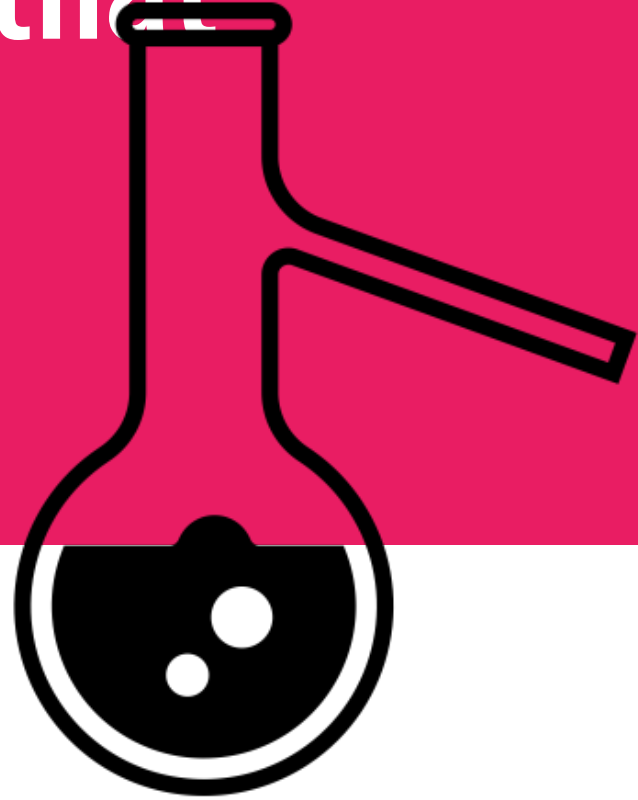


How can we ensure that homework is **EFFECTIVE?**

distilled learning from the
FIS Homework Working Group



Interleaving

stop “blocking” &
mix it up...



An interleaved assignment mixes up different kinds of situations or problems to be practiced, instead of grouping them by type. When students can't tell in advance what kind of knowledge or problem-solving strategy will be required to answer a question, their brains have to work harder to come up with the solution, and the result is that students learn the material more thoroughly...

A [study](#) published in 2010 in the journal Applied Cognitive Psychology asked fourth-graders to work on solving four types of math problems and then to take a test evaluating how well they had learned. The scores of those whose practice problems were mixed up were more than double the scores of those students who had practiced one kind of problem at a time.

— — —
“How Can We Make Homework More Worthwhile?”
Mind/Shift
Click or scan QR for full text



SPACED PRACTICE

RULES all



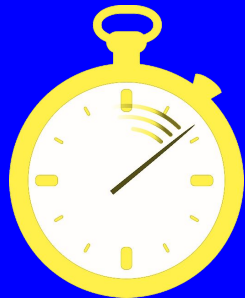
Students often ‘mass’ their study—in other words, they cram. But distributing learning over time is much more effective. In one classic experiment, students learned the English equivalents of Spanish words, then reviewed the material in six sessions. One group did the review sessions back to back, another had them one day apart and a third did the reviews 30 days apart. The students in the 30-day group remembered the translations the best. In an analysis of 254 studies involving more than 14,000 participants, students recalled more after spaced study (scoring 47 percent overall) than after massed study (37 percent).

— — —
*“What Works, What Doesn’t”
The Scientific American
Click or scan QR for full text*



SPACED

repetition repetition repetition
repetition repetition repetition
repetition repetition repetition
repetition repetition repetition



“Spaced repetition” is one example of the kind of evidence-based techniques that researchers have found have a positive impact on learning. Here’s how it works: instead of concentrating the study of information in single blocks, as many homework assignments currently do — reading about, say, the Civil War one evening and Reconstruction the next — learners encounter the same material in briefer sessions spread over a longer period of time. With this approach, students are re-exposed to information about the Civil War and Reconstruction throughout the semester.

It sounds unassuming, but spaced repetition produces impressive results. Eighth-grade history students who relied on a spaced approach to learning had nearly double the retention rate of students who studied the same material in a consolidated unit, reported researchers from the University of California-San Diego in 2007. The reason the method works so well goes back to the brain: when we first acquire memories, they are volatile, subject to change or likely to disappear. Exposing ourselves to information repeatedly over time fixes it more permanently in our minds, by strengthening the representation of the information that is embedded in our neural networks.

— — —
The New York Times
“The Trouble With Homework”
Click or scan QR for full text



do NOT highlight
text as you read...



QUIZ
yourself
instead

Highlighting and underlining led the authors' list of ineffective learning strategies. Although they are common practices, studies show they offer no benefit beyond simply reading the text. Some research even indicates that highlighting can get in the way of learning...

The teacher phrase for bringing to light what you know and don't know is *self-assessment*. Quizzing yourself works because each time a concept is revisited, or said differently, retrieved from memory, the mental connection is strengthened.

"Three Things Experts Say Make for a Perfect
Study Session"

blog entry at thepragmaticteacher.de



Experts advise EFFECTIVE HW should...

- have clear purpose
- avoid a specific amount
- be small # of varied practice
- focus on **connections**, not questions

In the research journal article “When is Homework Worth the Time?”, co-author Robert H. Tai [writes]: “...results...imply that homework should be purposeful, and that **the purpose must be understood by both the teacher and the students.**” The authors determined that in order to be worthwhile, homework should meet the following criteria:

- Eliminate specific quantities of homework, such as the common suggestion of 10 minutes per night per grade.
- Instead of length, assignments should focus on making analytical connections.
- Math homework should consist of a small number of different types of exercises instead of large quantities of similar problems.
- Science assignments should ask students to explore concepts rather than answer prescribed questions.

— — —
“Ending the Homework Debate: Expert Advice on What Works”

Concordia Online Education



CHOICE

↓ stress

↑ learning

students can decide how? when? what?

Big data and common sense show us that low stress levels are key to learning. In “Designing Effective Homework” the author, Nancy Self, suggests:

“Give students the responsibility of choosing a homework assignment that is of interest to them or would fit with their culture, lifestyle, and experience.

Teachers can create a selection of homework assignments that reinforce skills in focused categories. Students can read the various assignments and choose ones they would like to complete according to their interests. Assignments might include such things as planning a budget for a week of meals for the family; determining the best shops and prices in town for acquiring ethnic spices for a family meal; researching the best buys for the family to consider when purchasing a new computer or car; or applying physics to sports such as baseball or in-line skating.”

The simplest way to add some choice to HW? Give students more than one night to complete it.

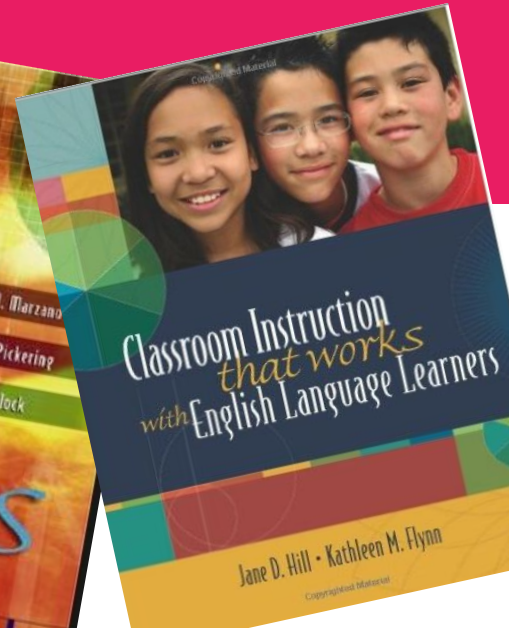
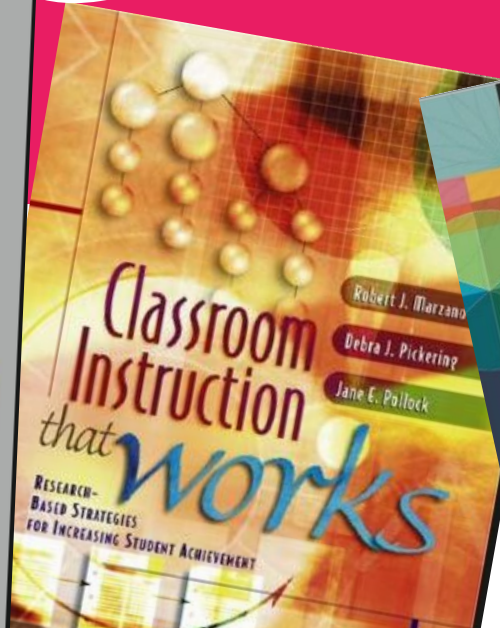
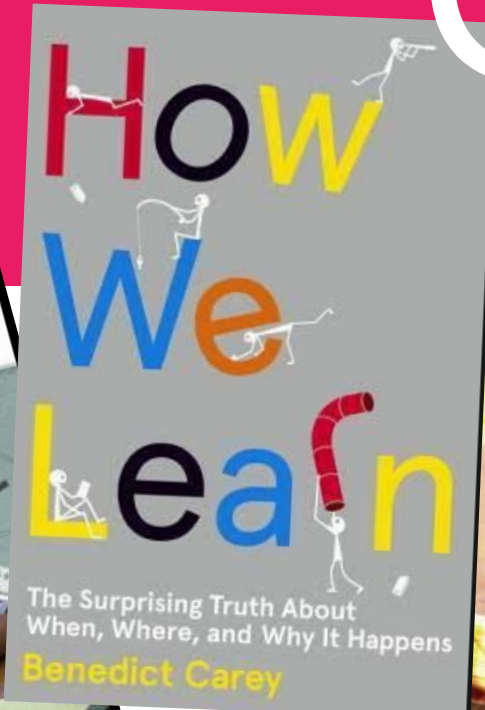
— — —
“Designing Effective Homework”
by Nancy Self @ ascd.org



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