Teaching World and Word Knowledge to Access Content-Area Texts in Co-Taught

Classrooms

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Abstract

In co-taught classes, general education and special education teachers can improve the content-area learning and literacy skills of students with learning disabilities by helping them read texts effectively. Co-teachers can improve comprehension by providing students with background and vocabulary knowledge before reading. In this article, a routine for introducing background (world) and vocabulary (word) knowledge—the *World Knowledge and Word Knowledge* routine (*World and Word)*—is described. The article includes explanations how each part of the routine works and uses an example to illustrate how co-teachers could use the routine to promote student reading comprehension.

Key words: content-area literacy, co-teaching, special education, reading, middle school, reading comprehension

Teaching World and Word Knowledge to Access Content-Area Texts in Co-Taught Classrooms

Middle school teachers in all content areas work hard to help all their students master their standards, but students in many classrooms—especially in co-taught classrooms—differ dramatically in their academic skills. Teachers endeavor to make the content accessible and engaging for all their students (Guthrie & Klauda, 2012). In-class reading can make content accessible and engaging (Biancarosa & Snow, 2006), but teachers often hesitate to spend class time on reading because their students also differ greatly in their reading skill (Swanson et al., 2005). Some students have mastered most reading skills—from pronouncing words, to understanding the literal meaning of each sentence, and to processing and integrating complex text ideas. But many other students with and without learning disabilities (LD) lack these skills (Faggella-Luby et al., 2012; Lee & Spratley, 2010), so reading may not help them learn important new ideas.

Incorporating reading in co-taught classrooms can be especially difficult. Content-area teachers are experts in their own disciplines, but few have received training to integrate literacy practices into their content curriculum (Gillis, 2014). Furthermore, many content-area teachers feel unsure of how to help students with LD (Hall, 2005). Their special education co-teachers face a complementary challenge: They know more than general-education teachers about teaching reading but lack content-area expertise (Brownell et al., 2009). In addition, all teachers have limited time and planning to incorporate reading is a major task. The result? Students with and without LD mostly learn without reading (Scruggs et al., 2007). The good news is that co-teachers can use their respective skills to make reading an important part of their instruction and build students' content-area knowledge and reading skills (Wexler et al., under review). This article is about an instructional routine to introduce content-area texts. It was designed to help co-teachers and can be used by teachers on their own.

Reading Comprehension and the Role of World and Word Knowledge

Students learn content-area concepts through texts when they can comprehend them. Reading comprehension happens when the reader builds a mental model of the author's ideas called the *situation model* (McNamara & Magliano, 2009). Readers construct the situation modeling using two general abilities, word recognition and linguistic (or language) comprehension (Hoover & Gough, 1990). Word recognition means looking at written words and knowing what they mean and how to say them. Linguistic comprehension comprises the knowledge and skills readers need to turn words into situation model for the text. Middle school students must have good word recognition skills, but the focus of this article is how to improve students' linguistic comprehension. Students benefit when teachers provide two critical types of knowledge, background *World Knowledge* and vocabulary *Word Knowledge*.

Background knowledge is essential to comprehension. For example, readers with difficulty who know a lot about baseball, given texts about baseball, comprehend those texts better than readers with stronger reading skills but less baseball knowledge (Recht & Leslie, 1988). Students in co-taught classes will vary in their World Knowledge and will benefit from strong prior knowledge. However, many content-area texts are not all about familiar topics, and many students will not have a great body of World Knowledge they can use to help with any new text (Cromley & Azevedo, 2007). How can teachers level the playing field and make texts more accessible? Researchers have shown that teachers can fill in missing background knowledge before reading (Deshler et al., 2001; Kamil et al., 2008).   In the co-teaching context, teachers work together to figure out what background knowledge their students need. As the baseball example makes clear, all students—not only those with LD—will need background knowledge if the topic is unfamiliar. The *World Knowledge* routine described in this article will help them pinpoint essential ideas and design short focused lessons to help students access new texts.

Word Knowledge

Students also comprehend best when they know important words in the text (Quinn et al., 2015). Readers with good comprehension skills know the meanings of many *general-*

purpose academic words that occur across texts—words like "occasionally" that could be used in almost any content area (Kelley et al., 2010; Ouellette, 2006). Students acquire new ideas from texts more easily when they learn text-specific vocabulary prior to reading (Burns et al., 2011), so co-teachers can both (a) explain words briefly (Biemiller & Boote, 2006) and (b) build knowledge of academic words with extended explanations (Beck et al., 2002). The goal of providing Word Knowledge is not to teach every unknown word but provide the word information needed for the text to "speak for itself" and allow students to construct the text situation model on their own.

The World Knowledge and Word Knowledge Routine

The *World Knowledge and Word Knowledge* (*World and Word*) routine described in this article is a strategy for helping teachers (a) plan pre-reading lessons to introduce critical background concepts and vocabulary words and (b) teach those lessons in 10 to 15 min. The evidence-based strategies in the routine here are not individually novel (Kamil et al., 2008). The value of the routine is in its design.

It was created for Project CALI and is encapsulated in slide templates available in the Supplemental Materials. The slide templates provide a skeleton to simplify and shorten the planning process and make teaching more efficient. Teachers can use the routine to plan any content area text lesson. Co-teachers can use the embedded planning recommendations to increase efficiency, such as dividing the routine into parts and each planning one part. Any individual teacher or co-teacher can use the materials (available in the online Supplemental Materials) and use the template to identify what to teach and decide how to teach it, fill the template with key information, and use the completed presentation to guide them as they teach the lesson. Teachers have reported that the template provides the structure to make their lessons more accessible to students with LD. In sum, the *World and Word* routine can help teachers implement evidence-based practices for all students.

Teaching World Knowledge

What to Teach

Students can only construct a situation model if they have foundational information that gives them access to new ideas. In the *World Knowledge* routine, co-teachers first choose the concepts students need to know to access the text, specifically unfamiliar concepts that make comprehension easier. Teachers can teach (a) complicated concepts in the text, (b) information not provided in the text, or (c) both. The text *Civil Rights on a City Bus* (ReadWorks, 2014) is used to illustrate how teachers make these decisions. The text describes Rosa Parks's involvement in the civil rights movement. The text was selected because students in many states first learn in depth about the institutionalized racism that catalyzed the civil rights movement during middle school (Southern Poverty Law Center, 2011). The following description provides a model of how teachers might choose concepts to teach in their *World and Word* lessons.

Complicated Concepts

In *Civil Rights on a City Bus*, the author describes Jim Crow laws in the following way: "For violating the laws of segregation, referred to as 'Jim Crow laws' (which were meant to keep white people and black people separate), Rosa was arrested and fined" (p. 1). What makes the Jim Crow laws a complicated concept is that the text does not explicitly describe what it means to "keep white people and black people separate" (p. 1). The author implies—but does not state directly—that the law requiring African Americans to give their seats at the front of buses to white people was an example of a Jim Crow law. Students today probably know about contemporary race-related issues like Black Lives Matter and may have experienced prejudice themselves, but these issues concern cultural bias, not the law itself. It may surprise students that the Jim Crow laws were blatantly racist. This makes clear that Rosa Parks was not just objecting to a cultural norm but breaking the law and dramatizes the stakes of her action and the civil rights movement in general. Teaching this complex concept directly will make *Civil Rights on a City Bus* easier to understand. Whether Jim Crow laws need an introduction will also depend on the background knowledge of the students in each class. Part of a teacher's work is

deciding what World Knowledge to teach.

Information Not Provided in the Text

The text also omits some important information about the Jim Crow laws. The author does not describe that these laws enforced segregation in restaurants, water fountains, bathrooms, and schools. These facts show how segregation invaded almost all public spaces. This is important information to understand when, at the end of the text, the author describes how the civil rights movement led to the elimination of all Jim Crow laws. Students may not appreciate the significance of this fact if they think Jim Crow laws only affected bus seating.

How to Teach

Teach Directly

In effective *Word Knowledge* lessons, co-teachers explain (Rosenshine, 2009) explain the new concepts explicitly (Watson et al., 2012)—meaning that they tell students information directly. This is not always obvious: Many teachers have been told directly that they should not provide information this way. Data do not support this contention (e.g., Hattie, 2009). Explicit teaching is especially useful for students with LD because it reduces the working memory load and allows them to focus on key ideas (Martin, 2016). Given its evident value for all students, we include direct teaching in the routine.

Direct teaching stands in contrast to one very common instructional technique, which is asking students to say what they already know about an unfamiliar topic. For example, when teaching *Civil Rights on a City Bus* a co-teacher might ask the problematic question, "What do you know about the Jim Crow laws?" This type of teaching is discouraged during the *World Knowledge* routine for several reasons. First, students probably do not know much about the topic of a content-area text. This makes sense: Teachers choose texts that provide new information. Second, students might share misinformation, requiring teachers to correct misunderstandings and risk creating confusion for other students (Ecker et al., 2014). Finally, teachers may have a small number of students with extensive knowledge on the topic. When

knowledgeable students share, teachers may think all students are as knowledgeable. This is frequently untrue—perhaps especially so in a co-taught classroom where students are extremely diverse in their knowledge base. "What do you know"-type questions invite myriad problems, so they are not part of the routine. Teachers should endeavor to understand students' prior knowledge—but the beginning of a lesson is not the time to do an informal assessment. Part of effective planning is knowing what information students need and directly teaching that.

Connect to Prior Learning

The recommendation to avoid asking what students know about a new topic does not mean avoiding connections to what students already know. Effective *World Knowledge* lessons connect the new text to students' prior knowledge based on previous instruction (Kendeou & van den Broek, 2007). As described by [Author], co-teachers should choose texts that help them address the content standards and the needs of students with and without disabilities. This means familiarity with ideas that are related to the text and will help them understand the complicated or unfamiliar concepts students need to learn. Teachers can actively engage students in this part of the lesson by asking them to make these links explicitly. To connect to students' prior learning when teaching *World Knowledge* for the *Civil Rights on a City Bus* text, co-teachers might say, "We have learned about several important people in the civil rights movement. Tell your partner some you recall." (Students discuss with a partner.) "Let's hear some ideas." (The teachers solicit volunteers; students mention Martin Luther King, Jr and John F. Kennedy.) "Good! Today, we are going to learn about another important person in the civil rights movement. Her name is Rosa Parks."

Use Visuals and Videos

Co-teachers use brief visuals and videos to present World Knowledge concepts where possible. Students retain information well when the multimedia materials have apparent links with concepts students need to learn (Xie et al., 2019). For students with LD, especially those with foundational skill difficulty, nonwritten media can foster comprehension by reducing

cognitive load (Kendeou et al., 2014). Co-teachers find visuals and videos through internet

searches. Some search engines have tools specifically for locating images or videos that teachers

can expedite the search process. There is no specific repository of videos to recommend, but

there is vast number of helpful resources online. In general, teachers can use visuals and videos

for instructional purposes without worrying about copyright under the "fair use" doctrine

because the purpose is strictly educational. Note that there are occasional exceptions, and some

schools have special policies about using visuals and videos teachers should know.
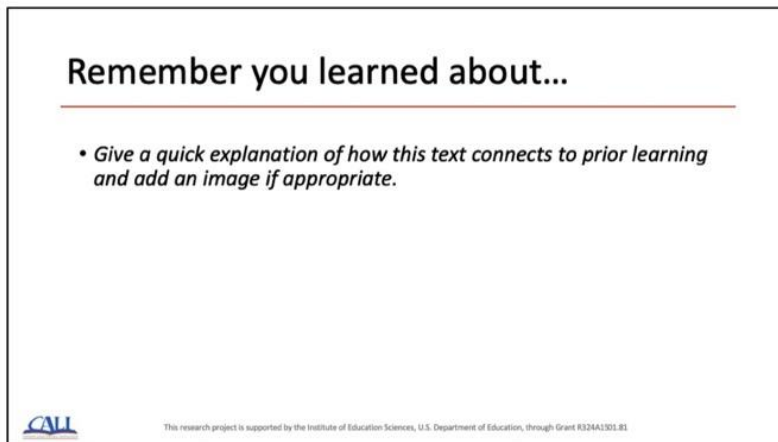
Figure 1 presents two photographs teachers might consider for describing the Jim Crow

laws. The value of these images for explaining the key concepts differs. Image A is the more

powerful image because it blatantly illustrates the fundamental inequality at the heart of

segregation. Image B shows that segregation even applied to healthcare, but it does not illustrate

the inequality so clearly.

Figure 1
Two Possible Photographs to Explain Jim Crow laws in a World Knowledge *Lesson Note.* In Image A, the signs above the water fountains read "WHITE" on the left and "COLORED" on the right. Image A (Wilson, 2011; Creative Commons License); Image B (Alexisrael, 2014; Creative Commons License).

Co-teachers would keep Image A (Figure 1) and explain the complex or unfamiliar concepts

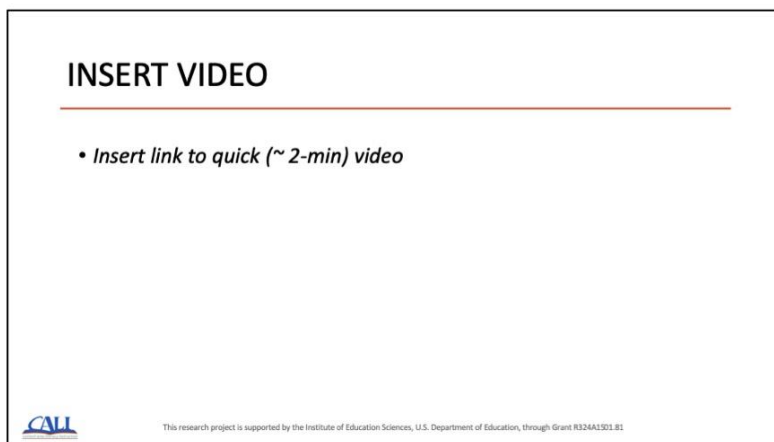using it. If they use multiple images, they might also use Image B. For Project CALI, co-teachers

used a *World and Word Knowledge* slideshow template they would fill in with their visuals (see

Figure 2 for example screenshots). This template is available in the Supplemental Materials

online.

Figure 2.1

Figure 2.2

INSERT CONCEPT

- *Add some bullet points with information, make a connection to prior learning, add images if appropriate.*

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What to Teach:
- Background information not provided in the text <u>and/or</u>
- A complicated concept in the text

How to Teach:
- Teach directly
- Connect to prior learning
- Sell the text
- Keep students engaged

Copy and paste this slide as needed.

Figure 2.3

Figure 2.1, Figure 2.2., and Figure 2.3.
Screenshots from the World Knowledge *Instructional Template*
Note. Complete instructional templates are available [here](#).

Videos are a second tool for teaching complicated or unfamiliar concepts. Well-crafted videos can provide students with a vivid representation of key ideas. However, not all videos are a good fit for teaching *World Knowledge*. First, the videos must address the key concepts specifically. In other words, a video for *Civil Rights on a City Bus* needs to address Jim Crow laws specifically. An overview of the civil rights movement generally would not provide the necessary background knowledge for reading the text.

Another challenge to using videos is that they are often too long, something that is especially problematic for students who have difficulty attending (Kendeou et al., 2014). Videos should be brief—only 2 and 4 min long—both to limit the length of World Knowledge lessons less than 10 min and to eliminate extraneous information. To direct students' attention to

important information, co-teachers show excerpts that highlight essential points and even

narrate the videos themselves rather than depending on unhelpful voiceovers. Teachers should

also provide a brief (10–20 s) preview before showing any video to make the video's purpose

clear and focus students' attention on important information (Deshler et al., 2001). Here is an

example of teacher talk before a video related to *Civil Rights on a City Bus:* "We are going to

watch a short video about segregation during the civil rights movement. Pay attention to what it

must have been like to have lived in a segregated state that had Jim Crow laws."

Sell the Text

The next task for co-teachers is to sell the text—that is, to interest students in reading it.

Many students with LD dislike reading and may be intimidated by texts on unfamiliar topics. In

addition, not all texts or topics immediately fascinate students, so students' motivation to read

will vary (Troyer, 2017). In some cases, the visuals and videos themselves sell the text. In *Civil*

Rights on a City Bus, the images of segregation may evoke an emotional reaction in students

that will motivate them to read. Co-teachers can also increase interest just by expressing their

own excitement about the text and topic. In some cases, creating a bit of suspense or previewing

part of what will be revealed can add to the interest. For *Civil Rights on a City Bus,* a co-teacher

might say, "Based on the title and the video we already watched, you already know Rosa Parks

protested on the bus—but how could she protest on a bus? And how could riding on a city bus

have an important impact on the civil rights movement? That is exactly what we will learn." This

accomplishes both the goal of selling the text and the goal of setting the reading purpose.

Engage Students by Eliciting Frequent Responses

Throughout the lesson, co-teachers must engage students by providing frequent

opportunities for students to respond. While a detailed description of specific strategies to

maintain student participation and engagement are beyond the scope of this article (see

MacSuga-Gage & Simonsen, 2015, for a review), co-teachers can provide opportunities to

respond by asking students to (a) recall information they have already learned, (b) repeat the

information the teachers have just provided, and (c) reflect on information they have just

learned. For Civil Rights on a City Bus, a teacher might deliver the following instructions: "The

video provided many examples of Jim Crow laws. What kind of laws?" (Students respond

chorally: "Jim Crow laws.") "Yes. Turn and tell the person sitting next to you the purpose of Jim

Crow laws." (Students discuss with a partner. The teacher listens to one pair and asks one

student to share with the class. The student says: "They were racist laws that were intentionally

designed to treat Black people worse than White people.") The teacher adds, "Yes, think of a Jim

Crow law from the video." (Teacher pauses and then solicits volunteers to give brief examples.)

World Knowledge Instruction Summary

In sum, co-teachers can plan and teach short engaging lessons that prepare students to

read new texts using *Word Knowledge* routine. In deciding what background knowledge will

make the text accessible to students, co-teachers consider what concepts in the text are

necessary background or complicated. They teach the concepts directly. They connect the new

information to students' prior knowledge of the topic, use visuals and videos to highlight the key

ideas, sell the text to promote interest and engagement, and use high-efficiency techniques to

provide students with as many opportunities to participate as possible.

To facilitate planning and teaching, the Project CALI *World Knowledge* slide template

includes (a) reminders about the principles described above to help with planning and (b)

spaces to add in images, videos, and other information to make it easier to assemble the

presentation (also see Figure 2). Using the template, co-teachers can share planning and

instructional tasks, and teach full *World and Word Knowledge* lessons in less than 10 min. The

Supplemental Materials provides a PowerPoint version of the template that can be converted for

use with Google Slides. The goal of the routine is to help teachers use many well-known

evidence-based instructional practices in a way that makes planning quick and the lessons both

efficient and effective—and help their students construct an accurate situation model.

Teaching Word Knowledge

What to Teach

Word Knowledge is a strong contributor to reading comprehension (e.g., Ricketts et al.,

2019) The purpose of teaching vocabulary in the *Word Knowledge* routine is to help students

understand the meanings of words that are important for comprehending the text and which the

students may not know. So, the goal is to teach useful words. There are two types of useful

words, those useful in general, and those useful for a specific text. Generally useful words (often

called Tier 2 words [Beck et al., 2002]) can be used across content areas (e.g., *scrutinize*,

occasional, or *gradual*). Text-specific useful words are words that are important for

understanding a specific text but would not otherwise help students in other contexts. For

example, the classic short story *The Lottery* (Jackson, 1948) involves a disturbing annual ritual

in a rural American town that requires *paraphernalia*. That word conveniently describes the

necessary materials for the abhorrent tradition—but will not apply to many other texts.

The question then remains how to decide which useful unknown words to teach. When

co-teachers select texts for Project CALI lessons, they choose texts for which they expect

students will know 90% of the academic content words. The remaining words are taught in the

Word Knowledge lesson. In *Civil Rights on a City Bus*, there are about a dozen words or

phrases that may be unfamiliar to students but support a full understanding of the text

including *defiance, intensify, violating, fined, inspiration, boycotted, commuters,*

unconstitutional, integrated, resistance, prejudice, and *mass protests*. Which of these are most

important for understanding the text? Co-teachers have to judge which words are most

important for their students, but they will not always agree. Readers of this article may even

disagree with our vocabulary selections. For example, we did not list *equality* as a potentially

unfamiliar word because seventh grade students—even those below grade level—likely know the

word. Some readers may not agree. Similarly, co-teachers do not always agree. *Word*

Knowledge lessons give teachers time for only four to six words, so teachers need to consider

which words are essential. Table 1 contains the explanations for choosing 5 words from the

longer list.

Table 1
Explanations for Choosing and Categorizing Vocabulary Words

Word	Rationale for Choosing	Category	Rationale for Category
boycott	the critical result of Rosa Parks's act of civil disobedience, and a word that is not clearly defined in the text. The meaning can be inferred, but the importance of the word means it is important to teach.	Fast	The word has a simple definition that can be visualized by imagining people refusing to get on a bus or engaging in a similar activity.
defiance	a general characteristic of civil disobedience related to the Jim Crow laws (*violating* and *resistance* are related words)	Fast	The word has a relatively simple definition that one can visualize by picturing someone defying a Jim Crow law or—as might apply to middle school students—defying their parents' rules.
inspiration	an important descriptor of Rosa Parks's influence on the Civil Rights movement	Focus	Defining the characteristics of inspiring behavior and the products of inspiration takes complex thinking that suggests students will benefit from further exploration.
integrated	a word that describes the effect of the Civil Rights movement	Fast	The word is seemingly complex but still has a simple definition that might be visualized by showing students of different races in the same school.
prejudice	an important descriptor of the Jim Crow laws as well as ongoing racism that has continued long beyond that time	Focus	The nature of prejudice is ambiguous because it is not confined to the idea of Jim Crow laws. It has relevance for this specific text and broader value as a word in the entire unit on the civil rights movement.

After selecting the words to teach, co-teachers need to decide which words require a more in-depth discussion to convey their meaning in the text. To do this, teachers distinguish *fast words* from *focus words*. Fast words are important but not the most critical in the text. They are often concrete words with simple definitions—often synonyms. Co-teachers can often find an image to describe their meaning. Fast words can be presented to students in as little as 30 s. Focus words are essential for text understanding and often have complex meanings. They are hard to explain briefly, and co-teachers may spend 1–3 min on each one. There is no perfect decision whether words should be fast or focus. In *Civil Rights on a City Bus*, among the 5 words we chose, we selected 3 as fast and 2 as focus. Table 1 shows the categories selected and the rationale for the category.

How to Teach

After selecting the words and dividing them into two categories, co-teachers plan instruction for each word. The fast-word routine has three parts, and the focus-word routine subsumes and extends the fast-word routine. Explicit vocabulary instruction increases student reading achievement (Kamil, 2008), so *Word Knowledge* instruction is direct and provides multiple opportunities for students to engage with each word. As with *World Knowledge*, the *Word Knowledge* routine does not address word recognition, but teachers can address students' difficulty reading the vocabulary words through co-teaching. Project CALI included a *student support rotation system* involving station teaching, and teachers supported some groups with word recognition for the text-specific vocabulary words through station work. See Author (in press) for more information on the student support rotations.

Teaching Fast Words

The three parts of a fast-word explanation are to (a) present a short definition, (b) use an image to illustrate the meaning, and (c) make an explicit link to the text. Since the goal of *Word Knowledge* is to help students access the text, teachers should be sure to match the definition to the way word is used in context and not provide multiple definitions for words. In terms of a

short definition, it can be especially helpful to search more than one dictionary, identify

common elements across definitions, and either use one definition or construct a new simpler

one by providing a student-friendly definition, an image, and the sentence from the text that

contains the word. Several online resources exist for quickly finding simple definitions and

synonyms for middle-school students, such as the **Merriam Webster Learner's Dictionary**

or the **Cambridge Learner's Dictionary**.

 Dictionary definitions are often too detailed, but co-teachers can easily modify them. For

boycott (verb), here are two definitions: (a) "to refuse to buy, use, or participate in (something)

as a way of protesting" (Merriam Webster) and (b) "a situation in which people refuse to buy,

use, or do something because they do not approve of it" (Cambridge). Common to these

definitions are (a) refusing to do something and (b) using this as a form of protest. So, the

combined definition of *boycott* that fits this text is "refuse to do something as a protest."

 The second part is to use an appropriate image. It is important to note that the image

should represent the exact concept (not simply relate to it), and not all words can be explained

with an image. In the case of *boycott,* here is an example: One image shows protestors

encouraging others to boycott a restaurant—to refuse to eat there—as a protest against animals'

living conditions. Thus, the image represents both the refusal and protest aspects of the

definition. A second image (Figure 3) suggests a protest (the raised fist) and not doing

something (the "no" sign), but the link is not clear unless one already knows the definition. The

image of the restaurant protest will help students better understand *boycott*.

Figure 3
Two Possible Images to Explain the Word Boycott
Note. Image A (Hogg, 2007; Creative Commons License); Image B (The Noun Project, 2017;
Creative Commons License).

The third part is to make a connection between the definition and the use of the word in

the text. Teachers explain the link directly and succinctly, in just a few sentences. Here is a co-

teacher's connection for *boycott*: "As we read, imagine African Americans all refusing to do

something as a protest, meaning they ..." (teacher pauses and points to word; students say:

"boycotted.") "Right. In this text, many people in Montgomery, Alabama boycotted the bus—

even though many used the bus every day. We will understand how and why they did this."

Teaching Focus Words

Teaching focus words begins with the same three parts as teaching fast words. Many

focus words are complex academic words, and that makes planning slightly more difficult. It can

be harder to come up with a very clear succinct definition, and only occasionally will focus words

have synonyms. These complex academic words are also difficult to represent with pictures

because they are abstract and cannot be captured exactly in images.

For the focus word *inspiration,* the definition is "someone or something that excites

people to take action," capturing both that an inspiration is exciting and that people take action as a result. Most images show people celebrating in nature and do not make clear that an inspiration spurs action. This makes immediately clear that images probably cannot capture the meaning well enough, so no image is used. For a text link, the teacher could say, "In this text, one person was an inspiration—that was Rosa Parks. She did something that inspired many other people do take action themselves, actions that would help bring an end to Jim Crow laws."

Once co-teachers come up with a definition, image (if relevant), and explicit link to text, there are three remaining steps for focus words, (a) give examples, (b) give non-examples (when appropriate), and (c) ask clarifying questions. The examples help students understand the conditions under which a focus word is used. These examples should relate to the definition in the given text—meaning that other definitions of polysemous (multiple-meaning) words are not given. For *inspiration,* here is one example: "One person who has been an inspiration for some students is Greta Thunberg. Her bold assertive message about the need to address climate change immediately has inspired many students at our school. Was Greta an inspiration for you—so that you took action since watching her United Nations speech?"

Non-examples help students differentiate the given word from similar concepts that do not mean the same thing—often where a concept addresses only part of the definition. In the case of *inspiration,* the inspiration must be very exciting and result in action. Some words address the excitement part without the action. For example, a comedic adventure movie will excite and entertain the audience, but comedic characters do not frequently inspire the audience to do anything. For the word *prejudice,* students must distinguish prejudice from other kinds of enmity—like disliking a peer for unkindness or avoiding sitting near younger children who are noisy and distracting in the library. Targeted non-examples make these distinctions clear. Non-examples are not always useful or necessary and could even be misunderstood as examples. To avoid confusion, non-examples should be brief and address only essential misunderstandings.

Finally, the questions to check for understanding are essential for students to deepen

their knowledge of words' definitions and to clarify their subtleties. The format is to ask a question that requires a "yes" or "no" answer and then a related question that requires students to process the words more deeply. They work in pairs to elaborate. The questions might take these forms: (a) Scenario: "Is being mad at a friend an example of *prejudice*? Turn and talk with a partner about why or why not." (b) Compare two words: "If you hear about an engineer's exciting job and visit some engineering firms, are you showing *inspiration* or *prejudice*?" Such questions complete students' focus word learning. This process should take no more than 2 min. In 8 to 10 min, students can learn three to five fast words and one to two focus words.

Conclusion

This article describes a *World Knowledge & Word Knowledge* routine for introducing students with and without LD to new texts with unfamiliar content and vocabulary. It provides co-teachers with a feasible, customizable, and repeatable process to introduce background knowledge and vocabulary so students with and without LD may construct a complete, coherent situation model for any text. The routine benefits all students, and it may be especially effective for students with LD for whom the focus and direct teaching lower the cognitive load associated with reading new texts. The *World and Word Knowledge* materials include a template that emphasizes critical knowledge (what to teach) and effective instructional strategies (how to teach). The routine is simple but can provide just enough information to allow the text "to speak for itself" while reducing the linguistic comprehension demands on students with LD who require more support for language-related tasks. The information students learn through this process will make it easier for them to construct situation models for new texts and increase content-area learning.

References

Beck, I. L., McKeown, M. G., & Kucan, L. (2002). *Bringing words to life: Robust vocabulary instruction* (2nd ed.). Guilford Press.

Biancarosa, G., & Snow, C. E. (2006). *Reading next—A vision for action and research in middle and high school literacy: A report to Carnegie Corporation of New York* (2nd ed.). Alliance for Excellent Education.

Biemiller, A., & Boote, C. (2006). An effective method for building meaning vocabulary in primary grades. *Journal of Educational Psychology, 98*, 44–62. **https://doi.org/10.1037/0022-0663.98.1.44**

Brownell, M. T., Bishop, A. G., Gersten, R., Klingner, J. K., Penfield, R. D., Dimino, J., … Sindelar, P. T. (2009). The role of domain expertise in beginning special education teacher quality. *Exceptional Children, 75*, 391–411.

Cromley, J. G., & Azevedo, R. (2007). Testing and refining the direct and inferential mediation model of reading comprehension. *Journal of Educational Psychology, 99,* 311–325. doi:10.1037/0022-0663.99.2.311

Deshler, D. D., Schumaker, B., Lenz, K., Bulgren, J. A., Hock, M. F., Knight, J., & Ehren, B. J. (2001). Ensuring content-area learning by secondary students with learning disabilities. *Learning Disabilities Research & Practice 16*(2), 96-108.

Ecker, U. K. H., Swire, B., & Lewandowsky, S. (2014). Correcting misinformation—a challenge for education and cognitive science. In D. N. Rapp & J. L. G. Braasch, *Processing Inaccurate Information: Theoretical and Applied Perspectives from Cognitive Science and the Educational Sciences,* Cambridge: MIT Press.

Faggella-Luby, M. N., Graner, P. S., Deshler, D. D., & Valentino, S. (2012). Building a house of sand: Why disciplinary literacy is not sufficient to replace general strategies for adolescent learners who struggle. *Topics in Language Disorders, 32*(1), 69–84.

Gillis, V. (2014). Disciplinary literacy: Adapt not adopt. *Journal of Adolescent & Adult Literacy*

57(8), 614-623. https://doi.org/10.1002/jaal.301

Guthrie, J. T., & Klauda, S. L. (2012). Making textbook reading meaningful. *Educational Leadership, 69*(6), 64-68.

Hall, L. A. (2005). Teachers and content area reading: Attitudes, beliefs, and change. *Teaching and Teacher Education, 21*(4), 403-414. https://doi.org/10.1016/j.tate.2005.01.009

Hattie, J. A. C. (2009). *Visible learning: A synthesis of over 800 meta-analyses related to achievement*. Routledge.

Hillman, A. M. (2013). A literature review on disciplinary literacy: How do secondary teachers apprentice students into mathematical literacy? *Journal of Adolescent & Adult Literacy 57*(5), 397-406. https://doi.org/10.1002/JAAL.256

Hoover, W., & Gough, P. (1990). The simple view of reading. *Reading and Writing: An Interdisciplinary Journal, 2*, 127–160.

Kamil, M. L., Borman, G. D., Dole, J., Kral, C. C., Salinger, T., & Torgesen, J. (2008). *Improving adolescent literacy: Effective classroom and intervention practices: A practice guide* (NCEE 2008-4027). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education.

Kendeou, P. & van den Broek, P. (2009). The effects of prior knowledge and text structure on comprehension processes during reading of scientific texts. *Memory & Cognition, 35*(7), 1567-1577.

Kendeou, P., van den Broek, P., Helder, A., & Karlsson, J. (2014). A cognitive view of reading comprehension: Implications for reading difficulties. *Learning Disabilities Research & Practice, 29*(1), 10-16.

Lee, C. D., & Spratly, A. (2010). *Reading in the disciplines: The challenges of adolescent literacy*. Carnegie Corporation of New York.

Lonigan, C. J., Burgess, S. R., & Schatschneider, C. (2018). Examining the simple view of reading with elementary school children: Still simple after all these years. *Remedial and*

Special Education, 39(5), 260-273.

Lottery, S. (1948). The lottery. *The New Yorker, 26,* 25-28.

McGlynn, K. & Kozlowski, J. (2017). Helping students succeed by preteaching content-area vocabulary. *Science Scope, 40*(7), 88-91.

MacSuga-Gage, A., & Simonsen, B. (2015). Examining the effects of teacher-directed opportunities to respond on student outcomes: A systematic review of the literature. *Education & Treatment of Children, 38*(2), 211-240. https://doi.org/10.1353/etc.2015.0009

Martin, A. J. (2016). *Using Load Reduction Instruction (LRI) to boost motivation and engagement*. Leicester, England: British Psychological Society.

Mason, L. H., & Hedin, L. R. (2011). Reading science text: Challenges for students with learning disabilities and considerations for teachers. *Learning Disabilities Research & Practice, 26*, 214-222. https://doi.org/10.1111/j.1540-5826.2011.00342.x

Ouellette, G., & Beers, A. (2010). A not-so-simple view of reading: How oral vocabulary and visual-word recognition complicate the story. *Reading and Writing, 23*, 189-208. https://doi.org/10.1007/s11145-008-9159-1

Perle, M. Grigg, W. & Donahue, P. (2005). *The nation's report card: Reading 2005 (NCES-2006-451)*. Washington DC: U.S. Department of Education, National Center for Education Statistics.

Quinn, J. M., Wagner, R. K., Petscher, Y., & Lopez, D. (2015). Developmental relations between vocabulary knowledge and reading comprehension: A latent change score modeling study. *Child Development, 86*, 159-175. https://doi.org/10.1111/cdev.12292

ReadWorks. (2014). *Civil rights on a city bus*. Retrieved from https://www.readworks.org/article/Civil-Rights-on-a-City-Bus/b4eecc45-7efc-4e0c-a759-87807b9e3bae#!articleTab:content/

Recht, D. R., & Leslie, L. (1988). Effect of prior knowledge on good and poor readers' memory of

text. *Journal of Educational Psychology, 80*, 16–20. https://doi.org/10.1037/0022-0663.80.1.16

Ricketts, J., Lervåg, A, Dawson, N., Taylor, L. A., & Hulme, C. (2019) Reading and oral vocabulary development in early adolescence. *Scientific Studies of Reading*. **https://doi.org/10.1080/10888438.2019.1689244**

Rosenshine, B. (2009). The empirical support for direct instruction. In S. Tobias & T. M. Duffy (Eds.). *Constructivist Instruction*. Routledge.

Scruggs, T. E., Mastropieri, M. A., & McDuffie, K. A. (2007). Co-teaching in inclusive classrooms: A metasynthesis of qualitative research. *Exceptional Children, 73*, 392-416.

Shanahan, T. & Shanahan, C. (2008). Teaching disciplinary literacy to adolescents: Rethinking content-area literacy. *Harvard Educational Review, 78*(1), 40-59.

Southern Poverty Law Center. (2011). *Teaching the movement: The state of Civil Rights education in the United States 2014*. Montgomery, AL: Author.

Stahl, S. A., Jacobson, M. G., Davis, C. E., & Davis, R. L. (1989). Prior knowledge and difficult vocabulary in the comprehension of unfamiliar text. *Reading Research Quarterly, 24*(1).

Troyer, M. (2017). A mixed-methods study of adolescents' motivation to read. *Teachers College Record, 119*(5), 1–48.

Watson, S. M., Gable, R. A., Gear, S. B., & Hughes, K. C. (2012). Evidence-based strategies for improving the reading comprehension of secondary students: Implications for students with learning disabilities. *Learning Disabilities Research & Practice, 27*, 79-89.

Wexler, J. A., Kearns, D. M., Lemons, C., Stapleton, L., Pollack, M., Clancy, E. E., Hogan, E., Lyon, C., & Shelton, A. (under review). Improving instruction in the co-taught middle school classroom to support reading comprehension.

Wigfield, A., & Guthrie, J. T. (1997). Relations of children's motivation for reading to the amount and breadth or their reading. *Journal of Educational Psychology, 89*, 420–432. https://doi.org/10.1037/0022-0663.89.3.420

Xie, H., Mayer, R. E., Wang, F., & Zhou, Z. (2019). Coordinating visual and auditory cueing in

multimedia learning. *Journal of Educational Psychology*, *111*(2), 235-255

World & Word Knowledge Lesson Template

Planning: Text Selection Criteria

CALL
content-area literacy instruction

Covers Key Concepts
- ❑ Supports lesson or unit objective
- ❑ Links to content standards

Is Comprehensible
- ❑ Average instructional level
- ❑ Few unknown vocabulary words
- ❑ Obvious organizational structure

Promotes Student Engagement
- ❑ Manageable length
- ❑ Worthy of a good conversation

Text Resources:
- NewsELA.com
- Readworks.org
- TweenTribune.com
- Google News Archive
- DogoNews.com
- Izzit.org
- Library of Congress
- Rewordify.com
- NewsInLevels.com
- CommonLit.org

Notes to help you plan are written in italics.

Use this slide to help you find a CALI text that meets the Text Selection Criteria.

When you present this PowerPoint to your class, this slide will not be shown.

World & Word Knowledge Lesson Template

Planning: Co-Planning Roles

CALL
content-area literacy instruction

Work Together		Divide and Conquer		Take the Lead	
Both teachers work together in person to plan the lesson.	Both teachers collaborate on Google Docs to plan the lesson.	CAT plans World Knowledge & SET plans Word Knowledge.	SET plans World Knowledge and CAT plans Word Knowledge.	CAT makes initial lesson and SET modifies as necessary.	SET makes initial lesson and CAT modifies as necessary.

TASK	CAT	SET	BOTH
Find text			
Choose World Knowledge concept(s)			
Complete World Knowledge Slides			
Choose Fast & Focus Words			
Complete Word Knowledge Slides			

Use this slide to decide how you will plan for World & Word Knowledge. Indicate (by putting your initials or some other notes in the table) which co-teacher will take the lead for planning each component or whether you will work together.

When you present this PowerPoint to your class, this slide will not be shown.

World & Word Knowledge Lesson Template

Planning: Co-Teaching Roles

CALL
content-area literacy instruction

Team Teaching		One-Teach, One-Monitor	
Both teachers take turns explaining concepts and words.		CAT presents World Knowledge and SET presents Word Knowledge.	One teacher takes the lead and the other teacher "jumps in" throughout.

COMPONENT	CAT	SET	BOTH
World Knowledge			
Word Knowledge			

Use this slide to give you some ideas for how to teach World & Word Knowledge.

Indicate (by putting your initials or some other notes in the table) which co-teacher will take the lead for each component or whether you will work together with both teachers "jumping in."

When you present this PowerPoint to your class, this slide will not be shown.

World & Word Knowledge Lesson Template

World & Word Knowledge

CALI
content-area literacy instruction

This research project is supported by the Institute of Education Sciences, U.S. Department of Education, through Grant R324A1501.81

Words in bold are a suggested script. *Notes for planning and teaching are written in italics.*

Be sure to insert required information onto slide throughout the presentation, where indicated. **Today, we will get the gist of a text called _____.**

Insert the title of the text into the textbox.

Instructional Technique Planning

Instructional Methods:
Throughout the entire lesson, keep students engaged using the following strategies:
- Be snappy, not fancy
- Get students talking (examples include:)
  - Choral Response
  - Turn and Talk
  - Hand Signals
  - Whip Around
  - Friendly Cold Call
  - Cold Call

Classroom Climate:
Explicitly state expectations, especially when you introduce a new activity (e.g. the first time you use Turn & Talk)
- This will help maximize structure and predictability for students
- You may need to practice these routines several times before students are proficient

Listen in on conversations during Turn & Talk
- Address misunderstandings and share student insights with whole group when appropriate.

Ignore minor behavior infractions and praise positive behavior
- Ignore off-task behavior or things that will derail you (students making off-task comments)
- Provide nonverbal cues for getting kids back on text (proximity)

World & Word Knowledge Lesson Template

- Provide examples of positive feedback (praise examples of behaviors that are incompatible with problem behavior)

World & Word Knowledge Lesson Template

Remember you learned about…

Recently, we learned about _____, so by getting the gist of this text, you'll learn more about _____.

Connect to prior learning: Insert a quick explanation about how the concepts and words that you'll present connect to prior learning. Add an image if appropriate.

World & Word Knowledge Lesson Template

What to Teach:
- Background information not provided in the text <u>and/or</u>
- A complicated concept in the text

How to Teach:
- Teach directly
- Connect to prior learning
- Sell the text
- Keep students engaged

Copy and paste this slide as needed.

World & Word Knowledge Lesson Template

_____

Introduce the video: **Knowing about _____ will help you understand the text you are about to read. As you're watching the video, look for _____.**

Insert a link to a video and choose which part(s) to play (total length should be less than 2 minutes). If the audio from the video is not important, talk over the video with your own narration. Be sure to introduce the video by telling students what to watch for.

Words to Know

Let's take a look at words you will need to know to understand the text.

Insert a bulleted list of all words (fast and focus) that you'll be teaching.

World & Word Knowledge Lesson Template

Copy and paste this slide for each Fast Word.

Fast Words
- Less essential to the text
- Simple definitions
- Easily imageable

How to Teach:
- Short Definition
    - synonyms, if possible
    - applicable to the current text
- Image (sometimes)
    - exactly shows what the word means in the text
    - does NOT approximate the meaning
- Explicit link to text
    - Insert the sentence from the text that contains the word exactly as it appears in the text (or describe its use in the text)
    - Verbally provide an explanation of the sentence
- Get students talking
    - Choral response

World & Word Knowledge Lesson Template

Copy and paste this slide for each Focus Word.
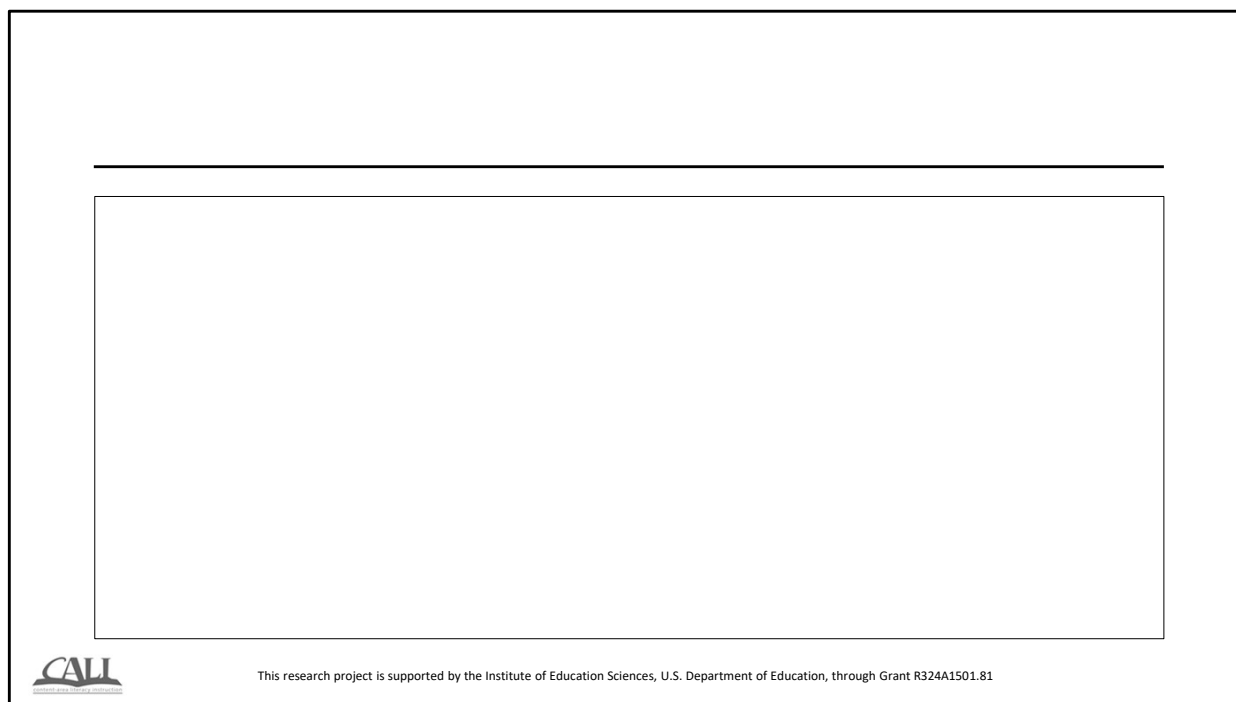
Focus Words
- Important for understanding
- Complex definitions
- Hard to explain

How to Teach:
- Short Definition
  - synonyms, if possible
  - applicable to the current text
- Image (sometimes)
  - exactly shows what the word means in the text
  - does NOT approximate the meaning
- Explicit link to text
  - Insert the sentence from the text that contains the word exactly as it appears in the text (or describe its use in the text)
  - Verbally provide an explanation of the sentence

World & Word Knowledge Lesson Template

CALL

Copy and paste this slide as needed for each Focus Word.

Focus Words
- Important for understanding
- Complex definitions
- Hard to explain

How to Teach:
- Examples/Non-Examples
    - Ask students to show thumbs/up down to show example vs. non-example
    - Ask students to turn and talk to discuss why it is an example or non-example

Classroom Climate:
Explicitly state expectations, especially when you introduce a new activity (e.g. the first time you use Turn & Talk)
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World & Word Knowledge Lesson Template

CALL

Copy and paste this slide as needed for each Focus Word.

Focus Words
- Important for understanding
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How to Teach:
- Examples/Non-Examples
    - Ask students to show thumbs/up down to show example vs. non-example
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World & Word Knowledge Lesson Template

Copy and paste this slide as needed for each Focus Word.

Focus Words
- Important for understanding
- Complex definitions
- Hard to explain

How to Teach:
- Question to Check for Understanding
    - Ask students to show thumbs/up down
    - Ask students to turn and talk to discuss