

DOES TWO-STAGE COLLABORATIVE TESTING IMPROVE RECALL AND RETENTION OF ANATOMICAL CONCEPTS?



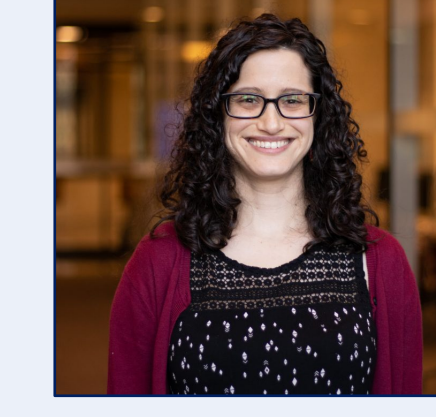
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INTRODUCTION

Retaining basic anatomy knowledge is imperative to all health care professionals. Two-stage collaborative testing has been previously shown to enhance student learning, as demonstrated through both short-term *recall* of course material and long-term *retention* of course material. Two-stage Collaborative Testing = complete test as individual, then complete same test in group.

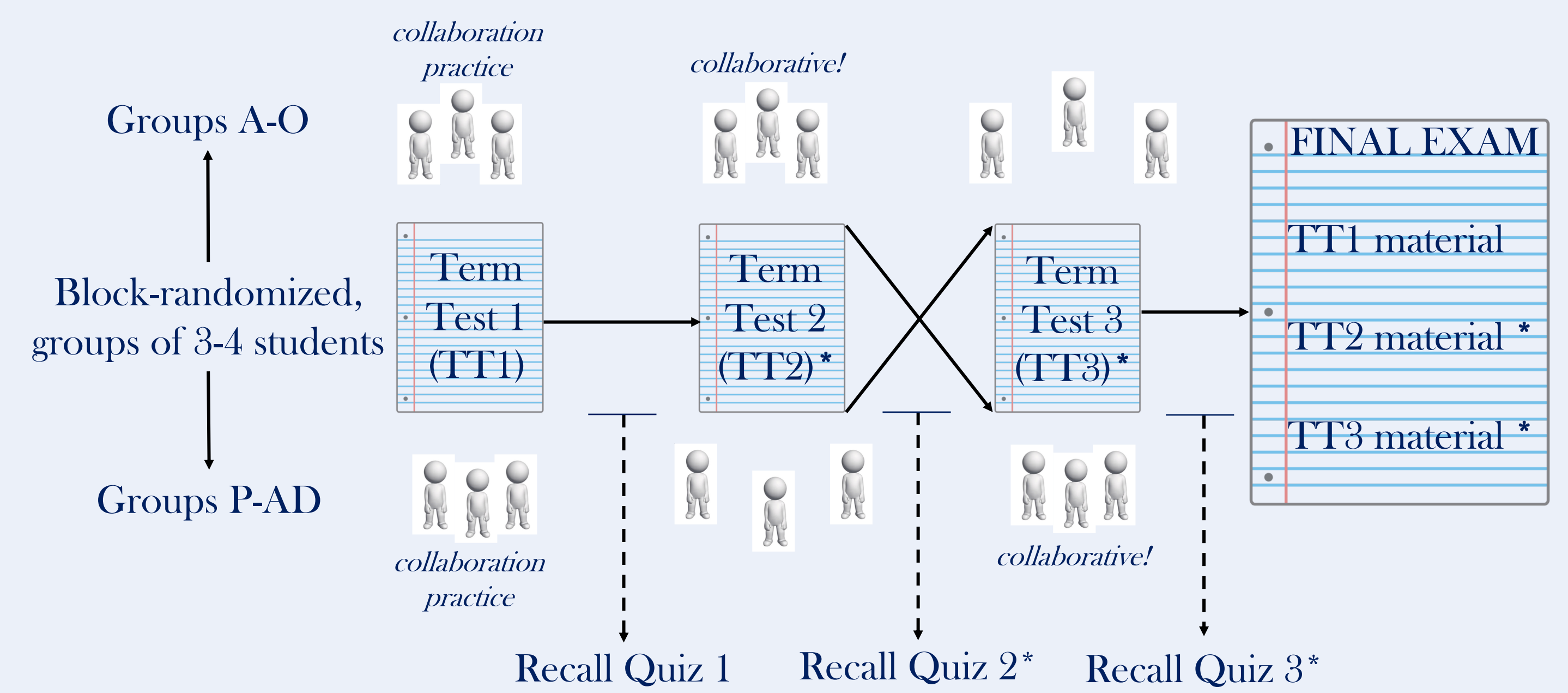
However, previous research on two-stage collaborative testing has generally compared separate cohorts of students; a research design that fails to control for between-student variance.

Primary Research Aim: to determine the educational impact of two-stage collaborative testing on student recall / retention using a blocked-randomized cross-over design to control variance.

Participants: ANAT1110 is an introductory anatomy course for students in the Radiation Science program at UofT/Michener. The 2019 cohort included 97 students; 84 of which provided end-of-term informed consent. Almost half (45%) of students had very limited previous anatomy experience, despite the majority (81%) having completed a university degree.

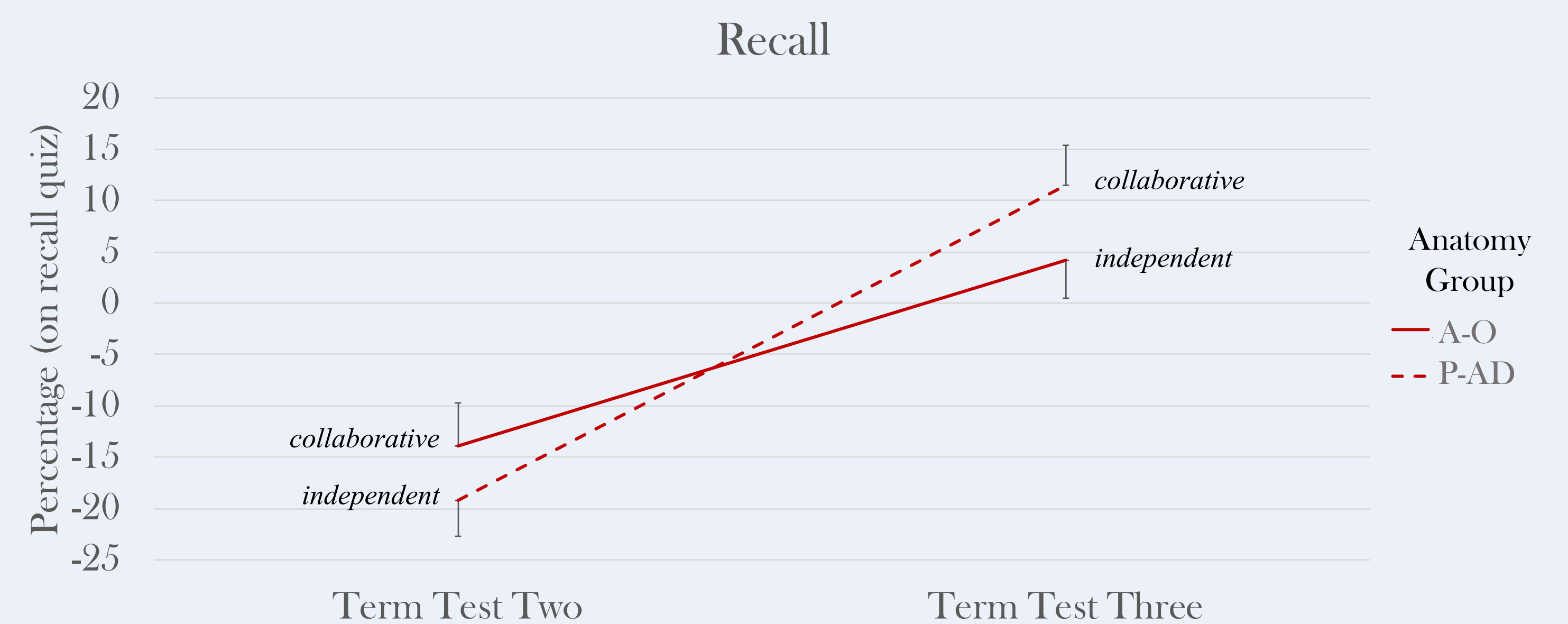
RESEARCH METHODOLOGY

(* experimental conditions)



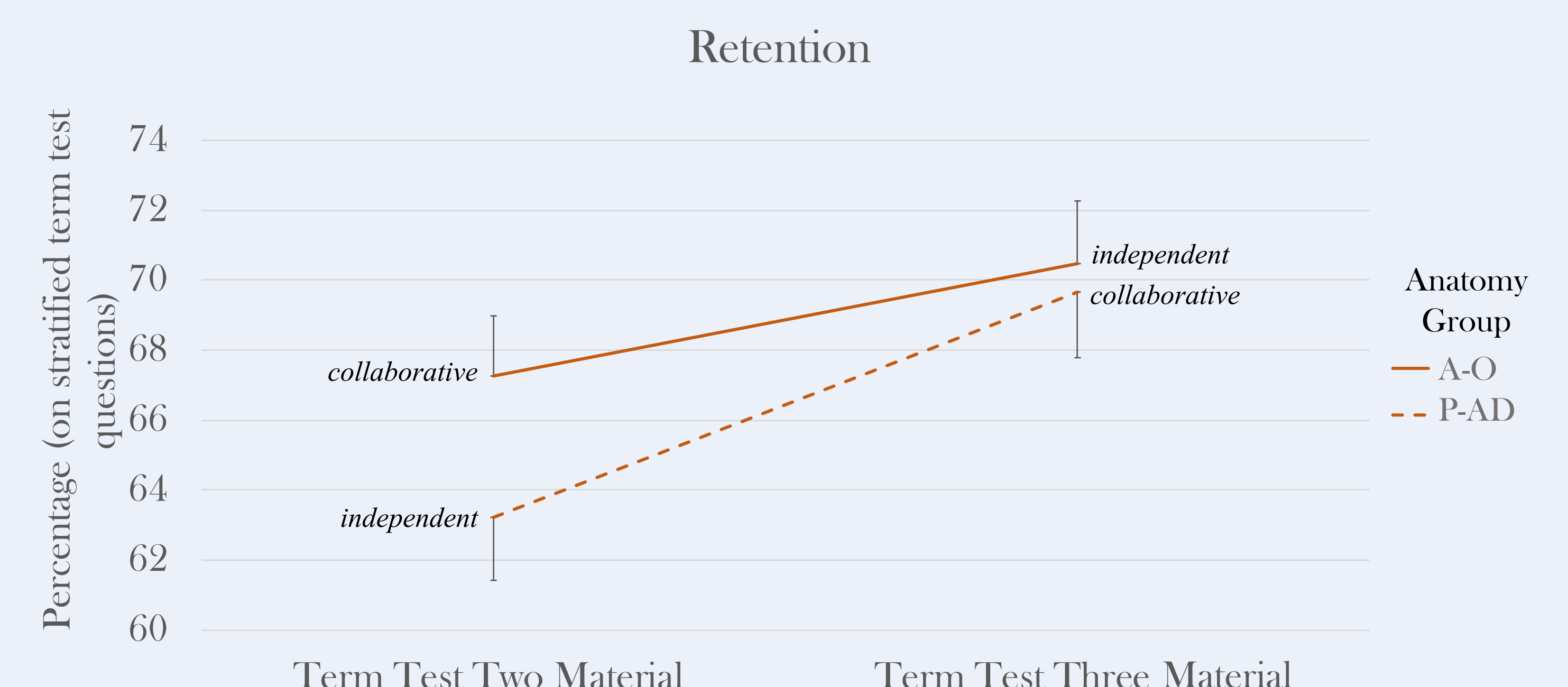
TWO-STAGE COLLABORATIVE TESTING

IMPROVES RECALL BY 6.3% (ns)



TWO-STAGE COLLABORATIVE TESTING

IMPROVES RETENTION BY 1.6% (ns)



POSITIVE STUDENT FEEDBACK

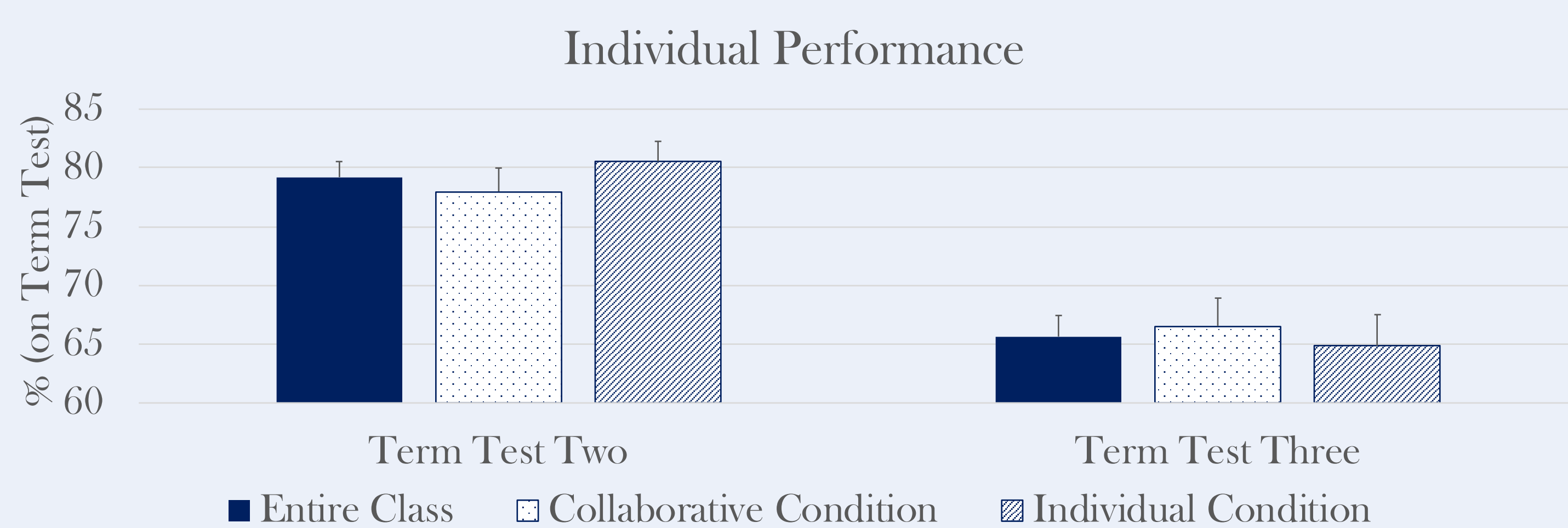
work with friends
"grade-boost"
discussions
share ideas
real-world communication practice
learn to collaborate
focus future studying
positive group dynamics
immediate feedback

NEGATIVE STUDENT FEEDBACK

afraid to let group down
negative group dynamics
frustration
shame
stressful
arguments
stigma
students forcefully persuading others
"majority wins"

Q: "DON'T STUDENTS STUDY LESS WHEN COLLABORATIVELY TESTED" ??

A: NOPE



Q: "DOESN'T COLLABORATIVE TESTING ARTIFICIALLY BOOST MARKS" ??

A: VERY MINIMALLY

Students who wrote TT2 collaboratively experienced a "boost" of $2.6 \pm 2.1\%$ on that test
Students who wrote TT3 collaboratively experienced a "boost" of $3.9 \pm 2.9\%$ on that test
= "boost" of 0.53% in the course
= "boost" of 0.79% in the course

Q: "WILL YOU CONTINUE COLLABORATIVE TESTING IN YOUR COURSE ??

A: ABSOLUTELY!

Fall 2019 cohort: To 1) demonstrate repeatability of results and 2) enhance statistical power