

Ending the Homework Debate: Expert Advice on What Works

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After exploring [the case against homework](#) as well as the ways [homework benefits students](#), it's clear that both sides have valid arguments. After examining the evidence, we've come up with recommendations for both teachers and parents for homework that contributes to students' academic growth.

What kind of homework is beneficial?

While some research points to homework increasing test scores, what researchers, parents, teachers, and even students want is homework that deepens content knowledge and thus understanding, critical thinking, and the ability of students to bring those to the classroom.

Homework must focus on quality, not quantity

In the research journal article "When is Homework Worth the Time?", co-author Robert H. Tai summarizes the analysis of 18,000 tenth-grade transcripts by saying, "The results of this study 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.

The study concluded with a call for further research in order to pinpoint the most effective type of homework.

Homework should meet the needs of each student

Another important factor in homework quality has to do with the needs of the recipients. Professor Gerald LeTendre discussed this in Penn State University's article "Is Homework Bad for Kids?", saying that young children do not benefit from homework as much as older students, because they lack the awareness and reflection required for good study habits.

Additionally, LeTendre points out that homework must address a child's "actual academic problem." In order to discuss these individual academic problems, differentiation, a key term in classroom management, must also be used in out-of-classroom work. LeTendre suggests that homework should be assigned at the individual level and reviewed with the student regularly to ensure its effectiveness.

One differentiation strategy: Flipped classrooms

Of course, differentiated homework leads to questions of fairness and the very real problem of teachers' time. With increasingly large class sizes, creating individual homework plans for every student could be an insurmountable task. One alternative to such problems is the flipped classroom, where students engage the lecture material outside of the classroom and then classroom time is dedicated to what would have been homework under the traditional setup. Teachers are then free to allow students to work in groups or individually, visiting each group and testing their mastery along the way.

Skills developed through effective homework: Spaced repetition, retrieval practice, desirable difficulties, deliberate practice

Changing the entire functionality of the course isn't necessary, though, if instructors remember key features of effective homework as identified by the emerging field of Mind, Brain, and Education, says Annie Murphy Paul. In the article "How Can We Make Homework Worthwhile?", Paul identifies important characteristics such as spaced repetition, retrieval practice, and desirable difficulties.

Spaced repetition

Spaced repetition covers and revisits material *over time* in ways that traditional homework has not, revisiting material that has been covered in the recent and distant past to reinforce a student's knowledge base.

Retrieval practice

Retrieval practice can lead to interesting assignments like the role-playing homework described in "How to Create Effective Homework," in which students adopted a historical persona. Their drive to maintain their character extended into their motivation for completing homework.

Desirable difficulty

Additional and sometimes fun strategies include working with what researchers call "cognitive disfluency" by breaking convention in order to more fully gain the attention of students via changes in fonts or sizes, intentional grammatical errors, and even breaking free of categorically organized homework. A math worksheet that combines

division, multiplication, addition, and subtraction problems randomly, for example, garners more attention from the brain than one that focuses on a single skill.

Deliberate practice

Finally, homework must be what Paul calls deliberate practice. Students and teachers must both be fully aware of homework's purpose and point. This leads to one of the most important points about homework: it is not effective without student buy-in. Both common sense and research show that the only chance a student has to benefit from homework is when the student actually attempts completion — meaning that in addition to being effective, students have to be motivated to complete it. That motivation only comes when students understand how and why homework is important.

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