

# IMPACT OF GROUP EXAMS IN NON-MAJORS BIOLOGY: A MIXED METHODS ANALYSIS

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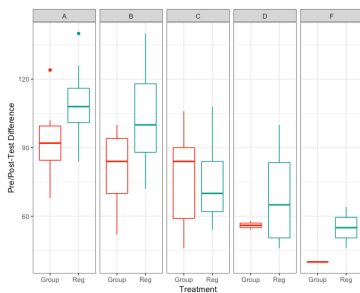
## BACKGROUND

Participants were students at Snow College, an open-enrollment, rural, state college in Ephraim, Utah. Snow College primarily awards associate degrees. Study participants were students enrolled in BIOL 1010 to fulfill their General Education (GE) requirements, i.e. non-majors.

## RQ1: DO GROUP EXAMS INCREASE STUDENTS CONTENT ASSESSMENTS SCORES?

- 2 sections of non-majors biology
  - 8 individual unit exams (n=47)
  - 8 individual unit exams + in-class group retake (n=35)
- Post-Pre test (comprehensive final)

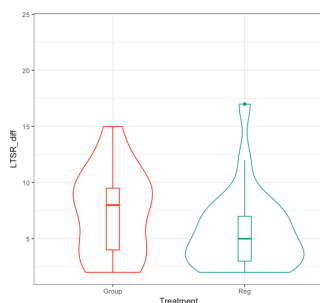
Results: Group testing does not significantly increase students post-pre test score, but group testing appears to help 'C' students the most.



## RQ2: DO GROUP EXAMS INCREASE SCIENTIFIC REASONING SKILLS?

- Same as RQ1
- Post-Pre Lawsons Test of Scientific Reasoning (LTSR; Lawson, 1978, ver. 2000; max score = 24)

Result: Group test students had higher scientific reasoning gains, but not significant ( $F=0.096$ ,  $P=.76$ ).



## RQ3: WHAT ARE STUDENTS PERCEPTIONS OF GROUP TESTING?

- 5 sections across 3 semesters (n=195)
  - 4 individual unit exams + group exam after in class; student selected & static groups (n=81)
  - 8 individual unit exams + group take home (encouraged before individual); student selected & static groups (n=76)
  - 4 individual unit exams + group exam in class; dynamic groups both student and instructor selected (n=38)
- Student in-class open response survey at the end of semester
- Iterative coding with two researchers

Result: The majority of students had a **positive** experience with group testing (83%), with 11% and 6% responding either neutral or negative, respectively. The majority of the negatives came from the group take home section.

CATEGORY OF CODES	REPRESENTATIVE STUDENT RESPONSE
<b>Understanding (38%)</b>	"they made you think about why more than you normally have to", "gain insights I otherwise wouldn't have", "often the things I was unsure about someone else knew and was able to explain it so that I understood the material"
<b>Study (26%)</b>	"they helped me prepare for the individual test", "it helped me remember things better"
<b>Teach (6%)</b>	"I loved that they made me explain what I had learned in class"
<b>Communication (33%)</b>	"if there was a dispute, we'd talk it out and come up with a reasonable answer", "we got to discuss questions we were confused on"
<b>View (11%)</b>	"I could hear how other people thought", "a chance to see other people's perspectives"
<b>Team (9%)</b>	"they helped us... learn to work together"
<b>Positive Environment (4%)</b>	"just a more relaxed environment is helpful", "It's nice to have a group to help reassure you that you aren't stupid"
<b>Unequal Contributions (14%)</b>	"they were good if I had a good group, but if I had a bad group it was me doing most of the work", "my group got tired of it & just started writing down answers"
<b>Negative Group Conflict (3%)</b>	"I felt as if I knew the right answer but everyone else disagreed so it was kind of annoying to have to compromise"