



Vocabulary Instruction: Possible Sentences for Science

Est. Time: 1 Hour

Objective

Learn about and discuss some of the issues related to vocabulary instruction for students in science classes.

Scenario

Mrs. Thomas is prepared to introduce her students to a chapter on the Water Cycle. She has previewed the text and chosen five unfamiliar words that are critically important to understanding the lesson. She has also chosen five related words that the students already know. All 10 words are displayed on the board.

Collection	Evaporation
Steam	Condensation
Ocean	Precipitation
Perspire	Vapor
Clouds	Transpiration

Mrs. Thomas reads each word to the class and has the students repeat each word. To activate her students' prior knowledge, she asks her students whether they know what any of the words mean.

Sam is a student in Mrs. Thomas' class. As Mrs. Thomas accepts students' responses to her prompt, "Raise your hand if you know what any of these words mean," she notices that Sam is struggling. He is giving very vague definitions. For example, he says that "*steam* comes off water," and that *collection* means "to get stuff." Sam is on the right track, but Mrs. Thomas wonders what she can do to help Sam deepen his understanding of the words' meanings.

Mrs. Thomas also notices that a few students need instruction on words that sound similar to her target words. For example, a few students confused *transpiration* with the more familiar word *transportation*, and *perspire* with *prosper*. Mrs. Thomas knows that students will encounter these words repeatedly in the text, and she is concerned that students might not understand the concepts if they are thinking of a different term.

After providing simplified definitions for each of the words and generating possible sentences, the students read the short story with a partner. The class is now working in pairs to review and revise their possible sentences.



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Scenario [Cont.]

Mrs. Thomas is circulating the classroom and providing help to the pairs as needed. She notices that Juan and Daniel have finished revising their sentences and are simply talking with each other now. She looks over their work and sees that they have successfully revised the possible sentences and seem to have a strong grasp of the words they are studying. She wonders how she can provide enrichment for Juan and Daniel while the rest of the class continues with the regular lesson.

Questions/Discussion Topics

1. How would you encourage Sam to deepen his understanding of the words' meanings?
2. How would you provide instruction on similar-sounding words to students who might confuse them with more familiar words that are not related to the concepts in the unit?
3. How would you provide enrichment for Juan and Daniel?



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★ What a STAR Sheet Is

A STAR (STrategies And Resources) Sheet provides you with a description of a well-researched strategy that can help you solve the case studies in this unit.

Discussion Points

- Engaging students in deeper vocabulary learning
- Addressing content specific words that might have a different meaning in another context or might be confused with similar sounding words that are more familiar to students
- Implementing the Possible Sentences instructional activity with fidelity
- Choosing appropriate vocabulary instructional practices
- Meeting the vocabulary needs of diverse adolescents

What the Research and Resources Say

- The use of vocabulary instructional activities, such as Possible Sentences, prior to reading text is intended to help students activate background knowledge, think about words as related concepts, and actively process information (Jitendra, Edwards, Sacks, & Jacobson, 2004). A study in which Possible Sentences was implemented with academic text found that students who engaged in the structured form of pre-teaching vocabulary showed improved recall of vocabulary as well as improved recall of facts from the text (Stahl & Kapinus, 1991).
- Students who have limited vocabulary knowledge not only know fewer words than their peers with typical vocabulary development, but also often know less about the meanings of individual words (August, Carlo, Dressler, & Snow, 2005). This makes it important to consider the multiple meanings of target words and words that sound similar to discipline specific vocabulary when planning instruction. New words with similar forms and pronunciations should not be taught simultaneously (Nation, 2013). However, teachers should avoid confusion by pointing out what distinguishes a new vocabulary word from any similar-sounding words students already know or what distinguishes a content-specific definition from the meaning students might already be using for a word with the same spelling.
- To implement Possible Sentences (Moore & Moore, 1986) with fidelity, teachers should follow these steps:



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What the Research and Resources Say [Cont.]

1. Teacher: Select 6–8 important, unfamiliar words and generate simplified definitions for each word.
 2. Teacher: Select 4–6 related, known words.
 3. Teacher and students: Compose prediction sentences containing at least two words each.
 - Teacher and students: Write as many sentences as are necessary to use each word at least one time.
 - Students: Share Possible Sentences with the class.
 4. Students: Read the text.
 5. Teacher and students: Evaluate accuracy of sentences and revise or add as needed.
 - Teacher: Plan to model making some modifications or additions to the possible sentences.
 - Students: Discuss revisions and additions to the possible sentences after reading the text.
 6. Teacher: Evaluate students' knowledge of the 6-8 important new terms.
- Vocabulary instruction is an integral part of helping secondary students successfully learn content, but not all approaches are appropriate for all content areas (Reed & Vaughn, 2012). Possible Sentences requires that students read texts of sufficient length and content to warrant teaching 6-8 new vocabulary words and reviewing another 4-6 more familiar words. This would preclude using the activity in some classes, such as mathematics, or with certain lessons or content such as poetry.
 - Because the range in students' reading abilities tends to widen as students enter the middle grades, there is an increased need for teachers to differentiate instruction and create appropriately challenging learning opportunities for all students (Firmender, Reis, & Sweeny, 2013). Teachers can differentiate Possible Sentences in the following ways:
 - Before reading: Providing sentence stems to students who are struggling or additional “challenge words” for students who are more advanced
 - After reading: Focusing students' attention on particular sentences needing revision or requiring revisions to include different forms of the target word(s)



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Keep in Mind

- Any new instructional activity must be thoroughly explained and modeled to students.
- Teachers should spend time preparing all parts of the activity (e.g., defining the words, writing sentences using all the words) before implementing a lesson in the classroom.
- Vocabulary learning is iterative and requires multiple opportunities for students to experience and practice applying a new word before they will do so expertly.
- Students benefit from hearing what their peers know about vocabulary words and how their peers can apply their words (Stahl & Kapinus, 1991), so include opportunities for peer-to-peer interaction or class discussions.

Resources

- August, D., Carlo, M., Dressler, C., & Snow, C. (2005). The critical role of vocabulary development for English language learners. *Learning Disabilities Research & Practice, 20*(1), 50–57.
- Firmender, J. M., Reis, S. M., & Sweeny, S. M. (2013). Reading comprehension and fluency levels ranges across diverse classrooms: The need for differentiated reading instruction and content. *Gifted Child Quarterly, 57*(1), 3–14.
- Jitendra, A. K., Edwards, L. L., Sacks, G., & Jacobson, L. A. (2004). What research says about vocabulary instruction for students with learning disabilities. *Exceptional Children, 70*(3), 299–322.
- Moore, D. W., & Moore, S. A. (1986). Possible sentences. In E. K. Dishner, T. W. Bean, J. E. Readence, & D. W. Moore (Eds.). *Reading in the content areas* (pp. 174-178). Dubuque, IA: Kendall-Hunt.
- Nation, I. S. P. (2013). *Learning vocabulary in another language* (2nd ed.). Cambridge, United Kingdom: Cambridge University Press.
- Reed, D. K., & Vaughn, S. (2012). Comprehension instruction for students with reading disabilities in grades 4 through 12. *Learning Disabilities: A Contemporary Journal, 10*, 17-33.
- Stahl, S. A., & Kapinus, B. A. (1991). Possible Sentences: Predicting word meanings to teach content area vocabulary. *The Reading Teacher, 45*(1), 36–43.