Project Background
The Advancing ALTELLA: Alternate Assessment Redesign project applies lessons learned from research on successful instructional practices, accommodations, and assessment of English learners with the most significant cognitive disabilities to inform development of alternate English language proficiency assessments.
Introduction

In identifying English learners who have disabilities and in creating a framework for addressing a variety of language and disability needs in this important population of students, educators have begun to reformulate how to make decisions and how to plan based on the needs of students during instruction and assessment. This brief focuses on applying the considerations of students’ language and disability needs while maintaining an environment in which students are continuing to acquire language and deepening understanding utilizing the Language and Disability Needs Framework and Learning Matrix.

Overview of the Framework

English learners with disabilities, including English learners who have significant cognitive disabilities, need to be able to participate meaningfully in instruction and in assessments so that they can effectively demonstrate what they know and what they can do on their pathways to college, career, and community readiness. Two major categories of needs that must be prioritized for English learners with significant cognitive disabilities are their language-related needs and their disability-related needs. It is particularly important for educators to consider these two categories of needs when developing individualized instructional and assessment solutions for this heterogeneous population of students. The Language and Disability Needs Framework (Shyyan & Christensen, 2018; Shyyan et al., 2016) was developed to help educators better understand how these two categories of needs apply to each student and to help them customize instruction and assessments according to each student’s unique needs.

Figure 1 shows the Language and Disability Needs Framework. Educators can place students anywhere in the four quadrants, indicating the intensity of the needs and preferences related to students’ choice and meaningful use of services. Generally, students with high English language needs and low disability-related needs will require more language-based instructional and assessment supports while their counterparts with high disability-related needs and low English language needs will require more supports that remove disability-related barriers. At the same time, students with high English language needs and high disability needs will benefit from more intensive language and disability supports to alleviate language and disability-related challenges. Students with low English language needs and low disability needs will require fewer supports. However, students’ needs will vary even within each quadrant, and each student’s needs should be addressed individually.

It is expected that the majority of English learners with significant cognitive disabilities might be in the quadrant of high language-related and high disability-related needs, and educators should be cognizant of high levels of diversity within this population of students (Christensen et al., 2018; Christensen & Mitchell, 2018). Educators should also be mindful that given the high heterogeneity of English learners with significant cognitive disabilities, some students might move among the quadrants at more rapid paces than others. It is also important to be cognizant of the fact that even within the high language-related and high disability-related needs quadrant, students can be in different areas, and their individual needs will vary.
The Language and Disability Needs Framework also empowers educators by helping them measure the student’s changing needs and preferences over time. Educators can place students in a quadrant as a baseline measurement and then compare this measurement with later placements. As students grow in their proficiency in English, educators expect the students’ positions within the quadrants to change. Although many disability needs may be consistent, other needs, such as the need for help with speech language, may shift. Educators must regularly reevaluate students’ changing language and disability needs and must adjust language supports employed in the classroom in response to these needs.

**Objectives of the Matrix**

While there is little research surrounding the instructional needs of English learners who have significant cognitive disabilities, Alternate English Language Learning Assessment (ALTELLA) researchers have collected data to further explore the complex spectrum of need and to help educators create insightful instructional plans while acknowledging several factors: *disability and language needs; available support models; first language proficiency; and social and emotional, cultural, and environmental factors.* According to a previous study by Christenen et al. (2018), of the 29 states surveyed, the most frequently reported primary disabilities of the sample students included the following: 42.3% intellectual disability, 26.9% autism, 11.6% multiple disabilities, and 6.0% developmental delay. Further, the majority of these students are receiving instruction in self-contained classrooms for students with disabilities where they have access to a variety of supports and models (Christensen & Mitchell, 2018).

While the ALTELLA briefs address the importance of creating an alternate English language proficiency assessment to summatively assess English learners with significant cognitive disabilities, it is also vital to create a matrix through which educators, advocates, and specialists can engage with and meaningfully support English learners with significant cognitive disabilities. It is equally important for educators to assess students’ comprehension based on disability needs and language needs as it is for them to assess their own instructional planning as it relates to developing language objectives for each student. As mentioned previously, ALTELLA researchers consider the reality of the classroom in developing both an alternate assessment and an learning matrix. Teachers modify their materials daily, and this matrix is meant to be a tool that bolsters educational supports and that empowers teachers as they develop objectives and planned outcomes for language instruction.
This matrix is adaptable to most curriculum maps—for example, Essential Element Concept Maps (EECMs)—and is meant to outline a more fluid approach to learning, much like the EECMs are adapted from Dynamic Learning Maps while considering a variety of educational variables (University of Kansas Center for Research, 2013). This matrix was created to provide consistent verbiage between language objectives and outcomes that are highlighted in alternate assessments and to support and guide instructors to think about **two questions** while they address a variety of needs and define a pathway to language acquisition for each individual student:

- How are students accessing information?
- How are students demonstrating understanding and showing growth?

### How Are Students Accessing Information?

This question considers current supports and models that are in place for each individual student. For example, in a 2018 ALTELLA report, Christensen and Mitchell frequently observed the following interactive tasks: drills and repetition, read aloud, and total physical response. The cognitive strategies they observed most frequently were listen/repeat, use of imagery, and use of graphic organizers. Based on these observations, it is important for educators to look at each student’s individual learning profile to highlight the supports for instruction and assessment the student can access on a daily, weekly, or monthly basis, and to account for the student’s needs in order for the matrix to accurately support their language and learning growth.

The following student profiles are based on some of many examples that fall within the learning matrix; details have been changed to protect identities.

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**Student Profile 1**  
**Jorge—High English Language Needs, Low Disability-Related Needs:**

Jorge is a 9-year-old male who came to the United States from Honduras. He was held in a detention center for around 90 days. In Honduras, his parents reported that he struggled with paying attention and was often sent home from school early, but that he did not have an Individualized Education Plan (IEP) or any equivalent education plan or accessibility supports in place. He has no physical disabilities other than some fine motor coordination challenges, and he has articulation and speech goals based on a speech and language screening. On initial assessments, the student is able to write numbers to 10, can trace basic object shapes and letter shapes, and can write his first name, but not his last name. He is able to identify 12 out of 26 letter sounds in Spanish. Currently, he receives instruction primarily from a special education teacher, but also is in a co-taught class (with regular education and an English as a Second Language [ESL] teacher) for a portion of the reading and writing (English/Language Arts) block.
Rings of the Matrix—Maintaining Rigor and Language Demand

After assessing how a student is able to access content based on their position in the framework, educators can transition to using the Learning Matrix, which illustrates how a concept can be taught with increasing language demand.

Based on this student’s characteristics and needs, his educational profile would be placed in the “High English Language Needs, Low Disability-Related Needs” quadrant of the framework. In looking at the matrix in Figure 2, the outer rungs are interpretive verbs, while the inner, colored rungs highlight the expressive verbs that can be used to articulate content and language objectives. Moving from the outside to the center, the verbs and tasks become more complex, therefore showing mastery of a topic by moving from, for example, “Point to” to “Organize.” For Jorge, consider the example of learning the concept of “Sink or Float.”

How are students demonstrating understanding and showing growth?

- **Initial interpretive tasks** *(Rung 1A)*: Student will point to the picture cards and identify words and images for sink or float lesson: sink, float, water, bowl, cork. The student will be able to engage in pointing or gesturing towards a series of pictures when introduced to the vocabulary for the unit. This may be picture cards, realia, or videos of actions.

- **For the student’s initial expressive tasks** *(Rung 1B)*: Student will repeat the words after the teacher models each word on the picture card. The student will repeat words and engage in motions that support the learning and retention of the word.
An initial lesson plan for the Introduction to the Unit might look like the following image:

As the student continues to progress through the unit, the levels of language input and output will increase based on the student’s abilities and access to supports. For Jorge, a mid-unit task could be:

- **For medial interpretive tasks (Rung 2A):** Student will match vocabulary words with corresponding characteristics. After watching a short video, reading a text, or observing an experiment, the student can match and/or label vocabulary words from the task or text with a picture card or word.

- **For medial expressive tasks (Rung 2B):** Student will sort various pictures into categories. Depending on the progression of language for the student, the student may be given categories or may come up with their own categories based on learned vocabulary (light/heavy).

As the student becomes more comfortable with the language frames and vocabulary, they could transition to the advanced stage of the concept:

- **For advanced interpretive tasks (Rung 3A):** The student will recreate or recast the experiment using motions or total physical response (TPR), ordering pictures, or ordering vocabulary or sentence frames.

- **For advanced expressive tasks (Rung 3B):** The student will demonstrate mastery of the concept by predicting or explaining why certain new objects will sink or float.
It is important to note that the student may express the language correctly (e.g., language of prediction, sorting of categories) but may still not have mastered the learning concept (for example, may not be able to accurately predict each sink/float object). The goal is to increase language load and to provide the student with opportunities for rigor in expressive and interpretive tasks based on their language ability while considering disability needs. It is also important to note that language learning is rarely linear; while some concepts may be easily acquired, others may take time and repetition, and the student may shift back and forth between rungs of the matrix without mastery. This is an expected part of the language learning process, and educators are aware that formative assessment is also a time to reflect and to reassess the learning plan and objectives.

**Student Profile 2**

**Jamie—High English Language Needs, High Disability-Related Needs:**

Jamie was born in the United States, has multiple physical disabilities, and is unable to speak. Since birth, she has been exposed to both English and Spanish at home and at school. Jamie uses eye gaze as a main form of communication. She receives most of her instruction in a self-contained classroom with a bilingual special education teacher. The teacher reports difficulty assessing this student in English or Spanish.

Based on this student’s characteristics and needs, her educational profile would be placed in the “High English Language Needs, High Disability-Related Needs” quadrant of the framework. This example demonstrates using the Language Learning Matrix for Jamie to learn the concept of “Seasons” in the United States. Because she is currently able to engage in learning only through eye gaze, her interpretive and expressive tasks will both incorporate this form of communication to accommodate her disability needs. While the responses might incorporate similar actions, the shift occurs in what type of language she is asked to produce and how the teacher poses the question or task to demonstrate mastery at each level.

**How are students demonstrating understanding and showing growth?**

- **For the student’s initial interpretive tasks (Rung 1A):** Student will use eye gaze to match a picture of a season with its corresponding word in English. The student will be able to engage in eye gaze towards a series of pictures or will observe teacher modeling to introduce the vocabulary for the unit. The vocabulary may be introduced as picture cards, realia, or videos of actions. The picture cards and the words and images to identify for a lesson in seasons would be fall, winter, spring, and summer.
• **For the student’s initial expressive tasks** (Rung 1B): *Student will use eye gaze to sort clothing with its corresponding season.* The student will use eye gaze to categorize words and pictures that support learning and retention of the season and its characteristics (e.g., summer: bathing suit, sandals; winter: hat, gloves, boots).

For Jamie, teachers must change their expectations for language demand along with their modeling and follow-up tasks. Because Jamie is using only eye gaze, the teacher must increase the demand by either providing opportunity for a higher language load by giving less language scaffolding or by offering more opportunity for expression by using a communication board or word chart with more options or combinations. For example, a mid-unit task could be:

• **For medial interpretive tasks** (Rung 2A): *Student will use eye gaze to match vocabulary words with corresponding characteristics.* After watching a short video, reading a text, or observing teacher modeling, the student can use a word chart to match vocabulary words with actions, clothing, or characteristics (e.g., summer: hot, sun, bathing suit, sunglasses, no school; winter: snow, snowflake, scarf, hat, cold, snow). The student can fill in cloze sentences with a corresponding word on the word chart after observing the model (e.g., In the winter, it is ______[cold]).

• **For medial expressive tasks** (Rung 2B): *Student will sequence pictures in order.* Depending on the progression of language for the student, the student may be given categories or may come up with the categories on their own. For example, the student may be shown a picture of winter and summer and asked, “Which season comes after fall?”

As the student becomes more comfortable with the language frames and vocabulary, they could transition to the advanced stage of the concept:

• **For advanced interpretive tasks** (Rung 3A): The student will recreate or recast the change of seasons by ordering pictures of a scene and then eye gazing towards adjectives that describe the scene or by ordering vocabulary or sentence frames (e.g., During the winter, most trees (have/do not have) leaves; During summer, we (have/do not have) school). The student could also eye gaze a cloze sentence modeled by the teacher and then answer using a word chart. Or, the student could play “What season am I,” in which the teacher provides clues, such as the following: The leaves are beginning to change color, the air is getting colder, I begin to wear long sleeve shirts, and so on.

• **For advanced expressive tasks** (Rung 3B): The student will demonstrate mastery of the concept by predicting or by justifying or explaining why a season comes next by using eye gaze to identify characteristics. For example, if using a chart with leaves, change, hot, cold, winter, spring, summer, fall, warm, chilly, yes, no, when asked, “What season comes after fall? How do you know?” The student could eye gaze to winter, cold, no leaves.
Based on this student’s characteristics and needs, his educational profile would be placed in the “Low English Language Needs, Low Disability-Related Needs” quadrant of the framework. The following example demonstrates using the matrix to help Ravi learn the concept of “Habitats.”

How are students demonstrating understanding and showing growth?

- **For the student’s initial interpretive tasks (Rung 1A):** Student will match habitats with a modeled Total Physical Response (TPR) action. To reinforce learning while accounting for hearing needs and gross motor skills, the teacher may prompt the student by providing gestures that go along with the habitats and by using language to provide characteristics of each habitat (e.g., Rainforest: Emergent Layer (arms high above head), Canopy (touch hands to shoulders), Understory (move lower to hands on knees), Forest Floor (hands on floor).

- **For the student’s initial expressive tasks (Rung 1B):** After watching a video or reading a text, the student will be given a habitat name and will provide or sort a list of short phrases to describe that habitat. For example, if given “Grassland Habitat” (with a photo or TPR motion), the student will choose corresponding phrases for the grassland habitat using a given list or independently coming up with a list. Example phrases include the following: large open spaces of grass, hot summers and cold winters, not many trees, herds of animals.

As the student continues to progress through the unit, the expectations of language input and output will increase based on the student’s abilities and access to supports. For example, a mid-unit task could be:

- **For medial interpretive tasks (Rung 2A):** Student will listen to (using assistive technology) or read several descriptions of habitats and will be able to identify the habitat and the key clues that led them to the answer. The teacher will say or the student will read the following: “You are wearing a parka, the air is frigid, you hear a splash and see a narwhal emerge, breaking the ocean’s frozen surface. Where are you?” The student can respond with a verbal phrase and TPR motion “I am in the ______ (Arctic Habitat).” The teacher or class can ask, “How do you know?” The student will respond with key clues and connections: “I know a parka is a very heavy jacket; I know a narwhal lives in the arctic; I know that there are frozen parts of the ocean in the arctic.”

- **For medial expressive tasks (Rung 2B):** After reading or listening to a nonfiction passage about animals and their survival characteristics, the student will sort various animals into their habitat categories based on characteristics. “An Arabian camel is able to store
fat and water in its hump. It can survive without water for up to 10 days. It can withstand extreme temperature changes. Its habitat is the _______ because _______."

As the student becomes more comfortable with the language frames and vocabulary, they could transition to the advanced stage of the concept:

- **For advanced interpretive tasks (Rung 3A):** The student can analyze new or imaginary animals and determine the most appropriate habitat for them based on their characteristics. “Because the ‘keelee’ travels in herds, requires open space, and survives on 8-10 pounds of grass per day, I infer that the ‘keelee’ would best survive in the grassland habitat.”

- **For advanced expressive tasks (Rung 3B):** The student will demonstrate mastery of the concept by creating a new animal and justifying why its characteristics make it appropriate for a certain habitat using learned concepts and key characteristics of each habitat. For example, ‘the brabble’ lives in the arctic because it has gray fur that turns white in the winter, eats large amounts of food in the fall, and hibernates during the winter.

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**Student Profile 4**

(Veronica—Low English Language Needs, High Disability-Related Needs):

Veronica has participated in the ESL program at her elementary school since kindergarten and is now in third grade. She has selective mutism and often shuts down. She responds mostly with gestures and pointing but will also mouth words and use a communication board. She speaks Spanish at home, but her parents and siblings all speak English with moderate or high proficiency.

Based on this student’s characteristics and needs, her educational profile would be placed in the “Low English Language Needs, High Disability-Related Needs” quadrant of the framework. For a unit on meals and food, the student may have a variety of visuals to support language learning while also providing a variety of mediums for expressive tasks. Here is how the objectives may progress as the student becomes more comfortable and familiar with the content vocabulary.
How are students demonstrating understanding and showing growth?

- **For the student’s initial interpretive tasks (Rung 1A):** Student will point to the visuals and respond to audio questions with nodding or gestures. To reinforce learning while accounting for accessibility supports for selective mutism, the teacher may prompt the student by providing gestures that go along with the meals or foods. For example, the student will engage with an introductory video lesson by pointing, gesturing, and using “thumbs up/thumbs down” to respond to the teacher’s prompts and questions about vocabulary for breakfast, lunch, and dinner.

- **For the student’s initial expressive tasks (Rung 1B):** After watching a video, the student will be given a meal and will provide or sort a list of short phrases, photos, or symbols to describe what is eaten during that meal. For example, when given the topic “Breakfast,” the student can choose any of the emojis on her communication board (Proloquo2Go) to show what the family is eating for breakfast.

- **For medial interpretive tasks (Rung 2A):** Student will match vocabulary words with corresponding characteristics using their communication board. They can associate pictures and labels with categories or sort a variety of objects based on their characteristics (e.g., foods vs. drinks, vegetables vs. fruits, utensils vs. food, healthy vs. less healthy).

- **For medial expressive tasks (Rung 2B):** Student will arrange pictures in order. Depending on the progression of language for the student, the student may be given categories or may come up with the categories on their own. For example, the student may be asked to fill in a sentence frame using a communication board: For breakfast I like to eat ______ and drink ______, or for this meal you will need a ______, ______, and ______. Choose from fork, spoon, knife, bowl, napkin.
As the student becomes more confident with using the communication board and acquires more language, they can transition to more advanced tasks.

- For advanced interpretive tasks (Rung 3A): The student will recreate or recast a meal after listening to a passage read aloud. For example, after listening to a daily routine or journal entry, the student can drag images or labels of meals and foods into corresponding boxes for the three meals of the day, based on what the character ate and drank during each meal.

- For advanced expressive tasks (Rung 3B): The student will demonstrate mastery of the concept by creating a menu that uses vocabulary from the food unit and by creating descriptions of the foods and how they are prepared. (e.g., Welcome to Veronica’s Pizza and Pasta Restaurant! Tonight’s special is spaghetti with meat sauce. The spaghetti was prepared with tomatoes, spices, and ground beef. For dessert, the brownies were baked in the oven and have peanut butter icing on top.)

Additional Considerations and Learning Factors

While looking at several student profiles and at how the students are able to demonstrate language growth with increasing linguistic demand, it is important to also acknowledge the fact that there are many layers of complexity to language learning that are beyond the scope of this matrix; there are other barriers that students face in addition to their language- and disability-related needs. However, the framework and the matrix can be used as foundations for instructional and assessment processes.

Accessibility Outside of School

While educational plans ensure that students have access to a variety of supports within the school day, there are many students who are unable to access supports outside of school. Accessibility to these supports outside of the educational setting can also alter a student’s language learning experience. When a student is able to bolster and practice language abilities using supports at home, their learning is reinforced and can be enhanced to create a continuity of expectations and a transfer of concepts. If a student is unable to practice learned concepts due to limited accessibility to supports or materials, this may affect their language learning progress and prolong their learning goals.

For example, if a student requires an interactive communication board to express themselves in English, but does not have access to the internet or to a computer at home, the student is able to communicate in English only at school. This can hinder the language acquisition experience and can create additional barriers for expression, as the student may feel frustrated when unable to communicate a concept at home, or they may feel that they need to speak only their first language instead of benefiting from communication in English and other languages at home because of accessibility limitations.

In addition, while extreme in circumstance, access to distance learning during the extended period of school closure may change how a student learns and may affect their placement on the Learning Matrix, without the daily support needed for them to be successful in the learning environment. If a student is unable to access supports, is not participating in a daily routine, is not able to observe peer modeling, and is only exposed to their first language rather than to bilingual supports, a period of language regression is to be expected, based on lack of accessibility and the limitations of the distance learning environment.
Transitional Trauma and PTSD
For some learners who have had interrupted education or have experienced abrupt transitions, there may be a layer of trauma or post-traumatic stress disorder (PTSD) warranting emotional support in addition to the educational supports that teachers provide. These needs may affect how a student moves through the matrix as their language ability changes. As previously discussed, language ability is not linear, but also, language ability may not be immediately present due to transitional trauma. As the environment becomes more comfortable and predictable, students may challenge, regress, or excel in areas that seem to suggest inconsistencies in their language or learning abilities. These periodical changes, while unpredictable, can be expected with students who are facing emotional, physical, and learning challenges. Students may require their basic needs to be addressed before being able to fully access their learning.

Shifting Quadrants
While the goal for all students is language proficiency in some capacity, it is possible that a student’s learning profile shifts quadrants as their needs change or their independent skill set changes. For example, a student may have a consistent disability-related need, but may shift from high language need to low language need as they acquire more language and are able to demonstrate a need for less language support through assessment or teacher observation. A student’s learning profile may also shift based on levels of need increasing: for example, a student may experience a shift in physical ability and move from low disability-related need to high disability-related need while needing a consistent amount of language support. This matrix is meant to guide instruction and to adapt to each learner’s current educational needs while providing consistent language and a means of demonstrating language proficiency.

Putting It All Together: Educational Team Planning
While teachers aim to meet the needs of a group of learners, in working with English learners with significant cognitive disabilities, it is vital for the educational team to come together to support the student in their language proficiency growth. Collaboration time is often limited, however, and each member of the team plays an essential role in supporting the student during learning. Many times, this work involves the student’s family as well.

Through the Advancing ALTELLA project, we have worked with teachers and researchers to develop a toolkit that empowers educators as they work to support each student’s language development. Part of this toolkit is the Student Language Builder. This planning guide incorporates the framework, matrix, and shared goals to help develop an educational plan to support each student while increasing language demand. Our hope is to create opportunities for families, students, and teachers to be heard and supported by meeting to thoughtfully plan and discuss opportunities for student language development and success.
Conclusion

As we continue to explore ways to meet the educational needs of English learners with significant cognitive disabilities, it is vital for educators, families, advocates, and other stakeholders to work together to support the student’s language learning experience. In applying each individual learner’s profile, learning characteristics, and needs to the quadrant matrix, we can better frame lessons and outcomes to support students as they learn English. In our quest to answer, “What does language learning look like?” we must continually and actively support students by recognizing and celebrating where they currently are and by having the vision and foresight to see where they can go.

References


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