Supporting All Learners to Build Literacy in the Content Area Classroom

Part 1: Morphology in the Content Areas



Dianna Townsend, Ed.D. January 25, 2021





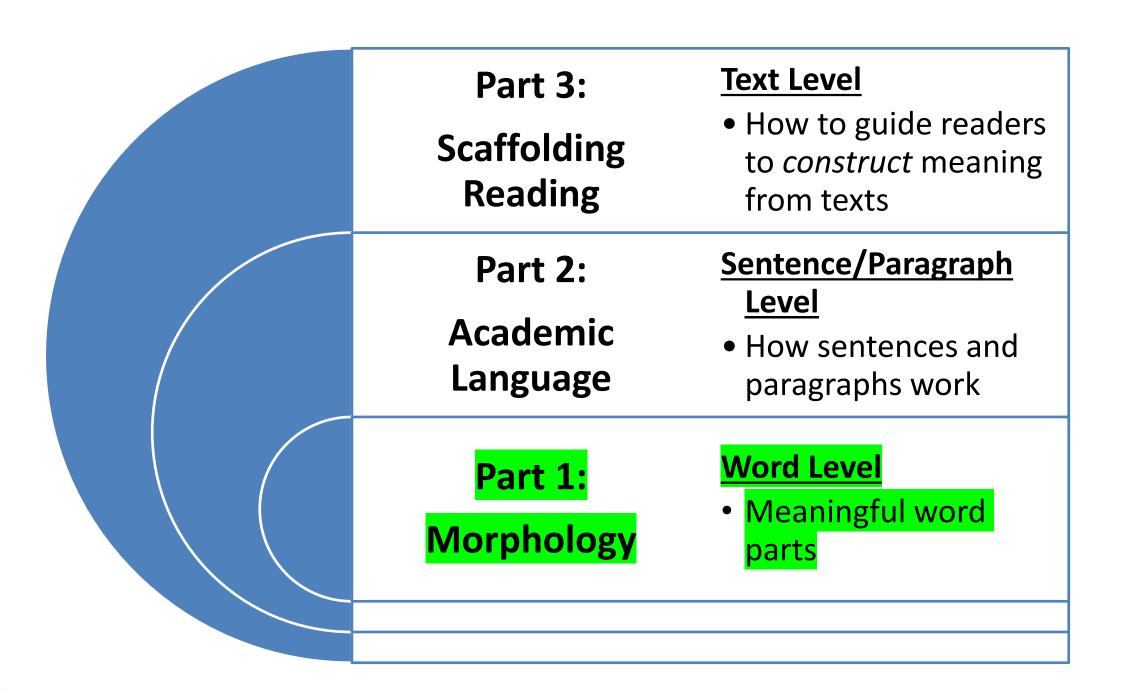
Introduction

- Literacy Researcher and Teacher at University of Nevada, Reno
- K-12 Experience: High School Teacher (ELA, Psychology, P.E.),
 Special Education Instructor









Word and World
Knowledge are
Critical
Components at All
Three Levels





Part 1 Agenda: "What I Wish I Knew about Morphology as a High School Teacher that I Know Now."

- How can all of those Greek/Latin roots really help my students?
- How can I help my students with morphology when I don't know a whole lot about it?
- I remember learning about prefixes and suffixes it wasn't particularly engaging or helpful. How can I do it differently?





What is Morphology?

• morpho-: "form, shape" (Greek)

• -logy: "a speaking, discourse, treatise, doctrine, theory, science" (Greek)

 Literally, the study/science of word forms!





Why Does Morphology Matter?

- •60-75%
- •90%
- •75%

 Morphological knowledge predicts reading comprehension, above and beyond other types of language knowledge, and morphological instruction may help our readers most in need of support moreso than our typically-developing readers (Bowers, Kirby, & Deacon, 2010; Goodwin & Ahn, 2010).





Grade 8, 2019, U.S. History Item, Ohio State Test

- After World War I, three social movements occurred: the Harlem Renaissance, the women's suffrage movement, and Prohibition. Identify the movement associated with each event shown.
 - The 19th Amendment was passed.
 - The 21st Amendment was passed.
 - Poets and Jazz artists addressed social concerns.
 - Organized crime increased.
 - The democratic participation of a group increased.



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What do teachers need to know about language to leverage morphology?

Units of Language

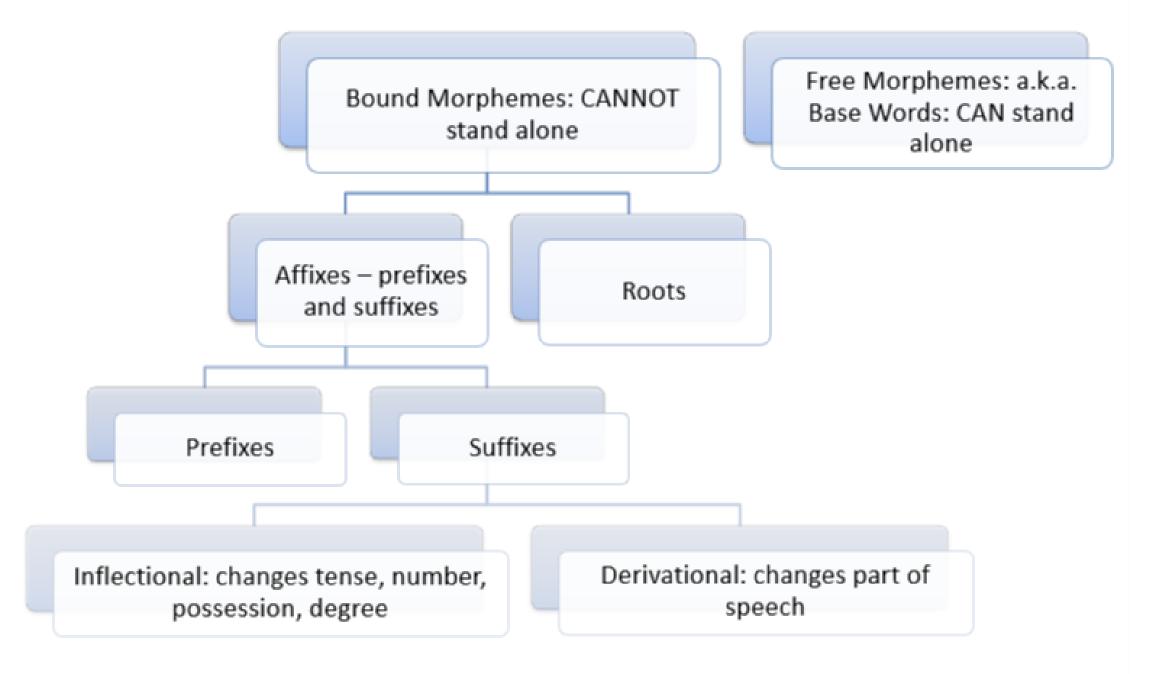
- **Phoneme**: distinct sounds in a language
 - about 44 in English
- Grapheme: letters or groups of letters that map onto individual phonemes
 - about 250 in English; single phonemes can be represented with can be 2, 3, or even 4 letters (e.g. "weigh")
- Morpheme: the smallest unit of language that has both sound AND meaning







Types of Morphemes



Adapted from Moats, 2010





Types of Suffixes

Inflectional	Derivational: P.O.S. Change
 Car vs. cars Suffix –s changes the number 	 Beauty vs. Beautiful Noun vs. Adjective, because of suffix –ful
Kindest vs. kind	
Suffix —est changes the degree of "kind"	 Social vs. Socialist Adjective vs. Noun, because of suffix -ist
 Paul vs. Paul's 	
Suffix –'s shows possession	
 Scare vs. scared Suffix –ed changes tense 	



prohibition





Prohibition: Etymonline.org

- Using Etymonline.org to explore:
 - prohibition (n.) late 14c., "act of prohibiting, a forbidding by authority," from Anglo-French and Old French prohibition (early 13c.), from Latin prohibitionem (nominative prohibitio) "a hindering, forbidding; legal prohibition," noun of action from past participle stem of prohibere "hold back, restrain, hinder, prevent," from pro "away, forth" (see pro-) + habere "to hold" (from PIE root *ghabh- "to give or receive"). Meaning "forced alcohol abstinence" is 1851, American English; in effect nationwide in U.S. as law 1920-1933 under the Volstead Act.
- prohibition
 - pro- forth, before, in front of
 - hibi from habere; "to hold"
 - -tion indicates a noun
- Prohibition was an initiative that held alcohol "in front of" (away) from people!





Prohibition: The Free Dictionary

- Search for "words containing hibi": https://www.thefreedictionary.com/words-containing-hibi
- inhibited
- uninhibited
- inhibition
- exhibit
- exhibition
- exhibitioner



organized





Organized: Etymonline.org

- Using Etymonline.org to explore:
- <u>organize (v.)</u> early 15c., *organisen*, "to construct, establish," from Old French *organiser* and directly from Medieval Latin *organizare*, from Latin *organum* "instrument, organ" (see **organ**). Meaning "to form into a whole consisting of interdependent parts" is from 1630s. The intransitive sense of "assume an organic structure" is by 1880. Related: **Organized**; *organizing*; *organizable*.
- organized
 - organ related to a whole of interdependent parts (like an organ or instrument)
 - -ize indicates a verb, *forming* the whole
 - -ed can indicate an adjective or past tense of a verb
- Organized crime was a whole system of criminals and criminal activities that worked around and above the law.





Organized: The Free Dictionary

- Search for "words containing organ":
 https://www.thefreedictionary.com/words-containing-organ
 - organization
 - disorganized
 - reorganize
 - organic
 - inorganic
 - organelle
 - organically
 - microorganism





Word Consciousness



• Word Consciousness: curiosity in, interest in, appreciation of, and awareness of words

(Scott & Nagy, 2004; Templeton et al., 2015)





Developing Word Consciousness, Ours' *AND* our Students'

Step 1: Boost your own morphological awareness.

Consider a professional book/article club with colleagues.

Step 2: Identify morphemes that deserve targeted learning opportunities.

What are your disciplinary objectives, what vocabulary words are most essential to those objectives, and what morphemes appear in those words?

Step 3: "Play" with morphemes and words to learn how they might help your students.

Using resources like Etymonline, Vocabulary.com, and The Free Dictionary, explore how useful they might be to students and select some to target.

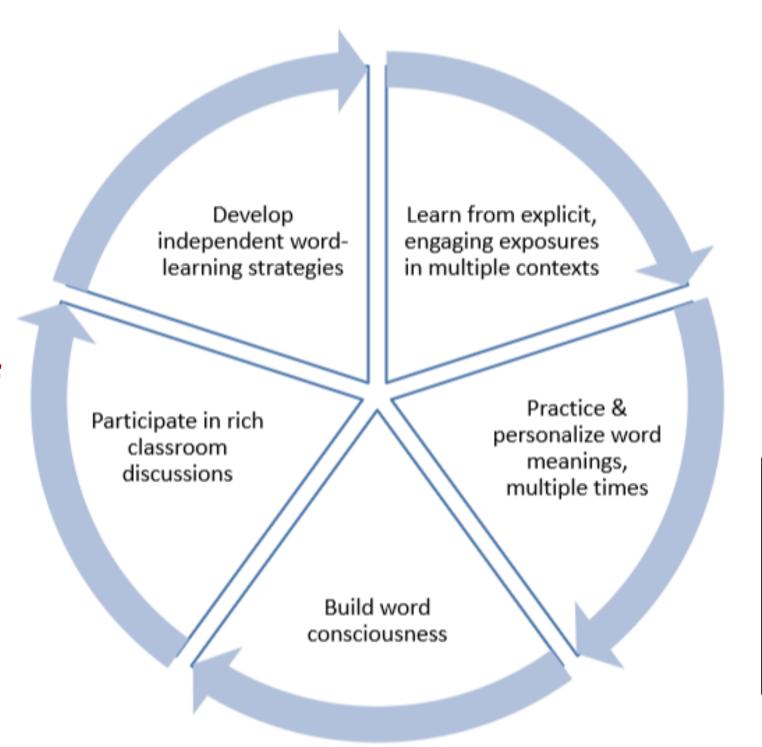
Step 4: Plan instructional routines that provide many learning and practice opportunities with these morphemes throughout the year.

See the next few slides for learning opportunities!





What learning opportunities do secondary students need to build knowledge of words and meaningful word parts?



Ford-Connors & Paratore (2015) confirmed this for secondary classrooms.





A Collaboration for Learning Morphology in Biology

- amphi both, endo within,
- syn/synth together, with
- cyto/cyte cell
- eco house
- hered/herit heir
- gen producing
- ceph head
- card heart
- neuro nerve
- therm heat
- phag eat





Learning Opportunities

Word Walls - Morphemes

 Each morpheme card has a morpheme, the meaning of the morpheme, and one or two words that use the morpheme.

Vocabulary Journals - Morphemes

 Learners record their deepening understanding of the morpheme and of words that include it. Both the word wall and the vocabulary journal becomes a reference for writing, for exams, and for using language in disciplinary activities and explanations.

Opportunities to Practice with Brief Discussions and Writing Tasks

 Create discussion and quick write prompts that ask students to use words that contain the meaningful morphemes from the word wall.

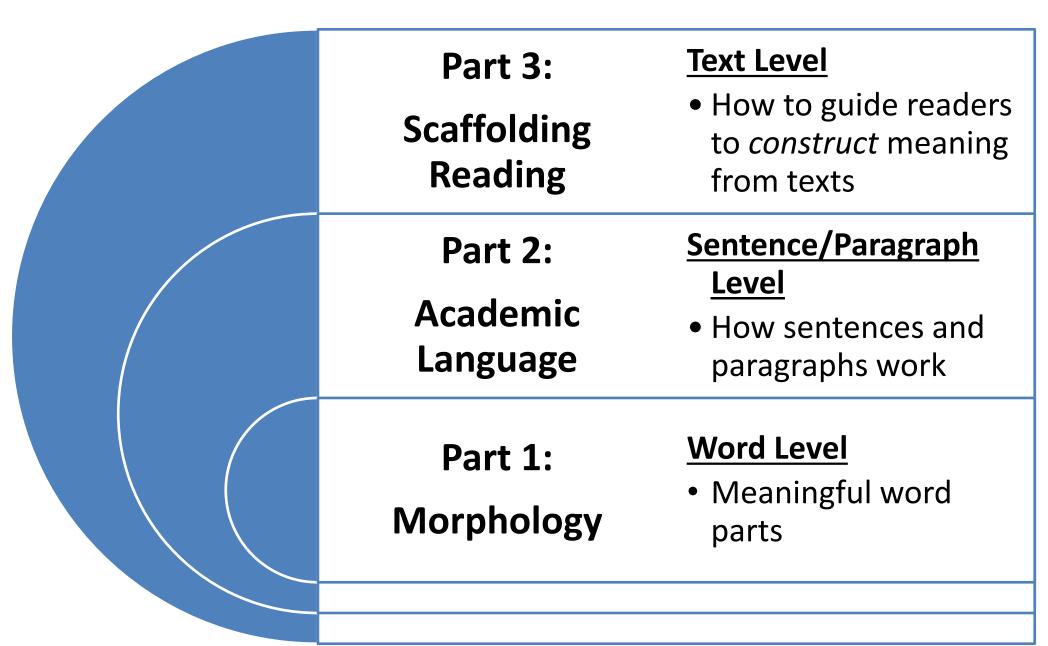
Opportunities to Practice with other Instructional Routines

 During note-taking, video viewings, demonstrations, experiments, problemsolving, analysis tasks, etc., ask students to identify key morphemes.





Looking ahead...



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Supporting All Learners to Build Literacy in the Content Area Classroom

Part 2: Academic Language in the Content Areas

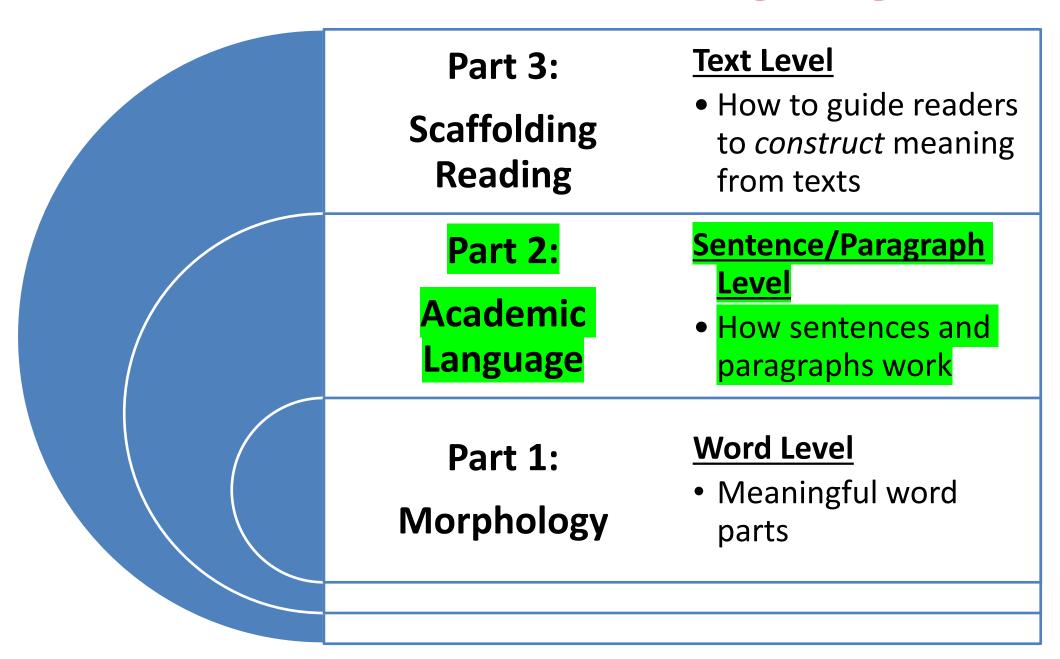


Dianna Townsend, Ed.D. March 15, 2021





Part 2: Academic Language



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Part 2 Agenda: "What I Wish I Knew about Academic Language as a High School Teacher that I Know Now."

- What makes academic language academic?
- How important is academic language for my students?
- Where do I start with supporting my students' academic language development?





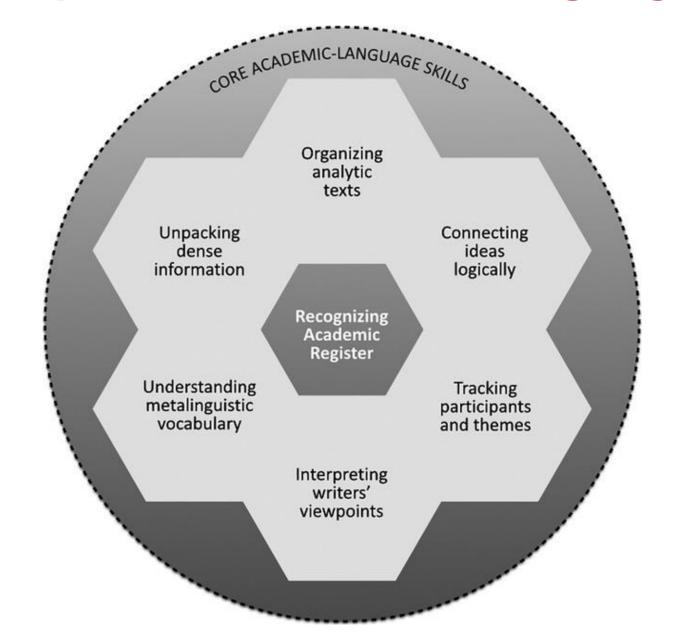
What is Academic Language?

- "Academic language is the specialized language, both oral and written, of academic settings that facilitates communication and thinking about disciplinary content" (Nagy & Townsend, 2012, p. 92).
- Is it mostly wordiness and jargon, or does it serve important functions?
 - Consider a scientist...



What do readers need to be able to do to comprehend academic language?

CALS: Core
Academic
Language Skills
(Uccelli, et al. 2015)







A diagnosis of lung cancer might not be the definitive death sentence it used to be, but it is still very bad news: only about 20% of people survive for five years with the disease. In 2019, the disease claimed about 2 million lives worldwide — more than any other cancer.

But researchers are chipping away at this disease from many angles. Most notably, therapies are becoming widely available that either harness the body's immune system or take aim at specific genetic features of a person's tumour. These mutations are many and varied, and numerous groups of patients have sprung up to advocate for research into their particular type of lung cancer and accelerate the development of new treatments. Meanwhile, some researchers are calling for greater study of the special needs of women with lung cancer — which is no longer the rare occurrence it once was.

Researchers are also working to find ways of diagnosing lung cancer more quickly and efficiently. Liquid biopsies are allowing doctors to detect cancer cells circulating in the blood early in the cancer's development when treatments are more effective. And artificial intelligence is proving to be a capable aid to human radiologists in identifying tiny tumours that might escape the eye.

Like most types of cancer, lung cancer has a tendency to spread to other parts of the body. But true to its billing as one of the nastiest malignancies, lung tumours often take aim at an especially precious organ: the brain. Death usually follows swiftly so there is a vigorous effort to understand the driving force behind brain metastasis and find ways to get drugs past the brain's defences to treat the cancer hiding inside.



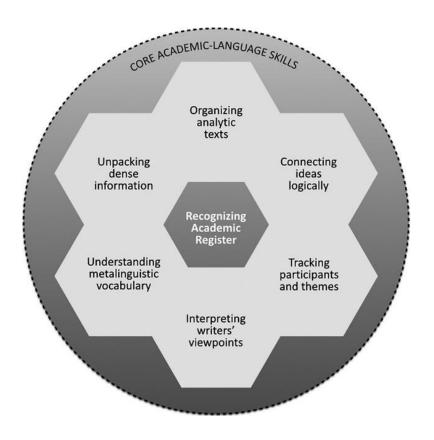


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Specific CALS map on to specific features of academic language:

Morphologically complex words and complex sentences require the ability to unpack complex words and sentences.







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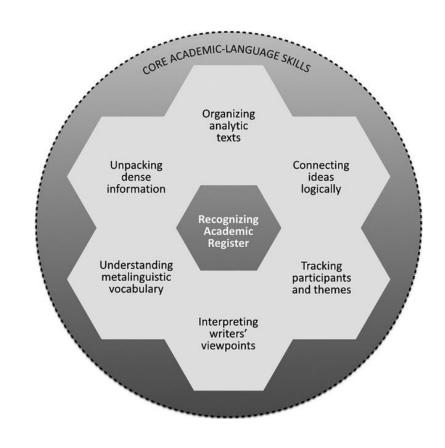


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Specific CALS map on to specific features of academic language:

Anaphoric References require the ability to track participants and themes in a text







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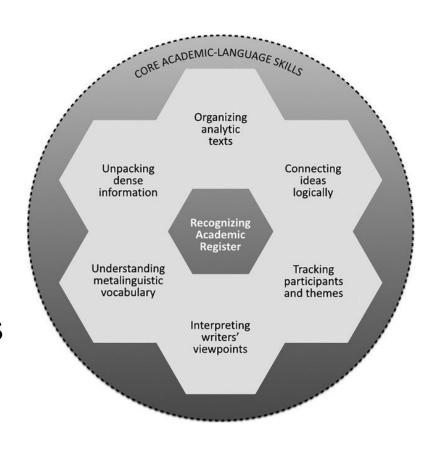


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Specific CALS map on to specific features of academic language:

Connectives require the ability to identify how connectives show relationships between ideas







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OK, academic language is important and has many different features that require many different skills. Now what?

Dr. Townsend goes back to high school...











A study on building background knowledge and knowledge of connectives to support the reading comprehension of multilingual high school students.

Connective Type	What does this type of connective do, and how does the name help us remember?	What are some examples of this type of connective?
Additive	Additive connectives ADD information from one idea to the next. The ADDed information might be: • equally important information • examples • elaboration • summarization	Additionally, And, Also, As exemplified by, As well as, Besides, For instance, Furthermore, In fact, Just as, Likewise, Moreover, Specifically, Such as, That is, To conclude
Temporal	Temporal connectives give information about TIME, because temporal means TIME. These connectives do the following: • say when something happened • show a sequence of events • indicate the order of ideas in a text	After, As soon as, At the same time, Before, Eventually, Finally, First, To begin with, Meanwhile, Next, Now, Recently, Soon, Subsequently, Until, When, While
Causal	Causal connectives indicate CAUSE and effect. These connectives do the following: • show that one thing caused another • show that one thing is the result of another	An effect of, An outcome of, As a consequence of, As a result, Because, By, Consequently, Due to, Hence, In that case, Since, So, Therefore, Thus Unless, Without
Adversative (a.k.a. Contrastive)	 Adversative connectives indicate ideas that are ADVERSARIES, or that CONTRAST each other. They do the following: show that two ideas are different from, or opposite to, each other 	Alternatively, Although, But, Conversely, Despite that, Except for, Even though, However, In contrast, In spite of, Instead of, Nevertheless, On the other hand, Or, Rather, Still, Whereas, Yet





Connective Puzzles

Stress and trauma can change the brain,
 _____ there is research that shows that those changes can be reversed.
 _____ the teenage years, there is a great deal of stress.
 _____ chronic stress can lead to illness, it is important to try to manage it before it gets too

serious.



Article: How to Cope with Stress

(Although, Because, Since) stress is a common and valid emotion, feeling stressed is not the same thing as feeling anxious or having clinical anxiety. _____ (After, Before, When) you're stressed, it's still possible to generally move through life as usual, ____ (because, before, even though) you might be in a heightened state.

Adapted by D. Townsend from article by: <u>Elly Belle</u>, Teen Vogue, 11/1/2018 https://www.teenvogue.com/story/how-to-cope-with-stress?verso=true





Developing Word Consciousness, Ours' *AND* our Students'

Step 1: Boost your own awareness of connectives.

Consider a professional book/article club with colleagues.

Step 2: From target texts, identify connectives that are worthy of practice.

Scan texts for connectives, and identify the ones that express a clear relationship between two important ideas in the text.

Step 3: Plan instructional routines that provide many learning and practice opportunities with these connectives throughout the year.

See the next few slides for learning opportunities!





What learning opportunities do secondary students need to build knowledge of words and meaningful word parts?



Ford-Connors & Paratore (2015) confirmed this for secondary classrooms.





Learning Opportunities

Sentence Puzzles

 Create sentences with missing connectives, and have students discuss which connectives fit best and why.

Word Walls – Connectives

 On the wall, organize connectives based on their functions, and include example sentences with essential info from your content area.

Vocabulary Journals - Connectives

 Learners record their deepening understanding of connectives and their functions. Both the word wall and the vocabulary journal becomes a reference for writing, for exams, and for using language in disciplinary activities and explanations.

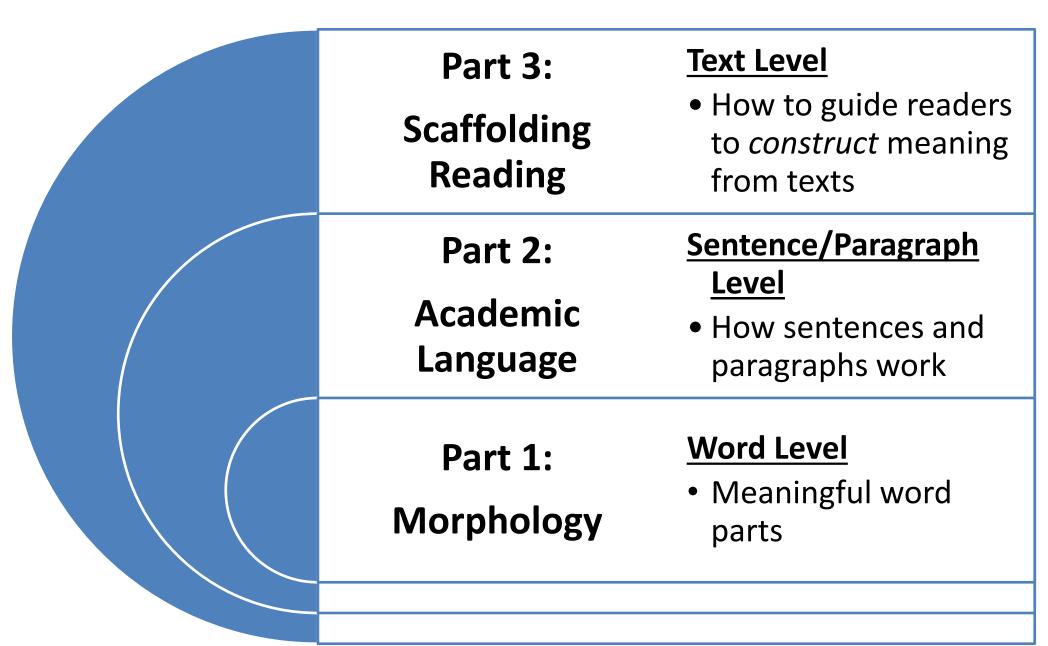
Opportunities to Practice with other Instructional Routines

 During note-taking, video viewings, demonstrations, experiments, problemsolving, analysis tasks, etc., ask students to identify connectives and what functions they have.





Looking ahead...



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Supporting All Learners to Build Literacy in the Content Area Classroom

Part 3: Scaffolding Texts in the Content Areas

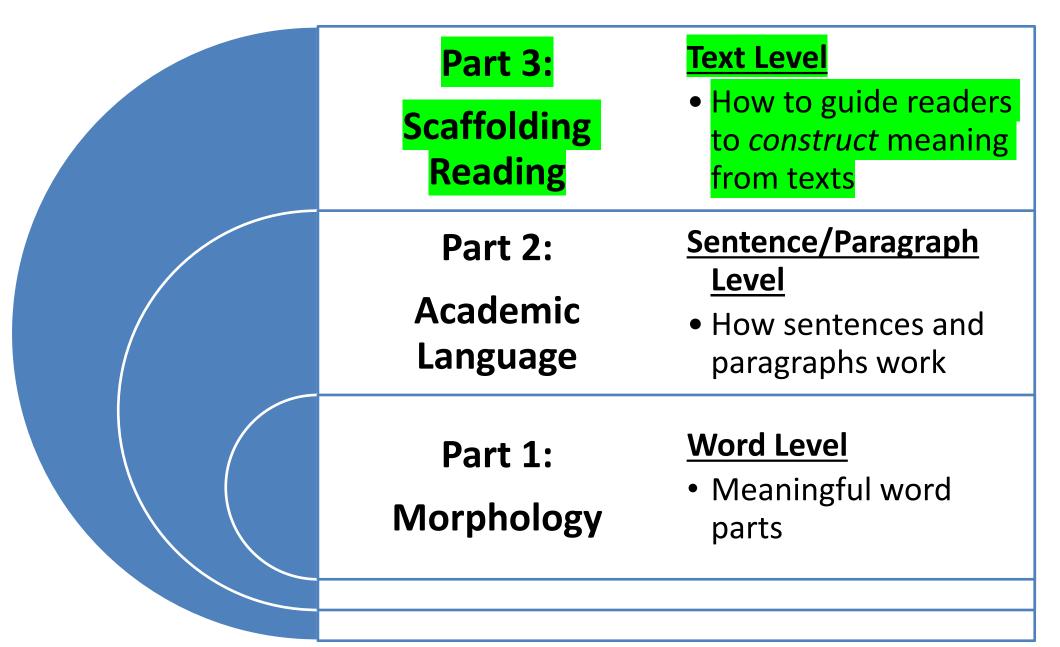


Dianna Townsend, Ed.D. May 10, 2021





Part 3: Scaffolding Reading



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Part 3 Agenda: "What I Wish I Knew about Scaffolding Reading as a Secondary Teacher that I Know Now."

- I'm not sure I know how to help my students develop as readers and learn the content I'm responsible for. Is it really so bad if I just talk them through what they need to know in engaging ways?
- I actually don't know how to teach them how to read at all. I typically just assign reading and then help them with it after. What should I do differently?
- How in the world can I support my students' reading when there are so many different reading levels in my class?





What is Reading Comprehension?

The Many Strands that are Woven into Skilled Reading (Scarborough 2001)

LANGUAGE COMPREHENSION

BACKGROUND KNOWLEDGE (facts, concepts etc)

VOCABULARY (breadth, precision, links etc)

LANGUAGE STRUCTURES (syntax, semantics etc)

VERBAL REASONING (reference, metaphor etc)

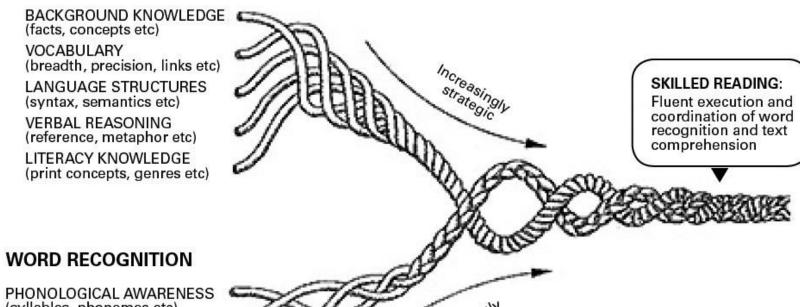
WORD RECOGNITION

(syllables, phonemes etc)

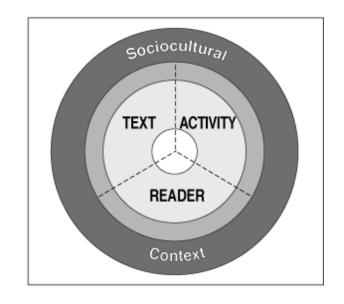
SIGHT RECOGNITION (of familiary words)

DECODING (alphabetic principle spelling-sound correspondence)

LITERACY KNOWLEDGE (print concepts, genres etc)



"The process of simultaneously extracting and constructing meaning through interaction and involvement with written language" (RAND, 2002).









Scaffolding Reading

Before Reading

Build word and world knowledge

Set a purpose for reading and explain text structure

During Reading

Promote selfregulation

Provide academic language support

After Reading

Promote reflection on new knowledge

Promote application of new knowledge

Lupo et al. (2019) found that, with scaffolding, most readers did as well on challenging versions of a text as they did on easier versions.





From the Final Report on the WASP Program

The women pilots, subsequent to graduation from the training program, flew approximately 60 million miles for the Army Air Forces; the fatalities were 38, or one to about 16,000 hours of flying. Both the accident rate and the fatality rate compared favorably with the rates for male pilots in similar work.

The WASP, according to the overwhelming opinion of station commanders where they were on duty, were as efficient and effective as the male pilots in most classes of duties and were better than the men in some duties, as for example towing of targets for gunnery practice. Almost uniformly the WASP were reported eager to learn, willing to work, and well behaved. The WASPs did ferrying, target towing, tracking and searchlight missions, simulated strafing, smoke laying and other chemical missions, radio control flying, basic and instrument instruction, engineering test flying, administrative and utility flying. The WASPs flew during operational duties nearly every type of airplane used by the AAF, from the small primary trainer to the Superfortress (B-29), including the Mustang, Thunderbolt, B-17, B-26, and C-54.

The WASPs, according to the medical surveys, had as much endurance and were no more subject to fatigue and flew as regularly and for as long hours as the male pilots in similar work. Aptitude and psychological tests, including the Stanine test, were found to be equally determinative and selective in the case of WASPs as in the case of males. The conclusion of the medical studies is, "It is no longer a matter of speculation that graduate WASPs were adapted physically, mentally, and psychologically to the type of flying assigned."





Before Reading: Building Word and World Knowledge



 $\frac{https://www.npr.org/2010/03/09/123773525/female-wwii-pilots-the-original-fly-girls}{}$

World Knowledge

- Women's Airforce Service Pilots (WASP)
- Jacqueline Cochran (1906 1980)
 - Pioneer of women's aviation and director of the WASPs,
 1943 1944
- "You may think it advisable to release the attached report for publication. There was widespread interest in the WASP program and this report shows an excellent result, both in the experimental and use features the record of women closely paralleled that of the men in rate of elimination, rate of accidents, rate of fatal accidents, hours flown per month, diversity of work, etc., and the report deals with many previously unknown things about women concerning stamina, endurance, resistance to fatigue, etc. Also, the report tells the factual mistakes in the Ramspeck Committee report and the reasons why militarization failed."



Before Reading: Building Word and World Knowledge



 $\frac{https://www.npr.org/2010/03/09/123773525/female-wwii-pilots-the-original-fly-girls}{}$

Word Knowledge

- Possible TargetWords/Morphemes:
- subsequent, determinative,
 selective, speculation,
 militarization, paralleled
- Set a Purpose for Reading and Explore Text Structure
 - Who wrote the report? For what audience? For what purpose? How would you expect the report to be organized? What would you expect the tone of the report to be: argumentative, dry and factual, something else?



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During Reading: Self-Regulation and Academic Language Support

- Ask good questions that help readers pay attention to what is important:
 - What similar claim are all three paragraphs making?
- Use annotations/text-coding strategically:
 - Write an "ev" in the margins each time you see evidence for this common claim.
- Draw attention to academic language features and providing opportunities to process them with feedback:
 - "The WASP, according to the overwhelming opinion of station commanders where they were on duty, were as efficient and effective as the male pilots in most classes of duties and were better than the men in some duties, as for example towing of targets for gunnery practice."
 - With a partner, identify the 4 pieces of information this sentence is sharing.





After Reading: Promote Reflection on and Application of New Knowledge

- In groups, answer the initial purpose-setting questions:
 - Who wrote the report? For what audience? For what purpose? How would you expect the report to be organized? What would you expect the tone of the report to be: argumentative, dry and factual, something else? Were your predictions accurate? Why or why not?
- Make connections to multiple sources, like this article from Forbes that shows contemporary biases against female pilots. Explore:
 - Despite the success of the WASP program, stereotypes about women pilots as inferior persist to this day. Why?





Part 3: Scaffolding Reading

Text Level Part 3: How to guide readers Scaffolding to construct meaning Reading from texts **Sentence/Paragraph Part 2:** Level Academic How sentences and Language paragraphs work **Word Level Part 1:** Meaningful word Morphology parts

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