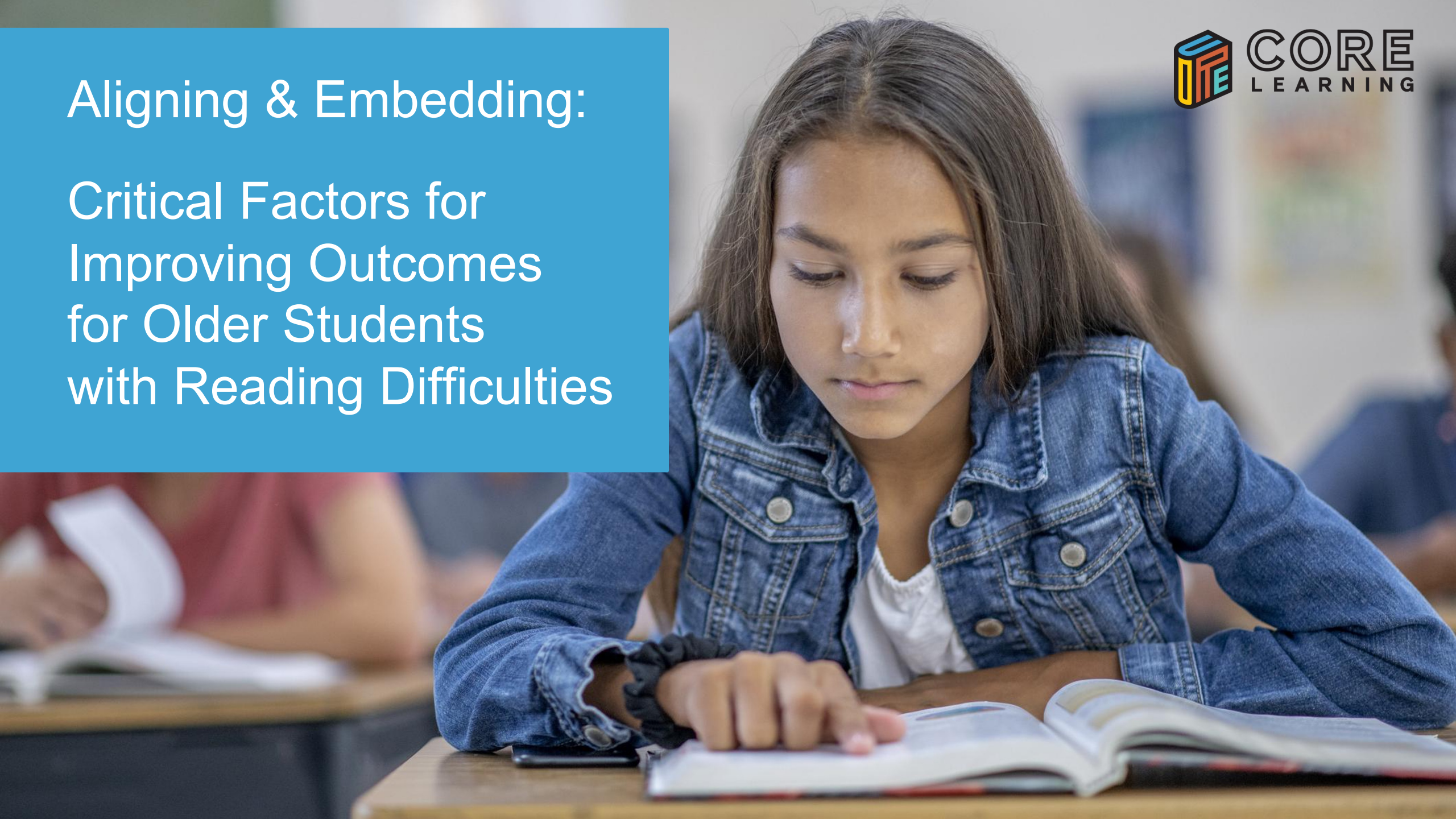


Aligning & Embedding: Critical Factors for Improving Outcomes for Older Students with Reading Difficulties



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Meet Your Presenter



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This research was supported by grant P50 HD052117 from the Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD).

The content is solely the responsibility of the authors and does not necessarily represent the official views of NICHD or the National Institutes of Health.

What Challenges Would Teachers Identify in Effectively Teaching All Learners?

Of course, they would all identify the challenges of the instability of schooling due to COVID-19.

What Else Would Teachers Identify as Big Challenges Effectively Teaching All Learners?

Key Points

- Improving reading comprehension has been an ongoing challenge.
- Explicit and Implicit Evidence Based Instruction is Needed.
- Word Reading and World Knowledge = Reading Comprehension.
- Use Screening Data to Inform Instruction and Academic Decision Making



Including ALL Students Requires:

- Accepting Each Student's Learning Potential
- Accepting Each Student's into the Classroom and School
- Recognizing that Each Student brings gifts to the school and classroom – take time to learn them
- Creating a Community that Appreciates All Learners Starts with the Leadership Team

Universal Design of Instruction

Many Instructional Practices Benefit ALL Learners

In fact, Many Effective instructional practices improve outcomes for all learners in the classroom.

What Are Some Examples Of Universally Effective Practices?

- * Teaching Academic Vocabulary
- * Providing Advanced Canopy of Knowledge
- * Identifying the “most important” things all students need through a pyramid of instruction
- * Using videos (1-3 mins) and/or pictures to preset knowledge
- * Explicit Instruction
- * Feedback

PACT Components



Comprehension Canopy



Explicit Vocabulary Instruction



Text-Based Classroom
Discourse



TBL Comprehension Check



TBL Knowledge Application

Comprehension Canopy Routine *7–10 minutes*

Materials

Springboard images: marine ecosystem, desert ecosystem, Amazon rainforest

Introduction and Prior Knowledge

When you see a picture of a forest or desert, it can look calm and peaceful, as if nothing is happening. But forests, deserts, and other ecosystems are full of life and activity.

In this unit, we will learn about relationships between living things and the environment.

Springboard

- Introduce the springboard images.

I will show you some pictures of different places.

- Provide a purpose for viewing the images.

As you look at each image, write one thing you know about the place just by looking at the picture.

- Display the springboard images one at a time. After showing each image, have students begin a “turn and talk” activity by using one of the following prompts.

- Tell your partner what kinds of plants and animals might live here.

OR

- How does the weather affect what lives in this environment?

Comprehension Question

State the comprehension question that will guide students’ learning throughout the unit.

How do interactions between living and nonliving things affect ecosystems?

Marine Ecosystem



Amazon Rainforest



Desert Ecosystem



interact

When two or more things have an effect on one another



www.wikimedia.org

Related Words: *interaction, influence, relate, connect*

Example Usage:

Ecology is the science of how living things **interact** with their environment.

Example: *A deer eating the flowers in your neighborhood because the forest where it lived burned down*

Nonexample: *Watching a news report about a forest fire*

Turn and Talk:

In what different ways do you **interact** with members of your family?



ecosystem

A community of organisms that live and interact in a particular area



www.pixabay.com

Related Words: *ecology, environment, habitat*

Example Usage:

Rainforest **ecosystems** rely on tropical bats to pollinate flowers and disperse seeds for trees and shrubs.

Example: *A stream with fish, insects, frogs, and water grasses*

Nonexample: *A puddle on the sidewalk from a recent rain shower*

Turn and Talk:

Is our classroom an **ecosystem**? Why? Why not?



Ask an Amazon Expert: Why Can't We Afford to Lose the Rainforest?



www.wikimedia.org

(1)

You've worked in the Amazon for more than 50 years. How have you seen the region change?

Fifty years ago, there were 3 million people and one highway in the entire Amazon basin. That's an area as large as the United States! Today, there are between 30 million and 40 million people, countless roads, and it's about 20% deforested. The combination of new roads and deforestation has fragmented the rainforest and affected the region's **biodiversity**. **Species** lose their habitat or

can no longer subsist in the small fragments of forests that are left. We know that **ecosystems** with a lot of **biodiversity** are generally stronger and more able to adapt than those with fewer **species**.

But on the plus side, 50 years ago there was only one national park—in Venezuela—and one national forest and one reserve in Brazil. Today, more than 50% of the Amazon is under the protection of national parks and reserves. The real challenge is to move toward a much more unified approach to managing the Amazon.

What changes have humans made in the Amazon region over the past 50 years?

What effects have those interactions had on the region's biodiversity?

(2)

When we talk about protecting the Amazon, it's hard for many people to relate because they don't feel connected to the region. How can we change that?

There are actually a lot of **interactions** between our lives and the Amazon, no matter how far away we are.

For example, there's a big, nasty viper called the bushmaster that lives in the Amazon. This snake kills its prey with venom that causes the prey's blood pressure to drop to zero. Scientists in Brazil discovered how this venom affects a human body system called the angiotensin (AN GEE OH TEN SIN) system. This discovery then allowed pharmaceutical scientists to design medicines to treat high blood pressure. Today, millions of people use these medicines. They now have longer, fuller, and more productive lives and they have the venom of a nasty snake far away in the Amazon to thank for it.

An **interaction** that affects everyone on the planet is climate change. Trees absorb carbon dioxide through photosynthesis. When deforestation occurs, there are far fewer trees to absorb carbon dioxide from the atmosphere. Reforestation—replanting a forest—is an important way of removing carbon dioxide from the atmosphere. The Amazon is a carbon sink, meaning it stores carbon dioxide that would otherwise contribute to climate change. If the Amazon were destroyed, climate change would dramatically increase.

Why would a person living in Washington, D.C., care about what happens in the Amazon?

How is climate change connected to the health of the Amazon rainforest?

Procedure

1. Complete the Comprehension Check individually.
2. Turn in the Comprehension Check.
3. Move into teams.
4. Complete the Comprehension Check as a team, using scratch-off cards. For each question, group members
 - a. suggest an answer;
 - b. cite evidence from unit text or notes;
 - c. agree on an answer; and
 - d. scratch off the answer—if incorrect, repeat the process.

NAME(S) _____

Comprehension Check #1

Individual Directions: Mark your answer to each of the following questions.

Team Directions: For each question, (1) read, (2) discuss, (3) justify your answer, and (4) scratch off your card.

21. The Proclamation of 1763 angered colonists because it:
- A Placed duties or import taxes on various goods brought into the colonies
 - B Imposed taxation without representation
 - C Tried to prevent colonists from forming representative governments
 - D Tried to prevent colonists from moving west in search of land

Team Explanation of #21: Why is ___ the correct answer?

22. The Sons of Liberty and other angry colonists protested the Stamp Act by:
- A Sending a petition to the House of Burgesses
 - B Destroying three ship loads of tea by throwing it into Boston Harbor
 - C Throwing rocks and ice balls at troops guarding the Boston Commons
 - D Attacking customs officials and organizing a boycott of British goods
23. The British decided to tax the colonists in an effort to raise revenue. They needed this revenue to pay off debt caused by:
- A The high price of sugar
 - B Loans to failing banks during the early 1750s
 - C The high cost of fighting the French and Indian War
 - D Mercantilist trade policies
24. The Sons of Liberty used news of the killings in the Boston Massacre as propaganda to:
- A Encourage colonists to organize and fight the British
 - B Discourage colonists from boycotting taxed goods
 - C Discourage colonists from meeting in public places
 - D Encourage colonists to follow British law more carefully

Randomized Control Design blocked on teacher with classes assigned to T or BAU

Vaughn et al., 2013

5 teachers
419 students
27 classes

PACT
261 students
16 classes

BAU
158 students
11 classes

Vaughn et al., 2014

19 teachers
1,487 students
85 classes

PACT
790 students
47 classes

BAU
652 students
38 classes

Sample Sizes

	Teacher s	Classes		Students	
		T	C	T	C
Vaughn et al., 2013	5	16	11	261	158
Vaughn et al., 2014	19	47	38	790	652
Vaughn et al., 2017	18	49	45	845	784
Wanzek, Swanson et al., 2015	14	23	18	468	374
Swanson et al., 2017	1	na	na	45	33
Wanzek et al., 2014 (TBL only)	7	15	11	266	150
Wanzek et al., 2015 (TBL only)	6	13	11	196	162
TOTAL	70	297		5,184	

Results from RCTs




Student Sample	Efficacy Trial	Content Knowledge	Content Reading Comprehension	Broad Reading Comprehension
General Education	Vaughn et al., 2013	.17	.29	.20
	Vaughn et al., 2014	.32 .29 .26	.02	.01
	Vaughn et al., 2017	.40	.20	.12
	Wanzek, Swanson et al., 2015	.36 .22 .24	.02	.04
	Wanzek et al., 2014 (TBL only)	.19	na	.03
	Wanzek et al., 2015 (TBL only)	.31	na	na

Studies with Struggling Readers

Student Sample	Efficacy Trial	Content Knowledge	Content Reading Comprehension	Broad Reading Comprehension
Struggling Readers	Swanson et al., 2015	.26	.34	.09
	Wanzek et al., 2015	.51	.04	.02
	Swanson et al., 2017	.35	.59	.10
	Kent et al., 2015 (TBL Only)	.50	.38	na

Study Highlight: Vaughn et al.,

- Summary: PACT students consistently demonstrate:

Content Knowledge	
Content Reading Comprehension	
Broad Reading Comprehension	

- How important is heterogeneity in classrooms?
 - When high achievers are present teachers have higher expectations and they alter instruction accordingly.
 - All students benefit from participation of peers with a range of achievement levels.
 - Academic engagement and motivation to learn are higher when there is a range of achievement levels.

Observing These Practices

What Would You Expect to See in a Classroom That Was Using PACT Practices?

What Would you NOT Expect to See in a Classroom That Was Using PACT Practices?

Please put one idea in the chat!

....even MORE evidence based practices to Enable

As we move from using Screening Data to Utilizing Evidence Based practices to respond to students' learning needs.....

Look for ways to implement the following.....

Use the **Power** of 1-Minute Instruction to **Individualize**

- You can provide practice and feedback with appropriate correction in less than 1 minute.
- Consider whether every student has had an opportunity to demonstrate learning.
- Use instructional approaches and materials that allow access for all learners.



Intensive Instruction

- Consider the precision, structure, repeated practice opportunities, and clarity of the task.
- Scaffold the task so that it is easier for some students and harder for other students.
- Move to increasingly smaller groups to ensure that students acquire target knowledge and skills.
- Use student performance as a guide to adjusting instruction.



Use Evidence-Based Instructional Practices and Resources



- Many teachers **inaccurately** perceive that *structured curricula* impair learning.
- *Discrete skills* can serve as the building blocks for bigger literacy skills. Do not underestimate their need or importance.
- Ongoing *progress monitoring* is a powerful instructional tool.
- Creative teaching results from structuring your instruction.

Building on Students' Success Improves Their Self-Esteem

- Self-esteem does not occur through sheltering students from learning—it occurs from mastering new learning.
- Self-esteem is the result of progress. Facilitate ways for students to monitor their academic and behavioral success.



Every Child Does **Not** Require Their Own Learning Approach



- Evidence-based instructional practices are effective for the vast majority of students, including students with disabilities as well as those who are gifted.
- Teachers need **not** be concerned with finding a **unique** approach to teaching each student.

Professionals Use Evidence to Make Decisions

- Clinical practice **informs** but does not supersede evidence.
- Learning the latest research findings improves our professional standing.



Control Task Difficulty

- Sequence task instruction.
- Provide multiple examples.
- Provide many opportunities and ways to respond.
- Engage students through questioning and responding.

Use a Range of Grouping Structures

- Use whole-class instruction purposefully.
- Use same-ability and mixed-ability small groups.
- Use student pairing, including cross-age and within-grade pairs.
- Provide one-on-one instruction through 1-minute lessons, paraprofessionals, and other adults.



Consider Ways to Engage Students in “Doing the Work”



- Teachers who do all the work do all the learning.
- Deliberately teach students to ask and answer questions.

Reading and Writing Are Reciprocal Processes

- Explicitly teach the critical steps in the writing process (e.g., using think sheets or prompt cards).
- Explicitly teach the conventions of writing.
- Use writing to practice reading instruction with phonics, word reading, and more advanced reading tasks.
- Provide guided practice with feedback.

Task Persistence...



...is associated with improved reading and writing outcomes.

Practice Is the Engine of Learning

- No one reaches fluency in challenging tasks without considerable practice.
- Distributed practice facilitates learning.
- Appropriate review and additional practice support retention.
- Having many practice opportunities minimizes the challenges of complex reading tasks.

Correction With Feedback Is the Fuel for the Engine



Positive Feedback

Levels of Positive Feedback

Unspecific

Teacher affirms that the answer is correct but does not provide specific feedback related to the correctness of the response.

- “That’s right.”
- “You are

Specific

Teacher affirms that the answer is correct **and** provides specific information about why the answer is correct.

- “That’s correct. You identified the most important event leading up to the battle.”
- “Yes, a lack of supplies was one of the challenges Stephen Austin faced when

Process

Teacher provides specific information about what the student did correctly when completing a task or process.

“I like how you used the glossary in your textbook to find the definition of *culture*.”

Self-Regulation

Teacher provides specific information about what the student did well related to learning goals or monitoring learning (i.e., self-check).

“I like how you went back and checked each of your words to be sure that you spelled it correctly.”

Corrective Feedback

Levels of Corrective Feedback

Unspecific

Teacher indicates that the answer is incorrect but does not provide information about why it's incorrect.

- "That's not right."
- "No."

Specific

Teacher confirms that the answer is incorrect **and** provides specific information about why the answer is incorrect.

Teacher: Cabeza de Vaca sailed along the coast of Cuba. Where did he land next?
Student: Mexico.

Process

Teacher: No, he went to Florida.
Teacher provides specific information about how to find the correct answer through a process.

Teacher: What was the battle called?
Student: The Texas Revolution.

Self-Regulation

Teacher: No, look at the paragraph in your textbook to find the name of the battle.
Teacher reminds the student of the learning goal or encourages the student to check his or her work.

- "Be sure to edit your sentences for correct spelling and capitalization."
- "Remember that we are working on writing complete sentences."

Combined Positive and Corrective Feedback

Teacher provides a combination of praise or positive feedback with corrective feedback.

“You identified two of the concerns Texans felt about the annexation of Texas. Now go back and reread to find the third concern.”

Intervention Examples

Comprehension Monitoring

Does It Make Sense?

My name is Samantha and I love to swim. It is my favorite book. Swimming helps me relax and is a good activity for my health because now, I have muscle strength, a healthy heart, and healthy lungs. I took classes when I was a child so that I could become a great driver one day.	YES	NO
Mountains exist on every continent and even beneath our great oceans. Did you know some of the highest mountains are at the bottom of the sea? Hawaii is at the top of a volcanic mountain in the Pacific Ocean. Mountains cover one-fifth of the earth's land surface and occur in 75% of the world's countries.	YES	NO
I have a beautiful garden in my back yard. I can see my garden from the kitchen. Sometimes I sit on my counter in the mornings and read a book, especially on rainy days. My dad and I are both nature lovers, so we planted the garden when I was a little kid. When I was 4, I cut the roses in our yard and gave them to my mother.	YES	NO

Intervention Examples




Self-Regulation

- The goal of **self-regulation** is for students to be able to plan for and monitor their word reading and comprehension skills and knowledge to fluently read and understand complex texts.
- Three main activities:
 - Goal setting
 - Self-monitoring
 - Self-reflection

Intervention Examples

Goal Setting

- Goals first provided to students with a process to meet goals
- Students explicitly taught and provided feedback
- Gradual release of responsibility
- Student independence

Name: _____ Date: _____ Lesson #: _____		
Self-Regulation	Reading Goals	What will I do?
Goal Setting and Monitoring	1. Figure out unknown words and ideas 	<i>Highlight unknown vocabulary words</i>
	2. Monitor my understanding 	<i>Read around to identify unknown words</i>
		<i>Break text into sections</i>
	3. Write for understanding 	<i>Write key words in margins</i>
		<i>Use key words in summary sentence</i>

Intervention Examples

Self-Monitoring

- Managing text length
- Monitoring vocabulary
- Monitoring comprehension
- Annotating text
- Summarizing text sections

Goal

I think I answered this many questions correctly.

0 1 2 3

I answered this many questions correctly.

















Does my main idea sentence include the most important "who" or "what"?	YES	NO
Does my main idea sentence include the most important idea from the passage?	YES	NO
Did I use a complete sentence?	YES	NO

Now color in the circles the amount of questions you got correct!

☐ **Stop and Think** 🤔

Intervention Examples

Self-Reflection

	Reading Goals	How did I do?
Self-Reflection	1. Figure out unknown words and ideas 	<div></div> <p>What words did I highlight?</p>
	2. Take notes for each text section 	<div></div> <p>What kind of notes?</p> <div></div>
	3. Write for understanding 	<div></div> <p>Key words? Y N</p> <p>Most important who or what? Y N</p> <p>Complete sentence? Y N</p>
Goal Setting	Reflect, what will you do next time? <hr/> <hr/>	

Intervention Examples

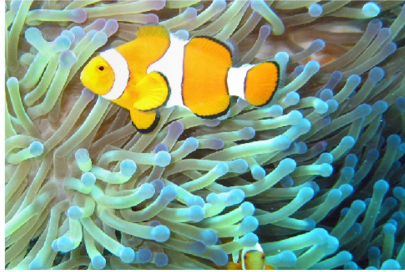
Essential Words

- Explore high-utility, high-frequency concepts.
- Introduce at the beginning of a unit.
- Review the words with warm-up activities.

Essential Word Ecology

interact

When two or more things have an effect on one another



www.wikimedia.org

Related Words: interaction, influence, relate, connect

Example Usage:
Ecology is the science of how living things **interact** with their environment.

Example: A deer eating the flowers in your neighborhood because the forest where it lived burned down

Nonexample: Watching a news report about a forest fire

Turn and Talk:
In what different ways do you **interact** with members of your family?

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The PACT and PACT Plus research teams from The University of Texas at Austin, Florida State University, and Texas A&M University developed these materials with funding from the Institute of Education Sciences (R03E100013) and Office of Special Education Programs (H026M150016).

Essential Word Ecology

ecosystem

A community of organisms that live and interact in a particular area



www.pixabay.com

Related Words: ecology, environment, habitat

Example Usage:
Rainforest **ecosystems** rely on tropical bats to pollinate flowers and disperse seeds for trees and shrubs.

Example: A stream with fish, insects, frogs, and water grasses

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Turn and Talk:
Is our classroom an **ecosystem**? Why? Why not?

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Intervention Examples

Academic Words

- Definition
- Word relatives
- Use in context

The essential word for today is ***persist***. *Persist* is a verb that means “to continue to do something despite opposition, warnings, or pleas—not giving up when things get tough.”

We will see several relatives of *persist* throughout our text today—*persisted*, *persistence*, *persistent*, *persistently*, *persisting*, and *persists*.

Here are some example sentences:

1. Must you persist in making that noise?
2. If he persists in studying each day, he is sure to pass the test.
3. She persistently volunteered at the shelter until all the dogs were adopted.

Look for the word *persist* and its relatives as we read.

(7) Just a year after her own escape, she returned to the South to rescue her sister and her sister’s two children. Then she returned once again for one of her brothers. Sometime later, she returned yet again to rescue her parents. It was not just her family she helped to become free. She wanted to help other slaves to escape. With persistence, she returned to the South 19 times.

Intervention Examples

Text-Based Discourse

- Essential word discussion
- Peer discussion
- Whole-class discussion

Essential Word Discussion

“How did this text use the idea of persist?”

(Both Harriets were persistent in ending slavery.)

Peer Discussion Using “Turn and Talk”

“Ask your partner to discuss one example of persistence in either Harriet’s life.”

Whole-Class Discussion

Ask for students to volunteer responses. Ask students how their response shows a Harriet continuing to do something despite opposition, warnings, or pleas.

How Do We Improve Reading Comprehension?



- Interventions will always be necessary, but interventions alone are inadequate.
- Schoolwide approaches to enhancing the pressure points for improving reading comprehension are needed to integrate and enhance what occurs during interventions.
- Without **enhanced word reading, vocabulary (language), and background knowledge**, reading comprehension will remain underdeveloped.

Platform 1: Organized Vocabulary and Concept Development Across Content Learning

Develop schoolwide approaches to enhancing vocabulary and academic knowledge.



Platform 2: Purposeful Peer Interaction



Organize opportunities for structured peer-pairing and small-group work with shared responsibility for learning.

Platform 3: More Reading

Consider ways to increase opportunities to use texts as a source of word reading practice and knowledge throughout the day.



Platform 4: Cognitive Self-Regulation (Strategies)



Reading strategies should be taught but are an incomplete approach to enhancing reading comprehension.

Platform 5: Foundational Skills

HUGELY
IMPORTANT:

- **Word reading** is the pathway to reading comprehension.
- **Word meaning** is the pathway to reading comprehension.



Significantly Improving Reading Comprehension

- A schoolwide platform to improve language and knowledge
- Ongoing intensive interventions focused primarily at the **word level**—word reading and word meaning
- Understanding that reading comprehension is fundamentally a result of **knowledge, word reading, and practice reading and discussing texts**



Takeaway Message



WWW.meadowscenter.org



Learn the Science of Reading

- 7–10-week online course that teaches foundational skills and instructional practices based on the science of reading
- Learn to understand and recognize dyslexia and its warning signs
- Learn the structure of the English and Spanish language system
- Includes the *Teaching Reading Sourcebook* and *Assessing Reading: Multiple Measures* textbooks
- Available for graduate credit

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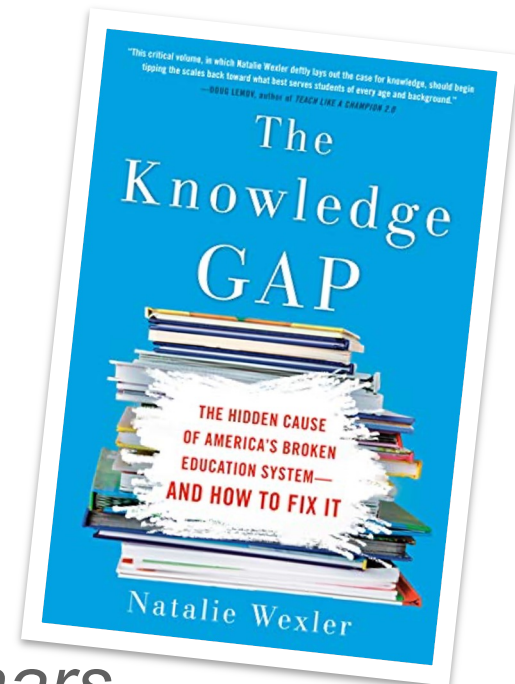
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Join Us in December

Comprehension and Writing: Where Do They Fit into the Science of Reading?

December 6, 4:00 p.m. ET

With Natalie Wexler, J.D. author of
*The Knowledge Gap: The Hidden Cause of America's
Broken Education System—And How to Fix It*



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