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## Solving the problem of zeros in grading

06.25.13 | Learning on the EDge | 3 Comments

By Thomas R. Guskey

Much ado has been made in recent years about the problem of zeros in grading. Some districts have responded by stipulating that the lowest grade teachers can assign students is 50% rather than a zero. Districts that enact such policies have no intention of giving students credit when no credit was deserved. A 50% is still a failing grade. They do so to eliminate the devastating effects of a zero in a percentage grading system.

To recover from a single zero percentage grade, a student must achieve a minimum of nine perfect papers. Attaining that level of performance would challenge the most talented students and may be impossible for most others, especially those who struggle in learning. A single zero can doom a student to failure, regardless of what dedicated effort or level of performance might follow.

Certainly students need to know that there are consequences for what they do and do not do in school. Malingering should be penalized. But should the penalty be so severe that students have no chance of restitution or recovery regarding their grade?

Ironically, the true culprit in this matter is not minimum grades or the zero — it's the percentage grading system. There is nothing sacred about percentages in grading. We use them today because we use electronic grading programs developed by software engineers with a fondness for a 0–100 scale.

*Grading should communicate information about student learning in school, not punish students in ways that make recovery from transgressions*

In a percentage grading system, to move from a B to an **A** is *impossible*. A generally requires improvement of 10%, say from 80% to 90%. But to move from a zero to a minimum passing grade requires six or seven times that improvement, usually from zero to 60% or 70%. Two-thirds of the marks in a percentage grading system denote levels of failure. Only one-third of the marks are considered passing.

The solution to this dilemma is simply to do away with percentages in grading and use integers instead: 0-4. Many schools use integers already in calculating grade point averages (GPAs). Colleges and universities throughout the U.S. use the integer grading system as well. If finer gradations are needed, tenths, hundredths, or thousandths can be included.

In an integer system, teachers can keep the zero and assign it to students when such a grade is deserved. Improving from a zero to a passing grade for those students means moving from zero to one, not from zero to 60% or 70%. It makes recovery possible. It also helps make grades more accurate reflections of what students have learned and accomplished in school.

Assigning fair and meaningful grades to students will continue to challenge educators at all levels. It requires thoughtful and informed professional judgment by teachers, along with an abiding concern for what best serves the interests of students and their families.

The purpose of grading should be to communicate information about student learning in school, not to punish students in ways that make recovery from transgressions impossible.

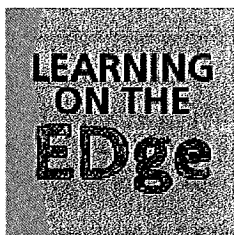
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Tags: grading, innovative teaching

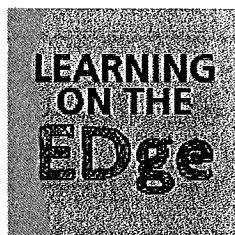
### About Thomas R. Guskey

THOMAS R. GUSKEY is a professor of educational psychology at the University of Kentucky, Lexington, Ky. His last *Kappan* article, coauthored with Gerry M. Swan and Lee Ann Jung, was "Grades that mean something: Kentucky develops standards-based report cards," *Phi Delta Kappan*, October 2011, (Vol. 93, No. 2), pp. 52-57.

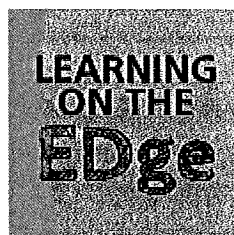
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## Comments on *Solving the problem of zeros in grading*

*Dr. Khym Goslin* says:

July 17, 2013 at 2:06 am - Reply

Dr. Guskey has once again revealed the errors made when good meaning folks, without the necessary background knowledge, create policies. My own experience within the post-secondary environment showed me how faculty unwittingly resorted to multiple grading scales within courses, banned zeros, and somehow believed that their assessment results were fair. At one institution the expectation was to use 5 point rubrics for feedback, convert outcomes to percentages for use on the LMS, then interpret the crunched numbers into letter grades for transcripts. Leaders need to help faculty to adopt assessment protocols that can withstand the test of integrity.

*a parent and a teacher* says:

October 15, 2013 at 1:38 pm - Reply

I read your article with fascination. I am a former teacher who used grading programs when they first came out back in the 90's. Because of my math background (even though I was an English teacher), I intuited some of the flaws you mention here when using percentages for my classes. These issues were compounded when a course's grades were broken down and weighted by percentages as well (i.e. homework counts 10%, classroom work counts 30%, tests count 30% etc.). If I wasn't careful with how I scheduled tests, for example, one grading period might include 3 tests, each of which would count as 10% of the student's grade for that period, while another grading period might only have one test, counting 30% of the overall grade — as much as a final exam, even though my intention was not for it to 'count' any more than the other tests. In frustration, I ultimately abandoned the weighted percentages, and a percentage system of grading all together, by using just points for each assignment or test that reflected the difficulty and effort (I used 'big points' too after hearing research about its motivating effect). Thus, a five-page paper might be worth 300 points and while a class assignment might be worth 50. Once I made this change, I felt a lot greater control over the effect the grades I assigned had on students' overall grades. The grading program showed the percentile equivalent of points received, so students knew how they did on their work (i.e. receiving a 40 out of 50 was 80%), and I set up the program so all grades were sorted by type (homework, tests, classwork, etc.), but that was simply for ease of understanding. Grades were determined by total points received.

I like the integer system you mentioned to mitigate the profound impact of zeroes. If I were teaching today, I would likely use something like that as well.

As a parent of a prep school student I notice that, at times, the non-math teachers don't always understand the underlying implications of "the percentage problem" (when it comes to both zeroes and weighted grades) and even at times, the implications of using the grading program itself. I think it can be a case in which technology is driving the situation rather than being used wisely as a tool. I hope to find a way to encourage dialogue among the teachers and the administration of the potential pitfalls as well as remedies so that, as you point out, grades can be used in the manner intended.

*Wiggins question #7 | Overthinking my teaching* says:

May 3, 2014 at 6:00 pm Reply

[...] the mean makes zeroes a problem in grading. Wildly divergent values (such as a zero in a

gradebook) will greatly affect the mean. [...]

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