MI Access™
Michigan's Alternate Assessment Program

Participation & Supported Independence

ELA, Mathematics, and Science

Michigan's Alternate Assessment Program

Michigan Department of Education
Bureau of Assessment and Accountability

Technical Report 2010-2011 Addendum

August 2011

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INTRODUCTION

The MI–Access Technical Reports provide information about (a) the nature of the tests; (b) their intended uses; (c) the processes involved in their development; (d) technical information related to scoring, interpretation, and evidence of reliability and validity; (e) scaling and equating; and (f) guidelines for test administration and interpretation, as recommended by the Standards for Educational and Psychological Testing (1999, p. 67). Technical Reports have been developed for the Participation and Supported Independence level assessments and the Functional Independence assessments.

The following Technical Reports have been developed:

Functional Independence English Languages Arts and Mathematics, March 2007
Participation and Supported Independence English Language Arts and Mathematics, June 2007
Participation, Supported Independence, and Functional Independence Science, August 2008

Each year, an addendum will be produced to provide the technical quality evidence for the most recent operational administrations of the tests. This is the third annual addendum and includes the Participation and Supported Independence ELA, Mathematics, and Science assessments administered in the 2010 – 2011 school year.

As indicated in the full technical reports for MI–Access, the reports are designed to communicate with multiple users, including state policy makers and their staffs, school and district administrators, teachers, parents and other advocates interested in such documentation. However, the addendums are designed to provide annual technical quality updates for a much smaller audience. The addendums will focus on reliability and validity evidence gathered at the time of test administration, scoring and scaling, and reporting.

1. Form Design

The fall 2010 grades 3 to 8 and spring 2011 grade 11 Participation and Supported Independence ELA and Mathematics, and the fall grades 5 and 8 and spring grade 11 Science assessments were developed according to the test blueprints. The test blueprints for ELA Participation and Supported Independence are given in Table 1.1, which is unchanged from the previous year. The test blueprints for Mathematics Participation and Supported Independence for grades 3 to 5, and grades 6 to 8 are given in Table 1.2. Due to item availability, small changes were made to Participation grades 6 to 8. Geometry and Data and Probability have three items and one item, respectively, whereas last year each strand had two items. The test blueprints for grade 11 Mathematics are given in Table 1.3. Again, due to item availability, small changes were made to both Participation and Supported Independence. For Quantitative Literacy and Logic and for Algebra and Functions, there are two less and two more items, respectively, for Participation, and one fewer and one more for Supported Independence. The test blueprints for Science Participation and Supported Independence are given in Table 1.4, which is unchanged from the previous year. For both Participation and Supported Independence and for all three content areas, three forms were developed for each grade group (elementary, grades 3 – 5; middle school, grades 6 – 8; and grade 11). The three forms contained the same operational, core items but differed by the field test items embedded in each form.

The Participation and Supported Independence assessments consist of a mixture of activity based and selected response items with picture cards that are scored by two raters. In addition to the numbers and the exact questions asked being different for Participation and Supported Independence, the two assessment levels differ in the number of answer choices for the selected response items (2 for Supported Independence and 3 for Participation) and the scoring rubrics. Students who take Participation are scored on a 3-point rubric by two raters and can receive credit when they get hand-over-hand assistance. Students who take Supported Independence are scored on a 2-point rubric by two raters and cannot get credit if they get hand-over-hand assistance.

Table 1.1
Operational ELA Test Blueprint: Grades 3 – 5,
Grades 6 – 8, and Grade 11

Strand	Participation	Supported Independence
Accessing Information	6	9
Word Study	3	4
Comprehension	3	5
Expressing Ideas	4	6
Total Core Items*	10	15
Embedded Field-Test Items	5	5
Total Number of Items	15	20

*Four core items were repeated from the previous year, 2009 – 2010, at Participation and five core items were repeated at Supported Independence.

Table 1.2
Operational Mathematics Test Blueprint: Grades 3 – 5 and 6 – 8

Strand	Participation		Supported Independence	
	Grades 3 – 5	Grades 6 – 8	Grades 3 – 5	Grades 6 – 8
Numbers and Operations	3	4	7	6
Algebra				1
Measurement	2	2	2	3
Geometry	4	3	4	3
Data and Probability	1	1	2	2
Total Core Items*	10	10	15	15
Embedded Field-Test Items	5	5	5	5
Total Number of Items	15	15	20	20

*Four core items were repeated from the previous year, Fall 2009, at Participation and five core items were repeated at Supported Independence.

Table 1.3
Operational Mathematics Test Blueprint: Grade 11

Strand	Participation	Supported Independence
Quantitative Literacy and Logic	6	10
Algebra and Functions	2	2
Geometry and Trigonometry	2	3
Total Core Items*	10	15
Embedded Field-Test Items	5	5
Total Number of Items	15	20

*Four core items were repeated from the previous year, Spring 2010, at Participation and five core items were repeated at Supported Independence.

Table 1.4
Operational Science Test Blueprint: Grades 5, 8, and 11

Strand	Participation	Supported Independence
Constructing and Reflecting	2	2
Life Science	5	7
Physical Science	5	3
Earth Science	3	5
Total Core Items*	15	17
Embedded Field-Test Items	5	5
Total Number of Items	20	22

*For both levels at all three grades, five core items were repeated from the previous year, 2009-2010.

2. Participation in Assessments and Subgroup Analysis

Participation in the assessments is monitored by gender and by racial/ethnic group. Participation counts by gender and grade are given in Tables 2.1 to 2.6, and participation counts by race/ethnicity and grade are given in Tables 2.7 to 2.12. The percent of male students across the grades and content areas for Participation ranges from 61% to 68%. For Supported Independence, the percent of males ranges from 62% to 71%. Across both levels and all three content areas, the largest racial/ethnic group is White students with 64% to 70% of the students, followed by Black students with 21% to 29% of the students, Hispanic students with 3% to 7% of the students, and Asian students with 1% to 3% of the students.

Table 2.1
2010–2011 N-Counts and Percents by Gender and Grade for ELA Participation

Grade	Female		Male		Total
	N	%	N	%	N
3	132	33.9	257	66.1	389
4	110	32.5	228	67.5	338
5	111	34.2	214	65.8	325
6	119	39.4	183	60.6	302
7	110	38.3	177	61.7	287
8	99	37.2	167	62.8	266
11	110	35.5	200	64.5	310

Table 2.2
2010–2011 N-Counts and Percents by Gender and Grade for ELA Supported Independence

Grade	Female		Male		Total
	N	%	N	%	N
3	153	29.8	360	70.2	513
4	162	31.6	351	68.4	513
5	150	30.7	338	69.3	488
6	171	36.5	298	63.5	469
7	166	34.0	322	66.0	488
8	191	37.4	320	62.6	511
11	182	36.9	311	63.1	493

Table 2.3
2010–2011 N-Counts and Percents by Gender and Grade for Mathematics Participation

Grade	Female		Male		Total
	N	%	N	%	N
3	131	33.7	258	66.3	389
4	110	32.5	228	67.5	338
5	110	34.0	214	66.0	324
6	119	39.5	182	60.5	301
7	110	38.2	178	61.8	288
8	98	37.0	167	63.0	265
11	108	35.2	199	64.8	307

Table 2.4
2010–2011 N-Counts and Percents by Gender and Grade for Mathematics Supported Independence

Grade	Female		Male		Total
	N	%	N	%	N
3	151	29.5	360	70.5	511
4	161	31.5	350	68.5	511
5	150	30.9	336	69.1	486
6	170	36.3	298	63.7	468
7	165	34.0	320	66.0	485
8	192	37.5	320	62.5	512
11	182	37.1	309	62.9	491

Table 2.5
2010–2011 N-Counts and Percents by Gender and Grade for Science Participation

Grade	Female		Male		Total
	N	%	N	%	N
5	110	35.4	201	64.6	311
8	95	37.5	158	62.5	253
11	110	35.5	200	64.5	310

Table 2.6
2010–2011 N-Counts and Percents by Gender and Grade for Science
Supported Independence

Grade	Female		Male		Total
	N	%	N	%	N
5	148	31.6	320	68.4	468
8	187	37.6	311	62.4	498
11	180	36.9	308	63.1	488

Table 2.7
2010–2011 N-Counts and Percents by Ethnicity and Grade for ELA Participation

Grade	Native Hawaiian or Other Pacific Islander		American Indian or Alaska Native		Black or African American		Hispanic of any Race		White		Two or more races		Asian		Unknown		Total
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N
3	0	0.0	2	0.5	89	22.9	25	6.4	260	66.8	3	0.8	10	2.6	0.0	0.0	389
4	0	0.0	0	0.0	77	22.8	25	7.4	223	66.0	9	2.7	4	1.2	0.0	0.0	338
5	1	0.3	1	0.3	85	26.2	19	5.8	209	64.3	2	0.6	8	2.5	0.0	0.0	325
6	0	0.0	0	0.0	69	22.8	12	4.0	208	68.9	5	1.7	8	2.6	0.0	0.0	302
7	0	0.0	1	0.3	63	22.0	12	4.2	200	69.7	3	1.0	8	2.8	0.0	0.0	287
8	1	0.4	2	0.8	62	23.3	18	6.8	174	65.4	1	0.4	8	3.0	0.0	0.0	266
11	0	0.0	2	0.6	75	24.2	19	6.1	203	65.5	2	0.6	9	2.9	0.0	0.0	310

Table 2.8
2010–2011 N-Counts and Percents by Ethnicity and Grade for ELA Supported Independence

Grade	Native Hawaiian or Other Pacific Islander		American Indian or Alaska Native		Black or African American		Hispanic of any Race		White		Two or more races		Asian		Unknown		Total
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N
3	0	0.0	3	0.6	120	23.4	28	5.5	348	67.8	6	1.2	8	1.6	0.0	0.0	513
4	1	0.2	3	0.6	126	24.6	31	6.0	333	64.9	7	1.4	12	2.3	0.0	0.0	513
5	2	0.4	2	0.4	132	27.0	31	6.4	311	63.7	3	0.6	7	1.4	0.0	0.0	488
6	0	0.0	5	1.1	98	20.9	27	5.8	318	67.8	5	1.1	16	3.4	0.0	0.0	469
7	2	0.4	3	0.6	117	24.0	27	5.5	324	66.4	6	1.2	9	1.8	0.0	0.0	488
8	0	0.0	2	0.4	112	21.9	25	4.9	353	69.1	9	1.8	10	2.0	0.0	0.0	511
11	4	0.8	2	0.4	141	28.6	14	2.8	320	64.9	2	0.4	10	2.0	0.0	0.0	493

Table 2.9
2010–2011 N-Counts and Percents by Ethnicity and Grade for Mathematics Participation

Grade	Native Hawaiian or Other Pacific Islander		American Indian or Alaska Native		Black or African American		Hispanic of any Race		White		Two or more races		Asian		Unknown		Total
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N
3	0	0.0	2	0.5	89	22.9	25	6.4	260	66.8	3	0.8	10	2.6	0.0	0.0	389
4	0	0.0	0	0.0	77	22.8	25	7.4	222	65.7	9	2.7	5	1.5	0.0	0.0	338
5	1	0.3	1	0.3	84	25.9	19	5.9	209	64.5	2	0.6	8	2.5	0.0	0.0	324
6	0	0.0	0	0.0	68	22.6	12	4.0	208	69.1	5	1.7	8	2.7	0.0	0.0	301
7	0	0.0	1	0.3	63	21.9	12	4.2	201	69.8	3	1.0	8	2.8	0.0	0.0	288
8	1	0.4	2	0.8	61	23.0	18	6.8	174	65.7	1	0.4	8	3.0	0.0	0.0	265
11	0	0.0	2	0.7	74	24.1	19	6.2	201	65.5	2	0.7	9	2.9	0.0	0.0	307

Table 2.10
2010–2011 N-Counts and Percents by Ethnicity and Grade for Mathematics
Supported Independence

Grade	Native Hawaiian or Other Pacific Islander		American Indian or Alaska Native		Black or African American		Hispanic of any Race		White		Two or more races		Asian		Unknown		Total
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N
3	0	0.0	3	0.6	118	23.1	28	5.5	348	68.1	6	1.2	8	1.6	0.0	0.0	511
4	1	0.2	3	0.6	125	24.5	31	6.1	332	65.0	7	1.4	12	2.3	0.0	0.0	511
5	2	0.4	2	0.4	131	27.0	31	6.4	310	63.8	3	0.6	7	1.4	0.0	0.0	486
6	0	0.0	4	0.9	98	20.9	27	5.8	318	67.9	5	1.1	16	3.4	0.0	0.0	468
7	2	0.4	3	0.6	117	24.1	27	5.6	323	66.6	6	1.2	7	1.4	0.0	0.0	485
8	0	0.0	2	0.4	113	22.1	25	4.9	353	68.9	9	1.8	10	2.0	0.0	0.0	512
11	4	0.8	2	0.4	141	28.7	14	2.9	318	64.8	2	0.4	10	2.0	0.0	0.0	491

Table 2.11
2010–2011 N-Counts and Percents by Ethnicity and Grade for Science Participation

Grade	Native Hawaiian or Other Pacific Islander		American Indian or Alaska Native		Black or African American		Hispanic of any Race		White		Two or more races		Asian		Unknown		Total
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N
5	1	0.3	1	0.3	83	26.7	18	5.8	199	64.0	2	0.6	7	2.3	0	0.0	311
8	1	0.4	2	0.8	59	23.3	16	6.3	166	65.6	1	0.4	8	3.2	0	0.0	253
11	0	0.0	2	0.6	73	23.5	19	6.1	205	66.1	2	0.6	9	2.9	0	0.0	310

Table 2.12
2010–2011 N-Counts and Percents by Ethnicity and Grade for Science
Supported Independence

Grade	Native Hawaiian or Other Pacific Islander		American Indian or Alaska Native		Black or African American		Hispanic of any Race		White		Two or more races		Asian		Unknown		Total
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N
5	2	0.4	2	0.4	126	26.9	31	6.6	299	63.9	3	0.6	5	1.1	0	0.0	468
8	0	0.0	2	0.4	108	21.7	24	4.8	346	69.5	9	1.8	9	1.8	0	0.0	498
11	4	0.8	2	0.4	141	28.9	14	2.9	315	64.5	2	0.4	10	2.0	0	0.0	488

Form Distribution

Recall from Section 1, three field test forms were developed for each level and content area. These forms were distributed to districts and schools according to the guidelines from the Michigan Department of Education, Bureau of Assessment and Accountability. The sampling unit was the school. Forms were randomly assigned using stratified random sampling where stratification was based on the enrollment counts provided to Questar. Except for Detroit, each district received up to two forms at a grade. For Detroit each school received the same form at a grade.

The percent of students by various subgroups and form for the 2010 – 2011 school year are given in the tables on the following pages. Each table contains the number of students tested by form at each grade as well as the grade total. At each grade, the percent of students for the various subgroups is given by form as well as for the grade total. For Participation, the percents for the three content areas are given in Tables 2.13 – 2.15. For Supported Independence, the percents for the three content areas are given in Tables 2.16 – 2.18. The subgroups consist of gender, three racial/ethnic groups (Black, Hispanic, and White), and Economically Disadvantaged. As seen from the tables for both levels and all three content areas, each form is well represented by the various subgroups. Moreover, for each form at a grade, the percent of students across the subgroups is generally consistent with the percents for the grade population.

Table 2.13
2010–2011 Percent of Students by Subgroup and Form
ELA Participation

	N	Female	Male	Black	Hispanic	White	Economic Disadv
Grade 3							
All Forms	389	33.9	66.1	22.9	6.4	66.8	52.2
Form 1	124	33.9	66.1	29.0	8.9	58.9	58.9
Form 2	128	36.7	63.3	16.4	4.7	73.4	44.5
Form 3	137	31.4	68.6	23.4	5.8	67.9	53.3
Grade 4							
All Forms	338	32.5	67.5	22.8	7.4	66.0	52.1
Form 1	113	31.9	68.1	18.6	8.0	70.8	47.8
Form 2	111	29.7	70.3	21.6	7.2	65.8	57.7
Form 3	114	36.0	64.0	28.1	7.0	61.4	50.9
Grade 5							
All Forms	325	34.2	65.8	26.2	5.8	64.3	52.3
Form 1	106	27.4	72.6	24.5	3.8	69.8	42.5
Form 2	105	33.3	66.7	30.5	6.7	57.1	56.2
Form 3	114	41.2	58.8	23.7	7.0	65.8	57.9
Grade 6							
All Forms	302	39.4	60.6	22.8	4.0	68.9	47.0
Form 1	115	39.1	60.9	26.1	5.2	64.3	39.1
Form 2	102	42.2	57.8	17.6	2.9	72.5	49.0
Form 3	85	36.5	63.5	24.7	3.5	70.6	55.3
Grade 7							
All Forms	287	38.3	61.7	22.0	4.2	69.7	44.3
Form 1	92	37.0	63.0	22.8	6.5	65.2	44.6
Form 2	116	38.8	61.2	25.9	1.7	69.8	43.1
Form 3	79	39.2	60.8	15.2	5.1	74.7	45.6
Grade 8							
All Forms	266	37.2	62.8	23.3	6.8	65.4	47.7
Form 1	93	37.6	62.4	22.6	10.8	60.2	51.6
Form 2	104	38.5	61.5	28.8	4.8	62.5	44.2
Form 3	69	34.8	65.2	15.9	4.3	76.8	47.8
Grade 11							
All Forms	310	35.5	64.5	24.2	6.1	65.5	43.9
Form 1	117	35.9	64.1	24.8	6.0	65.0	39.3
Form 2	100	39.0	61.0	26.0	5.0	63.0	50.0
Form 3	93	31.2	68.8	21.5	7.5	68.8	43.0

Table 2.14
2010–2011 Percent of Students by Subgroup and Form
Mathematics Participation

	N	Female	Male	Black	Hispanic	White	Economic Disadv
Grade 3							
All Forms	389	33.7	66.3	22.9	6.4	66.8	52.2
Form 1	125	33.6	66.4	28.8	8.8	59.2	59.2
Form 2	128	36.7	63.3	16.4	4.7	73.4	44.5
Form 3	136	30.9	69.1	23.5	5.9	67.6	52.9
Grade 4							
All Forms	338	32.5	67.5	22.8	7.4	65.7	51.8
Form 1	113	31.9	68.1	18.6	8.0	70.8	47.8
Form 2	110	30.0	70.0	21.8	7.3	65.5	57.3
Form 3	115	35.7	64.3	27.8	7.0	60.9	50.4
Grade 5							
All Forms	324	34.0	66.0	25.9	5.9	64.5	52.2
Form 1	105	26.7	73.3	23.8	3.8	70.5	41.9
Form 2	105	33.3	66.7	30.5	6.7	57.1	56.2
Form 3	114	41.2	58.8	23.7	7.0	65.8	57.9
Grade 6							
All Forms	301	39.5	60.5	22.6	4.0	69.1	46.8
Form 1	114	39.5	60.5	25.4	5.3	64.9	38.6
Form 2	102	42.2	57.8	17.6	2.9	72.5	49.0
Form 3	85	36.5	63.5	24.7	3.5	70.6	55.3
Grade 7							
All Forms	288	38.2	61.8	21.9	4.2	69.8	44.1
Form 1	92	37.0	63.0	22.8	6.5	65.2	44.6
Form 2	116	38.8	61.2	25.9	1.7	69.8	43.1
Form 3	80	38.8	61.3	15.0	5.0	75.0	45.0
Grade 8							
All Forms	265	37.0	63.0	23.0	6.8	65.7	47.5
Form 1	93	37.6	62.4	22.6	10.8	60.2	51.6
Form 2	104	38.5	61.5	28.8	4.8	62.5	44.2
Form 3	68	33.8	66.2	14.7	4.4	77.9	47.1
Grade 11							
All Forms	307	35.2	64.8	24.1	6.2	65.5	44.0
Form 1	117	35.9	64.1	24.8	6.0	65.0	39.3
Form 2	97	38.1	61.9	25.8	5.2	62.9	50.5
Form 3	93	31.2	68.8	21.5	7.5	68.8	43.0

Table 2.15
2010–2011 Percent of Students by Subgroup and Form
Science Participation

	N	Female	Male	Black	Hispanic	White	Economic Disadv
Grade 5							
All Forms	311	35.4	64.6	26.7	5.8	64.0	53.1
Form 1	113	26.5	73.5	31.0	3.5	64.6	47.8
Form 2	106	47.2	52.8	25.5	4.7	63.2	48.1
Form 3	92	32.6	67.4	22.8	9.8	64.1	65.2
Grade 8							
All Forms	253	37.5	62.5	23.3	6.3	65.6	47.4
Form 1	97	35.1	64.9	25.8	7.2	62.9	49.5
Form 2	82	34.1	65.9	28.0	3.7	64.6	50.0
Form 3	74	44.6	55.4	14.9	8.1	70.3	41.9
Grade 11							
All Forms	310	35.5	64.5	23.5	6.1	66.1	43.5
Form 1	141	33.3	66.7	23.4	8.5	65.2	41.8
Form 2	99	34.3	65.7	29.3	2.0	61.6	51.5
Form 3	70	41.4	58.6	15.7	7.1	74.3	35.7

Table 2.16
2010–2011 Percent of Students by Subgroup and Form
ELA Supported Independence

	N	Female	Male	Black	Hispanic	White	Economic Disadv
Grade 3							
All Forms	513	29.8	70.2	23.4	5.5	67.8	55.0
Form 1	154	29.9	70.1	23.4	4.5	66.2	48.1
Form 2	207	28.0	72.0	25.6	4.3	68.1	56.0
Form 3	152	32.2	67.8	20.4	7.9	69.1	60.5
Grade 4							
All Forms	513	31.6	68.4	24.6	6.0	64.9	55.2
Form 1	175	32.6	67.4	22.3	5.7	65.7	50.9
Form 2	158	31.0	69.0	26.6	5.7	63.9	54.4
Form 3	180	31.1	68.9	25.0	6.7	65.0	60.0
Grade 5							
All Forms	488	30.7	69.3	27.0	6.4	63.7	54.7
Form 1	163	23.9	76.1	25.2	8.0	65.6	50.9
Form 2	149	37.6	62.4	28.9	6.7	61.7	55.0
Form 3	176	31.3	68.8	27.3	4.5	63.6	58.0
Grade 6							
All Forms	469	36.5	63.5	20.9	5.8	67.8	56.3
Form 1	186	36.6	63.4	18.3	5.9	70.4	54.8
Form 2	168	33.3	66.7	29.2	3.0	63.7	60.1
Form 3	115	40.9	59.1	13.0	9.6	69.6	53.0
Grade 7							
All Forms	488	34.0	66.0	24.0	5.5	66.4	54.3
Form 1	162	29.6	70.4	23.5	9.3	63.0	51.9
Form 2	187	33.7	66.3	22.5	4.8	68.4	59.9
Form 3	139	39.6	60.4	26.6	2.2	67.6	49.6
Grade 8							
All Forms	511	37.4	62.6	21.9	4.9	69.1	53.4
Form 1	185	36.8	63.2	25.4	3.8	67.0	49.2
Form 2	188	39.4	60.6	23.4	3.7	67.0	60.1
Form 3	138	35.5	64.5	15.2	8.0	74.6	50.0
Grade 11							
All Forms	493	36.9	63.1	28.6	2.8	64.9	53.8
Form 1	191	35.1	64.9	30.9	4.7	60.2	48.2
Form 2	167	37.7	62.3	31.7	1.2	61.7	64.1
Form 3	135	38.5	61.5	21.5	2.2	75.6	48.9

Table 2.17
2010–2011 Percent of Students by Subgroup and Form
Mathematics Supported Independence

	N	Female	Male	Black	Hispanic	White	Economic Disadv
Grade 3							
All Forms	511	29.5	70.5	23.1	5.5	68.1	54.8
Form 1	154	29.9	70.1	23.4	4.5	66.2	48.1
Form 2	206	27.7	72.3	25.2	4.4	68.4	55.8
Form 3	151	31.8	68.2	19.9	7.9	69.5	60.3
Grade 4							
All Forms	511	31.5	68.5	24.5	6.1	65.0	55.2
Form 1	175	32.6	67.4	22.3	5.7	65.7	50.9
Form 2	157	30.6	69.4	26.1	5.7	64.3	54.1
Form 3	179	31.3	68.7	25.1	6.7	64.8	60.3
Grade 5							
All Forms	486	30.9	69.1	27.0	6.4	63.8	54.7
Form 1	163	23.9	76.1	25.2	8.0	65.6	50.9
Form 2	147	37.4	62.6	28.6	6.8	61.9	55.1
Form 3	176	31.8	68.2	27.3	4.5	63.6	58.0
Grade 6							
All Forms	468	36.3	63.7	20.9	5.8	67.9	56.4
Form 1	186	36.6	63.4	18.3	5.9	70.4	54.8
Form 2	168	33.3	66.7	29.2	3.0	64.3	60.1
Form 3	114	40.4	59.6	13.2	9.6	69.3	53.5
Grade 7							
All Forms	485	34.0	66.0	24.1	5.6	66.6	54.6
Form 1	161	29.8	70.2	23.6	9.3	62.7	52.2
Form 2	186	33.3	66.7	22.6	4.8	68.8	60.2
Form 3	138	39.9	60.1	26.8	2.2	68.1	50.0
Grade 8							
All Forms	512	37.5	62.5	22.1	4.9	68.9	53.3
Form 1	185	36.8	63.2	25.4	3.8	67.0	49.2
Form 2	188	39.9	60.1	23.4	3.7	67.0	59.6
Form 3	139	35.3	64.7	15.8	7.9	74.1	50.4
Grade 11							
All Forms	491	37.1	62.9	28.7	2.9	64.8	53.8
Form 1	191	35.1	64.9	30.9	4.7	60.2	47.6
Form 2	166	38.0	62.0	31.9	1.2	61.4	64.5
Form 3	134	38.8	61.2	21.6	2.2	75.4	49.3

Table 2.18
2010–2011 Percent of Students by Subgroup and Form
Science Supported Independence

	N	Female	Male	Black	Hispanic	White	Economic Disadv
Grade 5							
All Forms	468	31.6	68.4	26.9	6.6	63.9	55.1
Form 1	172	24.4	75.6	24.4	5.2	68.6	54.7
Form 2	154	34.4	65.6	27.9	6.5	62.3	48.1
Form 3	142	37.3	62.7	28.9	8.5	59.9	63.4
Grade 8							
All Forms	498	37.6	62.4	21.7	4.8	69.5	52.6
Form 1	196	31.6	68.4	23.5	3.1	69.9	48.5
Form 2	138	48.6	51.4	22.5	2.2	71.7	52.9
Form 3	164	35.4	64.6	18.9	9.1	67.1	57.3
Grade 11							
All Forms	488	36.9	63.1	28.9	2.9	64.5	53.9
Form 1	177	37.3	62.7	22.0	2.3	68.9	47.5
Form 2	179	35.8	64.2	34.6	2.8	60.9	57.0
Form 3	132	37.9	62.1	30.3	3.8	63.6	58.3

Subgroup Analysis

Summary statistics by gender and grade for all three content areas for Participation and Supported Independence are given in Tables 2.19 to 2.24, and the summary statistics by ethnicity and grade for the three content areas for Participation and Supported Independence are given in Tables 2.25 to 2.30. Summary statistics by ethnicity are given for White students, Black students, and Other students. Excluding white and black students, the Other students category combines all other ethnic subgroups but consists primarily of Hispanic students.

For ELA Participation males scored higher than females at grades 6, 8, and 11, and scored lower at grades 3 – 5 and 7. For ELA Supported Independence females scored higher than males at all grades except grade 5. For Mathematics Participation males scored higher than females at all grades except grade 3. For Mathematics Supported Independence, males scored higher than females at grades 5 – 8, and lower at grades 3 – 4 and grade 11. For Science Participation, males scored higher than females at grades 8 and 11 and lower at grade 5. For Science Supported Independence, females scored higher than males at all three grades.

At the elementary grade group (grades 3 – 5) for all three content areas and for both Participation and Supported Independence, the black students scored higher than the white students except at grades 3 – 5 ELA Supported Independence and grade 5 Science Supported Independence. At the middle school grade group (grades 6 – 8), the white students scored higher than the black students except at grades 6 and 8 ELA Participation, grade 8 ELA Supported Independence, and grade 8 Mathematics Supported Independence, about the same at grade 6 Mathematics and grade 8 Science Participation, and lower at all other middle school grades, tests, and levels. At grade 11 the white students scored higher than the black students except for ELA and Science Participation.

Table 2.19
2010–2011 Operational Form Score Summaries by Gender and Grade –
ELA Participation

	Female			Male		
Grade	Mean	SD	N	Mean	SD	N
3	27.09	17.94	132	24.52	16.85	257
4	27.88	17.65	110	27.04	17.18	228
5	25.60	18.27	111	25.14	17.92	214
6	23.97	17.17	119	26.26	17.36	183
7	26.72	17.46	110	26.47	17.52	177
8	24.75	18.66	99	28.62	17.46	167
11	28.25	19.07	110	30.86	16.67	200

Table 2.20
2010–2011 Operational Form Score Summaries by Gender and Grade –
ELA Supported Independence

	Female			Male		
Grade	Mean	SD	N	Mean	SD	N
3	39.16	13.52	153	36.67	13.64	360
4	40.37	13.86	162	39.60	13.73	351
5	41.61	13.18	150	41.95	13.15	338
6	36.51	16.18	171	35.62	15.39	298
7	40.58	14.33	166	38.07	14.38	322
8	42.13	12.76	191	40.50	13.95	320
11	43.57	13.62	182	41.38	14.33	311

Table 2.21
2010–2011 Operational Form Score Summaries by Gender and Grade –
Mathematics Participation

	Female			Male		
Grade	Mean	SD	N	Mean	SD	N
3	27.53	19.63	131	26.75	18.37	258
4	28.14	18.98	110	29.55	17.74	228
5	26.05	18.36	110	26.40	18.60	214
6	25.64	17.61	119	28.48	18.02	182
7	25.54	17.85	110	26.83	17.46	178
8	23.77	19.00	98	29.08	18.21	167
11	28.50	19.32	108	31.23	18.06	199

Table 2.22
2010–2011 Operational Form Score Summaries by Gender and Grade –
Mathematics Supported Independence

	Female			Male		
Grade	Mean	SD	N	Mean	SD	N
3	38.90	13.57	151	35.34	14.06	360
4	39.16	13.44	161	37.66	14.44	350
5	39.80	13.18	150	40.55	13.62	336
6	31.28	14.34	170	32.05	14.27	298
7	33.48	13.41	165	34.66	14.03	320
8	36.30	13.56	192	37.08	14.42	320
11	38.83	13.48	182	38.57	13.78	309

Table 2.23
2010–2011 Operational Form Score Summaries by Gender and Grade –
Science Participation

	Female			Male		
Grade	Mean	SD	N	Mean	SD	N
5	39.93	25.93	110	37.33	26.49	201
8	37.11	26.82	95	45.42	26.52	158
11	41.65	27.78	110	46.12	26.34	200

Table 2.24
2010–2011 Operational Form Score Summaries by Gender and Grade –
Science Supported Independence

	Female			Male		
Grade	Mean	SD	N	Mean	SD	N
5	47.96	14.74	148	47.18	15.41	320
8	46.44	13.95	187	46.01	16.57	311
11	49.53	14.43	180	47.67	15.73	308

Table 2.25
2010–2011 Operational Form Score Summaries by Ethnicity and Grade – ELA Participation

	White			Black			Other		
Grade	Mean	SD	N	Mean	SD	N	Mean	SD	N
3	24.64	16.98	260	26.83	18.12	89	27.10	17.05	40
4	26.82	17.02	223	30.13	18.01	77	24.55	17.34	38
5	25.11	18.17	209	27.01	18.64	85	21.84	14.88	31
6	25.25	17.36	208	27.00	16.97	69	21.76	17.74	25
7	27.24	17.15	200	22.24	16.16	63	32.33	21.32	24
8	26.67	18.13	174	27.31	17.27	62	29.83	18.86	30
11	30.83	16.73	203	30.93	19.02	75	21.94	17.84	32

Table 2.26
2010–2011 Operational Form Score Summaries by Ethnicity and Grade – ELA Supported Independence

	White			Black			Other		
Grade	Mean	SD	N	Mean	SD	N	Mean	SD	N
3	37.68	13.43	348	36.93	14.33	120	36.67	13.65	45
4	39.69	13.56	333	38.83	14.12	126	43.13	13.94	54
5	41.66	12.96	311	41.50	13.93	132	44.18	12.08	45
6	37.02	15.32	318	33.83	15.66	98	33.43	17.30	53
7	39.26	13.92	324	38.66	15.28	117	37.28	15.53	47
8	41.24	13.31	353	42.19	13.55	112	37.52	14.82	46
11	42.48	13.67	320	42.09	14.82	141	39.63	15.21	32

Table 2.27
2010–2011 Operational Form Score Summaries by Ethnicity and Grade – Mathematics Participation

	White			Black			Other		
Grade	Mean	SD	N	Mean	SD	N	Mean	SD	N
3	26.29	18.43	260	29.19	19.06	89	26.83	20.44	40
4	29.22	18.12	222	30.09	18.70	77	26.36	17.27	39
5	26.06	18.69	209	27.15	19.15	84	25.35	15.53	31
6	28.03	17.76	208	28.10	17.90	68	19.72	17.86	25
7	27.04	17.27	201	21.63	16.96	63	32.79	19.51	24
8	26.79	18.54	174	26.41	19.10	61	30.40	18.68	30
11	31.20	17.75	201	30.86	18.89	74	23.06	21.34	32

Table 2.28
2010–2011 Operational Form Score Summaries by Ethnicity and Grade – Mathematics Supported Independence

	White			Black			Other		
Grade	Mean	SD	N	Mean	SD	N	Mean	SD	N
3	36.44	13.62	348	36.64	14.84	118	35.36	14.84	45
4	37.38	13.95	332	38.78	14.62	125	41.26	13.89	54
5	39.59	13.38	310	40.92	14.36	131	43.60	10.92	45
6	32.36	13.90	318	29.73	14.92	98	31.98	15.35	52
7	34.81	13.30	323	34.18	14.60	117	30.53	15.11	45
8	36.71	13.82	353	38.41	14.30	113	33.39	15.36	46
11	39.17	13.36	318	37.55	13.94	141	38.59	15.41	32

Table 2.29
2010–2011 Operational Form Score Summaries by Ethnicity and Grade – Science Participation

	White			Black			Other		
Grade	Mean	SD	N	Mean	SD	N	Mean	SD	N
5	37.16	26.04	199	42.19	27.92	83	34.45	22.32	29
8	41.75	26.53	166	41.66	27.71	59	46.86	27.77	28
11	45.44	25.53	205	47.12	29.52	73	32.78	27.11	32

Table 2.30
2010–2011 Operational Form Score Summaries by Ethnicity and Grade – Science Supported Independence

	White			Black			Other		
Grade	Mean	SD	N	Mean	SD	N	Mean	SD	N
5	47.78	15.03	299	46.22	16.37	126	48.49	12.66	43
8	46.81	15.32	346	46.34	15.01	108	40.75	18.55	44
11	48.98	14.81	315	47.08	16.49	141	47.88	14.28	32

3. Score Reliability and Summary Statistics

Internal consistency reliability estimates were computed as Cronbach's Coefficient Alpha for the operational forms in ELA, Mathematics, and Science. These reliability estimates are reported in Tables 3.1 to 3.6. Across all grades for all three content areas of Participation, the estimated reliabilities range from the mid .80s to the low .90s. Across all grades for all three content areas of Supported Independence, the estimated reliabilities range from the mid .80s to the high .80s. These estimated reliabilities indicate a high degree of internal consistency across all 34 assessments.

The standard error of measurement (SEM) for each assessment is also reported in these tables as well as the N, mean, and standard deviation. The standard deviations for all the assessments are larger than one might expect, especially for the Participation assessments. This is because a few to several percent of the students obtained a valid, earned zero score, and likewise, a few to several percent of the students received a perfect score. Due to the large number of students obtaining each extreme score, the standard deviations are much larger than typical assessments. Due to the large standard deviations, the corresponding SEMs are also quite large despite the high reliabilities.

Table 3.1
2010–2011 Operational Form Summaries, including Sample Size, Score Statistics, Coefficient Alpha, and SEM by Grade – ELA Participation

Grade	N	Mean	SD	Cronbach's Alpha	SEM
3	389	25.39	17.24	0.86	6.4
4	338	27.32	17.31	0.86	6.6
5	325	25.30	18.02	0.88	6.3
6	302	25.36	17.29	0.86	6.4
7	287	26.57	17.46	0.86	6.5
8	266	27.18	17.98	0.87	6.6
11	310	29.94	17.58	0.87	6.3

Table 3.2
2010–2011 Operational Form Summaries, including Sample Size, Score Statistics, Coefficient Alpha, and SEM by Grade – ELA Supported Independence

Grade	N	Mean	SD	Cronbach's Alpha	SEM
3	513	37.41	13.64	0.84	5.5
4	513	39.84	13.76	0.85	5.3
5	488	41.85	13.15	0.84	5.3
6	469	35.95	15.67	0.88	5.4
7	488	38.93	14.40	0.86	5.4
8	511	41.11	13.53	0.85	5.3
11	493	42.18	14.10	0.87	5.1

Table 3.3
2010–2011 Operational Form Summaries, including Sample Size, Score Statistics, Coefficient Alpha, and SEM by Grade – Mathematics Participation

Grade	N	Mean	SD	Cronbach's Alpha	SEM
3	389	27.01	18.78	0.90	6.0
4	338	29.09	18.14	0.89	6.0
5	324	26.28	18.49	0.89	6.0
6	301	27.36	17.89	0.87	6.4
7	288	26.34	17.59	0.86	6.5
8	265	27.11	18.65	0.89	6.3
11	307	30.27	18.53	0.88	6.3

Table 3.4
2010–2011 Operational Form Summaries, including Sample Size, Score Statistics, Coefficient Alpha, and SEM by Grade – Mathematics Supported Independence

Grade	N	Mean	SD	Cronbach's Alpha	SEM
3	511	36.39	14.00	0.86	5.2
4	511	38.13	14.14	0.86	5.2
5	486	40.32	13.47	0.85	5.2
6	468	31.77	14.29	0.84	5.7
7	485	34.26	13.82	0.83	5.7
8	512	36.79	14.10	0.84	5.6
11	491	38.67	13.66	0.83	5.6

Table 3.5
2010–2011 Operational Form Summaries, including Sample Size, Score Statistics, Coefficient Alpha, and SEM by Grade – Science Participation

Grade	N	Mean	SD	Cronbach's Alpha	SEM
5	311	38.25	26.28	0.92	7.7
8	253	42.30	26.88	0.92	7.7
11	310	44.53	26.90	0.91	8.0

Table 3.6
2010–2011 Operational Form Summaries, including Sample Size, Score Statistics, Coefficient Alpha, and SEM by Grade – Science Supported Independence

Grade	N	Mean	SD	Cronbach's Alpha	SEM
5	468	47.42	15.19	0.85	5.9
8	498	46.17	15.63	0.86	5.9
11	488	48.36	15.27	0.86	5.6

4. Rater Consistency

Each item of the ELA, Mathematics, and Science assessments is scored based on a rubric. There is a 3–point rubric with 3 condition codes at the Participation level and a 2–point rubric with the same 3 condition codes at the Supported Independence level. Each activity has two raters — the Primary Assessment Administrator (PAA) and the Shadow Assessment Administrator (SAA). Items with a missing score for a rater are coded using a special code in the student data file, but for the purposes of scoring, a missing score for a rater is treated as a 0. There are very few item scores that are missing scores for a rater. A student's score is the sum of the item scores across both raters.

The consistency of each double–scored item is summarized in Tables 4.1 to 4.6. Across the 70 ELA Participation items, the percent perfect agreement rates ranged from 94% to 98% with a median of 96%. Across the 70 Mathematics Participation items, the percent perfect agreement rates ranged from 94% to 99% with a median of 97%. Across the 45 Science Participation items, the percent perfect agreement rates ranged from 93% to 98% with a median of 96%. Across the 105 ELA Supported Independence items, the percent perfect agreement rates ranged from 94% to 98% with a median of 97%. Across the 105 Mathematics Supported Independence items, the percent perfect agreement rates ranged from 94% to 99% with a median of 97%. Across the 51 Science Supported Independence items, the percent perfect agreement rates ranged from 95% to 99% with a median of 97%.

Table 4.1
2010–2011 Operational Form Percent Perfect Interrater Agreement Rates – Participation ELA

Grade 3		Grade 4		Grade 5		Grade 6		Grade 7		Grade 8		Grade 11	
Item #	N = 389	Item #	N = 338	Item #	N = 325	Item #	N = 302	Item #	N = 287	Item #	N = 266	Item #	N = 310
1	95	1	95	1	97	1	95	1	96	1	96	1	97
2	96	2	96	2	96	3	95	3	96	3	98	3	97
4	96	4	95	4	95	5	97	5	94	5	97	5	96
6	97	6	96	6	97	6	96	6	96	6	97	6	95
8	96	8	95	8	98	7	96	7	96	7	98	7	98
9	97	9	97	9	98	9	96	9	94	9	97	9	97
11	97	11	95	11	98	10	97	10	95	10	97	11	95
12	96	12	97	12	98	11	96	11	95	11	96	13	95
14	97	14	97	14	98	13	95	13	97	13	97	14	95
15	97	15	96	15	98	15	97	15	97	15	98	15	94

Table 4.2
2010–2011 Operational Form Percent Perfect Interrater Agreement Rates – Participation Mathematics

Grade 3		Grade 4		Grade 5		Grade 6		Grade 7		Grade 8		Grade 11	
Item #	N = 389	Item #	N = 338	Item #	N = 324	Item #	N = 301	Item #	N = 288	Item #	N = 265	Item #	N = 307
1	97	1	98	1	96	1	97	1	95	1	97	1	97
2	96	2	94	2	97	2	97	2	95	2	98	2	96
4	96	4	96	4	98	3	97	3	95	3	98	3	96
6	96	6	96	6	97	6	96	6	96	6	98	4	96
8	97	8	96	8	97	7	96	7	95	7	99	7	97
9	96	9	97	9	97	8	95	8	96	8	97	9	97
11	96	11	95	11	97	10	98	10	95	10	98	10	96
12	97	12	97	12	96	12	97	12	95	12	97	11	96
14	97	14	97	14	98	13	97	13	97	13	98	14	96
15	97	15	96	15	97	15	99	15	96	15	98	15	96

Table 4.3
2010–2011 Operational Form Percent Perfect Interrater Agreement Rates – Participation Science

Grade 5		Grade 8		Grade 11	
Item #	N = 311	Item #	N = 253	Item #	N = 310
1	97	1	97	1	97
2	98	2	96	2	96
3	96	3	96	3	97
4	97	4	97	4	93
5	97	5	96	5	94
6	98	7	97	6	96
8	98	8	96	8	95
9	97	9	96	9	96
11	96	12	96	10	93
12	97	13	94	11	95
16	98	15	95	14	95
17	98	16	96	15	95
18	98	18	95	16	94
19	96	19	95	19	98
20	98	20	96	20	96

Table 4.4
2010–2011 Operational Form Percent Perfect Interrater Agreement Rates –
Supported Independence ELA

Grade 3		Grade 4		Grade 5		Grade 6		Grade 7		Grade 8		Grade 11	
Item #	N = 513	Item #	N = 513	Item #	N = 488	Item #	N = 469	Item #	N = 488	Item #	N = 511	Item #	N = 493
1	98	1	97	1	98	1	97	1	96	1	98	1	96
2	98	2	97	2	97	2	96	2	98	2	97	3	98
4	96	4	97	4	98	3	97	3	97	3	97	4	96
6	97	6	96	6	97	6	95	6	94	6	96	6	95
7	97	7	96	7	97	7	97	7	94	7	97	7	95
8	96	8	96	8	95	8	96	8	95	8	96	8	97
9	96	9	98	9	97	9	97	9	96	9	98	9	97
10	96	10	96	10	97	11	96	11	95	11	96	10	95
12	97	12	98	12	97	12	96	12	97	12	97	12	96
13	97	13	96	13	98	13	97	13	95	13	96	14	97
14	97	14	97	14	98	14	96	14	95	14	96	16	96
16	98	16	96	16	96	15	97	15	98	15	98	17	97
18	97	18	96	18	98	16	95	16	96	16	98	18	95
19	97	19	96	19	98	18	97	18	97	18	97	19	95
20	97	20	97	20	98	20	96	20	97	20	97	20	95

Table 4.5
2010–2011 Operational Form Percent Perfect Interrater Agreement Rates –
Supported Independence Mathematics

Grade 3		Grade 4		Grade 5		Grade 6		Grade 7		Grade 8		Grade 11	
Item #	N = 511	Item #	N = 511	Item #	N = 486	Item #	N = 468	Item #	N = 485	Item #	N = 512	Item #	N = 491
1	97	1	97	1	97	1	98	1	96	1	96	1	97
2	96	2	97	2	96	2	96	2	96	2	97	2	98
4	97	4	96	4	97	3	97	3	96	3	97	3	96
6	97	6	97	6	97	6	97	6	96	6	97	4	97
7	96	7	96	7	95	7	96	7	96	7	97	6	98
8	97	8	97	8	97	8	97	8	96	8	96	7	96
9	96	9	96	9	97	9	95	9	97	9	97	8	96
10	97	10	96	10	96	11	97	11	97	11	97	10	96
12	97	12	96	12	98	12	97	12	97	12	97	13	96
13	98	13	99	13	99	13	96	13	96	13	96	14	97
14	98	14	98	14	97	14	95	14	98	14	96	15	97
16	97	16	97	16	96	16	99	16	99	16	99	16	97
18	99	18	98	18	97	17	97	17	95	17	96	17	96
19	97	19	96	19	97	19	97	19	94	19	97	19	99
20	96	20	95	20	95	20	97	20	95	20	98	20	99

Table 4.6
2010–2011 Operational Form Percent Perfect Interrater Agreement Rates –
Supported Independence Science

Grade 5		Grade 8		Grade 11	
Item #	N = 468	Item #	N = 498	Item #	N = 488
1	98	1	98	1	98
2	97	2	98	2	97
3	97	3	98	3	97
4	99	4	98	4	97
5	98	5	98	5	98
6	97	6	98	6	97
7	97	7	98	7	96
8	97	8	96	8	96
10	98	10	97	10	96
12	97	12	97	12	97
14	96	14	98	14	96
15	97	15	98	15	98
17	97	17	98	17	97
18	97	19	98	18	95
19	96	20	98	19	97
21	98	21	97	21	97
22	96	22	98	22	97

5. Classification Accuracy and Consistency

The number and percent of students at each of the three performance levels by content area and grade are given in Table 5.1 for Participation and in Table 5.2 for Supported Independence. Across grades and content areas of Participation, the largest percent is for Attained except for grades 5 and 7 ELA, grades 3 and 4 Mathematics, and grade 11 Science. Across grades and content areas of Supported Independence, the largest percent is for Attained except for grades 6 – 8 and 11 ELA.

Table 5.1
Percent of Students by Proficiency Level - Participation

Grade	Emerging		Attained		Surpassed	
	N	%	N	%	N	%
ELA						
3	150	38.6	182	46.8	57	14.7
4	122	36.1	155	45.9	61	18.0
5	140	43.1	138	42.5	47	14.5
6	119	39.4	124	41.1	59	19.5
7	113	39.4	112	39.0	62	21.6
8	104	39.1	117	44.0	45	16.9
11	97	31.3	132	42.6	81	26.1
Math						
3	130	33.4	124	31.9	135	34.7
4	112	33.1	120	35.5	106	31.4
5	145	44.8	108	33.3	71	21.9
6	126	41.9	104	34.6	71	23.6
7	139	48.3	95	33.0	54	18.8
8	126	47.5	105	39.6	34	12.8
11	133	43.3	117	38.1	57	18.6
Science						
5	106	34.1	177	56.9	28	9.0
8	78	30.8	149	58.9	26	10.3
11	171	55.2	110	35.5	29	9.4

Table 5.2
Percent of Students by Proficiency Level - Supported Independence

Grade	Emerging		Attained		Surpassed	
	N	%	N	%	N	%
ELA						
3	76	14.8	225	43.9	212	41.3
4	114	22.2	210	40.9	189	36.8
5	121	24.8	195	40.0	172	35.2
6	104	22.2	164	35.0	201	42.9
7	104	21.3	190	38.9	194	39.8
8	100	19.6	197	38.6	214	41.9
11	96	19.5	166	33.7	231	46.9
Math						
3	64	12.5	231	45.2	216	42.3
4	85	16.6	217	42.5	209	40.9
5	75	15.4	235	48.4	176	36.2
6	66	14.1	227	48.5	175	37.4
7	80	16.5	232	47.8	173	35.7
8	61	11.9	240	46.9	211	41.2
11	68	13.8	229	46.6	194	39.5
Science						
5	102	21.8	284	60.7	82	17.5
8	132	26.5	231	46.4	135	27.1
11	77	15.8	328	67.2	83	17.0

Classification accuracy and consistency are indices of agreement for performance–level classification as a score. Classification accuracy is a way to estimate the difference between true classification and observed classification due to measurement error. Classification consistency is a way to estimate the difference between the observed classification and the classification on a parallel form. The MI–Access Participation and Supported Independence classification accuracy and consistency indices were calculated by applying procedures given in Livingston and Lewis (1995) via the BB–CLASS computer program (Brennan, 2004). These indices are presented in Tables 5.3 and 5.4. The accuracy indices can be interpreted as the proportion of examinees that would be classified accurately into the performance–level score categories given infinite replications of identical conditions. The consistency indices can be interpreted as the proportion of examinees that would be classified into the same performance–level score categories on the assessment and a parallel form of the assessment.

Table 5.3
Estimated Classification Accuracy and Consistency by Content Area and Grade – Participation

	2 Categories Emerging vs Attained plus Surpassed		3 Categories Emerging vs Attained vs Surpassed	
Grade	Accuracy	Consistency	Accuracy	Consistency
ELA				
3	0.91	0.87	0.80	0.72
4	0.90	0.86	0.80	0.72
5	0.91	0.87	0.81	0.74
6	0.91	0.87	0.79	0.71
7	0.90	0.86	0.80	0.73
8	0.92	0.88	0.79	0.71
11	0.91	0.88	0.81	0.73
Mathematics				
3	0.92	0.89	0.83	0.76
4	0.92	0.89	0.82	0.75
5	0.91	0.88	0.82	0.75
6	0.91	0.87	0.80	0.72
7	0.89	0.85	0.80	0.73
8	0.92	0.88	0.80	0.73
11	0.91	0.87	0.80	0.72
Science				
5	0.93	0.90	0.85	0.80
8	0.94	0.91	0.84	0.80
11	0.92	0.88	0.85	0.79

Table 5.4
Estimated Classification Accuracy and Consistency by Subject and Grade – Supported Independence

	2 Categories Emerging vs Attained plus Surpassed		3 Categories Emerging vs Attained vs Surpassed	
Grade	Accuracy	Consistency	Accuracy	Consistency
ELA				
3	0.93	0.90	0.80	0.71
4	0.92	0.89	0.78	0.70
5	0.91	0.87	0.78	0.69
6	0.93	0.90	0.82	0.75
7	0.92	0.88	0.80	0.72
8	0.92	0.89	0.80	0.72
11	0.94	0.91	0.81	0.74
Mathematics				
3	0.94	0.92	0.82	0.75
4	0.93	0.91	0.82	0.74
5	0.93	0.90	0.81	0.74
6	0.93	0.90	0.80	0.72
7	0.92	0.89	0.80	0.72
8	0.94	0.91	0.81	0.73
11	0.94	0.91	0.80	0.72
Science				
5	0.93	0.89	0.76	0.69
8	0.92	0.89	0.74	0.65
11	0.95	0.93	0.78	0.69

Across all grades for all three content areas of Participation, when categorizing students into the NCLB categories of proficient (attained + surpassed) and not proficient (emerging), classification accuracy ranges from 89% to 94% while classification consistency ranges from 85% to 91%. When categorizing students into three categories (emerging, attained, and surpassed) the classification accuracy ranges from 79% to 85% and the classification consistency ranges from 71% to 80%. Across all grades for all three content areas of Supported Independence, the two-category classification accuracy ranges from 91% to 95% and the two-

category classification consistency ranges from 87% to 93%. The three-category classification accuracy ranges from 74% to 82% and the three-category classification consistency ranges 65% to 75%. Across all 34 assessments, there is at least 89% classification accuracy and at least 85% classification consistency when students are classified as proficient or not proficient. The accuracy indices will be higher than the consistency indices because the former estimates accuracy between observed scores containing measurement error and true scores with no error, whereas the later estimates consistency between observed scores on parallel forms of the assessment where both scores contain measurement error.

These estimates represent strong proportions of students classified accurately for an assessment appropriate for students with disabilities such as those that take the MI–Access Participation and Supported Independence assessments.

6. Interrelations Among Strands

One important source of validity evidence is the consistency of the relations of test subcomponents – interrelations among strands within the test. These interrelations provide a picture of the internal structure of a test, indicating the extent to which item types and items within subsections of the content area "hang together." The intercorrelations between section scores for ELA Participation and Supported Independence are reported in Tables 6.1 and 6.2. The Pearson product-moment intercorrelations between section scores for Mathematics Participation and Supported Independence at grades 3 to 8 are reported in Tables 6.3 and 6.4, and for grade 11 the intercorrelations are reported in Tables 6.5 and 6.6. The intercorrelations between section scores for Science Participation and Supported Independence are reported in Tables 6.7 and 6.8. For all three content areas for both Participation and Supported Independence, the intercorrelations between section scores are uniformly high indicating a high degree of association between the subcontent areas. For each content area within each level, the correlational structure is generally consistent across the grades.

The N, mean, standard deviation, and Cronbach's Coefficient Alpha along with the minimum and maximum score of the section scores are also provided. These summary statistics are given in Tables 6.9 and 6.10 for ELA Participation and Supported Independence, in Tables 6.11 and 6.12 for Mathematics Participation and Supported Independence at grades 3 to 8, in Tables 6.13 and 6.14 for grade 11 Mathematics, and in Tables 6.15 and 6.16 for Science Participation and Supported Independence.

Table 6.1
2010–2011 Operational Form Intercorrelations Between Section Scores by Grade – ELA Participation

Grade		Expressing Ideas	Text Comprehension
3	Text Comprehension	0.67	
	Word Recognition	0.65	0.67
4	Text Comprehension	0.68	
	Word Recognition	0.64	0.66
5	Text Comprehension	0.70	
	Word Recognition	0.65	0.64
6	Text Comprehension	0.70	
	Word Recognition	0.66	0.65
7	Text Comprehension	0.67	
	Word Recognition	0.67	0.62
8	Text Comprehension	0.71	
	Word Recognition	0.74	0.67
11	Text Comprehension	0.69	
	Word Recognition	0.68	0.64

Table 6.2
2010–2011 Operational Form Intercorrelations Between Section Scores by Grade – ELA Supported Independence

Grade		Expressing Ideas	Text Comprehension
3	Text Comprehension	0.73	
	Word Recognition	0.51	0.53
4	Text Comprehension	0.69	
	Word Recognition	0.56	0.57
5	Text Comprehension	0.70	
	Word Recognition	0.54	0.59
6	Text Comprehension	0.75	
	Word Recognition	0.56	0.59
7	Text Comprehension	0.74	
	Word Recognition	0.52	0.51
8	Text Comprehension	0.69	
	Word Recognition	0.51	0.44
11	Text Comprehension	0.69	
	Word Recognition	0.69	0.60

Table 6.3
Fall 2010 Operational Form Intercorrelations Between Section Scores by Grade – Mathematics Participation

Grade		Data Probability	Geometry	Measurement
3	Geometry	0.64		
	Measurement	0.57	0.61	
	Numbers and Operations	0.58	0.70	0.67
4	Geometry	0.65		
	Measurement	0.56	0.69	
	Numbers and Operations	0.50	0.70	0.68
5	Geometry	0.61		
	Measurement	0.51	0.65	
	Numbers and Operations	0.50	0.66	0.63
6	Geometry	0.60		
	Measurement	0.51	0.63	
	Numbers and Operations	0.65	0.71	0.65
7	Geometry	0.54		
	Measurement	0.49	0.61	
	Numbers and Operations	0.58	0.71	0.67
8	Geometry	0.57		
	Measurement	0.49	0.66	
	Numbers and Operations	0.54	0.73	0.69

Table 6.4
Fall 2010 Operational Form Intercorrelations Between Section Scores by Grade – Mathematics Supported Independence

Grade		Data Probability	Geometry	Measurement	Algebra
3	Geometry	0.48			
	Measurement	0.62	0.47		
	Numbers and Operations	0.65	0.58	0.63	
4	Geometry	0.47			
	Measurement	0.60	0.47		
	Numbers and Operations	0.65	0.57	0.65	
5	Geometry	0.49			
	Measurement	0.54	0.47		
	Numbers and Operations	0.64	0.54	0.61	
6	Geometry	0.35			
	Measurement	0.49	0.46		
	Numbers and Operations	0.51	0.45	0.57	
	Algebra	0.36	0.33	0.42	0.57
7	Geometry	0.35			
	Measurement	0.49	0.42		
	Numbers and Operations	0.53	0.40	0.59	
	Algebra	0.29	0.29	0.33	0.45
8	Geometry	0.37			
	Measurement	0.46	0.42		
	Numbers and Operations	0.49	0.49	0.62	
	Algebra	0.32	0.32	0.43	0.54

Table 6.5
Spring 2011 Operational Form Intercorrelations Between Section Scores – Mathematics Participation

Grade		Geometry
11	Logic	0.75

Table 6.6
Spring 2011 Operational Form Intercorrelations Between Section Scores – Mathematics Supported Independence

Grade		Geometry	Logic
11	Logic	0.48	
	Algebra	0.35	0.53

Table 6.7
2010–2011 Operational Form Intercorrelations Between Section Scores by Grade – Science Participation

Grade		Constructing & Reflecting	Life Science	Physical Science
5	Life Science	0.74		
	Physical Science	0.69	0.75	
	Earth Science	0.67	0.74	0.76
8	Life Science	0.70		
	Physical Science	0.69	0.74	
	Earth Science	0.67	0.69	0.72
11	Life Science	0.73		
	Physical Science	0.65	0.75	
	Earth Science	0.68	0.75	0.69

Table 6.8
2010–2011 Operational Form Intercorrelations Between Section Scores by Grade – Science Supported Independence

Grade		Constructing & Reflecting	Life Science	Physical Science
5	Life Science	0.57		
	Physical Science	0.49	0.57	
	Earth Science	0.57	0.63	0.52
8	Life Science	0.55		
	Physical Science	0.46	0.62	
	Earth Science	0.54	0.67	0.62
11	Life Science	0.44		
	Physical Science	0.38	0.62	
	Earth Science	0.43	0.69	0.59

Table 6.9
2010–2011 Operational Form Summary Statistics for Section Scores by Grade – ELA Participation

Grade		N	Minimum Score	Maximum Score	Mean	Standard Deviation	Cronbach's Alpha
3	Expressing Ideas	389	0	24	10.62	7.23	0.69
	Text Comprehension	389	0	18	7.03	5.95	0.67
	Word Recognition	389	0	18	7.74	6.40	0.71
4	Expressing Ideas	338	0	24	11.46	7.63	0.72
	Text Comprehension	338	0	18	7.98	6.01	0.63
	Word Recognition	338	0	18	7.88	6.05	0.62
5	Expressing Ideas	325	0	24	10.16	7.72	0.76
	Text Comprehension	325	0	18	7.37	6.25	0.70
	Word Recognition	325	0	18	7.78	6.48	0.72
6	Expressing Ideas	302	0	24	10.41	7.46	0.71
	Text Comprehension	302	0	18	7.75	6.08	0.66
	Word Recognition	302	0	18	7.20	5.98	0.68
7	Expressing Ideas	287	0	24	10.79	7.81	0.74
	Text Comprehension	287	0	18	8.14	6.10	0.65
	Word Recognition	287	0	18	7.63	5.98	0.65
8	Expressing Ideas	266	0	24	11.20	7.87	0.72
	Text Comprehension	266	0	18	7.86	6.11	0.64
	Word Recognition	266	0	18	8.12	6.03	0.63
11	Expressing Ideas	310	0	24	12.77	7.36	0.71
	Text Comprehension	310	0	18	8.06	5.98	0.69
	Word Recognition	310	0	18	9.11	6.51	0.72

Table 6.10
2010–2011 Operational Form Summary Statistics for Section Scores by Grade – ELA Supported Independence

Grade		N	Minimum Score	Maximum Score	Mean	Standard Deviation	Cronbach's Alpha
3	Expressing Ideas	513	0	24	15.74	5.91	0.69
	Text Comprehension	513	0	20	12.22	5.69	0.69
	Word Recognition	513	0	16	9.46	4.30	0.52
4	Expressing Ideas	513	0	24	16.70	5.89	0.71
	Text Comprehension	513	0	20	12.93	5.68	0.72
	Word Recognition	513	0	16	10.21	4.37	0.55
5	Expressing Ideas	488	0	24	17.38	5.69	0.69
	Text Comprehension	488	0	20	13.66	5.51	0.69
	Word Recognition	488	0	16	10.80	3.97	0.46
6	Expressing Ideas	469	0	24	14.03	7.01	0.78
	Text Comprehension	469	0	20	11.28	5.92	0.73
	Word Recognition	469	0	16	10.64	5.01	0.71
7	Expressing Ideas	488	0	24	15.15	6.58	0.74
	Text Comprehension	488	0	20	12.14	5.67	0.70
	Word Recognition	488	0	16	11.64	4.47	0.63
8	Expressing Ideas	511	0	24	16.13	6.40	0.76
	Text Comprehension	511	0	20	13.05	5.25	0.65
	Word Recognition	511	0	16	11.93	4.38	0.64
11	Expressing Ideas	493	0	24	15.41	6.63	0.76
	Text Comprehension	493	0	20	14.62	5.07	0.63
	Word Recognition	493	0	16	12.16	4.24	0.68

Table 6.11
Fall 2010 Operational Form Summary Statistics for Section Scores by Grade – Mathematics Participation

Grade		N	Minimum Score	Maximum Score	Mean	Standard Deviation	Cronbach's Alpha
3	Data Probability	389	0	6	3.51	2.71	
	Geometry	389	0	24	12.17	8.64	0.82
	Measurement	389	0	12	5.14	4.24	0.54
	Numbers and Recognition	389	0	18	6.19	6.10	0.77
4	Data Probability	338	0	6	3.92	2.60	
	Geometry	338	0	24	13.40	8.20	0.78
	Measurement	338	0	12	5.67	4.31	0.51
	Numbers and Recognition	338	0	18	6.10	5.73	0.73
5	Data Probability	324	0	6	3.39	2.70	
	Geometry	324	0	24	11.80	8.60	0.81
	Measurement	324	0	12	5.18	4.34	0.59
	Numbers and Recognition	324	0	18	5.90	6.01	0.77
6	Data Probability	301	0	6	3.22	2.66	
	Geometry	301	0	18	8.04	5.92	0.72
	Measurement	301	0	12	4.74	4.14	0.44
	Numbers and Recognition	301	0	24	11.36	7.94	0.68
7	Data Probability	288	0	6	3.25	2.68	
	Geometry	288	0	18	7.78	5.97	0.70
	Measurement	288	0	12	4.60	4.24	0.51
	Numbers and Recognition	288	0	24	10.70	7.62	0.63
8	Data Probability	265	0	6	3.06	2.69	
	Geometry	265	0	18	7.66	6.34	0.77
	Measurement	265	0	12	5.12	4.38	0.54
	Numbers and Recognition	265	0	24	11.27	8.12	0.72

Table 6.12
Fall 2010 Operational Form Summary Statistics for Section Scores by Grade – Mathematics Supported Independence

Grade		N	Minimum Score	Maximum Score	Mean	Standard Deviation	Cronbach's Alpha
3	Data Probability	511	0	8	4.27	2.70	0.57
	Geometry	511	0	16	12.97	3.74	0.61
	Measurement	511	0	8	4.08	2.85	0.55
	Numbers and Recognition	511	0	28	15.07	7.31	0.73
4	Data Probability	511	0	8	4.47	2.76	0.61
	Geometry	511	0	16	13.15	3.67	0.60
	Measurement	511	0	8	4.25	2.83	0.54
	Numbers and Recognition	511	0	28	16.25	7.49	0.75
5	Data Probability	486	0	8	4.87	2.74	0.61
	Geometry	486	0	16	13.50	3.19	0.49
	Measurement	486	0	8	4.74	2.83	0.54
	Numbers and Recognition	486	0	28	17.21	7.36	0.75
6	Data Probability	468	0	8	5.64	2.63	0.51
	Geometry	468	0	8	5.63	2.23	0.27
	Measurement	468	0	16	8.29	4.83	0.56
	Numbers and Recognition	468	0	24	11.02	6.85	0.72
	Algebra	468	0	4	1.19	1.54	NA
7	Data Probability	485	0	8	6.03	2.43	0.46
	Geometry	485	0	8	5.85	2.17	0.23
	Measurement	485	0	16	9.13	4.78	0.57
	Numbers and Recognition	485	0	24	11.88	6.71	0.69
	Algebra	485	0	4	1.36	1.60	NA
8	Data Probability	512	0	8	6.35	2.25	0.44
	Geometry	512	0	8	5.88	2.12	0.19
	Measurement	512	0	16	9.98	4.58	0.54
	Numbers and Recognition	512	0	24	12.92	7.03	0.73
	Algebra	512	0	4	1.65	1.72	NA

Table 6.13
Spring 2011 Operational Form Summary Statistics for Section Scores – Mathematics Participation

Grade		N	Minimum Score	Maximum Score	Mean	Standard Deviation	Cronbach's Alpha
11	Geometry	307	0	12	6.85	4.33	0.54
	Logic	307	0	48	23.42	15.07	0.86

Table 6.14
Spring 2011 Operational Form Summary Statistics for Section Scores – Mathematics Supported Independence

Grade		N	Minimum Score	Maximum Score	Mean	Standard Deviation	Cronbach's Alpha
11	Algebra	491	0	8	3.93	2.70	0.29
	Geometry	491	0	12	9.49	2.65	0.39
	Logic	491	0	40	25.25	10.52	0.81

Table 6.15
2010–2011 Operational Form Summary Statistics for Section Scores by Grade – Science Participation

Grade		N	Minimum Score	Maximum Score	Mean	Standard Deviation	Cronbach's Alpha
5	Constructing & Reflecting	311	0	12	5.07	4.52	0.64
	Life Science	311	0	30	13.32	9.65	0.80
	Physical Science	311	0	30	12.08	8.91	0.73
	Earth Science	311	0	18	7.79	6.24	0.73
8	Constructing & Reflecting	253	0	12	4.78	4.39	0.64
	Life Science	253	0	30	15.50	10.47	0.83
	Physical Science	253	0	30	14.12	9.55	0.79
	Earth Science	253	0	18	7.90	5.81	0.62
11	Constructing & Reflecting	310	0	12	6.41	4.79	0.70
	Life Science	310	0	30	15.08	10.45	0.82
	Physical Science	310	0	30	14.43	8.80	0.69
	Earth Science	310	0	18	8.62	6.17	0.65

Table 6.16
2010–2011 Operational Form Summary Statistics for Section Scores by Grade – Science Supported Independence

Grade		N	Minimum Score	Maximum Score	Mean	Standard Deviation	Cronbach's Alpha
5	Constructing & Reflecting	468	0	8	5.99	2.59	0.53
	Life Science	468	0	28	20.78	6.57	0.71
	Physical Science	468	0	12	7.43	3.80	0.55
	Earth Science	468	0	20	13.23	5.33	0.59
8	Constructing & Reflecting	498	0	8	6.28	2.56	0.59
	Life Science	498	0	28	17.95	6.90	0.67
	Physical Science	498	0	12	7.66	3.59	0.49
	Earth Science	498	0	20	14.28	5.44	0.68
11	Constructing & Reflecting	488	0	8	4.86	2.78	0.31
	Life Science	488	0	28	22.05	7.06	0.80
	Physical Science	488	0	12	8.69	3.22	0.47
	Earth Science	488	0	20	12.75	5.33	0.63

7. Summary of Items Flagged for Difficulty and Discrimination

The Michigan Department of Education, Bureau of Assessment and Accountability established the following criteria for flagging items based on their difficulty and discrimination:

PL flag if the adjusted p-value is less than 0.10
PH flag if the adjusted p-value is greater than 0.90
CL flag if the item-total correlation is less than 0.25.

The adjusted p-value is equal to the item mean divided by the maximum item score.

Table 7.1 summarizes the number of flagged items by level, content area, and grade. The table also shows the total number of items, core and field test, for each assessment. Only one item was flagged for the Participation assessments. For the Supported Independence assessments, no items were flagged for the lower bound difficulty (PL). For the upper bound difficulty, only two items were flagged for the grade 11 ELA assessments, only 1 or 2 items were flagged at each grade of the Mathematics assessments, and only one grade 8 item was flagged for Science. For discrimination, no items were flagged for ELA, only two items at grade 3 and one item at grade 5 Mathematics were flagged, and four items at grade 8 and two items at grade 11 Science were flagged.

Table 7.1
Number of Items Flagged for Difficulty and Discrimination

Grade	Participation				Supported Independence			
	Total Number of Items	Difficulty Flag		Item-Total Correlation Flag[3]	Total Number of Items	Difficulty Flag		Item-Total Correlation Flag[3]
		PL[1]	PH[2]			PL[1]	PH[2]	
ELA								
3	25	0	0	0	30	0	0	1
4	25	0	0	0	30	0	0	2
5	25	0	0	0	30	0	0	2
6	25	0	0	0	30	0	0	0
7	25	0	0	1	30	0	0	0
8	25	0	0	0	30	0	0	0
11	25	0	0	0	30	0	2	0
Mathematics								
3	25	0	0	0	30	0	1	2
4	25	0	0	0	30	0	1	0
5	25	0	0	0	30	0	2	1
6	25	0	0	0	30	0	1	0
7	25	0	0	0	30	0	1	0
8	25	0	0	0	30	0	1	0
11	25	0	0	0	30	0	2	0
Science								
5	30	0	0	0	32	0	0	0
8	30	0	0	0	32	0	1	4
11	30	0	0	0	32	0	0	2

[1]PL = p-value < 0.10
[2]PH = p-value > 0.90
[3]Item-total correlation < 0.25

8. Verification of Psychometric Procedures

As the independent psychometric quality assurance provider for the MI–Access Supported Independence and Participation programs, HumRRO was responsible for reviewing and assuring that all psychometric procedures were carried out accurately by Questar Assessment, Inc. For these assessments, classical statistics were checked for ELA (grades 3 – 8 and 11), Mathematics (grades 3 – 8 and 11), and Science (grades 5, 8, and 11). Classical statistics were checked for all items, core and field-test (FT).

Classical Statistics

The check of Questar's classical statistics results was done on the final files with core and FT items. HumRRO staff wrote custom SAS® programs to calculate a predetermined set of statistics variables. HumRRO then compared their results to Questar's. The variables checked were:

Number of Students
P-value or item mean divided by maximum score
Item Score Mean
Item Standard Deviation
Corrected/Adjusted Item-Total Correlation– For core items the total score excludes the item. For field-test items, correlation is between the item and the total raw score for core items.
Number of students with a score of 0
Number of students with a score of 1
Number of students with a score of 2
Number of students with a score of 3
Number of students with a score of 4
Number of students with a score of 5 (Participation only)
Number of students with a score of 6 (Participation only)
Percent of students with a score of 0
Percent of students with a score of 1
Percent of students with a score of 2
Percent of students with a score of 3
Percent of students with a score of 4
Percent of students with a score of 5 (Participation only)
Percent of students with a score of 6 (Participation only)
Corrected point biserial correlation for those scoring 0
Corrected point biserial correlation for those scoring 1 point
Corrected point biserial correlation for those scoring 2 points
Corrected point biserial correlation for those scoring 3 points
Corrected point biserial correlation for those scoring 4 points
Corrected point biserial correlation for those scoring 5 points (Participation only)
Corrected point biserial correlation for those scoring 6 points (Participation only)
Number of omits by Primary Scorer
Number with multi-marks by Primary Scorer
Number with condition code A by Primary Scorer
Number with condition code B by Primary Scorer
Number with condition code C by Primary Scorer

Number of scores of 1 by Primary Scorer
Number of scores of 2 by Primary Scorer
Number of scores of 3 by Primary Scorer (Participation only)
Percent of omits by Primary Scorer
Percent with multi-marks by Primary Scorer
Percent with condition code A by Primary Scorer
Percent with condition code B by Primary Scorer
Percent with condition code C by Primary Scorer
Percent of scores of 1 by Primary Scorer
Percent of scores of 2 by Primary Scorer
Percent of scores of 3 by Primary Scorer (Participation only)
Number of omits by Shadow Scorer
Number with multi-marks by Shadow Scorer
Number with condition code A by Shadow Scorer
Number with condition code B by Shadow Scorer
Number with condition code C by Shadow Scorer
Number of scores of 1 by Shadow Scorer
Number of scores of 2 by Shadow Scorer
Number of scores of 3 by Shadow Scorer (Participation only)
Percent of omits by Shadow Scorer
Percent with multi-marks by Shadow Scorer
Percent with condition code A by Shadow Scorer
Percent with condition code B by Shadow Scorer
Percent with condition code C by Shadow Scorer
Percent of scores of 1 by Shadow Scorer
Percent of scores of 2 by Shadow Scorer
Percent of scores of 3 by Shadow Scorer (Participation only)
P-Value Flag: if the P-value was less than 0.10 or greater than 0.90 (Participation)
P-Value Flag: if the P-value was less than 0.10 or greater than 0.90 (Supported Independence)
Item-Total Correlation Flag: if the point biserial was less than 0.25.

HumRRO matched all the variables (which were rounded to the second decimal place) at all grade/subject levels. Table 8.1 shows the matches that were verified for Supported Independence and Participation by subject and grade.

The following emails were sent by HumRRO to the Michigan Department of Education, Office of Educational Assessment and Accountability to announce when verification of a particular assessment had been made:

February 22, 2011 “SI and PA – Core and FT verification for MI-Access” [Final Item Analyses for ELA (grades 3–8), Mathematics (grades 3–8), and Science (grades 5 and 8)].

June 17, 2011 “SI and PA – Core and FT verification for MI-Access (Grade 11)” [Final Item Analyses for ELA (grade 11), Mathematics (grade 11), and Science (grade 11)].

Table 8.1
HumRRO's Verification of Item Analyses, by demographic subgroup, for Supported Independence and Participation Assessments

	Demographic Groups						
Grade	All	Black	White	Male	Female	Economic–Disadv	Non–Disadv
ELA							
3	✓	✓	✓	✓	✓	✓	✓
4	✓	✓	✓	✓	✓	✓	✓
5	✓	✓	✓	✓	✓	✓	✓
6	✓	✓	✓	✓	✓	✓	✓
7	✓	✓	✓	✓	✓	✓	✓
8	✓	✓	✓	✓	✓	✓	✓
11	✓	✓	✓	✓	✓	✓	✓
Mathematics							
3	✓	✓	✓	✓	✓	✓	✓
4	✓	✓	✓	✓	✓	✓	✓
5	✓	✓	✓	✓	✓	✓	✓
6	✓	✓	✓	✓	✓	✓	✓
7	✓	✓	✓	✓	✓	✓	✓
8	✓	✓	✓	✓	✓	✓	✓
11	✓	✓	✓	✓	✓	✓	✓
Science							
5	✓	✓	✓	✓	✓	✓	✓
8	✓	✓	✓	✓	✓	✓	✓
11	✓	✓	✓	✓	✓	✓	✓

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