

Self-Regulation and Calibration in Undergraduate Biology Students



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P20 Motivation and Learning Lab

Key Concepts

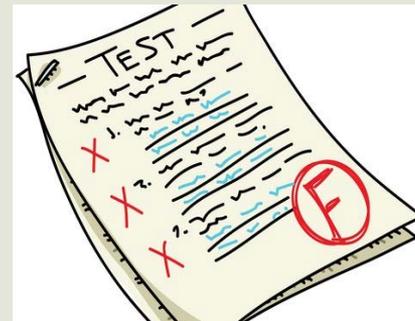
Self-Regulation



Calibration =

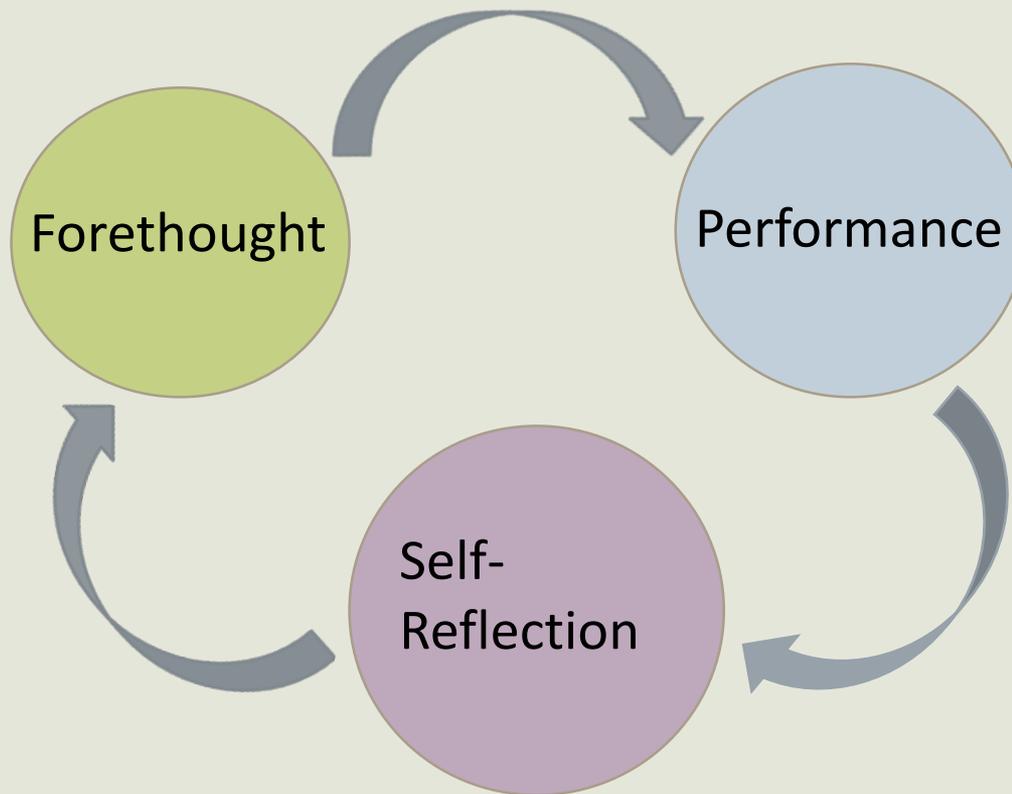


Expected
exam
grade



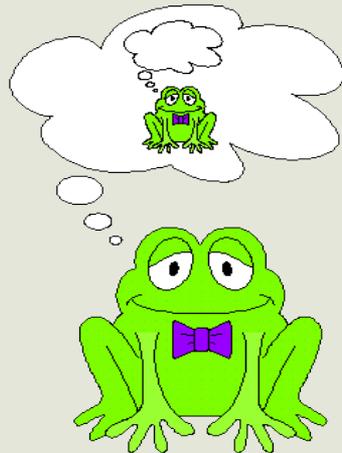
Actual
exam
grade

Self-Regulation: Framework



What does the literature say?

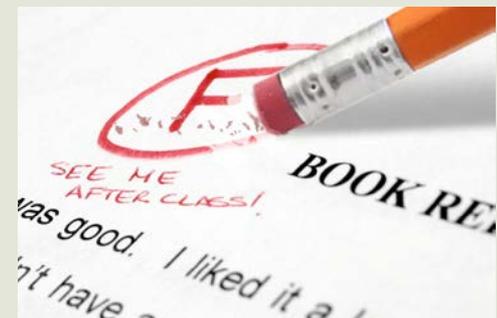
- If students lack the skills to produce the right answers, they are unable to know if their answers are right or wrong (inaccurate judgment of capabilities).
- Inaccurate judgment of capabilities can influence self-regulatory skills (i.e., study habits).



(Dunlosky, 2013; Dunning et al., 2003)

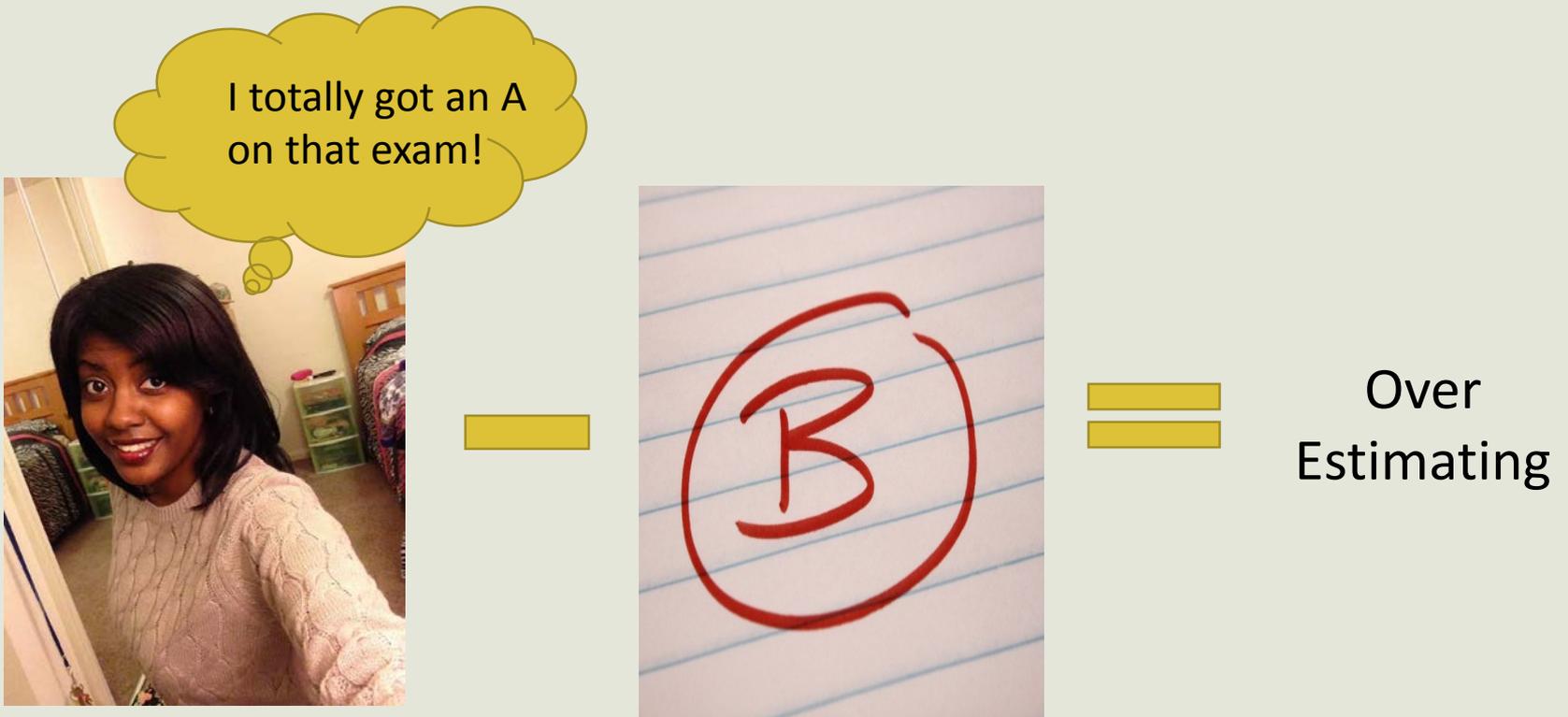
Calibration

- Well-calibrated students are tuned in to what they know and regulate their work strategies accordingly.
- Poorly-calibrated students are unaware of what they know and may be at risk academically.



(Lin & Zabrucky, 1998; Stone, 2000)

What the literature says...



Purpose of the study

- Do students know what they don't know?
- Research has shown that there is a miscalibration (and self-regulation) problem with students.



Research Objectives

- Objective 1: To examine students' capability to predict their exam scores when compared to their actual scores (i.e., how well calibrated they are).
- Objective 2: To examine whether students' calibration changed over the course of a semester.
- Objective 3: To investigate whether there is a relationship between students' year in college and their calibration over a semester.
- Objective 4: To examine whether calibration differs across a semester based on gender.

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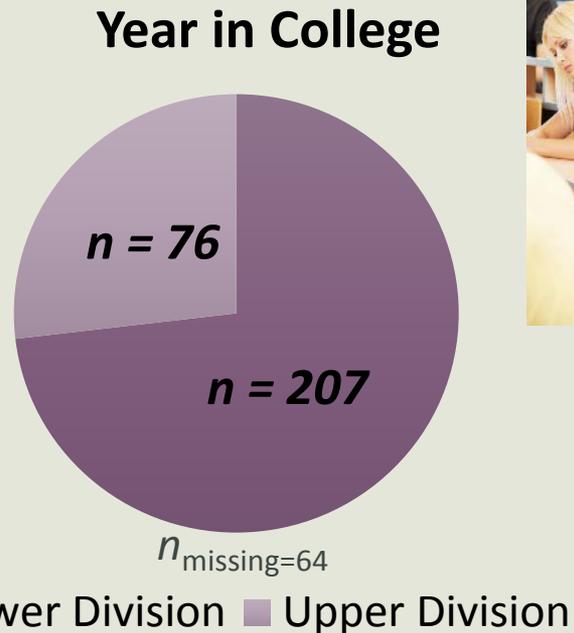
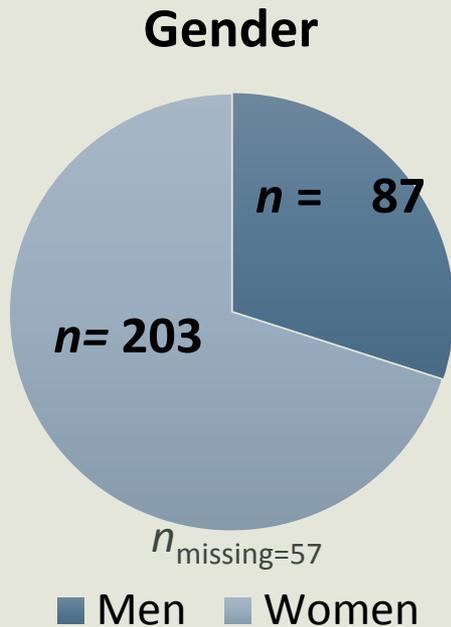
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Method

Year in College and Gender

- 315 undergraduate biology students



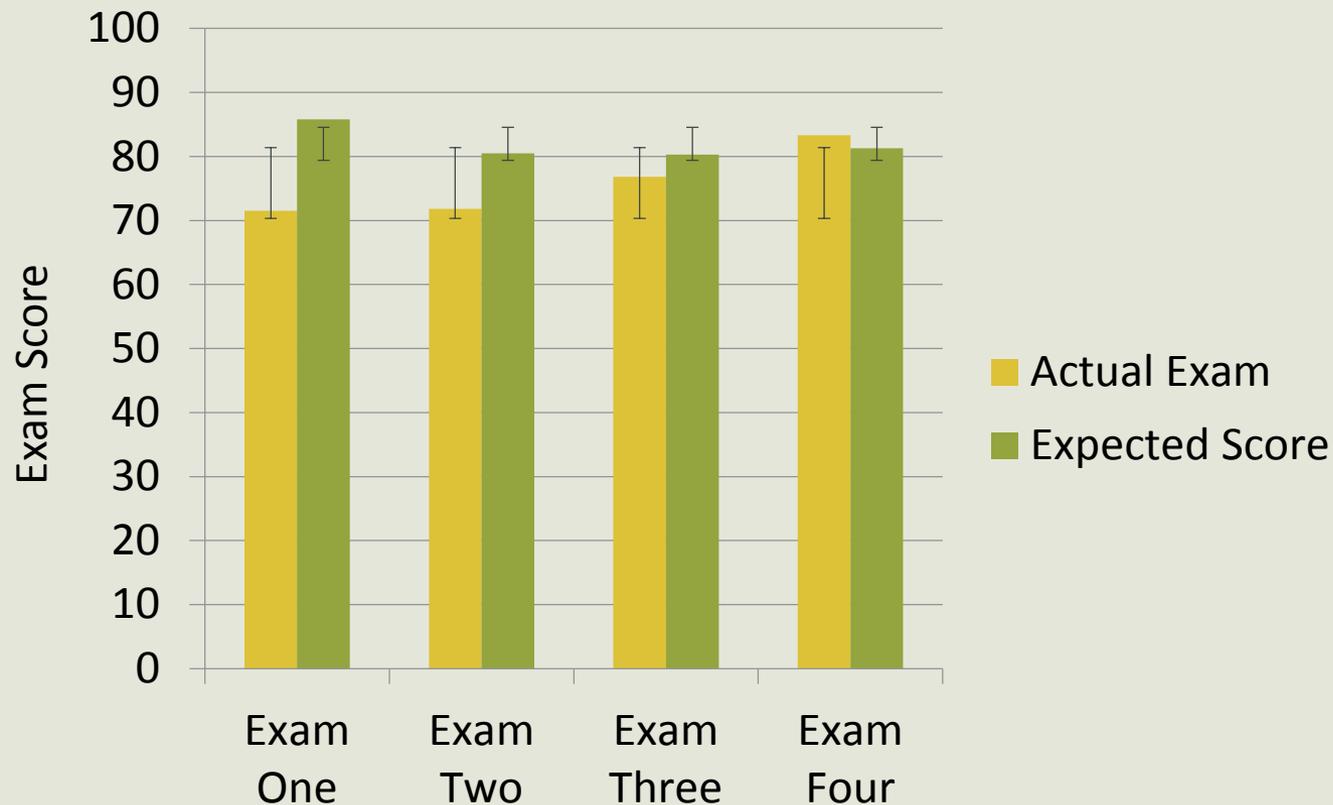
Materials and Procedure

- Across the course of a semester, students completed a survey prior to each of their four exams.
- Students were asked to provide:
 - Expected exam score (on a scale from 0-100)
 - Number of hours that they spent actively studying

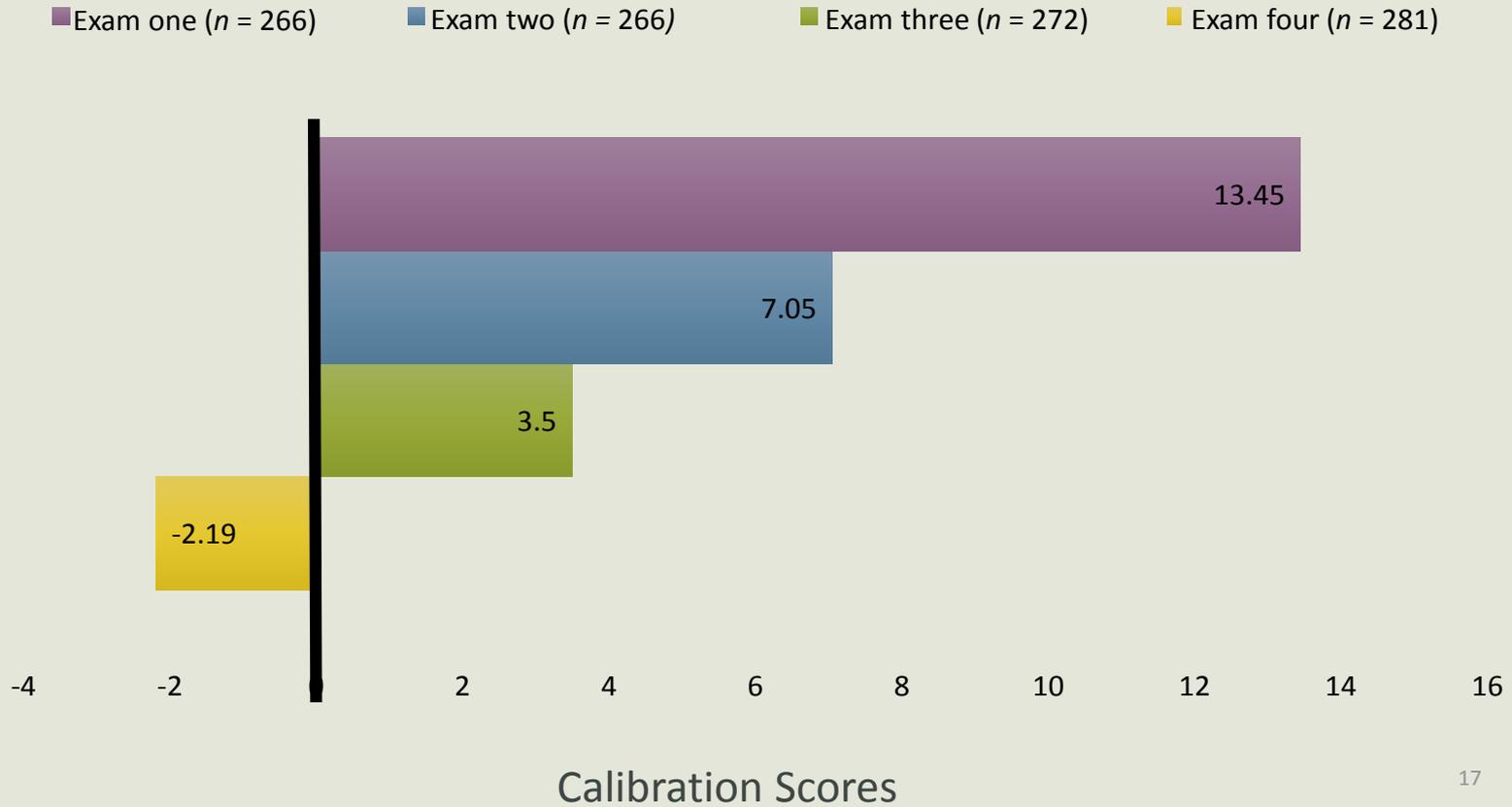


Results

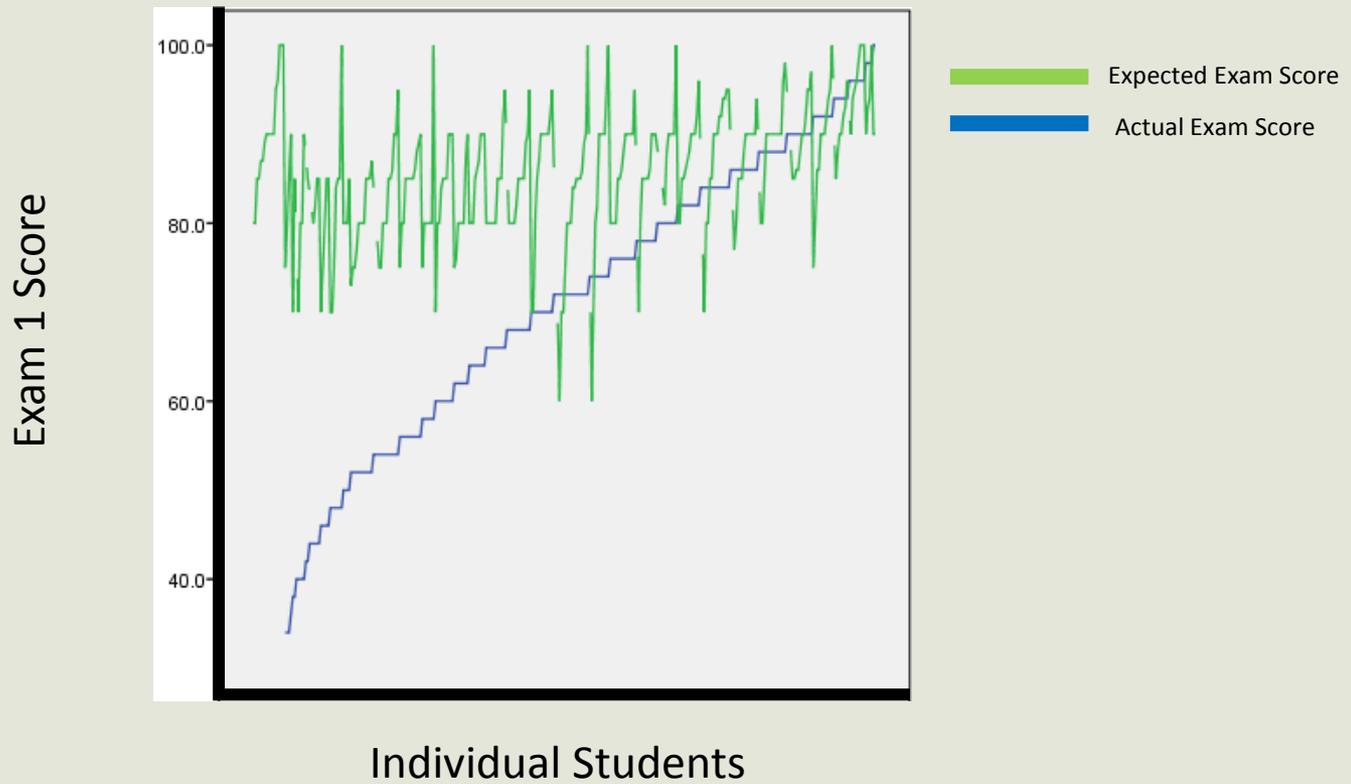
RQ1: Do students accurately anticipate their expected exam scores compared to their actual exam scores?



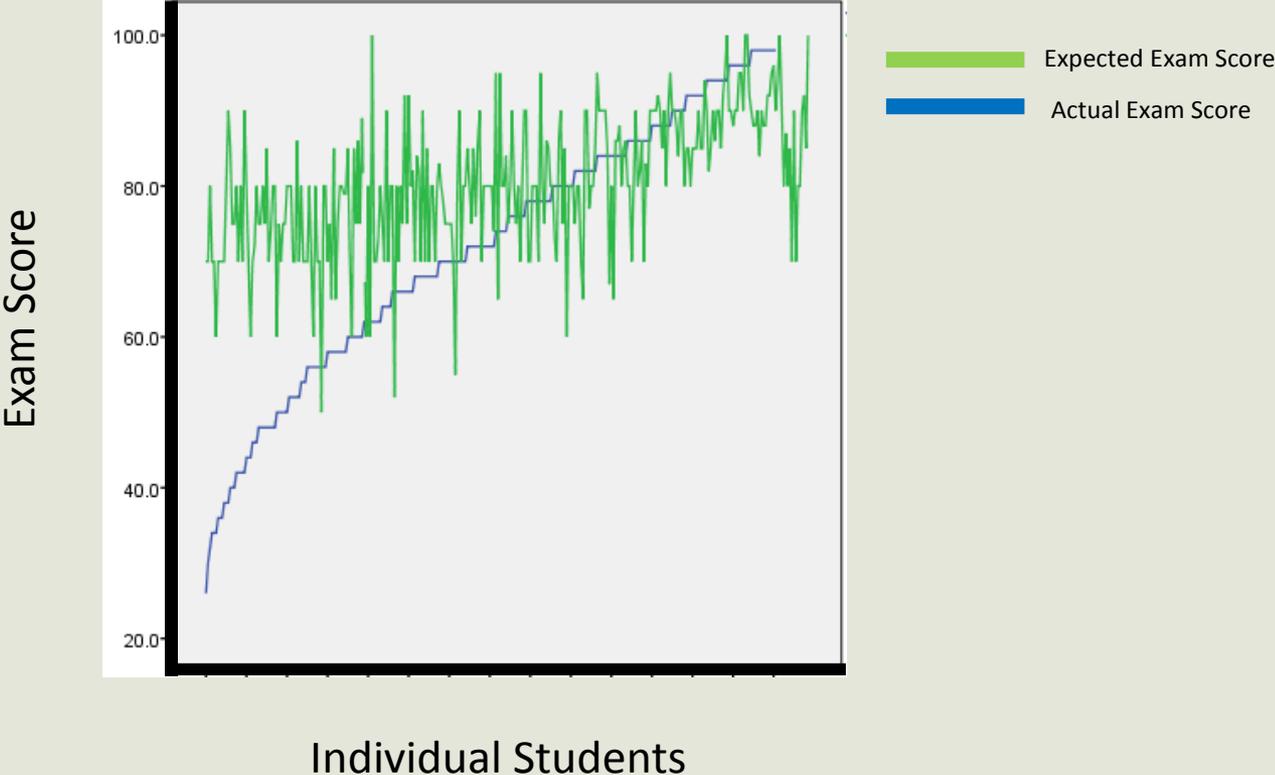
RQ2: Does a student's calibration change over the course of a semester?



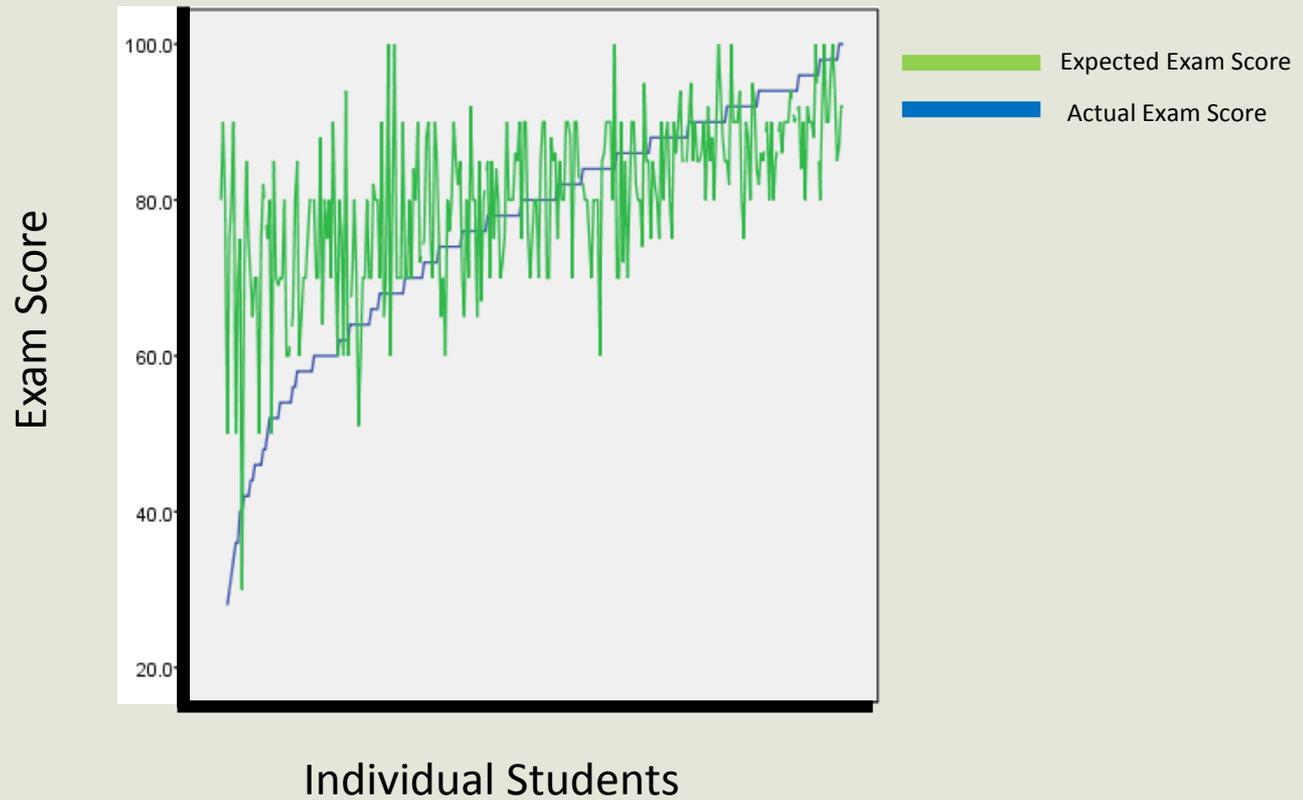
RQ 1 and RQ2 – Exam 1



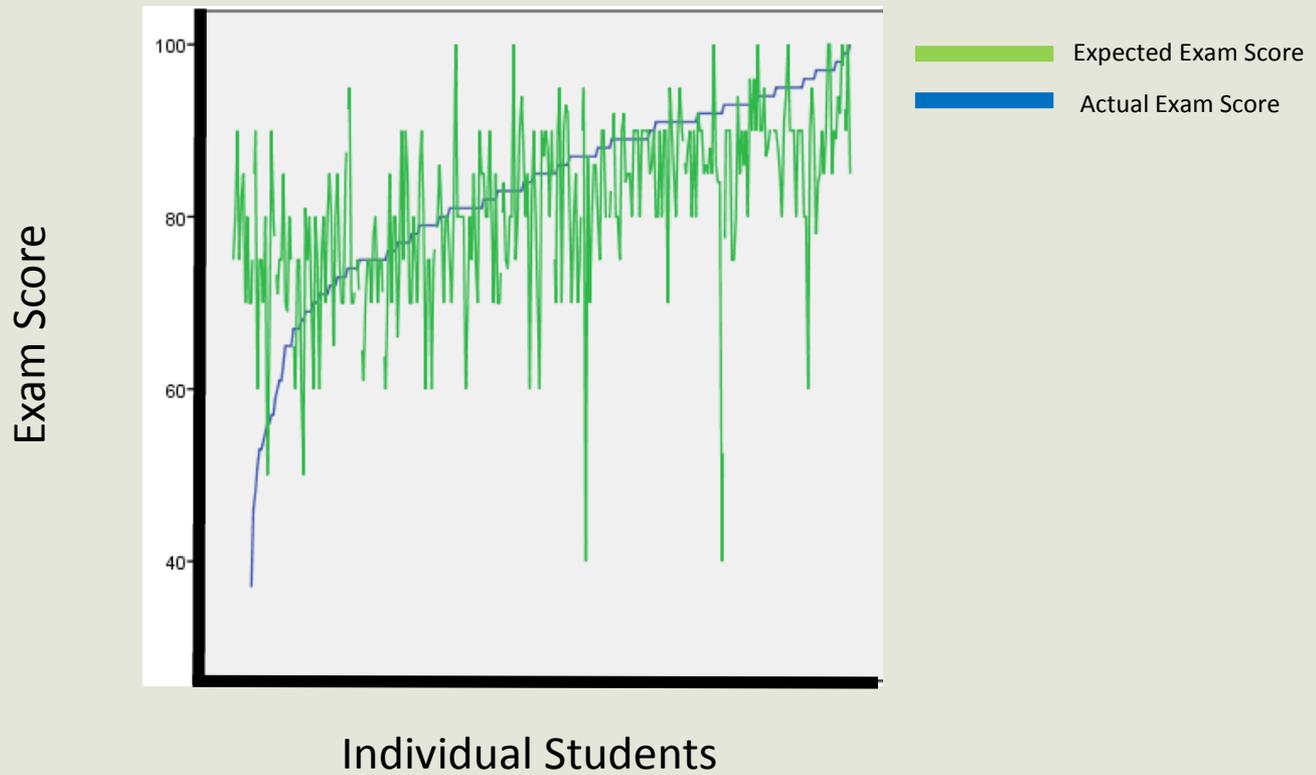
RQ 1 and RQ2 – Exam 2



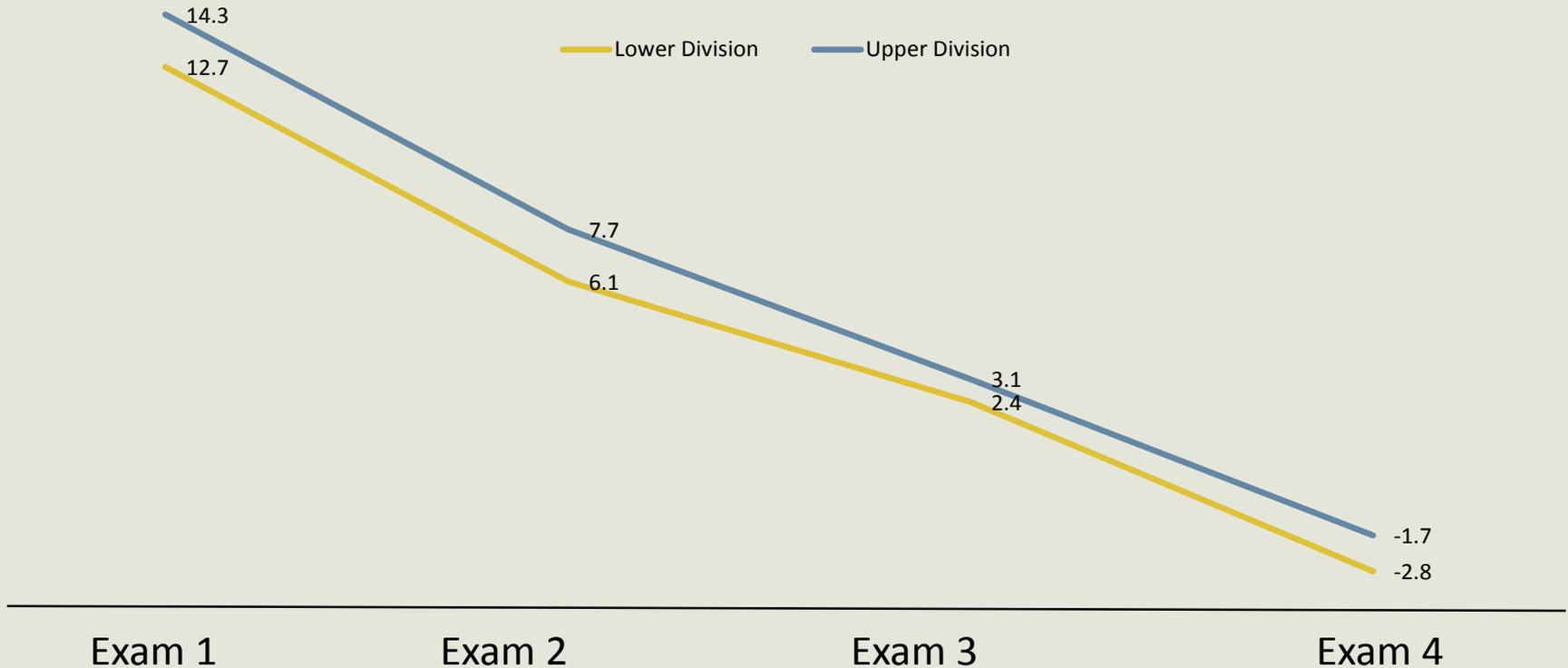
RQ 1 and RQ2 – Exam 3



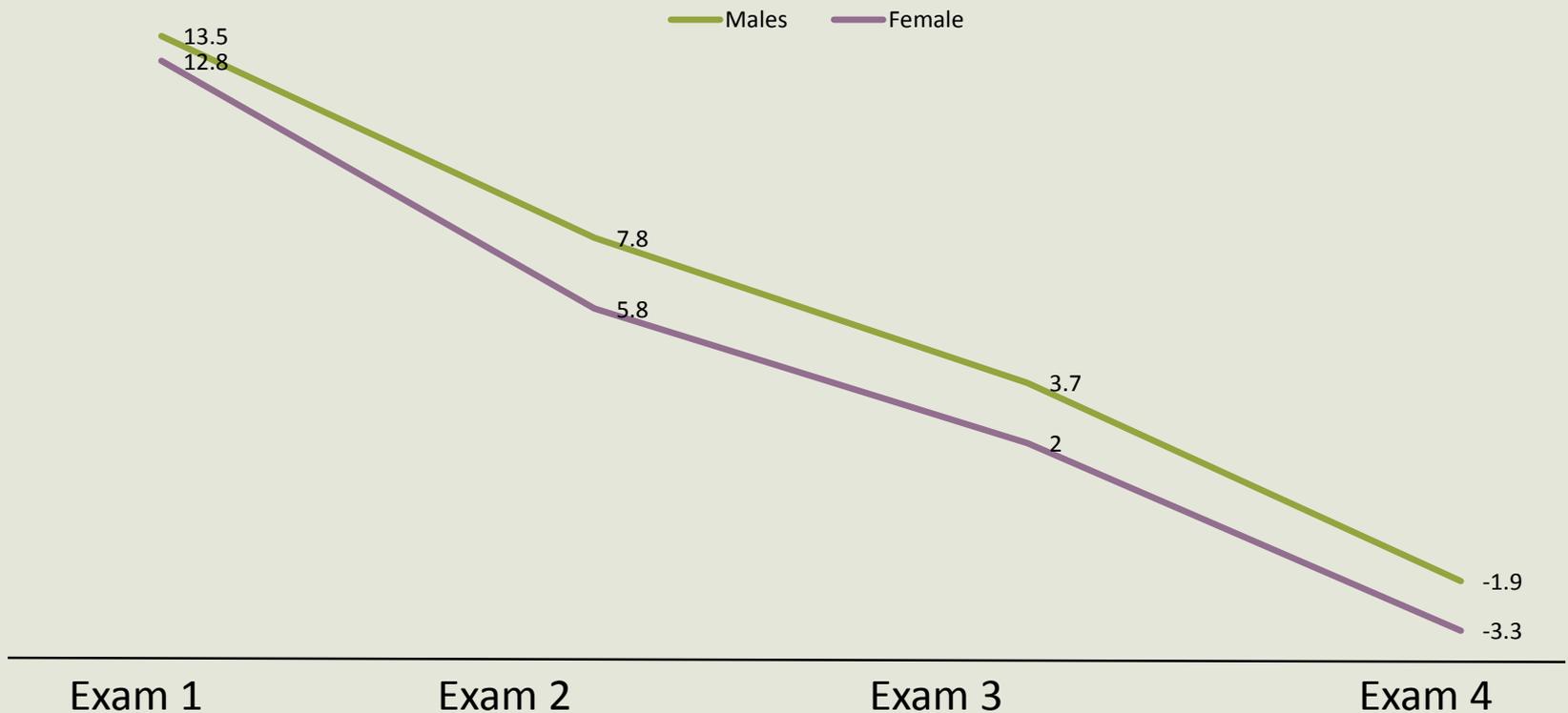
RQ 1 and RQ2 – Final Exam



RQ3: Is there a relationship between a student's year in college (lower division vs. upper division) and their calibration over a semester?



RQ4: Is there a relationship between a student's gender and their calibration across a semester?



F = .932

Key Findings

- Students greatly overestimate their grades for the first exam and gradually get better over the course of the semester.
- There were no significant differences that related to a student's year in college or their gender.



Discussion

- Previous research found that men overestimated their performance more than women. This is contrary to our findings.
- Study materials may have influenced students' calibration where gender and class standing did not.

Limitations

- There is a ceiling effect in this study.
- Disproportionate number of young women versus young men as well as a disproportionate number of lower division students compared to upper division students.

Next Steps

- Look at individuals
- Look at study strategies used
- Recruit additional participants from underrepresented groups

THANK YOU!

Any questions? Contact us at:
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Or contact Trisha Turner at: trisha.douin@uky.edu

