

ABSTRACT

Traditional grading has many practices which affect student agency. The use of partial-credit, the use of curves, and the lack of clarity of learning outcomes may leave some students feeling like they have little control over their grade. This project seeks to compare students' feelings of control over their grade in traditionally graded courses and in courses utilizing Standards Based Grading. The students were asked to reflect on their feelings of control and how their grades were determined throughout the semester before and after being graded according to Standards based methodology.

Overview and Context

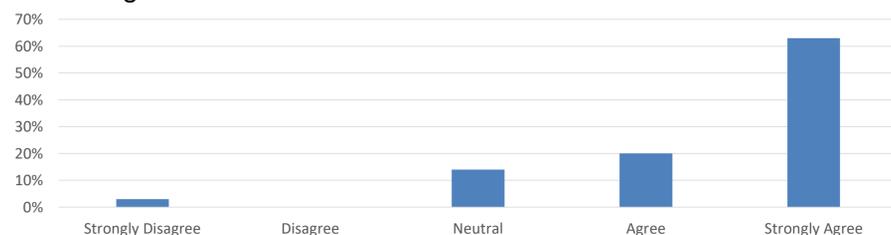
- Standards-Based grading utilizes a list of specific SMART learning outcomes. Students' grades are based on demonstrating competency in each outcome. Outcomes are repeatedly assessed until competency is demonstrated or the class ends.
- The hypothesis of this study is that students feel more "in control" of their own grades with this system. This may encourage them to work more efficiently and focus on improving their grade throughout the semester.
- Entrance, exit and mid semester surveys were used in 3 courses: MATH 310, MATH 371, and CSCI 201. A total of 40 students were surveyed.

Results

- A primary focus was how students rated the impact of three factors on their grade: instructor control, their own control, and chance. The surveys reflected a change from the beginning to end of the course. This validates the hypothesis that students feel more in control of their grade in SBG courses.
- The results show the desired trend. On average, students rated themselves as having more control over their grade, while the weight of the instructor and chance both decreased.

Percent control	Instructor	Student	Chance
Entry Survey	31.8	58.8	9.3
Week 10 Survey	27.8	65.1	7.1

- Additionally students were at Week 10 asked to agree or disagree with the statement "I feel like I have more control over my grade in this course than a traditionally graded course." The following results were achieved.



Results

Student Effort Levels

When asked during week 10 if they felt like the Standards-Based grading approach encouraged more effort on their part, students overwhelmingly thought so.



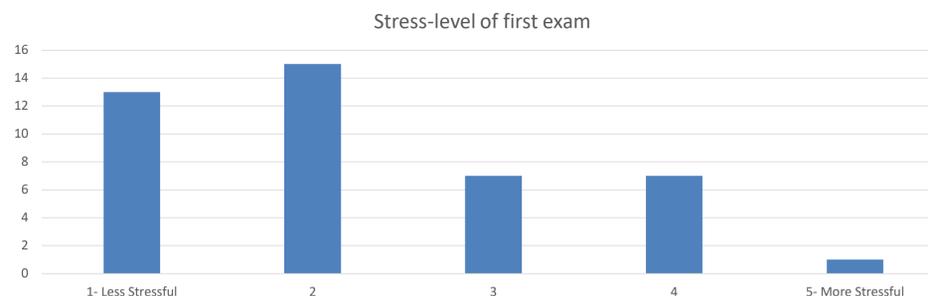
Students also perceived an increase in the emphasis on learning and a decrease in the emphasis on earning grades:

- "I have much preferred the standards-based grading used in this class!! I feel like I have much more power over my own grade and learning. I also feel like there is more of an emphasis on actually learning the material and the target skills than there is with traditional grading, which I think puts more of an emphasis on just passing a test and then not carrying whether or not you forget the info."
 - "[I prefer] standards-based grading because if you get something wrong you don't get credit until you get it right making you actually learn the material. whereas traditional if you get it wrong it's like oh well on to know material"
- It's specifically worth mentioning that students identify that traditional grading (without revision or re-assessment built-in) de-incentivizes them from remembering material. It is well studied that summative assessment discourages students from reflecting on their work and improving their understanding.

Learning from Mistakes

Another common theme among reflections was that mistakes are less costly, and in fact motivate students to revisit material and learn it. They often reflected that this led to more effort—perhaps because they saw a direct link between effort/time and learning.

- "The grading method in place doesn't harm you for not fully understanding a topic, but rather helps you learn your mistakes. By receiving feedback I am able to see where I'm making mistakes and how to fix them."
 - "This way, you can have failures, but if you work hard and ask questions you can succeed."
 - "[I prefer] Standard based, I feel much less punished for making mistakes which is how I learn best."
- The emphasis on mistakes not being costly also appeared to impact stress levels on the first Exam. Students were asked "Compared to a traditionally graded mathematics course, do you feel like the timed assessment is more or less stressful?" The data clearly shows a trend towards "Less Stressful":



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Discussion

- The way we use assessment certainly impacts student perception of a course. This study reinforces that standards-based grading encourages students to put more effort into courses, perhaps because they feel a greater sense of control over their own grade.
- Revision and re-assessment are key components of this grading style. In addition to alleviating students' anxiety about timed assessments, these techniques appear to reframe the goals of the course to students: learning is the goal and grades are a tool to improve one's learning.
- Another key component of this grading methodology is the use of specific SMART learning outcomes. Many students reflected that expectations were clearer and exams easier to prepare for since they knew what they were expected to do. This seems particularly important to bridge the gap between what "understanding" means to an expert/faculty member and what "understanding" means to someone learning a new subject.

Implications

- If student motivation/effort is a concern among faculty members, it may be useful to strengthen the connection between effort and outcome. Revision and re-assessment seem to increase students' feelings of agency in their grade, which should strengthen this relationship.
- For some courses, more explicit learning outcomes may help students prepare for assessments and alleviate stress. It can also help them more fully self-assess what they do or do not know.

Future Research

- It would be interesting to study how more specific learning outcomes affect students' perception of their own knowledge/ability. It seems to make them think these courses are easier, but how does that impact their opinion of how much they have learned?
- Follow-up surveys later in students' careers after taking more traditionally graded math courses would be beneficial to understand how students feel Standards-based grading impacts their learning in a long-term way.