

# **Teacher, Teacher, Don't Go Away!**

## **Advantages and Limitations of Computer Assisted Instruction for Adolescents**

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# The Many Strands that are Woven into Skilled Reading

(Scarborough, 2001)

## LANGUAGE COMPREHENSION

BACKGROUND KNOWLEDGE

VOCABULARY KNOWLEDGE

LANGUAGE STRUCTURES

VERBAL REASONING

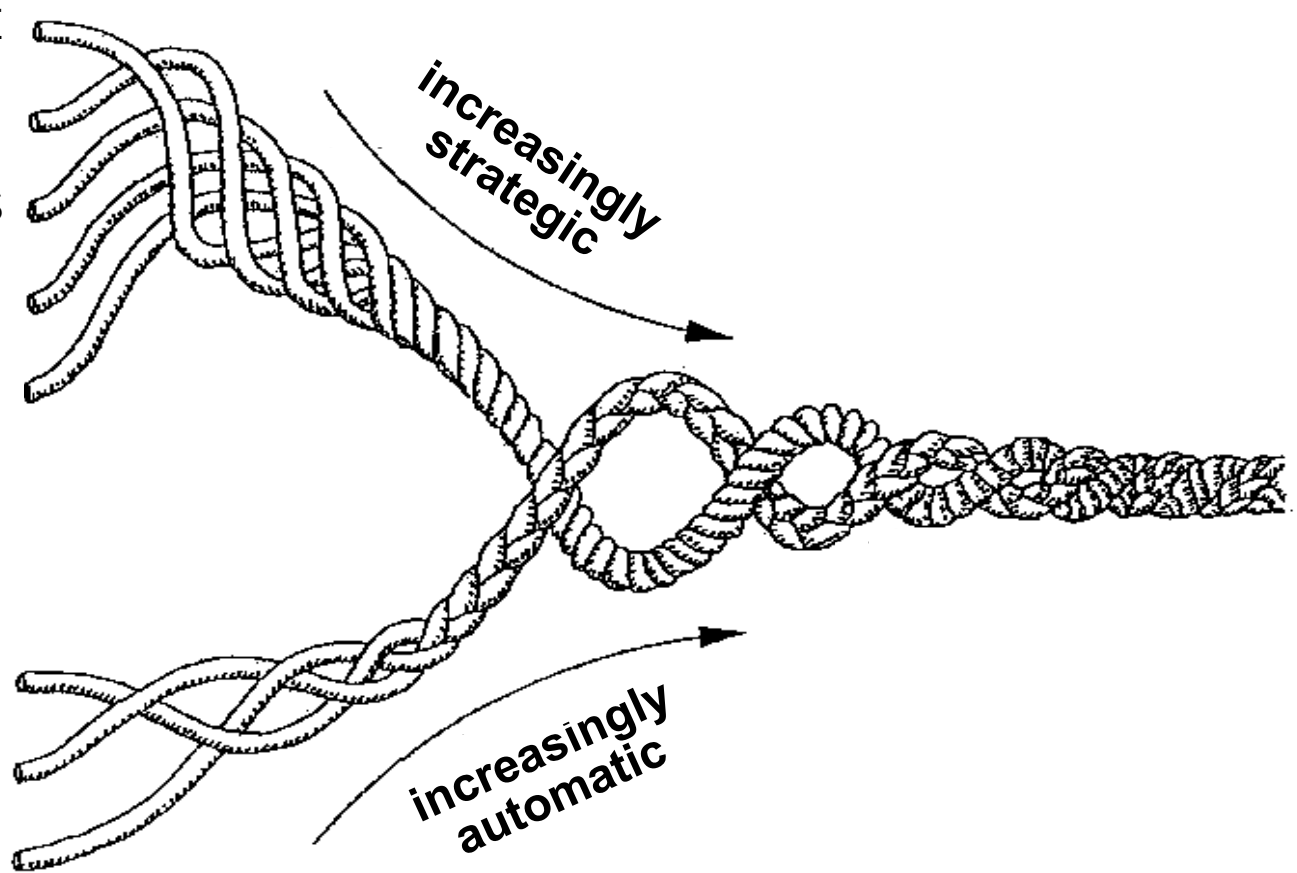
LITERACY KNOWLEDGE

## WORD RECOGNITION

PHON. AWARENESS

DECODING (and SPELLING)

SIGHT RECOGNITION



## **Agree or Disagree?**

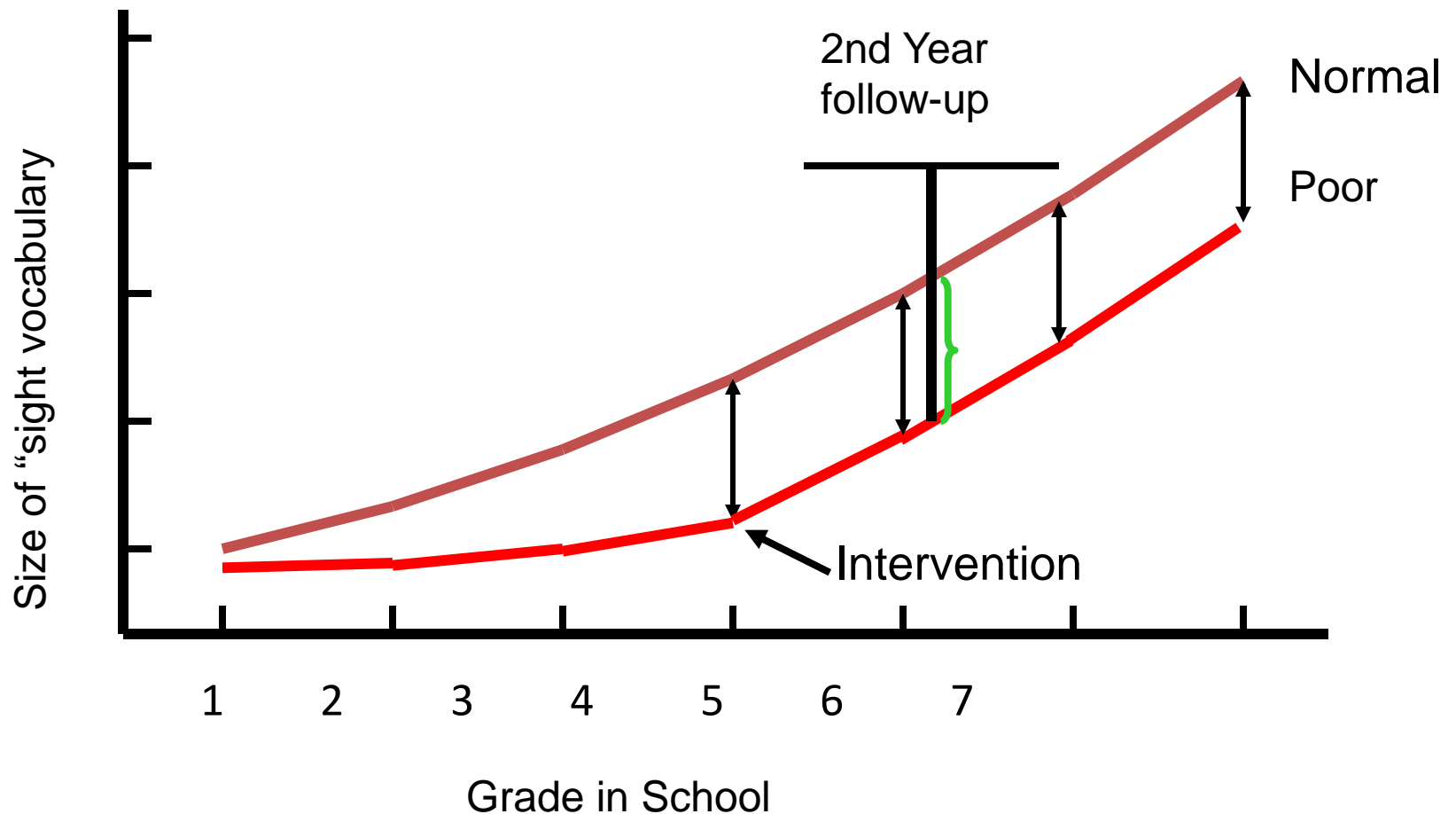
- a) Struggling readers will best acquire word recognition subskills during comprehension-focused lessons
- b) Poor reading is attributable to insufficient practice with complex, demanding text

# Primary Characteristics of Struggling Readers in Middle and High School

- Less skilled in comprehension monitoring and repair, less strategic in approach
- Less fluent and accurate in word recognition; fewer words recognized automatically
- Lower awareness of language structure
- Impoverished vocabulary
- Restricted background knowledge or topic knowledge → fewer, lower quality inferences



**Projected growth in “sight vocabulary” of normal readers and struggling readers before and after remediation (Torgesen, 2007)**



# Why is “closing the gap” so difficult?

**Each year, the demands of text become more challenging.**

- New words appear for the first time
- Sentences become longer and more complex
- Correct interpretation requires a broader range of knowledge
- The length of what you are expected to read increases

# **Just To Keep Pace, Students Must...**

- Recognize several thousand new words by sight
- Learn the meanings of several thousand new words
- Develop deeper knowledge of the topic domains they are reading about
- Learn to navigate increasingly complex text and respond to increasingly demanding tasks

# How?

- By increasing underlying skills that support accurate and fast word recognition
  - Phonological awareness
  - Orthographic awareness
  - Morphological awareness
  - Syntactic awareness
- By acquiring tools for conscious analysis of text structure (phrase, sentence, paragraph) and organization
- By learning specific academic language skills such as how to ask and answer questions

# Improving reading skills in middle and high school (FCRR Summary, Torgesen)

1. Schedule a three hour block every day for students with reading skills more than two years below grade level with word level difficulties
  - Word level skills-- accuracy and fluency
  - Strategy instruction and engagement in thinking about text
  - Both embedded and systematic vocabulary instruction
  - Lots of guided, supported practice in reading

# **What Do You Anticipate are the Advantages and Limitations of CAI for Adolescents?**

<b>Advantages of CAI</b>	<b>Limitations of CAI</b>

# Generic Advantages of CAI

- More practice opportunities for skill development
- Multi-modal presentation of information (UDL)
- Continuous feedback and reinforcement on responses
- Increased efficiency – time on task, targeted difficulty
- Privacy, self-pacing to avoid embarrassment
- Controlled social media environment, peer feedback, chat, posting of messages
- *Choice* of activities on a menu

# Generic Disadvantages of CAI

- In text reading, a sense of the whole is lost
- Speech recognition software not advanced enough to support feedback on oral reading; teacher must listen to recording
- Corrective feedback is not necessarily relevant to the source of error
- Keyboarding may not always have an advantage over handwritten notes, responses, and drafts



# Let's Refine the Question

1. For whom, with what content, under what performance conditions, for what purposes would CAI be preferable to teacher-led instruction of language-based skills?
2. For whom, with what content, under what conditions, for what purposes would teacher-led instruction of language-based skills be preferable to CAI?

# **Teaching Phoneme Awareness, Phonics, and Word Level Skills – Some Advantages for CAI**

- Explanation of concepts can be scripted by experts, presented clearly, ordered logically, taught cumulatively (Not so dependent on teacher!)
- Information can be revisited and reviewed easily (e.g., sound library, glossary)
- Model, lead, practice sequence – with amount of practice tailored to individual
- Multi-modal response formats: decoding, encoding, recording reading aloud

# Sample Videos

History of English:

<https://www.youtube.com/watch?v=BHbxWNCw UE>

Open Syllable:

<https://www.youtube.com/watch?v=Dtr-1y 3Dnw>

Skit: <https://www.youtube.com/watch?v=to0-LE1T5U4>

<https://www.youtube.com/user/VoyagerSopris>

# Example –L! Live, Level 2, Unit 5



# Open Syllable Explanation (2, 5, 17)



# Open Syllable Skit



# Corrective Feedback? (Chat)

Task: Spell the word “microscope”

Student response: mi-crow-scope

Computer feedback: “Listen to the word one more time...”

Better, more specific feedback?

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# Corrective Feedback? (Chat)

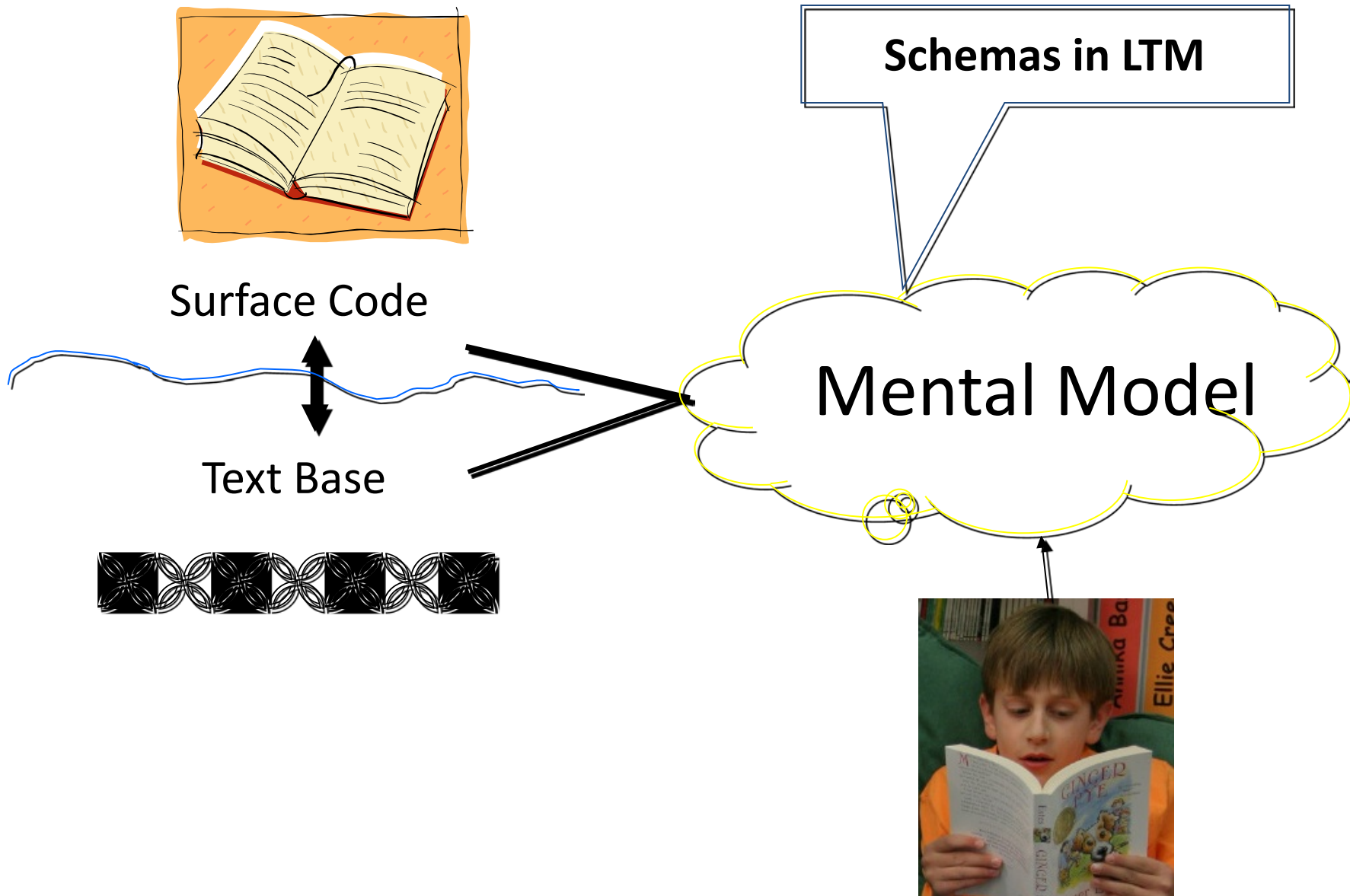
Task: Write the sentence, “It was wrong to wreck the car to avoid the rodent.”

Student Response: It was rong to reck the car to avoid the rodant.

Specific error correction?

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For many decades, the absence of a significant predator allowed the elk populations to inhabit virtually any area in Yellowstone that suited them. They transitioned from **feeding** in the relative protection of the dense forests to congregating and **browsing** in river valleys where food sources were easy and plentiful. This led to **ravaging** young trees, small shrubs, and ground cover. After the wolves returned, elk were forced to move back into the relative protection of the trees and onto the slopes where they could watch out for wolves. No longer able to **graze** at will, they have had to work a bit harder to **find food**, with **profound results**.

# The Teacher's Role

- Anticipate what might be misinterpreted or missed
- Formulate questions that help students make inferences and grasp deeper meanings
- Ask students to draw arrows showing references; highlight key words; locate evidence and details to support main ideas
- Foster dialogue and discussion focused on the “enduring understandings” of the lesson

# Unplugged: Developing Social Pragmatic Skills

- Experiencing the “other” person up close
- Maintaining eye contact, receptiveness to another person’s ideas
- Taking turns in conversation
- Responding to disagreement with civility
- “I” messages and “we” messages

Alone Together, Sherry Turkle

# Conclusion

## Advantages of computer-assisted instruction:

- Students get as much practice as is necessary
- Experts explain concepts about language and words, relieving the teacher of having to be an expert in phonology, orthography, syntax, etymology, etc.
- Teacher is freed up to work with individuals
- Engagement!
- Pace of learning can be individualized

# Conclusion

## Advantages of teacher-led instruction:

- corrective feedback that is responsive to the source of error or difficulty
- facilitation of reflective, deep reading
- sharing of emotional responses to the subject matter and face-to-face discussion
- facilitation of exchange of ideas among peers
- verbal modeling of vocabulary and syntax

“It would be a shame if brilliant technology were to end up threatening the kind of intellect that produced it.”

(Edward Tenner, 2006)

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