Welcome to the sixth module of the NCSC Communication Tool Kit, entitled: Embedding Communication into Academic Content.
So far, this series of communication modules has highlighted, identifying communication, considering sensory-motor factors, selecting communication targets, using the Total Communication approach, including the selection of AAC, and Teaching communication targets.

This module is about teaching communication embedded within academic instruction. We will highlight some evidence based practices used when embedding communication into academic instruction. It is especially important to remember that students with Complex Communication Needs (CCN) often understand much more than they can express. This is why we must not underestimate a student’s understanding or expressive attempts.
In this module, participants will:

- recognize the components of literacy: communication, writing, and reading, and understand how they are used within and throughout instruction

and

- understand the process for embedding communication into academic instruction through literacy

Let’s get started!
As we consider how to embed communication within academic instruction, we must first think about literacy. We will use this Language Wheel model from Susan Kempton’s book *Let’s Find Out!*. Although her book is geared toward early education and the need to broaden children’s language, experiences and background knowledge, the basis of this model holds true for instruction across the grades, including instruction for students with a significant cognitive disability.

So let’s look at what this model conveys: What we think about, we can talk about or more broadly, what we take in receptively, we can communicate about, what we communicate about, we can write, remember, writing is about expressing a complete thought, and what we can write, we can read. Which loops back around to what we can read, we can think about.
So what does embedding the components of literacy or expressive and receptive communication into academic instruction entail?

First we must:

Identify the content, including:
- Knowing the standards to be taught
- Identifying the academic goals related to the content to be taught
- Identifying communication targets to be used and reinforced during academic instruction

Then we,

Create supports for students so that they can communicate, read and write about the content by
- Utilizing the principles of UDL in planning instruction
- Identifying how a student will “speak” or express information, how a student will access printed information; and how a student will express information in writing

and

- Identifying the symbolic system and AAC a student will use to access and express information
Implement Instruction, both academic instruction and communication instruction by
- Building background knowledge
- Identifying key vocabulary to include in a communication system
- Modeling the use of communication during instruction
- Providing opportunities to practice communication within and across activities throughout the day

Finally, devise a way for the student to

Demonstrate Performance
- Utilize the principles of UDL
- Collect data
- Use formative assessments and culminating activities
- Use this information to make instructional decisions that allow for growth of more sophisticated understanding and communication; or to help problem solve and determine strategies when progress is flat. This will be discussed in detail in Module 7.
Quiz Question 1
What components of the Language Wheel are most relevant during instruction?

- A) Communication
- B) Reading
- C) Writing
- D) All of the above
Quiz Question 2

Fill in the blanks.

Name the 4 parts to embedding communication into academic instruction.

[Blank Fields]
Let’s look at an example of communication embedded in academic instruction. Notice how the teacher has developed a symbol system for Hunter, that is used by everyone in the classroom. Also notice that the teacher recognizes all modes of communication with Hunter (such as his symbol system and gestures, such as shaking his head for yes or no).
Teacher: Okay. In our book, Storm is Coming
Teacher: I have some questions for you to see if you were being good listeners.
Teacher: Let’s see. Hm hm hm hm?
Teacher: Where did the duck come from?
Teacher: Where did they find the duck on the way to the barn?
Teacher: Corinne, come on up and show me.
Teacher: Where did they find duck? Very good, in the pond.
Teacher: Umm! Let’s see. Hunter, how were the animals feeling while they were in the barn? Were they happy, were they scared, or were they sleeping?
Teacher: How were the animals feeling?
Hunter: (points to happy on the storyboard)
Teacher: Were they happy?
Teacher: Are you sure?
Hunter: (Nods head, yes)
Teacher: Hmm! Let’s look at the book.
Teacher: Let’s look.
Teacher: How do these animals look? Do they look happy? They’re not smiling.
Teacher: Look at their faces. How are they feeling...about storm?
Teacher: They were not happy about storm. How are they feeling?
Teacher: Look down here. How were they feeling?
Hunter: (points to scared on the storyboard)
Teacher: Yes. They were scared of storm, because they thought that storm was a...?
Students: “Monster”
The first step in preparing for instruction is to identify the content. We must know the standard or standards we are addressing and how the general education activities within the lesson reflect the concepts of that standard. Throughout this presentation, we will use the following general lesson on chapter 32 of Tom Sawyer.

Within this lesson, students will read chapter 32 and write a summary based on the settings found within the chapter. We can strip this lesson down to the following requirements: read a text; discuss the sequence and settings of the text; establish an agreement within the small group; and write the summary. You can see how the components of literacy and the Language wheel are evident across the activities.
In this particular slide we have pulled the big ideas from the general education lesson that reflect the CCSS in terms of expressive and receptive communication. Adapted goals might include such skills as: identify the events and locations from the text and build symbol vocabulary for expression. We may have to practice difficult steps by identifying unique vocabulary..... And following procedures to summarize by using simultaneous prompting, or other systematic instructional procedures and errorless learning. We should also use aided language stimulation to model communication by using the student’s communication system.
Now that we know the lesson activities with which the student will be involved, we can go to the next step in preparing for instruction, and consider the supports a student might need. Since we know the components of the literacy are evident within the activities, we must develop strategies and systems to support communication, reading and writing. For communication, consider all the modes a student uses, the symbol system and augmentative and alternative communication systems the student may need.

For reading, consider the multiple ways print materials may be represented, and if the student will access printed information through graphics, modified text, assistive technology, etc.

And for writing, consider how the student will express a complete thought in print. How will that be represented? Will the student use graphics, AT, word prediction, etc.
Determining the symbol system a student will use, will help create supports for how a student will express information through communication and writing as well as how a student will access printed information. Will the student use printed words, graphics paired with words, or tactile representations paired with spoken word?

Remember there is not a hierarchy to learning a symbol system, but relies more on a student’s sensory and motor needs as well as preferences. Refer to Modules 2 Considering Sensory and Motor Factors and Module 4 Selecting AAC for more information on determining a symbol system.
Let’s see how different symbol systems might be represented in the lesson on Tom Sawyer. In order to facilitate communication, the student must have words to communicate about what is being learned, so the most salient vocabulary from the story must be identified, included in the student’s system and used. Vocabulary should be presented in the mode of communication the student is learning to use. So if the student is using printed and spoken word, the following vocabulary may be taught and available to the student.
Or graphics such as picture symbols paired with the written word may be used to represent salient vocabulary.
Or tactile representations. To identify a few options. Reinforce the use of the supports by using the symbolic representations as the story is read. Graphic or Tactile representations can be presented to the student as the word is read in the story, so that he or she an then use it to take notes or contribute to discussions.
Quiz Question 3
When determining a symbol system for a student, decisions should be based on

- A) a set hierarchy of symbols (e.g., objects then pictures then printed words)
- B) a student's sensory and motor needs
- C) a student's preferences
- D) both B and C
- E) All of the above
Additional supports to consider relate to how a student will access reading. An adapted version of the text can be used during lesson activities to reinforce the specific vocabulary concepts related to the main idea of the chapter. Make sure the adapted text carry on the focused ideas of the original text. For example: if you are summarizing text based on setting, ensure the adapted text has all the key elements to identify each setting within the major events of that chapter.
As part of the activity, students should take notes about the settings, characters and events as they read the text. It is important to consider a strategy for writing, and specifically for note taking. An Adapted organizer can be used by student to record notes. Graphics that represent elements and key vocabulary of the chapter can be provided to a student as each point is discussed and placed in the organizer.
Once the students have discussed the events of the story and come to an agreement about how they will order the settings to write their summary, then they are ready to work on a draft. Again, a strategy for writing must be determined so that Maria can contribute to the final product. One way a student might write a summary is to use an electronic picture writing program with text reader. Picture representations are provided with prescribed meanings, so when the student chooses the picture representation of a concept, the program includes the prescribed text. A text reader allows the student to review what they have written.
Now that we know the lesson activities with which the student will be involved, and planned the the supports a student might need in relation to the literacy and language, we are ready to implement instruction. We have our lesson about Tom Sawyer and the activities related to writing a summary of the chapter. We also need to implement instruction on communication, using the symbol system identified.
To begin instruction, start with ensuring the student has background knowledge of the settings and events that occur within the chapter. Employ the use of the students mode of communication. Here is an example of a topic board used during a discussion about the settings in chapter 32 of Tom Sawyer. The teacher is using this discussion to build some background knowledge about caves and the Mississippi River. The board uses some of the students core vocabulary and models the use of additional concepts.

Remember - Communication is modeled and used throughout a school day for students who typically communicate through speaking and listening, however students who have an alternate means to communicate, also need that modeling. Using such things as topic boards and aided language stimulation can help teach communicative competence. Let’s look at how this might be used.

Teacher may say, One of the settings in Tom Sawyer is a cave. Let’s talk about caves. “Has anyone ever been to a cave?”

Peer 1 “yes”
Peer 2 “no”
Target student “no”
Teacher to peer 1 “Was it exciting”
Peer 1 “yes it was exciting, but it was also scary”
Why was it scary?
It was scary because it was so dark.
Use student’s core vocabulary to make connections to content vocabulary and concepts. Allow students to use core vocabulary to contribute to discussions, demonstrate understanding of concepts. For example when discussing the setting, characters and plot of chapter 32, pair core vocabulary – places, with content vocabulary - settings, people/characters, events/plots, as the class discusses the chapter. Then as the teacher or peers use the communication system by pointing to the graphic representations as they comment about specific setting, characters or plots, they can use that specific content vocabulary, but also pair it with the core vocabulary. This provides the student with the opportunity to hear the content vocabulary spoken by peers, as well as see how their communication system is used during discussion.
Now we are ready to read the text. We saw one way to adapt the text in the previous section on considering supports. In that section the text was simplified and paired with electronic text to speech. Another way a student might read the story is with the use of a story board aided language stimulation.

A messenger was sent to the cave to tell Judge Thatcher, that his daughter, Becky, had been found.

Tom lay on the sofa and told the people around him about their wonderful adventure.

He exaggerated the story to make it seem even more exciting and finished with a description of how he had left Becky and went exploring the dark cave as far as his kite string would reach.

When Tom came to the end of the kite string, he had seen a far off speck of light in the cave. He dropped the string and made his way to the light.

Tom found a hole and when he pushed his head outside he could see the Mississippi river.
As you may have noticed, getting the timing down when using aided language stimulation takes practice. Don’t fret about it. The more you use it, the easier, more natural it becomes.
Quiz Question 4

Complete the sentence below by filling in the blanks.

Use a student’s __________ vocabulary to

to make connections to __________ vocabulary.
While reading of the text, help students make connections to the text by asking guiding questions related to different events within the text. When Aunt Polly is worried sick, you might ask students how their aunt, grandmother, or mother might feel if they were lost. Or how they feel about the dark.
As part of the activity, students should take notes about the settings, characters and events as they read the text. Remember, we talked about note taking strategies in the supports section earlier. During instruction, ensure the student has what he or she needs to take notes, such as a graphic organizer and the key vocabulary of the chapter available in the symbol the student is using.
After the students have finished reading the story, the next step in the lesson is to discuss the events that occurred within the different settings. Ensure the student has what they will need within their communication system to contribute to the discussion. During small group instruction, peers can model communication using the student’s system, or similar system, and aided language stimulation. The system peers model may be slightly more complex than the students, as a way to expose the student to content specific vocabulary, even if they are not yet using that vocabulary, as it will provide opportunities to make connections to what they know and set the stage for learning more complex language.

Let’s see what that might look like in this small group consisting of Maria, our target student, and her two peers, Mike and Sally.

Mike: We have to write down all the settings or places first. I know the cave was an important setting, that’s where Tom used kite string to find his way around in the dark.
Sally: Tom went to Judge Thatcher’s house to see Becky. That is where he told everyone about their adventure. What setting or place are you thinking about, Maria?
Notice that Maria's communication board is less complex. This was done to make involvement in the discussion easier for Maria to access. She was provided with fewer options on preprogrammed switches with picture representations of the concepts discussed. But we also planned for growth by having the peers use a board with more options.

Let’s hear what Maria shared:

Maria: The river, Tom and Becky were saved by men on a boat.
Quiz Question #5

Which of the following are effective strategies for teaching communication skills while learning academics? Mark all that apply.

- A) Providing multiple opportunities to practice throughout the day
- B) Using purposeful ignoring
- C) Using aided language stimulation
- D) Building background knowledge
- E) Using a specified means of expression
- F) Using multiple means of representation and expression
After the students have discussed the events of the story and come to an agreement about how they will order the settings to write their summary, then they are ready to work on a draft. Again, a strategy for writing must be determined so that Maria can contribute to the final product. One way a student might write a summary is to use an electronic picture writing program with text reader as discussed earlier. Picture representations are provided with prescribed meanings, so when Maria chooses the picture representation of a concept, the program includes the prescribed text. A text reader allows Maria to review what she has written.
At the end of this lesson, the small group demonstrates performance through their written summary. You will notice each student's mode of communication is represented within the group's final written summary.
The class, with all members as active learners, has completed this lesson, which is part of their unit on Tom Sawyer. Let’s review what we learned about embedding communication into academic instruction.
We had a brief introduction to literacy through the language wheel and saw how it fit within all the instructional activities discussed today. If we can strategize ways for our students to communicate, then we can use their communication system and develop similar support strategies for reading and writing.
When planning to embed communication into academic content, follow this process:

**Identify the content**

**Create supports for active student participation**
- Identifying how a student will “speak” or express information, access printed information, and express information in writing

  and by

- Identifying the symbolic system and AAC a student will use to access and express information

**Implement Instruction**
- Academic Instruction
  - Instructional activities
- Communication Instruction
  - Model use of communication during instruction
  - Provide opportunities to communicate throughout activities

**Demonstrate Performance**
Here are some helpful references and resources that may be of interest to you.
Thank you for joining us today. The next module will be Module 7 - Monitoring Progress.