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# Characteristics of Students Who Take an Alternate Assessment Based on Modified Achievement Standards

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## Abstract

Alternate assessments based on modified achievement standards (AA-MAS) are designed to measure the academic achievement of students with disabilities who are not expected to reach grade-level standards but who do not qualify for alternate assessments based on alternate achievement standards (AA-AAS). This article describes the 2010 participants of one state's AA-MAS. AA-MAS test-takers included a higher proportion of males than were recorded for the general test, and they were more likely than other students with disabilities to be of minority ethnicity, to be English language learners, and to experience poverty. AA-MAS participants were representative of groups who are more likely than average to drop out of school due to these risk factors. Understanding the characteristics of these students will be crucial as the Common Core State Standards are widely adopted and new assessments are created to measure these standards without special testing considerations for this population.

## Keywords

assessment/evaluation, developmental disabilities, testing/state standards

The population of students for whom an alternate assessment based on modified achievement standards (AA-MAS) is now permitted is currently the subject of discussion due to upcoming changes in educational standards and large-scale accountability tests. Up to 2% of all students can currently be included as proficient for the purpose of adequate yearly progress (AYP) based on their performance on this type of alternate assessment (U.S. Department of Education, 2007). This is in addition to the 1% of students who can be counted as proficient as a result of performance on an alternate assessment based on alternate achievement standards (AA-AAS; U.S. Department of Education, 2003). However, Secretary of Education, Arne Duncan, recently said, “We will not issue another policy that allows districts to disguise the educational performance of 2% of students” (Duncan, 2011). How will this new policy impact these students? To begin to answer this question, we first need to know who we are talking about.

This article will briefly review the history of the so-called 2% population and AA-MAS tests under the No Child Left Behind (NCLB) Act and then describe the characteristics of the tested population in one midwestern state. No previous descriptive studies have provided a thorough analysis of the characteristics of students who are selected by their Individualized Education Program (IEP) teams for these assessments. This subject attains increased importance as the Common Core State Standards developed by

the Council of Chief State School Officers and the National Governors Association (Common Core State Standards Initiative [CCSSI], 2010) have been widely adopted, and new state assessments are being planned without explicit provisions for these students.

A study of Colorado's “students in the gap,” who performed at the lowest levels on the general assessments but who were not eligible for the alternate assessment (HB 05-1246 Study Committee, 2005), was one of the early sources of information about students who may need a specialized assessment other than a general or alternate assessment. These were students receiving special education services who were unable to show progress on general curricular assessments or who obtained perfect scores on the alternate assessment.

In regulations authorized on April 9, 2007 (U.S. Department of Education, 2007), AA-AAS was contrasted with AA-MAS. AA-MAS tests were to be based on the general content standards for the grade in which a child with disabilities was enrolled, but the academic achievement demands could be reduced in breadth and complexity.

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AA-MAS tests were to be permitted for use in identifying up to 2% of the total population of students as proficient or advanced for the purpose of AYP.

Information on AA-MAS and their eligibility criteria have been compiled by the National Center on Educational Outcomes (Lazarus, Hodgson, & Thurlow, 2010; Lazarus, Rogers, Cormier, & Thurlow, 2008; Lazarus, Thurlow, Christensen, & Cormier, 2007). Lazarus et al. (2007) described the features of the students and tests in the six states that were among the first to develop assessments for this population of students. Eligibility characteristics included having an IEP and being multiple years below grade level in achievement. By 2008, nine states had developed AA-MAS (Lazarus et al., 2008). Most states allowed students to participate in different assessment types (such as the general assessment and an alternate assessment), and in different subject areas, depending on the impact of the child's disability on academic achievement with respect to grade-level standards. In 2009 (Lazarus et al., 2010), a majority of the 14 states with AA-MAS required students to have access to grade-level instruction and to have grade-level goals on their IEPs yet not be expected to reach grade-level achievement within the current IEP year. Most states required multiple sources of information to determine that the AA-MAS would be the most appropriate assessment for a student. Several states had additional criteria, such as the requirement that eligible students must receive specialized instruction and accommodations or modifications in the classroom, must not be eligible for an AA-AAS, and must not have significant cognitive disabilities. Half of the states with 2009 AA-MAS defined exclusionary criteria, such as excessive absences, cultural or language differences, and economic or environmental factors. All but two states permitted students to take some combination of AA-MAS, AA-AAS, and general assessments, though only three allowed students to combine an AA-AAS with either or both an AA-MAS and a general assessment.

Elliott, Kettler, and Roach (2008) described AA-MAS tests as covering grade-level content but at a lower level of complexity or difficulty than general assessments. The AA-MAS will be better aligned with the instructional curriculum than out-of-level tests and should fall somewhere between the AA-AAS and general assessments in terms of difficulty. According to the authors, informal estimates provided by representatives of state departments of education suggested that as many as 3% to 9% of students might meet eligibility criteria for this type of test. The authors noted that areas of continuing ambiguity in AA-MAS included (a) the definition of proficiency for these tests and students, (b) the need for standard-setting procedures that recognize the characteristics of this population and their learning challenges, (c) confusion and controversy over modifications and accommodations and how to defend test validity and score inferences from altered tests, and (d) how to maintain

grade-level standards without compromising breadth and depth of content. Based on test and student data from a four-state project designed to investigate participation in the AA-MAS, Elliott et al (2008). recommended the use of screening and practice tests as a promising avenue for identifying students for whom the AA-MAS would be the best assessment option, whereas Fuchs, Seethaler, Fuchs, and Hamlett (2008) recommended curriculum-based measurement for this purpose.

Zigmond and Kloo (2009) described the difficulties states face in defining this population. One option for states would be to have students who are nearly proficient to take the AA-MAS, though this option would likely result in the creation of a separate educational "track" for these students. Such an outcome would be incompatible with the movement to create higher expectations for students with disabilities. Another option would be to choose students who are nowhere near meeting proficiency standards. This approach would be advantageous because it would result in a small group of students being designated for the AA-MAS, it would avoid the creation of a "track" for all nonproficient students with disabilities, and it would give this group of students credit for the large amount of effort they expend to meet proficiency standards. A disadvantage to this approach is that students who are currently nowhere near meeting proficiency standards may be given a narrower curriculum with lower expectations, so it would be questionable to assert that they are meeting grade-level standards when they pass the AA-MAS. Furthermore, allowing students to begin a modified curriculum early in their education makes it nearly impossible for these students to catch up with their peers. This approach would also be challenging to implement and potentially unfair to other students.

Thurlow (2008) noted that states had strong incentives to develop AA-MAS assessments because they would be permitted the option of counting up to 2% of all students as proficient pending the completion of their AA-MAS tests. She estimated that the population of students eligible for the AA-MAS would be about 18% of students with disabilities who receive special education services. Thurlow noted that identifying students who will meet the federal eligibility criteria, such as verifying that students have received appropriate instruction yet will not be able to reach grade-level expectations, will be a challenge for states.

When the final regulations were promulgated on April 9, 2007, five states already had assessments that they believed fit the AA-MAS criteria. These assessments had been developed using techniques such as fewer and shorter reading passages, simplified vocabulary, fewer total test items, extended time for testing, and fewer response options. Students identified as the most likely participants included students with autism, learning disabilities, and intellectual disabilities (Altman et al., 2008).

Lazarus et al. (2007) described the six AA-MAS tests then in place as characterized by fewer and simpler items, shorter reading passages, larger font size, fewer items per page, simplified language, removal of a distracter, and a variety of response formats, including multiple-choice and constructed response items as well as portfolios. Albus, Lazarus, Thurlow, and Cormier (2009) reported that AA-MAS covered the same content as general tests but frequently differed in the proportion of coverage for the various standards. The authors found that all AA-MAS tests included multiple-choice items, whereas some also used constructed responses, writing samples, and performance tasks. Accommodations on AA-MAS tests reflected features such as larger font, fewer items per page, more white space, bold or underlined key text, and oral presentation.

In one midwestern state, AA-MAS tests are based on state curricular achievement standards, but achievement expectations are reduced, and test items are modified from the general assessment. Students may be deemed eligible for the AA-MAS in one or more subject areas by their IEP teams. For instance, a student with a severe reading disability may be designated for the AA-MAS in reading at his or her grade level even though he or she may take the general mathematics assessment in the same year. Conversely, students may take an AA-MAS in one subject area and an AA-MAS in another.

The AA-MAS is the conceptual successor to modified assessments that were developed to meet the Individuals With Disabilities Education Act of 1997 mandate for the inclusion of all students with disabilities in district and state assessment programs as of July 2000. Although the AA-MAS was created for students with the most significant cognitive disabilities, the original modified assessments targeted students with milder disabilities who were not expected to reach grade-level academic achievement. Eligibility guidelines for the modified assessments suggested that students for whom these assessments would be most appropriate included students with disabilities who had scored below the fourth percentile on previously administered achievement tests, especially on individually administered tests used in special education eligibility evaluations. A student was required to have an IEP or a 504 plan to be considered eligible for the modified assessments and could not simultaneously meet eligibility criteria for the alternate assessment. At that time, as now, a student may have been eligible for a modified assessment in one subject area and a general assessment in another area. For example, a student with a mathematics disability may have taken a modified mathematics assessment but general reading and science assessments. It was anticipated during early development in 1999 that up to 2% of the student population would be eligible for and would be assessed on the modified tests, and eligibility criteria were established with this limit in mind.

During the spring of 2001, a study designed to investigate the relationship between a fourth-grade AA-MAS math test and the general fourth-grade math assessment used item response theory and a common block of 15 items to place test items and examinees' mathematics ability for the modified test onto the same scale as test items and math ability on the general assessment. Modified test items were at a lower difficulty level than the general test items overall, and the math ability of students who took the modified test formed a distribution centered approximately two standard deviations below the mean of general test-takers. This finding was in contrast to the largely overlapping distributions of ability for students with and without disabilities who took the general assessment. The modified test was shown to be a more efficient measure than the general assessment for fourth-grade students with disabilities whose math ability was more than one standard deviation below the mean of math ability in the tested sample (Shaftel, Yang, Glasnapp, & Poggio, 2005).

The original modified tests were operational from the spring of 2000 through the spring of 2005. New AA-MAS assessments were developed for the first NCLB test cycle in the spring of 2006. Test specifications for the current AA-MAS reduced the number of indicators selected for assessment and the number of items used to assess each indicator. Item modifications included using simplified versions of general assessment items, fewer passages and a lower reading level on reading tests, and three response options for multiple-choice questions instead of four. Rather than defining built-in accommodations, approved accommodations are available during administration just as they are on the general assessments. As the general assessments and AA-MAS are primarily computer based, a pencil-and-paper format is one of the allowable accommodations.

In this state, any test accommodation is available for any student who needs it and who uses that accommodation regularly for instruction. State assessments are not speeded; they are constructed and scheduled so that all students should have ample time to complete each assessment. If more time is needed, it should be provided for any student. Therefore, extended time is not considered an accommodation. Accommodations such as Braille or large-print test forms, sign language interpretation, and dictation of answers to scribes, are used infrequently. In addition to taking the test in a separate, quiet location and having frequent breaks, popular accommodations include having the test read aloud (except for reading passages) and taking the test as a pencil-and-paper assessment rather than on a computer screen.

Though the AA-MAS has now been in use for several years, the characteristics of the students who take it have not previously been described. One of the objectives of this study was to investigate the population of students who take the AA-MAS and to compare and contrast them with students with and without disabilities who take the general

assessments, to develop an overall picture of the students in the 2% group for whom these assessments were designed. In addition, accommodations used by these students were tabulated to compare their use with usage on the general assessments.

## Method

### Participants

Participants in this study included all students who took the reading, math, and science state assessments in 2010. Personal identifiers such as names, identification numbers, birthdates, and school information were removed from the data set prior to data analysis to protect the anonymity of the students.

The students being analyzed live in a midwestern state with a population of approximately 3 million people (U.S. Census Bureau, 2010). The state's population is 84% White, 11% Hispanic, 6% Black, 2% Asian, and 1% Native American. The state has fewer racial and ethnic minorities when compared with national U.S. census statistics (72% White, 16% Hispanic, 13% Black, 5% Asian, and 1% Native American, respectively). The state's median household income is about US\$47,700, which is lower than the national median of US\$50,200. Close to 90% of the state's population graduated from high school while approximately 29% hold bachelor's degrees or higher. The state's educational attainment is slightly higher than the national statistics of 85% for high school graduation and 28% for college completion.

### Data Collection

Student characteristics and assessment data were obtained from the state test contractor's records of the spring 2010 statewide assessment administration, the most recent year for which data were available. Variables of interest included demographic information such as sex, race, grade, migrant status, English-learner status, and whether the student was eligible for free or reduced lunch. Additional student characteristics included disability status, whether the student took the AA-MAS or the general statewide assessment, and the accommodations used by each student.

As this was a descriptive study, no coding or interpretation of data was required. Student characteristics were reported as contained in the state's assessment database for spring 2010. This database includes variables for each of the demographic and educational attributes listed above.

### Data Analyses

The current study focuses on the features of the population of students who took the AA-MAS. Therefore, demographic

characteristics and categories of special education identification were calculated for students who took the AA-MAS in each subject area and at each grade. For comparison purposes, these characteristics were also summarized for all students with disabilities and for the entire population of students.

Chi-square tests were computed for the frequencies of demographic variables to evaluate whether the AA-MAS population differs from students who take general assessments. For all statistical tests, the a priori alpha level was set at .05. Because of apparent changes in the AA-MAS population in high school, national drop-out data were examined to determine whether AA-MAS participants were among the groups more likely to drop out of school before completing required NCLB assessment. It was not possible to determine whether individual students were among the dropouts but only whether certain characteristics were risk factors for dropping out.

## Results

The data in Table 1 were derived from the 2010 statewide assessment. For this table, all grades at which an AA-MAS is available were combined for each subject. Because reading and math are each tested at seven grades, the population of reading and math test-takers is larger than for science, which is tested only 4 times: once in Grades 4 and 7 and twice in high school with separate life science and physical science assessments.

The percentages of some student characteristics vary across subject areas due to the impact of those characteristics on the test. For example, the AA-MAS reading tests have a higher proportion of students with specific learning disabilities. Developmental delay is a special education category that applies only through age 9, or through Grades 3 and 4. As the reading and math tests are given more frequently at the younger ages, the average proportion of special education students within this category will be larger than for the science tests, for which half the test-taking population is enrolled in high school. More English language learner (ELL) students take the AA-MAS in reading than in other subjects, possibly because of the impact of the challenge of learning a second language on reading performance. A greater proportion of females take the AA-MAS in mathematics than in reading or science.

More males are identified as having disabilities, in almost a two-to-one ratio to females. This trend is consistent with special education services as reported by the U.S. Department of Education in its *28th Annual Report to Congress on the Implementation of the Individuals With Disabilities Act, 2006* (2006). Consequently, more males than females take the AA-MAS. The sex ratio is significantly different for students with disabilities, whether or not they take the AA-MAS, than for students without disabilities,  $\chi^2 = 2711.492, p < .001$ .

**Table 1.** Demographic Characteristics as Percentage of AA-MAS Participants, All Students With Disabilities, and All Students

Characteristic	AA-MAS participants			All students with disabilities			All students		
	Reading	Math	Science	Reading	Math	Science	Reading	Math	Science
Population	8,037	7,349	3,058	30,910	31,192	15,769	261,712	264,670	142,854
Percentage of total (%)	3	3	2	12	12	11			
Male	65	61	63	65	65	66	51	51	51
ELL	12	11	9	8	7	6	8	8	7
Migrant	1	1	1					1	
Race/ethnicity									
Native American	2	2	3	2	2	2	1	1	1
Asian	1	1	1	1	1	1	3	3	3
Black	16	17	16	10	10	10	7	7	7
Hispanic	19	18	18	14	14	13	15	15	14
White	57	57	59	69	69	70	70	70	71
Other	4	4	4	4	4	4	4	4	4
Lunch support									
Reduced	10	10	11	12	12	12	10	10	10
Free	60	58	56	48	48	46	34	34	31
Primary disability									
Autism	3	4	4	3	3	3			
Deaf-blindness									
Developmental delay	3	3	2	3	3	1			
Emotional disturbance	4	5	5	6	6	7	1	1	1
Hearing impairment	1	1	2	1	1	1			
Learning disabilities	61	57	55	53	53	56	6	6	6
Multiple disabilities									
Intellectual disabilities	11	12	15	4	3	4			1
Other health impairment	13	15	14	14	14	16	2	2	2
Orthopedic impairment			1	1	1	1			
Speech-language	2	2	2	15	15	11	2	2	1
Traumatic brain injury		1	1						
Visual impairment									
Secondary disability									
Autism									
Deaf-blindness									
Developmental delay									
Emotional disturbance	1	1	1			1			
Hearing impairment									
Learning disabilities	1	1	1	1	1	1			
Multiple disabilities									
Intellectual disabilities									
Other health impairment	1	1	2	1	1	1			
Orthopedic impairment									
Speech-language	21	20	16	13	13	10	2	2	1
Traumatic brain injury									
Visual impairment									

Note: AA-MAS = alternate assessments based on modified achievement standards; ELL = English language learner. Cells have been left blank when less than 0.5% of students occur in a category.

A very small percentage of AA-MAS participants in all subjects, about 1%, is made up of migrant students. This is a larger percentage than in the population of students who take general assessments, which is less than 0.5%, but the

difference is not statistically significant,  $\chi^2 = 4.960$ ,  $p = .084$ .

Students of lower socioeconomic status (SES), as measured by free and reduced price lunch eligibility, are also

better represented on the AA-MAS, with about two thirds of AA-MAS test-takers in one of those two categories compared with 60% of all special education students and 44% of the entire student population. The difference between students who take the AA-MAS and students with or without disabilities who take the general assessments is statistically significant,  $\chi^2 = 2706.324, p < .001$ . Within AA-MAS subject areas, slightly more students of lower SES take the reading tests than the math or science tests.

In terms of race and ethnicity, AA-MAS participants constitute a more heterogeneous group than the overall population, with higher numbers of Native American, Black, and Hispanic students but fewer Asian and White students. AA-MAS test-takers are significantly more likely to be of minority ethnicity than general test-takers with or without disabilities,  $\chi^2 = 1188.206, p < .001$ . The large enrollment of Black and Hispanic students on the AA-MAS, when compared with their proportions in the population of students with disabilities, implies that members of these groups are more likely to be identified with disabilities significant enough to make them eligible for AA-MAS participation than are White and Asian students. For Black students, this is consistent with national trends toward overrepresentation of Black students in special education as reported by the U.S. Department of Education (2006). Interestingly, the proportion of Hispanic students identified as having any type of disability is slightly lower than their proportion in the general student population, suggesting that fewer Hispanic students are identified for special education services unless they have more serious disabilities, which then makes them eligible for the AA-MAS. This, too, is consistent with trends toward underrepresentation of Hispanics in special education except for specific learning disabilities (U.S. Department of Education, 2006). This trend is confirmed by the numbers of ELL students who are enrolled in special education, which is slightly lower in proportion than the general education ELL population, both predominantly made up of Spanish speakers.

When special education categories are compared, it is evident that students with specific learning disabilities, intellectual disabilities, and other health impairment make up the largest primary special education categories on the AA-MAS, with speech-language impairment representing the largest of the secondary categorical labels applied to students with a primary disability in another category. Students with emotional disturbance and speech-language impairment are less likely to take the AA-MAS than the general assessment, whereas students with intellectual disabilities are more likely to be eligible for the AA-MAS. Students in many low-incidence categories of disability, such as deaf-blindness, multiple disabilities, and traumatic brain injury, are more likely to be eligible for the AA-AAS than the AA-MAS, and their participation in the AA-MAS is negligibly small. Differences in the proportions of students in disability categories for the AA-MAS and the general assessments are significant,

even when only students with disabilities are compared,  $\chi^2 = 82786.299, p < .000$ .

Demographic and special education changes across grades can be seen in Table 2, using reading as the content area, with rows containing 1% or fewer students in a special education category eliminated. In terms of changes in special education categories, the proportion of students with emotional disturbance, intellectual disabilities, and other health impairment taking the AA-MAS increases whereas students with speech-language impairment, both primary and secondary, decreases. The latter finding may occur because fewer students receive special education and related services for speech and language impairment in high school. At the same time, a number of students with mild cognitive disabilities who previously participated in general assessments may become eligible for the AA-MAS in high school. Alternatively, students who were eligible for the AA-MAS at the elementary level may no longer take the AA-MAS in higher grades if they are assigned to the AA-AAS when their instructional needs diverge significantly from those of their same-age peers and grade-level achievement expectations climb further out of reach.

The proportion of students who receive free lunch decreases with higher grade whereas that of reduced price lunch holds steady or increases slightly, suggesting that students experiencing greater poverty participate less in the AA-MAS at high school. The proportions of students who are ELLs or who are Hispanic, two categories with substantial overlap, decrease at higher grades, whereas the proportion of White students remains fairly constant. These demographic changes may have several causes. For instance, students who take the AA-MAS may be more likely to drop out of high school than students with disabilities who take the general assessment or than students without disabilities. This hypothesis is supported by the demographic makeup of high-school dropouts as shown by data from the National Center on Educational Statistics (Chapman, Laird, & KewalRamani, 2010) and the National High School Center (Monrad, 2007; National High School Center, 2009a, 2009b). Ethnic and racial minorities, students with disabilities, and students with other challenges to academic achievement, including low SES and nonnative English language proficiency, drop out at higher rates than their proportion in the overall population. As AA-MAS participants have disabilities, they are at higher risk a priori for failing to complete high school. Furthermore, AA-MAS test-takers include greater proportions of racial and ethnic minorities and students living in poverty than the overall population, putting AA-MAS examinees as a group in greater jeopardy of dropping out than students who take the general assessments.

Students with disabilities use accommodations much more frequently than students without disabilities, even on the general assessments. Details of the accommodations

**Table 2.** Demographic Characteristics as Percentage of AA-MAS Participants in Reading by Grade

Characteristic	Third	Fourth	Fifth	Sixth	Seventh	Eight	HS
Population	1,110	1,232	1,262	1,203	1,051	1,055	1,124
Male	67	66	63	63	66	64	64
ELL	14	13	13	13	13	12	7
Migrant	1	1	1	1	1	1	
Race/ethnicity							
Native American	2	2	2	2	2	2	3
Asian	1	2	2	1	1	1	1
Black	13	15	17	18	16	16	17
Hispanic	20	19	20	19	19	18	18
White	59	58	54	55	58	58	59
Other	4	4	4	5	4	4	4
Lunch support							
Reduced	9	9	12	10	12	11	11
Free	63	64	63	62	57	57	54
Special education: Primary							
Autism	3	3	4	3	3	3	2
Developmental delay	17	6	1				
Emotional disturbance	2	3	4	5	4	5	7
Hearing impairment	1	1	1	1	1	1	1
Learning disability	56	63	66	63	62	60	57
Intellectual disabilities	6	7	9	12	13	14	18
Other health impairment	10	12	12	14	14	15	14
Orthopedic impairment	1	1					1
Speech–language	5	4	2	2	1	1	1
Traumatic brain injury						1	1
Special education: Secondary							
Emotional disturbance				1	1	1	1
Hearing impairment							1
Learning disability	1	1	1	1	1	2	2
Other health impairment	1	1	1	1	1	1	2
Speech–language	28	27	25	20	19	14	8

Note: AA-MAS = alternate assessments based on modified achievement standards; HS = high school; ELL = English language learner. Cells have been left blank when less than 0.5% of students occur in a category.

used by this population are shown in Table 3. Note that this table differs from the other two in that the comparison categories for the AA-MAS consist of all students with disabilities and students without disabilities. This allows for a mutually exclusive comparison of accommodation use between students with and without disabilities.

Students who take the AA-MAS are significantly more likely to use each accommodation than are students who take the general assessments, with the sole exception of large-print format. On the AA-MAS (a) close to half of the students with disabilities use a quiet or separate setting, most likely a resource room rather than a general education classroom; (b) almost one third take frequent breaks; (c) more than half have tests read aloud to them individually; and (d) a smaller percentage have tests read aloud to them as a group. These percentages are not dissimilar to those of all students with disabilities, the vast majority of whom take general assessments.

## Discussion

This investigation demonstrates that students who are selected by their IEP teams as eligible for the AA-MAS differ in meaningful ways from students with disabilities who take general assessments. These students experience intense educational challenges related to key demographic characteristics, such as nonnative English language proficiency and poverty. Furthermore, students who identify themselves as Native American, Hispanic, or Black are overrepresented in this population. Regarding special education categorization, students assigned to the AA-MAS by their IEP teams have more severe disabilities. Common disabilities for AA-MAS participants include autism, developmental delay in the early grades, specific learning disabilities, and intellectual disabilities, along with the secondary special education label of speech–language impairment. In contrast, students with disabilities who are more likely to take the general assessments have higher

**Table 3.** Accommodation Use by AA-MAS Participants, Students With Disabilities, and Students Without Disabilities

Accommodation		AA-MAS participants			Students with disabilities			Students without disabilities		
		Reading	Math	Science	Reading	Math	Science	Reading	Math	Science
Population		8,037	7,349	3,058	30,910	31,192	15,769	230,802	233,478	127,085
Quiet setting	<i>n</i>	3,764	3,417	1,074	13,375	13,492	5,286	10,189	9,955	2,544
	%	47	46	35	43	43	34	4	4	2
Frequent breaks	<i>n</i>	2,198	2,030	614	7,338	7,555	2,860	3,056	2,884	823
	%	27	28	20	24	24	18	1	1	1
Braille edition	<i>n</i>	8	10	4	21	19	12	1		
	%									
Large-print edition	<i>n</i>	0	0	0	40	42	17	22	22	11
	%									
Magnification	<i>n</i>	8	11	2	30	31	14	8	15	6
	%									
Dictated answers	<i>n</i>	130	128	55	331	340	152	27	28	13
	%	2	2	2	1	1	1			
Individual read-aloud	<i>n</i>	4,833	4,219	1,600	12,752	12,935	5,631	8,731	8,429	2,877
	%	60	57	52	41	41	36	4	4	2
Communication device	<i>n</i>	42	36	19	120	105	43	61	46	4
	%	1		1						
Group read-aloud	<i>n</i>	1,151	1,043	392	2,911	3,086	1,286	2,514	2,696	894
	%	14	14	13	9	10	8	1	1	1
Other accommodation	<i>n</i>	225	149	48	862	652	236	663	594	148
	%	3	2	2	3	2	1			
Signed directions	<i>n</i>	49	33	20	116	60	43	58	3	0
	%	1		1						
Signed responses	<i>n</i>	5	6	3	11	13	8	1	1	0
	%									
Braille responses	<i>n</i>	12	6	1	28	6	1	8	0	0
	%									
Paper and pencil	<i>n</i>	514	415	141	921	888	315	617	594	223
	%	6	6	5	3	3	2			
Student use of tape recorder	<i>n</i>	63	32	6	277	197	60	360	180	57
	%	1			1	1				
Translation dictionary	<i>n</i>	21	20	17	45	39	29	302	192	75
	%	0	0	1						
Spanish edition	<i>n</i>					11	1		356	131
	%									

Note: AA-MAS = alternate assessments based on modified achievement standards. Cells have been left blank when less than 0.5% of students occur in a category.

rates of identification with emotional disturbance and speech–language impairment as their primary disability. The AA-MAS population is particularly at risk for failing to complete high school because of its combination of attributes.

Only one other study (Elliott et al., 2010) has published demographic information for the 2% population, and no prior study has looked exclusively at the characteristics of this group of learners. Although the variance in eligibility criteria for the AA-MAS across states makes generalization difficult, there are some striking similarities where data are available. Elliott et al. (2010) published the demographics

of 250 eighth-grade students who were eligible for the AA-MAS in four states (Arizona, Hawaii, Idaho, and Indiana). The demographic information of their sample is reproduced in Table 4, along with similar data from the eighth-grade students in the present study.

Across both samples, the proportion of males to females was similar, consistent with national parameters. Regarding the race and ethnicity of the students, the proportion of Whites in the present study was less than in Elliott et al.'s (2010) sample. This may be due to regional differences in population as well as sample differences due to state eligibility criteria or the smaller number of students in Elliott

**Table 4.** Demographic Characteristics as Percentage of Eight-Grade Students Eligible for the AA-MAS Across Studies

Characteristic	Current study		Elliot et al. (2010)
	Reading	Math	Reading and Math
Population/sample	1,055	1,058	250
Male	64	61	64
Ethnicity			
European American	58	59	66
African American	16	18	4
Asian American	1	1	1
Hawaiian/Pacific Islander			1
Native American	2	2	3
Latino American	18	15	12
Multiracial/other	4	4	3
Disability Category (primary)			
Autism	3	4	3
Intellectual disabilities	14	13	23
Specific learning disability	60	57	46
Emotional disturbance	5	5	6
Traumatic brain injury	1	1	1
Speech/language impairment	1	1	4
Deafness/hearing impairment		1	
Orthopedic impairment			7
Other health impairment	15	18	8

Note: AA-MAS = alternate assessments based on modified achievement standards. Cells have been left blank when less than 0.5% of students occur in a category. Group descriptions are reported with labels used by Elliot et al. (2010).

et al.'s sample. However, it also highlights the fact that individuals from marginalized groups are overrepresented in the current study. Across both studies, the disability categories most commonly found among students eligible for the AA-MAS were consistent. Students with specific learning disabilities, intellectual disabilities, and other health impairments were most likely to be considered eligible for the AA-MAS. However, the proportion of students with intellectual disabilities in the present study was nearly half of that in Elliott et al.'s sample. Meanwhile, the proportion of students with other health impairments in the present study was nearly double that of Elliott et al.'s sample. These discrepancies may be due to sample size as well as the fact that eligibility criteria for the AA-MAS are determined by individual states. Due to the variability in AA-MAS policies from state to state, the percentage of students who take the AA-MAS also varies. For example, Lazarus and Thurlow (2009) found that the percentage of eighth graders who took the reading and math AA-MAS from 2006 to 2007 varied from 1.9% in Louisiana to 5.6% in Oklahoma, despite the

fact that only 2% of students can be counted as proficient using the AA-MAS. The paucity of data on this topic highlights the need for continued research in this area. The current descriptive study shows that these students demonstrate considerable educational differences from students for whom grade-level academic achievement expectations are appropriate.

How the nature of these assessments will change with the transition to the Common Core State Standards sponsored by the National Governors Association and the Council of Chief State School Officers (CCSSI, 2010), which are intended to be inclusive of students with disabilities and ELLs, is as yet unknown. The Common Core State Standards represent an opportunity for participating states to pool their resources in the development of tests with specifications tailored to this population, just as they have with the general education population through the creation of multi-state consortia for test development. The new standards appear to impose greater consistency between achievement measured on general large-scale assessments and achievement measured on tests of modified standards, like the AA-MAS. However, the current political climate does not seem to be receptive to continuing to segregate these students for large-scale assessment, and in fact, many states have never done so. Other technological developments, such as wider use of computer adaptive testing, would theoretically allow reliable assessments to be administered with fewer test items selected for the right level of difficulty for each child and would also permit scaling the ability and achievement of the AA-MAS population with that of the general population of students, with and without disabilities. Then the issue of evaluating which students have attained proficiency with respect to the standards appropriate for their assessment would rest on development of appropriate performance-level descriptors and standard setting for this population (Egan, Ferrara, Schneider, & Barton, 2009; Quenemoen, Albus, Rogers, & Lazarus, 2010) rather than categorical assignment to tests.

This study has several significant limitations that should be noted. The tests and population described are unique to one state, and the results are not generalizable. Many factors, including the development and content of modified achievement standards, eligibility decisions, and patterns of high school drop-out characteristics may differ from state to state and may result in different outcomes for similar students. Many testing options are available for students across the ability spectrum, and states have tremendous flexibility in how they choose to evaluate students with disabilities, particularly students with moderate to severe disabilities, such as those typically selected to take alternate assessments. With 40+ of the 50 states participating in the CCSSI (2010), the large-scale assessment picture will certainly change dramatically over the coming years, and the results of the current study may be rendered obsolete. Nonetheless,

even if AA-MAS tests are replaced with some other assessment system under the Common Core State Standards, this population of students will continue to be a challenge for large-scale assessment and a source of concern in terms of extracting educational guidance from assessment outcomes.

Future research should focus on a number of issues surrounding these students with the goal of improving assessment to enhance instructional opportunity and achievement. For example, are low-performing students with disabilities less able to answer grade-level content items because they have not been instructed on the content due to an emphasis on basic skills? Could it be that they miss important learning opportunities when they are out of the classroom receiving special education or related services? Will some test items, such as items targeting prerequisite skills, improve the information that can be extracted from AA-MAS tests, even if they reference below-grade-level performance expectations? Can the concepts behind learning progressions (e.g., Steedle & Shavelson, 2009) be incorporated into large-scale assessments for these students to provide better instructional guidance for teachers?

Another area of inconsistency that calls for additional study involves differences between students identified as having disabilities and low-performing students who are not so identified. Current AA-MAS tests are restricted to students who have IEPs while similarly low-achieving students must take general assessments, often without accommodations permitted and with little chance of achieving proficiency. Several studies (e.g., Gottlieb, Alter, Gottlieb, & Wishner, 1994; MacMillan, Gresham, & Bocian, 1998; Tomblin, Zhang, Buckwalter, & Catts, 2000) have demonstrated that the lines between disability categories are fuzzy. Might this also be the case for students categorized with and without disabilities within the lowest tier of academic achievement? It is hard to imagine that a student who would be deemed eligible for an AA-MAS could fail to be identified as having a disability by the time NCLB testing begins in Grade 3. However, it is not so difficult to conceive of students in the lower range of educational achievement who might be legitimately eligible for special education identification and concomitant services but who nevertheless have not received that identification. Their failure to be identified could be due to lack of teacher referral, frequent school changes interfering with special education prereferral processes, parent refusal for testing or placement, cultural and language differences, or even response-to-intervention procedures that have provided educational assistance without requiring the child to be identified as disabled. Further evaluation of the entire population of students whose achievement falls within the bottom 3% would shine more light on the attributes of these learners and their educational needs regardless of disability classification.

## Conclusions

The picture of student characteristics from the current study is the most complete such description available to date. As federal approval for AA-MAS is recent and has been exploited by only a minority of states, even eligibility criteria have not been clearly delineated and may be inconsistent from state to state, resulting in different characteristics of students taking tests similar to these. While much effort has been expended defining the tests and how they are different from general assessments, relatively little has gone into investigating the nature of the population selected to take the tests. This study is intended to increase awareness of the assessment needs of students with moderate disabilities for whom the alternate assessment is too easy yet who cannot show sufficient attainment of grade-level content to demonstrate their knowledge on grade-level assessments. With this awareness should come renewed concern over the multiple challenges and risk factors faced by this group of learners.

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## References

- Albus, D., Lazarus, S. S., Thurlow, M. L., & Cormier, D. (2009). *Characteristics of states' alternate assessments based on modified academic achievement standards in 2008* (Synthesis Report 72). Minneapolis: University of Minnesota, National Center on Educational Outcomes. Retrieved from <http://www.cehd.umn.edu/NCEO/OnlinePubs/Synthesis72/Synthesis72.pdf>
- Altman, J. R., Lazarus, S. L., Thurlow, M. L., Quenemoen, R. F., Cuthbert, M., & Cormier, D. C. (2008). *2007 survey of states: Activities, changes, and challenges for special education*. Minneapolis: University of Minnesota, National Center on Educational Outcomes. Retrieved from <http://www.cehd.umn.edu/NCEO/OnlinePubs/2007StateSurvey/2007StateSurveyReport.pdf>
- Chapman, C., Laird, J., & KewalRamani, A. (2010). *Trends in high school dropout and completion rates in the United States: 1972-2008, compendium report*. Washington, DC: National Center for Education Statistics. Retrieved from [http://www.air.org/focus-area/education/index.cfm?fa=viewContent&content\\_id=1075](http://www.air.org/focus-area/education/index.cfm?fa=viewContent&content_id=1075)

- Common Core State Standards Initiative. (2010). *Common core state standards*. Council of Chief State School Officers and the National Governors Association. Retrieved from <http://www.corestandards.org/>
- Duncan, A. (2011, March 15). *Preparing students with disabilities for success: Secretary Duncan's remarks to the American Association for People With Disabilities*. Retrieved from <http://www.ed.gov/news/speeches/all-means-all-secretary-duncans-remarks-american-association-people-disabilities>
- Egan, K. L., Ferrara, S., Schneider, M. C., & Barton, K. E. (2009). Writing performance level descriptors and setting performance standards for assessments of modified achievement standards: The role of innovation and importance of following conventional practice. *Peabody Journal of Education, 84*, 552–577. doi:10.1080/01619560903241028
- Elliott, S. N., Kettler, R. J., Beddow, P., Kurz, A., Compton, E., McGrath, D., . . . Roach, A. (2010). Effects of using modified items to test students with persistent academic difficulties. *Exceptional Children, 76*, 475–495. (Accession No. EJ891828)
- Elliott, S. N., Kettler, R. J., & Roach, A. T. (2008). Alternate assessments of modified achievement standards: More accessible and less difficult tests to advance assessment practices? *Journal of Disability Policy Studies, 19*, 140–152. doi:10.1177/1044207308327472
- Fuchs, L. S., Seethaler, P. M., Fuchs, D., & Hamlett, C. L. (2008). Using curriculum-based measurement to identify the 2% population. *Journal of Disability Policy Studies, 19*, 153–161. doi:10.1177/1044207308327471
- Gottlieb, J., Alter, M., Gottlieb, B. W., & Wishner, J. (1994). Special education in urban America: It's not justifiable for many. *Journal of Special Education, 27*, 453–465. doi:10.1177/002246699402700406
- HB 05-1246 Study Committee. (2005, December 31). *Assessing "students in the gap" in Colorado*. Retrieved from <http://www.cephd.umn.edu/NCEO/Teleconferences/tele11/ColoradoStudy.pdf>
- Lazarus, S. S., Hodgson, J., & Thurlow, M. L. (2010). *States' participation guidelines for alternate assessments based on modified academic achievement standards (AA-MAS) in 2009* (Synthesis Report 75). Minneapolis: University of Minnesota, National Center on Educational Outcomes. Retrieved from <http://www.cephd.umn.edu/NCEO/OnlinePubs/Synthesis75/default.htm>
- Lazarus, S. S., Rogers, C., Cormier, D., & Thurlow, M. L. (2008). *States' participation guidelines for alternate assessments based on modified academic achievement standards (AA-MAS) in 2008* (Synthesis Report 71). Minneapolis: University of Minnesota, National Center on Educational Outcomes. Retrieved from <http://www.cephd.umn.edu/NCEO/OnlinePubs/Synthesis71/Synthesis71.pdf>
- Lazarus, S. S., & Thurlow, M. L. (2009). The changing landscape of alternate assessments based on modified academic achievement standards: An analysis of early adopters of AA-MASs. *Peabody Journal of Education, 84*, 496–510. doi:10.1080/01619560903240913
- Lazarus, S. S., Thurlow, M. L., Christensen, L. L., & Cormier, D. (2007). *States' alternate assessments based on modified achievement standards (AA-MAS) in 2007* (Synthesis Report 67). Minneapolis: University of Minnesota, National Center on Educational Outcomes. Retrieved from <http://www.cephd.umn.edu/NCEO/OnlinePubs/Synthesis67/Synthesis67.pdf>
- MacMillan, D. L., Gresham, F. M., & Bocian, K. M. (1998). Discrepancy between definitions of learning disabilities and school practices: An empirical investigation. *Journal of Learning Disabilities, 31*, 314–326. doi:10.1177/002221949803100401
- Monrad, M. (2007). *High school dropout: A quick stats fact sheet*. Washington, DC: National High School Center. Retrieved from <http://www.betterhighschools.org/pubs/#Dropout>
- National High School Center. (2009a). *Educating English language learners at the high school level: A coherent approach to district- and school-level support*. Washington, DC: Author. Retrieved from <http://www.betterhighschools.org/pubs/#Graduation>
- National High School Center. (2009b). *High schools in the United States*. Washington, DC: Author. Retrieved from <http://www.betterhighschools.org/pubs/#Graduation>
- Quenemoen, R., Albus, D., Rogers, C., & Lazarus, S. (2010). *Developing and improving modified achievement level descriptors: Rationale, procedures, and tools*. Minneapolis: University of Minnesota, National Center on Educational Outcomes. Retrieved from <http://www.cephd.umn.edu/NCEO/OnlinePubs/ALDtool/ALDtool.pdf>
- Shaftel, J., Yang, X., Glasnapp, D., & Poggio, J. (2005). Improving assessment validity for students with disabilities in large-scale assessment programs. *Educational Assessment, 10*, 357–375. doi:10.1207/s15326977ea1004\_3
- Steedle, J. T., & Shavelson, R. J. (2009). Supporting valid interpretations of learning progression level diagnoses. *Journal of Research in Science Teaching, 46*, 699–715. doi:10.1002/tea.20308
- Thurlow, M. (2008). Assessment and instructional implications of the alternate assessment based on modified academic achievement standards (AA-MAS). *Journal of Disability Policy Studies, 19*, 132–139. doi:10.1177/1044207308327473
- Tomblin, J. B., Zhang, X., Buckwalter, P., & Catts, H. (2000). The association of reading disability, behavioral disorders, and language impairment among second-grade children. *Journal of Child Psychology and Psychiatry, 41*, 473–482. doi:10.1111/1469-7610.00632
- U.S. Census Bureau. (2010). *United States Census 2010*. Retrieved from <http://2010.census.gov/2010census/data/>
- U.S. Department of Education. (2003, December 9). *Title I—Improving the academic achievement of the disadvantaged: final rule*. Washington, DC: Author. Retrieved from <http://www.ed.gov/legislation/FedRegister/finrule/2003-4/120903a.html>
- U.S. Department of Education. (2006). *28th annual report to Congress on the implementation of the Individuals With Disabilities Education Act, 2006*. Washington, DC: Author.

Retrieved from <http://www.ed.gov/about/reports/annual/osep/2006/parts-b-c/index.html>

U.S. Department of Education. (2007, April 9). *Title I: Improving the academic achievement of the disadvantaged; Individuals With Disabilities Education Act (IDEA); final rule*. Washington, DC: Author. Retrieved from <http://www.cephd.umn.edu/nceo/2percentReg/FederalRegApril9TwoPercent.pdf>

Zigmond, N., & Kloo, A. (2009). The “two percent students”: Considerations and consequences of eligibility decisions. *Peabody Journal of Education*, 84, 478–495. doi:10.1080/01619560903240855

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