

Grades, Learning, and Reattempts: How Students Experience Outcomes-Based Testing

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Recent years have shown an uptick in faculty interest in alternative grading practices as they question the effectiveness and meaning of traditional grading practices and points-based systems (Blum, 2020; Nilson & Stanny, 2023). According to Clark and Talbert (2023), the four pillars of alternative grading are (1) clearly defined standards, (2) helpful feedback, (3) marks indicate progress, and (4) reattempts without penalty. An alternative grading practice built on these four pillars prioritizes learning, feedback, iteration, and transparency over point-earning and early mistakes. Shifting the focus from grades to learning intends to make grades more meaningful and to support the learning process. We are interested in how alternative grading can provide a supportive learning experience for our students and how the experience of reattempts on outcomes specifically affects them.

In this poster, we will present findings from a study on outcomes-based testing (OBT), a form of alternative grading, in linear algebra at a medium-sized public engineering institution. This work replicates and extends the research by Swanson et al. (2025) which reported on the benefits and drawbacks of mastery-based testing in linear algebra, and student beliefs about final grades as compared to other courses. In the present study, using qualitative and quantitative data collected from students across four different sections taught by two different instructors, we examine three key questions: (1) What benefits and drawbacks did students perceive in the OBT system?, (2) Did students believe that OBT grades more accurately reflected their learning compared to grades in other courses?, and (3) How did students' experiences differ based on the number of attempts they made to complete course outcomes?

Data for this study were collected during the fall 2024 and spring 2025 semesters. Students answered multiple 5-point Likert-scale rating items and open-ended questions about the perceived benefits and drawbacks of OBT and the meaning of grades through online, optional surveys administered at the beginning and end of the semester. Thematic analysis (Braun & Clarke, 2022) was used in coding the open-ended questions. Together with qualitative analyses, our results support the findings of Swanson et al. (2025) regarding benefits, drawbacks, and grades (RQ1, RQ2) with notable differences in the student experience based on outcomes attempt frequency (RQ3). Namely, we found that students perceived OBT to support their learning (e.g., deeper understanding) and to support self-regulated learning (e.g., flexible), and we found that aspects of OBT both reduced and provoked stress. Students rated grades in OBT as fairer and more accurate than grades in other classes. Some benefits of OBT were more pronounced for students who had less frequently reattempted outcomes; for example, while students reported less exam anxiety in the OBT-graded course than other courses overall, this benefit was greater for those who used fewer reattempts.

In this poster, we will include a brief description of our OBT system together with our full results on student-reported benefits, and drawbacks which are organized around how OBT supports both learning and self-regulation. We will conclude the poster by including implications for improving our OBT implementation and addressing equity in student experience.

References

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