DIAMOND Data Analysis Brief: Minnesota's Alternate Assessment Participation and Performance

Yi-Chen Wu and Martha L. Thurlow

Research questions asked of state data conducted by the Data-Informed Accessibility – Making Optimal Needs-based Decisions (DIAMOND) project focused on the participation and performance of students using accommodations at each school level (elementary, middle, high school) for each content area (English language arts – ELA, and mathematics). Comprehensive analyses were conducted using data from the state's regular assessment. To be complete, the DIAMOND project also examined participation and performance of students in the Minnesota Test of Academic Skills (MTAS), Minnesota's alternate assessment based on alternate achievement standards (AA-AAS).

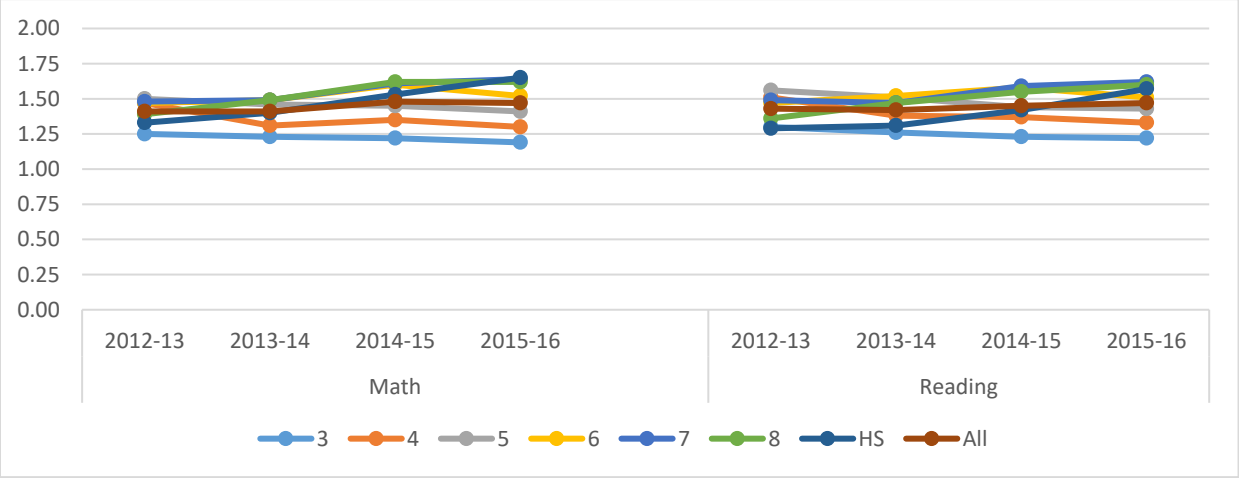
MTAS is a performance assessment. It is individually administered to each student by the student's teacher or another district employee. We examined data for the tests of mathematics and reading. The mathematics MTAS has performance tasks that measure computational skills and mathematics reasoning. The reading MTAS has performance tasks that measure understanding of short fiction and nonfiction passages.

Because accommodations data were not available for students who participate in the MTAS, we examined participation rates, student characteristics, and consistency of MTAS participation across years (2012-13 to 2015-16). The numbers of students on which the findings presented here are based are included in Table 1 in the Appendix.

Student AA-AAS Participation

Figure 1 presents the percentages of students participating in math and reading MTAS across years overall and by each grade level. As evident in the figure, percentages tended to decrease in lower grade levels (grades 3-5) and increase in higher grade levels (for example, grades 7-8 and high school) for both math and reading (see Appendix Table 2).

Figure 1. AA-AAS Participation Rates by Content Area, Grade Level, and Year

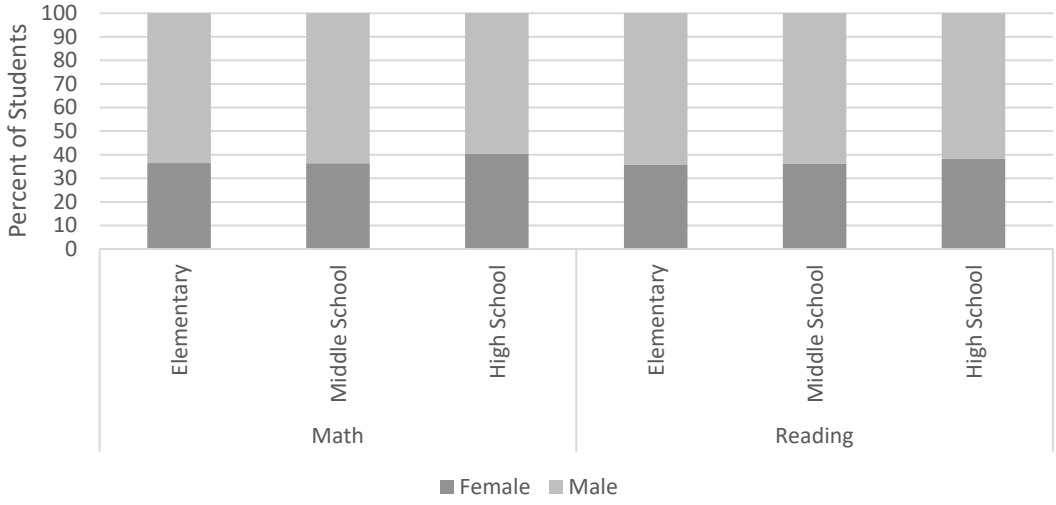


Characteristics of Students Participating in AA-AAS

Data on student characteristics were examined for students who partcipated in MTAS in each school year. These data revealed that student characteristics were similar across the years 2012-13 through 2015-16 and also across school levels. Because of the similarity in findings, only the findings for 2015-16, with school levels combined, are presented here. Data for other years and each school level are included the Appendix, Tables 3 and 4. The student characteristics that were examined were gender, ethnicity, free/reduced lunch, percent time in regular education, "limited English proficiency" status, and disability category.

Gender. Figure 2 shows the gender distribution of students participating in math and reading MTAS. As shown in the figure, for both math and reading, the majority students who took MTAS were male students. The percentages of females in the MTAS tended to increase from elementary school to high school.

Figure 2. Gender Distribution of Students Participating an AA-AAS in 2015-16



Ethnicity. Figures 3 and 4 present the ethnicities of students partcipating in MTAS math and reading respectively. As shown in these figures, for both math and reading, the ethnicity distributions of white students tended to increase from the elementary school level to the high school level (from 58% to 70% for math; 58% to 56% for reading). The other four ethnicity groups tended to decrease across school levels. For example, the percentage of Black/African American students were decreased from 20% to 16% for both math and reading MTAS.

Figure 3. Ethnicity of Students Participating an AA-AAS in 2015-16 - Math

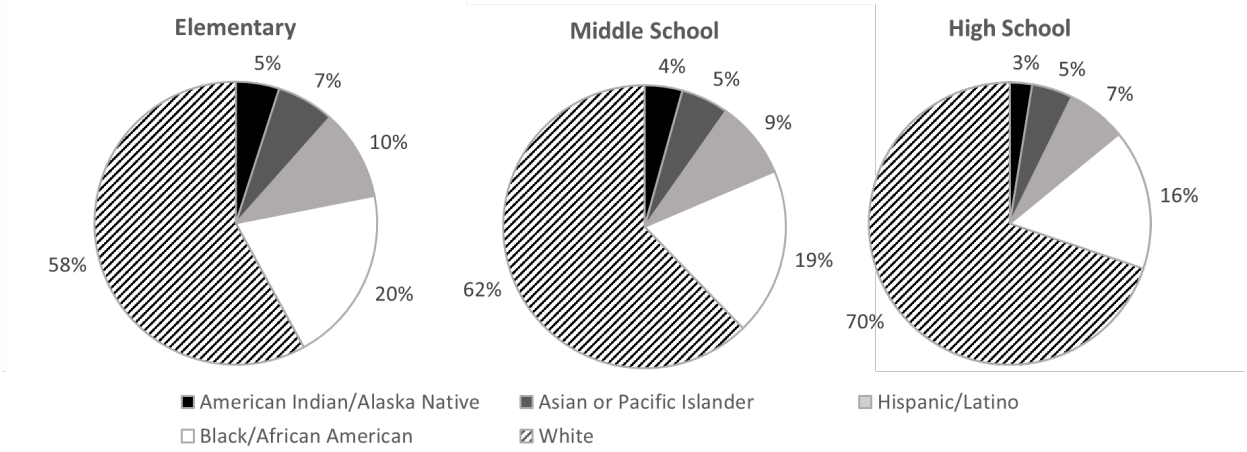
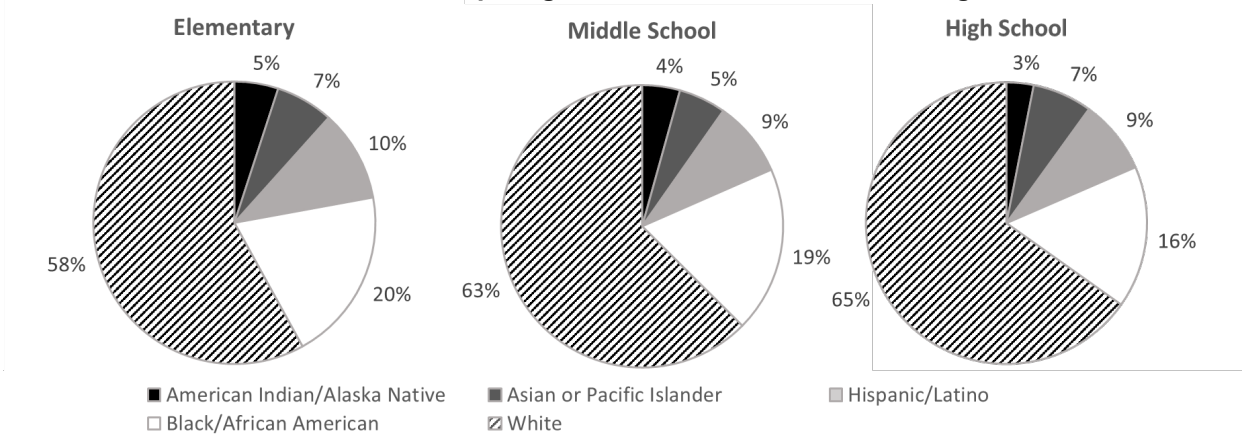
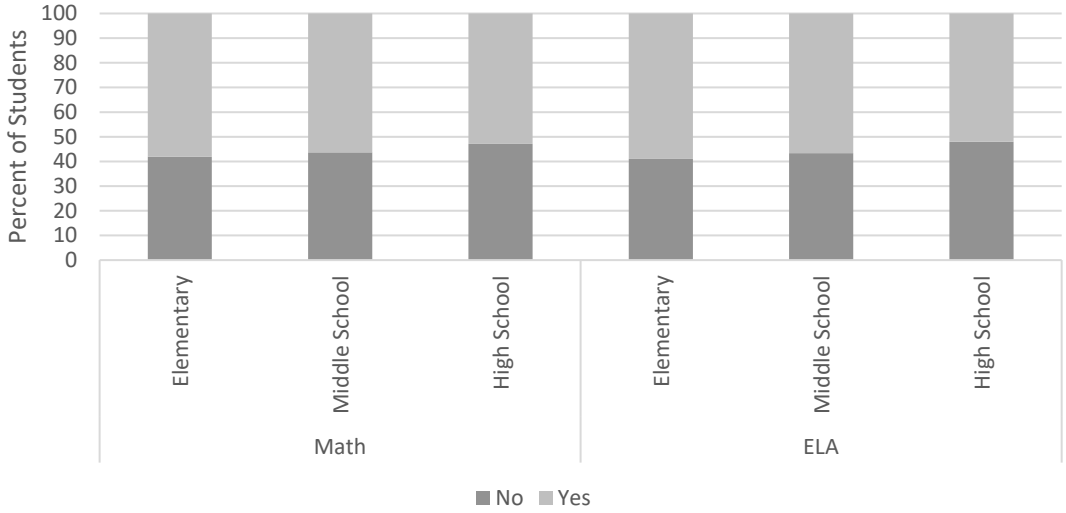


Figure 4. Ethnicity of Students Participating an AA-AAS in 2015-16 - Reading



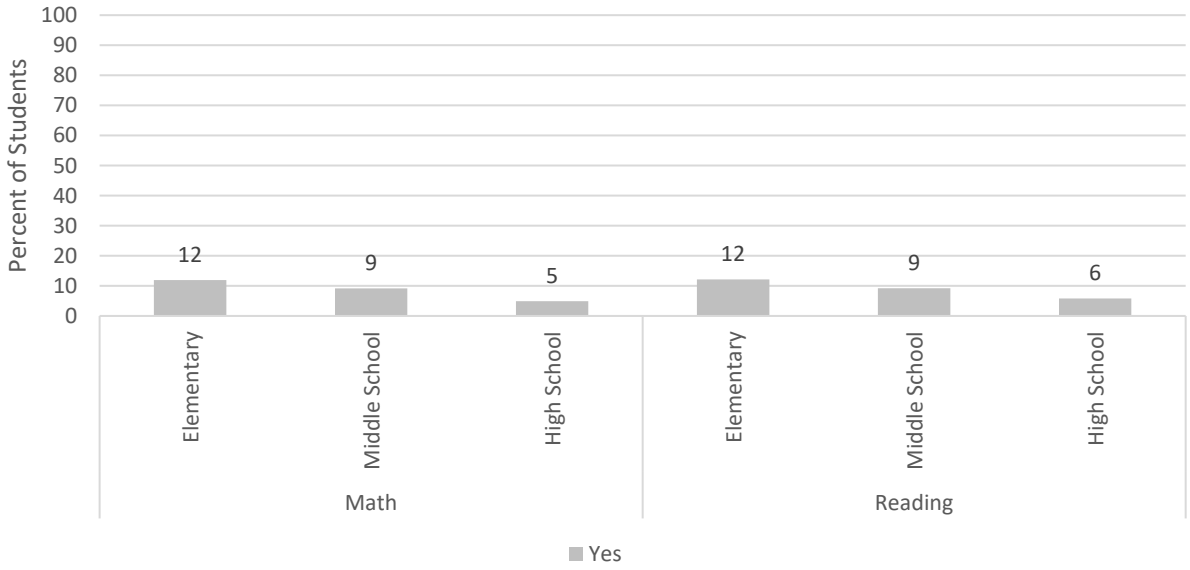
Free/Reduced Lunch. Figure 5 shows the percentage of students participating in math and reading MTAS in terms of their free/reduced price lunch status. For both math and reading, about 50% - 60% of students received free/reduced price lunch across school levels; slightly more of the elementary school students received free/reduced price lunch compared to students in middle school and high school (math: 58%-53%; Reading: 59%-52%).

Figure 5. Free/Reduced Price Lunch Status of Students Participating an AA-AAS in 2015-16



English Learner Status. Figure 6 shows the percentage of students participating in MTAS math and reading who were identified as having limited English proficiency (LEP) status, referred to here as EL status**.** As shown in Figure 6, for both math and reading, the percentages of students with EL status tended to decrease from elementary to high school (approximately 12% in elementary school vs. 5% in high school in math).

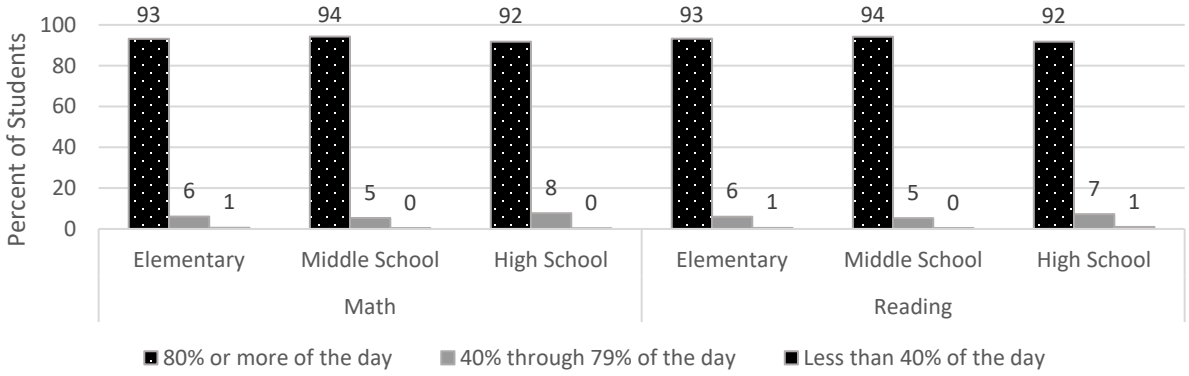
Figure 6. English Learner Status of Students Participating an AA-AAS in 2015-16



Percent Time in Regular Classroom. Figure 7 shows the percentage of students participating in math and reading MTAS who were in the regular classroom more than 80% of the day, between 40 and 80 percent of the day, and less that 40% of the day. For both math and reading, the

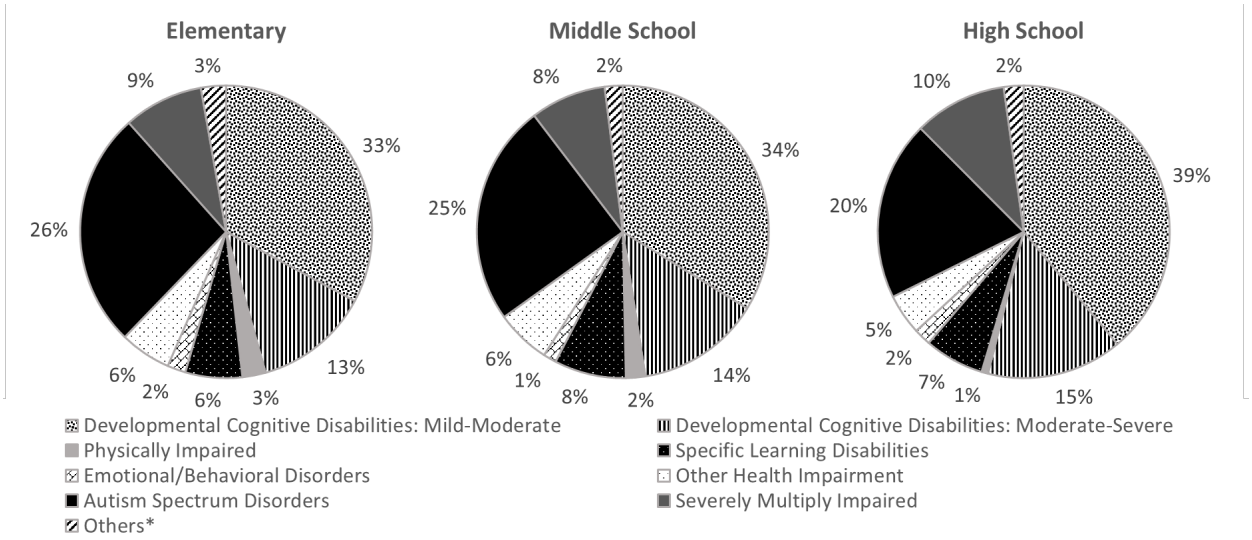
percentages were similar, with just slightly more of the students spending more than 80% of the day in the regular classroom.

Figure 7. Primary Education Setting for Students Participating in an AA-AAS in 2015-16



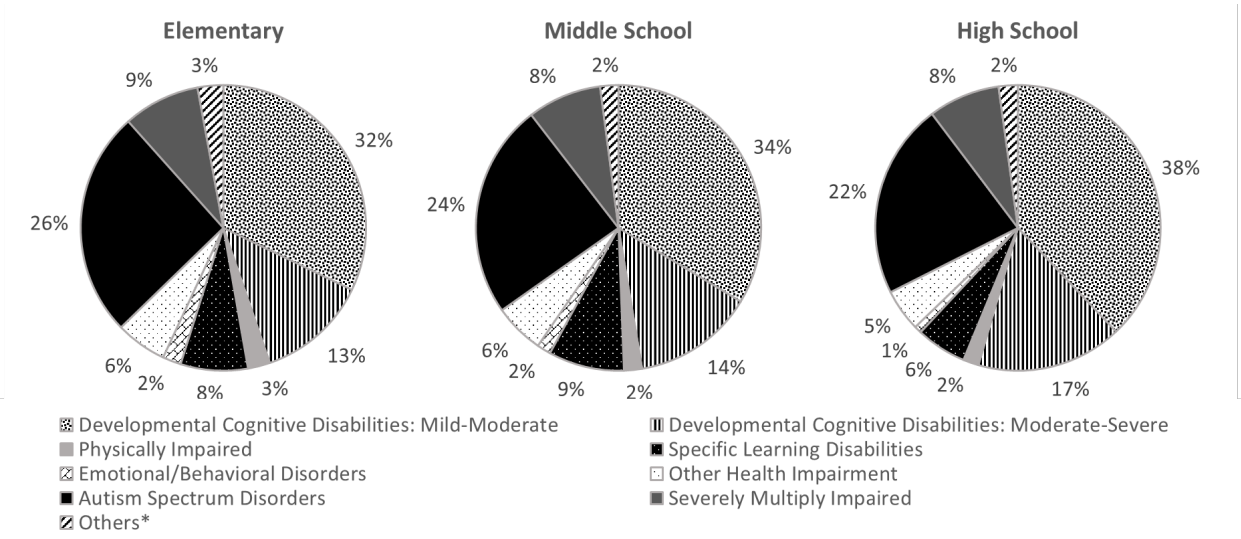
Disability Category. Figures 8 and 9 present the disability categories of students participating in math and ELA MTAS respectively. As shown in these figures, for both math and reading, the category distributions of students with disabilities were slightly different across school levels. Students tended more often to be in the mild-moderate developmental cognitive disabilities, the autism spectrum disorders, and the moderate-several developmental cognitive disabilities categories. They were less often in the emotional/behavioral disabilities and phisically impaired categories. In general, a trend of increasing percentages across school levels was evident for the mild-moderate developmental cognitive disabilities (from approximately 33% in elementary school vs. 39% in high school in math).

Figure 8. Disability Category Distributions of Students Participating in an AA-AAS in 2015-16 – Math



*The "Others" category includes disability categories with less than 1% for all school levels. These categories are Speech/Language Impairment, Deaf-Hard of Hearing, Visually Impaired, Deaf–Blind, Developmental Delay, and Traumatic Brain Injury.

Figure 9. Disability Category Distributions of Students Participating in an AA-AAS in 2015-16 – ELA



*Others category includes categories less than 1% for all school level groups. These categories are speech/Language Impairment Deaf-Hard of Hearing, Visually Impaired, Deaf – Blind, Developmental Delay, and Traumatic Brain Injury.

Consistency of AA-AAS Participation

Tables 4 and 5 present the number of times that students who had four years of assessment records participated in the math and reading MTAS respectively, starting in grade 3, 4, and 5 in 2012-13. Four consecutive years of assessment are only available for students in these grades because assessments are available only in grades 3-8 and once in high school. As shown in the tables, approximately 70% of students who had four years of assessment records for students who participated at least once in the MTAS from 2012-13 to 2015-16 consistently participated in the math and reading MTAS across years. The percentage was slightly lower for those students whose first year of assessment records was grade 3.

Table 4. Number and Percent of Students with Four Years of Assessment Records Who Participated in the Math AA-AAS from One to Four Years from 2012-13 to 2015-16

	Grade 3 (N = 868)		Grade 4 (N = 951)		Grade 5 (N = 925)		Grade 6[1] (N = *)	
Test Pattern	N	%	N	%	N	%	N	Col%
Once	139	16.01	101	10.62	83	8.97		
Twice	87	10.02	89	9.36	114	12.32		
Three Times	65	7.49	77	8.1	72	7.78		
Always	577	66.47	684	71.92	656	70.92	*	100

*Cell size < 10

[1] These students were ones who were retained in grades 7 and 8 within the 4-year period, so had assessment data for grades 6-8 that covered four years.

Table 5. Number and Percent of Students with Four Years of Assessment Records Who Participated in the Reading AA-AAS from One to Four Years from 2012-13 to 2015-16

	Grade 3 (N = 894)		Grade 4 (N = 963)		Grade 5 (N = 961)		Grade 6[1] (N = *)	
Test Pattern	N	%	N	%	N	%	N	Col%
Once	133	14.88	114	11.84	88	9.16		
Twice	95	10.63	86	8.93	113	11.76		
Three Times	73	8.17	80	8.31	80	8.32		
Always	593	66.33	683	70.92	680	70.76	*	100

*Cell size < 10

[1] These students were ones who were retained in grades 7 and 8 within the 4-year period, so had assessment data for grades 6-8 that covered four years.

Conclusion

Examination of the state's data on participation in the MTAS and the characteristics of those students is an important undertaking, as evident in the data summarized in this brief. It is important to continue to document the extent to which the data indicate that Individualized Education Program teams are making appropriate decisions about which students should participate in this assessment.

MTAS data show several positive findings. Participation numbers in MTAS are fairly consistent across years. In addition, the characteristics of students participating in MTAS also are fairly consistent.

The MTAS data did reveal a couple areas that may need continued monitoring. For example, there appeared to be some tendency for the number of students participating in MTAS at the lower grades to decrease across years and for the number of students participating in MTAS at higher grades to increase across years. Similarly, there are some characteristics of students in MTAS that deserve continued checking (e.g., ethnicity, EL status). Finally, it is always good to watch participation of individual students in the MTAS across years. Students with significant cognitive disabilities, in general, are a stable group and would not be expected to move in and out of MTAS participation. Having only 70% of students with four years of data participating in MTAS across four years may be lower than desirable. This may be an indication of the need for additional professional development, especially at the earlier grades in which assessments are administered.

Appendix

Table 1. Number of Students Included in Analyses by Year Assessments

		2012-13	2013-14	2014-15	2015-16
Math	All students[1]	433,592	436,219	439,060	441,804
	MTAS	6,126	6,150	6,506	6,496
Reading	All students	435,413	438,206	441,828	446,785
	MTAS	6,207	6,204	6,411	6,547

[1]All students participated in the state assessments.

Table 2. Number and Percentage of Students who Took AA-AAS over tested population by Year and Grade level

		2012-13		2013-14		2014-15		2015-16	
	Grade	N	%	N	%	N	%	N	%
Math	3	797	1.25	781	1.23	791	1.22	787	1.19
	4	918	1.47	835	1.31	855	1.35	844	1.30
	5	917	1.50	917	1.46	926	1.45	904	1.41
	6	916	1.47	918	1.49	1,011	1.60	978	1.52
	7	919	1.48	935	1.49	1,000	1.61	1,041	1.64
	8	855	1.39	923	1.49	1,021	1.62	1,004	1.62
	HS	804	1.33	841	1.40	902	1.53	938	1.65
	All	6,126	1.41	6,150	1.41	6,506	1.48	6,496	1.47
ELA	3	825	1.30	795	1.26	791	1.23	808	1.22
	4	942	1.51	875	1.38	867	1.37	865	1.33
	5	952	1.56	944	1.51	920	1.44	912	1.43
	6	916	1.47	937	1.52	994	1.58	976	1.51
	7	926	1.49	928	1.47	985	1.59	1,030	1.62
	8	840	1.36	914	1.47	979	1.55	994	1.60
	HS	806	1.29	811	1.31	875	1.42	962	1.57
	All	6,207	1.43	6,204	1.42	6,411	1.45	6,547	1.47

Table 3. Number and Percentage of Students Participating in an AA-AAS Math by School Level in 2015-16

	Elementary (N = 2,535)		Middle School (N = 3,023)		High School (N = 938)	
Variable	**N**	**%**	**N**	**%**	**N**	**%**
Gender						
Female	924	36.5	1,101	36.4	379	40.4
Male	1,611	63.6	1,922	63.6	559	59.6
Ethnicity						
American Indian/Alaska Native	126	5.0	131	4.3	24	2.6
Asian or Pacific Islander	167	6.6	164	5.4	44	4.7
Hispanic/Latino	262	10.3	267	8.8	64	6.8
Black/African American	510	20.1	579	19.2	151	16.1
White	1,470	58.0	1,882	62.3	655	69.8
Free/reduced Lunch						
No	1,063	41.9	1,319	43.6	445	47.4
Yes	1,472	58.1	1,704	56.4	493	52.6
Special Education Service						
No	4	0.2	0	0.0	2	0.2
Yes	2,531	99.8	3,023	100.0	936	99.8
Currently receiving or formerly received SPED services						
No	2	0.1	0	0.0	0	0.0
Yes	2,533	99.9	3,023	100.0	938	100.0
% in Regular Education						
80% or more of the day	2,363	93.2	2,850	94.3	861	91.8
40% through 79% of the day	153	6.0	161	5.3	72	7.7
Less than 40% of the day	15	0.6	12	0.4	3	0.3
N/A	4	0.2	0	0.0	2	0.2
Disability						
No IEP/IFSP/IIIP, non-disabled student	4	0.2	0	0.0	3	0.3
Speech/Language Impairments	19	0.8	7	0.2	1	0.1
Developmental Cognitive Disabilities: Mild-Moderate	834	32.9	1,023	33.8	365	38.9
Developmental Cognitive Disabilities: Moderate-Severe	322	12.7	412	13.6	141	15.0
Physically Impaired	66	2.6	65	2.2	6	0.6
Deaf – Hard of Hearing	12	0.5	20	0.7	5	0.5
Visually Impaired	7	0.3	5	0.2	0	0.0
Specific Learning Disabilities	161	6.4	240	7.9	61	6.5
Emotional/Behavioral Disorders	52	2.1	44	1.5	17	1.8
Deaf – Blind	8	0.3	8	0.3	2	0.2
Other Health Impairment	145	5.7	183	6.1	43	4.6

Autism Spectrum Disorders	662	26.1	741	24.5	186	19.8
Developmental Delay	1	0.0	0	0.0	0	0.0
Traumatic Brain Injury	20	0.8	21	0.7	10	1.1
Severely Multiply Impaired	222	8.8	254	8.4	98	10.5
504 Accommodation Plan	0	0.0	0	0.0	0	0.0
LEP Status						
No	2,232	88.1	2,746	90.8	892	95.1
Yes	303	12.0	277	9.2	46	4.9
currently receiving or formerly received ELL services						
No	2,194	86.6	2,704	89.5	884	94.2
Yes	341	13.5	319	10.6	54	5.8

Table 3. Number and Percentage of Students Participating in an AA-AAS Reading by School Level in 2015-16

	Elementary (N = 2,585)		Middle School (N = 3,000)		High School (N = 962)	
Variable	**N**	**%**	**N**	**%**	**N**	**%**
Gender						
Female	921	35.6	1,084	36.1	369	38.4
Male	1,664	64.4	1,916	63.9	593	61.6
Ethnicity						
American Indian/Alaska Native	130	5.0	130	4.3	30	3.1
Asian or Pacific Islander	171	6.6	163	5.4	66	6.9
Hispanic/Latino	271	10.5	260	8.7	82	8.5
Black/African American	513	19.9	570	19.0	157	16.3
White	1,500	58.0	1,877	62.6	627	65.2
Free/reduced Lunch						
No	1,060	41.0	1,306	43.5	461	47.9
Yes	1,525	59.0	1,694	56.5	501	52.1
Special Education Service						
No	4	0.2	1	0.0	0	0.0
Yes	2,581	99.9	2,999	100.0	962	100.0
Currently receiving or formerly received SPED services						
No	2	0.1	0	0.0	0	0.0
Yes	2,583	99.9	3,000	100.0	962	100.0
% in Regular Education						
80% or more of the day	2,411	93.3	2,827	94.2	883	91.8
40% through 79% of the day	156	6.0	159	5.3	70	7.3
Less than 40% of the day	14	0.5	13	0.4	9	0.9
N/A	4	0.2	1	0.0	0	0.0
Disability						
No IEP/IFSP/IIIP, non-disabled student	4	0.2	1	0.0	0	0.0
Speech/Language Impairments	19	0.7	9	0.3	1	0.1
Developmental Cognitive Disabilities: Mild-Moderate	831	32.2	1,009	33.6	365	37.9
Developmental Cognitive Disabilities: Moderate-Severe	325	12.6	412	13.7	159	16.5
Physically Impaired	65	2.5	61	2.0	17	1.8
Deaf – Hard of Hearing	15	0.6	19	0.6	9	0.9
Visually Impaired	8	0.3	5	0.2	2	0.2
Specific Learning Disabilities	197	7.6	258	8.6	55	5.7
Emotional/Behavioral Disorders	54	2.1	47	1.6	8	0.8
Deaf – Blind	8	0.3	8	0.3	3	0.3
Other Health Impairment	150	5.8	170	5.7	46	4.8

Autism Spectrum Disorders	663	25.7	729	24.3	213	22.1
Developmental Delay	1	0.0	0	0.0	0	0.0
Traumatic Brain Injury	20	0.8	20	0.7	6	0.6
Severely Multiply Impaired	225	8.7	252	8.4	78	8.1
504 Accommodation Plan	0	0.0	0	0.0	0	0.0
LEP Status						
No	2,271	87.9	2,723	90.8	906	94.2
Yes	314	12.2	277	9.2	56	5.8
currently receiving or formerly received ELL services						
No	2,232	86.3	2,684	89.5	893	92.8
Yes	353	13.7	316	10.5	69	7.2

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