

Do the Math

Redesigning Homework to Create More Time for Learning

Chris Ellsasser



CHRISTOPHER ELLSASSER teaches English and serves as the Director of Curriculum at Sage Hill School in Newport Beach, CA. His major interests are professional development and curriculum design.

A little before three-o'clock the final bell sounds at Central High School where Maisha, a junior, rushes off to the gym for two hours of varsity volleyball practice. On the shorter days when she does not have a game, she usually manages to catch the 6:30 bus home. On game days her volleyball commitment can last until anywhere between 8 and 9 in the evening, depending on where the game is held. On the days she does manage to catch the 6:30 bus, she is home before 7:30. After she helps with dinner, eats, and does her part of cleaning up the

kitchen, it is well past 8:00. If she is able to resist the temptation to call, text message, or email her friends, she is able to settle into the chair at her desk and open her first book before 9:00. If she has been assigned the research-recommended amount of homework, 10 minutes per grade (Cooper 2007), then a little before 11:00 she can begin to relax and get ready for bed. On these “good” days she falls asleep before midnight, leaving her with about six hours to sleep. Optimally, 15- to 18-year-olds need 9¼ hours of sleep (Carskadon 2002). So by Friday she will have been deprived of at least twelve hours of the sleep she needs to stay healthy and alert.

Maisha lives in a middle class neighborhood with tree-lined streets, smooth sidewalks, and landscaped front yards. She lives in a freshly painted house with a two-car garage and two loving parents, one of whom works part-time to be at home when Maisha’s two younger sisters arrive home from school. Most nights the entire family sits in the dining room and eats together. She has her own room with a desk, a computer, and window seat strewn with stuffed animals where she likes to read. She attends a school with small classes and teachers who stay year after year.

Maisha’s story is as good as it gets, and yet even when we imagine her most ideal day, the numbers tell us she is putting her health at risk. Unlike the ideal day described above, most of her days are extended by the need to cram for a test, finish a paper, or attend to any number of personal- and/or family- related commitments. Maisha’s days regularly stretch out until 2 or 3 in the morning. She and her peers pull “all-nighters” a few times a month. This schedule leaves her sleep deprived, anxious, and feeling behind in everything.

Maisha's less affluent peers are at even greater risk. Their commitments beyond the six hours they spend in class are not voluntary. They have jobs to earn income needed to cover rent and put food on the table. They care for younger siblings in order to help working parent(s) who are busy putting in 10 to 12 hours each day commuting and working. Even when they can manage to find free time, they do not have a safe quiet place to learn or simply relax. Their world is a chaotic roller coaster of adult-like responsibilities, random schedules, poor nutrition, and the anxiety that comes from a feeling of hopelessness.

Some argue Maisha and her peers must be prepared for the way things are in the adult world. They claim we all compete with time. Our freeways are filled with breakfast-eating commuters. Cell-phone-talking, PDA-checking, e-mail-responding multi-taskers fill coffee shops. We are a nation consumed by busyness. Work is a 24/7 phenomenon thanks to inventions that promised us freedom. Our relationship to time twists ever tighter with each new responsibility. While it is true that the current recommendation of 10 minutes of homework per grade (Cooper 2007) — 110 minutes for an eleventh grader — may prepare privileged eleventh graders like Maisha for modern life, such a position assumes schooling is about preserving the status-quo. At its most insidious level, homework is assuring that Maisha and her under-resourced peers remain worlds apart simply because of the differences between the situations into which they happened to be born.

Homework at the secondary level is often assigned with no consideration for students' lives outside the classroom. High school students are under extreme pressure. Whether students attend an under-resourced school or an elite private school, our unwavering commitment to the Puritan ethic of hard work and our blind

faith in progress continue to expose all students to an assembly-line approach to education that reduces learning to little more than a to-do list.

Nobody ever developed a love of literature or history by “reading to page thirty for Monday.” Nobody ever developed a love of math or science by “answering the questions at the end of the chapter.” All students struggle to play the homework game, yet the education pundits continue to be divided. Progressives call for the practice to be abolished (Buell 2004; Kohn 2006; Kralovec & Buell 2000). Conservatives defend the practice by claiming it “can foster positive character traits such as independence and responsibility” (U.S. Department of Education 2003). While assigning homework and administering quizzes is an efficient and widely accepted means of leaving no child behind, it is also a practice which finds little if any credible support from the research (Kohn 2006). Teachers who find themselves caught between school policies and the real world must navigate the paradoxical landscape of the classroom where theory encounters a ticking clock.

For high school students much of the wonder and imagination they demonstrated as younger students is replaced by a more “serious” and less authentic approach to learning. Lists of books are prescribed. Hours of homework are assigned. Quizzes are taken. Grades are recorded. Learning becomes busywork. Bluffing, skimming, and copying become necessary methods of coping with the workload (Sizer & Sizer 2000) assigned by teachers who have never taken the time to sit down and “do the math” to determine how much time their students actually have outside of class or how much quality learning time is actually spent in class.

A Better Approach

There must be a mindful (Langer 1997) alternative to blindly following the recommended dosage of ten minutes of homework a night per grade level. Discussions of homework cover a wide range of topics, but we need to consider how to use homework in a way that ties into the school day and permits more time for comfortable learning.

Consider this snapshot of first period in a typical high school class. The first bell rings at 7:45; the second bell rings at 7:50; and the bell to begin learning rings at 7:55. The tenth graders in Mr. C's classroom settle into their seats by 8:00. Mr. C finishes walking up and down the aisles checking off the homework in his green grade book by 8:10. Once directions for the day's assignment and an example are presented at the board, students are instructed to begin doing math. It is 8:20. Nearly half an hour has passed without students learning content. Just under 20 minutes later Mr. C calls for everyone's attention so he can assign the homework. The bell to end class rings at 8:50. Mr. C and his students have 55 minutes a day to learn math. Thanks to the "busyness" associated with homework, when things go smoothly and there are no schooling interruptions like announcements over the P.A. system, Mr. C's students spend just over 36% of their time actually doing math.

What if teachers assigned homework that is determined by how much time students actually have in and out of class to learn? What if teachers and students collaborated to design homework with the aim of improving the quality of the time they spend in class? What if teachers engaged their students in discussions around learning as a lifestyle? Such a collaborative and deliberative approach to

homework could help us move away from a banking system (Freire 1997) of education which treats students as empty vessels to be filled with content. What if we joined with students to design homework that could actually add quality and quantity to the time spent learning in class? Surely the average 6.7 hours (U.S. Department of Education 2002) students spend in school each day is enough time spent learning academic knowledge and skills for one day.

There are those who call upon schools to ban homework (Buell 2004; Kralovec & Buell 2000). They describe the way homework harms family life and leaves students with no time to pursue non-school interests. While these critics make valid points, they can lead teachers to feel they have permission to dismiss homework completely, thus pitting them against their administrators who must enforce district level policies shaped by the popular belief in the necessity of homework. Such either/or thinking is too radical. Few would disagree that busy work should not be assigned, that sleep deprivation should be avoided, or that quality family time is important. But before condemning the tradition of homework out of hand, we should consider the ways homework might help us address the one thing teachers and students ask for consistently: more time.

A new approach to homework must avoid distracting myths. A major myth is that the problem is teenage procrastination. Today's teenagers are depicted as text-messaging, cell-phone-talking, instant-messaging machines. The distorted lens of memory frames a picture of a generation of students who just do not have the discipline of earlier generations. But when we look out how adolescents spend their time, a very different picture comes into focus.

While much has been written already about the way homework impacts life beyond the classroom (Kralovek & Buell 2000; Buell 2004; Kohn 2006; Bennett & Kalish 2006), there are some pretty basic numbers to crunch regardless of where you fall in terms of your opinion about the value of homework. Time is a finite resource and something which cannot be changed, so it makes sense to begin by establishing exactly how time works for students.

Developing a thoughtful approach to homework can begin by doing the math on the time students spend each day. We can begin our calculations by looking at how much time students need to be healthy. Based on recommendations, students should spend about 12 hours a day maintaining their basic health (nine hours a day sleeping; two hours sleeping; and an hour exercising).

The next consideration is how much time is actually spent engaged in structured activities. Six hours is spent in school; two hours in after-school activities (sports, art, work); an hour in commuting — for a total of nine hours.

Once we have accounted for the 21 hours needed to maintain health and engage in structured activities, students have three hours of discretionary time available on an average day. Of course that assumes the day is without unexpected glitches or distractions. Factor in a conservative 30 minutes twice a day for hygiene/waking up/winding down and you are down to two hours unaccounted for each day.

Given the overwhelming research on the importance of reading, we would be inclined to set aside one hour for reading. Now we are down to one hour a day for school-age children to play, relax, or just spend down time with friends and

family. Regardless of the recommended 10 minutes of homework per day per grade (90 to 120 minutes for high school students), even if we eliminate “personal time,” today’s high school students only have one hour each day to spend doing homework. So now the question becomes what, if anything, can be done in one hour to enhance the quality of their education.

In terms of the quantity of learning experienced by students, rather than adding time after school, we could think of ways to add time during school. The business associated with homework consumes a considerable amount of time in class. Homework is typically assigned, collected, and reviewed during class. While it might be argued that reviewing or correcting homework is quality learning time, it cannot be argued that assigning or collecting homework is time spent learning. Even if assigning and collecting homework only takes five minutes per class session (classroom observations suggest the amount of time is closer to seven minutes), based on an average of five classes per day that adds up to 25 minutes a day.

When we look at the way time is spent in class, it also becomes apparent that considerable time is spent repeating directions. Consider a classroom in which the teachers spends 11 minutes delivering and repeating directions. Those 11 minutes account for nearly 25% of the time left in class after subtracting five minutes for the time we allotted for the “busyness” of checking, collecting, and distributing homework. In this scenario over 30% of the “learning time” students have in class is spent on activities during which students are not engaged with the content. If we add to this the seven minutes spent in a class dealing with school-related tasks like taking

attendance and making announcements, then we reach a point where during a 55-minute class almost 42% of the time is spent not learning. Clearly there is a problem with how time is used in classrooms, the question is how educators might redesign homework so the one hour students have to spend on it translates into more time spent learning in class?

Intentional Attendance: An Alternative Design for Homework

John Dewey's (1938, 67) belief in the "importance of the participation of the learner in the formation of the purposes which direct his activities in the learning process" offers us a frame for rethinking our approach to homework. And for Dewey, even student participation is not enough; what is called for is intelligent activity, which gives direction to what would otherwise be the blind pursuit of desire. Consider how this phenomenon of doing without thinking plays out in classrooms where students do activities with little or no understanding of why. While students may appear to be "on task," they are merely doing as they have been told in order to earn some external reward whether it be a grade, praise from the teacher, or simply avoiding punishment.

Consider the way students enter a classroom. Even when they manage to arrive on time with the necessary materials, they do so with the intent of following school rules, not with any type of intellectually minded intent. This lack of intent manifests itself in the way they spend their time prior to receiving direction from the teacher. Students who enter a classroom without a plan are simply doing time. No wonder teachers waste so much time repeating directions. Students arrive as blank slates with no other agenda, under the best circumstances, than

to do as they are told. Following directions is not learning. One can argue students are lost in their classes. They are like passengers who have boarded a bus with no understanding of where that bus is going or why they have climbed on board other than because the bus arrived and opened its doors. Like travelers without expectations, students struggle to pay attention and make any meaning out of their experiences.

In order for students to become engaged and take some ownership of what they do in classrooms, they need time to reflect and make sense of what they will be doing during that time. This need for reflection prior to action suggests the need for students to be aware of the purpose of class well in advance of the class.

This call for student ownership and reflection suggests a way students might use the hour a day they have for homework. Rather than using homework to reinforce learning and extend classroom learning, we can think of homework as a time to formulate learning intent. Such a shift would call for students to give some thought to what they will be doing in class so they walk into the classroom with a plan.

When homework is designed to ensure students are prepared to learn during class, and students are expected to arrive to class ready to engage with content from bell to bell, then the need to add on more time at home decreases. Such a practice along with steps taken to remove school-related business from class time could nearly double the amount of time students spend learning in class. This would remove the need for students to spend so much time learning outside of class. If the classroom minutes currently being spent on clerical and school

business-related tasks were replaced by time spent learning, then roughly two hours of recommended homework could be replaced by sleep, family time, recreation, or down time, which might enable students to arrive to class well rested with greater knowledge and skills to contribute in class.

What would a 5- to 10-minute homework assignment designed to develop learning intent look like? With 5 to 10 minutes assigned per class, students in a traditional schedule would have between 20 and 50 minutes of homework per night. Given the amount of time students report having to spend on homework, an average of 45 minutes per night, such a homework load seems manageable.

Small chunks of time doing homework per class does not allow for any learning that requires critical thinking. Five- to ten-minute assignments would have to be more procedural in nature. What if homework took the form of directions aimed at helping student arrive to class ready to participate in a learning activity? If class time were designed for more active learning by students, then homework could mean reading directions to become familiar with what and how they will be expected to learn during class.

What if students spent all of the available time learning during a 55-minute class? Over the course of one school year, given that students currently spend less than half their time doing a subject in class, that adds up to 375 hours a year which, based on the roughly five hours students spend in class each school day, is the equivalent of 75 extra days of school per year. That is the equivalent of 2½ more years of learning over the span of a K-12 education.

This approach to homework could free teachers from giving directions so they could provide students with more formative feedback.

References

- Bennett, S., and N. Kalish. 2006. *The case against homework: How homework is hurting our children and what we can do about it*. New York: Crown.
- Buell, J. 2004. *Closing the book on homework: Enhancing public education and freeing family time*. Philadelphia: Temple University Press.
- Carskadon, M. 2002. *Adolescent sleep patterns: Biological, social, and psychological influences*. New York: Cambridge University Press.
- Cooper, H. 2007. *The battle over homework: Common ground for administrators, teachers, and parents*. Thousand Oaks, CA: Corwin Press.
- Dewey, J. 1938. *Experience and education*. New York: Macmillan.
- Kohn, A. 2006. *The homework myth: Why our kids get too much of a bad thing*. Cambridge, MA: Da Capo Press.
- Kralovec, E., and J. Buell. 2000. *The end of homework: How homework disrupts families, overburdens children, and limits learning*. Boston: Beacon Press.
- Langer, E. 1997. *The power of mindful learning*. New York: Perseus Books.
- Sizer, T., and N. Sizer. 2000. *The students are watching: School and the moral contract*. Boston: Beacon Press.
- U.S. Department of Education, National Center for Education Statistics. 2005. *The condition of education 2005* (NCES 2005-094).
- U.S. Department of Education, Office of Intergovernmental and Interagency Affairs, Educational Partnerships and Family Involvement Unit. 2003, May. *Homework tips for parents*. Washington, DC: U.S. Government Printing Office.