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6 Successful Strategies for Teaching to State Standards

For Students with Moderate-to-Severe Disabilities

Bree Jimenez, PhD • Ginevra Courtade, PhD • Diane Browder, PhD

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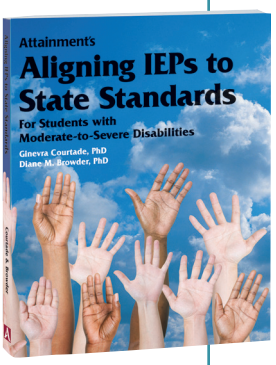
Preface

This book serves as the next logical step for teachers to take as they consider the development and implementation of a standards-based IEP for students with moderate and severe disabilities. In a companion book on this subject, *Aligning IEPs to State Standards: For Students with Moderate-to-Severe Disabilities,* the authors outlined strategies to develop a standards-based IEP aligned to general education curriculum; one that promotes meaningful access to state and national standards. Now this book adds to that by outlining six successful strategies teachers can use to align instruction with meaningful access to state and national standards, including the Common Core State Standards (CCSS).

Aligning IEPs to State Standards presents a user-friendly template for aligning student IEP goals to instruction, assessment, and grade-level standards, including CCSS. This book features:

- New ideas for aligning IEP goals and objectives to state standards, plus self-determination and assistive technology goals.
- Examples of current hardware, software, and apps used to teach academic objectives.
- Discussion of effective instruction for teaching academic objectives to students.
- Example case studies.



About the authors

Bree Jimenez, PhD

Dr. Bree Jimenez is an assistant professor in special education at the University of North Carolina (UNC) at Greensboro. Dr. Jimenez's research interests include general curriculum access and assessments for students who have a significant intellectual disability, including autism. Dr. Jimenez has helped design and conduct research in the area of general curriculum access, specifically in adapted literature, mathematics, and inquiry science. She has published multiple peer-reviewed journal articles, written several textbook chapters surrounding general curriculum access and alternate assessments for students with severe disabilities, and is an author of *Teaching to Standards: Math; Teaching to Standards: Science; Early Numeracy;* and *Early Science.*

Dr. Jimenez received her bachelor's degree in special education from the University of Central Florida, master's in Curriculum and Supervision from UNC at Charlotte, and her PhD in special education from UNC at Charlotte. Before joining the faculty at UNC, Greensboro, she was a teacher of students with moderate-to-severe developmental disabilities in both elementary and secondary schools. Additionally, she was a grant liaison between the local school district and university, then Lead Research Associate for an Institute of Educational Sciences funded grant with the department of Special Education and Child Development at UNC at Charlotte.

Dr. Jimenez has spent extensive time writing extended content standards for state departments, as well as training educators and administrators on alternate assessments. Dr. Jimenez presents at national and international conferences and at state department of education and school system in-services for teachers, parents, and service providers of students with moderate-to-severe disabilities on the topics of assessment and general curriculum access.

Ginevra Courtade, PhD

Dr. Ginevra Courtade is an associate professor in special education at the University of Louisville in Kentucky. Dr. Courtade has worked in the field of moderate-to-severe disabilities for 15 years. She has been a classroom teacher, a grant-funded project trainer, and a research associate, and she now trains teachers and conducts research at the university level. Her work focuses specifically on teaching academics to students with moderate-to-severe disabilities and preparing teachers to instruct students using the general education curriculum. She has numerous publications to her credit, including *Early Literacy Skills Builder, Teaching to Standards: Science, Aligning IEPs to State Standards,* and *Aligning IEPs to TEKS.*

Dr. Courtade received her bachelor's degree in psychology from the State University of New York at Buffalo, her master's degree in special education from D'Youville College, and her doctoral degree in special education from the University of North Carolina (UNC) at Charlotte. She taught students with moderate-to-severe disabilities in the Charlotte-Mecklenburg Schools (CMS) and was a grant liaison between UNC at Charlotte and CMS before taking on the role of research associate at UNC at Charlotte. Prior to her current position, Dr. Courtade spent two years at West Virginia University, where she served as an assistant professor in special education.

Currently, Dr. Courtade works closely with the Kentucky Department of Education to provide training and support to new teachers of students with moderate-to-severe disabilities. She also trains teachers nationally to implement academic curricula for their students.

Diane M. Browder, PhD

Dr. Diane Browder is the Lake and Edward P. Snyder Distinguished Professor of Special Education at the University of North Carolina (UNC) at Charlotte. She has over two decades of research and writing on assessment and instruction for students with severe developmental disabilities, including textbooks, curricula, and numerous journal publications. Her work focuses on teaching general curriculum content (reading, mathematics, and science) and alternate assessment based on alternate achievement standards. She has been Principal Investigator for several grants on access to general curriculum, including two recent IES-funded research projects—one on early literacy and the other on math and science for students with significant developmental disabilities. She also is a partner in the OSEP-funded National Center and State Collaborative focused on alternate assessment.

Dr. Browder works closely with the Charlotte-Mecklenburg Schools and a team of researchers to develop new interventions and curricula in literacy, science, mathematics, and social studies. She also has been involved in developing alignment strategies for states' alternate assessment systems.

In 2009, Dr. Browder received the Distinguished Researcher Award from the AERA Special Education SIG and was the First Citizens Bank Scholar at UNC, Charlotte. Dr. Browder also has received national and state awards for her service to individuals with disabilities. In 2011, she was awarded the O. Max Gardner Award for the faculty member in North Carolina whose research has had the greatest impact on the human race.

Introduction

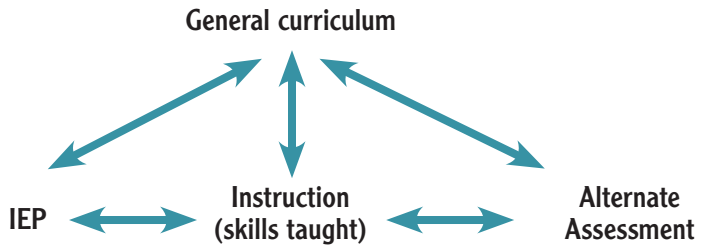
Academic standards define what all students are expected to know and do. In the past two decades, states have defined standards in most academic content domains. State assessments are used to determine if students have achieved these standards. Students who are not able to take the general assessment, even with accommodations, take an alternate assessment. Standards are designed to help students become "college and career ready." The College and Career Readiness Standards (CCR) of the Common Core State Standards (Common Core State Standards Initiative, 2015) that anchor the English language arts (ELA) and mathematics standards are based on evidence about college and workforce training, and include both the broad standards that cross grade and content areas (e.g., ELA) and the specific standards that all students should study for readiness (e.g., high school mathematics). Students who take alternate assessments are also expected to show achievement of the standards, although this may be alternate achievement of a prioritized subset of these standards, or extensions of these standards. Students with significant intellectual disabilities can be moved close to achieving the skills defined as "career and college" ready given the supports to master the standards (see the full report by Kearns, Kleinert, Harrison, Sheppard-Jones, Hall, & Jones, 2011).

Knowing how to adapt a grade-level standard for a student with a moderate or severe intellectual disability can be difficult. This book offers six strategies for making these adaptations, as featured in each of its six chapters. The first strategy considers how to use Universal Design for Learning (UDL). Before describing UDL, let's consider how to make sure all of our adaptations stay true to the original standard. In singing a popular song, it is important to stay true to the original tune and lyrics for others to recognize the song, even when using a unique and sometimes quite different vocal styling. Similarly, when teaching a standard, it is important to stay true to the original intent of the standard. Staying true to the original standard is referred to as "alignment."

Instruction as a component of alignment

Alignment is the process of matching educational components to strengthen their purpose and goals. Creating a standards-based individualized education program (IEP) is one such component in the alignment of curriculum, instruction, and assessment for students with moderate-to-severe disabilities. The IEP serves as a blueprint to focus instruction. Instruction of skills addressed in the standards-based IEP further facilitates the alignment of educational components for students. This, again, strengthens the purpose and goals of the components: to create access to and support students in making progress in the general education curriculum. For more help in creating a standards-based IEP, see *Aligning IEPs to Standards* (Courtade & Browder, 2016). The following illustration shows how IEPs, instruction, standards, and alternate assessment should align.

When IEPs promote alignment



Understanding alignment

Take a minute to think about what alignment is and is not. Review the following scenarios. Do you think the teachers' plans demonstrate alignment to the standards for the students' instruction? Why or why not?

1 To target a standard on listening and speaking within the English language arts standards, Alice's teacher developed a plan to teach Alice to use her alternative/augmentative communication (AAC) device to greet her peers.

Does this create alignment? Why or why not?

2 When planning instruction for Thelma, who is in the 7th grade, her teacher uses the 1st-grade mathematics standards to teach from, because Thelma has not yet mastered these early numeracy skills.

Does this create alignment? Why or why not?

3 To teach to the math standard "represent and interpret data," Logan's teacher decided to have Logan identify his favorite food and put his name on a bar graph above the picture of the food item.

Does this create alignment? Why or why not?

4 The students in Mrs. Wilson's 5th-grade class were expected to read multiple articles on the same event, then compare and contrast the authors' points of view. Luis was only expected to listen to an audio version of one of the articles.

Does this create alignment? Why or why not?

5 The inclusion specialist working with Luis in Mrs. Wilson's class set up an electronic slide show to compare and contrast the two articles. When Luis clicked on the adapted mouse, picture presentations were automatically revealed in an onscreen graphic organizer.

Does this create alignment? Why or why not?

6 Jamie has been taught to identify key details in text (e.g., setting, main idea, main characters) since the 2nd grade. He is now in the 8th grade and continues to identify the same key details with grade-appropriate novels.

Does this create alignment? Why or why not?

7 While instructing Jones to identify the main character in the novel *Holes*, his teacher asks him to point to his response given three options. When Jones is assessed summatively at the end of the unit, he is asked to produce answers verbally. Jones is scored "not proficient" on his summative assessment of this skill.

Does this create alignment? Why or why not?

8 A school district in Wisconsin has required that all IEP objectives for all students must be connected to a specific grade-level standard. Teachers were told that previous objectives addressing self-determination, daily living, and social skills were no longer appropriate to meet the requirements of standards-based IEPs.

Does this create alignment? Why or why not?

As you read through the remainder this book, reflect on the six strategies and determine if these ideas changed your initial answers to the questions! Appendix A provides explanations and answers to these eight questions.

Where to begin

To create access to standards with links to grade-level content for students with moderate-to-severe disabilities, begin by focusing on the academic content and have one or more specific standards in front of you as you plan. The student's grade level is your starting point. For example, if a student is in the 4th grade, use the 4th-grade mathematics standards for planning. These will likely be too complex for a student with moderate and severe disabilities, so you will need to plan an adaptation of the standard. (See *Aligning IEPs to Standards* [Courtade & Browder, 2016] for examples of how to adapt a standard.) Once you have an adaptation of the standard, make sure you did not lose the content and performance expected for the student. For example,

if the standard is on comparing data on a graph, be sure that the content is a graph and the performance involves a comparison. The adaptation will differ some from grade-level achievement. It might require a slightly less complex task or a simpler form of responding than the original standard. For example, the student may only compare one type of graph or use smaller numbers.

While focusing on simpler achievements, it is important to be sure that you still target achievement versus something else altogether. That is, be sure you expect the student to show learning, rather than just comply with your prompt. This will require planning to help students overcome barriers to learning. Adaptations like using raised pictures or objects for a student who is legally blind, or making materials motivational for a student with autism leads to instructional alignment. As you teach the skill, be sure not to lose sight of the standard. For example, in teaching the student to compare graphs, be certain to address content related to graphing, like the concepts of rows and columns, rather than teaching something unrelated, like the color of the columns on the graph. Now that you have considered the importance of keeping instruction focused on the standard selected, it is time to consider the first instructional strategy: using Universal Design for Learning for all students.

STRATEGY

1 Apply Universal Design for Learning for all students

Mr. Wilson & Mrs. Santiago

Mr. Wilson is a 7th-grade teacher at Lane Elementary school. Mrs. Santiago is a special educator at Lane Middle school. Together they co-teach English language arts and social studies. They have a very diverse class of students. Three of the students are just learning English, and three others have been identified as needing extra supports in reading and writing (e.g., they have learning disabilities). Two of the students in this 7th-grade class have a moderate-to-severe intellectual disability, and one has a hearing impairment. Once a week, Mr. Wilson and Mrs. Santiago formally plan together and pay special attention to ensure that each lesson allows all students access to the content and instructional materials. Additionally, the two teachers take time at the end of the day to reflect on what worked during that day's lessons and they review their plans for the next instructional day.

Both teachers understand that from a social aspect, it is very important to 7th graders to blend with their peers, so if they adapt materials specifically for one student's access, they allow all students the same adaptation. For example, because Julius has a moderate hearing impairment, they provide notes to him so he doesn't have to take notes while trying to read the teachers' lips at the same time. Instead of providing the notes only to Julius, they provide all students with guided notes. The teachers have decided that the notes would be beneficial to all students.

Additionally, when planning reading assessments for the two students who have a moderate-to-severe intellectual disability, Robin and Drake, multiple-choice options are provided using picture symbol representations. Because it is important to teach those picture symbols in context, literacy lessons involve picture representations for all students to gain better understanding of the new content. For example, while the whole class is reading the novel *Holes,* by Louis Sachar, the setting of the story, Camp Green Lake, is paired with a digital picture of a camp.

Mr. Wilson and Mrs. Santiago work together as a team to plan for all students in their class. They take into consideration the supports each student needs to be successful, and they plan accordingly. Rather than make a modification of the lesson for an individual student, they take a proactive approach to making every lesson accessible to all, with the outlook that all students can benefit from an environment (lesson, assessment, activity) that is universally designed. Sometimes when applying universal design for learning (UDL), teachers use a range of options. Some students may access the book through reading, others may listen to a digital version, and some may have a peer reader. UDL does not mean every student has the same access. Instead, it involves making sure that no student is excluded from instruction or from being able to show what he or she knows.

Principles of UDL

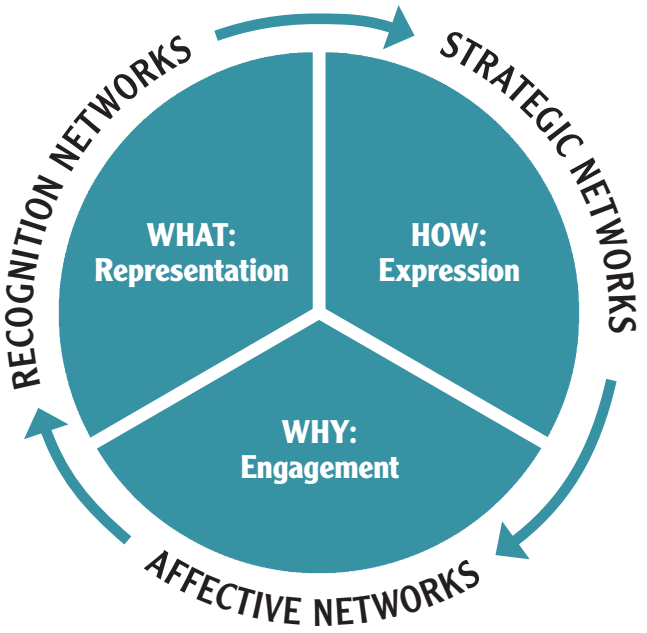
UDL is "a set of principles for curriculum development that gives all individuals equal opportunity to learn" (National Center on Universal Design for Learning, 2013). As just demonstrated in the classroom of Mr. Wilson and Mrs. Santiago, UDL is the concept of proactively designing a learning environment that allows all learners to access the content and curriculum to their greatest ability. The primary difference between modifications or adaptations and UDL is the concept of planning for all learners from the beginning. Often instructional goals, lesson plans, assessments, or materials are planned generally for a lesson, then the adaptations are retrofitted to support one or two students who will need that extra assistance. While modifications and accommodations are important, using UDL can minimize the number of them needed, and thereby promote learning for all students.

In order to plan universally designed lessons, educators must think about the way students learn. There are three basic ways in which individuals learn: (1) recognition networks (the WHAT of learning), (2) strategic networks (the HOW of learning), and (3) affective networks (the WHY of learning; Center for Applied Special Technology, 2011). In order to plan learning opportunities, educators need to develop learning environments within these networks that supply students with a wide range of opportunities (see Figure 1.1).

WHAT: Representation

Providing multiple means of representation is the first step of UDL. Recognition networks help learners gather information and categorize what they see, hear, feel, or taste. In the previous example, Mr. Wilson and Mrs. Santiago provided students with multiple ways to read and understand the setting, Camp Green Lake, during the reading of the book *Holes.* By presenting multiple means of representation for the setting of the novel, they gave students an opportunity to gather information that provided them greater access to the content being taught. Julius, the student with a hearing

Figure 1.1 Learning networks



impairment, benefited from the visual cue for the setting, while Robin and Drake needed support to read the words. Other students in the class with reading-based learning disabilities most likely also benefited from the extra support. In this example, the presentation of the picture symbol was part of the lesson, not something extra added for one or two students, but instead a support that all students in the class could use to sustain their learning.

The WHAT of Learning

Possible barriers to learning: Text, audio, visual, images

Idea: Vary the way you present materials or information—

- **Say it.** Lecture, discuss, question, read aloud, describe.
- **Show it.** Use pictures, graphics, transparencies, whiteboard, videos, closed caption.
- **Model it.** Demonstrate, think aloud, act out, build/construct, provide manipulatives.
- **Vary media.** Use video, audio, computer, SMART technology.

HOW: Expression

Providing multiple means of expression is the second step of UDL. Strategic networks help learners organize relevant information and develop plans for how to "show what they know." Students should be able to express themselves through multiple means, giving them greater access to the

content being taught. For example, when developing the literacy assessment for the class on the novel *Holes,* Mr. Wilson and Mrs. Santiago provided students with multiple-choice options for answering comprehension questions about the setting, plot, and main characters. This option allowed the two teachers to assess comprehension among all their learners (without the need to generate an answer, which can be a difficult skill for students with an intellectual disability). In this scenario, Julie and Sergio were just learning English. Julie had just moved to the United States from Nepal and Sergio from Mexico. Their teachers wanted to measure their understanding of main character from the novel being read in class. The multiple-choice option allowed these students to "show what they know," without the unnecessary emphasis on fine motor or cognitive skills required in writing, or the development of a complete thought needed to generate an answer. In this example, the assessment was developed with UDL in mind. While the assessment may have been developed with varying levels of comprehension questions, the specific example of the multiple-choice question, with or without picture symbols, provided a means for expression that proved beneficial to all students in the classroom. Again, Mr. Wilson and Mrs. Santiago did not create a separate assessment for individual groups of students based on perceived differences; instead, they created a universally designed assessment that provided all students with the means to express their knowledge.

The HOW of Learning

Possible barriers to learning: Writing, speaking, drawing

Idea: Provide students a way to show what they know—

- **Low-tech tools.** Provide picture support, graphic organizers, choice boards, stencils, a scribe, eye-gaze response options, pencil grips.
- **High-tech tools.** Provide computer writing software or apps (e.g., *PixWriter, Picture It, Co-Writer, Symbol Support*), augmentative/alternative communication devices (e.g., GoTalk, BigMac Switch), adapted keyboard, voice-activated computer software.

WHY: Engagement

Providing multiple means of engagement is the final step to assuring UDL. Affective networks keep us engaged in the materials and concepts being presented. The level of excitement and wonder learners gain from the content is why they stay engaged, and why they become engaged in the first place. Again, let's use the example of Mr. Wilson and Mrs. Santiago. The novel *Holes* is a fun book with interesting characters. The novel is grade- and age-appropriate, and that's important when planning aligned instruction for students in the 7th grade. Students engage in the novel because it is written for their age group, but also because it involves interesting characters, an

exciting plot, and a great mystery to solve. Student engagement is a critical component of UDL. And since not all students are motivated by the same things, Mr. Wilson and Mrs. Santiago felt they needed to employ multiple modes to engage all students.

In subsequent classes, Mr. Wilson and Mrs. Santiago might also find it helpful to assign chapters of the novel to peer groups to read together, or to present portions of the book digitally, or even play the movie version of the novel chapter-by-chapter after reading it aloud. All of these methods of "reading" the book are helpful to students because they engage their interest and provide greater access to the novel.

Sergio, for example, who recently emigrated from Mexico, might enjoy the novel being read with peers, which provides a social interaction component. This also provides him with the 1:1 support he needs to hear the words read aloud while following along. Remember Julie, who just moved to the United States from Nepal? She is learning the English language while trying to learn new concepts (e.g., main character). When the movie clips are shown in class, Julie might be able to see what she just read, allowing her greater access to the content and enjoyment of the literature. Finally, Drake attends summer camp, like the characters in *Holes*, and may be highly motivated by contexts that are familiar to him. He might also be motivated by "funny" characters, and this book has plenty.

Student interests and technology are not the only ways to increase their engagement in UDL; systematic instruction and prompting can improve student motivation and success. Teacher presentation of the material is also a key component in keeping students engaged in learning. Asking comprehension questions often, allowing students to participate in the readings, and assisting students in finding personal relevance in their reading materials also increases motivation. Just like it is with representation and expression, planning multiple modes of engagement must be intentional. As educators, we like to think that everything we teach our students is somehow personally relevant and motivating, but the reality is that you generally need to plan ways to engage their interest beyond simply hoping it will happen.

The WHY of Learning

Possible barriers to learning: Challenging materials, novel content, unclear directions

Idea: Change the way you engage students in the activities—

- **Instruction.** Give reinforcement; provide error correction, prompting strategies, wait times, peer supports.
- **Content.** Provide highly motivating content and context, give students choices.

You may have noticed that many of the ideas listed in representation or expression mode could also be used to promote engagement. If so, you are correct! All three components of UDL work together to promote greater accessibility through what is presented, how students show what they know, and why students are motivated to learn. First and foremost, UDL is a concept that requires educators to proactively think, plan, and create an environment where all students have access to learning.

Mr. Wilson and Mrs. Santiago took the time to think about the needs of the entire class and then to develop aligned instruction. Individualized instruction is still employed in their classroom by making sure that the lessons, materials, and assessments are usable and beneficial for all students. Stigmas are not developed; instead, inclusive practices are celebrated.

Applying UDL to lesson planning in general education

Students with disabilities may receive access to the general curriculum in multiple settings, but the important thing to consider when applying the principles of UDL to planning instruction is to be proactive. The best way to plan is to begin with standards and within that context to consider what the "Big Idea" of the lesson is. The following two examples demonstrate this concept.

Example 1

In the following English language arts lesson, students are learning to produce clear and coherent writing by composing a friendly letter.

English Language Arts/Writing/Production and Distribution of Writing (Grade 4)

Standard: Produce clear and coherent writing in which the development and organization are appropriate to task, purpose, and audience.

Learning outcomes

Students will:

- respond to listening through multimedia sources.
- compose a fictional friendly letter.
- listen to a partial reading of a fictional story written entirely in a friendly letter format using a formal style.
- create a similar letter using formal word choices and sentence structures.

Materials: Copy of *Dear Peter Rabbit* by Alma Flor Ada, notebook paper and pencils, dictionaries

Technology resources: Computer lab, word-processing program and printer, document camera or overhead projector

Activities

1. Introduce students to the picture book *Dear Peter Rabbit* and the author, Alma Flor Ada. Review and elicit from students the name of some familiar characters from storybooks and fairy tales. Using the title, prompt children to predict what writing form might be used in the book. Confirm that the book is written in a letter format. Ask students to listen as several of the letters are read.
2. After reading the seventh letter (or at a point when the students show they know exactly what should happen next), ask students to predict which character might write the next letter and what it might say. Let one or two students respond. Rather than listening to all responses, explain that the students will now have the opportunity to compose the next letter.
3. Using the document camera (or other projection device), display one of the letters from the book. Point out the formal words and phrases and sentence structures used in the letter. Make a list of the different words used for formal salutations and closings in formal letters: "Dear," "Sincerely," "Affectionately," "Your dear friend," "Gratefully yours," etc. Other formal language: "the forthcoming event," "distasteful," "abode," "rather offensive." Also identify formal phrases, such as "We look forward to hearing from you at your earliest convenience."
4. Give small groups of students copies of other letters from this book and the companion book, *Yours Truly, Goldilocks* (also by Alma Flor Ada). Have students highlight examples of formal words, phrases, and sentences and share their discoveries with the rest of the class.
5. Display a conventional friendly letter form. Students should understand that their letters will include each part of the letter form. Go over each part and ask for examples of each part (salutation = "Dear Peter Rabbit," etc.).
6. Explain to students that they will write a rough draft during this first lesson. Have students choose a storybook character to write a letter to and another character to be the recipient. Have students read their rough drafts to a partner and make revisions as needed.
7. After the revisions are made, have students take their final copy to the computer lab, use a word-processing program to write it, and then print it. They may also add illustrations from clip art if desired.

✔ **Check for understanding.** Table 1.1 on page 20 describes how the components of UDL were applied in this lesson. Can you think of other ways UDL components could have been applied?

Table 1.1 Fourth-grade writing lesson

UDL planning	Ideas
Representation planning: Adaptations of materials (e.g., adapt for sensory impairments)	• Read the book aloud to create access for students who are nonreaders or those who are legally blind; it also engages the entire class. • Read aloud the lists students generated for how to address their letters. Also creates access for nonreaders. • Have all students read their letters aloud to create access.
Expression planning: How students show learning (e.g., use of assistive technology; completing an alternative project)	• Have students who do not write full sentences use picture or word icons to fill in a letter template. For example, the student could select a photo of the person to whom the letter is addressed. The student then completes sentences like: "I am writing you a letter about (selects picture of topic). I like (selects picture of topic). Do you like (selects picture of topic) or (selects other pictures)? I hope we can get together to talk about (selects picture of topic) on (selects a date). Please write back soon." • The student may sign the letter or use a name stamp.
Engagement planning: How students participate in the activity	• To motivate students, include pictures of highly preferred activities and people to use in composing the letter. As needed, prompt the student to fill in each space of the letter. A student may use an AAC device to ask a peer to read the letter aloud, "Will you please read my letter aloud?"

Example 2

UDL for a 5th-grade science lesson (Nadine)

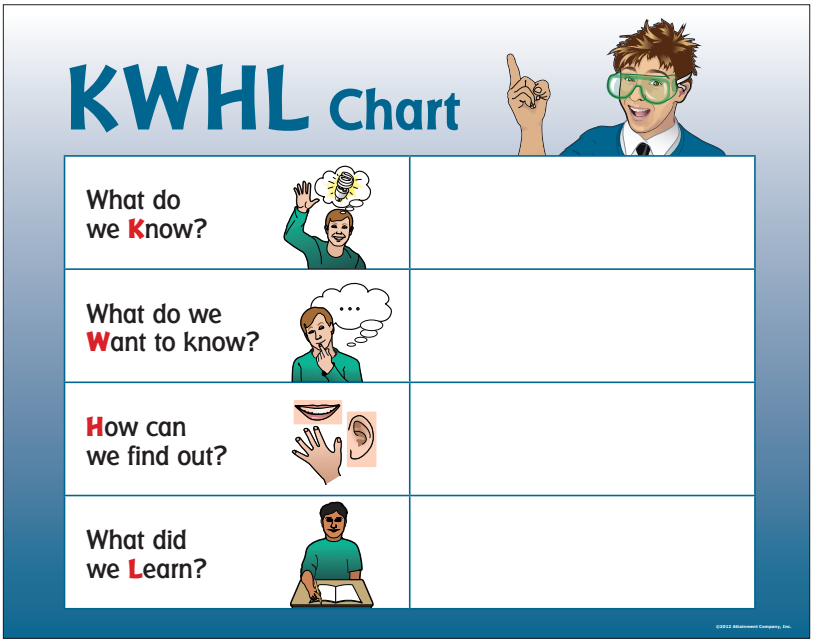
Teachers can universally design lessons in multiple content areas (e.g., science) using lesson plans, curriculum supports, and grade-level standards. In this example, Mrs. Zarbuk wants to assure that Nadine has access to the general curriculum in science. She began by identifying her state's 5th-grade standards, which she will teach to her whole class, including Nadine (see Table 1.2). Nadine has an IEP objective related to identification of the "big idea" in science lessons. Specific to this lesson, Nadine will learn about the water cycle aligned to the 5th grade standard, the Earth and Space strand.

Nadine is a 5th-grade student with a moderate intellectual disability. She enjoys working with her peers and is highly motivated by science due to the hands-on activities and the link to her everyday world (e.g., rain = precipitation). Nadine is currently using words paired with pictures to learn new concepts. She verbally responds to questions but often needs help articulating new complex vocabulary.

Table 1.2 Fifth-grade science lesson

UDL planning	Mrs. Zarbuk's ideas for whole class that will also benefit Nadine
Representation planning: Adaptations of materials (e.g., adapt for sensory impairments)	• Reduce amount of text and enlarge text. • Use picture/text cue cards to represent the abstract concepts (evaporation, condensation, and precipitation). • Use picture/text worksheets and step-by-step directions. • Assist with reading new vocabulary by verbally modeling the correct pronunciation.
Expression planning: How students show learning (e.g., use of assistive technology; completing an alternative project)	• Match word cards to the appropriate area on a picture worksheet of the water cycle. • Verbally explain concepts using concrete examples (e.g., dry, clouds, gas, droplets, rain). • Have students verbally participate in filling out a KWHL chart (see Figure 1.2). • Help students sequence steps in the water cycle using picture/text cue cards of the concepts.
Engagement planning: How students participate in the activity	• Provide concrete representation of concepts (models). • Provide systematic prompting and feedback. • Have students complete the KWHL chart with support from peers who are without disability. • Engage students by observing condensation and evaporation.

Figure 1.2 KWHL chart



From *Early Science*, by B. Jimenez, V. Knight, & D. Browder, 2012, Verona, WI: Attainment Company.

Example Standard for Science (Grade 5)

Earth and Space. The student knows that there are recognizable patterns in the natural world and among the Sun, Earth, and Moon systems. The student is expected to:

- differentiate between weather and climate
- explain how the Sun and the ocean interact in the water cycle

Goal for mastery linked to Nadine's IEP objective

To understand that water travels in a cycle and to understand the parts of the water cycle: evaporation, condensation, precipitation, and run-off.

KWHL chart

The KWHL chart is a graphic organizer used to promote science inquiry:

K What do we **K**now about the materials/content?

W What do we **W**ant to know?

H **H**ow will we find out more?

L What did we **L**earn from the lesson?

It is used as a concrete place for students to note their learning. The inquiry questions allow students to self-direct their learning and builds self-determination skills.

Summary

Instructional alignment is the heart of the song, along with planning for all learners for UDL. State standards provide teachers with the content to teach, and the components of UDL give teachers planning guidelines. The following chapters will provide teachers with research-based instructional methods and ideas to implement personally relevant lessons for students with moderate and severe disabilities.