First Contact: A Census Report on the Characteristics of Students Eligible to Take Alternate Assessments

Technical Report #16-01

May 2016

Table of Contents

Nash, B., Clark, A. K., & Karvonen, M. (2015). *First contact: A census report on the characteristics of students eligible to take alternate assessments* (Technical Report No. 16-01). Lawrence, KS: University of Kansas, Center for Educational Testing and Evaluation.

Executive Summary

The purpose of the First Contact survey is to collect fine-grained information about the students who participate in alternate assessments based on alternate achievement standards. Educator ratings on the survey are summarized to provide an understanding of the assessment population. Ultimately, the results provided information on how students entered into and interacted with the Dynamic Learning Maps® (DLM®) Alternate Assessment System, which is an adaptive assessment designed to meet the diverse needs of students with the most significant cognitive disabilities.

Responses obtained from the First Contact survey facilitate the consortium's understanding of characteristics of the assessment's population, including students' current access to computers, assessment needs, and diverse knowledge, skills, and abilities. Key findings from a census of the DLM alternate assessment population during the 2012–2013 academic year are presented in the bulleted list that follows:

- 81% of students were characterized as having an intellectual disability, autism, or multiple disabilities.
- 67.6% of students were taught primarily in classrooms separate from their grade-level peers.
- 76% of students used expressive speech to communicate.
- 96% of the students accessed a computer using conventional means or an assistive device.
- Almost 60% of all students across grade levels read at or below a first grade level.
- With respect to English language skills, students tended to be more successful in more basic skills, such as recognizing single symbols presented visually or tactually. Students struggled with more complicated skills and needed further explanation or elaboration of text that is in print or braille.
- With respect to mathematics skills, students tended to be more successful in more basic skills, such as matching patterns, sorting by common properties, and counting more than two objects. Students struggled more as the skills became more complicated, such as in multiplying or dividing using numerals.

Overall, descriptive results from the First Contact survey demonstrate that the population of students eligible to take the alternate assessment is highly variable both in sensory characteristics and disabilities and in academic skills in English language arts and mathematics. However, the majority of students access a computer by traditional means or with an assistive device. The findings point to the need for an online assessment system that is varied both in the accessibility supports it offers and in the complexity of content and skills it assesses.

Overview

The DLM Alternate Assessment System is an adaptive assessment system designed to meet the diverse needs of students in the alternate assessment population. The system takes into consideration students' unique visual, auditory, communication, and academic needs when assigning tests. Furthermore, because delivery is computer based, the testing platform must account for students' needs for accessibility supports and use of assistive devices. Test developers also require a gauge of the variability of the students' needs and academic skills to develop test content that is appropriately rigorous for all students within the population. To provide an assessment system that meets each of these needs, a fine-grained understanding of students within the population is necessary. The DLM Consortium developed the First Contact survey to meet this end.

There were three key goals in distributing the First Contact survey. Initially, the data collection effort would provide a fine-grained understanding of the student population participating in alternate assessments based on alternate achievement standards. Individual student characteristics, garnered through First Contact ratings, would also provide information regarding the student's personal assessment access needs and an initial, basic understanding of the student's academic skills. Finally, educator responses to the First Contact survey would eventually be used to ensure the assessment system provided the student with an appropriate initial testlet, or collection of assessment items, for each student to take within the DLM Alternate Assessment System. The primary purpose of this report is to summarize the findings to address the first two goals of the survey—that is, to provide a census of students eligible to take alternate assessments and to better understand students' accessibility needs and academic skills.

Development of the First Contact Survey

The First Contact survey was developed to be a web-based inventory consisting of approximately 60 items. Primary educators of students participating in the alternate assessments based on alternate achievement standards completed the survey. The survey collected information regarding rater and facility characteristics and student demographics, special education placement, sensory perception, motor skills, expressive and receptive language, computer access, use of augmentative and alternative communication devices, academic skills, and engagement with and attention to instruction. Because the survey covered numerous domains, many items were designed to collect information in more than one area. However, to reduce respondent burden, the survey directed participants to complete only certain items based on previous responses. Table A-1 in the Appendix depicts the total number of items composing the First Contact survey by domain.

Two First Contact pilot events occurred during the 2011–2012 academic year. First, the DLM team piloted the survey in an effort to evaluate the usability of the online form of the survey. Through the usability study, participants provided feedback related to the format of the items and the ease of progressing through the items during administration. Researchers used the usability pilot results to modify instructions and incorporate web-based design features for the second event.

Data Collection

The First Contact survey was sent to educators of the DLM State Partners. At the time of the survey administration, the DLM project included 13 partner states: Iowa, Kansas, Michigan, Mississippi, Missouri, New Jersey, North Carolina, Oklahoma, Utah, Virginia, Washington, Wisconsin, and West Virginia. All participants were educators and other service providers of students with the most significant cognitive disabilities. The survey was intended to be completed by the primary educator of each student taking an alternate assessment based on alternate achievement standards in the participating states. The survey took less than 15 minutes to complete, and educators had 6 months to complete one survey for each eligible student for whom they were a primary educator. The survey was distributed via web-based survey tool, and links were provided via email to each state-level contact. State-level contacts then forwarded the information to district-level personnel for distribution. Periodic reminders were sent throughout the 6-month period regarding participation and the survey closing date.

The target population in the First Contact survey comprised approximately 60,000 primary service providers of students with the most significant cognitive disabilities in grades 3–12 participating in their state alternate assessments based on alternate achievement standards. Although the subjects of the First Contact survey were students with the most significant cognitive disabilities, primary service providers who worked with the students completed the survey.

Reliability Evidence

To support interpretations made from the First Contact survey, classifications and ratings provided by educators were evaluated for consistency across multiple raters for a single student. Educators from seven of the 17 DLM State Partners participated. The total number of valid student ratings (N = 758) represented a 50% response rate of the number originally intended. Data were evaluated for rater consistency using descriptive statistics: percentage of exact, adjacent, and discrepant ratings defined by 0, 1, and ≥2 discrepancy points, respectively. Cohen's Kappa (Cohen, 1960) provided inter-rater agreement indices while taking into account chance agreement between raters. Kappa values of >.60 were deemed acceptable. Intraclass correlations also facilitated the evaluation; the indices provide an index of the variance

attributable to the students and, in this instance, absolute agreement among raters (McGraw & Wong, 1996). Table 1 presents sample indices.

Although evidence suggested the overall consistency across raters was acceptable, the DLM team evaluated the results with an eye toward improvement for the operational First Contact survey. The team developed action steps, including strengthening rater requirements (i.e., only primary educators may rate students on the operational survey), developing an administration fact sheet and video, releasing the full survey to state partners to share with their respective educators before administration, and modifying several items with respect to embedded definitions or design.

Table 1

Reliability Indices for a Sample of First Contact Items

Skills	Overall Consistency Indices						
	Exact	Adjacent	Discrepant	ICC	Lower Bound	Upper Bound	Kappa
Highest level of understanding	63.1	28.7	8.2	0.579	0.498	0.651	0.453
Approximate instructional reading level	73.2	20.7	6.1	0.899	0.862	0.911	0.667
Highest level of expressive communication	78.4	18.7	2.9	0.715	0.633	0.781	0.596
Receptive communication skill: 2-step directions	60.5	29.7	9.8	0.745	0.690	0.792	0.458

Note. Kappa for more observable classifications: student has a health issue that interferes with instruction (0.801); student uses speech to meet expressive needs (0.751); student can access a computer using a standard keyboard with his or her fingers (0.699). ICC = intraclass correlation.

Results

Following the pilot events, the DLM Consortium administered the First Contact survey throughout the 2012–2013 academic year. More than 44,000 valid student ratings were obtained from educators across 14 states. Table 2 presents participation in the First Contact survey by state. A case was considered valid if the educator indicated a valid state code, including "other," and completed additional items. Descriptive statistics are provided in the following sections by categories of First Contact survey questions.

Table 2

First Contact Participation by State

State	n	%
Iowa	1,546	3.1
Kansas	3,030	6.0
Michigan	7,959	15.9
Mississippi	2,953	5.9
Missouri	5,748	11.5
New Jersey	8	< 0.1
North Carolina	6,838	13.6
Oklahoma	2,754	5.5
Utah	2,375	4.7
Vermont	200	0.4
Virginia	7,018	14.0
Washington	837	1.7
West Virginia	2,305	4.6
Wisconsin	1,191	2.4
Other	20	< 0.1
Missing	5,383	10.7

Demographics

Student demographic information is provided below for grade level and race in Tables 3 and 4, respectively. There was a relatively even distribution of students represented across the grade levels, with approximately 21% of students in high school grade levels (9–12). Almost 64% of students in the census were white. According to the 44,667 responses that indicated students' gender, 35.4% (n = 15,832) students were female and 64.6% (n = 28,835) students were male.

Table 3

Number of Students Included in First Contact Survey by Grade Level (N = 44,949)

Grade	n	%
3	5,872	13.0
4	5,835	13.0
5	5,925	13.2
6	5,964	13.3
7	5,831	13.0
8	5,677	12.6
9	1,498	3.3
10	2,824	6.2
11	4,055	9.0
12	1,040	2.3
Uncertain	428	0.9

Table 4

Number of Students Included in First Contact Survey by Race (N = 46,049)

Race	n	%
White	29,371	63.8
Black or African American	11,408	24.8
American Indian or Alaska Native	856	1.9
Asian	1,045	2.3
Native Hawaiian or Pacific Islander	142	0.3
Other Race	3,227	7.0

Sensory Characteristics and Disabilities

Several groups of questions on the First Contact survey pertained to students' individual sensory characteristics and disabilities. As depicted in Figure 1, educators classified the majority of students in the sample as students with autism, students who have an intellectual disability, or students who have multiple disabilities. Although infrequent, some unexpected classifications were reported, such as specific learning disability, sensory impairments, and emotional disturbance.
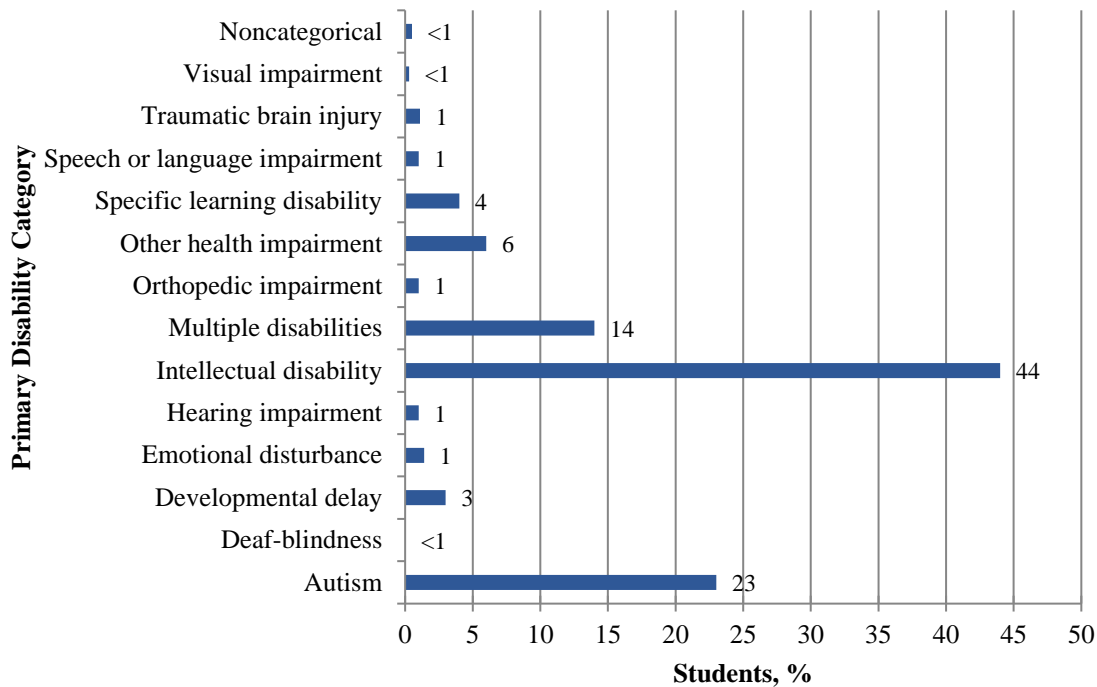
Figure 1. Percentage of students classified in each primary disability category (*N* = 44,638).

Figure 2 depicts the percentage of students with specific characteristics related to assessment needs, including students who are blind or have visual impairments, students who required enlarged print, or students who used braille. One third of students reportedly had a health or care issue that interfered with assessment, and approximately one fourth (24%) did not use speech for expressive communication. These findings will be taken into consideration for item development and design of the technology platform that delivers DLM assessments.
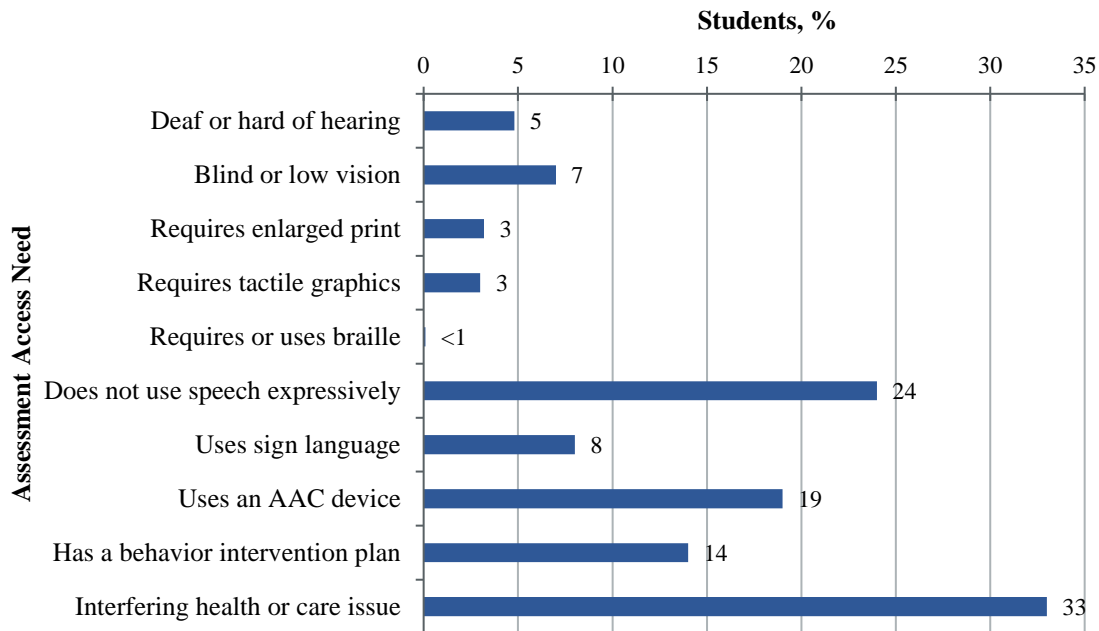
Figure 2. Percentage of students with each assessment access need (*N* = 44,638). The chart depicts separate items presented within one graphic summary, and the total will therefore not sum to 100%. AAC = augmentative or alternative communication.

Table 5 presents student use of auditory aids according to the survey responses. Of the students who are deaf or hard of hearing, a majority used oral language. Many students also used personal or classroom amplification to aid their hearing or used sign language. A fewer number of students used an animated signing software. Educators were allowed to respond in multiple categories, as many students used more than one auditory aid, resulting in a total number of responses greater than the total number of students who are deaf or hard of hearing. The total number of students was used to calculate the percentage of students who are deaf or hard of hearing who used each auditory aid.

Table 5

Use of Auditory Aids by Students Who are Deaf or Hard of Hearing (N = 2,109)

Auditory Aid	*n*	*%*
Personal or classroom amplification	519	24.6
Animated signing software	32	1.5
Oral language	1,069	50.7
Sign language	678	32.1

Note. Multiple responses could be selected for one student.

Table 6 depicts student use of technological visual aids. Most students who relied on a technological device used a light box or a magnifier.

Table 6

Students' Use of Technological Visual Aids (N = 1,566)

Technological Visual Aid	n	%
Magnifier	602	24.8
Computer screen magnifier (fits over standard monitor)	292	12.0
Screen magnification software (e.g., Closeview for Mac, ZoomText)	211	8.7
Closed circuit television (CCTV)	81	3.3
Screen reader	201	8.3
Scanner with talking word processor	104	4.3
Manual braille writing device (e.g., Perkins Brailler)	92	3.8
Electronic braille writing device (e.g., Mountbatten Brailler)	22	0.9
Device with refreshable braille display	18	0.7
Light box	803	33.1

Note. Multiple responses could be selected for one student.

Of 44,614 responses regarding student mobility, educators responded that 39,408 students (88.3%) were able to walk without assistance, whereas 1,953 students (4.4%) could walk with physical assistance and 3,253 students (7.3%) could not walk. Table 7 displays the number of students by type of mobility support for students who either walked with assistance or could not walk. Multiple responses were allowed for this question, and percentages were calculated based a total of 5,206 students who either walked with assistance or could not walk.

Table 7

Number and Percentage of Students Using Mobility Aids (N = 5,206)

Mobility Aid	n	%
Walks with a cane	201	3.9
Uses walker for mobility	866	16.7
Uses wheelchair for mobility without assistance	713	13.7
Uses wheelchair for mobility with assistance	3,696	71.0

Note. Multiple responses could be selected for one student.

Of 44,603 responses regarding student use of specialized seating or positioning equipment, educators responded that 2,160 students (4.8%) required specialized seating to maintain an upright position and 1,593 students (3.6%) required specialized positioning equipment such as a standing frame. The remaining 40,850 students (91.6%) did not require any specialized seating equipment. Tables 8 and 9 summarize students' arm and hand control and head control, respectively. The majority of students reportedly could use two hands together to perform tasks (77%) and could support and turn their head without assistance (94%).

Table 8

Number and Percentage of Students by Ability to Perform Tasks With Their Hands (N = 44,597)

Arm and Hand Control	n	%
Uses two hands together to perform tasks	38,103	76.7
Uses only one hand to perform tasks	6,417	13.0
Requires physical assistance to perform tasks with hands	3,917	7.9
Cannot use hands to complete tasks	1,251	2.5

Note. Multiple responses could be selected for one student.

Table 9

Number and Percentage of Students by Ability to Support and Turn Head (N = 44,311)

Head Control	n	%
Supports and turns head without assistance	42,387	94.3
Has restricted range of head motion	1,012	2.2
Requires head support or head rest throughout the day	1,547	3.4

Communication

The First Contact survey also collected educator classifications regarding students' expressive and receptive communication skills and students' use of augmentative or alternative communication devices.

Educators indicated approximately 76% of students used speech to meet expressive communication needs. The majority of the students who used speech expressively did so by regularly combining three or more words according to grammatical rules. Table 10 presents the percentage of students by level of expressive communication.

Table 10

Students' Highest Level of Expressive Communication With Speech, Given That the Students Use Speech to Meet Expressive Communication Needs (N = 33,571)

Expressive Communication	n	%
Uses one spoken word at a time	3,021	8.9
Uses two spoken words at a time	6,715	20.0
Combines three or more spoken words according to grammatical rules	23,835	71.0

Many students did not communicate via spoken word and instead used sign language or symbols. Educators indicated approximately 7% of the students used sign language to meet their expressive communication needs. Table 11 presents the percentage of students who used a specific type of sign language among those students who used sign language. The data represent the students' primary sign system. Of the students who used sign language, the majority used American Sign Language.

Table 11

Percentage of Students Using Each Type of Sign Language, Given That the Students Use Sign Language (N = 3,329)

Expressive Communication	n	%
American Sign Language	1,998	60.0
Hybrid or personalized sign system	1,165	35.0
Signed exact English	166	5.0

Table 12 shows that 8% of the students who used sign language did so by combining three or more signed words according to correct grammatical rules, whereas 80% signed one word at a time.

Table 12

Students' Highest Level of Expressive Communication With Sign Language, Given That the Students Use Sign Language to Meet Expressive Communication Needs (N = 3,365)

Expressive Communication	n	%
Uses one signed word at a time	2,692	80.0
Uses two signed words at a time	404	12.0
Combines three or more signed words according to grammatical rules	269	8.0

Table 13 focuses on students who used symbols for expressive communication. Within this group, 10% of students correctly combined three or more symbols according to correct grammatical rules, whereas 69% used one symbol at a time.

Table 13

Students' Highest Level of Expressive Communication With Symbols, Given That the Students Use Symbols to Meet Expressive Communication Needs (N = 8,203)

Expressive Communication	n	%
Uses one symbol at a time	5,660	69.0
Uses two symbols at a time	1,723	21.0
Combines three or more symbols according to grammatical rules	820	10.0

Information regarding students' use of augmentative or alternative communication devices was also collected. Table 14 suggests that the most frequently used augmentative or alternative communication options are symbols offered in groups of one or two, a simple voice output

device, and low-tech communication boards with eight or fewer symbols. Educators once again were allowed multiple responses, as many students used more than one device.

Table 14

Students' Use of Augmentative or Alternative Communication Device

Augmentative or Alternative Communication Device	n	%
Symbols offered in groups of one or two	4,114	27.0
Low-tech communication board(s) with eight or fewer symbols	2,406	15.8
Low-tech communication board(s) with nine or more symbols	782	5.1
Low-tech communication book with multiple pages, each containing eight or fewer symbols	732	4.8
Low-tech communication book with multiple pages, each containing nine or more symbols	753	4.9
Eye gaze board (eye gaze communication) with four or fewer symbols	620	4.1
Eye gaze board (eye gaze communication) with five or more symbols	83	0.5
Simple voice output device (e.g., BIGmack, Step by Step, Cheap Talk, Voice-in-a-Box, Talking Picture Frame) with nine or fewer messages or multiple messages in sequence	2,692	17.7
Simple voice output device with 10–40 messages	464	3.0
Voice output device with levels (e.g., 6-level Voice-in-a-box, Macaw, Digivox, DAC)	305	2.0
Voice output device or computer/tablet with dynamic display software (e.g., DynaVox, Mytobii, Proloquo2Go, Speaking Dynamically Pro, Vantage)	1,925	12.6
Voice output device with icon sequencing (e.g., ECO, ECO2, Springboard Lite, Vanguard)	350	2.3

Note. Multiple responses could be selected for one student.

For students who did not use speech, sign language, or augmentative or alternative communication systems, data were collected on types of receptive communication used. Table 15 displays the number of students who used various types of receptive communication.

Table 15

Number and Percentage of Students by Type of Receptive Communication (N = 4,004)

Type of Receptive Communication	n	%
Uses conventional gestures and vocalizations to communicate intentionally but does not yet use symbols or sign language	1,926	48.1
Uses only unconventional vocalizations, unconventional gestures, and/or body movement to communicate intentionally	560	14.0
Exhibits behaviors that may be reflexive and are not intentionally communicative but can be interpreted by others as communication	1,518	37.9

Figure 3 summarizes the percentage of students who used each form of receptive communication more than 80% of the time. Approximately three fourths of students (74%) could point to, look at, or touch things when asked, and two fifths (41%) could follow two-step directions.
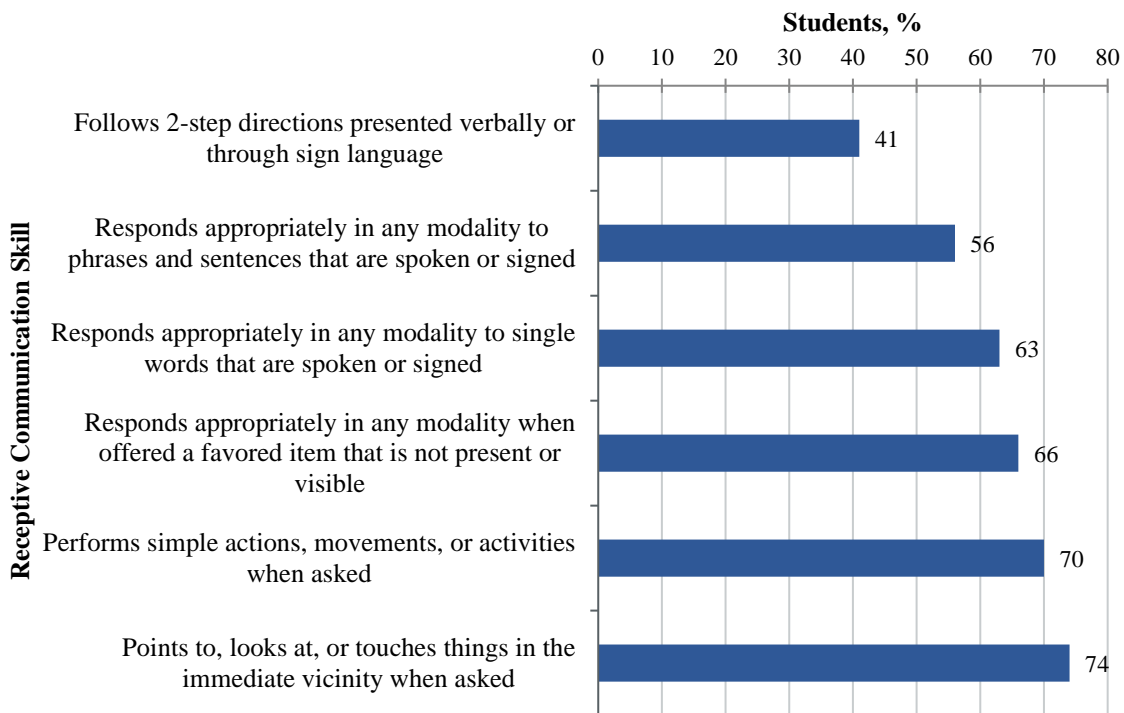

Figure 3. Percentage of students who demonstrated receptive communication skill more than 80% of the time (*N* = 50,165).

Academics

One of the primary goals of the First Contact survey is to appropriately place students in the learning map tool such that the assessment is well matched to the students' knowledge, skills, and abilities. Therefore, it was critical to collect information regarding students' academic skills in the areas of English language arts (reading and writing) and mathematics.

Within the First Contact survey, each academic subject item was administered as a multiple-response item type. As such, the values for each skill should be considered independently. That is, a respondent could select more than one category for a single student.

Students, %

Reading Level	%
Does not read any words when presented in print or braille (not including environmental signs or logos)	20
Reads only a few words or up to pre-primer level	18
Reads at primer to first grade level	21
Reads above first grade level to second grade level	17
Reads above second grade level to third grade level	15
Reads above third grade level	9
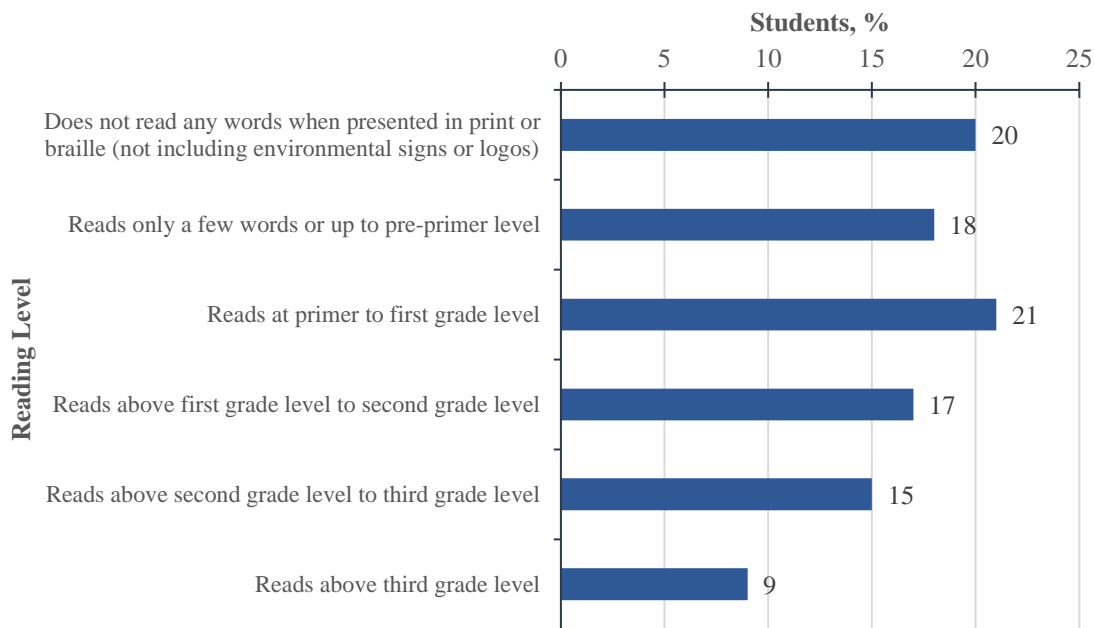
Figure *4* presents the overall percentage of students who were performing at each approximate reading level.

Students, %

- Does not read any words when presented in print or braille (not including environmental signs or logos): Elementary school 22, Middle school 19, High school 18
- Reads only a few words or up to pre-primer level: Elementary school 23, Middle school 16, High school 13
- Reads at primer to first grade level: Elementary school 28, Middle school 18, High school 14
- Reads above first grade level to second grade level: Elementary school 17, Middle school 19, High school 15
- Reads above second grade level to third grade level: Elementary school 8, Middle school 18, High school 21
- Reads above third grade level: Elementary school 2, Middle school 10, High school 19

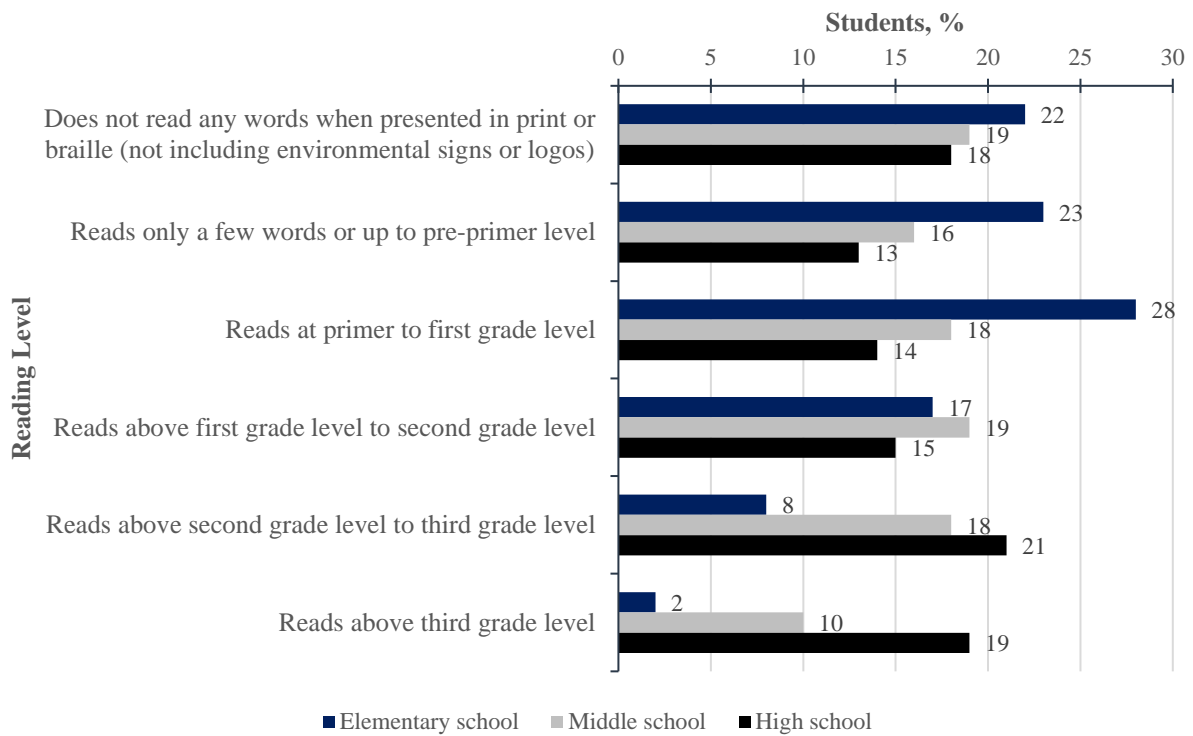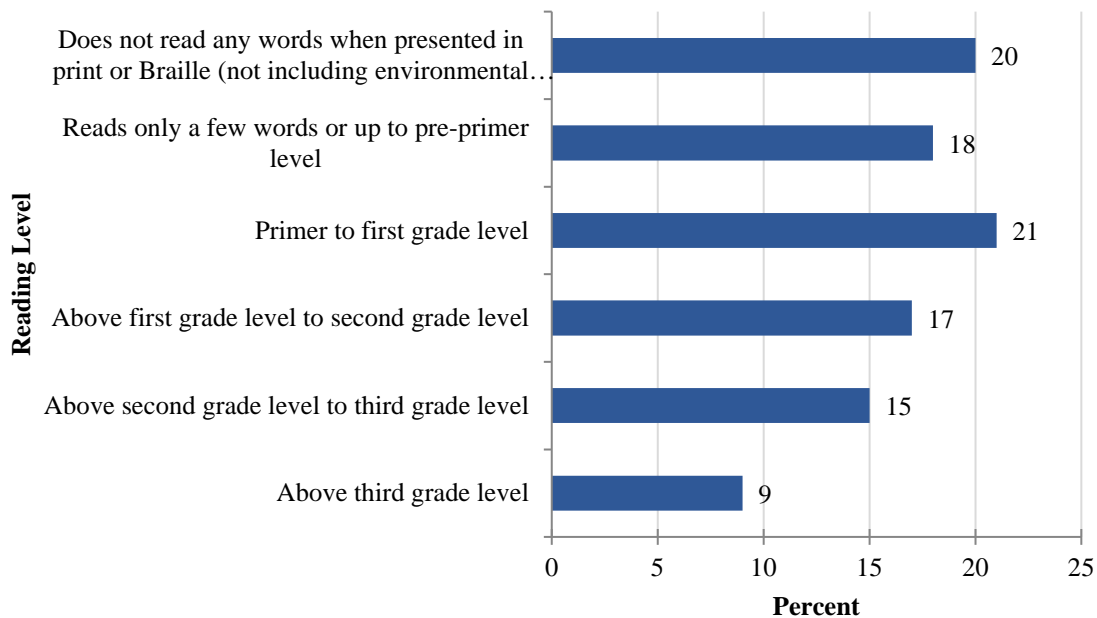■ Elementary school ■ Middle school ■ High school

Figure 5 presents this information by grade band. Overall, 20% of students reportedly did not read any words and 39% read at or below the first grade level.
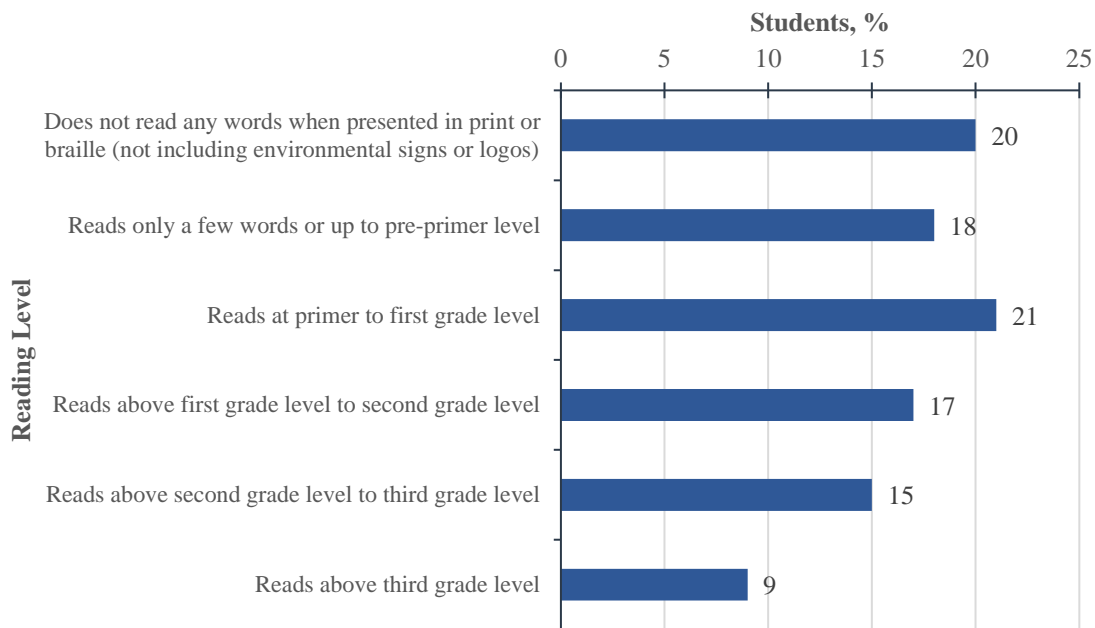

Reading Level

- Does not read any words when presented in print or Braille (not including environmental…: 20
- Reads only a few words or up to pre-primer level: 18
- Primer to first grade level: 21
- Above first grade level to second grade level: 17
- Above second grade level to third grade level: 15
- Above third grade level: 9

Percent

Figure 4. Percentage of students at each approximate reading level in print or braille (*N* = 44,438).

Although the percentage of high school students rated as reading at or above the second grade level (40%) surpasses the percentage of elementary and middle school students reading at that level (10% and 28%, respectively), Figure 5 highlights that students' reading levels were variable across grades. This finding suggests that a student's grade level does not provide enough information to guide presentation of items targeted to the student's knowledge and skills.
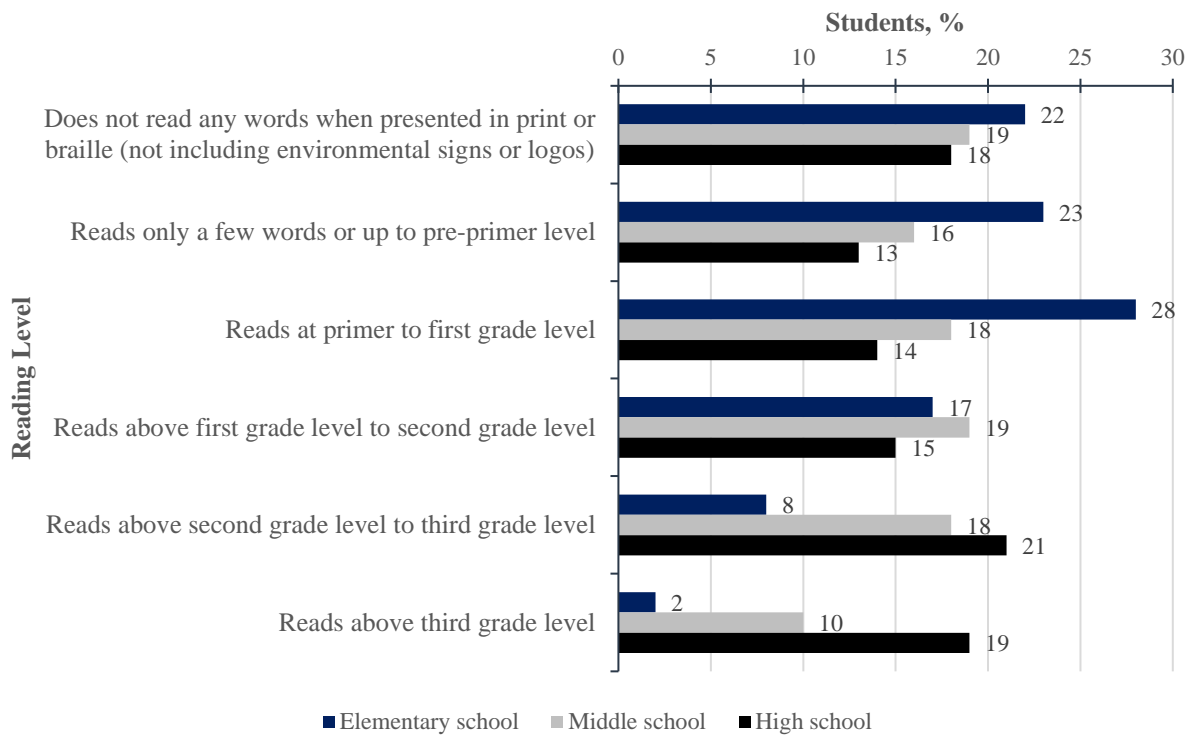
Figure 5. Percentage of students at each approximate reading level in print or braille by grade band (*N* = 44,302).

In the remainder of this section, results are summarized in terms of the percentage of students who could reportedly demonstrate an academic skill at least 80% of the time. This threshold was chosen because it indicates a high level of consistency. Figures 6–8 represent students' skills in English language arts (including reading and writing) and mathematics.
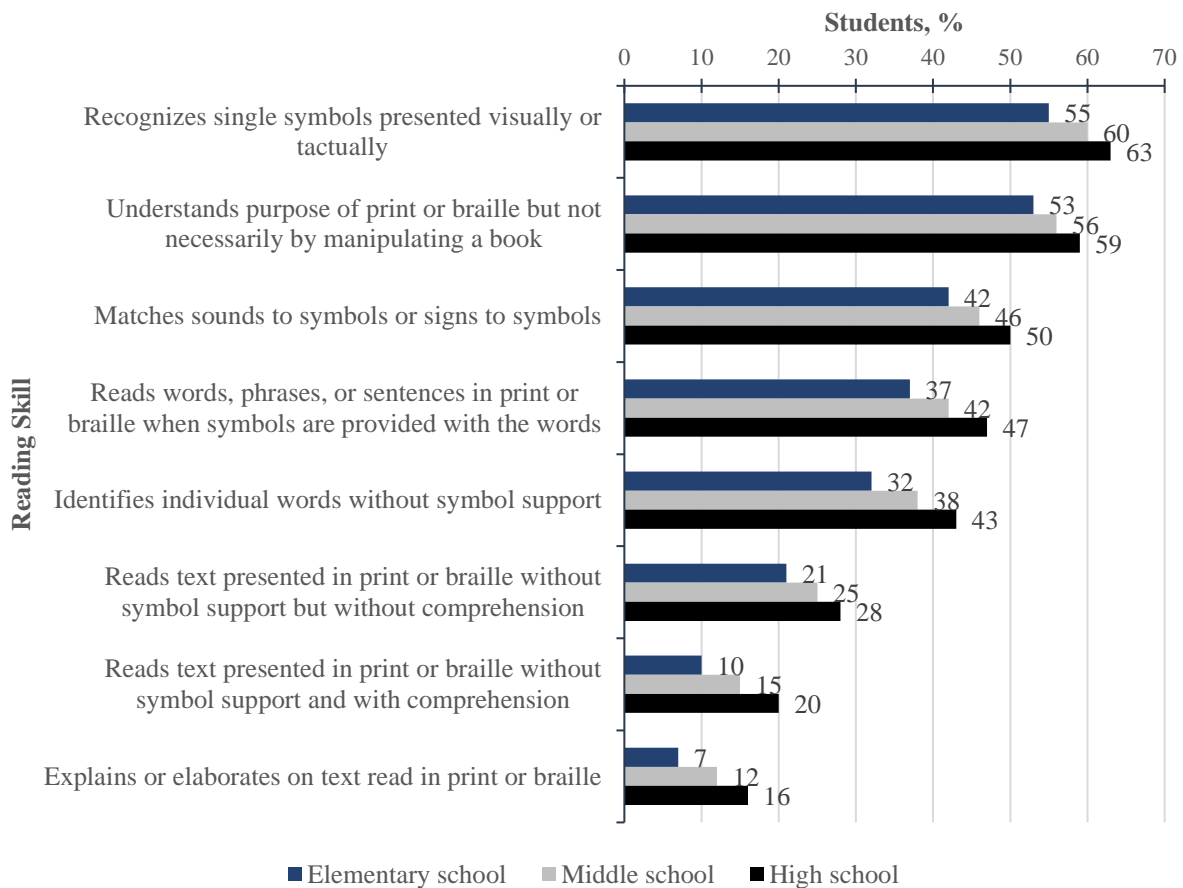
Students, %

Reading Skill	Elementary school	Middle school	High school
Recognizes single symbols presented visually or tactually	55	60	63
Understands purpose of print or braille but not necessarily by manipulating a book	53	56	59
Matches sounds to symbols or signs to symbols	42	46	50
Reads words, phrases, or sentences in print or braille when symbols are provided with the words	37	42	47
Identifies individual words without symbol support	32	38	43
Reads text presented in print or braille without symbol support but without comprehension	21	25	28
Reads text presented in print or braille without symbol support and with comprehension	10	15	20
Explains or elaborates on text read in print or braille	7	12	16

■ Elementary school   ■ Middle school   ■ High school

Figure *6* shows the percentage of students who performed a reading skill more than 80% of the time, split by grade band. There are trends across skills and grade bands. More students consistently demonstrated basic skills, such as recognizing single symbols presented visually or tactually, and fewer students consistently demonstrated more complicated skills, such as explaining or elaborating on text read in print or braille. The highest proportions of students who performed each skill consistently were at the high school level, followed by middle school and then elementary school.
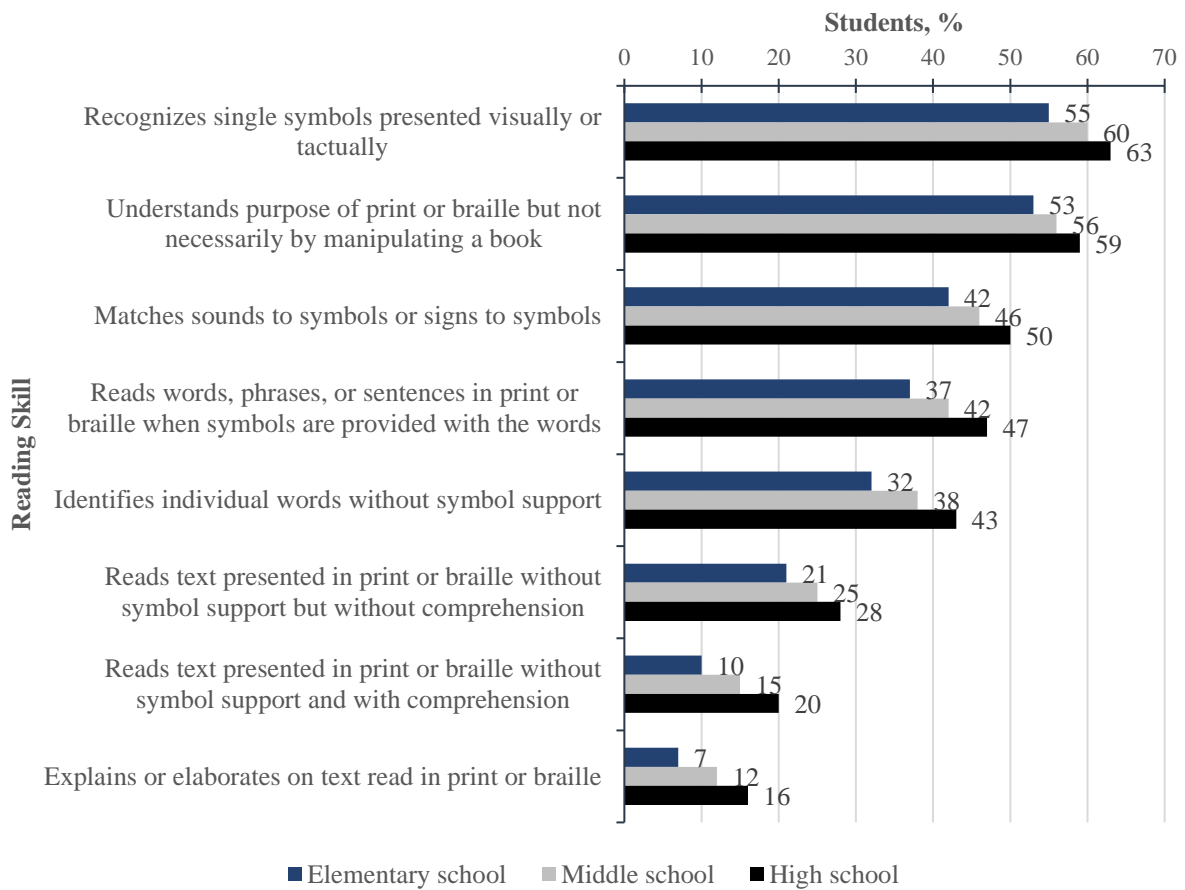
Figure 6. Percentage of students who demonstrated reading skill more than 80% of the time (*N* = 44,451).
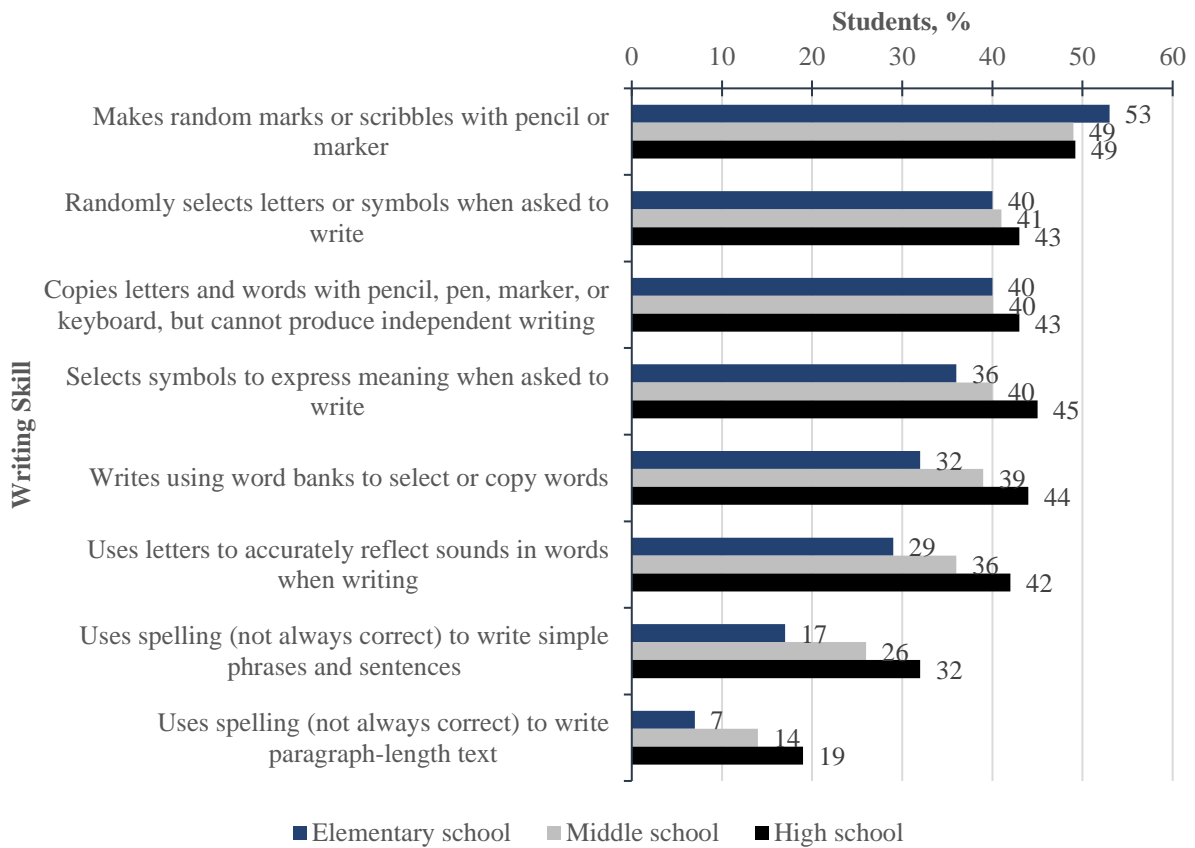
Figure *7* presents the percentage of students who demonstrated writing skills at least 80% of the time. Similar to reading, there was a tendency for more students in higher grades to consistently demonstrate each skill compared with students in lower grades and a tendency for simpler skills to be demonstrated more frequently than more complicated skills.
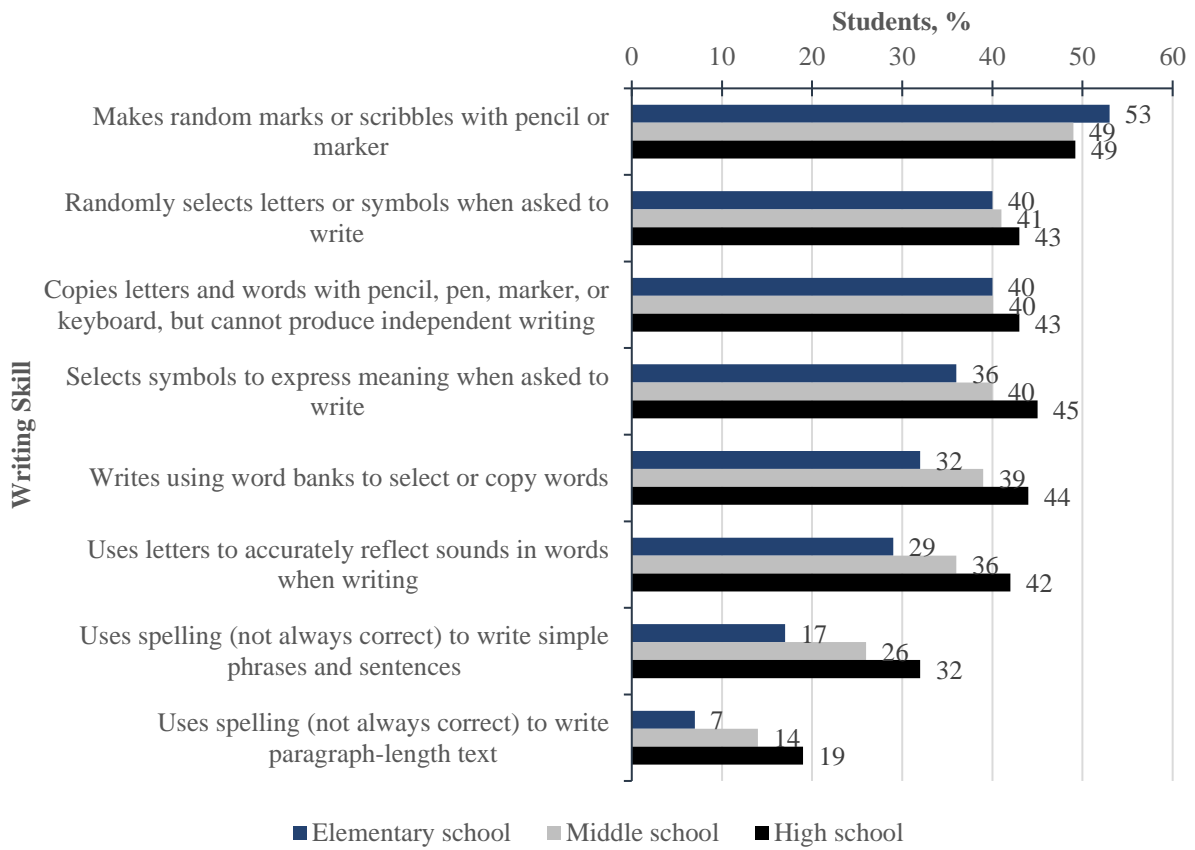
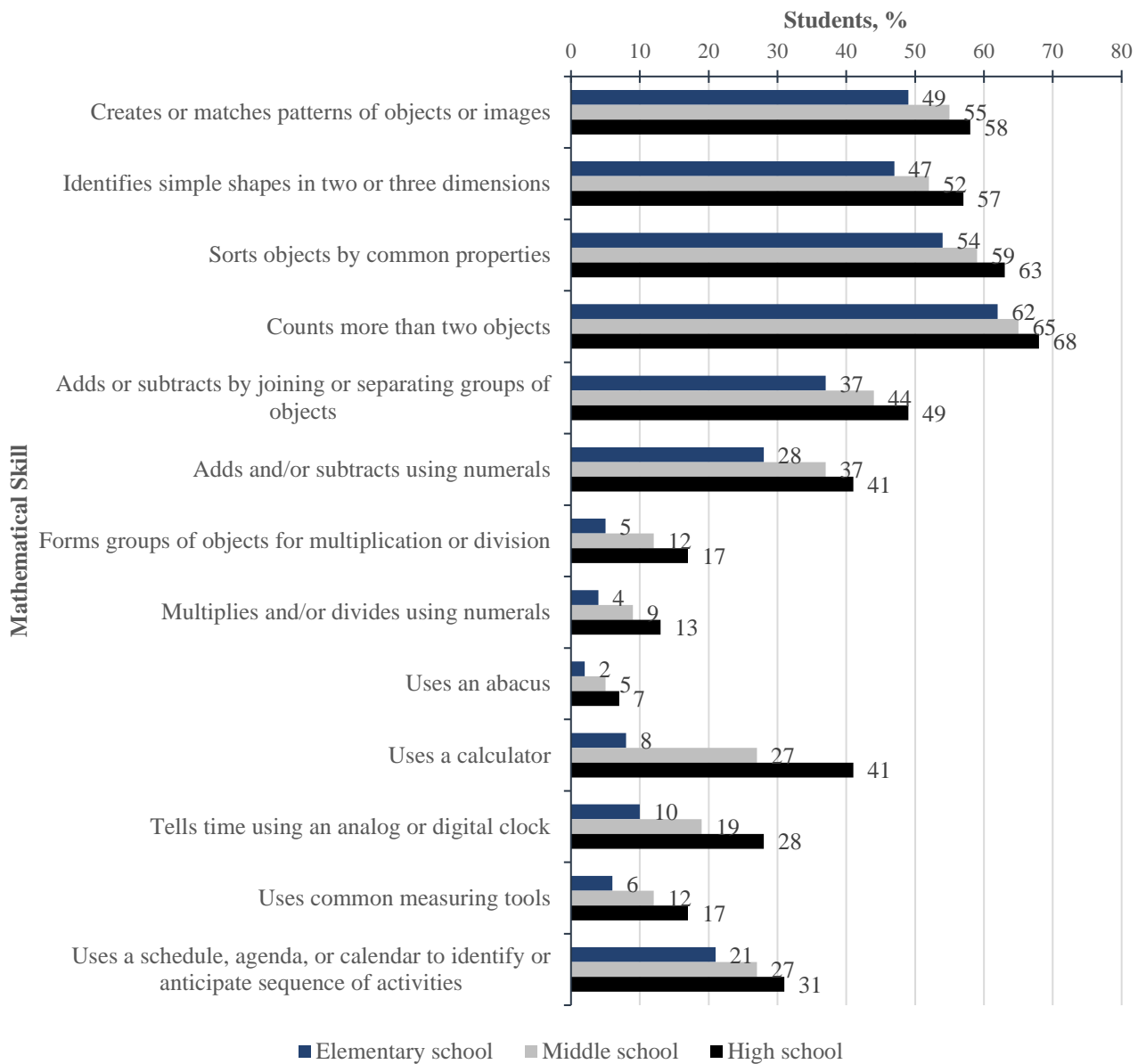*Figure 7*. Percentage of students who demonstrated writing skill more than 80% of the time (*N* = 44,342).

Students, %

Mathematical Skill	Elementary school	Middle school	High school
Creates or matches patterns of objects or images	49	55	58
Identifies simple shapes in two or three dimensions	47	52	57
Sorts objects by common properties	54	59	63
Counts more than two objects	62	65	68
Adds or subtracts by joining or separating groups of objects	37	44	49
Adds and/or subtracts using numerals	28	37	41
Forms groups of objects for multiplication or division	5	12	17
Multiplies and/or divides using numerals	4	9	13
Uses an abacus	2	5	7
Uses a calculator	8	27	41
Tells time using an analog or digital clock	10	19	28
Uses common measuring tools	6	12	17
Uses a schedule, agenda, or calendar to identify or anticipate sequence of activities	21	27	31

■ Elementary school   ■ Middle school   ■ High school

Figure 8 depicts the percentage of students who performed mathematics skills more than 80% of the time, split by grade band. Counting, sorting, matching patterns, and identifying simple shapes were among the most frequent skills students demonstrated consistently, whereas more complex skills such as multiplying and dividing were less frequently reported. Again, higher proportions of students in high school demonstrated each skill than in middle school or elementary school.
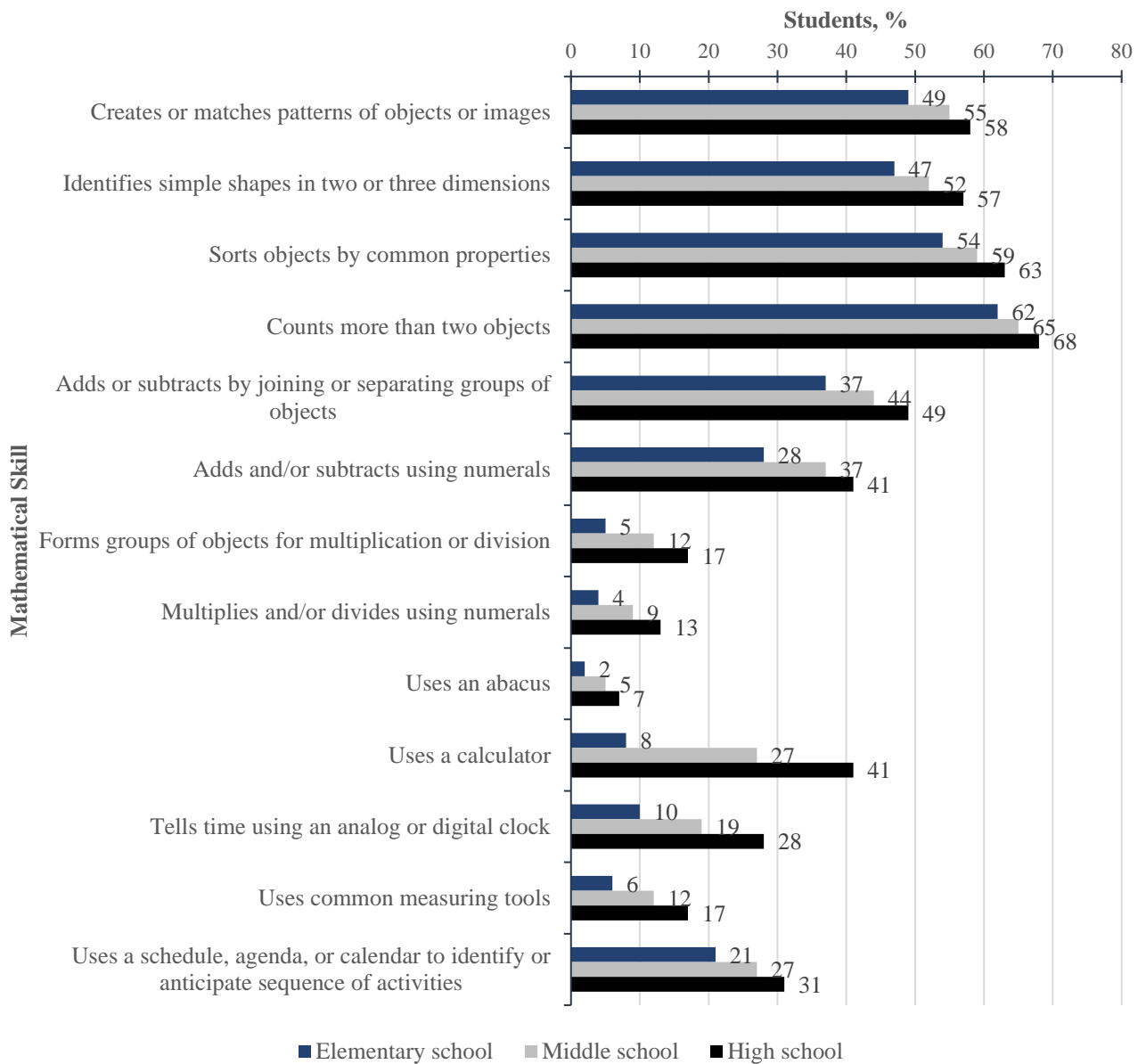
Students, %

Figure 8. Percentage of students who demonstrated mathematical skill more than 80% of the time (*N* = 44,387).

Computer Use

Because the DLM Alternate Assessment System was intended to be computer based, students' access to and use of computers was important to understand. As depicted in Figure 9, approximately 56% of students used a computer independently as their primary means of access. Less than 4% of students in the sample (1,538 students), however, had not had the opportunity to access a computer.
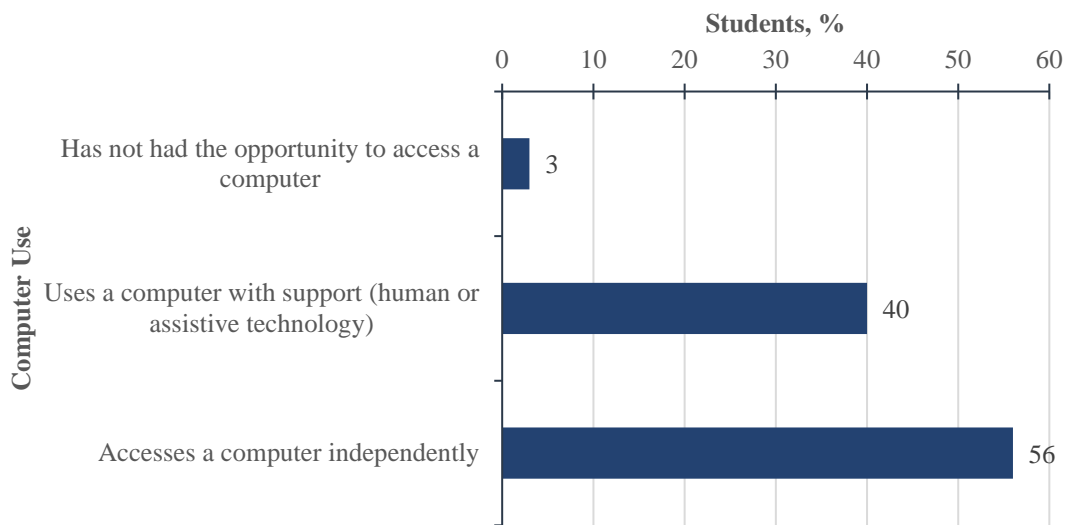
Figure 9. Percentage of students by primary use of a computer (*N* = 44,439).

Figure 10 describes the percentage of students who accessed a computer using a specific tool. For this portion, the survey allowed respondents to select multiple responses. As such, the values for each type of computer access should be considered separately. That is, a student may be included in more than one category as long as the corresponding tool was used by the student to access a computer. The figure reveals that the majority of students could access a computer through conventional means, such as a standard keyboard and standard mouse.
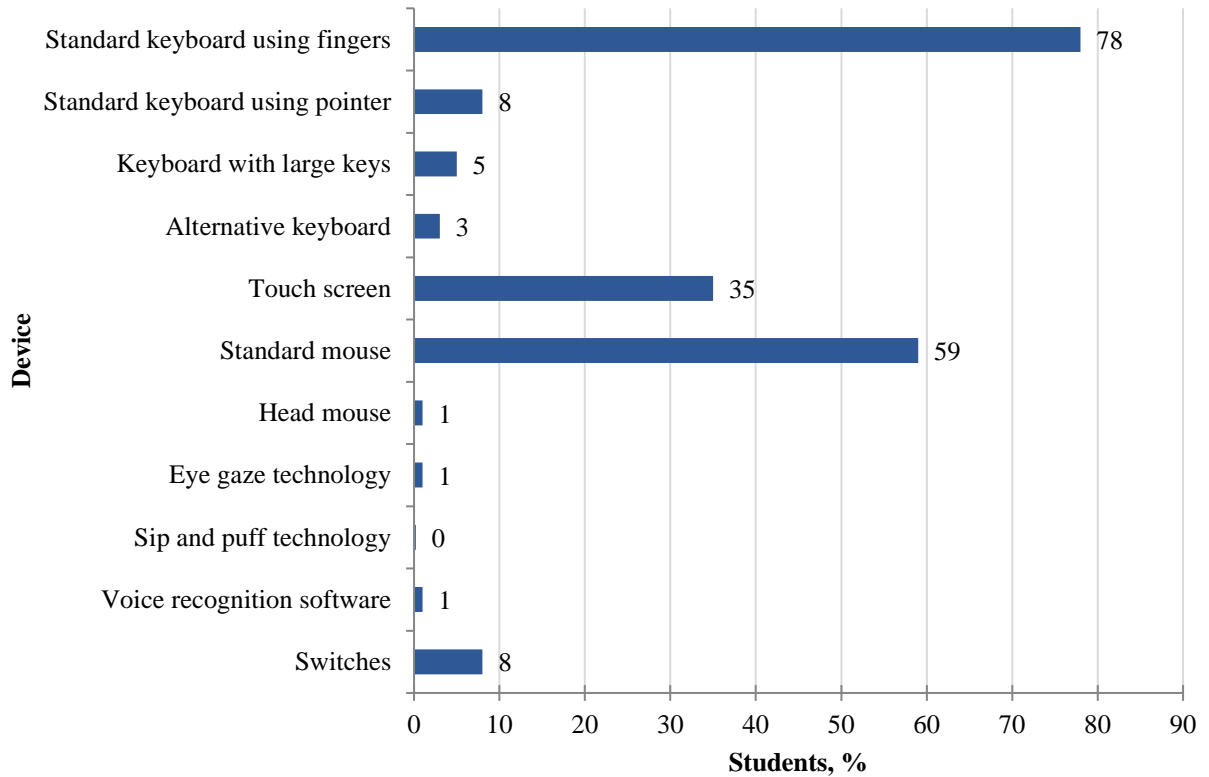
Figure 10. Percentage of students using each device to access a computer (*N* = 42,652).

For students who had not had access to a computer, the First Contact survey further prompted educators to elaborate as to why. Figure 11 depicts educator responses as to why a student may not have accessed a computer. An intended consequence of the online assessment system is to reduce the number of students who have yet to access a computer, so these responses provide direction for development of the DLM assessment system, including guidance for educators and design of accessibility supports for the testing platform.
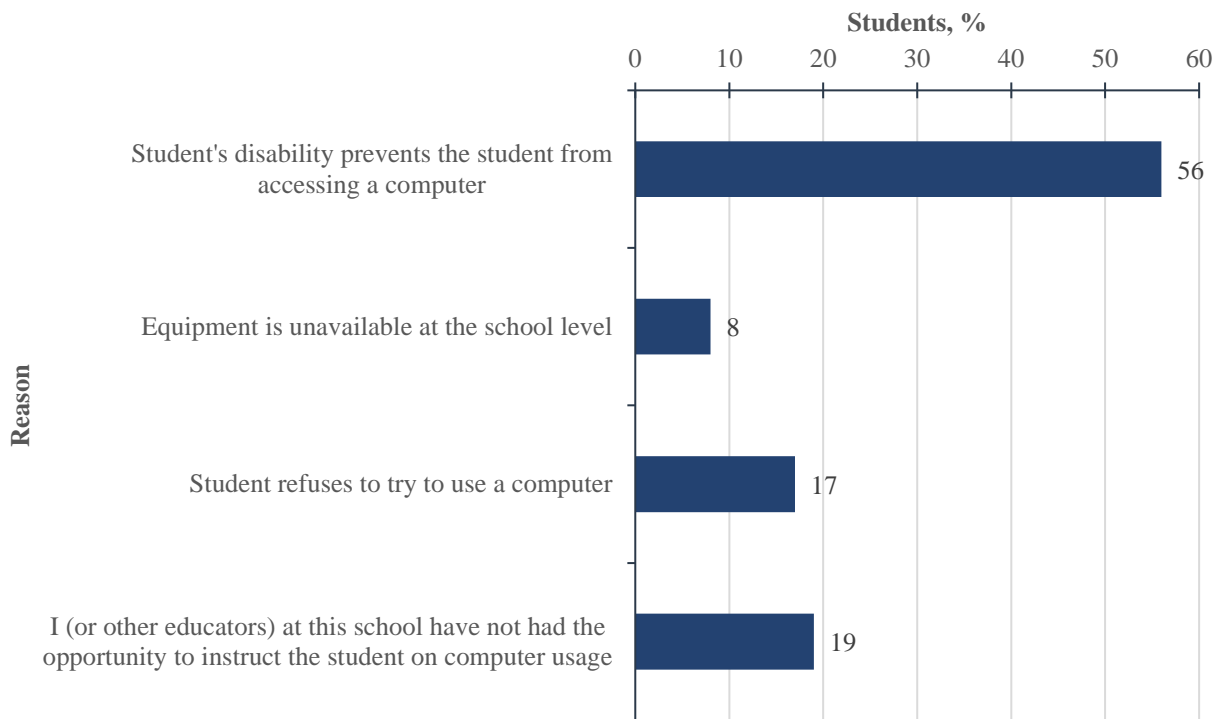
Students, %

Figure 11. Reasons students were unable to access a computer (*N* = 1,531). Educators did not provide additional information for seven students previously classified as not having an opportunity to access a computer.

Instruction

Several groups of First Contact survey questions were intended to gather information about instruction for students who are eligible to take alternate assessments. Many factors can affect instruction, particularly for this group of students. These factors include educational setting, student engagement, and understanding of instruction.

Table 16 shows the classroom setting in which each student was typically taught. The majority of students who participated in the DLM Alternate Assessment System (68%) belonged to a separate classroom from their peers, but not a separate school. Approximately 28% of students were taught either in a resource room or in an entirely separate school. A small percentage of the students participated in a regular classroom. Very few were homebound or hospitalized.

Table 16

Number and Percentage of Students by Type of Classroom Setting (N = 44,152)

Classroom Setting	*n*	%
Regular class	1,635	3.7
Resource room	7,425	16.8
Separate class	29,844	67.6
Separate school	4,881	11.1
Homebound or hospital	367	0.8

Figure 12 presents educator ratings of their students' attention to teacher-directed and computer-directed instruction. More than 40% of the students demonstrate fleeting attention to either teacher-directed or computer-directed instruction. The students in this category required repeated prompts to sustain attention. Slightly more than 10% of the students demonstrated little or no attention to either type of instructional activities.
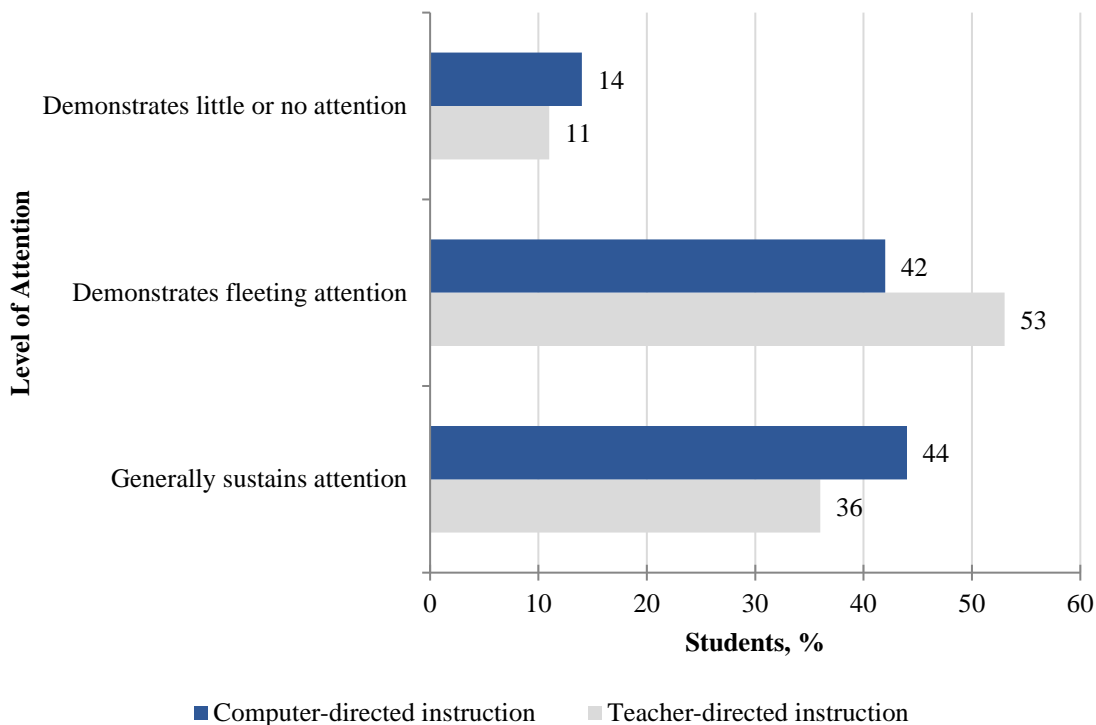

Figure 12. Percentage of students by level of attention to type of instruction (*N* = 44,317).

Finally, Table 17 summarizes students' level of understanding of instruction. Nearly half of the students (45%) reportedly demonstrated understanding of previously instructed skills and concepts with prompting and support. Nearly one fifth of students (18%) were able to demonstrate understanding of previously taught skills in similar situations without prompting and support. A small percentage of students (4%) did not participate in instructional activities, even with prompting and support.

Table 17

Number and Percentage of Students by Level of Understanding of Instruction (N = 44,306)

Level of Understanding	*n*	*%*
Applies understanding of skills to novel instructional activities	2,496	5.6
Demonstrates understanding of previously instructed skills and concepts in similar situations without prompting and support	8,120	18.3
Demonstrates understanding of previously instructed skills and concepts with prompting and support	19,859	44.8
Participates in instructional activities with prompting and support	12,296	27.8
Does not participate in instructional activities, even with prompting and support	1,535	3.5

Conclusions

Based on educator responses submitted during the census administration of the First Contact survey, several important findings were obtained. Descriptive results suggest that the majority of students currently access a computer via traditional means with or without assistance, and students' academic skills are diverse within and across grade levels. Findings regarding access needs and expressive communication have implications for design of the assessments and the testing platform. Ultimately, these results inform the DLM Consortium about the demographics of the population being assessed and will eventually be used to determine students' entry into the DLM Alternate Assessment System.

In the future, First Contact survey data will be analyzed for further understanding of the relationships among topics represented on the survey and for other information that could guide improvements to the assessment system and technology platform. For example, additional studies may examine the relationship between students' educational settings and other variables such as academic skills and different subgroups' access to computers. Survey responses will be used in conjunction with student responses to assessment items to refine the algorithms used to guide student entry into the assessment system. Longitudinal data will also

be used to track changes in students' academic skills, computer access, support needs, and other educational experiences over time.

References

Cohen, J. (1960). A coefficient of agreement for nominal scales. *Educational and Psychological Measurement, 20,* 37-46. doi: 10.1177/001316446002000104

McGraw, K., & Wong, S. P. (1996). Forming inferences about some intraclass correlation coefficients. *Psychological Methods*, *1*(1), 30–46.

Appendix

Table A-1

Number of First Contact Items by Domain

Domain	Number of Items
Demographics	6
Educator and Agency	9
Special Education	2
Sensory Capabilities	9
Motor Capabilities	5
Computer Access	4
Communication	10
Academic Skills	4
Instruction, Behavior, and Health	8
Optional Text Comment	1