

BYRAM HILLS CENTRAL SCHOOL DISTRICT

THE HOMEWORK EXPERIMENT

The story of a 7th grade math teacher who challenged her beliefs about homework

By

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From elementary school through high school, homework is a key tenet of our education system. Teachers assign homework. Students do homework. It's given for various reasons – but do we ever question those reasons? Is homework necessity, or just a rote part of our collective educational model?

In thinking about this, a few key questions come to mind: *What if some students are wasting their time doing homework that does not challenge them? What if other students are wasting their time doing homework just to satisfy the teacher's requirements? What if some students are crying over the amount of time it takes to complete homework, and never feel successful at it?*

For me and my colleagues in the Byram Hills School District, one BIG question came to mind two years ago: *What if all this could change; what would happen if we stopped assigning homework?*

All this began because the Superintendent in my district had a theory: that our testing, grading, and homework practices may, in part, be contributing to student stress and anxiety. He wondered if we could reduce student stress – and potentially increase student success – by changing an aspect of our practice that we, as teachers, control. To test this theory, the Superintendent asked for volunteers to join a committee that would study and experiment with alternative ways to test, grade, or assign homework in order to analyze the impact on student stress. I decided to join, as I was seeing firsthand the rise in anxious middle school students over the years.

The teachers who joined the committee were assured by the Superintendent that there would be no consequences to our experimentation. If our plan failed, then so be it. He insisted that we

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had the full support of the Superintendent and the Principal. He encouraged us to take a leap, to try something ambitious. It was truly liberating to be able to try something new without fear.

As a committee, we considered areas in our teaching where we saw high levels of stress and anxiety. We were provided articles, books, and research to stimulate our thinking. We discussed ideas and shared our experiences and wonderings together. And this is where the question of homework comes in: it was the one area that troubled me most. I had just switched from teaching 8th grade math to 7th grade math, and I was surprised by the volume of homework given to students. My 7th grade team was discussing homework, and as a school we were considering Dr. Carol Dweck's research on mindset. As these ideas swirled about in the back of my mind, I began doing *my* homework *on* homework.

Dr. Douglas Reeves, founder of Creative Leadership Solutions, an organization that seeks to improve educational opportunities for students, challenged my assumption that completing homework improves student achievement. He notes in the article [Busting Myths about Grading](#) that the real driver of student learning is the feedback students receive. My current homework structure did not allow opportunities for students to get immediate feedback or respond to and learn from mistakes they made. My focus was on students *completing* homework, not on the *learning of the mathematics* from the homework. Furthermore, Dr. Cathy Vatterott, author and founder of Homework Lady, advocates for connecting homework assignments to student learning on assessments. She goes further to include students as decision-makers; in her article [Making Homework Central to Learning](#) she describes a model where “*students decide* whether completing the task will further their understanding of the topic.” I wondered if the young learners I taught could make their own decisions about what to study.

During my research phase, my math department was studying the work of Stanford University professor Jo Boaler, who says, “The highest achieving kids in the world are the ones who see math as a big web of interconnected ideas, and the lowest achieving students in the world are the kids who take a memorization approach to math.” This is further highlighted in a [Washington Post](#) article by teacher and author Jessica Leahy, who shares her story about her mathematics experience as a child:

“My mathematical education was characterized by drills
memorization and instructions to accept abstract axioms and

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mathematical order of operations as “simply how it’s done,” concepts, my teachers promised, I would understand later. I dutifully followed their directions, memorized the steps and regurgitated on demand, but the understanding I had been promised never materialized. What I got instead was a raging case of math anxiety and the belief that I am not a math person.”

Simply put, this was not the math teacher I wanted to be!

When I got to the point of considering not assigning homework, I had a number of thoughts and concerns. *Would it make a difference for students? What impact would it have on their learning? Would parents question my sanity?* But without the fear of failure, I was ready to take the leap and see if it would have a positive affect on my students.

Here was my plan: I would continue to “post” assignments so students could practice the content learned in class if they so chose. But I would not assign specific problems, and I would not collect or check the assignments.

It was right after Thanksgiving that I introduced my students to “The Homework Experiment.” I told my 7th grade students that I would not *assign* or *check* homework for the next four weeks, through our holiday vacation. (This deadline gave me an exit strategy for this very unproven experiment.) I would, however, continue to *post* assignments, and I told my students they could -- and *should* -- continue to do these assignments for practice. But it was *their* choice. It was important not to make students feel homework is a bad thing. Instead, I wanted them to see that there might be better ways of approaching homework that can be beneficial. Maybe homework could actually be *appealing* to students, instead of a must-do drag.

To help me analyze this experiment, and to make students feel invested in it, I collected some initial impressions of homework in a survey at the beginning of our four weeks. One student reported that she felt pressure to complete the assigned homework, spending hours on it, despite my constant attempts to advise students to stop after 15 minutes. Other students reported that they stressed over the homework. I changed my policy a few years ago by not grading homework (only checking it for completion.) But this did not seem to alleviate stress.

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The initial four week phase of The Homework Experiment went quickly, and yielded immediate findings. I noticed quickly that:

- *I gained instructional time.* Checking homework daily took me five to ten minutes at the start of class, and the conversations with students never centered on the math, just the completion of homework. Now, I was starting class *doing and discussing* math, increasing my instructional time by 25 to 50 minutes each week.
- *Students were less anxious.* Those who didn't complete homework no longer had to hide or make excuses. Other students didn't have worry the night before if they didn't understand the problems. Instead, we started class learning and doing math together – exactly what school is supposed to be about.
- *Students gained more free time.* In our overscheduled world, students need time to be kids, enjoy family time, and pursue their own interests.
- *Achievement was unchanged.* Many teachers hypothesize that, "If I don't assign homework, students will not learn." That most certainly was not the case. I analyzed students' quiz scores, and their collective performance was the same during the experiment as it was previously. That is, students who did well on quizzes continued to do so, and those struggling on quizzes continued to struggle. Additionally, the New York State Math 7 assessment results remained consistent with previous years' results.
- *Students want more homework!* That's right, now I get requests for additional homework from students, proving that they continue to choose to work on assignments to practice their math skills. In fact, some students request different types of problems, and some ask for videos that review the content from class.
- *My time shifted.* Counterintuitively, The Homework Experiment created more work for me! Remember those 25 to 50 minutes of instruction time I gained? Well, I had to plan and fill that time. I was also expanding my homework repertoire by including more variety in the types of work students could practice. By student request, I was organizing my optional homework by topic, including answer keys so students could self-check, and including recommendations for students who needed suggestions.

Simply put, after four weeks of The Homework Experiment, I was seeing success. I was no longer struggling with students on the logistics of homework; instead I was helping them choose what resources are best for them and how to organize their work, and talking to them about the mathematics. I was helping them be more successful.

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When asked to provide feedback about The Homework Experiment student comments included:

“I liked it because I could practice as much as I wanted to without being stressed over too much homework.”

“I feel that selecting my own homework pushed me to work harder and it helped me. It also helped me on the quiz because I really worked on things I didn’t understand. “

“It was nice only to practice something when I needed practice and not practice something others needed when I needed something else.”

Two years later, The Homework Experiment continues, but has evolved. Importantly, I focus on flexibility and choice. Every student has different needs, and – what now appears obvious to me – they need different homework. I see a goal of my teaching, in addition to the math content, as helping students 1) reflect on their learning, 2) make decisions about where they need to grow as learners, and 3) manage their learning environment. Some students need more guidance than others, and this applies to both homework and activities in the classroom. One size does not fit all. What I see now are students *trying* math that they never would have tried before. After I was “liberated” by my Superintendent from the fear of taking a chance and failing, I now liberate my students from the risk of failing on homework.

I am convinced that The Homework Experiment is having a dramatic impact on my students as math learners and as young adults. But also, I have come to realize it has made an impact on me as a teacher.

First, I realize that no student should cry doing homework. Every student can learn math – and it’s my job to be certain I give each student the tools to do so. Second, students should not be doing school work just to please the teacher. It’s time to end students just “doing school.” Instead, I want students to find the joy of math. A 12-year-old should still be in awe of the world around her, still discovering what interests and excites her. Students can make good choices about what to do, when to do it, and when to seek help. If they mess up – and they will! – we, as educators, guide them to learn from the mistakes. Third, I could not have taken this risk alone.

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Teachers need partners; we need others to provide encouragement and honest feedback. Finally, we need environments where taking risks for the benefit of our students – without consequences for failure – are encouraged and *rewarded*. I was free to try something new, and, as a result, I no longer waste my or my students' energy on random assignments.

Are you assigning homework? Don't be afraid to experiment!

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