

all things PLC

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SEEING
DIFFERENTLY





BUSTING MYTHS ABOUT GRADING

By Douglas Reeves

MythBusters is the longest running television series in the history of the Discovery Channel. During its 14 years on the air, the show, featuring Adam Savage and Jamie Hyneman, have conducted 2,950 experiments, explored 1,050 myths, and created 900 explosions (Friedlander, 2015). From ancient legends to *Star Wars*, Savage and Hyneman break down claims into testable hypotheses, design experiments, and then let the results of the experiments—often dramatic and explosive—speak for themselves. The questions they ask range from the absurd (“Can eating pop rocks and soda cause your stomach to explode?”) to serious inquiries that challenge the audience to gain a deeper understanding of physics, chemistry, and biology. But each of the almost 3,000 experiments follows the scientific method—identifying a hypothesis and testing the hypothesis with objective observation. The more emotional and politically volatile the subject, the more important it is to separate myth from fact. The world of education would benefit from a *MythBusters* approach to one of its most challenging subjects: grading.

This article explores five prevailing myths, and like the legends and fanciful claims exploded by Savage and Hyneman, we will consider each one against the evidence. The first myth is that grades motivate students. This is seductive and appealing because so many of us, including educators and admin-

istrators, found grades motivating when we were students, and we wish very much that our personal experiences could be applied to the universe. This expectation conforms to the principles of behavioral psychology based on reinforcement and punishment—the practices that lead rats to find their way out of a maze, pigeons to play the piano, and many humans to do algebra. The second is that grading homework and practice work improves student achievement. Although effective practice is clearly related to student performance, there is a chasm between the characteristics of effective practice and typical homework. The third myth is that grades accurately predict future performance. This myth, like many, has a grain of truth. Grades are, compared to many other measures such as standardized test scores, relatively better predictors of future student performance. That is, however, damning with faint praise, somewhat like claiming that grades are better predictors of human performance than the reading of entrails. Fourth is the myth that punishment—particularly Fs, zeroes, and other punitive consequences for academic and behavior shortcomings—deters unwanted student behavior. The fifth and final myth is that grading practices are a matter of personal taste and professional judgment and therefore not subject to the collaborative work of colleagues within a school and educational system.

Myth #1: Grades Motivate Students

There is a simple way to test the hypothesis that grades motivate students. If rewards in the form of good grades and punishment in the form of bad grades motivate students, then teachers should consistently report that—because of decades of using these rewards and punishments—homework completion, classroom engagement, and overall diligence is at an all-time high and late work, inattention, and overall slovenliness among students is at an all-time low. Perhaps that's true for some readers, but teachers routinely tell me that their multidecade experiment in grading as a motivational practice is not working. Students are not completing homework in a more accurate and timely manner than was the case a decade ago, nor are they more organized and attentive.

Consider the frustrated homeowner who, every year for 30 consecutive years, has patched the roof, and yet for 30 years, the rain continued to pour through the rafters. The frustrated homeowner would not insist that the roof repair was working or defend 30 years of faulty patches with the conviction that the roof sealant should have been effective. At some point, we allow the evidence to force us to reconsider our conclusions.

Myth #2: Grading Homework and Practice Improves Student Achievement

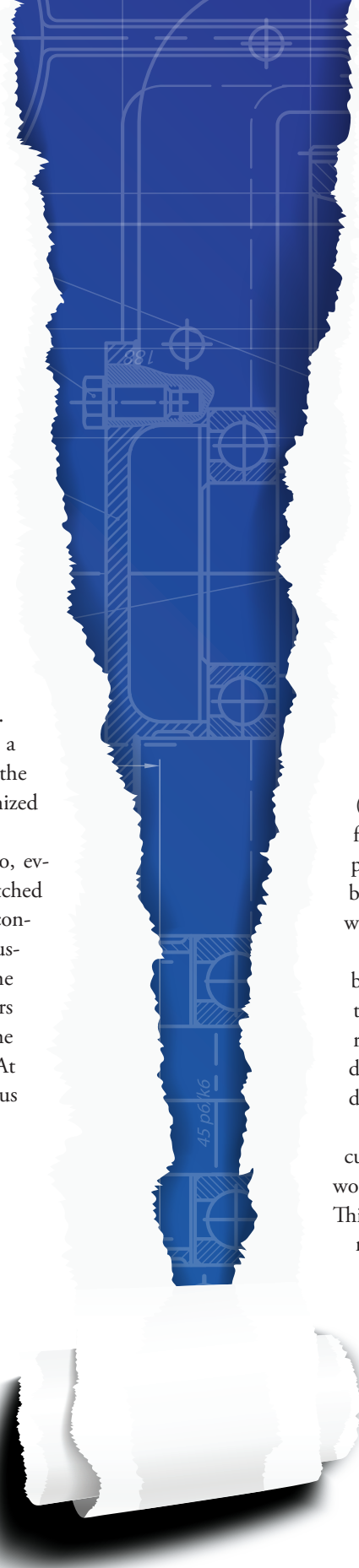
Practice is an essential part of learning. Think of students who have made great leaps in performance, particularly in music, athletics, or literal equations. Only in the last instance do they labor alone to understand where Mary and Brooks meet, one having started

in Kansas City, the other in Los Angeles, each traveling at different rates and departing at different times. Practice makes, in this condition, perfect boredom. But in the cases of music and athletics, where practice can lead to significant and observable improvement, students are doing something quite different.

Ericsson and Pool (2016) define purposeful practice as “the gold standard” (p. 84) that leads to the highest levels of expert performance. Contrast purposeful practice to most homework. Effective practice takes place “outside one’s comfort zone and requires a student to constantly try things that are just beyond his or her current abilities” (p. 89). Thus, the perfectly done homework assignment prized by teachers (and the parents who completed the work) falls short of the mark, just as a basketball practice in which a player stood under the basket and hit 100 percent of the shots was wasted time.

Moreover, effective practice “involves feedback and modification of efforts in response to that feedback” (p. 89). This almost always requires a coach or teacher who is present—difficult enough in a classroom of 30 students, impossible in 30 bedrooms.

Finally, gold standard practice involves “focusing on particular aspects of . . . skills and working to improve them specifically” (p. 100). This requires differentiated homework assignments, something that music teachers and athletic coaches do routinely but that is generally absent from the academic classroom. What happens when we grade homework and practice? No one ever ventures outside their comfort zone. Why risk Chopin’s *Fantasia-Impromptu* when you can play the C-major scale perfectly? No one gets feedback that is meaningful, because the only feedback that matters is that the work was finished on time and





correctly. No one gets feedback to improve specific skills because everyone is doing the same dreary and unchallenging work.

Before you decide to grade homework and practice, find the basketball coach who sends students home with the ball in their backpack and instructions to “complete the odd-numbered problems 1 through 30.” Punishing students on their final grades for the mistakes they made in practice is as logical as parents refusing to applaud after the end of a school concert because of mistakes students made during rehearsals early in the year.

Myth #3: Grades Predict Future Performance

In her landmark article “A Century of Grading Research,” Brookhart and her colleagues (2016) examine the relationship between student grades and future performance. There is some evidence that low grades predict bad outcomes, such as dropping out of school. But there is hardly any evidence that grades predict good outcomes, including success in college and the world of work.

Most pernicious in the relationship between grades and future results is the “good girl effect” (Reeves, 2016) in which


female students are disproportionately rewarded for quiet compliance, behavior that may lead to good grades but does not necessarily correlate to success after secondary school. Even where grades are related to future success—very high-performing students are more likely to be accepted to elite colleges, which, in turn, open doors to greater job opportunities—we should interpret the data with caution. While it is possible that intelligence and work ethic forge the path from kindergarten to Ivy League to Wall Street, it is also possible that zip code, tutors, and connections—all artifacts of family socioeconomic status—are the underlying causes.

Myth #4: Punishment Deters Unwanted Behavior

There was a time not long ago that corporal punishment—beating students with sticks, rods, paddles, and hands—was an educational norm, based on the belief that violence would modify the behavior of the unruly. These beliefs turned out to be accurate but not in the way that the adherents of corporal punishment intended. An analysis of more than 80 studies on the matter concludes that corporal punishment does indeed modify student behavior—leading to aggression and antisocial behavior (Gershoff, 2002). Nevertheless, more than 80 percent of parents believe that corporal punishment should be legal, and almost half believe that it is effective (Samakow, 2014).

While most teachers and school administrators today recoil at the idea of corporal punishment, its academic equivalent—using grades as punishment—remains alive and well. Guskey (2015) provides consistent and overwhelming evidence that grading as punishment is ineffective. In fact, when teachers think that they are being punitive, they often provide unintention-





tional rewards to students, reinforcing the very behavior that teachers seek to eliminate. Consider the example of the “no late work” policy. When students miss an assignment, they are rarely overwhelmed with grief and remorse; rather, they gleefully tell their parents, “Now I don’t have to do it—the teacher doesn’t accept late work!” A far more effective consequence for assignments that are late, missing, or poorly done is the consistent requirement that students get the work done. Sometimes that will be at home, but more often it will be during the school day, when the most meaningful consequence a student can experience—restrictions on time and the possibility to earn freedom on how to use time—can be used to get work done, improve personal organization, and reduce stress on teachers.

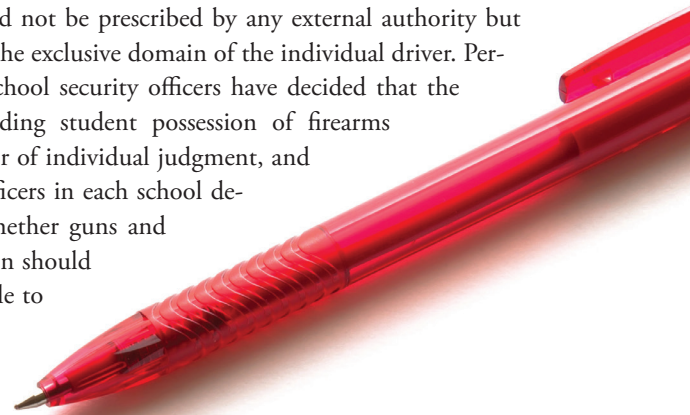
Perhaps the most counterproductive punishment is the use of the average to calculate the final grade, so that the failures of January lead to a spiral of doom in March and April. Rather than using the last two months of the semester to build momentum and finish strong, many students know that, because of a punitive grading system, they are doomed to failure well before the semester is over. There is nothing left for them to do except cut class, be disruptive, or ultimately, quit school. The next year, they repeat the same class, a year older, more cynical, more frustrated, and angrier—and those descriptions apply to the teachers as well as the students.

Myth #5: Grading Is a Personal Preference

The synthesis of research by Brookhart and colleagues (2016) reveals that grading practices and policies are wildly inconsistent, based on the idiosyncratic belief system of each teacher. The practical effect of this bone-deep belief that grading policy is a matter of personal preference was revealed in a series

of experiments involving more than 10,000 teachers (Reeves, 2016). First, the teachers were asked to explain the differences between students who earned grades of A and B and those who earned grades of D and F. The responses are consistent: intelligence, parent support, attendance, prior knowledge, personal organization, ability to follow directions, and so on. Then the teachers were given a set of grades for a semester and asked to calculate the final scores. Note that the students who earned these marks had the same intelligence, same parent support, same attendance, same prior knowledge, same personal organization, same ability to follow directions, and so on—because it was the very same student. Nevertheless, the consistent results of this experiment show that the final grades awarded by teachers ranged from A to F. The difference in the final grade, it turns out, had nothing to do with the individual student and everything to do with the idiosyncratic grading policies of the teacher.

Imagine that your new food services manager announces that cafeteria hygiene is a matter of personal preference, and any intrusions by the health department will be an infringement on the professional independence and judgment of the manager. Imagine that school bus drivers announce that safety rules should not be prescribed by any external authority but should be the exclusive domain of the individual driver. Perhaps the school security officers have decided that the rules regarding student possession of firearms are a matter of individual judgment, and security officers in each school determine whether guns and ammunition should be accessible to students in their



lockers. I use these examples because they involve student safety, something on which I hope that we can all agree. I would argue that grading policies—which have a strong influence on student dropout rates and a lifetime of consequences—are also a safety issue.

Moreover, grading policies are matters of equity, with disparate impacts on students, particularly based on ethnicity and gender. Boys and minority males receive lower grades just as they are more likely to be more severely disciplined for an infraction. Girls receive higher grades for the same level of proficiency (Reeves, 2016). If racial and gender disparities of this sort took place in any other area of public life, then the consequences would be swift and sure. When these disparities take place in the context of grading, then the personal preferences of those making grading policies are somehow elevated over simple requirements for equity. Where are the MythBusters with their relentless willingness to challenge prevailing but wrong-headed opinions when we need them?

Why Are Myths So Persistent?

Francis Bacon wrote about the scientific method 500 years before *MythBusters* applied his approach in the 21st century. Why does it take half a millennium to compare claims to evidence? First, myths persist because they are easy. A chariot carrying the sun across the sky is easier to understand than the elliptical orbits of planets around the sun. Storks carrying babies is easier to conceptualize than human gestation. Myths have an infantile appeal, like the baby playing peek-a-boo: “If I see it, it must be true; if I don’t see it, it doesn’t exist.” Second, myths absolve us of responsibility. I would rather blame Bacchus, the god of wine, for overindulging in alcohol than acknowledge my own responsibility. A better ex-

ample from ancient mythology, however, is Sisyphus, who devoted his life to pushing the same rock up the same hill, only to repeat the exercise the following day into eternity.

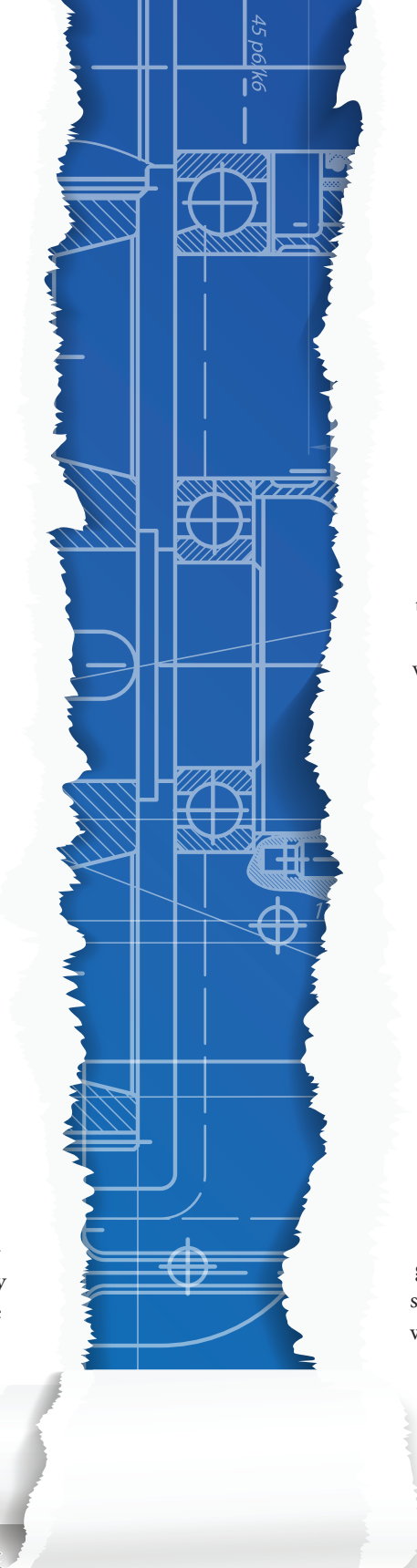
Beyond Mythology

We are not bound by the past, whether that past is decades of fact-free debates about grading policies or millennia of mythology. We can and must challenge the myths of grading with the following three-step process.

First, we replace “I believe” statements with claims about hypotheses. Rather than, “I believe that grading as punishment is effective” or “I believe that if I don’t grade homework, student performance will decline,” let’s rephrase the contentions as hypotheses—testable *if/then* statements. “If I penalize students for late, incomplete, and absent homework, then student achievement will improve.” We can then compare two classes with students of similar backgrounds, one of which has punitive policies and the other of which engages in in-class gold standard practice, and assess the degree of student success at the end of each semester.

Second, we can stop the futile practice of seeking buy-in for changes in grading practices. This is by far the single most frequent request I receive from school administrators, as if a keynote, workshop, or book study will change decades of deeply held beliefs. The change model must be changed fundamentally from “first buy-in, then change” to “first express hypotheses, then test hypotheses, then observe results, then apply the results (however reluctantly), and then change.”

We do not ask for buy-in on matters of health and safety. We present the evidence, implement the change, and then, over the course of time, the professionals involved in making the change observe the differences in results and embrace them. Atul Gawande (2011) found this process to be the case with surgeons. The evidence on life-saving checklists did not change surgical prac-



tices. After all, the evidence applied to other hospitals with different patient populations and was not applicable, particularly given the expertise of the surgeons in our hospital. Therefore, the changes requiring checklists from the emergency room to the operating suite were implemented not because there was buy-in from the surgeons but because the hospital decided to do less of what was killing patients and more of what kept them alive. This situation is no less true with professional educators and administrators. Behavior precedes belief. Practices, however reluctantly implemented, are essential to develop local evidence of effective change. This flies in the face of every prevailing change model that demands endless series of workshops and futile efforts at building consensus; the only change model that works is reversing the traditional sequence of “external evidence, buy-in, implementation” with “implementation, internal evidence, buy-in.”

Third and most important, we document and celebrate local results. When we explode grading myths and establish constructive policies, the results are immediate. Reductions

in failures, improvements in discipline, high levels of student engagement, and dramatic gains in teacher morale can be observed in months, not years. The ridiculous futility of five-year plans is replaced with an impact that teachers can see in six to eight weeks. Within a single semester, reduced failure rates lead to fewer repeaters, fewer dropouts, and more opportunities to teach elective courses that inspire students and engage teachers.

Reframing the Myths

In most versions of the Sisyphian myth, the unfortunate man pushes the rock up the hill for all eternity. But in Ovid's telling, there is a moment when Sisyphus stops his labors, sits on the rock, and thinks. *MythBusters* often challenges prevailing but wrong-headed ideas with an explosion. My aims are more modest, asking that you consider the evidence and, before pushing the rock up the hill yet another day, think of a better vision of the future for students, teachers, and the world. ■

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