

Teaching Reading Comprehension: Research, Best Practice, and Good Teaching



P. David Pearson

UC Berkeley

Slides posted at

www.scienceandliteracy.org




Changing Titles

 Three Pillars

 Four Pillars

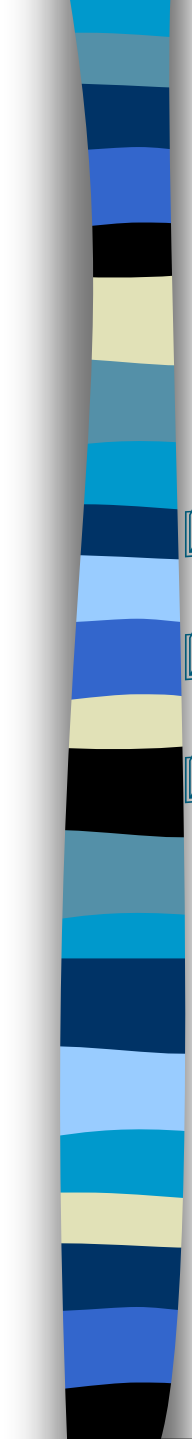
 Five Pillars

 Teaching Reading Comprehension:
Research, Best Practice, and Good
Teaching




Paper on which my talk is based



**Nell Duke and P. David Pearson (2002)
Effective Practices for Developing
Reading Comprehension. *In S. J.
Samuels and A. E. Farstrup (Eds.) What
research says to the teacher (3rd edition).*
Newark, DE: International Reading
Association.**



What's the difference between primary, secondary, and college teachers?

-  Their kids
-  Their subject matter
-  Themselves



So how do you design a
comprehension curriculum



What I try to convince folks of when it comes to supporting comprehension

📖 A goal

📖 A supportive instructional context

📖 An instructional model

📖 A comprehension curriculum



A little pre-test...



The term, **Scientifically-Based Reading Research**, occurs _____ times in the Reading First Portion of NCLB

1.115

2.118

3.110

4. An average of 114.3



Phonemic Awareness is...

1. The ability to discern separate sounds in the stream of speech
2. The process by which a unit of sound can experience self-actualization
3. Something a person needs to practice a bit more IF he consistently says NUCULAR for NUCLEAR.



Reading Recovery is...

1. A much missed part of our current portfolio of early interventions
2. The plaintiff in a law suit with the federal Department of Education
3. A 12 step program designed to assist 1st graders who have overdosed on Accelerated Reader



Reading First...

1. Is the reading part of NCLB
2. Has provided more resources for compensatory reading than any previous piece of legislation in our history
3. Means that math is a curricular second and science and social studies are not even on the radar screen (not to mention art and music)...



1. You need a goal: what is an expert reader

- Active
- Planful
- Integrate PK and TI
- Constant revision
- Monitor
- Take stock

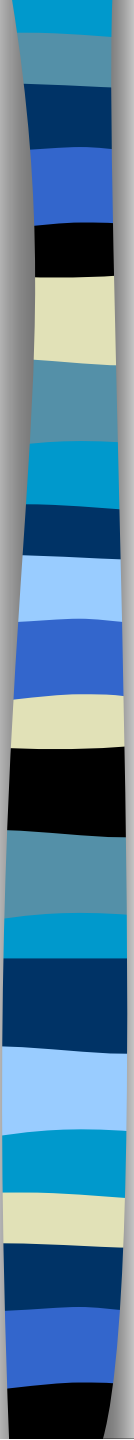


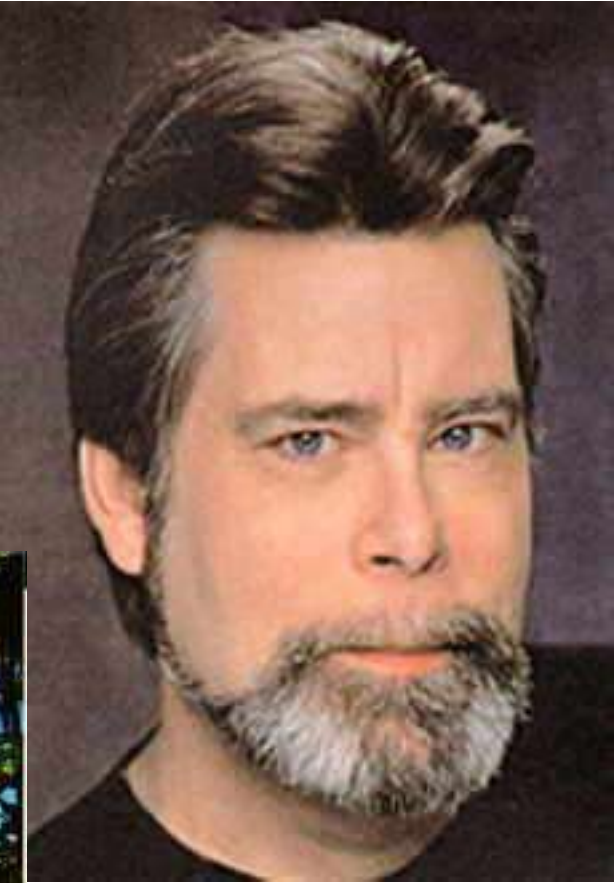
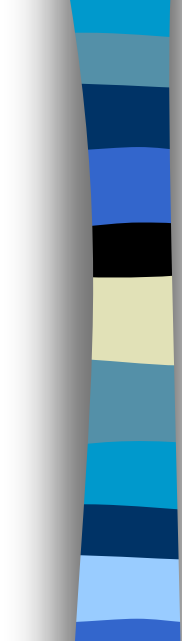
From Stephen King

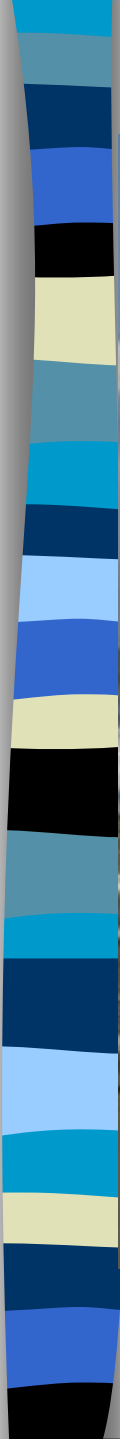
 *On Writing: A Memoir of the Craft*, by
Stephen King

 He got it right about building what it
takes to build a model of reading

 Listen as I read his words...









What can we learn from Stephen King about situation models?

- 📖 That writers expect us to fill in some of the details in building a model of meaning.
- 📖 That no two readers will ever build exactly the same mental model
- 📖 That our models will often be similar enough to allow us to “talk about a text.” (we need to agree on the general frame not the details)*
- 📖 That some things are more important than others
- 📖 Whose minds meet in reading?

*levels of accountability in making meaning



2. You need a supportive instructional context

- 📖 Enabling Skills: solid base of decoding, monitoring and fluency
- 📖 Opportunity: large amounts of time for actual text reading
- 📖 Talk: talking about text, with a teacher and one another
- 📖 Words: Conceptually driven vocabulary development
- 📖 Writing: writing texts for others to comprehend



Make sure the enabling skills are taught well

 Decoding (accurate, automatic, fluent)

 Fluency: facile not fast

 Don't confuse the means and the ends

 Monitoring



Opportunity

📖 The big ruckus from the National Reading Panel

📖 Should we promote independent reading?



What people think NRP says

 Don't provide time for independent reading.



What NRP really says

- 📖 The evidence is too sketchy to draw any conclusion one way or another...
- ✎ About school-based programs to promote independent reading
 - ✓ DEAR
 - ✓ SSSR




My own view

- 📖 The lack of credible evidence one way or another is no basis for getting rid of programs that have other virtues
- 📖 Is reading the only phenomenon in human experience that doesn't get better with practice
- 📖 If you do it, do it right and do it well
 - ✎ Make sure kids have things to read
 - ✎ Make sure kids DO read
 - ✎ Provide incentives and support



Talk about Text

 An environment rich in high-quality talk about text. This should involve both teacher-to-student and student-to-student talk. It should include discussions of text processing at a number of levels, from clarifying basic material stated in the text to drawing interpretations of text material to relating the text to other texts, experiences, and reading goals.



Recent Meta-analysis on discussion by Wilkinson, Murphy, & Soter

 Review studies on discussion

 Three types of emphasis

 Efferent (unpacking the facts of the text)

 Aesthetic-> expressive (say what you think--affective response)

 Critical-analytic

✓ Debate ideas


✓ Interrogate the text, the author, the issue

Conclusions from Wilkinson et al

- 📖 **Some evidence that you get what you pay for.**
- 📖 **Overall, discussion approaches with an efferent component were more effective at increasing student talk and various forms of basic comprehension than other approaches.**
- 📖 **Few approaches were successful at promoting critical-thinking and reasoning, but again only when they went after it directly**
- 📖 **The number of weeks of discussion exhibited the greatest influence on talk.**
- 📖 **Discussion approaches exhibited the greatest benefits for below-average and average-ability students.**



We are pretty good on this score

 The point is to get to the point of the piece we are reading


 Good models

 Book Club and Literature Circles: Juicy Questions

✓ Raphael or Daniels

 Grand Conversations: embracing the big ideas

✓ Eads and Wells, or Great Books

 Instructional Conversations: embedding skills and strategies into text talk

✓ Goldenburg and Saunders

 Collaborative Reasoning: Debate controversial points

✓ Anderson et al

 Accountable Talk

✓ Sarah Michaels



Toughest Problem: Promoting higher level talk about text

- 📖 In our CIERA work, the good news is that when we see it, it improves learning and achievement, but...
- 📖 The bad news is that we don't see it very much

Supporting talk about text

ppearson@berkeley.edu

Conversational Move	Definition	Example (Student talk)	Scaffolds (Teacher talk)
Restating	Repeating a previous contribution	Linda said that the fish was sad, because he was lonely.	Can someone say that in a different way?
Inviting	Inviting a participant to contribute	I'd like to hear what George thinks.	Do you want to invite anyone else to add to what you said?
Acknowledging or validating	Recognizing a response without agreeing or disagreeing	I can see why you said that. I get what you're saying. I hadn't thought of that.	Do you get what Juan is trying to say here?
Focusing/refocusing	Making a metacomment about the course of the conversation	We were talking about the reasons that Frank ran away from home.	I think I've lost track of the question we were trying to answer. Can anyone help me here?
Agreeing		I agree, because Yeah. That's right, because	Does anyone agree with Juan? (agreeing)
Disagreeing		I see what you're saying, but But what about? I disagree, because	Does anyone want to disagree? Does anyone see it another way? Do you all see this the same way as Juan?
Elaborating	Extending one's own or another's assertion	I agree with Juan that the fish was lonely, and I think that he... Also	Does anyone want to say something more about that? Who can think of another solution or another reason?
Requesting clarification or elaboration		What do you mean? Can you say more about that? What makes you think that?	Does anyone want to raise any questions about the point that Juan is trying to make? Anyone find anything confusing in this part of the story?
Providing an example	Providing an example from inside of the text or outside to support one's own or another's assertion. Examples can be explanatory or evidentiary	For example It's like when	Can you give an example of from the story? Has anything like this ever happened to you or someone you know? Can you think of an example from another story by this author?
Signaling a change	Changing the direction of the conversation	I want to talk about the mother.	Does anyone want to change the subject? Are you ready to move on? Does anyone want to ask a different question?
Providing evidence			
Posing a question to the group		Does anyone think ?	Do you have a question for the group?

Some Conversational Norms

- 📖 **Talk to each other, not just to the teacher.**
- 📖 **Listen to each other. Listening is as important as (or more important than) speaking.**
- 📖 **Avoid interrupting the speaker.**
- 📖 **Link your comments to those of a previous speaker.**
- 📖 **Wait until a topic is exhausted before moving on, or announce a shift in topic.**
- 📖 **Take turns in the conversation and bid for turns using the established method.**
- 📖 **Avoid monopolizing the floor and talking over others.**
- 📖 **If you state an opinion, you have to back it up (or declare your uncertainty).**
- 📖 **Feel free to disagree, but show respect for others' ideas.**

I don't care much what they are, but have some!




Questions for Stories

- 📖 Read the text for the big ideas (theme, character, lessons for life)
- 📖 Generate some probes to get at them
 - ✍️ Go from general to specific
 - ✓ So what is important about this story
 - ✓ So is this story more about the plot or the characters
 - ✓ So what does this story tell us about how human beings look out for one another?
 - ✓ O'Flahavan: How is ignorance like a prison?
 - ✍️ Go for Response before Comprehension
 - ✍️ Go for comprehension to support response or claims
 - ✍️ Work for a unified understanding of plot, setting, character, feelings, motives.



Vocabulary/Concept Development

 An environment rich in vocabulary and concept development, through reading, experience, and, above all, discussion of words and their meanings. Any text comprehension depends on some relevant prior knowledge. To some degree, well-chosen texts can, in themselves, build readers' knowledge base. At the same time, hands-on activities, excursions, conversations, and other experiences are also needed to develop vocabulary and concept knowledge required to understand a given text.








The Rationale: Why should we teach vocabulary

- 📖 The research: consistent effects on both growth in vocabulary knowledge and comprehension when vocabulary is taught systematically
- 📖 The theory: Words are labels for knowledge. As our knowledge grows, so does our vocabulary for codifying, understanding, and expressing that knowledge--most likely a reciprocal relationship










The Research: A little deeper

NRP report

-  Computerized programs work
-  Vocabulary impacts comprehension
-  Vocabulary is learned incidentally during reading and listening to books
-  Repeated exposure is key--especially in authentic contexts of use
-  Pre- reading instruction has a role in improving comprehension

 Beck et al: Post-reading instruction is also helpful

The parts that teachers can impact

-  Reading that kids do
 -  On each reading, you know 10-15% more about words than you did before
-  Conversations they have about new ideas
-  Directed inquiry into new domains (usually in thematic units or in content area instruction)
-  Intentional instruction for new words/ideas
 -  Definitional
 -  Contextual
 -  Conceptual
 -  Critical??



Three approaches

- 📖 **Definitional:** how do we “define” the word officially?
- 📖 **Contextual:** how do we use the word in everyday language and written discourse?
- 📖 **Conceptual:** Where does the word (the idea really) fit?
- 📖 **Critical:** How does (the use of) the word shape our response to people and things named by it?



Definitional

- 📖 Look up words in dictionary or glossary
- 📖 Write down a definition and/or use in a sentence
- 📖 Generate your own and check with the dictionary
- 📖 General concern: tends to reinforce what kids already know; doesn't help them figure out where things "fit."



Contextual

- 📖 Try to use words in sentences.
- 📖 Find sentences in a selection or a chapter in which a word is used, try to come up with a definition.
- 📖 Very useful as a “problem solving” strategy because we often encounter new words in context. Modeling is a good start.
- 📖 More productive in informational than literary text (we’ll see why...)
- 📖 A good thing to do as a class activity on a second pass.

Carlisle, 2005

Incidental word learning (IWL)

- 90% of the approximately 3,000 words students learn each year are learned through incidental encounters in oral and written discourse contexts
- That is, most words are not learned through explicit instruction
- A large percentage of the new words students learn after 3rd grade are derived words with familiar parts (e.g., *dis-trust-ful*)
 - 60% of the unfamiliar words students encounter in texts they read are derived words whose meanings can be figured out by analysis of structure and context



Independent Word Learning

IWL depends on two inferential processes

- Nagy & Scott (2000): “**Context** and morphology (**word parts**) are the two major sources of information immediately available to a reader who comes across a new word.”
- The two inferential processes work together, often complement one another.

The Cheyenne People

Men and women wore shirts similar to the women's dresses, but shorter and with longer sleeves. A *breechclout* hung from a belt around the waist. The Cheyennes decorated their clothing and leather goods with *quillwork*. Many designs had special meanings and could be recognized by all their people. It was an honor to belong to the Quillers' Society.

The first step to quillworking is the difficult removal of the sharp quills from the porcupines. They are then dyed, using berries, flower, or minerals. After sun-drying the quills, the quillworker *flattens* them with her teeth so they can be sewn with a bone needle and *sinew* thread.


(from *Quillworker, A Cheyenne Legend*)


Context “clues” lead to guesses about the meaning of a word

- Common clues are synonyms, antonyms, temporal or spatial relations, categorical or functional roles:
 - For *breechclout*: clothing; “hung from belt” (functional and spatial clues)
 - For *sinew*: a kind of thread (categorical?)
- “Contexts can be generous or parsimonious, helpful or hostile in the amount of assistance they provide the reader or listener.” (Baumann & Kame’enui, 1991)




Context is tricky


 On the one hand we surely want students be able to use context to unearth the meanings of unknown words.

 On the other hand, context does not always help--a fact about texts that we need to let kids in on.

You figure it out

 Have you seen a coyote lately? Have you heard one howling in the night or watermelonning in the day?

 The elk watermelons in the snow for grass.

 Once a family bought a house near a watermelon city where coyotes roamed in the neighboring woods.

Note: A different word is replaced in each sentence.



Answer Key

 yip-yapping

 paws

 mid-sized



So what to do about “context”

- 📖 It is useful to introduce and define words within a context.
- 📖 In order to move from awareness to...ownership, students need to encounter a word many times in many contexts
- 📖 As a metacognitive strategy for clarifying, students deserve some guidance in how to infer or clarifying meanings in context
 - ✍️ (although the research on teaching context clues is pretty anemic)




Using context as a fix up strategy

- 📖 Use a cloze or a “placeholder” approach (nonsense word or watermelon)
- 📖 Have students substitute an uncommon word for a common word-- or vice-versa.
- 📖 Lots of modeling and group problem-solving when uncommon words are encountered



Modeling about how to clarify an unknown word

 This might be just the place to combine contextual analysis, morphological analysis, and the use of external resources

 **Inside** the word: morphology

 **Around** the word: context

 **Outside** the text: dictionary, thesaurus, other texts, and people



Conceptual Approaches

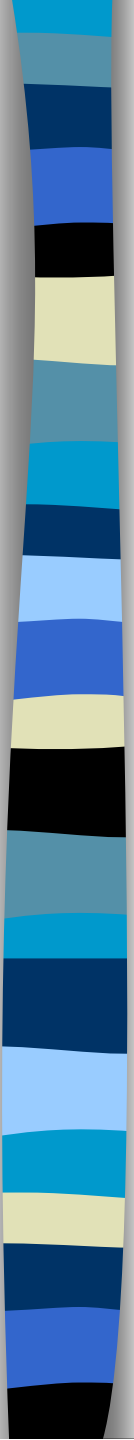
- 📖 A different kind of context: the context of the head and the world, not the context of the page.
- 📖 If the head is like a dresser, the whole idea is to help kids learn what “drawers” to put new ideas in.
- 📖 This is what schema theory during the 1980s was all about (still is all about).



Conceptual Approaches, cont

- 📖 Semantic mapping or webbing
- 📖 Semantic feature analysis
- 📖 Any sort of categorization activity
- 📖 Expansion ala Beck & McKeown

What counts in all of these approaches is the nature and quality of the discussion surrounding the activity.





Conceptual approaches

- 📖 Work well in content areas like science and social studies
- 📖 Where learning new words is also about learning new content and learning new concepts
- 📖 Where the word is the label (a way to name) the new concepts you are acquiring.



Conceptual Approaches

- 📖 A different kind of context: the context of the head and the world, not the context of the page.
- 📖 If the head is like a dresser, the whole idea is to help kids learn what “drawers” to put new ideas in.
- 📖 This is what schema theory during the 1980s was all about (still is all about).




The impact of reading vocabulary on other subject matter pedagogy



**The evolution of mathematics story
problems during the last 40 years.**



1960's


 **A peasant sells a bag of potatoes for \$10. His costs amount to $\frac{4}{5}$ of his selling price. What is his profit?**

1970's (New Math)

- 📖 A farmer exchanges a set P of potatoes with a set M of money.
- 📖 The cardinality of the set M is equal to \$10 and each element of M is worth \$1. Draw 10 big dots representing the elements of M .
- 📖 The set C of production costs is comprised of 2 big dots less than the set M .
- 📖 Represent C as a subset of M and give the answer to the question: What is the cardinality of the set of profits? (Draw everything in red).




1980's

 **A farmer sells a bag of potatoes for \$10. His production costs are \$8 and his profit is \$2. Underline the word "potatoes" and discuss with your classmates.**



1990's

 **A kapitalist pigg undjustlee akires \$2 on a sak of patatos. Analiz this tekst and sertch for erors in speling, contens, grandmar and ponctuassion, and than ekspress your vioos regardeng this metid of geting ritch.**

 **Author unknown**



2000's

📖 **Dan was a man.**

📖 **Dan had a sack.**

📖 **The sack was tan.**

📖 **The sack had spuds**

📖 **The spuds cost 8.**

📖 **Dan got 10 for the tan sack of spuds.**

📖 **How much can Dan the man have?**



Extended talk about words

 See Beck & McKeown (Bringing Words to Life)

 Splendid: Which of these would be splendid?

 A dirty sock

 A sunny day in the park

 Your own bicycle


 A rainy day



Beck & McKeown

 Which of these would “astound” you?

 a monkey driving a car

 a homework assignment to do 10 problems in math

 a magic trick by a friend

 a clock on the wall





So what is a body to do?

My response to the research

- 📖 Pre-teach only the most conceptually important vocabulary
- 📖 Do lots of “point of contact” defining and explaining to “get through the text”
- 📖 For Tier 2 words (ala Beck & McKeown) do the bulk of vocabulary instruction after reading--revisiting and expansion: mostly narrative
- 📖 For Tier 3 words, use a conceptual approach in which vocabulary instruction = knowledge acquisition
- 📖 Help students develop a set of strategies for

The common element in all of these activities is

 Conversation: the key; the experiences of other students is as important as those of the teacher

 The overall goal is for any new concept is to help kids figure out

 What it is like


 How it is different from what it is like

 Family resemblances

Back to Supportive Classroom



Writing

 Lots of time spent writing texts for others to comprehend. Again, students should experience writing the range of genres we wish them to be able to comprehend. Their instruction should emphasize connections between reading and writing, developing students' abilities to write like a reader and read like a writer.



Why Writing Helps Reading

- 📖 You can't write without reading: the writer's first reader.
- 📖 When you write, you often seek information through reading
- 📖 Writing makes the metaphor “constructing a model of meaning” completely explicit.
- 📖 Writing helps us decide what we really “think” about a topic (stares back at you).
- 📖 Writing makes metacognition transparent (makes monitoring visible)

Why Writing Helps Reading

- 📖 Writing reinforces some reading processes
 - ✎ An authentic context for phonemic awareness (listen to the word in parts, match a letter to each part)
 - ✎ Examining claim and support is like unearthing the relationship between MI and Details
- 📖 By the way, reading helps writing too--by providing good models of well-crafted prose, spelling, and punctuation.



Just to review about the supportive context

 Opportunity

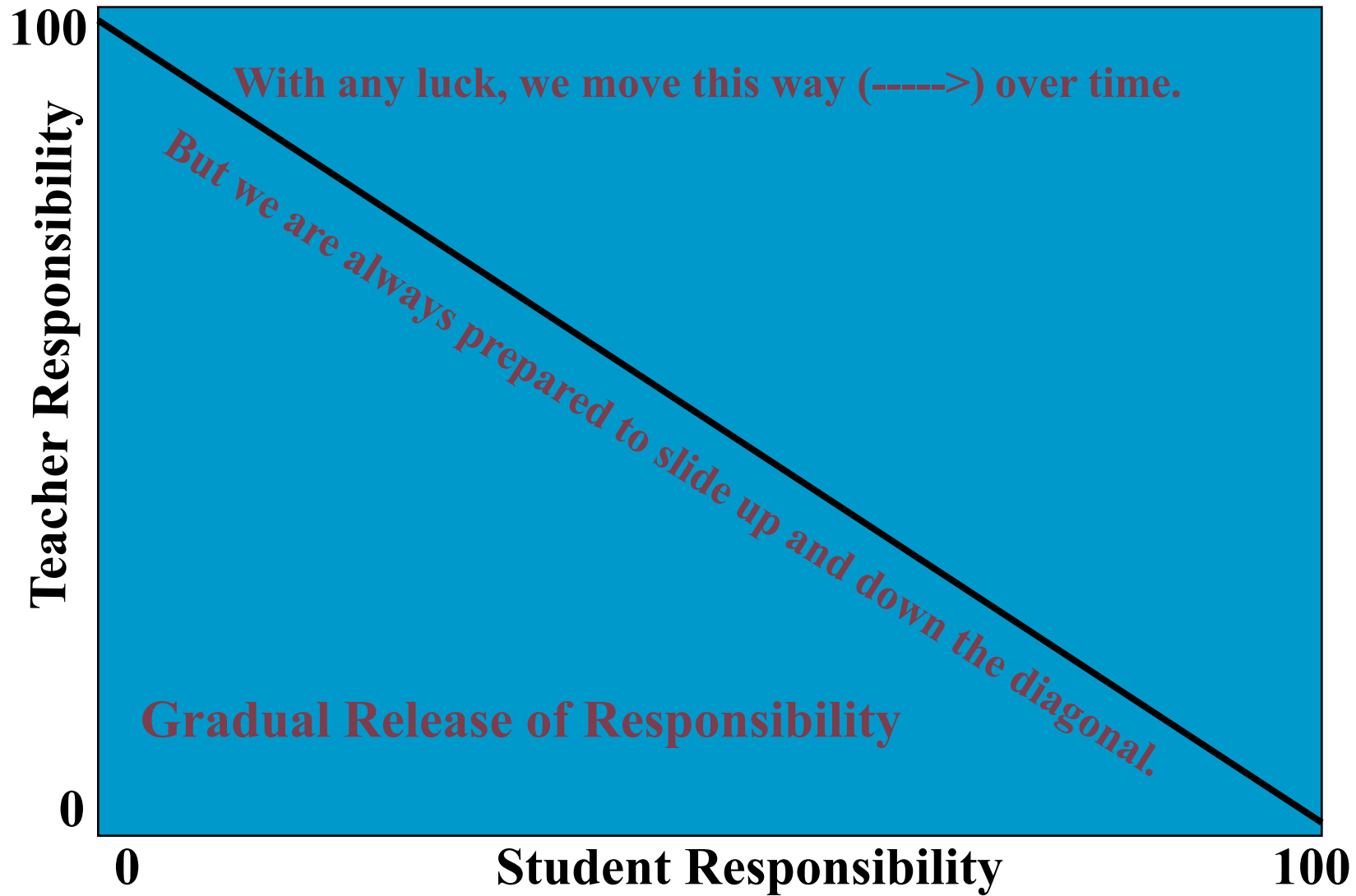
 Talk about text

 Talk about words

 Writing

 Enabling skills

3. a model: Cognitive apprenticeship



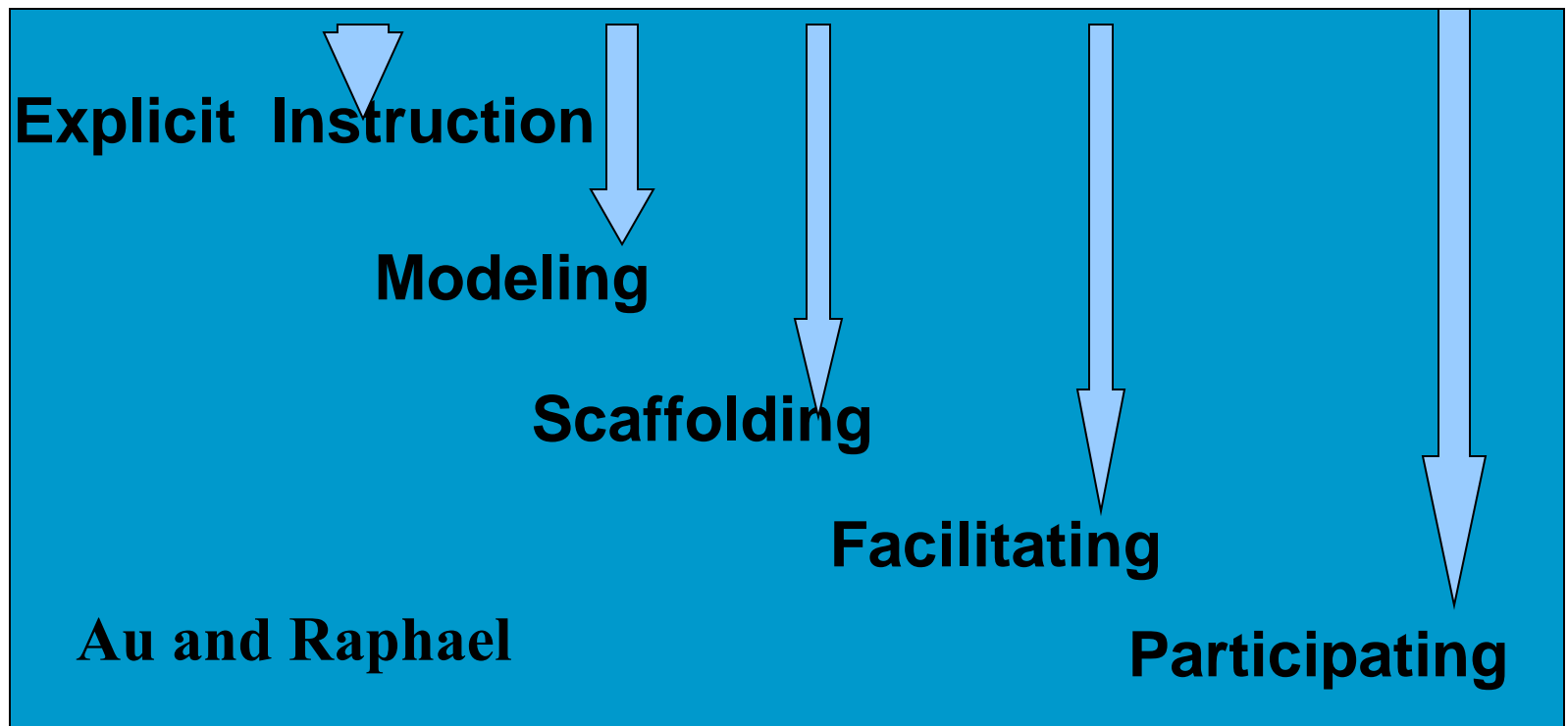
Changing Teacher Roles

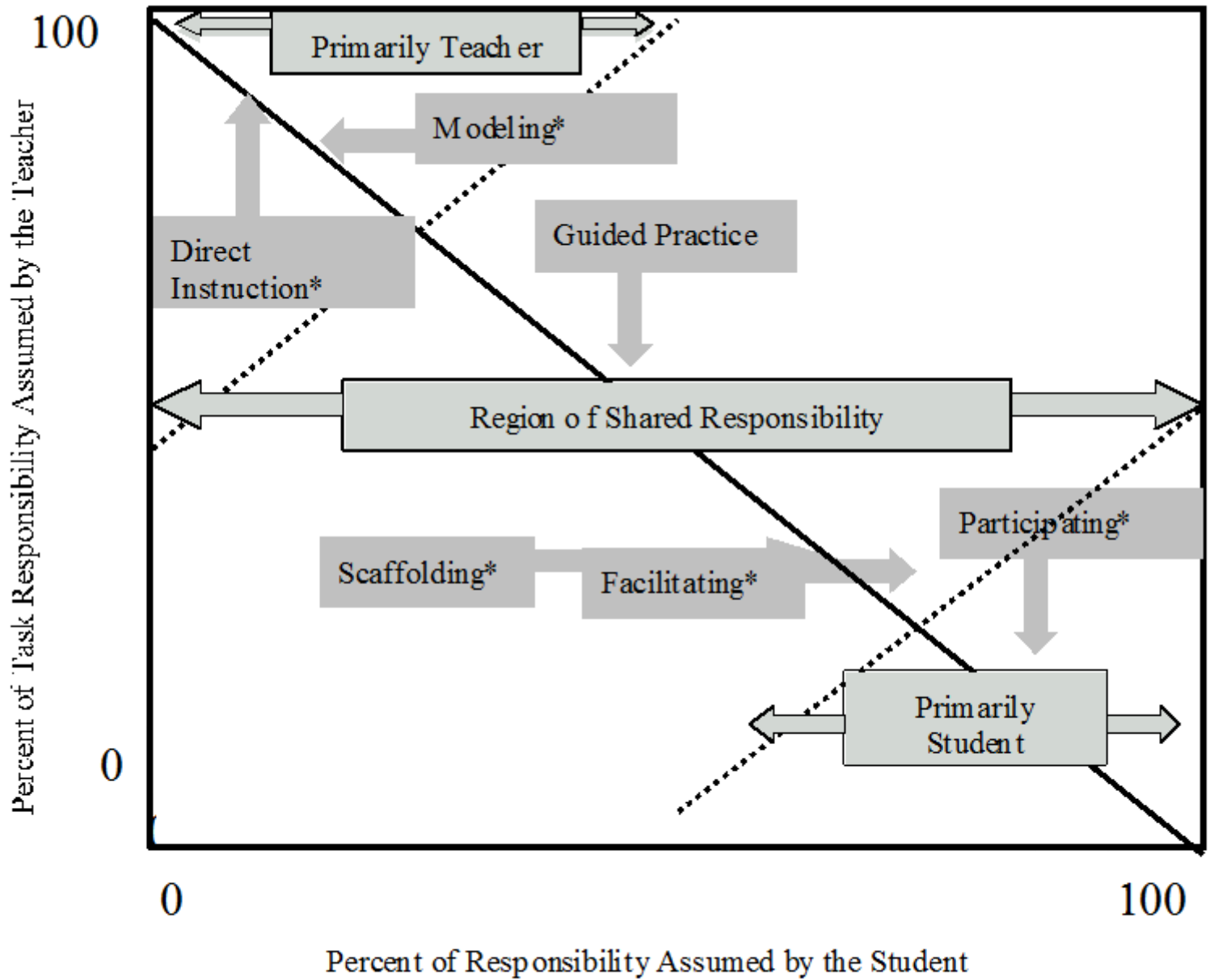
High Teacher

Low Student

Low Teacher

High Student

















From Duke & Pearson

4. You need a comprehension curriculum: sure fire strategies and routines/packages.

Individual Strategies

-  Making predictions
-  Think-alouds
-  Uncovering text structure
-  Summarizing
-  Question-generation
-  Drawing inferences

Routines or Packages*

-  **Reciprocal Teaching+**
-  **Transactional Strategies Instruction+**
-  Questioning the Author
-  CORI
-  *Oczkus, Harvey-Goudvis, Almasi books
-  +Talk about RT and TSI today



Strategy Instruction

📖 What strategies do we pick?

📖 How do we teach them?



Picking strategies

 NRP

 Duke & Pearson

 Routines such as Reciprocal Teaching
or Transactional Strategies Instruction

 Good news

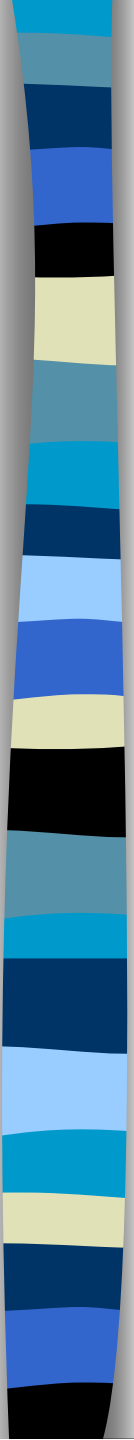
 Lots of overlap

 No definitive set



Reciprocal Teaching: The logic

- 📖 Premise: teachers who guide students in the acquisition of a routine that can be applied iteratively to text segments help them get to and through texts that would otherwise baffle them.
- 📖 Pick a small set of key strategies and apply them again and again.
- 📖 Gradual release of responsibility
- 📖 Eventually, they don't need you any longer





Transactional Strategies Instruction

The logic

1. **Every reader needs a strategy tool kit (a MENU) from which she can choose the right strategy for the right job**
2. **Use strategies in a flexible and opportunistic manner (problem-solving)**
3. **Acquire strategies while engaged in authentic reading: embedded instruction**
4. **Shared responsibility by teacher and student.**
5. **Add interpretive strategies to cognitive.**

For a full treatment of SAIL, a curricular approach to TSI, see several articles in *Elementary School Journal* [1992, 94 (2)]

The menu for TSI

Cognitive strategies

- 📖 Thinking Aloud
- 📖 Constructing images
- 📖 *Summarizing*
- 📖 *Predicting (prior knowledge activation)*
- 📖 *Questioning*
- 📖 *Clarifying*
- 📖 Story grammar analysis
- 📖 Text structure analysis

Italics = also in Reciprocal Teaching

Interpretive Strategies

- 📖 Character Development: Imagining how a character might feel; identifying with a character
- 📖 Creating themes
- 📖 Reading for multiple meanings
- 📖 Creating literal/figurative distinctions
- 📖 Looking for a consistent point of view
- 📖 Relating text to personal experiences
- 📖 Relating text to other texts
- 📖 Responding to certain text features--point of view, tone, mood



The evidence for TSI

 Solid evidence of improvement on

 specific strategies

 content of the lessons

 more general comprehension


 Used in 1-9, but most of the research in
2-4




The real problem with strategy instruction

 Lots of evidence for their efficacy

 But

 How do you make them a part of everyday life in classrooms?

 Lots of curricula I have reviewed: side with breadth rather than depth

 Mile wide and inch deep



Another strategy problem

- 📖 Helping kids learn how to decide what strategies to use when.
- 📖 Most training studies just keep using the strategies iteratively...
 - ✎ Whether the kids need to use them or not
 - ✎ Whether they are appropriate or not...
- 📖 The trick with strategies, ultimately, is knowing which ones will help you in which situations
 - ✎ When do you clarify? Summarize? Predict? Generate pictures?



My advice

 Key study by Reutzell et al

 A tool kit is more effective than an unintegrated set of encapsulated strategies

 Do one strategy well for starters

 Then add to the repertoire one by one until all are in place

 Establish a set for diversity



Summary: Comprehension improves when

- 📖 We engage students in rich discussions that allow students to integrate knowledge, experience, strategies, and textual insights
- 📖 We support it with other types of instruction (**vocabulary**, word identification, fluency, writing)
- 📖 We teach strategies and routines explicitly.
- 📖 We provide lots of opportunities for just plain reading
- 📖 We provide teachers with real support in PD