Technical Report # 08-08

Examining the Technical Adequacy of Second-Grade Reading Comprehension Measures in a Progress Monitoring Assessment System

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Abstract

This technical report describes the development of reading comprehension assessments designed for use as progress monitoring measures appropriate for 2nd grade students. Reading passages were created by elementary and secondary teachers, as well as graduate students. Corresponding items were written by an assessment design expert, and grouped according to cognitive attribute and degree of difficulty. Twenty alternate forms were piloted using a common person/ common item design, in which groups of students took five forms, with overlapping forms across groups. Content and bias reviews were conducted. Additionally, a Rasch analysis was used to determine the approximate difficulty of each item, based on the estimated ability level of each test taker. Items that did not appear to be functioning appropriately were retained and will be examined in a future study with a larger sample size.

Introduction

In this technical report, we describe the development and piloting of reading comprehension measures as part of a comprehensive progress monitoring literacy assessment system developed in 2006 for use with students in Kindergarten through eighth grade (Alonzo, Tindal, Ulmer, & Glasgow, 2006). We begin with a brief overview of the two conceptual frameworks underlying the assessment system: progress monitoring and developmental theories of reading. We then provide context for how the comprehension measures fit into the full assessment system. Additional technical reports provide similar information about measures of early literacy (Alonzo & Tindal, 2007a) and fluency (Alonzo & Tindal, 2007b).

Conceptual Framework: Progress Monitoring and Literacy Assessment

Early work related to curriculum-based measurement (CBM) led by Deno and Mirkin at the University of Minnesota (*c.f.a.*, Deno & Mirkin, 1977) was instrumental in promoting the use of short, easily-administered assessments to provide educators with information about student skill development useful for instructional planning. In the three decades since, such *progress monitoring probes* as they have come to be called have increased in popularity, and they are now a regular part of many schools' educational programs (Alonzo, Tindal, & Ketterlin-Geller, 2007). However, CBMs – even those widely used across the United States – often lack the psychometric properties expected of modern technically-adequate assessments. Although the precision of instrument development has advanced tremendously in the past 30 years with the advent of more sophisticated statistical techniques for analyzing tests on an item by item basis rather than relying exclusively on comparisons of means and standard deviations to evaluate comparability of alternate forms, the world of CBMs has not always kept pace with these statistical advances.

A key feature of assessments designed for progress monitoring is that alternate forms must be as equivalent as possible to allow meaningful interpretation of student performance data across time. Without such cross-form equivalence, changes in scores from one testing session to the next are difficult to attribute to changes in student skill or knowledge. Improvements in student scores may, in fact, be an artifact of the second form of the assessment being easier than the form that was administered first. The advent of more sophisticated data analysis techniques (such as the Rasch modeling used in this study) have made it possible to increase the precision with which we develop and evaluate the quality of assessment tools. In this technical report, we document the development of a progress monitoring assessment in reading, designed for use with students in Kindergarten through Grade 8. This assessment system was developed to be used by elementary school educators interested in monitoring the progress their students make in the area of early reading skill acquisition.

Reading is a fluid construct, shifting over time from a focus on discrete skills necessary for working with language in both written and spoken forms, to those more complex combinations of skills associated with decoding, and finally to comprehension—a construct in which all prior literacy skills are called upon in the act of reading. Reading assessment typically follows this general progression as well (Reading First, 2006). Assessments of emerging literacy skills evaluate student mastery of the alphabetic principle. These tests measure students' ability to correctly identify and/or produce letters and the sounds associated with them. They measure students' ability to manipulate individual phonemes (sound units) within words, when, for example, students are asked to blend a list of phonemes into a word, segment a word into its corresponding phonemes, or identify the sounds which begin or end a word (Ritchey & Speece, 2006).

As student reading skill progresses, it is necessary to use different reading measures to be able to continue to track the progress students are making as developing readers. Oral reading fluency, which measures a combination of students' sight vocabulary and their ability to decode novel words rapidly and accurately, is consistently identified in the literature as one of the best predictors of student reading comprehension in the early grades (Graves, Plasencia-Peinado, Deno, & Johnson, 2005; Hasbrouck & Tindal, 2005). Eventually, however, the information provided by measures of oral reading fluency is limited. Readers attain a fluency threshold that enables them to attend to comprehension rather than decoding (Ehri, 1991, 2005). Once this threshold has been reached, fluency is no longer sensitive to increases in reading comprehension. At this point, one must turn to measures designed to assess comprehension more directly. Although this technical report provides information specifically related to the comprehension measures developed for use in our Progress Monitoring assessment system, it is important to provide an overview of the complete system so readers can understand how the comprehension measures fit into the system as a whole.

The Measures that Comprise Our Complete Assessment System

Based on previous empirical studies of early literacy assessment (see, for example, the report from the National Reading Panel), we developed two measures of alphabetic principle (Letter Names and Letter Sounds), one measure of phonological awareness (Phoneme Segmenting), three measures of fluency (Word Reading Fluency, Sentence Reading Fluency, and Passage Reading Fluency), and one measure of comprehension (Multiple Choice Reading Comprehension). Table 1 presents information about the measures we developed for use in different grade levels. The specific technical specifications for the reading comprehension

measure are described in the methods section of this technical report. First, we describe the specific requirements related to the intended use of the measures in our assessment system.

Table 1

Distribution of the Measures Across the Grades

Grade	Measure					
	Letter Names	Letter Sounds	Phoneme Segmenting	Word & Sentence Reading	Passage Reading	MC Reading Comp
Kindergarten	X*	X	X	X		
Grade 1	X	X	X	X	X	
Grade 2			X	X	X	X
Grade 3				X	X	X
Grade 4					X	X
Grade 5					X	X
Grade 6					X	X
Grade 7					X	X
Grade 8					X	X

*Note: Each "X" represents 20 alternate forms of the measure for that grade level.

When one is interested in monitoring the progress students are making in attaining specific skills, it is important to have sufficient measures to sample student performance frequently. Thus, our goal was to create 20 alternate forms of each measure in our assessment system at each grade level where the measure was designed to be used. Because these alternate forms are designed to be used for progress monitoring, it is essential that all forms of a particular measure in a given grade level be both sensitive to showing growth in a discrete skill area over short periods of time (1-2 weeks of instruction) and comparable in difficulty. These two equally

important needs informed all parts of our measurement development effort: the construction of the technical specifications for each of the measures, the design of the studies used to gather data on item and test functioning, the analytic approaches we used to interpret the results of the pilot studies, and subsequent revision of the measures. In all cases, we sought approaches that would provide us with enough information to evaluate the *sensitivity of the individual measures* to detect small differences in student performance and the *comparability of the different forms* of each measure to allow for meaningful interpretation of growth over time.

In the section that follows, we describe the methods we used to construct, pilot, and analyze the performance of the measures in terms of reliability and validity for use in a progress monitoring assessment system.

Methods

We selected the format of the comprehension measures based on prior empirical work with local school districts (Alonzo & Tindal, 2004a, 2004b, 2004c). In this work, teachers had expressed their desire for tests that closely resembled the types of readings students regularly encountered in their classes. At the same time, concerns about increasing the reliability, easy of use, and cost-effectiveness of our measures prompted us to use selected response rather than open ended question types in our comprehension measures. Accordingly, we developed the MC Comprehension Tests in a two-step process. First, we wrote the stories that were used as the basis for each test. Then, we wrote the test items associated with each story. We embedded quality control and content review processes in both these steps throughout instrument development.

Two people, selected for their expertise in instrument development and language arts, were principally involved with overseeing the creation of the comprehension tests. The lead

author, who oversaw the creation and revision of the stories and test items earned her Bachelor of Arts degree in Literature from Carleton College in 1990, worked for twelve years as an English teacher in California public schools, was awarded National Board for Professional Teaching Standards certification in Adolescent and Young Adulthood English Language Arts in 2002, and was a Ph.D. candidate in the area of Learning Assessments / System Performance at the University of Oregon at the time the measures were created. The man hired to write the multiple choice comprehension items earned his Ph.D. in education psychology, measurement and methodology from the University of Arizona. He has worked in education at the elementary and middle school levels, as well as in higher education and at the state level. He held a position as associate professor in the distance learning program for Northern Arizona University and served as director of assessment for a large metropolitan school district in Phoenix, Arizona. In addition, he served as state Director of Assessment and Deputy Associate Superintendent for Standards and Assessment at the Arizona Department of Education. He was a test development manager for Harcourt Assessment and has broad experience in assessment and test development.

Creation of Original Fictitious Narratives

The lead author and the professional item writer hired for this project worked together to create documentation for story writers to use while creating their stories (see Appendix A). This written documentation was provided to increase the comparability of story structure and reduce the likelihood of construct irrelevant variance related to variation in story type affecting student performance on the different forms of the comprehension measures. Story creation specifications provided information about the length of the stories (approximately 700 words), characters, settings, and plots. Stories, which were composed between June 2006 and January 2007, were written by a variety of people who were either elementary and secondary school teachers or

graduate students in the College of Education. In all, 21 stories were written for use in this project: 1 did not pass the criteria required for use in the assessment system, leaving 20 to be piloted at the second Grade level.

Writing Multiple Choice Items to Fit Each Story

The professional item writer we hired created 12 multiple choice questions, each with 3 possible answer options, for each form of the 2nd Grade MC Comprehension tests. In all, he wrote 240 multiple choice questions for the 2nd Grade measures. All questions were written between July and October of 2007. For each of the 2nd Grade MC Comprehension tests, we wrote 7 questions targeting literal comprehension and 5 questions targeting inferential comprehension, for a total of 12 items on each form of the test (see Tables 44-49). Within each type of comprehension, item-writing specifications called for a range of difficulty such that each form of each test contained some easy, moderate, and difficult items in each of the types of comprehension assessed on that test. Item-writing specifications also guided the ordering of the items on each form of the MC Comprehension test. In all cases, we followed a similar pattern of item ordering, beginning with the easiest literal comprehension item and continuing with items of increasing difficulty, ending with an item designed to be one of the most challenging, pulled from the highest level of comprehension assessed in that grade level (inferential comprehension in Grade 2). Appendix B provides a more detailed description of the item ordering specifications followed in test construction.

Once the multiple choice items were written, the stories and item lists were formatted into individual tests, each comprised of a story and 12 multiple choice test items. Appendix C provides tables listing each 2nd Grade multiple choice test item by its unique identifying item name, the cognitive attribute and assessment objective it was designed to sample, the degree of

difficulty the item writer believed the item demonstrated, and the final ordering of the items on the test.

Pilot Testing

We used a common-person / common item piloting design to collect information on how each of the MC Comprehension measures functioned. In this design, the 20 different forms of each grade level measure are clustered into 5 groups, with 5 forms in each group. These five different forms are administered to different groups of students in a relatively short period of time. Each test grouping contains two overlapping forms, enabling concurrent analysis of all measures across the different student samples (see Table 2 for an example of this design at second Grade). The overlapping forms serve as the 'common items' that allow one to analyze the comparability of test forms. Having students take 5 different forms of the test provides 'common person' information, in which each person acts as his/her own 'control.' This design allows test developers to increase the reliability of item difficulty estimation because all different forms of the measures are analyzed simultaneously, and the overlap in people and test forms increases the statistical power of analyses.

Table 2
Organization of Test Form Groupings for Piloting Different MC Comprehension Forms

	Test Form																			
Group[1]	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	X	X	X	X	X															
2					X	X	X	X	X											
3									X	X	X	X	X							
4													X	X	X	X	X			
5	X																X	X	X	X

[1] Each "group" represents approximately 100 students

A convenience sample of teachers from two large school districts in the Pacific Northwest were recruited to participate in the piloting effort. All piloting of the 2nd Grade MC Comprehension tests took place within the same 3-week window the last two weeks in April and May of 2007. Teachers were recruited for participation through email notices sent by their school districts on behalf of the researchers. District personnel specifically recruited teachers who worked with students with a wide range of skill in reading, as the statistical analyses used in our item development are enhanced by increasing the variance among test takers. Teachers were compensated $50 for participating in the pilot. All items were piloted using a computer delivered online test platform. Teachers brought their classes to a computer lab to participate in the piloting. The computer captured item-level response information for analysis.

Analysis of Technical Adequacy

We evaluated the technical adequacy of the MC Reading Comprehension measures in two primary ways: (a) content review of the stories and test items and (b) statistical analysis of data obtained when the measures were piloted in the spring of 2007.

Content Review

Content and grade-level appropriateness of each of the MC Reading Comprehension measures was analyzed in four ways: grade-level appropriateness, adequate story structure for the types of items called for in the test specification documents, bias in language or story elements, and formatting.

Reviewing the content and grade-level appropriateness. First, each of the passages was reviewed by an elementary school educator employed as a Title I Reading Specialist in the school district where we piloted the measures. This review focused on evaluating the degree to which the stories used in the measures were appropriate in tone, content, and language for their

target grade-level audience. We used feedback from this review to revise one story prior to sending them to the item writer for question development. The remaining stories met content and grade-level appropriateness standards on first review.

Concurrent review and revision to address item-writing specifications. Second, during the item-writing phase, the professional item writer and the lead author worked in tandem to review and revise each of the stories as items were being written. This ongoing review and revision process focused on replacing vocabulary words that were deemed out of grade level (based on Taylor, Frackenpohl, & White's 1989 *A Revised Core Vocabulary*) and on re-writing sections of the stories to create more uniform story structures across different forms of the tests. In particular, revisions were made to ensure adequate opportunities for the development of higher-order inferential and evaluative questions related to the stories. Slight revisions to all of the stories were made during this process.

Attending to potential bias for students with special needs and diverse backgrounds. In the third step of the review process, all tests (stories and questions) were reviewed by students enrolled in the third term of a Special Education Master's seminar on assessment issues related to special-needs students. Each student read and provided feedback on 5 complete tests. Their feedback was shared with the item writer and lead author. Because this review process did not lead to any suggested revisions, tests were sent on for reviews related to formatting without further alterations as a result of this step in the review process.

Formatting consistency and issues related to ease of access. During the final step of the content review process, two Master's students in the College of Education read all of the revised and formatted tests, looking for issues related to consistency and appropriateness of formatting for elementary school students. Specific formatting issues included inconsistency in using bold

or normal typeface (*n* = 9), spacing between the header and the first item (*n* = 8), and font used (*n* = 3). Issues noted in this review process were addressed prior to piloting the tests. In all cases, stories were on the computer in a sans serif font style to increase readability for students with visual impairments. During the piloting, students were able to look back at the story as they were answering the test questions. The format in which the test items were piloted is an exact replica of the computer delivered test format used on the end system (easycbm.com).

Statistical Analysis

We analyzed data from the pilot testing of the MC Comprehension measures with a one parameter logistic Rasch analysis using the software Winsteps3.61.1 (Linacre, 2006). Rasch analyses differ from approaches using classical statistics in that they consider patterns of responses across individuals, using this information to provide a level of specificity in results unattainable with approaches based on classical statistics used in the development of most CBMs. In a complex iterative process, a Rasch analysis concurrently estimates the difficulty of individual test items and the ability level of each individual test taker. The results one obtains from this analysis, relevant to our discussion here, include an estimation of the difficulty (referred to as the 'measure' of each item), the standard error of measure associated with each item's estimated difficulty, and the degree to which each item 'fits' the measurement model (referred to as the 'mean square outfit' of each item). In addition, a Rasch analysis can provide information about the average estimated ability of students who selected each of the possible answer choices. All of this information must be considered when evaluating the technical adequacy of the measures, as described below.

Considering each item's estimated difficulty. Rasch analyses, which examine each item's reliability, provide a more precise treatment of reliability than classical statistics, which examine the issue only at a more global test level. The most reliable estimation of a test-taker's ability can be gained from tests comprised of items that represent the fullest range of difficulty possible for the population with which the test is intended to be used. Thus, in evaluating the technical adequacy of our MC Comprehension measures, we looked for items representing a range of difficulties. In Rasch analyses, this information is gleaned from examining each item's *measure*. Easy items will have measures represented with negative numbers; difficult items will have measures represented with positive numbers. A measure of zero indicates an item that a person of average ability would be expected to have a 50% chance of getting correct. Thus, we sought a full range of measures on every MC Comprehension test.

Examining the standard error of measure. Rasch analyses provide information about the standard error of measure associated with the estimation of each item's measure. In general, the smaller the standard error of measure, the more reliable the estimation. We sought small standard errors of measure on all items on our tests.

Using the mean square outfit to evaluate goodness of fit. An additional piece of information used to evaluate technical adequacy in a Rasch model is the mean square outfit associated with each item. Values in the range of 0.50 to 1.50 are considered *acceptable fit*. Mean square outfits falling outside this acceptable range indicate the need for further evaluation of item functioning. In general, items with a mean square outfit less than 0.50 are considered less worrisome than items with mean square outfits higher than 1.50. In all cases, distractor analysis provides useful information to further evaluate the technical adequacy of each item.

Analyzing distractor selection information. A distractor analysis provides information on the average estimated ability of test takers who selected a particular distractor on a test. In evaluating the technical adequacy of an assessment instrument, one hopes to see that the correct answer is selected by test-takers with the highest average estimated ability and the remaining distractors are selected by test-takers with lower estimated abilities. In addition, every distractor in a well-constructed measure will be selected by at least some test-takers. We considered all of these features in evaluating the technical adequacy of the MC Comprehension measures.

Results

Tables 4 - 43 present the Item Measure, Standard Error of Measure, Mean Square Outfit, and complete Distractor Analyses of the 20 2nd Grade MC Comprehension measures. All items in Gr2MC1, Gr2MC6, Gr2MC10, Gr2MC12, Gr2MC13, Gr2MC15, and Gr2MC17 passed the pre-set adequate model fit selection criteria, falling within the Mean Square Outfit range of 0.5 to 1.5, with every distractor selected by at least one student. One item in Gr2MC2 required further analysis. Item #12 was slightly under-fit, with a Mean Square Outfit of 1.57. Analysis of the distractors, however, indicated that items were functioning appropriately, given the small sample size for this analysis. Two items in Gr2MC3 required further analysis. Items #5 and #6 were slightly under-fit with Mean Square Outfits of 1.61 and 1.53 respectively. Again, analysis of the distractors indicated that both items were functioning appropriately, and they were retained without revisions. One item in Gr2MC4 required further analysis. Item #8 was under-fit with a Mean Square Outfit of 1.82. Again, analysis of the distractor indicated that the item was functioning appropriately, and it was retained without revisions.

One item in Gr2MC5 required further analysis. Item #11 was poor-fitting with a Mean Square Outfit of 2.05. Analysis of distractors indicated that the 22 students who chose correct

answer (C) on average had higher estimated ability than students who chose the other distractors, so the item was deemed appropriate for use without revision. One item in Gr2MC7 may need further revision in the future. In this initial item piloting, no students selected Distractor C on Item #1 from that test. With only 55 students in the piloting sample, however, we opted to retain the distractor as is and examine it again in the future with a larger sample of students.

One item in Gr2MC8 required further analysis. Item # 8 was under-fit with a Mean Square Outfit of 1.91, but distractor analysis indicated that the distractors were all functioning appropriately, so the item was retained without changes. Two items in Gr2MC11 required further analysis. Item #2 was slightly under-fit with a Mean Square Outfits of 1.65. The analysis of distractors indicated that all three worked appropriately, so the item was retained as it was. Item #9 was poor-fitting with a Mean Square Outfit of 2.10. Analysis of the distractors indicated that the 23 students who chose Distractor A on average had a slightly higher estimated ability level than the 26 students who chose the correct answer, (answer B). Because the difference was slight, the item was retained without further revision. In Gr2MC14, Distractor C from Item #6 was revised slightly to make it more appealing to students, as no students selected it in the pilot.

In Gr2MC16, two items required further analysis. Items #9 and #10 were also slightly under-fit with a Mean Square Outfit of 1.65 and 1.71 respectively; however, the analysis of distractors indicated that these items all function appropriately, so these items were retained without revision. In Gr2MC18, Item #12 was slightly under-fit with a Mean Square Outfit of 1.62. Analysis of the distractors showed that the average estimated ability of students who selected Distractor A was slightly higher than that of the students who chose the correct answer (answer B). Again, because the difference in estimated ability was slight and the sample small, this item was retained without revision.

In Gr2MC19, Item #8 was under-fit, with a Mean Square Outfit of 1.87. Distractor analysis indicated a need for further evaluation because the students who chose Distractor C on average had a higher estimated ability than the students who chose the correct answer (answer B). After re-considering the story and checking the answer key, we decided to retain the item as it was written but to evaluate it again in a future pilot with a larger sample. In Gr2MC20, Item #4 was slightly under-fit (with a Mean Square Outfit of 1.56), but the distractor analysis suggested no need to revise this item, so it was left in its original form. Item #12, was more poorly fit, with a Mean Square Outfit of 2.18. Distractor analysis indicated that students who chose Distractor A on average had higher estimated ability than students who chose the correct answer (answer B). Again, however, due to the small sample size, we decided to retain this item as is but to re-analyze it in a future piloting with a larger sample.

Table 3

Item Statistics, Entry Order, Gr2MC1

Item Number	Raw Score	Count	Measure	Model Standard Error	Mean Square Outfit
1	100	118	-1.49	0.27	0.76
2	78	118	-0.28	0.21	0.75
3	71	118	0.03	0.21	1.09
4	53	118	0.77	0.20	1.16
5	68	118	0.15	0.21	1.00
6	59	118	0.52	0.20	1.19
7	79	118	-0.32	0.21	0.75
8	71	118	0.03	0.21	0.88
9	61	118	0.44	0.20	1.27
10	72	117	-0.04	0.21	1.02
11	88	117	-0.80	0.23	0.75
12	47	117	1.00	0.21	1.10

Table 4
Distractor Analysis, Gr2MC1

Entry #	Data Code	Score Value	Count	%	Average Measure	S.E. Mean
1	B	0	5	4	-0.60	.52
	C	0	13	11	-0.40	.21
	A	1	100	85	0.87	.13
	Missing	**				
2	B	0	14	12	-0.37	.25
	A	0	26	22	-0.21	.14
	C	1	78	66	1.15	.15
	Missing	**				
3	C	0	20	17	-0.09	.19
	B	0	27	23	0.31	.24
	A	1	71	60	1.02	.16
	Missing	**				
4	A	0	30	25	-0.02	.18
	C	0	35	30	0.56	.14
	B	1	53	45	1.13	.21
	Missing	**				
5	A	0	25	21	-0.25	.13
	B	0	25	21	0.37	.30
	C	1	68	58	1.11	.15
	Missing	**				
6	C	0	18	15	-0.44	.19
	A	0	41	35	0.66	.19
	B	1	59	50	1.01	.17
	Missing	**				
7	C	0	10	8	-0.49	.32
	B	0	29	25	-0.23	.14
	A	1	79	67	1.15	.14
	Missing	**				
8	A	0	21	18	-0.22	.17
	B	0	26	22	0.04	.24
	C	1	71	60	1.16	.15
	Missing	**				
9	A	0	26	22	0.27	.15
	C	0	31	26	0.45	.26
	B	1	61	52	0.95	.18
	Missing	**				
10	B	0	18	15	-0.06	.22
	C	0	27	23	0.18	.16
	A	1	72	62	1.04	.17
	Missing	**	1	1	0.25	

Table 4

Distractor Analysis, Gr2MC1 (Continued)

Entry #	Data Code	Score Value	Count	%	Average Measure	S.E. Mean
11	C	0	7	6	-0.53	.29
	B	0	22	19	-0.25	.15
	A	1	88	75	1.00	.14
	Missing	**	1	1	0.25	
12	A	0	30	26	0.13	.16
	C	0	40	34	0.28	.14
	B	1	47	40	1.35	.23
	Missing	**	1	1	0.25	

Table 5

Item Statistics, Entry Order, Gr2MC2

Item Number	Raw Score	Count	Measure	Model Standard Error	Mean Square Outfit
1	54	78	-0.85	0.27	0.68
2	43	78	-0.10	0.26	0.97
3	46	78	-0.30	0.26	0.66
4	44	78	-0.17	0.26	0.70
5	32	78	0.61	0.26	1.39
6	38	78	0.22	0.26	1.24
7	33	78	0.55	0.26	0.83
8	48	78	-0.43	0.26	0.76
9	44	78	-0.17	0.26	0.94
10	37	77	0.26	0.26	1.15
11	46	77	-0.34	0.26	0.95
12	30	77	0.72	0.26	1.57

Table 6
Distractor Analysis, Gr2MC2

Entry #	Data Code	Score Value	Count	%	Average Measure	S.E. Mean
1	B	0	13	17	-1.19	.39
	C	0	11	14	-0.69	.23
	A	1	54	69	0.73	.18
	Missing	**				
2	A	0	15	19	-0.70	.34
	C	0	20	26	-0.34	.30
	B	1	43	55	0.78	.21
	Missing	**				
3	A	0	17	22	-0.92	.27
	B	0	15	19	-0.78	.28
	C	1	46	59	0.94	.19
	Missing	**				
4	C	0	17	22	-0.85	.24
	B	0	17	22	-0.71	.28
	A	1	44	56	0.96	.19
	Missing	**				
5	A	0	26	33	-0.18	.33
	C	0	20	26	0.09	.21
	B	1	32	41	0.59	.27
	Missing	**				
6	B	0	26	33	-0.31	.27
	C	0	14	18	0.00	.46
	A	1	38	49	0.64	.22
	Missing	**				
7	B	0	19	24	-0.64	.26
	A	0	26	33	-0.43	.21
	C	1	33	42	1.19	.24
	Missing	**				
8	C	0	15	19	-1.09	.35
	A	0	15	19	-0.53	.24
	B	1	48	62	0.84	.19
	Missing	**				
9	A	0	16	21	-0.83	.38
	B	0	18	23	-0.32	.25
	C	1	44	56	0.80	.20
	Missing	**				
10	B	0	22	29	-0.58	.24
	C	0	18	23	0.03	.33
	A	1	37	48	0.76	.25
	Missing	**	1	1	0.17	

Table 6
Distractor Analysis, Gr2MC2 (Continued)

Entry #	Data Code	Score Value	Count	%	Average Measure	S.E. Mean
11	A	0	18	23	-0.80	.25
	B	0	13	17	-0.34	.40
	C	1	46	60	0.76	.21
	Missing	**	1	1	0.17	
12	A	0	30	39	-0.22	.23
	C	0	17	22	0.54	.42
	B	1	30	39	0.44	.27
	Missing	**	1	1	0.17	

Table 7

Item Statistics, Entry Order, Gr2MC3

Item Number	Raw Score	Count	Measure	Model Standard Error	Mean Square Outfit
1	64	78	-1.56	0.32	0.63
2	47	78	-0.27	0.25	0.84
3	43	78	-0.02	0.25	1.04
4	61	78	-1.29	0.30	1.00
5	15	78	1.90	0.31	1.61
6	31	78	0.73	0.25	1.53
7	58	78	-1.04	0.28	0.79
8	41	78	0.11	0.25	1.02
9	27	78	0.99	0.26	1.13
10	38	78	0.29	0.25	0.71
11	47	78	-0.27	0.25	0.97
12	36	78	0.42	0.25	0.83

Table 8
Distractor Analysis, Gr2MC3

Entry #	Data Code	Score Value	Count	%	Average Measure	S.E. Mean
1	A	0	11	14	-1.25	.35
	C	0	3	4	0.00	.23
	B	1	64	82	0.51	.13
	Missing	**				
2	B	0	25	32	-0.53	.23
	A	0	6	8	-0.34	.16
	C	1	47	60	0.72	.15
	Missing	**				
3	C	0	4	5	-2.06	.85
	A	0	31	40	-0.01	.16
	B	1	43	55	0.64	.16
	Missing	**				
4	C	0	4	5	-0.42	.29
	B	0	13	17	-0.33	.22
	A	1	61	78	0.41	.16
	Missing	**				
5	B	0	18	23	-0.49	.31
	A	0	45	58	0.42	.13
	C	1	15	19	0.57	.38
	Missing	**				
6	B	0	15	19	-0.21	.21
	C	0	32	41	0.30	.20
	A	1	31	40	0.40	.24
	Missing	**				
7	A	0	11	14	-0.92	.40
	C	0	9	12	-0.34	.29
	B	1	58	74	0.55	.14
	Missing	**				
8	C	0	18	23	-0.31	.14
	B	0	19	24	-0.19	.39
	A	1	41	53	0.68	.14
	Missing	**				
9	C	0	19	24	-0.36	.34
	A	0	32	41	0.25	.16
	B	1	27	35	0.65	.21
	Missing	**				
10	B	0	11	14	-0.55	.26
	A	0	29	37	-0.39	.19
	C	1	38	49	0.95	.15
	Missing	**				

Table 8

Distractor Analysis, Gr2MC3 (Continued)

Entry #	Data Code	Score Value	Count	%	Average Measure	S.E. Mean
11	B	0	20	26	-0.40	.29
	C	0	11	14	-0.24	.31
	A	1	47	60	0.62	.15
	Missing	**				
12	A	0	11	14	-0.58	.16
	C	0	31	40	-0.23	.20
	B	1	36	46	0.90	.17
	Missing	**				

Table 9

Item Statistics, Entry Order, Gr2MC4

Item Number	Raw Score	Count	Measure	Model Standard Error	Mean Square Outfit
1	59	78	-0.94	0.30	1.40
2	47	78	0.01	0.27	0.92
3	58	78	-0.85	0.30	0.52
4	62	78	-1.22	0.32	0.78
5	49	78	-0.14	0.27	0.58
6	34	78	0.89	0.26	0.99
7	49	78	-0.14	0.27	0.56
8	29	78	1.22	0.26	1.82
9	37	78	0.69	0.26	1.22
10	36	78	0.76	0.26	1.12
11	49	78	-0.14	0.27	1.19
12	49	78	-0.14	0.27	0.71

Table 10
Distractor Analysis, Gr2MC4

Entry #	Data Code	Score Value	Count	%	Average Measure	S.E. Mean
1	B	0	8	10	-1.33	.77
	C	0	11	14	0.42	.33
	A	1	59	76	0.85	.20
	Missing	**				
2	B	0	19	24	-0.90	.42
	A	0	12	15	0.17	.36
	C	1	47	60	1.26	.19
	Missing	**				
3	C	0	11	14	-1.46	.48
	B	0	9	12	-1.00	.46
	A	1	58	74	1.19	.16
	Missing	**				
4	A	0	13	17	-1.43	.51
	C	0	3	4	0.30	.50
	B	1	62	79	1.00	.17
	Missing	**				
5	B	0	17	22	-1.13	.37
	A	0	12	15	-0.50	.39
	C	1	49	63	1.41	.17
	Missing	**				
6	C	0	17	22	-1.04	.46
	A	0	27	35	0.39	.18
	B	1	34	44	1.50	.24
	Missing	**				
7	A	0	12	15	-1.23	.47
	B	0	17	22	-0.65	.31
	C	1	49	63	1.43	.17
	Missing	**				
8	C	0	12	15	0.00	.26
	B	0	37	47	0.48	.31
	A	1	29	37	0.90	.30
	Missing	**				
9	C	0	14	18	-0.34	.56
	A	0	27	35	0.29	.34
	B	1	37	47	1.11	.21
	Missing	**				
10	B	0	8	10	-0.90	.58
	A	0	34	44	0.18	.29
	C	1	36	46	1.25	.23
	Missing	**				

Table 10

Distractor Analysis, Gr2MC4 (Continued)

Entry #	Data Code	Score Value	Count	%	Average Measure	S.E. Mean
11	C	0	9	12	-0.27	.21
	A	0	20	26	-0.26	.39
	B	1	49	63	1.06	.23
	Missing	**				
12	A	0	12	15	-0.93	.54
	C	0	17	22	-0.61	.33
	B	1	49	63	1.34	.17
	Missing	**				

Table 11

Item Statistics, Entry Order, Gr2MC5

Item Number	Raw Score	Count	Measure	Model Standard Error	Mean Square Outfit
1	97	141	-0.65	0.21	1.04
2	105	141	-1.00	0.22	0.69
3	69	141	0.44	0.20	0.88
4	104	141	-0.96	0.21	1.33
5	95	141	-0.57	0.20	0.75
6	71	141	0.36	0.19	0.92
7	69	141	0.44	0.20	0.82
8	89	141	-0.33	0.20	0.84
9	75	141	0.21	0.19	1.04
10	106	141	-1.05	0.22	1.02
11	22	141	2.43	0.25	2.05
12	63	141	0.67	0.20	1.32

Table 12
Distractor Analysis, Gr2MC5

Entry #	Data Code	Score Value	Count	%	Average Measure	S.E. Mean
1	B	0	0	0	0	0
	A	0	6	4	-1.46	0.67
	C	1	38	27	-0.41	0.21
	Missing	**				
2	A	0	15	11	-0.83	0.22
	C	0	21	15	-0.73	0.24
	B	1	105	74	0.98	0.16
	Missing	**				
3	B	0	32	23	-0.61	0.16
	A	0	40	28	-0.09	0.19
	C	1	69	49	1.43	0.20
	Missing	**				
4	C	0	13	9	-0.70	0.29
	B	0	24	17	-0.24	0.33
	A	1	104	74	0.87	0.16
	Missing	**				
5	A	0	17	12	-0.87	0.15
	B	0	29	21	-0.53	0.22
	C	1	95	67	1.11	0.16
	Missing	**				
6	C	0	19	13	-0.45	0.24
	A	0	51	36	-0.25	0.15
	B	1	71	50	1.36	0.20
	Missing	**				
7	B	0	15	11	-1.05	0.22
	C	0	57	40	-0.17	0.14
	A	1	69	49	1.46	0.20
	Missing	**				
8	B	0	28	20	-0.77	0.21
	C	0	24	17	-0.26	0.20
	A	1	89	63	1.16	0.17
	Missing	**				
9	A	0	22	16	-0.34	0.14
	C	0	44	31	-0.28	0.18
	B	1	75	53	1.27	0.20
	Missing	**				
10	B	0	22	16	-0.88	0.23
	C	0	13	9	-0.29	0.41
	A	1	106	75	0.93	0.15
	Missing	**				

Table 12

Distractor Analysis, Gr2MC5 (Continued)

Entry #	Data Code	Score Value	Count	%	Average Measure	S.E. Mean
11	A	0	59	42	0.15	0.21
	B	0	60	43	0.71	0.19
	C	1	22	16	1.10	0.44
	Missing	**				
12	A	0	38	27	-0.20	0.25
	C	0	40	28	0.23	0.20
	B	1	63	45	1.17	0.22
	Missing	**				

Table 13

Item Statistics, Entry Order, Gr2MC6

Item Number	Raw Score	Count	Measure	Model Standard Error	Mean Square Outfit
1	50	59	-1.58	0.38	0.61
2	43	59	-0.73	0.32	0.76
3	34	59	0.12	0.30	0.89
4	29	59	0.57	0.30	0.94
5	40	59	-0.43	0.31	0.63
6	43	59	-0.73	0.32	0.72
7	32	59	0.30	0.30	0.84
8	32	59	0.30	0.30	1.02
9	36	59	-0.06	0.30	1.23
10	27	59	0.75	0.30	1.21
11	28	59	0.66	0.30	1.20
12	26	59	0.83	0.30	1.14

Table 14
Distractor Analysis, Gr2MC6

Entry #	Data Code	Score Value	Count	%	Average Measure	S.E. Mean
1	B	0	3	5	-0.91	0.58
	C	0	6	10	-0.60	0.26
	A	1	50	85	1.19	0.26
	Missing	**				
2	C	0	6	10	-0.53	0.26
	A	0	10	17	-0.24	0.21
	B	1	43	73	1.37	0.29
	Missing	**				
3	B	0	9	15	-0.61	0.18
	C	0	16	27	0.05	0.35
	A	1	34	58	1.71	0.31
	Missing	**				
4	B	0	14	24	-0.08	0.41
	A	0	16	27	0.09	0.23
	C	1	29	49	1.83	0.35
	Missing	**				
5	C	0	13	22	-0.63	0.18
	A	0	6	10	-0.26	0.27
	B	1	40	68	1.58	0.29
	Missing	**				
6	B	0	8	14	-0.68	0.26
	C	0	8	14	-0.13	0.18
	A	1	43	73	1.39	0.29
	Missing	**				
7	A	0	14	24	-0.19	0.20
	B	0	13	22	-0.19	0.22
	C	1	32	54	1.83	0.35
	Missing	**				
8	A	0	13	22	-0.24	0.23
	B	0	14	24	0.15	0.38
	C	1	32	54	1.70	0.34
	Missing	**				
9	B	0	7	12	-0.67	0.30
	C	0	16	27	0.43	0.42
	A	1	36	61	1.43	0.31
	Missing	**				
10	A	0	11	19	-0.47	0.24
	B	0	21	36	0.65	0.33
	C	1	27	46	1.67	0.39
	Missing	**				

Table 14

Distractor Analysis, Gr2MC6 (Continued)

Entry #	Data Code	Score Value	Count	%	Average Measure	S.E. Mean
11	C	0	11	19	-0.19	0.26
	A	0	20	34	0.48	0.35
	B	1	28	47	1.64	0.38
	Missing	**				
12	A	0	15	25	-0.11	0.17
	B	0	18	31	0.51	0.41
	C	1	26	44	1.76	0.39
	Missing	**				

Table 15

Item Statistics, Entry Order, Gr2MC7

Item Number	Raw Score	Count	Measure	Model Standard Error	Mean Square Outfit
1	51	55	-2.42	0.53	0.66
2	38	55	-0.46	0.32	0.77
3	35	55	-0.17	0.31	0.73
4	25	55	0.75	0.30	1.35
5	35	55	-0.17	0.31	1.00
6	29	55	0.39	0.30	0.79
7	35	55	-0.17	0.31	1.19
8	35	55	-0.17	0.31	1.12
9	30	55	0.03	0.30	0.85
10	30	54	0.27	0.31	0.79
11	26	54	0.64	0.31	1.15
12	20	54	1.20	0.32	1.14

Table 16
Distractor Analysis, Gr2MC7

Entry #	Data Code	Score Value	Count	%	Average Measure	S.E. Mean
1	B	0	4	7	-0.47	0.32
	C	0	0	0	0	0
	A	1	51	93	0.86	0.22
	Missing	**				
2	A	0	7	13	-0.58	0.16
	B	0	10	18	-0.02	0.18
	C	1	38	69	1.22	0.26
	Missing	**				
3	A	0	7	13	-0.54	0.2
	C	0	13	24	-0.13	0.18
	B	1	35	64	1.36	0.27
	Missing	**				
4	B	0	21	38	0.15	0.26
	C	0	9	16	1.30	0.66
	A	1	25	45	1.09	0.30
	Missing	**				
5	C	0	7	13	-0.12	0.31
	B	0	13	24	0.08	0.26
	A	1	35	64	1.20	0.28
	Missing	**				
6	A	0	8	15	-0.57	0.18
	B	0	18	33	0.10	0.20
	C	1	29	53	1.55	0.30
	Missing	**				
7	A	0	10	18	-0.25	0.27
	C	0	10	18	0.56	0.47
	B	1	35	64	1.11	0.27
	Missing	**				
8	B	0	13	24	-0.36	0.16
	C	0	7	13	0.81	0.68
	A	1	35	64	1.17	0.26
	Missing	**				
9	C	0	12	22	-0.10	0.23
	A	0	13	24	-0.04	0.26
	B	1	30	55	1.46	0.30
	Missing	**				
10	B	0	11	20	-0.28	0.24
	A	0	13	24	0.02	0.22
	C	1	30	55	1.51	0.29
	Missing	**	1	2	-0.43	0

Table 16

Distractor Analysis, Gr2MC7 (Continued)

Entry #	Data Code	Score Value	Count	%	Average Measure	S.E. Mean
11	A	0	17	31	-0.01	0.24
	C	0	11	20	0.78	0.42
	B	1	26	47	1.31	0.33
	Missing	**	1	2	-0.43	0
12	A	0	16	29	0.01	0.25
	B	0	18	33	0.54	0.20
	C	1	20	36	1.64	0.44
	Missing	**	1	2	-0.43	0

Table 17

Item Statistics, Entry Order, Gr2MC8

Item Number	Raw Score	Count	Measure	Model Standard Error	Mean Square Outfit
1	33	55	0.06	0.32	1.06
2	27	55	0.66	0.32	1.91
3	43	55	-1.05	0.36	0.61
4	36	54	-0.29	0.33	0.69
5	34	54	-0.08	0.33	1.04
6	30	54	0.34	0.32	1.03
7	33	54	0.03	0.33	0.98
8	32	54	0.14	0.33	0.66
9	33	54	0.03	0.33	0.94
10	38	54	-0.52	0.34	0.60
11	31	52	0.13	0.33	0.85
12	27	52	0.56	0.33	1.07

Table 18
Distractor Analysis, Gr2MC8

Entry #	Data Code	Score Value	Count	%	Average Measure	S.E. Mean
1	B	0	9	16	-0.30	0.53
	A	0	13	24	0	0.40
	C	1	33	60	1.71	0.33
	Missing	**				
2	C	0	1	2	-1.19	0
	A	0	27	49	0.75	0.30
	B	1	27	49	1.29	0.44
	Missing	**				
3	C	0	7	13	-0.73	0.36
	B	0	5	9	-0.69	0.23
	A	1	43	78	1.45	0.29
	Missing	**				
4	B	0	8	15	-0.83	0.28
	A	0	10	18	-0.26	0.30
	C	1	36	65	1.82	0.30
	Missing	**	1	2	-2.38	0
5	C	0	4	7	-1.13	0.27
	A	0	16	29	0.12	0.35
	B	1	34	62	1.73	0.32
	Missing	**	1	2	-2.38	0
6	A	0	6	11	-0.18	0.34
	C	0	18	33	0.11	0.43
	B	1	30	55	1.85	0.32
	Missing	**	1	2	-2.38	0
7	A	0	8	15	-0.89	0.25
	B	0	13	24	0.33	0.50
	C	1	33	60	1.79	0.30
	Missing	**	1	2	-2.38	0
8	B	0	10	18	-0.59	0.32
	C	0	12	22	-0.31	0.15
	A	1	32	58	2.06	0.32
	Missing	**	1	2	-2.38	0
9	A	0	11	20	-0.20	0.46
	B	0	10	18	-0.14	0.39
	C	1	33	60	1.81	0.32
	Missing	**	1	2	-2.38	0
10	A	0	7	13	-0.84	0.23
	C	0	9	16	-0.54	0.32
	B	1	38	69	1.76	0.29
	Missing	**	1	2	-2.38	0

Table 18

Distractor Analysis, Gr2MC8 (Continued)

Entry #	Data Code	Score Value	Count	%	Average Measure	S.E. Mean
11	B	0	8	15	-0.38	0.24
	C	0	13	24	-0.14	0.41
	A	1	31	56	1.95	0.33
	Missing	**	3	5	-0.60	1.16
12	B	0	9	16	-0.28	0.46
	C	0	16	29	0.36	0.37
	A	1	27	49	1.94	0.37
	Missing	**	3	5	-0.60	1.16

Table 19

Item Statistics, Entry Order, Gr2MC9

Item Number	Raw Score	Count	Measure	Model Standard Error	Mean Square Outfit
1	81	110	-0.60	0.24	0.91
2	51	110	0.94	0.22	0.80
3	89	110	-1.12	0.27	0.82
4	77	110	-0.37	0.24	0.97
5	90	110	-1.19	0.27	1.43
6	86	110	-0.91	0.26	1.05
7	62	110	0.41	0.22	0.89
8	78	110	-0.43	0.24	0.82
9	52	110	0.90	0.22	1.06
10	53	110	0.85	0.22	1.37
11	68	110	0.11	0.23	0.92
12	41	110	1.42	0.23	1.29

Table 20
Distractor Analysis, Gr2MC9

Entry #	Data Code	Score Value	Count	%	Average Measure	S.E. Mean
1	C	0	13	12	-0.2	0.22
	A	0	16	15	-0.11	0.26
	B	1	81	74	1.60	0.22
	Missing	**				
2	B	0	29	26	0.01	0.23
	A	0	30	27	0.02	0.16
	C	1	51	46	2.45	0.27
	Missing	**				
3	C	0	13	12	-0.87	0.20
	B	0	8	7	0.03	0.48
	A	1	89	81	1.54	0.20
	Missing	**				
4	B	0	22	20	-0.26	0.27
	A	0	11	10	0.11	0.39
	C	1	77	70	1.69	0.22
	Missing	**				
5	C	0	8	7	-0.73	0.34
	B	0	12	11	0.20	0.64
	A	1	90	82	1.43	0.19
	Missing	**				
6	C	0	11	10	-0.52	0.30
	A	0	13	12	0.06	0.44
	B	1	86	78	1.52	0.21
	Missing	**				
7	A	0	22	20	-0.30	0.23
	C	0	26	24	0.26	0.26
	B	1	62	56	2.02	0.24
	Missing	**				
8	B	0	12	11	-0.49	0.25
	C	0	20	18	-0.09	0.22
	A	1	78	71	1.71	0.22
	Missing	**				
9	B	0	31	28	0.27	0.32
	A	0	27	25	0.49	0.31
	C	1	52	47	2.00	0.25
	Missing	**				
10	B	0	24	22	0.08	0.31
	C	0	33	30	0.93	0.29
	A	1	53	48	1.75	0.28
	Missing	**				

Table 20

Distractor Analysis, Gr2MC9 (Continued)

Entry #	Data Code	Score Value	Count	%	Average Measure	S.E. Mean
11	B	0	18	16	-0.74	0.20
	A	0	24	22	0.47	0.18
	C	1	68	62	1.87	0.24
	Missing	**				
12	C	0	24	22	-0.13	0.24
	A	0	45	41	0.74	0.21
	B	1	41	37	2.32	0.34
	Missing	**				

Table 21

Item Statistics, Entry Order, Gr2MC10

Item Number	Raw Score	Count	Measure	Model Standard Error	Mean Square Outfit
1	48	55	-1.69	0.43	0.65
2	31	55	0.35	0.31	0.76
3	42	55	-0.81	0.35	0.57
4	30	55	0.45	0.31	0.79
5	34	55	0.06	0.32	1.10
6	35	55	-0.04	0.32	0.87
7	30	55	0.45	0.31	1.04
8	31	55	0.35	0.31	1.32
9	34	55	0.06	0.32	0.76
10	23	55	1.10	0.31	1.46
11	35	55	-0.04	0.32	0.81
12	37	55	-0.25	0.33	1.19

Table 22
Distractor Analysis, Gr2MC10

Entry #	Data Code	Score Value	Count	%	Average Measure	S.E. Mean
1	A	0	5	9	-0.31	0.38
	B	0	2	4	-1.59	0.36
	C	1	48	87	1.33	0.26
	Missing	**				
2	A	0	18	33	-0.13	0.22
	C	0	6	11	-0.15	0.36
	B	1	31	56	2.01	0.33
	Missing	**				
3	B	0	9	16	-0.59	0.23
	C	0	4	7	-0.48	0.27
	A	1	42	76	1.58	0.28
	Missing	**				
4	A	0	13	24	-0.28	0.17
	B	0	12	22	0.10	0.33
	C	1	30	55	2.05	0.34
	Missing	**				
5	A	0	14	25	-0.06	0.19
	C	0	7	13	0.53	0.99
	B	1	34	62	1.65	0.30
	Missing	**				
6	B	0	13	24	0.02	0.21
	C	0	7	13	-0.35	0.35
	A	1	35	64	1.75	0.32
	Missing	**				
7	A	0	18	33	0.43	0.34
	B	0	7	13	-0.49	0.25
	C	1	30	55	1.83	0.34
	Missing	**				
8	A	0	14	25	0.15	0.37
	C	0	10	18	0.79	0.50
	B	1	31	56	1.58	0.35
	Missing	**				
9	B	0	14	25	-0.04	0.23
	C	0	7	13	-0.52	0.08
	A	1	34	62	1.86	0.32
	Missing	**				
10	A	0	14	25	0.76	0.42
	B	0	18	33	0.70	0.45
	C	1	23	42	1.55	0.39
	Missing	**				

Table 22

Distractor Analysis, Gr2MC10 (Continued)

Entry #	Data Code	Score Value	Count	%	Average Measure	S.E. Mean
11	A	0	11	20	-0.10	0.38
	B	0	9	16	-0.28	0.14
	C	1	35	64	1.79	0.31
	Missing	**				
12	B	0	11	20	-0.40	0.29
	C	0	7	13	1.06	0.61
	A	1	37	67	1.51	0.31
	Missing	**				

Table 23

Item Statistics, Entry Order, Gr2MC11

Item Number	Raw Score	Count	Measure	Model Standard Error	Mean Square Outfit
1	55	59	-2.36	0.55	0.64
2	31	59	0.84	0.30	1.65
3	42	59	-0.23	0.33	0.54
4	50	59	-1.29	0.41	0.40
5	32	59	0.75	0.30	1.02
6	33	59	0.66	0.30	0.88
7	38	59	0.19	0.32	0.95
8	42	59	-0.23	0.33	0.52
9	26	59	1.28	0.30	2.10
10	45	59	-0.58	0.35	1.00
11	42	59	-0.23	0.33	0.73
12	27	59	1.19	0.30	0.73

Table 24
Distractor Analysis, Gr2MC11

Entry #	Data Code	Score Value	Count	%	Average Measure	S.E. Mean
1	A	0	3	5	-0.82	0.74
	C	0	1	2	0.05	0
	B	1	55	93	1.37	0.23
	Missing	**				
2	B	0	4	7	-1.08	0.54
	C	0	24	41	1.26	0.31
	A	1	31	53	1.51	0.33
	Missing	**				
3	B	0	9	15	-0.64	0.41
	C	0	8	14	-0.34	0.25
	A	1	42	71	1.94	0.23
	Missing	**				
4	B	0	4	7	-1.39	0.27
	A	0	5	8	-0.75	0.46
	C	1	50	85	1.64	0.22
	Missing	**				
5	A	0	4	7	-0.06	0.31
	B	0	23	39	0.29	0.31
	C	1	32	54	2.08	0.28
	Missing	**				
6	C	0	11	19	-0.08	0.39
	B	0	15	25	0.32	0.32
	A	1	33	56	2.09	0.29
	Missing	**				
7	A	0	12	20	0.04	0.29
	C	0	9	15	0.17	0.51
	B	1	38	64	1.87	0.28
	Missing	**				
8	A	0	3	5	-0.66	0.15
	B	0	14	24	-0.52	0.30
	C	1	42	71	1.96	0.23
	Missing	**				
9	C	0	10	17	-0.22	0.4
	A	0	23	39	1.62	0.31
	B	1	26	44	1.46	0.37
	Missing	**				
10	B	0	8	14	-0.18	0.44
	C	0	6	10	0.26	0.47
	A	1	45	76	1.62	0.26
	Missing	**				

Table 24

Distractor Analysis, Gr2MC11 (Continued)

Entry #	Data Code	Score Value	Count	%	Average Measure	S.E. Mean
11	A	0	5	8	-0.54	0.56
	C	0	12	20	-0.20	0.35
	B	1	42	71	1.86	0.24
	Missing	**				
12	B	0	10	17	-0.25	0.37
	A	0	22	37	0.57	0.34
	C	1	27	46	2.33	0.27
	Missing	**				

Table 25

Item Statistics, Entry Order, Gr2MC12

Item Number	Raw Score	Count	Measure	Model Standard Error	Mean Square Outfit
1	38	55	-0.34	0.34	0.56
2	34	55	0.10	0.33	1.14
3	35	55	0.00	0.33	0.91
4	34	55	0.10	0.33	0.60
5	42	55	-0.83	0.36	0.47
6	43	55	-0.97	0.37	0.60
7	38	55	-0.34	0.34	1.11
8	31	55	0.42	0.33	1.64
9	30	55	0.52	0.32	1.02
10	30	55	0.52	0.32	1.19
11	27	55	0.82	0.32	1.15
12	35	55	0.00	0.33	0.72

Table 26
Distractor Analysis, Gr2MC12

Entry #	Data Code	Score Value	Count	%	Average Measure	S.E. Mean
1	B	0	10	18	-1.48	0.49
	C	0	7	13	-0.07	0.34
	A	1	38	69	2.17	0.30
	Missing	**				
2	B	0	5	9	-1.25	0.81
	A	0	16	29	0.25	0.52
	C	1	34	62	2.04	0.34
	Missing	**				
3	B	0	9	16	-0.98	0.48
	C	0	11	20	0.11	0.64
	A	1	35	64	2.14	0.33
	Missing	**				
4	B	0	15	27	-0.75	0.41
	A	0	6	11	-0.40	0.32
	C	1	34	62	2.37	0.32
	Missing	**				
5	C	0	8	15	-1.40	0.64
	B	0	5	9	-0.76	0.14
	A	1	42	76	1.96	0.30
	Missing	**				
6	A	0	8	15	-0.87	0.52
	C	0	4	7	-0.65	0.10
	B	1	43	78	1.78	0.33
	Missing	**				
7	C	0	9	16	-0.73	0.88
	B	0	8	15	-0.04	0.64
	A	1	38	69	1.95	0.30
	Missing	**				
8	C	0	6	11	-0.51	0.37
	A	0	18	33	0.74	0.45
	B	1	31	56	1.84	0.44
	Missing	**				
9	B	0	13	24	-0.62	0.50
	A	0	12	22	0.48	0.42
	C	1	30	55	2.31	0.38
	Missing	**				
10	A	0	7	13	-0.22	0.36
	C	0	18	33	0.32	0.57
	B	1	30	55	2.10	0.37
	Missing	**				

Table 26

Distractor Analysis, Gr2MC12 (Continued)

Entry #	Data Code	Score Value	Count	%	Average Measure	S.E. Mean
11	C	0	11	20	-0.28	0.86
	B	0	17	31	0.72	0.40
	A	1	27	49	2.15	0.37
	Missing	**				
12	B	0	15	27	-0.63	0.45
	A	0	5	9	-0.39	0.32
	C	1	35	64	2.24	0.33
	Missing	**				

Table 27

Item Statistics, Entry Order, Gr2MC13

Item Number	Raw Score	Count	Measure	Model Standard Error	Mean Square Outfit
1	94	105	-1.75	0.34	0.52
2	70	105	-0.04	0.23	1.37
3	49	105	1.01	0.22	1.08
4	75	104	-0.36	0.24	1.09
5	70	104	-0.08	0.24	0.70
6	82	104	-0.81	0.26	0.72
7	71	104	-0.13	0.24	1.04
8	72	104	-0.19	0.24	0.69
9	62	104	0.35	0.23	1.35
10	53	104	0.80	0.22	0.91
11	76	104	-0.42	0.25	0.84
12	36	104	1.62	0.23	1.01

Table 28
Distractor Analysis, Gr2MC13

Entry #	Data Code	Score Value	Count	%	Average Measure	S.E. Mean
1	B	0	5	5	-1.15	0.24
	A	0	6	6	-0.47	0.37
	C	1	94	90	1.54	0.19
	Missing	**				
2	A	0	15	14	-0.19	0.14
	C	0	20	19	1.12	0.43
	B	1	70	67	1.66	0.23
	Missing	**				
3	C	0	14	13	0.27	0.25
	B	0	42	40	0.59	0.22
	A	1	49	47	2.19	0.29
	Missing	**	1	1	2.63	0
4	A	0	15	14	-0.07	0.18
	C	0	14	13	0.38	0.48
	B	1	75	71	1.72	0.22
	Missing	**				
5	B	0	16	15	-0.14	0.22
	A	0	18	17	-0.11	0.17
	C	1	70	67	1.96	0.23
	Missing	**	1	1	2.63	0
6	C	0	12	11	-0.58	0.22
	A	0	10	10	0.03	0.32
	B	1	82	78	1.71	0.21
	Missing	**	1	1	2.63	0
7	C	0	8	8	0.10	0.44
	B	0	25	24	0.23	0.18
	A	1	71	68	1.78	0.24
	Missing	**	1	1	2.63	0
8	B	0	20	19	-0.27	0.20
	A	0	12	11	0.02	0.18
	C	1	72	69	1.92	0.22
	Missing	**	1	1	2.63	0
9	B	0	13	12	0.38	0.28
	C	0	29	28	0.77	0.35
	A	1	62	59	1.71	0.25
	Missing	**	1	1	2.63	0
10	A	0	35	33	0.21	0.16
	C	0	16	15	0.49	0.41
	B	1	53	50	2.23	0.27
	Missing	**	1	1	2.63	0

Table 28

Distractor Analysis, Gr2MC13 (Continued)

Entry #	Data Code	Score Value	Count	%	Average Measure	S.E. Mean
11	B	0	20	19	-0.08	0.15
	C	0	8	8	0.36	0.21
	A	1	76	72	1.74	0.23
	Missing	**	1	1	2.63	0
12	C	0	23	22	0.39	0.30
	A	0	45	43	0.89	0.26
	B	1	36	34	2.35	0.32
	Missing	**	1	1	2.63	0

Table 29

Item Statistics, Entry Order, Gr2MC14

Item Number	Raw Score	Count	Measure	Model Standard Error	Mean Square Outfit
1	31	44	-0.42	0.36	0.99
2	19	44	0.94	0.33	1.00
3	17	44	1.16	0.34	1.14
4	21	44	0.72	0.33	0.94
5	20	44	0.83	0.33	0.86
6	41	44	-2.44	0.62	1.51
7	38	44	-1.55	0.47	0.60
8	30	44	-0.29	0.35	0.89
9	18	44	1.05	0.33	1.29
10	30	44	-0.29	0.35	0.61
11	31	44	-0.42	0.36	0.80
12	21	44	0.72	0.33	1.10

Table 30
Distractor Analysis, Gr2MC14

Entry #	Data Code	Score Value	Count	%	Average Measure	S.E. Mean
1	B	0	6	14	-0.29	0.48
	C	0	7	16	0.36	0.33
	A	1	31	70	1.03	0.24
	Missing	**				
2	B	0	14	32	0.16	0.30
	A	0	11	25	0.49	0.25
	C	1	19	43	1.31	0.35
	Missing	**				
3	C	0	4	9	-0.15	0.28
	A	0	23	52	0.57	0.26
	B	1	17	39	1.17	0.35
	Missing	**				
4	C	0	4	9	-0.14	0.73
	A	0	19	43	0.28	0.20
	B	1	21	48	1.32	0.32
	Missing	**				
5	B	0	12	27	-0.17	0.28
	A	0	12	27	0.47	0.17
	C	1	20	45	1.45	0.33
	Missing	**				
6	C	0	0	0	0	0
	B	0	3	7	0.38	0.53
	A	1	41	93	0.77	0.21
	Missing	**				
7	A	0	5	11	-0.81	0.37
	C	0	1	2	0.48	0
	B	1	38	86	0.95	0.21
	Missing	**				
8	B	0	6	14	-0.01	0.20
	C	0	8	18	-0.01	0.28
	A	1	30	68	1.09	0.26
	Missing	**				
9	A	0	20	45	0.54	0.31
	C	0	6	14	0.59	0.31
	B	1	18	41	1.01	0.34
	Missing	**				
10	B	0	2	5	-0.43	0.92
	A	0	12	27	-0.33	0.20
	C	1	30	68	1.25	0.23
	Missing	**				

Table 30

Distractor Analysis, Gr2MC4 (Continued)

Entry #	Data Code	Score Value	Count	%	Average Measure	S.E. Mean
11	B	0	5	11	-0.63	0.43
	C	0	8	18	0.12	0.28
	A	1	31	70	1.12	0.24
	Missing	**				
12	B	0	7	16	-0.37	0.34
	A	0	16	36	0.69	0.32
	C	1	21	48	1.15	0.29
	Missing	**				

Table 31

Item Statistics, Entry Order, Gr2MC15

Item Number	Raw Score	Count	Measure	Model Standard Error	Mean Square Outfit
1	35	44	-1.29	0.40	0.68
2	36	44	-1.46	0.42	0.80
3	20	44	0.56	0.34	1.07
4	24	44	0.11	0.34	0.91
5	22	43	0.27	0.34	1.11
6	26	43	-0.20	0.35	1.10
7	14	43	1.22	0.36	0.91
8	30	43	-0.70	0.36	0.68
9	24	43	0.04	0.34	0.87
10	14	43	1.22	0.36	0.94
11	21	43	0.39	0.34	1.25
12	25	42	-0.16	0.35	1.34

Table 32
Distractor Analysis, Gr2MC15

Entry #	Data Code	Score Value	Count	%	Average Measure	S.E. Mean
1	A	0	2	5	-1.04	0.25
	B	0	7	16	-0.64	0.34
	C	1	35	80	0.75	0.20
	Missing	**				
2	A	0	5	11	-0.63	0.38
	C	0	3	7	-0.13	0.35
	B	1	36	82	0.65	0.21
	Missing	**				
3	C	0	9	20	-0.21	0.28
	A	0	15	34	0.24	0.33
	B	1	20	45	0.90	0.28
	Missing	**				
4	B	0	16	36	-0.35	0.14
	C	0	4	9	0.13	0.46
	A	1	24	55	1.04	0.28
	Missing	**				
5	B	0	17	39	-0.09	0.25
	C	0	4	9	0.11	0.66
	A	1	22	50	0.84	0.27
	Missing	**	1	2	2.36	0
6	B	0	10	23	-0.16	0.20
	A	0	7	16	-0.08	0.49
	C	1	26	59	0.75	0.26
	Missing	**	1	2	2.36	0
7	B	0	20	45	-0.33	0.20
	C	0	9	20	0.82	0.36
	A	1	14	32	1.19	0.32
	Missing	**	1	2	2.36	0
8	A	0	7	16	-0.82	0.34
	C	0	6	14	-0.41	0.28
	B	1	30	68	0.86	0.21
	Missing	**	1	2	2.36	0
9	B	0	8	18	-0.51	0.38
	C	0	11	25	-0.15	0.28
	A	1	24	55	0.97	0.23
	Missing	**	1	2	2.36	0
10	B	0	13	30	-0.11	0.23
	A	0	16	36	0.06	0.26
	C	1	14	32	1.28	0.37
	Missing	**	1	2	2.36	0

Table 32

Distractor Analysis, Gr2MC15 (Continued)

Entry #	Data Code	Score Value	Count	%	Average Measure	S.E. Mean
11	C	0	14	32	-0.16	0.30
	A	0	8	18	0.59	0.34
	B	1	21	48	0.71	0.29
	Missing	**	1	2	2.36	0
12	C	0	4	9	-0.20	0.34
	B	0	13	30	0.06	0.45
	A	1	25	57	0.67	0.21
	Missing	**	2	5	1.52	0.84

Table 33

Item Statistics, Entry Order, Gr2MC16

Item Number	Raw Score	Count	Measure	Model Standard Error	Mean Square Outfit
1	34	43	-1.22	0.41	0.73
2	33	43	-1.06	0.40	0.62
3	30	43	-0.62	0.37	0.79
4	27	43	-0.22	0.36	1.03
5	29	43	-0.48	0.37	0.82
6	17	43	0.98	0.35	1.06
7	30	43	-0.62	0.37	0.77
8	21	43	0.50	0.35	0.93
9	15	43	1.22	0.36	1.65
10	15	43	1.22	0.36	1.71
11	21	43	0.50	0.35	0.94
12	26	42	-0.21	0.36	0.89

Table 34
Distractor Analysis, Gr2MC16

Entry #	Data Code	Score Value	Count	%	Average Measure	S.E. Mean
1	A	0	7	16	-0.90	0.33
	C	0	2	5	0.19	0.20
	B	1	34	79	0.90	0.25
	Missing	**				
2	B	0	6	14	-1.11	0.23
	A	0	4	9	-0.71	0.72
	C	1	33	77	1.04	0.23
	Missing	**				
3	B	0	3	7	-1.08	0.49
	C	0	10	23	-0.34	0.32
	A	1	30	70	1.05	0.26
	Missing	**				
4	A	0	10	23	-0.30	0.34
	B	0	6	14	-0.09	0.49
	C	1	27	63	1.05	0.29
	Missing	**				
5	A	0	9	21	-0.70	0.34
	C	0	5	12	0.15	0.27
	B	1	29	67	1.05	0.28
	Missing	**				
6	C	0	7	16	-0.90	0.29
	A	0	19	44	0.59	0.37
	B	1	17	40	1.17	0.29
	Missing	**				
7	B	0	10	23	-0.50	0.26
	C	0	3	7	-0.42	0.8
	A	1	30	70	1.03	0.27
	Missing	**				
8	A	0	8	19	-0.59	0.44
	B	0	14	33	0.20	0.32
	C	1	21	49	1.27	0.31
	Missing	**				
9	B	0	16	37	0.18	0.19
	C	0	12	28	0.30	0.40
	A	1	15	35	1.22	0.51
	Missing	**				
10	A	0	14	33	-0.16	0.29
	C	0	14	33	0.87	0.35
	B	1	15	35	0.99	0.46
	Missing	**				

Table 34

Distractor Analysis, Gr2MC16 (Continued)

Entry #	Data Code	Score Value	Count	%	Average Measure	S.E. Mean
11	C	0	6	14	-0.35	0.38
	A	0	16	37	-0.07	0.26
	B	1	21	49	1.33	0.35
	Missing	**				
12	C	0	6	14	-0.36	0.49
	B	0	10	23	-0.32	0.31
	A	1	26	60	1.08	0.30
	Missing	**	1	2	1.95	0

Table 35

Item Statistics, Entry Order, Gr2MC17

Item Number	Raw Score	Count	Measure	Model Standard Error	Mean Square Outfit
1	70	85	-1.50	0.31	1.02
2	65	85	-1.08	0.28	0.69
3	53	85	-0.24	0.25	0.62
4	41	85	0.50	0.25	0.74
5	36	85	0.81	0.25	1.45
6	45	85	0.25	0.25	0.99
7	61	84	-0.83	0.27	0.63
8	41	84	0.48	0.25	1.70
9	36	84	0.79	0.25	0.72
10	53	84	-0.28	0.26	0.83
11	40	84	0.54	0.25	0.95
12	40	84	0.54	0.25	1.23

Table 36
Distractor Analysis, Gr2MC17

Entry #	Data Code	Score Value	Count	%	Average Measure	S.E. Mean
1	C	0	5	6	-0.99	0.18
	A	0	10	12	-0.18	0.37
	B	1	70	82	0.94	0.21
	Missing	**				
2	C	0	6	7	-0.79	0.33
	B	0	14	16	-0.64	0.20
	A	1	65	76	1.11	0.21
	Missing	**				
3	A	0	16	19	-0.67	0.12
	C	0	16	19	-0.55	0.18
	B	1	53	62	1.48	0.23
	Missing	**				
4	B	0	23	27	-0.33	0.17
	A	0	21	25	-0.26	0.27
	C	1	41	48	1.75	0.26
	Missing	**				
5	B	0	26	31	0.03	0.21
	A	0	23	27	0.51	0.32
	C	1	36	42	1.28	0.34
	Missing	**				
6	C	0	18	21	-0.51	0.19
	B	0	22	26	0.14	0.29
	A	1	45	53	1.44	0.26
	Missing	**				
7	B	0	11	13	-0.80	0.19
	C	0	12	14	-0.56	0.21
	A	1	61	72	1.22	0.22
	Missing	**	1	1	-0.19	0
8	C	0	16	19	-0.37	0.25
	A	0	27	32	0.99	0.30
	B	1	41	48	0.93	0.30
	Missing	**	1	1	-0.19	0
9	B	0	26	31	-0.20	0.25
	A	0	22	26	-0.17	0.25
	C	1	36	42	1.89	0.26
	Missing	**	1	1	-0.19	0
10	B	0	17	20	-0.52	0.23
	C	0	14	16	-0.24	0.21
	A	1	53	62	1.34	0.24
	Missing	**	1	1	-0.19	0

Table 36

Distractor Analysis, Gr2MC17 (Continued)

Entry #	Data Code	Score Value	Count	%	Average Measure	S.E. Mean
11	B	0	20	24	-0.38	0.20
	A	0	24	28	0.06	0.24
	C	1	40	47	1.62	0.29
	Missing	**	1	1	-0.19	0
12	A	0	34	40	-0.03	0.17
	C	0	10	12	0.45	0.52
	B	1	40	47	1.38	0.31
	Missing	**	1	1	-0.19	0

Table 37

Item Statistics, Entry Order, Gr2MC18

Item Number	Raw Score	Count	Measure	Model Standard Error	Mean Square Outfit
1	37	42	-1.78	0.50	0.78
2	33	42	-0.98	0.41	0.76
3	27	42	-0.12	0.36	0.94
4	23	42	0.36	0.35	1.15
5	24	42	0.24	0.35	1.11
6	25	42	0.12	0.35	0.74
7	28	42	-0.25	0.36	0.71
8	25	42	0.12	0.35	0.74
9	23	42	0.36	0.35	1.20
10	18	42	0.95	0.35	1.36
11	24	42	0.24	0.35	0.58
12	20	42	0.72	0.35	1.62

Table 38
Distractor Analysis, Gr2MC18

Entry #	Data Code	Score Value	Count	%	Average Measure	S.E. Mean
1	B	0	2	5	-1.24	0
	C	0	3	7	-0.24	0.77
	A	1	37	88	0.96	0.22
	Missing	**				
2	B	0	2	5	-1.00	0.24
	A	0	7	17	-0.46	0.43
	C	1	33	79	1.14	0.22
	Missing	**				
3	A	0	7	17	-0.09	0.39
	C	0	8	19	0.08	0.11
	B	1	27	64	1.20	0.29
	Missing	**				
4	A	0	16	38	0.28	0.36
	C	0	3	7	0.32	0.49
	B	1	23	55	1.17	0.28
	Missing	**				
5	B	0	13	31	0.13	0.21
	C	0	5	12	0.39	0.52
	A	1	24	57	1.20	0.32
	Missing	**				
6	C	0	7	17	-0.39	0.24
	A	0	10	24	0.01	0.28
	B	1	25	60	1.40	0.28
	Missing	**				
7	B	0	8	19	-0.43	0.19
	C	0	6	14	-0.06	0.41
	A	1	28	67	1.29	0.26
	Missing	**				
8	B	0	4	10	-0.48	0.35
	C	0	13	31	-0.11	0.23
	A	1	25	60	1.43	0.27
	Missing	**				
9	C	0	8	19	0.01	0.30
	A	0	11	26	0.58	0.46
	B	1	23	55	1.13	0.29
	Missing	**				
10	B	0	12	29	0.41	0.31
	A	0	12	29	0.55	0.32
	C	1	18	43	1.16	0.40
	Missing	**				

Table 38

Distractor Analysis, Gr2MC18 (Continued)

Entry #	Data Code	Score Value	Count	%	Average Measure	S.E. Mean
11	A	0	6	14	-0.31	0.28
	B	0	12	29	-0.29	0.20
	C	1	24	57	1.57	0.26
	Missing	**				
12	C	0	9	21	0.15	0.38
	A	0	13	31	1.13	0.37
	B	1	20	48	0.82	0.34
	Missing	**				

Table 39

Item Statistics, Entry Order, Gr2MC19

Item Number	Raw Score	Count	Measure	Model Standard Error	Mean Square Outfit
1	32	44	-0.70	0.37	0.60
2	27	44	-0.06	0.35	0.70
3	29	44	-0.31	0.36	0.79
4	28	44	-0.19	0.35	0.84
5	33	44	-0.84	0.38	0.81
6	23	44	0.40	0.34	1.10
7	27	44	-0.06	0.35	1.23
8	18	44	0.97	0.34	1.87
9	29	44	-0.31	0.36	0.78
10	24	44	0.29	0.34	1.16
11	24	44	0.29	0.34	0.78
12	22	44	0.52	0.34	0.69

Table 40
Distractor Analysis, Gr2MC19

Entry #	Data Code	Score Value	Count	%	Average Measure	S.E. Mean
1	A	0	6	14	-0.76	0.11
	B	0	6	14	-0.34	0.28
	C	1	32	73	1.21	0.26
	Missing	**				
2	C	0	8	18	-0.66	0.12
	A	0	9	20	-0.06	0.20
	B	1	27	61	1.40	0.29
	Missing	**				
3	B	0	6	14	-0.37	0.24
	C	0	9	20	-0.26	0.33
	A	1	29	66	1.26	0.28
	Missing	**				
4	A	0	9	20	-0.26	0.26
	B	0	7	16	-0.15	0.31
	C	1	28	64	1.27	0.29
	Missing	**				
5	C	0	2	5	-0.60	0.60
	B	0	9	20	-0.43	0.32
	A	1	33	75	1.13	0.25
	Missing	**				
6	B	0	14	32	0.06	0.23
	A	0	7	16	0.22	0.42
	C	1	23	52	1.29	0.36
	Missing	**				
7	A	0	8	18	0.07	0.38
	B	0	9	20	0.29	0.36
	C	1	27	61	1.07	0.32
	Missing	**				
8	A	0	8	18	0.63	0.65
	C	0	18	41	1.12	0.42
	B	1	18	41	0.38	0.22
	Missing	**				
9	B	0	4	9	-0.86	0.12
	C	0	11	25	-0.18	0.31
	A	1	29	66	1.29	0.27
	Missing	**				
10	B	0	7	16	0.11	0.29
	C	0	13	30	0.20	0.28
	A	1	24	55	1.20	0.36
	Missing	**				

Table 40

Distractor Analysis, Gr2MC19 (Continued)

Entry #	Data Code	Score Value	Count	%	Average Measure	S.E. Mean
11	C	0	7	16	-0.39	0.33
	A	0	13	30	-0.07	0.26
	B	1	24	55	1.49	0.30
	Missing	**				
12	B	0	12	27	-0.33	0.26
	A	0	10	23	-0.04	0.31
	C	1	22	50	1.66	0.30
	Missing	**				

Table 41

Item Statistics, Entry Order, Gr2MC20

Item Number	Raw Score	Count	Measure	Model Standard Error	Mean Square Outfit
1	20	41	0.54	0.36	1.07
2	28	41	-0.53	0.38	1.31
3	28	41	-0.53	0.38	0.75
4	14	41	1.30	0.37	1.56
5	29	41	-0.68	0.39	0.56
6	28	41	-0.53	0.38	0.94
7	25	41	-0.12	0.37	0.75
8	27	41	-0.39	0.38	0.89
9	26	41	-0.25	0.37	0.47
10	24	41	0.02	0.37	1.16
11	24	41	0.02	0.37	0.65
12	15	41	1.17	0.37	2.18

Table 42
Distractor Analysis, Gr2MC20

Entry #	Data Code	Score Value	Count	%	Average Measure	S.E. Mean
1	A	0	8	20	-0.37	0.35
	C	0	13	32	0.18	0.33
	B	1	20	49	1.36	0.39
	Missing	**				
2	B	0	7	17	-0.75	0.30
	C	0	6	15	0.49	0.87
	A	1	28	68	1.03	0.28
	Missing	**				
3	A	0	6	15	-0.81	0.18
	B	0	7	17	-0.36	0.44
	C	1	28	68	1.21	0.29
	Missing	**				
4	C	0	14	34	-0.15	0.27
	B	0	13	32	0.95	0.43
	A	1	14	34	1.16	0.51
	Missing	**				
5	A	0	8	20	-0.90	0.21
	C	0	4	10	-0.61	0.34
	B	1	29	71	1.25	0.28
	Missing	**				
6	B	0	7	17	-0.94	0.17
	C	0	6	15	0	0.68
	A	1	28	68	1.19	0.28
	Missing	**				
7	A	0	3	7	-0.50	0.93
	B	0	13	32	-0.50	0.25
	C	1	25	61	1.39	0.30
	Missing	**				
8	A	0	7	17	-0.63	0.30
	B	0	7	17	-0.07	0.36
	C	1	27	66	1.17	0.32
	Missing	**				
9	C	0	7	17	-0.94	0.17
	B	0	8	20	-0.71	0.27
	A	1	26	63	1.49	0.27
	Missing	**				
10	C	0	12	29	-0.16	0.32
	A	0	5	12	0.10	0.47
	B	1	24	59	1.17	0.36
	Missing	**				

Table 43
Distractor Analysis, Gr2MC20 (Continued)

Entry #	Data Code	Score Value	Count	%	Average Measure	S.E. Mean
11	C	0	7	17	-0.61	0.32
	B	0	10	24	-0.48	0.31
	A	1	24	59	1.49	0.30
	Missing	**				
12	C	0	11	27	0.15	0.32
	A	0	15	37	0.91	0.42
	B	1	15	37	0.75	0.49
	Missing	**				

Table 44
Item Ordering Tables for Second Grade, Story 1, 2, and 3

Item	Cognitive Category	Assessment Objective	Degree of Difficulty	Order for Test
GR2MC1_L1	Literal	Detail (attitude)	Ll	1
GR2MC1_L2	Literal	Detail (causal)	Lm	3
GR2MC1_L3	Literal	Detail (identify)	Ll	2
GR2MC1_L4	Literal	Sequence (detail)	Lm	4
GR2MC1_L5	Literal	Detail (sequence)	Lh	8
GR2MC1_L6	Literal	Detail (causal)	Ll	7
GR2MC1_L7	Literal	Detail (sequence)	Ll	11
GR2MC1_M1	Inferential	Sequence (detail)	Mm	9
GR2MC1_M2	Inferential	Main idea	Mh	10
GR2MC1_M3	Inferential	Causal (inferential)	Mm	6
GR2MC1_M4	Inferential	Story ending	Ml	5
GR2MC1_M5	Inferential	Causal (inferential)	Mh	12
GR2MC2_L1	Literal	Detail (causal)	Ll	1
GR2MC2_L2	Literal	Detail (identify)	Ll	2
GR2MC2_L3	Literal	Causal (detail)	Lm	3
GR2MC2_L4	Literal	Causal (detail)	Lh	8
GR2MC2_L5	Literal	Detail (sequence)	Lm	4
GR2MC2_L6	Literal	Causal (detail)	Lh	11
GR2MC2_L7	Literal	Causal (character)	Lm	7
GR2MC2_M1	Inferential	Main idea	Mm	12
GR2MC2_M2	Inferential	Causal (detail)	Ml	5
GR2MC2_M3	Inferential	Sequence	Mh	10
GR2MC2_M4	Inferential	Causal	Mm	6
GR2MC3_M5	Inferential	Story ending	Mh	9
GR2MC3_L1	Factual/Literal	Detail (identify)	Ll	1
GR2MC3_L2	Factual/Literal	Detail (identify)	Lm	3
GR2MC3_L3	Factual/Literal	Detail (discriminate)	Lm	4
GR2MC3_L4	Factual/Literal	Discriminate (detail)	Lh	8
GR2MC3_L5	Factual/Literal	Detail (identify)	Lm	7
GR2MC3_L6	Factual/Literal	Detail (sequence)	Ll	2
GR2MC3_L7	Interpretive/Inferential	Causal (sequence)	Lm	11
GR2MC3_M1	Interpretive/Inferential	Story ending	Mm	9
GR2MC3_M2	Interpretive/Inferential	Causal (inferential)	Mh	10
GR2MC3_M3	Interpretive/Inferential	Sequence (detail)	Ml	5
GR2MC3_M4	Interpretive/Inferential	Sequence (inference)	Ml	6
GR2MC3_M5	Interpretive/Inferential	Problem (inference)	Mm	12

Table 45
Item Ordering Tables for Second Grade, Story 4, 5, and 6

Item	Cognitive Category	Assessment Objective	Degree of Difficulty	Order for Test
GR2MC4_L1	Factual/Literal	Detail (identify)	Lm	3
GR2MC4_L2	Interpretive/Inferential	Causal (detail)	Lm	4
GR2MC4_L3	Factual/Literal	Detail (identify)	Ll	1
GR2MC4_L4	Factual/Literal	Detail (identify)	Ll	2
GR2MC4_L5	Factual/Literal	Sequence (detail)	Lh	8
GR2MC4_L6	Factual/Literal	Causal (detail)	Lm	7
GR2MC4_L7	Factual/Literal	Causal (detail)	Lm	11
GR2MC4_M1	Interpretive/Inferential	Causal (detail)	Ml	5
GR2MC4_M2	Interpretive/Inferential	Sequence	Mm	9
GR2MC4_M3	Interpretive/Inferential	Causal (inference)	Mm	12
GR2MC4_M4	Interpretive/Inferential	Story ending (inference)	Mh	10
GR2MC4_M5	Interpretive/Inferential	Character (detail)	Ml	6
GR2MC5_L1	Factual/Literal	Sequence (detail)	Lm	11
GR2MC5_L2	Factual/Literal	Detail (identify)	Ll	1
GR2MC5_L3	Factual/Literal	Detail (identify)	Lm	4
GR2MC5_L4	Factual/Literal	Detail (character)	Ll	2
GR2MC5_L5	Factual/Literal	Sequence (detail)	Lh	8
GR2MC5_L6	Factual/Literal	Detail (resolution)	Lm	7
GR2MC5_L7	Factual/Literal	Resolution (detail)	Ll	3
GR2MC5_M1	Interpretive/Inferential	Problem (reason)	Ml	5
GR2MC5_M2	Interpretive/Inferential	Sequence (reaction)	Mm	6
GR2MC5_M3	Interpretive/Inferential	Character (reaction)	Mm	9
GR2MC5_M4	Interpretive/Inferential	Causal (resolution)	Mh	10
GR2MC5_M5	Interpretive/Inferential	Character (inference)	Mh	12
GR2MC6_L1	Factual/Literal	Detail (attitude)	Ll	1
GR2MC6_L2	Factual/Literal	Detail	Lm	2
GR2MC6_L3	Factual/Literal	Detail (discriminate)	Lh	6
GR2MC6_L4	Factual/Literal	Character attitude (detail)	Lm	3
GR2MC6_L5	Factual/Literal	Causal (detail)	Lm	4
GR2MC6_L6	Factual/Literal	Causal (detail)	Lm	7
GR2MC6_L7	Factual/Literal	Causal (detail)	Lh	8
GR2MC6_M1	Interpretive/Inferential	Character (attitude)	Ml	5
GR2MC6_M2	Interpretive/Inferential	Causal (detail)	Mm	9
GR2MC6_M3	Interpretive/Inferential	Main idea	Mh	10
GR2MC6_M4	Interpretive/Inferential	Sequence (events)	Mh	12
GR2MC6_M5	Interpretive/Inferential	Story ending	Mm	11

Table 46
Item Ordering Tables for Second Grade, Story 7, 8, and 9

Item	Cognitive Category	Assessment Objective	Degree of Difficulty	Order for Test
GR2MC7_L1	Factual/Literal	Detail (causal)	Ll	1
GR2MC7_L2	Factual/Literal	Detail	Ll	2
GR2MC7_L3	Factual/Literal	Sequence (detail)	Lh	8
GR2MC7_L4	Factual/Literal	Sequence (detail)	Lm	3
GR2MC7_L5	Factual/Literal	Causal (detail)	Lm	4
GR2MC7_L6	Factual/Literal	Detail (discriminate)	Lh	11
GR2MC7_L7	Factual/Literal	Detail	Lm	7
GR2MC7_M1	Interpretive/Inferential	Character (inference/trait)	Mh	10
GR2MC7_M2	Interpretive/Inferential	Detail (character)	Ml	5
GR2MC7_M3	Interpretive/Inferential	Causal (inference/trait)	Mm	6
GR2MC7_M4	Interpretive/Inferential	Story ending (character)	Mm	9
GR2MC7_M5	Interpretive/Inferential	Causal (inference)	Mm	12
GR2MC8_L1	Factual/Literal	Detail	Ll	1
GR2MC8_L2	Factual/Literal	Detail (discriminate)	Lm	2
GR2MC8_L3	Factual/Literal	Detail (problem)	Lm	3
GR2MC8_L4	Factual/Literal	Detail (resolution)	Lh	8
GR2MC8_L5	Factual/Literal	Detail (discriminate)	Lm	4
GR2MC8_L6	Factual/Literal	Character (attitude)	Lh	11
GR2MC8_L7	Factual/Literal	Detail (story ending)	Lm	7
GR2MC8_M1	Interpretive/Inferential	Sequence (detail)	Ml	5
GR2MC8_M2	Interpretive/Inferential	Inference (detail)	Mm	6
GR2MC8_M3	Interpretive/Inferential	Causal (prediction)	Mm	9
GR2MC8_M4	Interpretive/Inferential	Sequence	Mh	10
GR2MC8_M5	Interpretive/Inferential	Main idea	Mm	12
GR2MC9_L1	Factual/Literal	Detail	Ll	1
GR2MC9_L2	Factual/Literal	Character (detail)	Lm	3
GR2MC9_L3	Factual/Literal	Detail (attitude)	Lm	4
GR2MC9_L4	Factual/Literal	Detail	Lm	7
GR2MC9_L5	Factual/Literal	Causal (inference)	Lh	8
GR2MC9_L6	Factual/Literal	Detail	Ll	2
GR2MC9_L7	Factual/Literal	Sequence (detail)	Lh	11
GR2MC9_M1	Interpretive/Inferential	Causal (inference)	Mm	6
GR2MC9_M2	Interpretive/Inferential	Detail (inference)	Ml	5
GR2MC9_M3	Interpretive/Inferential	Character (attitude)	Mm	9
GR2MC9_M4	Interpretive/Inferential	Causal (inference)	Mh	10
GR2MC9_M5	Interpretive/Inferential	Sequence (event)	Mm	12

Table 47
Item Ordering Tables for Second Grade, Story 10, 11, and 12

Item	Cognitive Category	Assessment Objective	Degree of Difficulty	Order for Test
GR2MC10_L1	Factual/Literal	Detail	Ll	1
GR2MC10_L2	Factual/Literal	Detail (discriminate)	Lh	8
GR2MC10_L3	Factual/Literal	Detail (causal)	Lm	3
GR2MC10_L4	Factual/Literal	Causal (detail)	Lm	4
GR2MC10_L5	Factual/Literal	Detail (causal)	Ll	2
GR2MC10_L6	Factual/Literal	Detail (attitude)	Lm	7
GR2MC10_L7	Factual/Literal	Story ending (character)	Lm	11
GR2MC10_M1	Interpretive/Inferential	Causal (inference)	Mh	9
GR2MC10_M2	Interpretive/Inferential	Character (trait)	Mm	6
GR2MC10_M3	Interpretive/Inferential	Detail (attitude)	Ml	5
GR2MC10_M4	Interpretive/Inferential	Causal (character)	Mm	12
GR2MC10_M5	Interpretive/Inferential	Sequence	Mh	10
GR2MC11_L1	Factual/Literal	Detail (causal)	Ll	1
GR2MC11_L2	Factual/Literal	Detail (inference)	Lm	3
GR2MC11_L3	Factual/Literal	Causal (detail)	Lm	4
GR2MC11_L4	Factual/Literal	Detail (resolution)	Ll	2
GR2MC11_L5	Factual/Literal	Detail (discriminate)	Lm	7
GR2MC11_L6	Factual/Literal	Detail (sequence)	Lm	8
GR2MC11_L7	Factual/Literal	Detail (trait)	Lm	11
GR2MC11_M1	Interpretive/Inferential	Character (attitude)	Ml	5
GR2MC11_M2	Interpretive/Inferential	Causal (inference)	Mh	10
GR2MC11_M3	Interpretive/Inferential	Detail (sequence)	Mm	6
GR2MC11_M4	Interpretive/Inferential	Causal (inference)	Mm	9
GR2MC11_M5	Interpretive/Inferential	Causal (character)	Mm	12
GR2MC12_L1	Factual/Literal	Detail	Ll	1
GR2MC12_L2	Factual/Literal	Detail (attitude)	Lm	2
GR2MC12_L3	Factual/Literal	Detail (attitude)	Lm	3
GR2MC12_L4	Factual/Literal	Sequence (attitude)	Lh	8
GR2MC12_L5	Factual/Literal	Causal (detail)	Lm	4
GR2MC12_L6	Factual/Literal	Causal (detail)	Lm	7
GR2MC12_L7	Factual/Literal	Causal (inference)	Lh	11
GR2MC12_M1	Interpretive/Inferential	Character (traits)	Ml	5
GR2MC12_M2	Interpretive/Inferential	Character (traits)	Mh	10
GR2MC12_M3	Interpretive/Inferential	Causal (inference)	Mm	6
GR2MC12_M4	Interpretive/Inferential	Character (attitude)	Mm	9
GR2MC12_M5	Interpretive/Inferential	Prediction (inference)	Mh	12

Table 48
Item Ordering Tables for Second Grade, Story 13, 14, and 15

Item	Cognitive Category	Assessment Objective	Degree of Difficulty	Order for Test
GR2MC13_L1	Factual/Literal	Detail	Ll	1
GR2MC13_L2	Factual/Literal	Detail (discriminate)	Ll	2
GR2MC13_L3	Factual/Literal	Detail (discriminate)	Lm	3
GR2MC13_L4	Factual/Literal	Causal (inference)	Lh	8
GR2MC13_L5	Factual/Literal	Causal (detail)	Lm	4
GR2MC13_L6	Factual/Literal	Character (attitude/detail)	Lm	7
GR2MC13_L7	Factual/Literal	Sequence (detail)	Lm	11
GR2MC13_M1	Interpretive/Inferential	Prediction (inference)	Mm	6
GR2MC13_M2	Interpretive/Inferential	Character (attitude/detail)	Mm	9
GR2MC13_M3	Interpretive/Inferential	Causal (detail)	Ml	5
GR2MC13_M4	Interpretive/Inferential	Sequence (detail)	Mh	10
GR2MC13_M5	Interpretive/Inferential	Story ending	Mm	12
GR2MC14_L1	Factual/Literal	Detail (sequence)	Ll	1
GR2MC14_L2	Factual/Literal	Detail (inference)	Lm	3
GR2MC14_L3	Factual/Literal	Detail	Ll	2
GR2MC14_L4	Factual/Literal	Detail (discriminate)	Lm	4
GR2MC14_L5	Factual/Literal	Problem resolution	Lh	8
GR2MC14_L6	Factual/Literal	Causal (inference/detail)	Lh	11
GR2MC14_L7	Factual/Literal	Causal (detail)	Lm	7
GR2MC14_M1	Interpretive/Inferential	Main idea	Ml	5
GR2MC14_M2	Interpretive/Inferential	Causal	Mh	10
GR2MC14_M3	Interpretive/Inferential	Sequence (detail)	Mm	6
GR2MC14_M4	Interpretive/Inferential	Character (attitude)	Mm	9
GR2MC14_M5	Interpretive/Inferential	Causal (story ending)	Mm	12
GR2MC15_L1	Factual/Literal	Character (attitude)	Lm	7
GR2MC15_L2	Factual/Literal	Detail	Ll	1
GR2MC15_L3	Factual/Literal	Sequence (detail)	Lh	8
GR2MC15_L4	Factual/Literal	Detail	Ll	2
GR2MC15_L5	Factual/Literal	Detail (causal)	Lm	3
GR2MC15_L6	Factual/Literal	Character (attitude/detail)	Lm	4
GR2MC15_L7	Factual/Literal	Detail (inference)	Lh	11
GR2MC15_M1	Interpretive/Inferential	Character (trait)	Mm	6
GR2MC15_M2	Interpretive/Inferential	Causal (sequence)	Ml	5
GR2MC15_M3	Interpretive/Inferential	Inference (detail)	Mh	10
GR2MC15_M4	Interpretive/Inferential	Character (attitude/infer)	Mm	9
GR2MC15_M5	Interpretive/Inferential	Story ending (character)	Mm	12

Table 48
Item Ordering Tables for Second Grade, Story 16, 17, and 18

Item	Cognitive Category	Assessment Objective	Degree of Difficulty	Order for Test
GR2MC16_L1	Factual/Literal	Detail	Ll	1
GR2MC16_L2	Factual/Literal	Detail (discriminate)	Lh	8
GR2MC16_L3	Factual/Literal	Detail (sequence)	Lm	2
GR2MC16_L4	Factual/Literal	Detail (discriminate)	Lm	3
GR2MC16_L5	Factual/Literal	Detail (character)	Lh	11
GR2MC16_L6	Factual/Literal	Detail (character)	Lm	4
GR2MC16_L7	Factual/Literal	Causal (detail)	Lm	7
GR2MC16_M1	Interpretive/Inferential	Character (attitude)	Ml	5
GR2MC16_M2	Interpretive/Inferential	Sequence	Mh	10
GR2MC16_M3	Interpretive/Inferential	Character (attitude)	Mm	6
GR2MC16_M4	Interpretive/Inferential	Main idea	Mm	9
GR2MC16_M5	Interpretive/Inferential	Story ending	Mm	12
GR2MC17_L1	Factual/Literal	Detail	Ll	1
GR2MC17_L2	Factual/Literal	Character (detail)	Lm	2
GR2MC17_L3	Factual/Literal	Detail (character/attitude)	Lm	3
GR2MC17_L4	Factual/Literal	Detail (discriminate)	Lm	4
GR2MC17_L5	Factual/Literal	Detail (causal)	Lm	7
GR2MC17_L6	Factual/Literal	Character (attitude)	Lm	11
GR2MC17_L7	Factual/Literal	Causal (sequence)	Lh	8
GR2MC17_M1	Interpretive/Inferential	Causal (inference)	Ml	5
GR2MC17_M2	Interpretive/Inferential	Causal (inference)	Mh	10
GR2MC17_M3	Interpretive/Inferential	Sequence	Mm	6
GR2MC17_M4	Interpretive/Inferential	Character (attitude)	Mm	9
GR2MC17_M5	Interpretive/Inferential	Story ending	Mm	12
GR2MC18_L1	Factual/Literal	Detail (character)	Ll	1
GR2MC18_L2	Factual/Literal	Detail (character)	Lm	2
GR2MC18_L3	Factual/Literal	Detail (discriminate)	Lm	3
GR2MC18_L4	Factual/Literal	Sequence (detail)	Lh	8
GR2MC18_L5	Factual/Literal	Detail (resolution)	Lm	4
GR2MC18_L6	Factual/Literal	Sequence (detail)	Lh	11
GR2MC18_L7	Factual/Literal	Detail (discriminate)	Lm	7
GR2MC18_M1	Interpretive/Inferential	Causal (character)	Ml	5
GR2MC18_M2	Interpretive/Inferential	Prediction	Mh	10
GR2MC18_M3	Interpretive/Inferential	Causal (inference)	Mm	6
GR2MC18_M4	Interpretive/Inferential	Causal (character)	Mh	12
GR2MC18_M5	Interpretive/Inferential	Causal (detail)	Mm	9

Table 49
Item Ordering Tables for Second Grade, Story 19 and 20

Item	Cognitive Category	Assessment Objective	Degree of Difficulty	Order for Test
GR2MC19_L1	Factual/Literal	Detail	Ll	1
GR2MC19_L2	Factual/Literal	Detail	Ll	2
GR2MC19_L3	Factual/Literal	Causal (detail)	Lh	7
GR2MC19_L4	Factual/Literal	Detail (discriminate)	Lm	3
GR2MC19_L5	Factual/Literal	Detail (causal)	Lm	4
GR2MC19_L6	Factual/Literal	Causal (detail)	Lh	8
GR2MC19_L7	Factual/Literal	Causal (inference)	Lh	11
GR2MC19_M1	Interpretive/Inferential	Inference (detail)	Ml	5
GR2MC19_M2	Interpretive/Inferential	Sequence	Mm	6
GR2MC19_M3	Interpretive/Inferential	Causal (detail)	Mm	9
GR2MC19_M4	Interpretive/Inferential	Character (attitude)	Mm	12
GR2MC19_M5	Interpretive/Inferential	Causal (inference)	Mh	10
GR2MC20_L1	Factual/Literal	Detail (character trait)	Ll	1
GR2MC20_L2	Factual/Literal	Detail (inference)	Lm	2
GR2MC20_L3	Factual/Literal	Detail (causal)	Lm	3
GR2MC20_L4	Factual/Literal	Detail (discriminate)	Lh	5
GR2MC20_L5	Factual/Literal	Causal (character)	Lh	8
GR2MC20_L6	Factual/Literal	Sequence (detail)	Lm	4
GR2MC20_L7	Factual/Literal	Causal (detail)	Lm	7
GR2MC20_M1	Interpretive/Inferential	Character (attitude/detail)	Mm	6
GR2MC20_M2	Interpretive/Inferential	Sequence (detail)	Mm	9
GR2MC20_M3	Interpretive/Inferential	Causal (inference)	Mm	11
GR2MC20_M4	Interpretive/Inferential	Main idea	Mh	10
GR2MC20_M5	Interpretive/Inferential	Story ending	Mm	12

References

Alonzo, J., & Tindal, G. (2004a). Technical Report: District Reading Assessments, Spring 2004 Administration (Tech. Rep. No. 30). Eugene, Oregon: University of Oregon, College of Education, Behavioral Research and Teaching.

Alonzo, J., & Tindal, G. (2004b). Analysis of Reading Fluency and Comprehension Measures for Fourth-Grade Students (Tech. Rep. No. 27). Eugene, Oregon: University of Oregon, College of Education, Behavioral Research and Teaching.

Alonzo, J., & Tindal, G. (2004c). Analysis of Reading Fluency and Comprehension Measures for First-Grade Students (Tech. Rep. No. 25). Eugene, Oregon: University of Oregon, College of Education, Behavioral Research and Teaching.

Alonzo, J., & Tindal, G. (2007a). Examining the Technical Adequacy of Early Literacy Measures in a Progress Monitoring Assessment System: Letter Names, Letter Sounds, and Phoneme Segmenting (Technical Report # 39). Eugene, OR: Behavioral Research and Teaching.

Alonzo, J., & Tindal, G. (2007b). Examining the Technical Adequacy of Word and Passage Reading Fluency Measures in a Progress Monitoring Assessment System (Technical Report # 40). Eugene, OR: Behavioral Research and Teaching.

Alonzo, J., Tindal, G., Ulmer, K., & Glasgow, A. (2006). easyCBM online progress monitoring assessment system. http://easycbm.com. Eugene, OR: Center for Educational Assessment Accountability.

Alonzo, J., Tindal, G., & Ketterlin-Geller, L.R. (2007). *General outcome measures of basic skills in reading and math*. In L. Florian (Ed.), Handbook of Special Education. Thousand Oaks, CA: Sage.

Deno, S. L., & Mirkin, P. M. (1977). *Data based program modification.* Minneapolis, MN: University of Minnesota Leadership Training Institute/Special Education.

Ehri, L.C. (1991). Development of the ability to read words. In R. Barr, M.L. Kamil, P.B. Mosenthal, & P.D. Pearson (Eds.) *Handbook of reading research, Volume II.* New York: Longman.

Ehri, L.C. (2005). Learning to read words: Theory, findings, and issues. *Scientific Studies of Reading, 9,* 167-188.

Graves, A. W., Plasencia-Peinando, J., Deno, S. L., & Johnson, J. R. (2005). Formatively evaluating the reading progress of first-grade English learners in multiple-language classrooms. *Remedial & Special Education, 26,* 215-225.

Hasbrouck, J. & Tindal, G. (2005). Oral reading fluency norms: a valuable tool for reading teachers. *The Reading Teacher.*

Linacre, J. M. (2006). Winsteps3.61.1. Author.

Reading First. (2006). U.S. Department of Education. Retrieved August 8, 2006 from http://www.ed.gov/programs/readingfirst/index.html

Ritchey, K. D., & Speece, D. L. (2006). From letter names to word reading: The nascent role of sublexical fluency. *Contemporary Educational Psychology, 31,* 301-327.

Taylor, S. E., Frackenpohl, H., & White, C. E. (1989). *A revised core vocabulary.* Orlando, FL: Steck-Vaughn.

Appendix A

Item Specifications for MC Comprehension
PASSAGE CRITERIA

1. Passage type criteria
   Fiction – Text that is read for enjoyment (Realistic fiction; folktales; fables; tall tales; animal stories).
2. Content criteria
   Reflect a range of multi-cultural content.
   Avoid stereotyping and be free from bias.
   Avoid controversial, confusing, or emotionally-charged topics.
   Represent various family structures.
3. Passage source criteria
   Original work – do not use previously published stories.
4. Passage quality criteria
   Passages reflect good writing.
   Fictional passages contain elements of good fiction and have a beginning, middle, and end.
   Passages are intact, stand-alone pieces.
   Passages are interesting and appropriate for the grade level.
   Topics of passages are timely and not something that would quickly become dated.
   Writing must show sensitivity to level of complexity needed in terms of grade level.
5. Criteria related to possible passage modification
   Commissioned passages will have changes made to allow for specific item requirements.
   Explanations, definitions for words, or other clarification will be footnoted, boxed, or otherwise provided for student as needed.
6. Reading level criteria
   Reading level must be appropriate for the grade level in terms of difficulty and the beginning and end of the grade level expectations.
   Readability formulas should be used as guides only.
7. Diversity criteria
   Reading passages must reflect the diversity of the world's peoples.
   Some passages may be specific to the diversity of the state.
   Passages must be written so that no group of students is advantaged or disadvantaged.
8. Passage length criteria
   Average length of 2nd Grade passages will range from 500 – 700 words.
   Average length of 3rd-5th Grade passages will range 1,300 – 1,500.
   Longer passages typically should be lower in readability level and concept load than shorter passages.
9. Passage suitability for Items
   Passage content should allow a sufficient number of items.
   Passage content should allow a sufficient range of item difficulty.
   Passage content should accommodate measurement of factual/literal, interpretative/inferential, and critical/evaluative comprehension.
   Passage content should accommodate assessment objectives (cognitive tasks).

Appendix B

Suggested Guidelines for ordering items for test pull and test form development.

Treat all items with the following understanding:
1) Although the cognitive categories dictate the degree of difficulty, there is a range of objectives within each category which will likely produce total-scale-score difficulty values that overlap among categories.
2) The assessment-objective difficulty designations assigned to the items by the professional item writer are estimates (based on the design of each item in terms of expected student responses).

The following diagram shows the difficulty relationship among assessment-objective designations. Ll would be the least difficult item(s) on a test form, and Mh would be the most difficult item(s) on the test. Lh and Mm would be items of similar difficulty based on an overall "reading comprehension scale."

Ll Lm Lh
Ml Mm Mh

Below is a table for recommended item ordering based on objective by category difficulties. Where the specific difficulty is not available, a second (or third) choice can be made using the above diagram. For example, if there are not enough Mm items for a particular form, then Lh would be a good substitute. When a second (or third) choice is not available, then whatever items are left over can be inserted using what seems to be the closest match. It would probably be best to fill out as many matches to the table as possible and then start making second choices; however, there may be times when you will want to manipulate as you go.

Item number	Difficulty
1	Ll
2	Ll
3	Ml
4	Mm
5	Lm
6	Mm
7	Lm
8	Mm
9	Lh
10	Mh
11	L1
12	Mm