
Translating Cognitive Science Into Classroom Practice

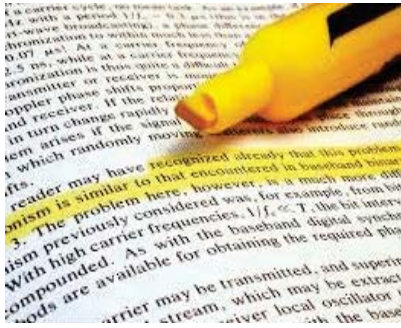
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Schools of education have developed along a
different track from the rest of academia



What's the best way to retain information?

Rereading and highlighting?



Or taking a quiz?



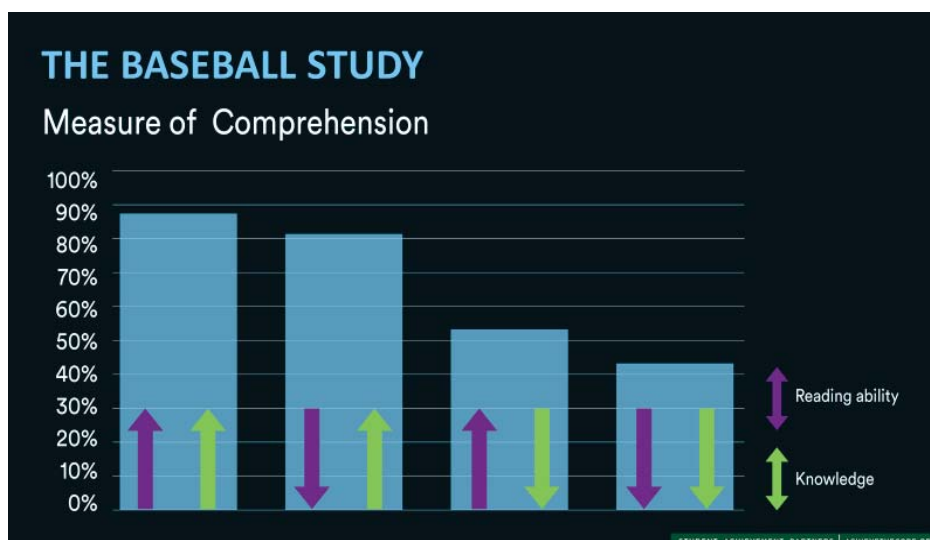
For more information on retrieval practice and other findings of cognitive science ...

- The Learning Scientists (articles, podcasts, etc., by cognitive psychologists) <https://www.learningscientists.org/>
- The Learning Agency Lab (nonprofit with many resources on its website) <https://www.the-learning-agency.com/>

What Teachers Are Told About How Reading Comprehension Works

- Instruction should focus on comprehension skills and strategies (finding the main idea, making inferences, etc.).
- Students need to practice the skills and strategies on texts at their individual level—not too easy and not too challenging.
- If students do this, they will move up the ladder of text complexity.
- If they become proficient at, e.g., “finding the main idea,” they will be able to apply that skill to any text (e.g., passages on standardized reading tests, high school textbooks).

What Scientists Have Found About How Reading Comprehension Works



What does this mean?

- Reading comprehension isn't a set of skills; it's mostly an outgrowth of knowledge and vocabulary.
- An individual doesn't have a single "reading level." The level will vary with how much she knows about the topic.
- The best way to boost comprehension is to build students' knowledge of social studies, science, literature, and the arts.

Three Kinds of Obstacles to Getting Scientific Findings Incorporated into Classroom Practice

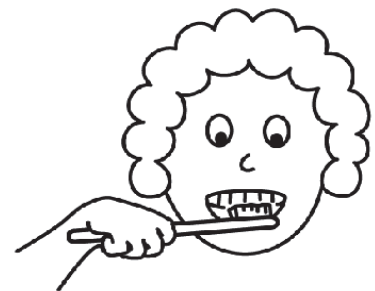
HEAD



HEART



HABIT



Lack of Awareness



- Not covered in pre-service training
- Not covered in professional development
- Some teachers will embrace new findings once they learn about them
- But many others won't

Scientific Findings Get Lost in Translation



Many teachers believe there's evidence for, e.g., "learning styles." There isn't.

On reading comprehension:

- National Reading Panel and "the science of reading"
- The strategies endorsed by the NRP won't work if you can't understand the text
- Most of what teachers do in the classroom has little to do with what the NRP endorsed

The Environment Conflicts With the Science



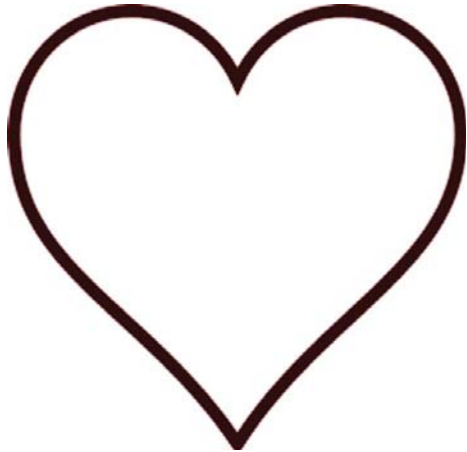
- If everything you're told conflicts with the science, it may seem reasonable to doubt the science.
- Curriculum & materials are skills-focused
- Tests appear to be skills-focused
- Evaluations are often linked to test scores

Suspicion of "Evidence-Based" Innovations



- Teachers may see ideas about education as a philosophy or belief system rather than a matter of science
- Research seen as too ivory tower
- Too many initiatives labeled "evidence-based" when they're not

Guilt



If you've been using a certain approach for years in the sincere belief that it's helping students ...

And someone tells you it's not helping them—and may be holding them back ...

That's a difficult pill to swallow

Confirmation Bias

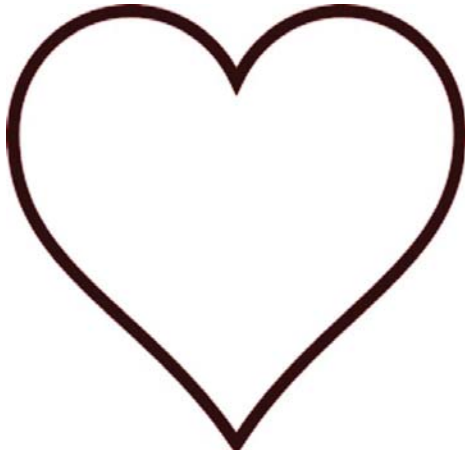


When people have strongly held beliefs ...

they're likely to accept evidence that supports those beliefs ...

and likely to REJECT evidence that conflicts with those beliefs

Unease, Anxiety, Fear



- Unease with student struggle
- Anxiety that students will be bored by or unable to grasp challenging content
- Fear of teaching content teachers aren't familiar with themselves



Teaching Is an
Incredibly
Complex Activity

Change *Is* Happening

Teachers &
Administrators:
Twitter,
researchED,
Curriculum
Matters

Chiefs for
Change



Deans for
Impact

Knowledge-
Building
Elementary
ELA Curricula

Content-Specific, Ongoing Professional
Development and Support

How Do We Fill the Bucket?

FOCUS LESS ON
“EVIDENCE-
BASED”
ARGUMENTS

SHOW TEACHERS
THAT A NEW
APPROACH
WORKS



MAKE THE
REFORM EFFORT
MULTI-PRONGED

HAVE PATIENCE
AND
UNDERSTANDING;
FOCUS ON
COMMON GOALS