The Innovative Instructor

Pedagogy

August 2018

Meaningful Grades with Specifications Grading

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The issue

What do course grades mean? What do they actually measure? In this age of grade inflation and widely varying standards, both teachers and students struggle to define what an A, B, or C in a course really means in terms of student learning and achievement. At the same time, many teachers are overwhelmed by their grading load and are looking for ways to reduce and simplify it without trivializing their course assignments.

Why does it matter

When course grades are perceived by students as a largely arbitrary measure of a hodge-podge of attendance, participation, tests, and assignment scores, they tend to focus more on earning points than on the quality and quantity of what they are learning. Grades are seen as subjective and negotiable rather than a clear-cut measurement by a predefined standard. Using grading rubrics can help establish clearer standards for scoring and make grading easier, but they do not preclude students from wheedling teachers for extra points to try to bump that A- up to an A. To motivate students to focus on learning instead of point values, a different grading system is needed that directly links course grades to achievement of learning goals in a way that is unequivocal.

Faculty solution

Specifications grading, or "specs grading" for short, is just such a system. Although there are many variations on the ways in which the method can be implemented, the fundamentals are as follows.

- Course learning goals are clearly spelled out.
- Achievement of the learning goals is measured by specific assignments.
- Assignments are graded on a pass/fail or satisfactory/unsatisfactory basis depending on whether or not the student demonstrates mastery of the learning goal(s) being measured. For rigor, the pass threshold should be the equivalent of a B or better under the regular grading system.
- Students are given multiple opportunities to achieve each learning goal, either by re-doing failed assignments or by attempting different assignments linked to a particular goal.
- Course grades are determined by how many learning goals a student masters during the term, as measured by passing a particular bundle of assignments. More learning equals a higher grade.

Assignments can be short and simple or long and complex, but in all cases the specifications for achieving a passing grade must be clear. Commonly, a rubric is used that spells out exactly what a student must demonstrate or accomplish and the quality standards that must be met satisfactorily in order to pass. While the prospect of potentially failing major assignments can be daunting, most specs grading courses include some sort of system for retakes, such as providing a number of tokens to each student at the beginning of the term that allow them to re-do an assignment or turn it in late without penalty.

The up-side of this approach for the student is that failing an assignment does not count against their grade; it simply does not count. There is no course average to keep track of, just a count of the number of passed assignments as they work toward completing

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the grade bundle for their desired course grade. With multiple opportunities to demonstrate mastery of the learning goals, they can focus on learning from their mistakes and achieving the goals set before them.

From the teacher's perspective, grading is greatly simplified because a student's work either meets the stated specifications or it does not. No more agonizing over how many points to take off for a particular error. As a general rule, the quality of student work is higher because students know that they will receive no credit for work that does not measure up to standards. The specs grading method thus simultaneously increases the rigor of a course while saving faculty time.

Results

In the spring 2018 term, I taught an introduction to geographic information systems (GIS) course using specs grading. The course is a mix of lecture material and hands-on computer lab work that teaches students to use a GIS software package proficiently to design maps and analyze spatial data.

In redesigning the course for specs grading, I developed a set of eight learning goals ranging from basic to high-level and linked each graded assignment, project, lab test, and lecture exam to a particular goal. I then determined which learning goals had to be achieved to earn a C, B, or A in the course, with an A requiring mastery of all eight. Earning a higher grade thus involved completing more graded work successfully.

All student work was graded on a pass/fail basis except for the two lecture exams, which were graded on a regular percentage point scale. To incorporate these scores into the specs grading scheme, I required a 90% or better average on the two exams for the A grade bundle, an 80% average or better for the B bundle, etc.

Course Grade	**A**	**B**	**C**
Assignments (total #)	*# Completed Satisfactorily*		
Exams (average of 2)	≥90%	≥80%	≥70%
Lab Tests (2)	2	2	1
Lab Projects (3)	3	2	1
Lab Tutorials (18)	18 (Ch. 3-20)	14 (Ch. 3-10, 15-20)	10 (Ch. 3-10, 15-16)
Map Critiques (2)	2	1	1
Reading Responses (3)	3	2	1
GIS Articles (3)	3	2	1
Material Responses (14)	11	9	7
Learning Objectives Achieved	#1-8	#1-6, 8	#1-4, 8

Summary of final grade rubric

Most assignments did not have set due dates, but the two exam dates were fixed and several deadlines for completion of the minimum number of assignments were set throughout the term. I provided a detailed pacing guide for each grade bundle to assist students in planning their weekly workload. This approach allowed students to develop lab software skills at their own pace, while the class moved through the lecture material at a steady tempo. I did not anticipate the extent to which some students would procrastinate on assignments like lab tests, and in future, I plan to include more fixed due dates to avoid this problem.

Benefits

I was extremely pleased with the high quality of work that students turned in. Their attention to detail was very high, and they frequently sought my input on projects before turning them in. That gave me the opportunity to provide the individual attention that really makes a difference in student learning. Grading was also a snap because it is easy to recognize quality work when you see it. Formal and informal surveys throughout the term indicated that the vast majority of students were happy with the new grading system and appreciated working at their own pace and having clear learning objectives to aim for in earning their course grade. I call that a success.

Many professors in disciplines across higher education are experimenting with specifications grading to increase student focus on learning and make grades more meaningful. Consider giving it a try in one of your courses!

Additional resources

- Nilson, L. B. (2015). *Specifications grading: Restoring rigor, motivating students, and saving faculty time*. Sterling, Virginia: Stylus Publishing, LLC.
- Article by Linda B. Nilson in Inside Higher Education "Yes, Virginia, There's a Better Way to Grade": https://www.insidehighered.com/views/2016/01/19/new-ways-grade-more-effectively-essay
- CER blog "What is Specifications Grading and Why Should You Consider Using It?": https://ii.library.jhu.edu/2018/04/11/what-is-specifications-grading-and-why-should-you-consider-using-it/
- Article and comments "Experimenting with Specifications Grading" at The Chronicle of Higher Education: https://www.chronicle.com/blogs/profhacker/experimenting-with-specifications-grading/61912

Author's background

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Rebecca Kelly teaches in the Earth and Planetary Sciences Department and is the director of the Environmental Science and Studies undergraduate program. She has eighteen years of teaching experience in a wide range of courses and enjoys sharing her love of teaching and learning with her students and colleagues.