Characteristics and Performance of Students with Significant Cognitive Disabilities Who May Be English Learners

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#### Abstract

There is a dearth of research describing the small population of students who have significant cognitive disabilities and are also English learners (ELs). This study seeks to expand what is known about this population by summarizing data for EL students who participated in Dynamic Learning Maps Alternate Assessments in 16 partner states during the 2016-2017 academic year. Teacher responses to a survey of student characteristics, including items about academic skills, expressive and receptive communication, and classroom setting, as well as the students' final performance levels are described for students identified as ELs and non-ELs to provide a richer picture of EL students with significant cognitive disabilities.

*Keywords:* English learners, students with significant cognitive disabilities, student characteristics, alternate assessment

# Characteristics and Performance of Students with Significant Cognitive Disabilities Identified as English Learners

Alternate assessments based on alternate achievement standards (AA-AAS) are designed for the small but heterogeneous population of students with the most significant cognitive disabilities (SWSCD) who are eligible to take the assessments. The Every Student Succeeds Act (ESSA) limits participation in AA-AAS to 1% of the total student population, although eligibility decisions are made at the local level (ESSA, 2015). Within this so-called 1% population, an extremely small and largely understudied sub-population of students eligible to take AA-AAS is SWSCD who are also English learners (SWSCD-ELs; Thurlow & Kopriva, 2015). Because of challenges with identification and small sample sizes observed by state, little is known about the characteristics of this subgroup that would influence assessment design and implementation, as well as their instruction and support needs in the classroom.

While a number of studies have been conducted since the Individuals with Disabilities Education Act (1997) requirement that states conduct annual assessments of students with significant disabilities, most studies describing the alternate assessment population do not provide information on SWSCD-ELs (Erickson & Geist, 2016; Erickson & Quick, 2016; Kearns, Towles-Reeves, Kleinert, & Thomas (2011); Towles-Reeves, Kearns, Kleinert, & Kleinert, 2009). As specifically noted by Towles-Reeves et al., (2009), data collection regarding the number of SWSCD-ELs who take AA-AAS assessments has not been collected.

SWSCD often have communication challenges that are compounded by their disability. According to a cross-state study conducted by Towels-Reeves, et al., (2009), between 18% and 33% of students used AAC devices in addition to or in place of speech. Similarly, a census study

of students taking AA-AAS indicated that 15.6% make use of AAC devices for expressive communication (Erickson & Geist, 2016).

The subgroup of SWSCD-ELs may have further challenges with expressive and receptive communication due to the confounding of their disability with their second language skills, leading to challenges in even identifying who this subset of students is. As such, research is still needed to describe characteristics of the population that may have important assessment design and instructional implications.

## **Population**

According to the National Center for Education Statistics (NCES), the population of EL students nationwide has increased over the last decade (NCES, 2017b) to approximately 9.4% of the public school population. These students receive a range of services to assist with expressive and receptive communication skills.

Similarly, in 2014-15 students with disabilities made up 13 percent of the public school population (NCES, 2017a). This population consists of students with both high- and low-incidence disabilities, a small subset of whom are eligible to take AA-AAS because even with accommodations, these students are not able to access the grade-level academic content.

There is a history of treating ELs and students with disabilities (SWD) as separate sub-populations in large-scale academic assessments. As such, accommodations guidance and validity evidence has historically been presented separately for these groups. In recent years there has been recognition that these groups are not completely independent and that assessment considerations have some overlap. According to Thurlow and Kopriva (2015), the percentage of ELs with high- or low-incidence disabilities is almost 8% of all public school students with disabilities, and increasing.

In recognition of this sub-population, the latest Council of Chief State School Officers

Accommodations Manual includes a section for SWD who are ELs (Shyyan, et al., 2013).

Furthermore, SWDs who are ELs is now a third group referenced in the Every Student Succeeds

Act (ESSA, 2015). ESSA also includes a requirement that states make available an alternate

assessment for English language proficiency (ELP), and (for the first time) that it may set

alternate achievement standards for this assessment.

Recently an Enhanced Assessment Grant was funded to set the framework for developing alternate ELP assessments, known as the Alternate English Language Learning Assessment project. The grant includes multiple stages of research, the first of which is to collect information about students who will take the assessment. Early findings provide some evidence of the prevalence of EL within SWSCD, however, they too note the challenges in identifying these students (Lindner, Christmus, Johnston, & Christensen, 2017).

#### **ELs Who Take AA-AAS**

Despite the recent focus on SWD who are ELs, there is still a lot that is not known about the population of SWSCD-ELs, which has implications for both academic achievement assessments and also ELP assessments and classroom instruction. Major efforts have first emphasized EL students with high-incidence disabilities as a subgroup for whom there are special considerations with regard to EL status identification, services, and exit from services. However, to date EL students with low-incidence disabilities have received far less focus. For individual state assessments, these students are a very small portion of the 1% of students eligible to take AA-AAS. They are also more likely to be served primarily through special education and may not receive language-related services as part of daily instruction. Limited

expressive communication systems related to their disability may also mask their EL status, adding additional challenges to both their identification and meeting their needs in the classroom.

Much of the documentation on SWSCD-ELs provides guidance for including SWSCD-ELs in state accountability assessments (Liu, Ward, Thurlow, & Christensen, 2017) and detailed information on allowable accommodations, but does not necessarily describe characteristics of the population itself (e.g., Albus & Thurlow, 2007; Albus & Thurlow, 2013; Beech, 2010; Christensen, Albus, Kiu, Thurlow & Kincaid 2013; Kuti, 2011; Thurlow & Kopriva, 2015). After participating in an Enhanced Assessment Grant targeted at improving the validity of inferences made from assessment results for SWSCD-ELs, a limited study was conducted based on one year of data for students in Arizona who take AA-AAS. The study compared performance of students whose home language was not English to peers whose home language was English and found the EL group had lower performance than the non-EL group (Ahumada & Williams, 2013). These results indicated that more information is needed to support academic and language acquisition for SWSCD-ELs.

# **Purpose of the Current Study**

The purpose of the present study is to expand on existing research to provide a richer description of what is known about SWSCD-ELs by examining responses to a survey of learner characteristics as well as summative assessment results for students who participate in the DLM Alternate Assessment Consortium.

Because the roughly one-percent of students who are eligible to take AA-AAS is so small, the identification and description of SWSCD-ELs within that population has been challenging to provide. However, with the availability of data collected by one of two federally

funded alternate assessment consortiums, data can be summarized across participating states to describe this previously under-studied population and better understand their needs.

Sixteen states and a Bureau of Indian Education tribal school annually administer

Dynamic Learning Maps (DLM) Alternate Assessments to nearly 90,000 SWSCD. As part of annual data collection, information on students is collected in the form of the First Contact survey, which is a survey of learner characteristics. Analyses of survey data collected by the DLM Consortium, as well as a summary of student performance on the assessment, provides a unique opportunity to identify characteristics of SWSCD-ELs that may be different from the population of SWSCD who are not ELs. The purpose of this paper is to describe ELs participating in AA-AAS and their performance relative to students who were not identified as ELs.

# **Research Questions:**

- Approximately what proportion of students with significant cognitive disabilities are also English learners?
- 2. What are the characteristics of SWSCD-ELs and how do they differ from students who were not identified as SWSCD-ELs consortium-wide?
- 3. Do SWSCD-ELs perform differently from non-EL SWSCD consortium-wide on AA-AAS?

#### Method

# Sample

This study is based on the entire population of students who participated in the DLM AA-AAS in English language arts, mathematics, and/or science during the 2016-2017 academic year. The population consists of approximately 90,000 students in grades 3-12 across 16 states. All

students who take DLM assessments have been identified by local IEP teams as eligible for the assessment because they meet common eligibility criteria, which include 1) the student has a significant cognitive disability; 2) the student is primarily being instructed using alternate content standards; and 3) the student requires extensive, direct individualized instruction and substantial supports to achieve measureable gains in the grade and age-appropriate curriculum. Each state provides additional guidance to help IEP teams identify eligible students.

The population of students taking DLM assessments is heterogeneous in nature. Students have a mix of 17 primary disability categories, with the most prevalent being intellectual disability (25.6%) and autism (25.2%). Approximately two-thirds of students are male and one-third are female. The most predominant race is white (62.4%) followed by African American (19.4%), two or more races (9.9%), Asian (4.4%), American Indian (3.2%), Alaskan Native (0.3%), and Native Hawaiian or Pacific Islander (0.3%).

Defining the number of students who are ELs is included in the results that follow.

#### **Instruments**

First Contact Survey. Information about student characteristics comes from the First Contact survey, which teachers complete or update online each year prior to administering DLM assessments. Some items are used to assign students to assessments, while other items describe characteristics that may impact teaching and learning, including first language. A subset of academic and communication-related items are used to calculate *complexity bands* for each subject. During operational assessment, complexity bands are used to assign testlets at five levels, which vary in complexity relative to the grade-level target for each alternate content standard. Complexity bands are based on algorithms that consider First Contact responses across several related items. Bands are calculated separately for each subject using teacher ratings of the

student's prior knowledge in the subject and the complexity of their expressive communication regardless of communication mode. There are four bands (Foundational, 1, 2, and 3). Other First Contact items included in this study focused on the use of English language and the student's instructional setting.

Alternate Assessments. Student performance is defined in this study as the student's performance level in each subject in which the student tested with DLM (ELA, mathematics, and/or science). Performance levels are Emerging, Approaching the Target, At Target, and Advanced.

#### **Data Collection**

The First Contact survey was completed for 98,936 students consortium-wide in 2016-2017. However, because consortium states have different policies regarding its completion, not all items require responses from teachers in every state, so the rate of missing data per item varies. Because the First Contact survey is completed prior to administering testlets, and consortium states have differing data management practices regarding how students are rostered to receive assessments, there are fewer students with final assessment results than completed First Contact surveys. A total of 89,872 had both First Contact survey responses and assessment results.

## **Data Analysis**

Student data from the 2016-2017 administration year were combined from two sources: state summative result files and the First Contact Survey results. Descriptive analyses were conducted for variables in the data file that pertained to the research questions.

# **Results**

Results are summarized for each of the three research questions in the sections that follow.

# **Identification of English Learners**

Results for the first research question, determining the proportion of SWSCD-ELs in the DLM population, were obtained from the First Contact survey. Three of the items on the survey pertain to students' first language. Responses to first language items are summarized in Table 1. For nearly 10% of students, teachers indicated English is *not* the primary language spoken in the student's home. For approximately 5% of students, teachers indicated the student's primary language was *not* English. For less than 1% of students, the teacher indicated the student is instructed in a language other than English.

The relationship between these three items was further evaluated for students who had at least one non-English response indicated for the above three items (n = 10,503). Most students (55.6%) only had one non-English response indicated. Approximately 37.2% of students had two non-English responses indicated. Only 3.2% of students had non-English responses for all three language items.

Given (1) the differences in response patterns for the primary language items, (2) the lack of information available about students consortium-wide who receive language-related services, and (3) the goal of learning more about a population that is likely to be under-identified and under-served, for the purposes of this study, ELs are defined as students who met any one of the following criteria: 1) teacher indicated English is not the primary language spoken in the home; 2) teacher indicated the student's primary language was not English; and/or 3) teacher indicated the student is instructed in a language other than English. Students who did not meet any of these criteria were identified as non-ELs. Table 2 summarizes the number of EL and non-EL students

by state. The percent of EL students in the DLM assessment population ranges from 0.0% to 16.4% by state. Over 10,000 students (11.5%) were identified across all states.

## **Student Characteristics**

Results for the second research question were obtained from the First Contact survey and the state data files. Table 3 summarizes the percent of EL and non-EL students classified to each complexity band. Across all subjects, the distribution of students across levels tended to be lower for EL than non-EL students. Differences in the percent of EL and non-EL students in each band were generally small, between 2.9 and 6.9 percentage points. The largest difference was in ELA Band 3. Within the EL group, the percentage of students classified to each complexity band was largely consistent across the three subjects, with the largest deviation being for the percentage of students in science Band 2 (approximately 7 percentage points fewer than in ELA or mathematics).

Teacher responses to expressive communication items for EL students may be lower and based on students' second language skills being confounded with their overall expressive communication skills. To provide additional insight into the expressive communication of students in this population, the expressive communication bands without subject-specific responses included are summarized in Table 4. The expressive communication band is calculated from items pertaining to mode and highest level of communication used. The EL group has a slightly higher percentage of students in the Foundational band than the non-EL group (2.8 percentage points higher), and nearly 13 percentage points fewer students in the highest band (3) compared to the non-EL group.

To better understand the large percentage difference of students in the highest expressive communication band when comparing EL students to non-EL students, responses to the

expressive communication items are summarized in Table 5. The first two items listed in the table are used in the calculation of the communication complexity band and demonstrate that overall the EL group has a lower percentage of students who use spoken word and higher percentage of students who use signs and alternative or augmentative communication devices than their non-EL peers. Similarly, the percent of EL students who regularly combine three spoken words, signs, or symbols when communicating was nearly 12 percentage points lower than for non-EL students.

Responses to additional expressive communication items are also included in Table 5 to provide a fuller description of the population. Responses to these items indicate that the EL group has a slightly higher percentage of students who do not use spoken word, sign, or augmentative or alternative communication devices to communicate, and that EL students have a slightly higher percentage of students (percentage difference of 3.5) who choose from only one to two symbols to communicate. Similarly, EL students had a lower percentage of students (percentage difference of 5.8) who choose from 10 or more symbols when communicating. Taken together, these results indicate an observed difference in the expressive communication skills of SWSCD-ELs and their non-EL peers.

In addition to expressive communication items, the First Contact survey also collects teacher responses regarding students' receptive communication skills. Responses to the receptive communication items are summarized in Table 6 for EL and non-EL students. Across all items, EL students had a larger percentage of students who "almost never" demonstrated the skill being measured (difference ranging from 2.9 to 5.1 percentage points), and a smaller percentage of students who "consistently" demonstrated the skill being measured (difference ranging from 4.0 to 8.2 percentage points). These results indicate that overall a larger percentage of EL students

appear to struggle to demonstrate consistent receptive communication when compared to their non-EL peers.

Because a student's instructional setting can also provide insight into their broader academic experience, Table 7 summarizes classroom setting as reported on the First Contact survey for EL and non-EL students. For several options, including students who spend 80% to 100% of the day in a regular class, students in a residential facility, or students who are homebound or in a hospital environment, the percentage for EL and non-EL students differed by less than one percentage point. The largest differences in instructional setting were observed for students who spend 40%-70% of the day in a regular class (non-EL percentage greater by 6.3 points) and separate school (EL percentage greater by 7.1 points). Additionally, the percentage of EL students who spend less than 40% of the day in a regular class was 3.4 percentage points higher than for non-EL students.

#### **Student Performance on the Assessment**

Results for the third research question, regarding student performance on the assessment, were obtained from the state data files. Table 8 summarizes the percentage of students who achieved at each performance level by subject for EL and non-EL students. In all three subjects, the percentage of EL students who achieved at the lowest performance level (emerging) was larger than observed in the non-EL group of students, with the difference ranging from 4.3 to 11.8 percentage points. Of the three subjects, the percentage of students achieving at each performance level differed the least for mathematics, with a percentage point difference of less than 5 observed for all performance levels.

#### **Discussion**

The study presented here identifies SWSCD-ELs from among a broader AA-AAS population. Once identified, a description of student characteristics and comparison of assessment results were provided for EL and non-EL students who take DLM AA-AAS. Overall this line of research contributes to the literature by expanding the research available for this under-studied population. Furthermore, the findings could help individuals in state departments of education think about guidance on eligibility for services, could inform supports for academic assessments, as well as the design of new English language proficiency alternate assessments.

One challenge in describing the population of SWSCD-ELs is their identification. Many students in the AA-AAS population have challenges with expressive communication that may be unrelated to their first language status. Similarly, a student's first language status may pose additional challenges for expressive communication beyond those introduced by the student's disability. Differences in state policies around data collection further contribute to the challenge of correctly identifying EL students. Not all states require teachers to respond to items regarding the student's primary language, and for others the language spoken in the home may not be known. While responses to the language items on the First Contact survey represent a best guess as to who the EL students within the DLM Consortium are, the identification of students belonging to the EL and non-EL language categories in this study may not be completely accurate. Students in the non-EL group could actually be ELs and vice versa.

While these limitations are present in the results presented here, the large sample size of students in states across the DLM Consortium allows for results to be summarized for a larger group of students than would be meaningful for many states individually, and helps provide additional insight into this historically under-studied group of students. Data collection efforts

can further be expanded over time to aid in identification. Better identification measures at the consortium level may also benefit students in the classroom by facilitating their receiving instructional supports to better meet their needs in terms of both language acquisition and academic skills. Because the 2016-2017 year was the first year in which the First Contact survey included items regarding students' primary language, additional data will be collected over time from the DLM assessment system to more fully describe the student population.

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**Tables** 

Table 1
First Contact Responses Summarizing the Student's Primary Language

	Yes		No		Unkn	own <sup>*</sup>	No Response	
Item	n	%	n	%	n	%	n	%
Is English the student's primary language?	67,135	67.9	4,942	5.0	N/A	N/A	26,859	27.1
Is English the primary language spoken in the student's home?	58,861	59.5	9,804	9.9	3,426	3.5	26,845	27.1
Is English the primary language used for the student's instruction?	68,159	68.9	485	0.5	N/A	N/A	30,292	30.6

<sup>\*</sup>Unknown was an available response option only for the second item.

Table 2
State Count and Percentage of Students by Language Group

	Е	L	Non	-EL
State	$\overline{n}$	%	n	%
A	1,815	16.4	9,285	83.6
В	3,689	16.4	18,841	83.6
C	1,737	14.4	10,350	85.6
D	815	14.1	4,977	85.9
E	236	13.6	1,502	86.4
F	440	9.5	4,206	90.5
G	310	8.0	3,566	92.0
Н	52	7.7	627	92.3
I	188	6.5	2,686	93.5
J	370	6.1	5,708	93.9
K	48	5.6	816	94.4
L	378	5.3	6,700	94.7
M	28	4.2	635	95.8
N	230	3.2	6,901	96.8
O	11	2.2	500	97.8
P	15	0.7	2,194	99.3
Total	10,362	11.5	79,494	88.5

Table 3

Final First Contact Complexity Band for Each Subject by Language Group

		Е	LA			Mathematics			Science			
Complexity	E	L	Non-	EL	Е	EL Non-EL		EL	EL		Non-EL	
Band	n	%	n	%	n	%	n	%	n	%	n	%
Foundational	2,035	19.4	12,659	14.3	2,090	19.9	13,327	15.1	774	21.7	6,825	17.0
Band 1	4,023	38.3	28,033	31.7	3,917	37.3	29,976	33.9	1,511	42.4	15,136	37.6
Band 2	3,480	33.1	33,405	37.8	3,499	33.3	34,109	38.6	927	26.0	12,463	31.0
Band 3	962	9.2	14,258	16.1	994	9.5	10,943	12.4	355	10.0	5,801	14.4

Table 4

Expressive Communication First Contact Band by Language Group

Complexity	Е	L	Non-EL				
Band	n	%	n	%			
Foundational	1,088	10.4	6,743	7.6			
Band 1	2,767	26.3	18,222	20.6			
Band 2	2,715	25.9	18,983	21.5			
Band 3	3,932	37.4	44,442	50.3			

Table 5. Expressive Communication First Contact Items by Language Group

Item	EL %	Non-EL %
Expressive communication needs met with the following:*		
Spoken word	71.9	77.7
Sign language	6.6	5.4
Augmentative or alternative communication	23.2	20.5
Highest form of expressive communication*		
Regularly combines 3 or more spoken words, signs, or symbols	38.0	49.9
Usually uses 2 spoken words, signs, or symbols	29.0	23.9
Usually uses only 1 spoken word, sign or symbol	33.0	26.2
If the student does <i>not</i> use spoken word, sign language, or augmentative or alternative		
communication		
Uses conventional gestures and vocalizations to communicate intentionally	3.6	3.0
Uses only unconventional vocalizations, unconventional gestures, and/or body	1.8	1.2
movements to communicate intentionally		
Exhibits behaviors that may be reflexive and are not intentionally communicative	5.3	3.9
but can be interpreted by others as communication		
Not applicable	89.3	91.9
How many symbols does the student choose from when communicating?		
1 or 2 at a time	24.4	20.9
3 or 4 at a time	17.3	18.2
5 to 9 at a time	7.7	10.0
10 or more at a time	13.6	19.4
Not applicable	37.0	31.5

<sup>\* =</sup> more than one option could be selected if more than one communication method used

Table 6

Receptive Communication First Contact Items by Language Group

		EL %	1		Non-EL %					
	AN	O	F	C	AN	О	F	С		
Item	%	%	%	%	%	%	%	%		
Can point to, look at, or touch things in the immediate vicinity when asked	10.6	13.8	22.5	52.8	7.7	10.7	19.2	60.4		
Can perform simple actions, movements or activities when asked	12.1	14.2	24.1	49.3	9.1	11.8	21.1	56.0		
Responds appropriately in any modality when offered a favorite item that is not present or visible	14.0	17.4	25.9	42.2	9.9	13.9	23.5	50.4		
Responds appropriately in any modality to single words that are spoken or signed	14.2	19.0	27.3	39.0	10.1	15.6	25.1	46.7		
Responds appropriately in any modality to phrases and sentences that are spoken or signed	16.8	22.4	28.4	31.9	12.1	18.2	27.4	39.6		
Follows 2-step directions presented verbally or through sign	26.2	24.4	26.5	22.5	21.1	21.7	28.2	26.5		

For each item, approximately 0.3% of EL students and 2.4% of non-EL students had no response; AN = Almost Never (0%-20% of the time), O = Occasionally (21% - 50% of the time), F = Frequently (51% - 80% of the time), C = Consistently (more than 80% of the time)

Table 7
Students in Classroom Setting Type by Language Group

_	Е	L	Non-	-EL
Classroom Setting	n	%	n	%
80%-100% of the day in regular class	541	5.2	3,822	4.6
40%-79% of the day in regular class	1,031	9.9	14,180	17.0
<40% of the day in regular class	5,548	53.3	43,467	52.1
Separate school	3,159	30.3	20,373	24.4
Residential facility	61	0.6	816	1.0
Homebound/hospital environment	76	0.7	775	0.9

<sup>&</sup>quot;Regular Class" means a typical classroom, not a resource room or separate class.

Table 8

Percent of Students in Each Performance Level by Subject and Language Group

	ELA			Mathematics				Science				
	E	L	Non-EL		EL		Non-EL		EL		Non-	EL
Performance Level	n	%	n	%	n	%	n	%	n	%	n	%
Emerging	4,981	49.5	30,062	39.7	5,751	57.1	39,899	52.8	1,110	69.8	10,814	58.0
Approaching the Target	2,181	21.7	17,406	23.0	2,217	22.0	19,296	25.5	307	19.3	4,228	22.7
At Target	2,110	21.0	19,963	26.4	1,238	12.3	9,654	12.8	114	7.2	2,630	14.1
Advanced	564	5.6	6,217	8.2	618	6.1	4,432	5.9	16	1.0	468	2.5
Not Assessed	232	2.3	2,016	2.7	240	2.4	2,319	3.1	43	2.7	512	2.7