UNIVERSITY OF THE PACIFIC

Psychology Department

Individual versus Collaborative Active Learning: Impact on Actual Learning, Perceived Learning, and Motivation

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More info
tinyurl.com/WPA22-active

Introduction

- **Active vs. passive learning:** Better learning performance, but lower perception of learning (Deslauriers, 2019)
- **Benefits of collaborative over individual:** Promotes cooperative not competitive (better for learning), deeper learning, better self-regulatory behavior, more student autonomy and positive interdependence (Prince, 2004; Scager et al., 2016)

Question: What are the impacts of collaborative active learning on students' **1a)** motivation, **1b)** commitment, **2a)** judgment of learning, **2b)** subjective knowledge, and **3)** learning performance?

Hypothesis: Collaborative, versus individual, learning will relate to higher motivation, greater perceived learning, better learning performance.

Methods

Study Design (Quasi-experimental) and Analytic Approach

- 2 conditions (between: collaborative, individual) × 2 time (within: pre, post)
- RMANOVAs, ANCOVAs (post with pre covaried), X^2, factor analysis

Participants: Developmental Psychology Students (*N* = 65)

Semester	*n*	Format	% Female	Psych Major	% Underclassmen
F21	29	Sync. online	68%	41%	48%
S22	36	In-person	89%	47%	78%

Procedures: Weekly Undergraduate TA-led group discussion (75-min.)

- **Online surveys:** Week 1 background and start and end of class session
- Random assignment of groups to active learning conditions
  - ✓ **Collaborative:** Completed exercises in small groups and taught peers
  - ✓ **Individual:** Read content and completed exercises independently
- Comparable learning objectives, exercises, and duration in both conditions
- **Exercises:** Empty outline, PowerPoint, mind map, concept map
- **Topics:** Language development in infancy: a) theories and b) milestones

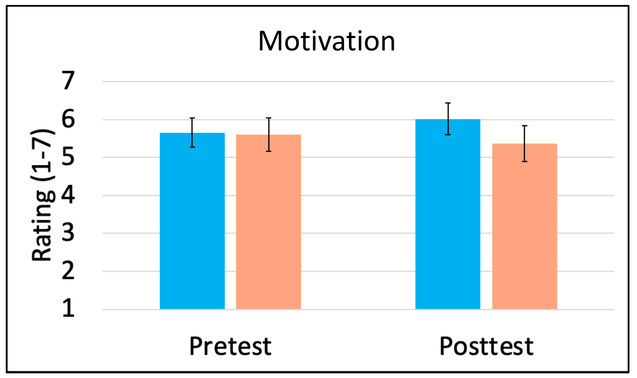
Measures:

- **Motivation:** Engagement and motivation to learn (4 items, α_{pre}=.91; α_{post}=.94)
- **Commitment:** Perceived value of time spent (2 items, α_{pre}=.93; α_{post}=.93)
- **Perceived learning:** a) judgement of learning and b) subjective knowledge
- **Learning performance:** 4 multiple choice questions (easy / hard for each topic)
- Background and demographics (class introduction survey)

Results

Collaborative Individual

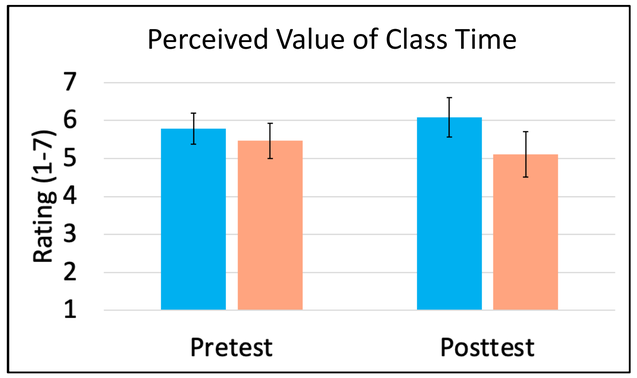
Result 1a.



$F(1,63)=2.39$, $p=.128$, $\eta^2 = .04$

Decrease in motivation for individual group, but not collaborative group

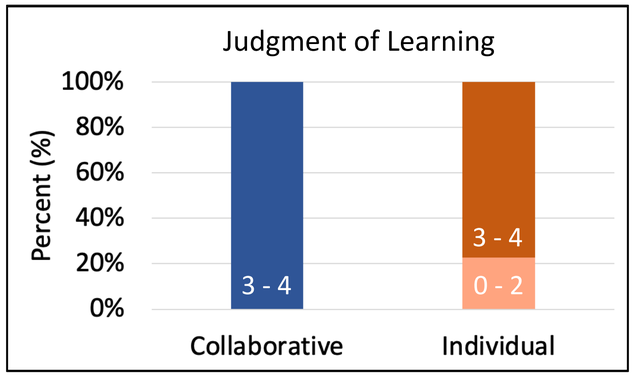
Result 1b.



$F(1,63)=4.71$, $p=.034$, $\eta^2 = .07$

Decrease in perceived value of time use for individual group, but not collaborative group

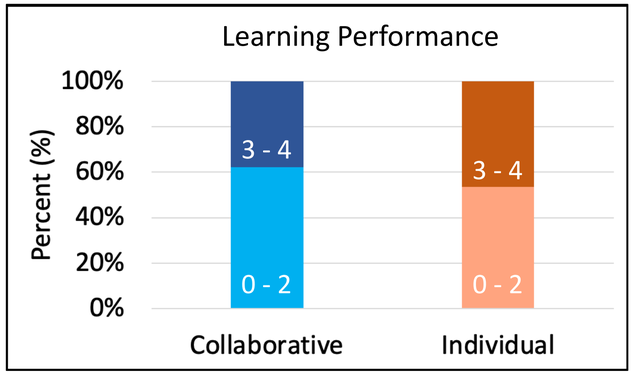
Result 2a.



$X^2(1,56)=8.49$, $p=.004$

100% of collaborative group judged they would correctly answer 3-4 questions (at least 1 hard)

Result 3.



$X^2(1,65)=.48$, $p=.486$

Comparable learning performance (% group who correctly answered 3-4 questions)

- **Result 2b:** Pre-post subjective knowledge increase for both conditions, $F(1,63)=69.98$, $p=<.001$, $\eta^2 = .526$, but non-significant interaction, $F(1,63)=1.89$, $p=.174$, $\eta^2 = .03$

Discussion

- Improved motivation and perceived learning but comparable learning performance (immediately)
- Class format: Solo zoom room (online) versus "study hall" (in-person) and need for remote community
- Potential longer-term benefits for actual learning and generalization of benefits (e.g., sense of belonging) related to higher motivation and greater perception of class value