

Ungrading a modern physics course



PRESENTER:
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Motivation: Looking for behaviors centered around students struggling to succeed in a course and faculty unwilling or unable to address these challenges

Conducting Interviews

- Asking students “What does it look like when you get stuck in a course?”
- Asking faculty “How do you help students who are struggling in your class?”

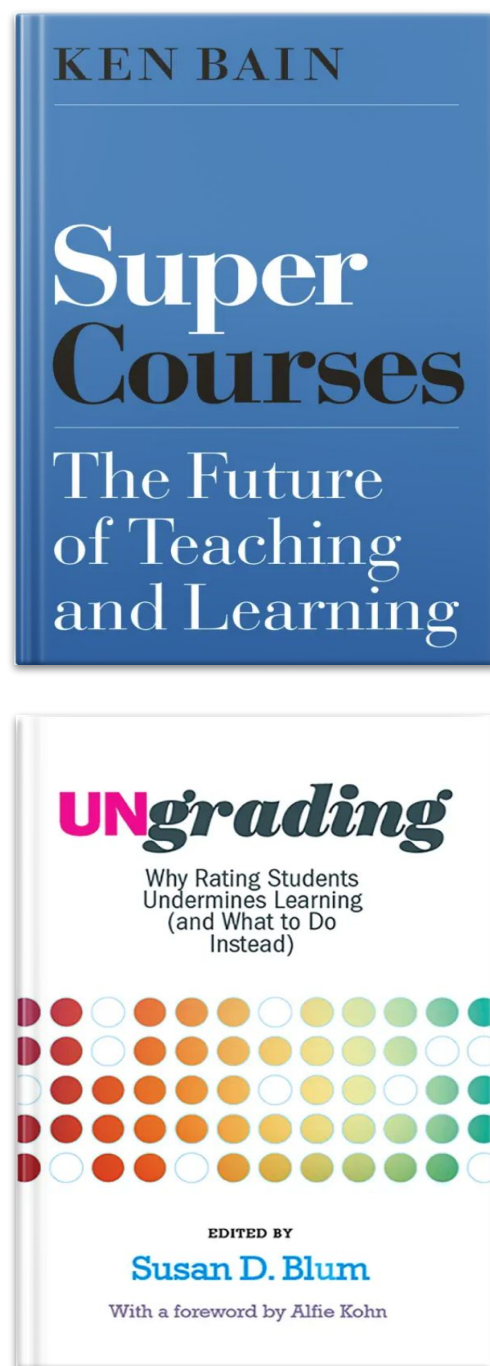


We found a gap between faculty expectations and student behaviours

- Faculty:** Read this textbook and engage in discussion
Students: do not seek access to the book
- Faculty:** Complete this homework to gain mastery of the material from lecture before an exam
Students: Google/Chegg for answers and fail an exam
- Faculty:** Please visit office hours and ask for help
Students: spend hours sifting through YouTube videos

Grades and by extension GPA created a gap that both faculty and students struggle to accommodate

- Cause students to focus on the grade and not on learning
- Do a poor job of motivating students to learn and take intellectual risk
- Create a transactional relationships between students and faculty that result in course gamification
- Are the leading cause of stress and anxiety for college students



Instructor Takeaways

The instructor and TA both felt the overall quantity and quality of engagement was improved for the ungraded students.

Ungraded students self-reported spending 22% less time on this course compared to graded students. Similarly, ungraded students listed unexpected motivated factors for succeeding and created novel activities to support their learning

End of course evaluations improved for the ungraded students. Overall feelings of inclusiveness, respect for students, and stimulating interest were boosted.

Performance on exams were comparable between graded and ungraded students. The instructor and TA spent less time grading!

What would you be worried about if you let your students decide how to determine their own grade in your class?



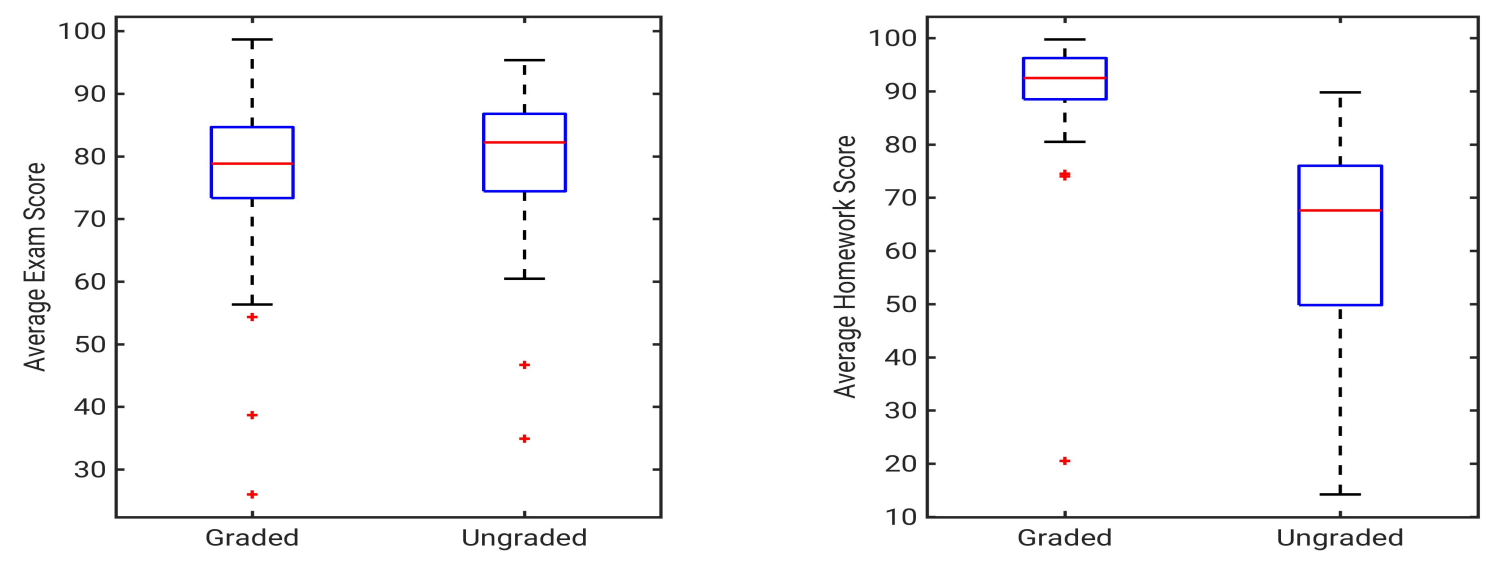
Required student conferences

- Student identify learning goals and propose new activities (or use those from the graded course)
- Student determine how they will assess progress
 - How will they grade?
 - Require growth
- Students specify grade
 - Submit supporting evidence
 - Instructor reserves veto rights

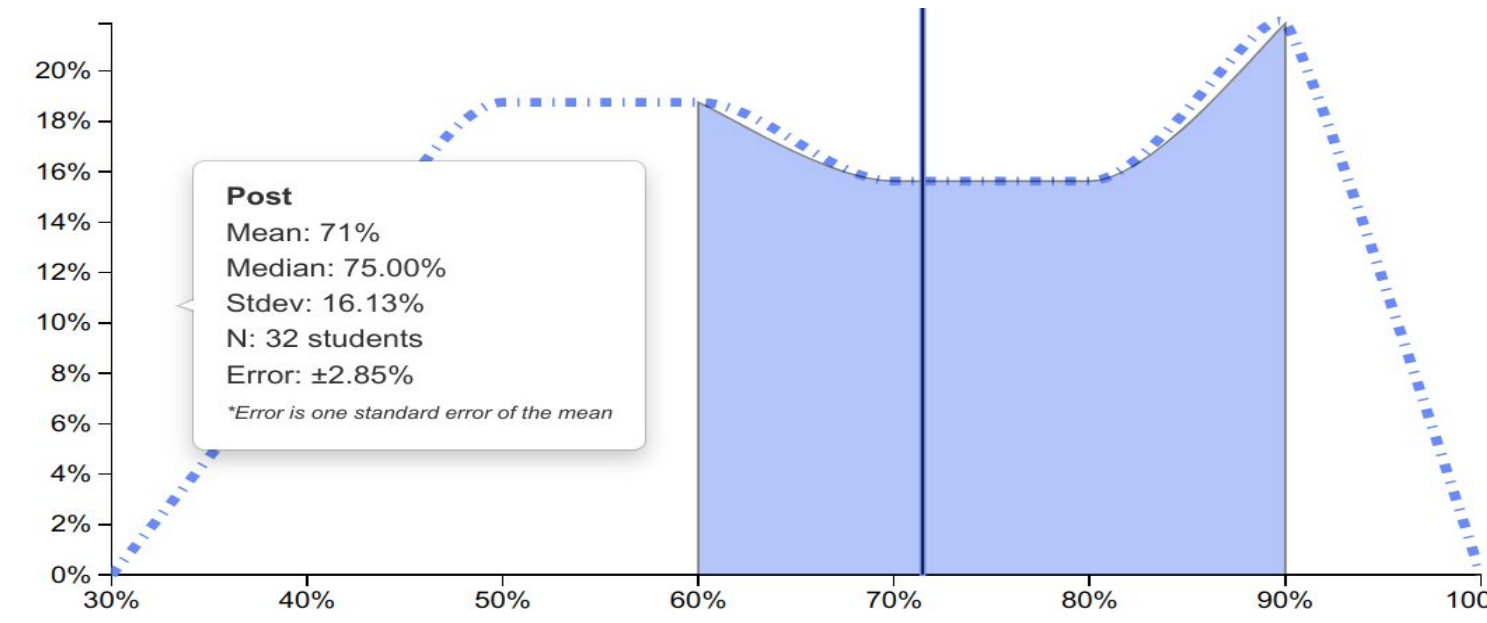
21
Hours Spent
Conferencing

Ungraded student activities

- Activities in common with the graded course
 - 94% included class participation and exams
 - 97% completed a final group project
 - 87% submitted homework
 - 28% completed online (Perusall) readings
 - 25% created a wiki page



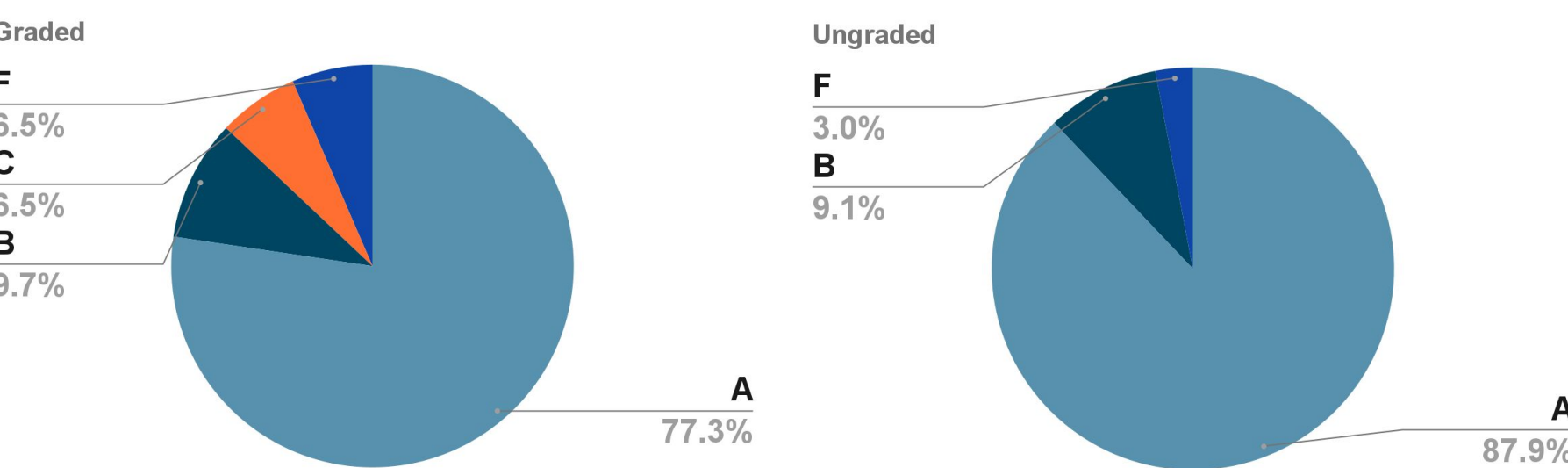
Ungraded students did not require themselves to complete every homework, never asked for a regrade on exams or homeworks, and scored well on the Quantum Mechanics Conceptual Survey



- Unique to the ungraded course
 - 25% reviewed a modern physics article
 - 12% of students created physics videos
 - One student taught a class
 - One student created a learning portfolio
 - One student completed mini projects

How did ungraded students assign final course grades?

- 52% of students chose a unique standards based grading approach
- 48% of students chose a traditional points based approach (10 or 15 point scale)
- 100% of students factored in some form of Mastery grading into their assessment plan



Graded Two students did not participate in the course and did not withdraw. One student withdrew before midterms

Ungraded 114% increase in “A” grades. Grades are roughly shifted up one lettergrade. One student did not participate.

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