An Accountability & Assessment Brief

Technical Brief: Accommodation Usage on the 2009 Criterion-Referenced Competency Tests and Georgia High School Graduation Tests

Introduction

Accommodations are changes in the administration of an assessment in terms of how the student takes or responds to the assessment. Broad categories of accommodations include setting, scheduling, presentation, and response. Accommodations do not change the construct intended to be measured by the assessment or the meaning of the resulting scores. Accommodations are designed to provide equity, not advantage, and serve to level the playing field for Students with Disabilities (SWD) and students with limited English proficiency, or English Language Learners (ELL). When used appropriately, they reduce or even eliminate the effects of a student's disability or limited English proficiency; they do not reduce learning expectations.

Importantly, accommodations provide equitable access during instruction and assessments for SWD and ELL. Research consistently indicates there should always be a direct link between classroom instructional accommodations and assessment accommodations. Georgia policy mandates that any accommodation provided to a student must be the same for classroom instruction, classroom assessments, and state assessments.

Who is eligible for an accommodation?

Four groups of students are eligible to receive test administration accommodations:

(1) SWD who have an Individualized Education Program (IEP);
(2) Students served under Section 504 and who have an Individual Accommodation Plan (IAP);
(3) ELL who have a Testing Participation Plan (TPP); and
(4) ELL-monitored (ELL-M) students who have exited language assistance services in the last two years and who have a TPP.

Not all students identified as having a disability or with limited English proficiency require an accommodation during testing. Accommodations must be specified in the student's Individualized Education Program (IEP), Individual Accommodation Plan (IAP)/504 Plan, or the ELL Testing Participation Plan (TPP). No accommodations should be introduced for the first time during a state assessment. Simply because a student needs an accommodation does not mean he/she will understand how to use it. Students need training and practice in using accommodations. Informed decision making regarding accommodations is critical in ensuring successful and meaningful participation of students with disabilities and students with limited English proficiency in the assessment process.

Reporting Accommodations

State summary reports are generated for the main administration of both the Criterion-Referenced Competency Tests (CRCT) and the Georgia High School Graduation Tests (GHSGT). Performance summary data include the frequency of testing accommodations overall, the frequency of SWD and ELL, the frequency of testing accommodations allowed, and the scale score mean and standard deviation for SWD with testing accommodations and ELL with testing accommodations. These data are utilized by the Georgia Department of Education (GaDOE) to better understand the ways in which testing accommodations may be assisting students with access to the overall testing program.

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Research Questions

The purpose of this brief is examine the usage and effects of test administration accommodations on the 2009 CRCT and GHSGT. Accommodations are provided to ensure meaningful participation in Georgia's assessment programs for SWD and ELL. The following questions guide this inquiry:

1. What is the frequency of accommodation usage for the SWD and ELL subgroups?
2. How does the performance of the students within each subgroup, SWD and ELL, who receive accommodations compare to students who do not receive accommodations?
3. What type of accommodation is provided most often to students in both subgroups? What is the frequency of students who receive more than one type of testing accommodation?
4. Does the receipt of a testing accommodation affect the internal consistency of the assessments for students in both subgroups (SWD and ELL)?

Methodology

Accommodation types are captured on a student's answer document at the time of testing. Three types of information are collected: 1) whether an accommodation was provided on the test, 2) the type of accommodation, and 3) the subject area in which the accommodation was provided. Answer documents are then scanned and information is captured in a state-wide data file for each assessment. For the purposes of this inquiry, the calculations are based on the 2009 Spring administration of the CRCT for students in grades three through eight, and the 2009 Spring administration of the GHSGT for first-time grade 11 test takers.

For the purposes of this inquiry, the scores of SWD were identified using State Required Codes (SRC) of 01 through 12 or 15. The scores of ELL were identified using a SRC of 13.

For research question one, a crosstab was run by grade level for students in both subgroups providing the frequency of those provided testing accommodations and those without testing accommodations. A similar methodology was used to calculate the types of accommodations, addressing research question three. For research question two, the mean scale score was computed for students with testing accommodations and those without testing accommodations in both subgroups. Finally, for research question four, Cronbach's alpha was calculated, providing a reliability coefficient to assess the internal consistency of the measures and how it might be affected for students who receive accommodations versus those who do not receive accommodations within each subgroup. As an additional indicator, the standard error of measurement was also calculated.

Results

Table 1 provides the performance of SWD who received an accommodation by subject area. Table 2 provides the performance of ELL who received an accommodation by subject area.

For the CRCT, students are classified as meeting the standard (i.e., proficient) if they achieve a scale score of 800.

For the GHSGT, students are classified as passing if they achieve a scale score of 200 on the English Language Arts test, which measures the Georgia Performance Standards (GPS), and a scale score of 500 on the Mathematics test which measures the Quality Core Curriculum (QCC).

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Table 1. Students with Disabilities and the performance of those who received a testing accommodation versus those without a testing accommodation.

Subject	Grade Level	State-wide N	SWD		SWD with an Accommodation			SWD without an Accommodation		
			n	%	n	%	Mean Scale Score	n	%	Mean Scale Score
Reading	3	129,829	13,528	10.4	8,411	62.2	**804**	5,117	37.8	**830**
	4	126,046	13,977	11.1	9,410	67.3	**801**	4,567	32.7	**828**
	5	125,532	14,384	11.5	10,712	74.5	**802**	3,672	25.5	**824**
	6	120,576	13,156	10.9	10,319	78.4	**805**	2,837	21.6	**828**
	7	120,988	13,431	11.1	10,629	79.1	**803**	2,802	20.9	**819**
	8	121,229	12,752	10.5	10,308	80.8	**808**	2,444	19.2	**826**
English Language Arts	3	129,774	13,522	10.4	8,398	62.1	**801**	5,124	38.0	**829**
	4	126,036	13,978	11.1	9,412	67.3	**797**	4,566	32.7	**827**
	5	125,523	14,412	11.5	10,742	74.5	**804**	3,670	25.5	**832**
	6	120,551	13,168	10.9	10,333	78.5	**803**	2,835	21.5	**829**
	7	120,932	13,442	11.1	10,641	79.2	**802**	2,801	20.8	**823**
	8	121,093	12,746	10.5	10,297	80.1	**803**	2,449	19.2	**825**
	11	95,512	7,695	8.1	6,103	79.3	**198**	1,592	20.7	**218**
Mathematics	3	130,063	13,519	10.4	8,407	62.2	**787**	5,112	37.8	**833**
	4	126,260	13,966	11.1	9,444	67.6	**785**	4,522	32.4	**827**
	5	125,815	14,421	11.5	10,784	74.8	**790**	3,637	25.2	**833**
	6	120,759	13,169	10.9	10,380	78.8	**791**	2,789	21.2	**818**
	7	121,108	13,443	11.1	10,748	80.0	**798**	2,695	20.0	**825**
	8	121,362	12,746	10.5	10,416	81.7	**785**	2,330	18.3	**812**
	11	95,566	7,711	8.1	6,020	78.1	**504**	1,691	21.9	**519**

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Table 2. English Language Learners and the performance of those who received a testing accommodation versus those without a testing accommodation.

Subject	Grade Level	State-wide N	ELL		ELL with Accommodations			ELL without Accommodations		
			n	%	n	%	Mean Scale Score	n	%	Mean Scale Score
Reading	3	129,829	6,912	5.3	4,284	62.0	**813**	2,628	38.0	**819**
	4	126,046	4,451	3.5	2,785	62.6	**808**	1,666	37.4	**814**
	5	125,532	3,255	2.6	2,260	69.4	**804**	995	30.1	**812**
	6	120,576	2,740	2.3	1,998	72.9	**809**	742	27.1	**818**
	7	120,988	2,831	2.3	2,125	75.1	**801**	706	24.9	**812**
	8	121,229	2,425	2.0	1,847	76.2	**805**	578	23.8	**815**
English Language Arts	3	129,774	6,914	5.3	4,280	61.9	**812**	2,634	38.2	**819**
	4	126,036	4,454	3.5	2,790	62.6	**807**	1,664	37.4	**815**
	5	125,523	3,257	2.6	2,263	69.5	**810**	994	30.5	**822**
	6	120,551	2,740	2.3	1,982	72.3	**809**	758	27.7	**819**
	7	120,932	2,832	2.3	2,101	74.2	**802**	731	25.8	**817**
	8	121,093	2,444	2.0	1,861	76.1	**806**	583	23.9	**820**
	11	95,512	1,336	1.4	960	71.9	**201**	376	28.1	**211**
Mathematics	3	130,063	7,190	5.5	4,508	62.7	**808**	2,682	37.3	**822**
	4	126,260	4,679	3.7	3,000	64.1	**801**	1,679	35.9	**821**
	5	125,815	3,485	2.8	2,455	70.4	**806**	1,030	29.6	**812**
	6	120,759	2,916	2.4	2,154	73.9	**799**	762	26.1	**809**
	7	121,108	3,004	2.5	2,261	75.3	**806**	743	24.7	**821**
	8	121,362	2,630	2.2	2,029	77.1	**797**	601	22.9	**808**
	11	95,566	1,364	1.4	945	69.3	**518**	419	30.7	**522**

Accommodation Types

Four overarching accommodation types are allowed in the administration of the CRCT or GHSGT. The four types are 1) Setting, 2) Presentation, 3) Response, and 4) Scheduling. The inset box provides a few examples of approved accommodations applicable to both SWD and ELL.

Table 3 illustrates the types of testing accommodations SWD received by grade level, including the number of students who received multiple types of accommodations. Table 4 displays the same information for ELL.

Examples of Accommodations:

These examples are types of accommodations allowed for both Students with Disabilities and English Language Learners.

Setting:
- Small group
- Special education or ESOL classroom
- Individual administration

Presentation:
- Explain or paraphrase general test directions
- Repetition of directions (in English only)
- Use of color overlays or templates

Response:
- Student marks answers in test booklet
- Verbal response in English only
- Student points to answer

Scheduling:
- Extended time
- Frequent, monitored breaks

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Table 3. Students with Disabilities who received an accommodation and the type(s) of testing accommodations received.

Subject	Grade Level	SWD with Accom	Setting		Presentation		Response		Scheduling		Multiple	
		n	n	%	n	%	n	%	n	%	n	%
Reading	3	8,411	8,229	97.8	6,244	74.2	1,985	23.6	6,920	82.3	7,797	92.7
	4	9,410	9,208	97.9	6,907	73.4	2,083	22.1	7,725	82.1	8,701	92.5
	5	10,712	10,492	97.9	7,441	69.5	1,921	17.9	8,903	83.1	9,863	92.1
	6	10,319	10,083	97.7	6,368	61.7	1,228	11.9	8,370	81.1	9,189	89.0
	7	10,629	10,350	97.4	5,993	56.4	1,017	9.6	8,763	82.4	9,384	88.3
	8	10,308	10,027	97.3	5,549	53.8	820	8.0	8,416	81.2	8,934	86.7
English Language Arts	3	8,398	8,208	97.8	6,408	76.3	1,964	23.4	6,858	81.7	7,813	93.0
	4	9,412	9,206	97.8	7,074	75.2	2,060	21.9	7,622	80.1	8,718	92.6
	5	10,742	10,516	97.9	7,663	71.3	1,906	17.7	8,792	81.8	9,914	92.3
	6	10,333	10,095	97.7	6,700	64.8	1,212	11.7	8,273	80.1	9,207	89.1
	7	10,641	10,371	97.5	6,272	58.9	1,003	9.4	8,675	81.5	9,399	88.3
	8	10,297	10,006	97.2	5,808	56.4	765	7.4	8,376	81.3	8,984	87.2
	11	6,103	5,776	94.6	3,108	50.9	234	3.8	4,918	80.6	5,200	85.2
Mathematics	3	8,407	8,222	97.8	6,410	76.2	2,114	25.1	6,905	82.1	7,829	93.1
	4	9,444	9,242	97.9	7,110	75.3	2,457	26.0	7,700	81.5	8,762	92.8
	5	10,784	10,559	97.9	7,710	71.5	2,629	24.4	8,941	82.9	9,985	92.6
	6	10,380	10,106	97.4	6,663	64.2	3,775	36.4	8,438	81.3	9,408	90.6
	7	10,748	10,399	96.8	6,278	58.4	4,223	39.3	8,803	81.8	9,663	89.9
	8	10,416	10,062	96.6	5,807	55.8	4,414	42.4	8,461	81.2	9,331	89.6
	11	6,020	5,677	94.3	3,002	49.9	231	3.8	4,872	80.9	5,096	84.7

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Table 4. English Language Learners who received an accommodation and the type(s) of testing accommodations received.

Subject	Grade Level	ELL with Accom	Setting		Presentation		Response		Scheduling		Multiple	
		n	n	%	n	%	n	%	n	%	n	%
Reading	3	4,284	3,952	92.3	3,803	88.8	281	6.6	3,615	84.4	3,943	92.0
	4	2,785	2,653	95.3	2,454	88.1	160	5.7	2,330	83.4	2,592	93.1
	5	2,260	2,120	93.8	1,945	86.1	112	5.0	1,887	83.5	2,069	91.5
	6	1,998	1,736	86.9	1,493	74.7	450	22.5	1,503	75.2	1,729	86.5
	7	2,125	1,860	87.5	1,721	81.0	529	24.9	1,660	78.1	1,917	90.2
	8	1,847	1,662	90.0	1,445	78.2	530	28.7	1,446	78.3	1,640	88.8
English Language Arts	3	4,280	3,948	92.2	3,819	89.2	285	6.7	3,597	84.0	3,942	92.1
	4	2,790	2,658	95.3	2,475	88.7	160	5.7	2,323	83.3	2,600	93.2
	5	2,263	2,125	93.9	1,954	86.3	100	4.4	1,871	82.7	2,075	91.7
	6	1,982	1,738	87.7	1,493	75.3	460	23.2	1,466	74.0	1,718	86.7
	7	2,101	1,860	88.5	1,717	81.7	531	25.3	1,606	76.4	1,903	90.6
	8	1,861	1,664	89.4	1,465	78.7	527	28.3	1,439	77.3	1,659	89.1
	11	960	850	88.5	698	72.7	70	7.3	775	80.7	838	87.3
Mathematics	3	4,508	4,171	92.5	4,022	89.2	289	6.4	3,797	84.2	4,159	92.3
	4	3,000	2,864	95.5	2,659	88.6	177	5.9	2,533	84.4	2,802	93.4
	5	2,455	2,310	94.1	2,126	86.6	133	5.4	2,062	84.0	2,260	92.1
	6	2,154	1,904	88.4	1,629	75.6	496	23.0	1,645	76.4	1,900	88.2
	7	2,261	2,008	88.8	1,849	81.2	594	26.3	1,763	78.0	2,056	90.9
	8	2,029	1,802	88.8	1,588	78.3	597	29.4	1,594	78.6	1,811	89.3
	11	945	825	87.3	679	71.9	70	7.4	728	77.0	796	84.2

Reliability

According to the *Standards for Educational and Psychological Testing* (AERA, APA, NCME, 1999), reliability is "the degree to which test scores for a group of test takers are consistent over repeated applications of a measurement procedure and hence are inferred to be dependable, and repeatable for an individual test taker; the degree to which scores are free of errors of measurement for a given group" (180). In other words, a reliable assessment is one that would produce stable scores if the same group of students were to take the same test repeatedly without any fatigue or memory effects. Reliability information is an important indicator of the consistency of an assessment. A reliability measure provides evidence that a measure, if given multiple times to the same student, would result in similar scores. A commonly used example is a scale, wherein, no matter the number of times a person weighs themselves using the same scale, given that their weight has not changed, the scale will provide a consistent weight. Such a scale would be considered reliable.

For the CRCT and the GHSGT programs, two commonly used indicators of reliability are (1) Cronbach's alpha and (2) the standard error of measurement (SEM). Cronbach's alpha measures the internal consistency over the responses to a set of items measuring an underlying unidimensional trait. The second statistical index used to describe test score reliability for the CRCT or GHSGT is the SEM, which is an index of the random variability in tests scores. The SEM is related to Cronbach's alpha in that, if a student were to take the same test multiple times, assuming that no learning would take place between administrations of the test, their repeated scores would fall within a band of plus one SEM and minus

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one SEM about two-thirds of the time. The SEM provides the band or spread of students' scores if they were to be assessed multiple times. The SEM can be calculated in terms of raw scores or scale scores. For the purposes of this report, the reported SEMs are based on scale scores. These two indicators of reliability and precision are considered industry standards when addressing the reliability of a measure.

Table 5 provides the reliability coefficients for accommodated versus non-accommodated SWD. Table 6 provides the reliability coefficients for accommodated versus non-accommodated ELL. Reliability information is reported annually in the technical manuals for each of Georgia's assessment programs. Tables 7 and 8 present the SEM for SWD and ELL respectively.

Table 5. Reliability coefficients (Cronbach's alpha) for accommodated versus non-accommodated SWD.

Assessment	Grade	Reading		English Language Arts		Mathematics	
		Accom	Non-Accom	Accom	Non-Accom	Accom	Non-Accom
CRCT	3	.88	.89	.89	.91	.92	.92
	4	.89	.90	.88	.91	.91	.92
	5	.84	.87	.88	.89	.91	.93
	6	.87	.90	.88	.90	.87	.92
	7	.87	.89	.88	.91	.88	.92
	8	.88	.89	.86	.89	.88	.92
GHSGT	11	--	--	.89	.90	.92	.93

Table 6. Reliability coefficients (Cronbach's alpha) for accommodated versus non-accommodated ELL.

Assessment	Grade	Reading		English Language Arts		Mathematics	
		Accom	Non-Accom	Accom	Non-Accom	Accom	Non-Accom
CRCT	3	.85	.85	.87	.88	.90	.89
	4	.85	.85	.86	.87	.90	.89
	5	.81	.83	.87	.87	.91	.92
	6	.85	.88	.87	.89	.88	.91
	7	.86	.83	.88	.88	.91	.91
	8	.86	.86	.87	.86	.92	.92
GHSGT	11	--	--	.82	.84	.90	.90

Table 7. Standard error of measurement (SEM) for accommodated versus non-accommodated SWD.

Assessment	Grade	Reading		English Language Arts		Mathematics	
		Accom	Non-Accom	Accom	Non-Accom	Accom	Non-Accom
CRCT	3	8.82	9.49	8.18	8.77	10.8	12.34
	4	8.19	9.16	8.06	8.75	9.82	11.64
	5	8.33	8.85	7.84	8.93	10.10	11.64
	6	7.97	8.63	9.61	8.58	7.90	8.85
	7	6.69	7.29	7.84	8.13	8.62	9.31
	8	7.16	7.77	8.94	9.57	9.46	10.45
GHSGT	11	--	--	10.57	10.67	6.43	6.79

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Table 8. Standard error of measurement (SEM) for accommodated versus non-accommodated ELL.

Assessment	Grade	Reading		English Language Arts		Mathematics	
		Accom	Non-Accom	Accom	Non-Accom	Accom	Non-Accom
CRCT	3	8.76	8.86	8.19	8.22	10.89	11.98
	4	8.48	8.84	8.04	8.03	10.07	10.57
	5	8.16	8.19	7.95	8.66	10.75	11.36
	6	8.13	8.39	7.50	8.08	8.31	8.77
	7	6.60	7.35	7.74	7.99	8.71	9.35
	8	7.11	7.37	9.34	9.11	9.76	10.34
GHSGT	11	--	--	10.17	10.90	6.93	6.84

Discussion

Research Question 1: What is the frequency of accommodations for the SWD and ELL subgroups?
For both student subgroups, SWD and ELL, the percent of students in either subgroup who receive an accommodation ranges from approximately 60% to 80%, increasing as grade levels increase (see Tables 1 and 2). In other words, more students receive testing accommodations in the upper grades than in the lower grades. The overall use of testing accommodations appears consistent across content areas for both ELL and SWD.

Research Question 2: How does the performance of the students within each subgroup, SWD and ELL, who receive accommodations compare to students who do not receive accommodations?
Research question two relates to comparing the performance (i.e., mean scale score) of students within both subgroups who receive a testing accommodation with students in the same subgroup who do not receive an accommodation. Across all grades and subject areas, SWD who received a testing accommodation underperformed when compared to SWD who did not receive a testing accommodation (see Table 1). This finding is expected, in that students who do not require a testing accommodation tend to be those with less severe disabilities. An interesting area to examine in the future might include an analysis of the type of disability students tend to have who are not provided a testing accommodation.

It is also interesting to note that for SWD, the mean scale scores for students with accommodations were above the scale score performance level cut score indicating that student met expectations in all grades in Reading. In ELA, only grade four had a mean scale score below the cut score for meets expectations, while math did not have any.

Similarly, ELL students who were not provided a testing accommodation had higher mean scale scores than their counterparts who did receive a testing accommodation (see Table 2). Again, this is expected given that a student classified as ELL who is not provided a testing accommodation does not require an instructional accommodation and therefore, is assumed to have higher levels of English proficiency than their counterparts with a testing accommodation. For ELL, the mean scale score for students who received an accommodation is above the scale score cut for meeting expectations in all subject areas and grade levels except in grades 6 and 8 Mathematics.

Given that testing and instructional accommodations are provided to increase access for ELL and SWD students to both instructional and testing environments, it is reasonable to assume that if students had not been provided the accommodations, their mean scale scores may have been lower.

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Research Question 3: What type of accommodation is provided most often to students in both subgroups? What is the frequency of students who receive more than one type of testing accommodation?

The types of accommodations provided seem to follow a consistent pattern across subject area and grade level (see Tables 3 and 4). The most frequently provided accommodation type is Setting, ranging from 94.3% to 97.9% of the students who receive an accommodation. The second most frequently provided accommodation type was Scheduling, wherein approximately 80% of students receiving accommodations across all grade levels and subject areas received this type of accommodation. Presentation and Response followed respectively, with Response being the least used type. Many students receive more than one type of accommodation. Approximately 90% of SWD students who receive an accommodation receive more than one accommodation type. The Setting administration type remains in consistent use as the grade levels increase whereas all of the other types of accommodations decrease as the grade levels increase.

The pattern of accommodation type differs for ELL. While the most used accommodation type remains Setting, Presentation is the second-most used accommodation type for students classified as ELL, followed by Scheduling and then the least used being Response. The Response accommodation type is rarely used in grades 3, 4, and 5 but then increases dramatically in usage across all content areas in grades 6, 7, and 8. This finding may warrant some future inquiries and perhaps professional development for testing coordinators in the state. Similarly as with the SWD subgroup, the majority of ELL who receive an accommodation receive more than one at approximately 90% in each grade level and subject area.

Research Question 4: Does the receipt of a testing accommodation affect the internal consistency of the assessments for students in both subgroups (SWD and ELL)?

The reliability coefficients remain quite consistent for the accommodated students when compared to the non-accommodated students within each subgroup (see Tables 5 and 6). The SEMs shown in Tables 7 and 8 are small and would produce small bands around the means scale scores. These reliability indicators provide evidence of the stability of the measure and are indicative that testing accommodations are not negatively affecting the reliability of the assessments.

Another way to examine how accommodations might affect the reliability of the test is to examine the Cronbach's alpha reliability coefficients for accommodated and non-accommodated SWD or ELL in light of the reliability coefficients for the overall tested population. Table 9 shows the reliability indices reported for the 2009 CRCT and GHSGT.

Table 9. Reliability coefficients (Cronbach's Alpha) for overall population.

Assessment	Grade	Reading	English Language Arts	Mathematics
		Alpha	Alpha	Alpha
CRCT	3	0.88	0.90	0.92
	4	0.89	0.90	0.92
	5	0.86	0.90	0.93
	6	0.88	0.90	0.92
	7	0.86	0.90	0.92
	8	0.87	0.89	0.92
GHSGT	11	--	0.89	0.92

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For example, the range of coefficient alphas for SWD on the Reading CRCT in grades 3 through 8 is from 0.84 to 0.89 which is very similar to the range of coefficient alphas for the general population (0.86 to 0.89). Similarities are found in the other subject areas for both CRCT and GHSGT for the SWD subgroup as well as for ELL. This is additional support that the receipt of accommodations is not affecting the constructs being measured or the reliability of the assessments.

As Georgia continues to improve its overall assessment program, care with regard to the appropriate and effective use of testing accommodations is of utmost importance.

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