Effects of Generating Self-Explanations on Self-Monitoring and Study Plans

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BACKGROUND

Prevalence of online learning contribute to reliance on **self-paced** assignments and podcasted lectures.

Effective self-monitoring is crucial for **long-term learning, academic success, and intrinsic motivation.**

Illusions of learning: Learners experience overconfidence→ stop studying too early or adopt ineffective study strategies.

Generating self-explanations can help identify gaps in knowledge, improving **self-monitoring accuracy**, thus potentially impacting final exam score.

RESEARCH QUESTION

Q: How does generating explanations, compared to just reading, affect one's self-monitoring and future decisions for studying?

H1: Different studying strategies (generate explanations vs. read-only) will result in *different* self-monitoring and future study plans.

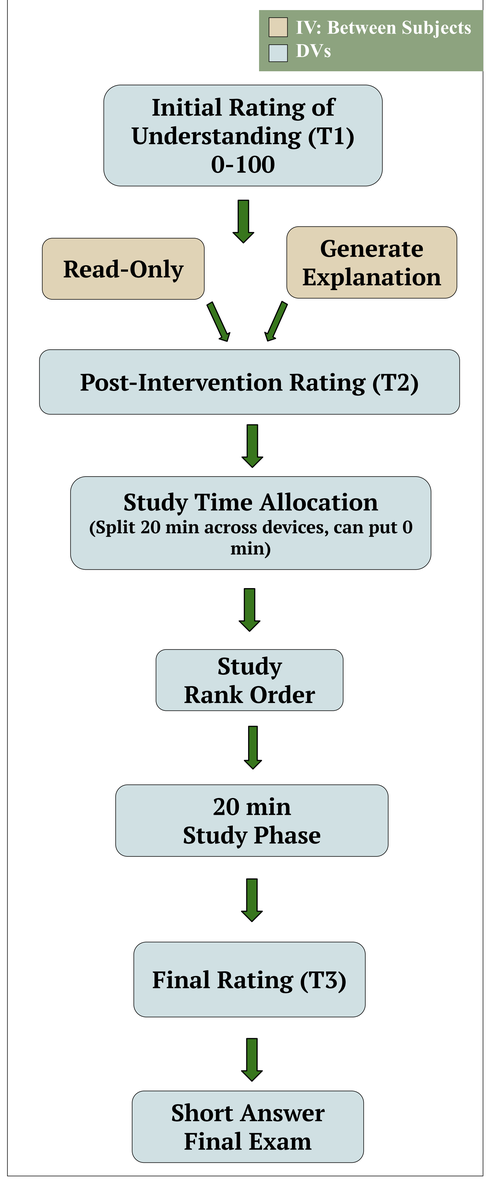
PARTICIPANTS

- **N = 148 undergraduates**

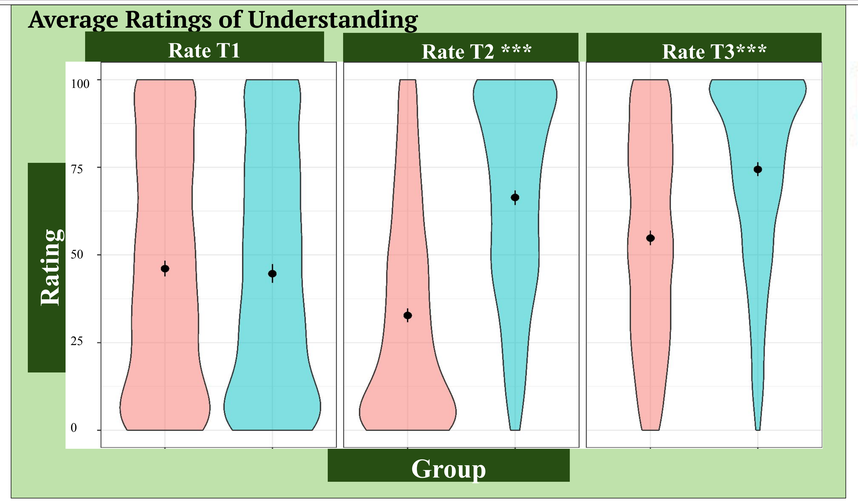
MATERIALS

- Generating explanation prompts developed from Rozenbilt & Keil (2002)
- Expert explanations sourced from howstuffworks.com and *The Way Things Work* by David Macaulay. Reworded by ChatGPT.

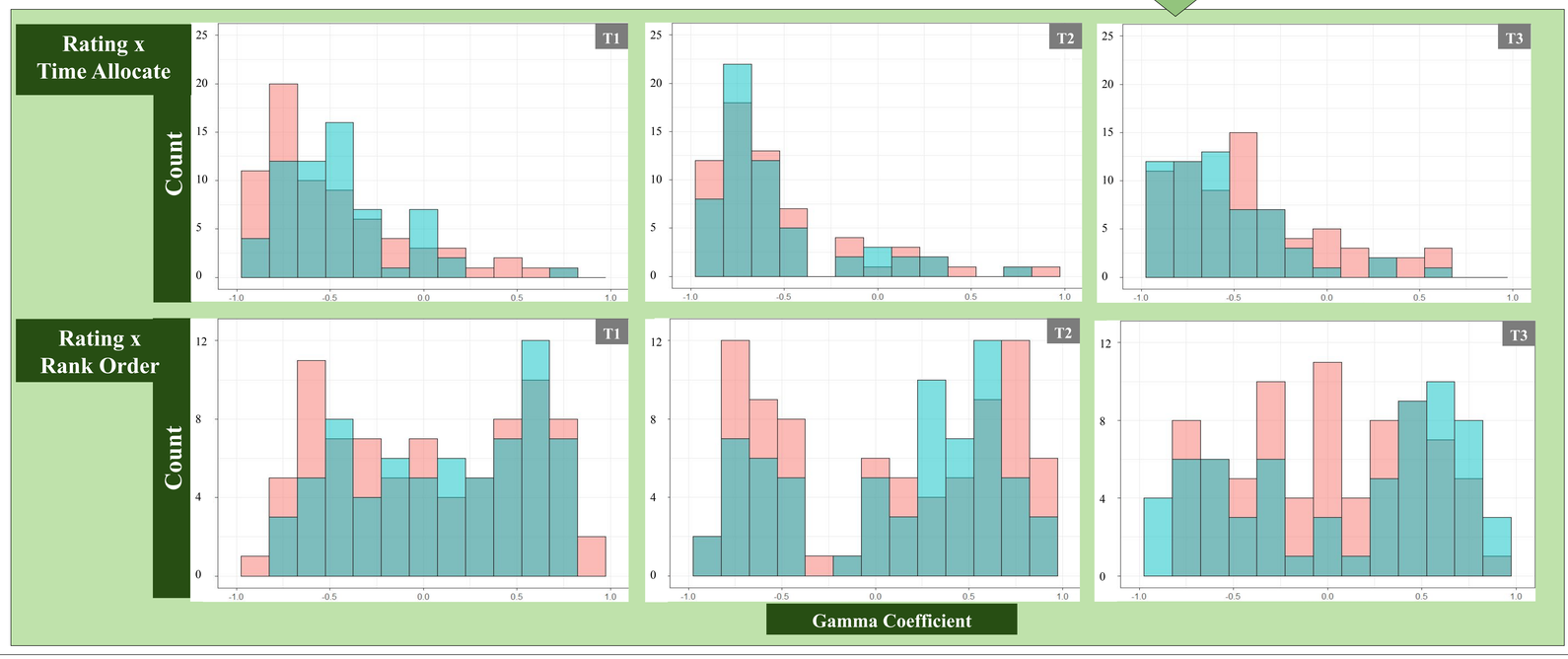
PROCEDURE



RESULTS



- **Time Allocate**: *The closer the gamma coefficient is to 1.0 means as participants' self-rating of their understanding of the device increases, participants allocate more time to studying the device.*
- **Rank Order**: *The closer the gamma coefficient is to 1.0 means as participants' self-rating of their understanding of the device increases, participants choose to study this device later.*



CONTRIBUTIONS

- **Ratings:**
  - Generating led to reduced ratings at T2 and more distributed ratings at T3, suggesting recognition of knowledge gaps.
- **Time Allocation:**
  - Generally, both groups spent more time studying devices they felt they did not understand well.
- **Rank Order:**
  - Gammas between ratings and proposed study order show two broad strategies: studying highly rated devices early or late.

Limitations & Future Directions

- Short-term online study & low stakes
  → Replicate in a classroom setting with delays.
- Actual study behavior may differ from study plan.
  → Measure actual study time allocation.

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