	Male	Female	8	201.70	25.21	1.37	-0.7	A-
		White	Black	8	61.69	7.71	1.35	-0.7	A-
		White	Hispanic	8	11.90	1.49	1.13	-0.3	A-
D	101	Male	Female	8	81.90	10.24	1.10	-0.2	A-
		White	Black	8	26.62	3.33	1.00	0.0	A+
		White	Hispanic	8	8.98	1.12	0.98	0.0	A+
D	102	Male	Female	8	394.57	49.32	1.47	-0.9	A-
		White	Black	8	27.50	3.44	0.83	0.4	A+
		White	Hispanic	8	6.90	0.86	0.96	0.1	A+
D	103	Male	Female	8	60.63	7.58	0.80	0.5	A+
		White	Black	8	4.06	0.51	1.00	0.0	A-
		White	Hispanic	8	8.93	1.12	0.92	0.2	A+
D	104	Male	Female	8	41.75	5.22	1.19	-0.4	A-
		White	Black	8	12.52	1.57	1.02	0.0	A-
		White	Hispanic	8	27.14	3.39	1.18	-0.4	A-
D	105	Male	Female	8	12.08	1.51	1.00	0.0	A+
		White	Black	8	22.93	2.87	0.94	0.1	A+
		White	Hispanic	8	6.86	0.86	0.95	0.1	A+
D	106	Male	Female	8	30.61	3.83	1.04	-0.1	A-
		White	Black	8	24.97	3.12	0.95	0.1	A+
		White	Hispanic	8	8.11	1.01	0.87	0.3	A+
D	107	Male	Female	8	118.00	14.75	1.20	-0.4	A-
		White	Black	8	29.42	3.68	1.23	-0.5	A-
		White	Hispanic	8	6.87	0.86	1.04	-0.1	A-

Appendix V(a): Grade Eleven Reading

Between Group DIF Analysis -- Multiple Choice Items

Form	Seq	Group Reference	Focal	d.f.	Chi Squared	Mean Square	Odds Ratio	Effect	Code
D	108	Male	Female	8	67.69	8.46	0.84	0.4	A+
		White	Black	8	30.74	3.84	0.82	0.5	A+
		White	Hispanic	8	15.27	1.91	0.84	0.4	A+
D	109	Male	Female	8	35.04	4.38	1.17	-0.4	A-
		White	Black	8	16.70	2.09	1.16	-0.3	A-
		White	Hispanic	8	12.25	1.53	1.09	-0.2	A-
D	110	Male	Female	8	49.80	6.22	1.16	-0.4	A-
		White	Black	8	26.72	3.34	0.84	0.4	A+
		White	Hispanic	8	2.51	0.31	1.01	0.0	A-
D	111	Male	Female	8	54.72	6.84	0.97	0.1	A+
		White	Black	8	10.82	1.35	0.97	0.1	A+
		White	Hispanic	8	2.38	0.30	0.94	0.1	A+
D	112	Male	Female	8	233.48	29.18	0.63	1.1	B+
		White	Black	8	35.77	4.47	0.76	0.7	A+
		White	Hispanic	8	28.93	3.62	0.61	1.2	B+
D	113	Male	Female	8	90.91	11.36	1.18	-0.4	A-
		White	Black	8	15.95	1.99	1.13	-0.3	A-
		White	Hispanic	8	9.36	1.17	1.11	-0.2	A-
D	114	Male	Female	8	22.49	2.81	1.07	-0.2	A-
		White	Black	8	6.29	0.79	1.03	-0.1	A-
		White	Hispanic	8	11.50	1.44	0.78	0.6	A+
D	115	Male	Female	8	43.19	5.40	1.11	-0.3	A-
		White	Black	8	11.74	1.47	0.99	0.0	A+
		White	Hispanic	8	8.67	1.08	0.93	0.2	A+
D	116	Male	Female	8	29.89	3.74	1.10	-0.2	A-
		White	Black	8	14.81	1.85	0.85	0.4	A+
		White	Hispanic	8	14.78	1.85	0.74	0.7	A+
D	117	Male	Female	8	50.42	6.30	1.06	-0.1	A-
		White	Black	8	41.86	5.23	1.13	-0.3	A-
		White	Hispanic	8	24.33	3.04	0.92	0.2	A+
D	118	Male	Female	8	26.83	3.35	1.00	0.0	A+
		White	Black	8	17.47	2.18	1.09	-0.2	A-
		White	Hispanic	8	21.85	2.73	1.32	-0.7	A-
D	119	Male	Female	8	1647.61	205.95	2.55	-2.2	C-
		White	Black	8	395.44	49.43	2.32	-2.0	C-
		White	Hispanic	8	58.22	7.28	1.65	-1.2	B-
D	120	Male	Female	8	251.89	31.49	1.35	-0.7	A-
		White	Black	8	11.05	1.38	1.02	0.0	A-
		White	Hispanic	8	11.67	1.46	1.12	-0.3	A-
D	121	Male	Female	8	6.17	0.77	1.01	0.0	A-
		White	Black	8	36.74	4.59	0.80	0.5	A+
		White	Hispanic	8	9.13	1.14	0.92	0.2	A+
D	122	Male	Female	8	33.99	4.25	0.99	0.0	A+
		White	Black	8	25.51	3.19	0.87	0.3	A+
		White	Hispanic	8	3.01	0.38	0.99	0.0	A+
D	123	Male	Female	8	385.00	48.12	0.65	1.0	B+
		White	Black	8	23.70	2.96	0.84	0.4	A+
		White	Hispanic	8	5.83	0.73	0.90	0.3	A+

Appendix V(a): Grade Eleven Reading

Between Group DIF Analysis -- Multiple Choice Items

Form	Seq	Group Reference	Focal	d.f.	Chi Squared	Mean Square	Odds Ratio	Effect	Code
D	124	Male	Female	8	74.48	9.31	0.85	0.4	A+
		White	Black	8	31.49	3.94	0.81	0.5	A+
		White	Hispanic	8	18.25	2.28	1.14	-0.3	A-
D	125	Male	Female	8	193.39	24.17	1.45	-0.9	A-
		White	Black	8	5.59	0.70	1.07	-0.2	A-
		White	Hispanic	8	4.55	0.57	0.97	0.1	A+
D	126	Male	Female	8	329.64	41.20	1.43	-0.8	A-
		White	Black	8	22.89	2.86	1.10	-0.2	A-
		White	Hispanic	8	12.59	1.57	0.98	0.0	A+
D	127	Male	Female	8	21.49	2.69	1.03	-0.1	A-
		White	Black	8	21.01	2.63	1.15	-0.3	A-
		White	Hispanic	8	5.92	0.74	0.94	0.2	A+
D	128	Male	Female	8	101.71	12.71	0.84	0.4	A+
		White	Black	8	45.31	5.66	0.76	0.6	A+
		White	Hispanic	8	17.95	2.24	0.77	0.6	A+
D	129	Male	Female	8	58.13	7.27	1.09	-0.2	A-
		White	Black	8	6.15	0.77	0.99	0.0	A+
		White	Hispanic	8	19.89	2.49	1.31	-0.6	A-
D	130	Male	Female	8	299.65	37.46	0.68	0.9	A+
		White	Black	8	7.34	0.92	1.04	-0.1	A-
		White	Hispanic	8	9.86	1.23	1.16	-0.3	A-
D	131	Male	Female	8	233.70	29.21	0.69	0.9	A+
		White	Black	8	74.79	9.35	0.71	0.8	A+
		White	Hispanic	8	8.93	1.12	0.83	0.4	A+
D	132	Male	Female	8	36.75	4.59	1.06	-0.1	A-
		White	Black	8	8.67	1.08	0.97	0.1	A+
		White	Hispanic	8	25.27	3.16	0.67	0.9	A+
D	133	Male	Female	8	133.06	16.63	0.73	0.7	A+
		White	Black	8	87.61	10.95	0.64	1.0	B+
		White	Hispanic	8	26.58	3.32	0.81	0.5	A+
D	134	Male	Female	8	5.34	0.67	0.97	0.1	A+
		White	Black	8	3.04	0.38	1.01	0.0	A-
		White	Hispanic	8	17.26	2.16	1.02	0.0	A-
D	135	Male	Female	8	142.59	17.82	1.25	-0.5	A-
		White	Black	8	60.89	7.61	1.31	-0.6	A-
		White	Hispanic	8	46.06	5.76	1.45	-0.9	A-
D	136	Male	Female	8	69.94	8.74	0.85	0.4	A+
		White	Black	8	26.09	3.26	0.83	0.4	A+
		White	Hispanic	8	4.38	0.55	1.02	0.0	A-
D	137	Male	Female	8	85.59	10.70	0.76	0.6	A+
		White	Black	8	20.01	2.50	1.06	-0.1	A-
		White	Hispanic	8	12.87	1.61	0.89	0.3	A+
D	138	Male	Female	8	29.45	3.68	0.96	0.1	A+
		White	Black	8	10.21	1.28	1.04	-0.1	A-
		White	Hispanic	8	16.99	2.12	0.88	0.3	A+
D	139	Male	Female	8	70.88	8.86	0.76	0.6	A+
		White	Black	8	20.54	2.57	1.13	-0.3	A-
		White	Hispanic	8	25.77	3.22	1.32	-0.6	A-

Appendix V(a): Grade Eleven Reading

Between Group DIF Analysis -- Multiple Choice Items

Form	Seq	Group Reference	Focal	d.f.	Chi Squared	Mean Square	Odds Ratio	Effect	Code
E	100	Male	Female	8	15.42	1.93	1.02	-0.1	A-
		White	Black	8	12.61	1.58	1.03	-0.1	A-
		White	Hispanic	8	7.83	0.98	0.97	0.1	A+
E	101	Male	Female	8	54.44	6.80	1.16	-0.3	A-
		White	Black	8	6.10	0.76	0.97	0.1	A+
		White	Hispanic	8	14.94	1.87	0.88	0.3	A+
E	102	Male	Female	8	363.26	45.41	1.54	-1.0	B-
		White	Black	8	66.54	8.32	1.39	-0.8	A-
		White	Hispanic	8	12.03	1.50	1.11	-0.3	A-
E	103	Male	Female	8	49.94	6.24	0.92	0.2	A+
		White	Black	8	23.41	2.93	0.84	0.4	A+
		White	Hispanic	8	14.79	1.85	0.88	0.3	A+
E	104	Male	Female	8	70.97	8.87	0.92	0.2	A+
		White	Black	8	58.66	7.33	0.78	0.6	A+
		White	Hispanic	8	8.97	1.12	0.89	0.3	A+
E	105	Male	Female	8	19.74	2.47	1.01	0.0	A-
		White	Black	8	4.19	0.52	1.00	0.0	A+
		White	Hispanic	8	4.50	0.56	1.07	-0.2	A-
E	106	Male	Female	8	24.92	3.12	0.96	0.1	A+
		White	Black	8	33.42	4.18	0.80	0.5	A+
		White	Hispanic	8	11.13	1.39	0.83	0.4	A+
E	107	Male	Female	8	181.72	22.71	1.27	-0.6	A-
		White	Black	8	8.93	1.12	1.03	-0.1	A-
		White	Hispanic	8	10.00	1.25	1.11	-0.2	A-
E	108	Male	Female	8	167.33	20.92	0.69	0.9	A+
		White	Black	8	73.47	9.18	0.64	1.0	B+
		White	Hispanic	8	18.23	2.28	0.67	0.9	A+
E	109	Male	Female	8	13.13	1.64	0.96	0.1	A+
		White	Black	8	3.15	0.39	0.99	0.0	A+
		White	Hispanic	8	52.44	6.56	0.87	0.3	A+
E	110	Male	Female	8	27.39	3.42	1.09	-0.2	A-
		White	Black	8	14.37	1.80	1.09	-0.2	A-
		White	Hispanic	8	9.27	1.16	1.14	-0.3	A-
E	111	Male	Female	8	66.37	8.30	0.93	0.2	A+
		White	Black	8	68.58	8.57	0.71	0.8	A+
		White	Hispanic	8	20.24	2.53	0.72	0.8	A+
E	112	Male	Female	8	41.14	5.14	1.18	-0.4	A-
		White	Black	8	13.17	1.65	0.86	0.4	A+
		White	Hispanic	8	5.39	0.67	0.91	0.2	A+
E	113	Male	Female	8	16.88	2.11	1.01	0.0	A-
		White	Black	8	53.08	6.64	0.78	0.6	A+
		White	Hispanic	8	4.74	0.59	0.87	0.3	A+
E	114	Male	Female	8	42.96	5.37	1.08	-0.2	A-
		White	Black	8	15.30	1.91	0.96	0.1	A+
		White	Hispanic	8	11.51	1.44	1.03	-0.1	A-
E	115	Male	Female	8	210.98	26.37	1.51	-1.0	A-
		White	Black	8	10.89	1.36	1.04	-0.1	A-
		White	Hispanic	8	11.54	1.44	1.09	-0.2	A-

Appendix V(a): Grade Eleven Reading

Between Group DIF Analysis -- Multiple Choice Items

Form	Seq	Group Reference	Focal	d.f.	Chi Squared	Mean Square	Odds Ratio	Effect	Code
E	116	Male	Female	8	55.56	6.95	0.78	0.6	A+
		White	Black	8	39.78	4.97	0.77	0.6	A+
		White	Hispanic	8	16.16	2.02	0.83	0.4	A+
E	117	Male	Female	8	33.10	4.14	1.06	-0.1	A-
		White	Black	8	12.22	1.53	0.99	0.0	A+
		White	Hispanic	8	2.06	0.26	0.99	0.0	A+
E	118	Male	Female	8	37.41	4.68	0.91	0.2	A+
		White	Black	8	26.03	3.25	0.82	0.5	A+
		White	Hispanic	8	7.74	0.97	1.13	-0.3	A-
E	119	Male	Female	8	40.49	5.06	1.08	-0.2	A-
		White	Black	8	37.05	4.63	1.17	-0.4	A-
		White	Hispanic	8	8.94	1.12	1.06	-0.1	A-
E	120	Male	Female	8	18.66	2.33	0.90	0.2	A+
		White	Black	8	21.71	2.71	1.04	-0.1	A-
		White	Hispanic	8	6.35	0.79	0.89	0.3	A+
E	121	Male	Female	8	20.44	2.56	1.09	-0.2	A-
		White	Black	8	30.70	3.84	1.25	-0.5	A-
		White	Hispanic	8	16.96	2.12	1.03	-0.1	A-
E	122	Male	Female	8	48.32	6.04	1.06	-0.1	A-
		White	Black	8	25.75	3.22	0.84	0.4	A+
		White	Hispanic	8	4.66	0.58	1.08	-0.2	A-
E	123	Male	Female	8	18.98	2.37	1.00	0.0	A-
		White	Black	8	14.19	1.77	0.90	0.2	A+
		White	Hispanic	8	20.48	2.56	0.74	0.7	A+
E	124	Male	Female	8	262.45	32.81	1.40	-0.8	A-
		White	Black	8	17.25	2.16	1.07	-0.2	A-
		White	Hispanic	8	10.57	1.32	1.12	-0.3	A-
E	125	Male	Female	8	827.06	103.38	1.92	-1.5	C-
		White	Black	8	94.40	11.80	1.46	-0.9	A-
		White	Hispanic	8	26.05	3.26	1.27	-0.6	A-
E	126	Male	Female	8	114.74	14.34	0.81	0.5	A+
		White	Black	8	19.46	2.43	1.18	-0.4	A-
		White	Hispanic	8	8.51	1.06	1.01	0.0	A-
E	127	Male	Female	8	38.03	4.75	0.86	0.4	A+
		White	Black	8	36.89	4.61	0.73	0.7	A+
		White	Hispanic	8	21.37	2.67	0.76	0.6	A+
E	128	Male	Female	8	180.43	22.55	1.30	-0.6	A-
		White	Black	8	19.96	2.49	1.11	-0.2	A-
		White	Hispanic	8	5.40	0.67	0.94	0.1	A+
E	129	Male	Female	8	92.37	11.55	0.79	0.6	A+
		White	Black	8	30.57	3.82	0.80	0.5	A+
		White	Hispanic	8	18.33	2.29	0.75	0.7	A+
E	130	Male	Female	8	354.79	44.35	1.46	-0.9	A-
		White	Black	8	10.49	1.31	1.06	-0.1	A-
		White	Hispanic	8	19.25	2.41	1.07	-0.2	A-
E	131	Male	Female	8	30.62	3.83	1.00	0.0	A+
		White	Black	8	12.95	1.62	0.98	0.1	A+
		White	Hispanic	8	5.80	0.72	0.91	0.2	A+

Appendix V(a): Grade Eleven Reading

Between Group DIF Analysis -- Multiple Choice Items

Form	Seq	Group Reference	Focal	d.f.	Chi Squared	Mean Square	Odds Ratio	Effect	Code
E	132	Male	Female	8	43.77	5.47	1.04	-0.1	A-
		White	Black	8	30.53	3.82	0.87	0.3	A+
		White	Hispanic	8	6.63	0.83	0.86	0.4	A+
E	133	Male	Female	8	19.92	2.49	1.07	-0.2	A-
		White	Black	8	17.97	2.25	0.94	0.2	A+
		White	Hispanic	8	8.39	1.05	0.97	0.1	A+
E	134	Male	Female	8	30.57	3.82	0.90	0.2	A+
		White	Black	8	14.97	1.87	1.11	-0.3	A-
		White	Hispanic	8	12.02	1.50	0.80	0.5	A+
E	135	Male	Female	8	40.58	5.07	1.17	-0.4	A-
		White	Black	8	16.23	2.03	1.14	-0.3	A-
		White	Hispanic	8	6.61	0.83	1.15	-0.3	A-
E	136	Male	Female	8	122.56	15.32	0.81	0.5	A+
		White	Black	8	36.54	4.57	0.84	0.4	A+
		White	Hispanic	8	18.54	2.32	0.83	0.4	A+
E	137	Male	Female	8	516.76	64.60	1.63	-1.1	B-
		White	Black	8	8.84	1.10	1.07	-0.2	A-
		White	Hispanic	8	5.36	0.67	1.04	-0.1	A-
E	138	Male	Female	8	61.26	7.66	1.14	-0.3	A-
		White	Black	8	10.69	1.34	0.89	0.3	A+
		White	Hispanic	8	8.31	1.04	0.81	0.5	A+
E	139	Male	Female	8	15.63	1.95	0.99	0.0	A+
		White	Black	8	36.18	4.52	1.20	-0.4	A-
		White	Hispanic	8	16.55	2.07	1.13	-0.3	A-
F	100	Male	Female	8	112.87	14.11	1.24	-0.5	A-
		White	Black	8	45.72	5.72	1.26	-0.5	A-
		White	Hispanic	8	11.41	1.43	1.18	-0.4	A-
F	101	Male	Female	8	61.11	7.64	1.16	-0.3	A-
		White	Black	8	36.22	4.53	0.78	0.6	A+
		White	Hispanic	8	14.69	1.84	0.99	0.0	A+
F	102	Male	Female	8	20.81	2.60	1.03	-0.1	A-
		White	Black	8	8.10	1.01	1.01	0.0	A-
		White	Hispanic	8	5.85	0.73	0.88	0.3	A+
F	103	Male	Female	8	230.68	28.84	1.39	-0.8	A-
		White	Black	8	12.16	1.52	1.08	-0.2	A-
		White	Hispanic	8	11.71	1.46	1.04	-0.1	A-
F	104	Male	Female	8	1077.72	134.72	2.12	-1.8	C-
		White	Black	8	90.69	11.34	1.44	-0.9	A-
		White	Hispanic	8	24.88	3.11	1.47	-0.9	A-
F	105	Male	Female	8	86.68	10.84	0.86	0.4	A+
		White	Black	8	33.89	4.24	1.24	-0.5	A-
		White	Hispanic	8	8.81	1.10	0.95	0.1	A+
F	106	Male	Female	8	23.90	2.99	0.89	0.3	A+
		White	Black	8	49.88	6.24	0.68	0.9	A+
		White	Hispanic	8	16.76	2.09	0.70	0.8	A+
F	107	Male	Female	8	449.80	56.22	1.58	-1.1	B-
		White	Black	8	67.87	8.48	1.25	-0.5	A-
		White	Hispanic	8	25.33	3.17	1.16	-0.3	A-

Appendix V(a): Grade Eleven Reading

Between Group DIF Analysis -- Multiple Choice Items

Form	Seq	Group Reference	Focal	d.f.	Chi Squared	Mean Square	Odds Ratio	Effect	Code
F	108	Male	Female	8	166.19	20.77	0.72	0.8	A+
		White	Black	8	47.61	5.95	0.73	0.7	A+
		White	Hispanic	8	35.13	4.39	0.59	1.2	B+
F	109	Male	Female	8	433.35	54.17	1.53	-1.0	B-
		White	Black	8	10.90	1.36	0.97	0.1	A+
		White	Hispanic	8	5.74	0.72	1.03	-0.1	A-
F	110	Male	Female	8	25.50	3.19	0.95	0.1	A+
		White	Black	8	9.41	1.18	0.94	0.1	A+
		White	Hispanic	8	14.48	1.81	0.78	0.6	A+
F	111	Male	Female	8	15.57	1.95	1.06	-0.1	A-
		White	Black	8	28.68	3.58	0.85	0.4	A+
		White	Hispanic	8	8.11	1.01	0.98	0.0	A+
F	112	Male	Female	8	69.53	8.69	1.19	-0.4	A-
		White	Black	8	5.08	0.63	0.94	0.2	A+
		White	Hispanic	8	5.27	0.66	0.93	0.2	A+
F	113	Male	Female	8	51.13	6.39	1.01	0.0	A-
		White	Black	8	12.48	1.56	1.03	-0.1	A-
		White	Hispanic	8	11.06	1.38	0.88	0.3	A+
F	114	Male	Female	8	27.52	3.44	1.12	-0.3	A-
		White	Black	8	52.31	6.54	1.10	-0.2	A-
		White	Hispanic	8	13.26	1.66	1.32	-0.7	A-
F	115	Male	Female	8	146.18	18.27	0.78	0.6	A+
		White	Black	8	21.58	2.70	0.90	0.3	A+
		White	Hispanic	8	15.07	1.88	0.82	0.5	A+
F	116	Male	Female	8	395.90	49.49	1.54	-1.0	B-
		White	Black	8	27.30	3.41	1.09	-0.2	A-
		White	Hispanic	8	5.13	0.64	1.03	-0.1	A-
F	117	Male	Female	8	58.82	7.35	1.16	-0.3	A-
		White	Black	8	17.16	2.15	0.85	0.4	A+
		White	Hispanic	8	6.88	0.86	0.90	0.2	A+
F	118	Male	Female	8	31.75	3.97	1.08	-0.2	A-
		White	Black	8	63.87	7.98	1.14	-0.3	A-
		White	Hispanic	8	16.80	2.10	0.79	0.5	A+
F	119	Male	Female	8	10.65	1.33	1.03	-0.1	A-
		White	Black	8	13.32	1.67	0.99	0.0	A+
		White	Hispanic	8	6.49	0.81	1.00	0.0	A
F	120	Male	Female	8	142.13	17.77	1.26	-0.5	A-
		White	Black	8	20.88	2.61	0.93	0.2	A+
		White	Hispanic	8	31.56	3.95	0.71	0.8	A+
F	121	Male	Female	8	308.44	38.55	1.49	-0.9	A-
		White	Black	8	38.21	4.78	1.24	-0.5	A-
		White	Hispanic	8	13.26	1.66	1.03	-0.1	A-
F	122	Male	Female	8	26.91	3.36	0.93	0.2	A+
		White	Black	8	25.28	3.16	0.86	0.3	A+
		White	Hispanic	8	10.66	1.33	0.83	0.4	A+
F	123	Male	Female	8	33.38	4.17	0.94	0.2	A+
		White	Black	8	48.99	6.12	0.77	0.6	A+
		White	Hispanic	8	11.87	1.48	0.87	0.3	A+

Appendix V(a): Grade Eleven Reading

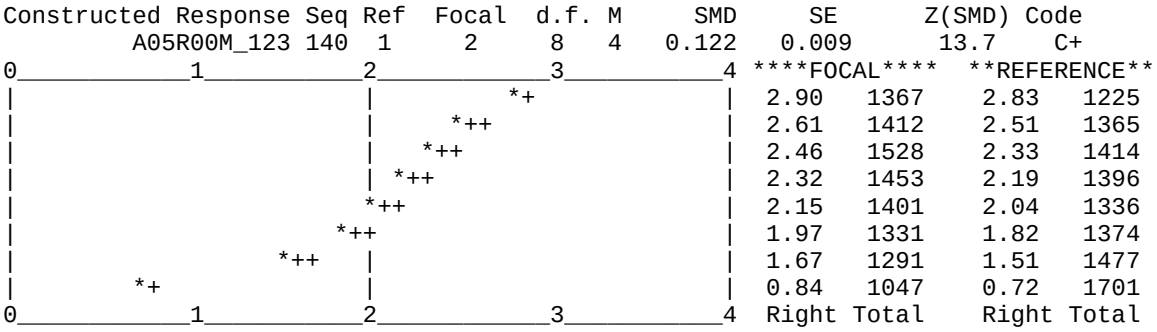
Between Group DIF Analysis -- Multiple Choice Items

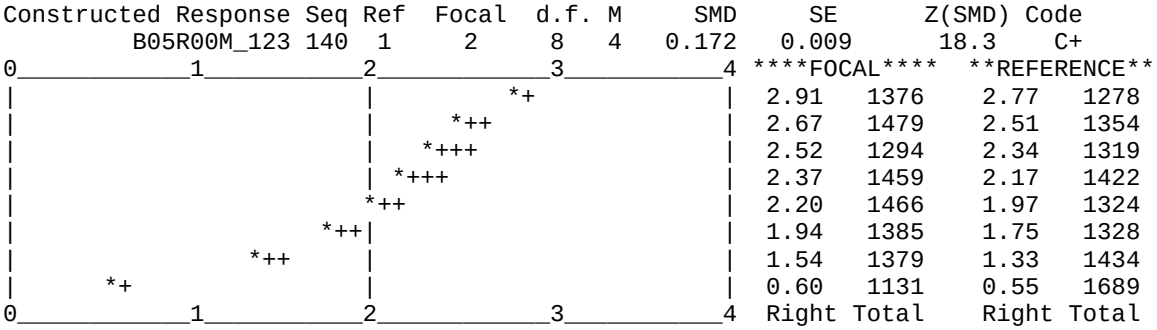
Form	Seq	Group Reference	Focal	d.f.	Chi Squared	Mean Square	Odds Ratio	Effect	Code
F	124	Male	Female	8	14.76	1.85	1.07	-0.2	A-
		White	Black	8	13.35	1.67	0.95	0.1	A+
		White	Hispanic	8	10.05	1.26	0.91	0.2	A+
F	125	Male	Female	8	44.68	5.58	0.93	0.2	A+
		White	Black	8	21.31	2.66	0.85	0.4	A+
		White	Hispanic	8	10.61	1.33	0.89	0.3	A+
F	126	Male	Female	8	95.25	11.91	1.22	-0.5	A-
		White	Black	8	8.49	1.06	0.97	0.1	A+
		White	Hispanic	8	4.12	0.52	0.89	0.3	A+
F	127	Male	Female	8	241.69	30.21	0.63	1.1	B+
		White	Black	8	84.44	10.55	0.66	1.0	A+
		White	Hispanic	8	28.45	3.56	0.63	1.1	B+
F	128	Male	Female	8	15.90	1.99	0.92	0.2	A+
		White	Black	8	5.18	0.65	0.99	0.0	A+
		White	Hispanic	8	5.56	0.70	0.90	0.3	A+
F	129	Male	Female	8	40.21	5.03	1.10	-0.2	A-
		White	Black	8	15.85	1.98	1.11	-0.3	A-
		White	Hispanic	8	7.72	0.96	1.18	-0.4	A-
F	130	Male	Female	8	165.02	20.63	0.84	0.4	A+
		White	Black	8	89.72	11.22	0.70	0.8	A+
		White	Hispanic	8	33.94	4.24	0.68	0.9	A+
F	131	Male	Female	8	13.23	1.65	1.00	0.0	A-
		White	Black	8	5.48	0.69	1.00	0.0	A-
		White	Hispanic	8	5.83	0.73	1.04	-0.1	A-
F	132	Male	Female	8	10.66	1.33	1.00	0.0	A+
		White	Black	8	39.10	4.89	0.76	0.6	A+
		White	Hispanic	8	17.28	2.16	0.98	0.0	A+
F	133	Male	Female	8	25.40	3.17	1.04	-0.1	A-
		White	Black	8	23.75	2.97	0.92	0.2	A+
		White	Hispanic	8	4.21	0.53	0.95	0.1	A+
F	134	Male	Female	8	178.86	22.36	1.38	-0.8	A-
		White	Black	8	22.58	2.82	1.17	-0.4	A-
		White	Hispanic	8	9.62	1.20	0.88	0.3	A+
F	135	Male	Female	8	73.02	9.13	0.80	0.5	A+
		White	Black	8	24.35	3.04	0.83	0.4	A+
		White	Hispanic	8	8.30	1.04	0.81	0.5	A+
F	136	Male	Female	8	8.73	1.09	0.98	0.0	A+
		White	Black	8	8.81	1.10	0.98	0.0	A+
		White	Hispanic	8	19.82	2.48	0.87	0.3	A+
F	137	Male	Female	8	89.65	11.21	0.86	0.4	A+
		White	Black	8	21.59	2.70	0.84	0.4	A+
		White	Hispanic	8	12.25	1.53	0.87	0.3	A+
F	138	Male	Female	8	50.42	6.30	1.10	-0.2	A-
		White	Black	8	31.96	4.00	1.12	-0.3	A-
		White	Hispanic	8	20.63	2.58	1.23	-0.5	A-
F	139	Male	Female	8	100.73	12.59	0.77	0.6	A+
		White	Black	8	35.78	4.47	1.13	-0.3	A-
		White	Hispanic	8	31.03	3.88	0.73	0.7	A+

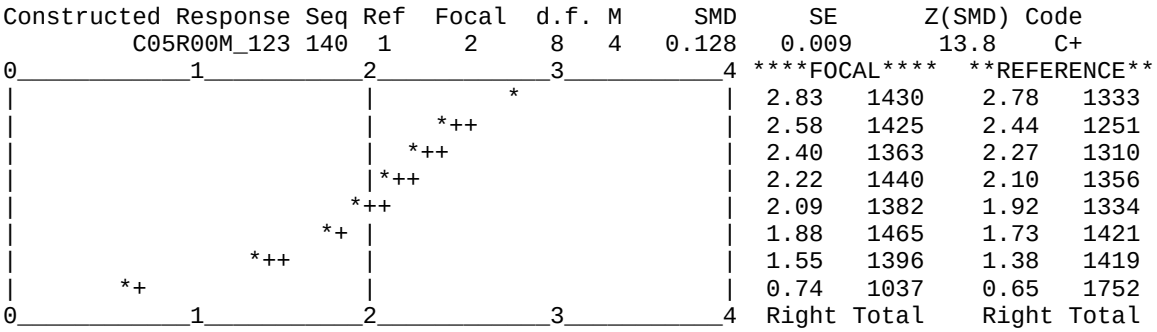
Appendix V(b): Grade Eleven Reading
Between Group DIF Analysis – Constructed Response Items

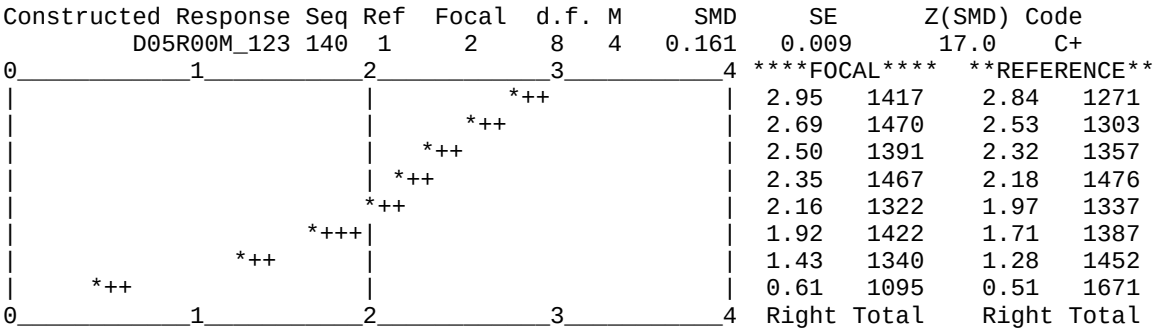
Item Characteristic Curves – C+/- Items

Reference Group = Male, Focal Group = Female

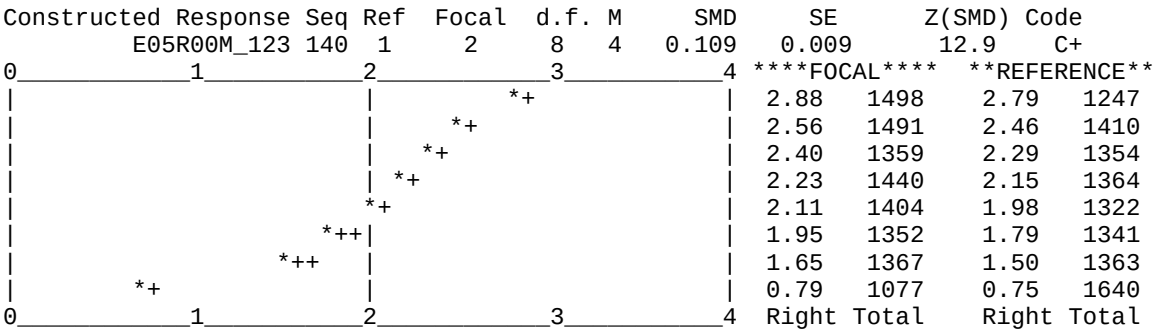


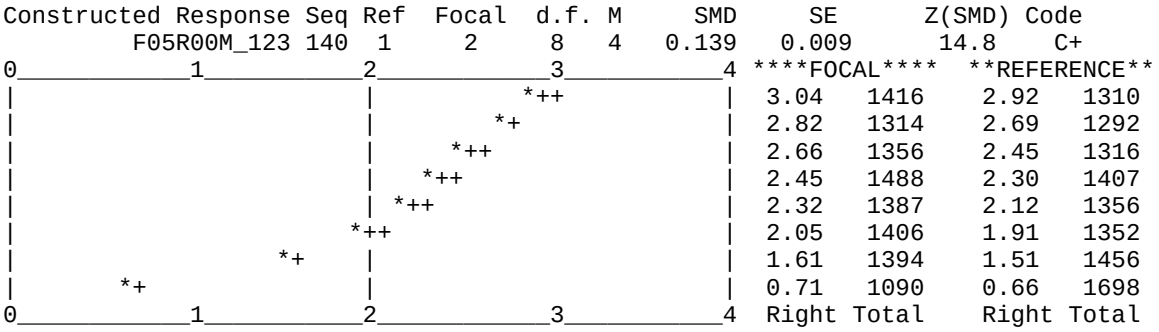




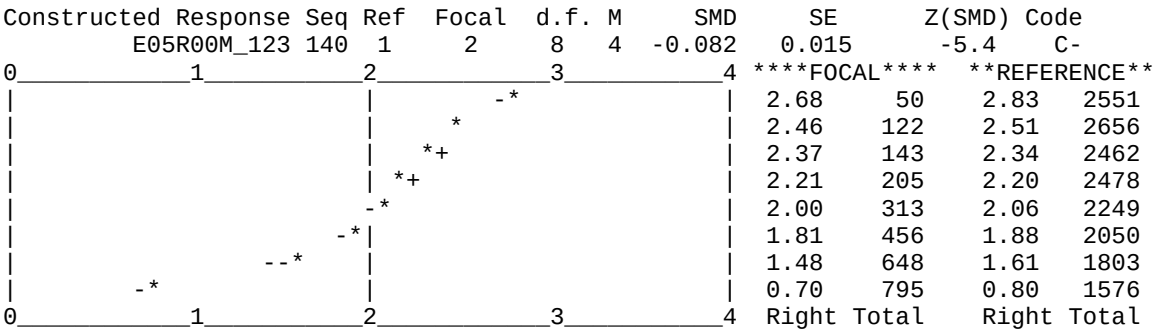


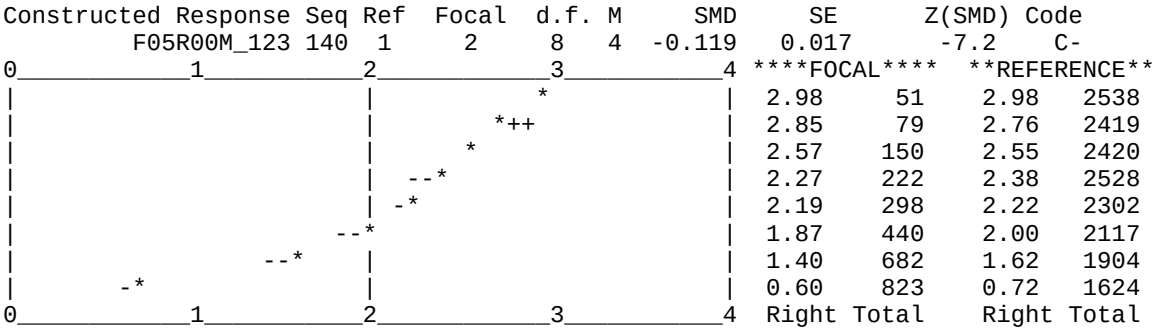
Appendix V(b): Grade Eleven Reading
Between Group DIF Analysis – Constructed Response Items





Reference Group = White, Focal Group = Black





Appendix V(b): Grade Eleven Reading

Between Group DIF Analysis -- Constructed Response Items

Form	Seq	Reference	Focal	d.f.	Max Score	SMD	S.E.	Effect	Code
A	140	Male	Female	8	4	0.122	0.009	13.7	CC+
		White	Black	8	4	-0.030	0.016	-1.9	AA-
		White	Hispanic	8	4	-0.032	0.026	-1.2	AA-
B	140	Male	Female	8	4	0.172	0.009	18.3	CC+
		White	Black	8	4	-0.019	0.016	-1.2	AA-
		White	Hispanic	8	4	-0.019	0.027	-0.7	AA-
C	140	Male	Female	8	4	0.128	0.009	13.8	CC+
		White	Black	8	4	-0.065	0.016	-4.0	BB-
		White	Hispanic	8	4	-0.048	0.026	-1.8	AA-
D	140	Male	Female	8	4	0.161	0.009	17.0	CC+
		White	Black	8	4	-0.076	0.016	-4.6	BB-
		White	Hispanic	8	4	-0.055	0.026	-2.1	BB-
E	140	Male	Female	8	4	0.109	0.009	12.9	CC+
		White	Black	8	4	-0.082	0.015	-5.4	CC-
		White	Hispanic	8	4	-0.069	0.025	-2.8	BB-
F	140	Male	Female	8	4	0.139	0.009	14.8	CC+
		White	Black	8	4	-0.119	0.017	-7.2	CC-
		White	Hispanic	8	4	-0.077	0.028	-2.8	BB-

Appendix W: 2004 PSSA School Level Percentile Ranks

Percentile Rank	Mathematics			Reading		
	Five	Eight	Eleven	Five	Eight	Eleven
1	1060	1021	979	1039	921	829
2	1090	1070	1009	1080	1020	910
3	1110	1110	1038	1110	1082	970
4	1135	1120	1050	1130	1110	1000
5	1150	1130	1070	1150	1120	1016
6	1170	1140	1080	1160	1140	1040
7	1180	1150	1090	1171	1150	1050
8	1200	1160	1100	1180	1160	1060
9	1210	1170	1110	1190	1180	1073
10	1217	1188	1120	1210	1190	1110
11	1230	1190	1130	1220	1199	1121
12	1240	1210	1140	1230	1210	1150
13			1160	1240		1160
14	1250	1230	1170	1250	1220	1180
15	1260		1180	1260	1230	1200
16	1269	1240	1200		1240	1207
17	1270			1270	1250	1210
18	1280	1250	1210	1280		1230
19	1290		1220		1260	1240
20		1260		1290	1270	1244
21	1300		1230		1280	1250
22	1310	1270		1300		1260
23			1240	1310	1290	
24		1280				1270
25	1320		1250	1320	1300	1280
26		1290				
27	1330			1330	1310	1290
28		1300	1260			
29	1340				1320	
30				1340		1300
31			1270			
32	1348	1310				
33	1350				1330	
34				1350		1303
35		1320	1280		1340	1310
36	1360					
37						1320
38	1361		1290	1360	1350	
39	1370					
40		1330				
41				1370		1330
42			1300		1360	
43	1380					
44		1335				
45		1340		1380		
46	1390		1302			1340
47			1310		1370	
48						
49		1350				1350
50	1400		1320	1390		

Appendix W: 2004 PSSA School Level Percentile Ranks

Percentile Rank	Mathematics			Reading		
	Five	Eight	Eleven	Five	Eight	Eleven
51						
52					1380	
53		1360				
54	1410			1400		1360
55						
56			1330		1390	
57		1370				1370
58	1420			1410		
59						
60					1400	
61			1333			
62		1380	1340	1420		
63	1430					1380
64						
65					1410	
66	1440		1350	1430		
67		1390				
68						1390
69					1420	
70	1450		1360			
71		1400		1440		1400
72						
73	1460		1370		1430	
74		1409				
75	1470	1410		1450		
76						1410
77	1480		1380		1432	
78		1420			1440	
79				1460		1420
80						
81	1490		1390		1450	
82		1426		1470		
83	1500	1430	1400			1430
84						
85	1510	1440	1410	1480	1460	
86						1440
87	1520	1450		1490	1470	
88			1420		1480	1450
89				1500		
90	1530	1460	1430		1490	1460
91		1470	1440	1510		1470
92	1540				1500	1480
93		1480	1450	1520		
94	1550	1490	1460	1530	1510	1490
95	1560	1500	1470	1540	1520	1500
96	1570		1482		1530	1510
97	1580	1510	1500	1570	1540	1520
98	1603	1530	1520	1580	1570	1530
99	1620	1550	1540	1610	1600	1552

Appendix X: 2004 PSSA Percentile Rank for Student-Level Scaled Scores

	Mathematics						Reading					
	Grade 5		Grade 8		Grade 11		Grade 5		Grade 8		Grade 11	
Percentile Rank	Scaled Score	Raw Score	Scaled Score	Raw Score	Scaled Score	Raw Score	Scaled Score	Raw Score	Scaled Score	Raw Score	Scaled Score	Raw Score
1	700	1	700	1	700	1	700	1	700	1	700	1
2	860	17					766	12				
3	906	20	955	17			834	15	768	20		
4	947	23	983	19	895	15	876	17	821	23	714	21
5	960	24	996	20	930	17	896	18	854	25	765	24
6	986	26	1009	21	946	18	934	20	886	27	796	26
7	1010	28	1022	22	962	19	953	21	917	29	827	28
8	1022	29	1046	24	978	20	971	22	948	31	856	30
9	1034	30	1057	25	993	21	989	23	978	33	885	32
10	1057	32	1068	26			1024	25	1007	35	899	33
11	1068	33			1007	22	1042	26	1022	36	927	35
12	1079	34	1079	27	1021	23	1059	27	1037	37	954	37
13	1090	35	1090	28			1076	28	1066	39	968	38
14	1101	36	1101	29	1035	24			1081	40	995	40
15	1112	37	1111	30	1049	25	1094	29	1096	41	1009	41
16	1123	38	1122	31			1111	30	1110	42	1022	42
17	1134	39	1132	32	1062	26	1129	31	1125	43	1049	44
18	1144	40			1075	27	1146	32	1140	44	1062	45
19	1155	41	1142	33					1155	45	1076	46
20			1152	34	1088	28	1164	33			1090	47
21	1166	42	1162	35					1170	46	1103	48
22	1176	43			1101	29	1182	34	1186	47	1117	49
23	1187	44	1172	36	1113	30					1131	50
24	1198	45	1182	37			1200	35	1201	48		
25			1191	38	1126	31	1219	36	1217	49	1145	51
26	1209	46									1159	52
27	1219	47	1201	39	1138	32			1232	50	1173	53
28			1211	40			1237	37				
29	1230	48			1150	33			1248	51	1187	54
30	1241	49	1220	41	1162	34	1256	38			1202	55
31	1252	50	1230	42					1265	52		
32					1174	35					1216	56
33	1263	51	1239	43			1276	39	1281	53		
34			1249	44	1186	36					1231	57
35	1275	52			1198	37			1298	54	1246	58
36	1286	53	1259	45			1296	40				
37			1268	46	1210	38					1262	59
38	1297	54							1315	55		
39			1278	47	1221	39	1317	41			1277	60
40	1309	55	1288	48								
41					1233	40			1333	56	1293	61
42	1321	56	1297	49	1245	41	1338	42				
43	1333	57										
44			1307	50	1257	42			1351	57	1310	62
45	1345	58										
46			1317	51	1268	43	1360	43			1326	63
47	1358	59	1327	52					1369	58		
48					1280	44						
49	1371	60	1337	53	1292	45					1343	64
50							1383	44	1388	59		
51	1384	61	1347	54	1303	46					1361	65
52												
53	1398	62	1358	55	1315	47						
54			1368	56			1407	45	1408	60	1379	66
55	1412	63			1327	48						
56			1379	57	1338	49						
57									1428	61	1397	67
58	1427	64	1390	58	1350	50	1433	46				
59												

Appendix X: 2004 PSSA Percentile Rank for Student-Level Scaled Scores

	Mathematics						Reading					
	Grade 5		Grade 8		Grade 11		Grade 5		Grade 8		Grade 11	
Percentile Rank	Scaled Score	Raw Score	Scaled Score	Raw Score	Scaled Score	Raw Score	Scaled Score	Raw Score	Scaled Score	Raw Score	Scaled Score	Raw Score
60	1442	65	1401	59	1362	51					1416	68
61					1373	52			1449	62		
62	1457	66	1412	60			1459	47			1436	69
63					1385	53						
64			1423	61	1397	54			1471	63		
65	1474	67									1457	70
66			1435	62	1409	55						
67	1491	68					1488	48				
68			1447	63	1420	56			1494	64	1478	71
69			1460	64	1432	57						
70	1509	69										
71			1472	65	1444	58					1501	72
72	1528	70			1456	59	1518	49	1518	65		
73			1486	66								
74					1467	60					1524	73
75	1548	71	1499	67	1479	61						
76							1551	50	1543	66		
77	1570	72	1514	68	1492	62					1549	74
78					1504	63						
79			1529	69	1516	64						
80	1593	73							1570	67	1576	75
81			1545	70	1529	65	1586	51				
82					1542	66						
83	1618	74	1562	71	1556	67			1598	68	1604	76
84												
85	1645	75	1580	72	1570	68	1625	52				
86					1585	69					1634	77
87			1599	73	1600	70			1629	69		
88	1675	76			1617	71						
89			1620	74			1668	53			1667	78
90					1634	72			1662	70		
91	1709	77	1642	75	1653	73					1703	79
92					1673	74	1718	54				
93	1747	78	1667	76	1695	75			1699	71		
94			1694	77	1719	76					1743	80
95	1789	79					1775	55	1740	72	1787	81
96			1724	78	1746	77						
97	1839	80	1758	79	1812	79			1786	73	1839	82
98			1798	80	1853	80	1843	56	1839	74	1899	83
99	1969	82	1845	81	1903	81	1928	57	1902	75	1972	84

Appendix Y: 2004 PSSA Reading Raw to Scaled Score Conversion Tables

	Grade 5			Grade 8			Grade 11			
Raw Score	Scale Score	Scale Score SEM	Raw Score SEM	Scale Score	Scale Score SEM	Raw Score SEM	Scale Score	Scale Score SEM	Raw Score SEM	Raw Score
0	700	365	0.54	700	430	0.55	700	650	0.38	0
1	700	203	0.98	700	237	0.99	700	450	0.55	1
2	700	146	1.36	700	170	1.38	700	248	0.99	2
3	700	122	1.64	700	140	1.68	700	177	1.39	3
4	700	107	1.86	700	123	1.91	700	146	1.68	4
5	700	97	2.04	700	111	2.12	700	128	1.92	5
6	700	90	2.20	700	102	2.29	700	115	2.13	6
7	700	85	2.34	700	96	2.45	700	106	2.31	7
8	700	81	2.46	700	91	2.59	700	99	2.47	8
9	700	77	2.57	700	86	2.72	700	94	2.62	9
10	713	74	2.67	700	83	2.83	700	89	2.75	10
11	740	72	2.76	700	80	2.94	700	85	2.88	11
12	766	70	2.84	700	77	3.04	700	82	2.99	12
13	790	68	2.92	700	75	3.13	700	79	3.10	13
14	813	67	2.98	700	73	3.21	700	77	3.19	14
15	834	65	3.04	700	71	3.29	700	75	3.29	15
16	856	64	3.10	700	70	3.36	700	73	3.37	16
17	876	63	3.14	711	69	3.42	700	71	3.45	17
18	896	62	3.19	731	67	3.48	700	70	3.53	18
19	915	62	3.23	750	66	3.54	700	68	3.60	19
20	934	61	3.26	768	65	3.59	700	67	3.66	20
21	953	60	3.29	786	65	3.64	714	66	3.72	21
22	971	60	3.31	804	64	3.68	731	65	3.78	22
23	989	60	3.34	821	63	3.72	748	64	3.83	23
24	1007	59	3.35	837	62	3.76	765	63	3.88	24
25	1024	59	3.37	854	62	3.80	781	62	3.93	25
26	1042	59	3.37	870	61	3.83	796	62	3.97	26
27	1059	59	3.38	886	61	3.86	812	61	4.01	27
28	1076	59	3.38	902	61	3.88	827	61	4.05	28
29	1094	59	3.38	917	60	3.90	842	60	4.08	29
30	1111	59	3.38	932	60	3.92	856	60	4.11	30
31	1129	59	3.37	948	60	3.94	871	59	4.14	31
32	1146	59	3.36	963	59	3.96	885	59	4.16	32
33	1164	60	3.34	978	59	3.97	899	59	4.18	33
34	1182	60	3.32	992	59	3.98	913	58	4.20	34
35	1200	60	3.30	1007	59	3.99	927	58	4.22	35
36	1219	61	3.27	1022	59	3.99	941	58	4.23	36
37	1237	61	3.24	1037	59	4.00	954	58	4.24	37
38	1256	62	3.21	1051	59	4.00	968	58	4.25	38
39	1276	63	3.17	1066	59	4.00	982	58	4.26	39
40	1296	64	3.12	1081	59	3.99	995	58	4.27	40
41	1317	65	3.08	1096	59	3.99	1009	57	4.27	41
42	1338	66	3.02	1110	59	3.98	1022	57	4.27	42
43	1360	67	2.97	1125	59	3.97	1035	57	4.27	43
44	1383	68	2.91	1140	59	3.96	1049	58	4.27	44
45	1407	70	2.84	1155	60	3.95	1062	58	4.26	45
46	1433	72	2.77	1170	60	3.93	1076	58	4.26	46

Appendix Y: 2004 PSSA Reading Raw to Scaled Score Conversion Tables

	Grade 5			Grade 8			Grade 11			
Raw Score	Scale Score	Scale Score SEM	Raw Score SEM	Scale Score	Scale Score SEM	Raw Score SEM	Scale Score	Scale Score SEM	Raw Score SEM	Raw Score
47	1459	74	2.69	1186	60	3.91	1090	58	4.25	47
48	1488	76	2.61	1201	60	3.89	1103	58	4.23	48
49	1518	79	2.52	1217	61	3.87	1117	58	4.22	49
50	1551	82	2.42	1232	61	3.84	1131	58	4.21	50
51	1586	86	2.32	1248	62	3.82	1145	59	4.19	51
52	1625	90	2.20	1265	62	3.79	1159	59	4.17	52
53	1668	96	2.08	1281	63	3.75	1173	59	4.15	53
54	1718	103	1.94	1298	63	3.72	1187	59	4.13	54
55	1775	111	1.79	1315	64	3.68	1202	60	4.10	55
56	1843	122	1.62	1333	65	3.64	1216	60	4.07	56
57	1928	138	1.44	1351	65	3.59	1231	61	4.05	57
58	2041	163	1.22	1369	66	3.54	1246	61	4.01	58
59	2216	217	0.92	1388	67	3.49	1262	62	3.98	59
60	2482	374	0.53	1408	68	3.44	1277	62	3.94	60
61				1428	70	3.38	1293	63	3.9	61
62				1449	71	3.31	1310	64	3.86	62
63				1471	72	3.24	1326	64	3.82	63
64				1494	74	3.17	1343	65	3.77	64
65				1518	76	3.09	1361	66	3.72	65
66				1543	78	3.01	1379	67	3.67	66
67				1570	81	2.91	1397	68	3.61	67
68				1598	83	2.82	1416	69	3.55	68
69				1629	87	2.71	1436	70	3.49	69
70				1662	90	2.6	1457	72	3.42	70
71				1699	95	2.47	1478	73	3.34	71
72				1740	101	2.33	1501	75	3.27	72
73				1786	107	2.19	1524	77	3.18	73
74				1839	116	2.02	1549	79	3.1	74
75				1902	127	1.84	1576	82	3	75
76				1979	142	1.65	1604	85	2.9	76
77				2078	164	1.44	1634	88	2.79	77
78				2213	196	1.2	1667	92	2.68	78
79				2426	260	0.9	1703	96	2.55	79
80				2747	444	0.53	1743	102	2.41	80
81							1787	108	2.27	81
82							1839	117	2.11	82
83							1899	127	1.93	83
84							1972	141	1.74	84
85							2065	161	1.52	85
86							2191	193	1.27	86
87							2393	262	0.94	87
88							2715	459	0.54	88

Appendix Z: 2004 PSSA Mathematics Raw to Scaled Score Conversion Tables

	Grade 5			Grade 8			Grade 11			
Raw Score	Scale Score	Scale Score SEM	Raw Score SEM	Scale Score	Scale Score SEM	Raw Score SEM	Scale Score	Scale Score SEM	Raw Score SEM	Raw Score
0	700	348	0.54	700	325	0.55	700	379	0.55	0
1	700	193	0.98	700	180	0.99	700	209	0.99	1
2	700	138	1.37	700	129	1.38	700	150	1.38	2
3	700	115	1.66	700	106	1.67	700	124	1.67	3
4	700	100	1.89	700	93	1.91	700	109	1.90	4
5	700	91	2.09	700	84	2.12	700	98	2.10	5
6	700	84	2.26	726	77	2.30	700	90	2.28	6
7	700	79	2.41	757	72	2.46	700	84	2.44	7
8	700	74	2.55	785	68	2.60	731	80	2.59	8
9	700	71	2.68	810	65	2.73	760	76	2.72	9
10	723	68	2.80	833	62	2.85	787	73	2.85	10
11	747	65	2.91	854	60	2.97	812	70	2.96	11
12	768	63	3.01	873	58	3.07	834	67	3.06	12
13	789	61	3.11	891	56	3.17	856	65	3.16	13
14	808	59	3.19	909	55	3.26	876	63	3.26	14
15	826	58	3.28	925	53	3.34	895	62	3.34	15
16	843	57	3.35	940	52	3.42	913	60	3.42	16
17	860	55	3.43	955	51	3.50	930	59	3.50	17
18	876	54	3.49	969	50	3.57	946	58	3.56	18
19	891	53	3.56	983	49	3.63	962	57	3.63	19
20	906	52	3.62	996	48	3.69	978	56	3.69	20
21	920	52	3.67	1009	47	3.75	993	55	3.74	21
22	934	51	3.73	1022	47	3.81	1007	54	3.79	22
23	947	50	3.78	1034	46	3.86	1021	54	3.84	23
24	960	50	3.82	1046	45	3.90	1035	53	3.89	24
25	973	49	3.87	1057	45	3.95	1049	53	3.92	25
26	986	49	3.91	1068	45	3.99	1062	52	3.96	26
27	998	48	3.94	1079	44	4.03	1075	52	3.99	27
28	1010	48	3.98	1090	44	4.07	1088	51	4.02	28
29	1022	47	4.01	1101	43	4.10	1101	51	4.05	29
30	1034	47	4.04	1111	43	4.13	1113	51	4.07	30
31	1045	47	4.07	1122	43	4.16	1126	50	4.09	31
32	1057	46	4.09	1132	42	4.18	1138	50	4.11	32
33	1068	46	4.12	1142	42	4.21	1150	50	4.13	33
34	1079	46	4.14	1152	42	4.22	1162	50	4.14	34
35	1090	46	4.15	1162	42	4.24	1174	50	4.16	35
36	1101	46	4.17	1172	42	4.26	1186	50	4.17	36
37	1112	45	4.18	1182	42	4.27	1198	49	4.18	37
38	1123	45	4.19	1191	41	4.28	1210	49	4.18	38
39	1134	45	4.20	1201	41	4.29	1221	49	4.19	39
40	1144	45	4.21	1211	41	4.30	1233	49	4.19	40
41	1155	45	4.21	1220	41	4.30	1245	49	4.20	41
42	1166	45	4.21	1230	41	4.30	1257	49	4.20	42
43	1176	45	4.21	1239	41	4.30	1268	49	4.20	43
44	1187	45	4.21	1249	41	4.30	1280	49	4.20	44
45	1198	45	4.21	1259	41	4.30	1292	49	4.20	45
46	1209	45	4.20	1268	41	4.29	1303	49	4.20	46

Appendix Z: 2004 PSSA Mathematics Raw to Scaled Score Conversion Tables

	Grade 5			Grade 8			Grade 11			
Raw Score	Scale Score	Scale Score SEM	Raw Score SEM	Scale Score	Scale Score SEM	Raw Score SEM	Scale Score	Scale Score SEM	Raw Score SEM	Raw Score
47	1219	45	4.19	1278	41	4.28	1315	49	4.20	47
48	1230	45	4.18	1288	42	4.27	1327	49	4.20	48
49	1241	46	4.16	1297	42	4.25	1338	49	4.20	49
50	1252	46	4.14	1307	42	4.24	1350	49	4.21	50
51	1263	46	4.12	1317	42	4.22	1362	49	4.21	51
52	1275	46	4.10	1327	42	4.20	1373	49	4.21	52
53	1286	47	4.07	1337	42	4.18	1385	49	4.21	53
54	1297	47	4.04	1347	43	4.15	1397	49	4.21	54
55	1309	47	4.01	1358	43	4.13	1409	49	4.20	55
56	1321	48	3.98	1368	43	4.10	1420	49	4.20	56
57	1333	48	3.94	1379	44	4.07	1432	49	4.19	57
58	1345	49	3.90	1390	44	4.04	1444	49	4.18	58
59	1358	49	3.85	1401	44	4.00	1456	49	4.17	59
60	1371	50	3.81	1412	45	3.96	1467	50	4.16	60
61	1384	51	3.76	1423	45	3.91	1479	50	4.13	61
62	1398	51	3.70	1435	46	3.87	1492	50	4.11	62
63	1412	52	3.64	1447	47	3.82	1504	51	4.07	63
64	1427	53	3.58	1460	47	3.76	1516	51	4.03	64
65	1442	54	3.51	1472	48	3.70	1529	52	3.99	65
66	1457	55	3.44	1486	49	3.63	1542	53	3.93	66
67	1474	56	3.37	1499	50	3.55	1556	53	3.86	67
68	1491	58	3.29	1514	51	3.47	1570	54	3.79	68
69	1509	59	3.20	1529	52	3.39	1585	56	3.70	69
70	1528	61	3.11	1545	54	3.29	1600	57	3.61	70
71	1548	63	3.02	1562	56	3.20	1617	59	3.51	71
72	1570	65	2.91	1580	57	3.09	1634	61	3.39	72
73	1593	68	2.81	1599	60	2.98	1653	63	3.27	73
74	1618	70	2.69	1620	62	2.87	1673	66	3.13	74
75	1645	74	2.57	1642	65	2.75	1695	69	2.99	75
76	1675	78	2.45	1667	68	2.62	1719	73	2.84	76
77	1709	82	2.31	1694	71	2.49	1746	77	2.68	77
78	1747	87	2.18	1724	75	2.35	1777	82	2.51	78
79	1789	93	2.03	1758	81	2.20	1812	88	2.33	79
80	1839	101	1.88	1798	87	2.04	1853	97	2.14	80
81	1897	110	1.72	1845	96	1.85	1903	107	1.92	81
82	1969	124	1.54	1903	109	1.63	1967	123	1.68	82
83	2063	146	1.30	1983	131	1.35	2055	149	1.38	83
84	2211	198	0.96	2115	182	0.97	2203	209	0.99	84
85	2451	351	0.54	2336	327	0.54	2456	378	0.55	85