

MORE THAN WHAT THEY KNOW: WHY ATTITUDES MATTER IN TEACHING ABOUT AGRICULTURE

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INTRODUCTION

- “New Decade, Same Concerns” (Cosby et al., 2022)
 - Progress made, but many still lack agricultural understanding and decision-making ability
- Field often measures knowledge in isolation, agricultural literacy is more than knowledge alone
- Need to include non-cognitive factors (attitudes, values, motivation) in evaluation
- Broader evaluation = clearer picture of how behavior (and subsequently, agricultural literacy) is shaped
- Priority in W-4006: Agricultural Literacy Multistate Research Group
 - Assess attitudes, perceptions, and motivations of diverse population segments related to agriculture
- KAP Theory: Explains how knowledge, attitudes, and practices shape behavior (Bandura, 1976; Rogers, 1995).

METHODS

- Participants: 48 Colorado school-based agricultural education students
- Focus: Semester-long livestock production & sustainability curriculum intervention
- Measures:
 - Knowledge (12 binary items; composite score)
 - Attitudes (14 Likert-scale items; composite mean)
- Data Collection: Validated pre- and post-assessments (Bennett et al., 2025)
- Analysis:
 - Paired-sample t-tests for pre/post differences (Ross & Willson, 2017)
 - Pearson correlations & regression for relationships between outcomes (Prematunga, 2012)

FINAL THOUGHTS

Conclusions:

- Significant increases found in students’ agricultural knowledge and attitudes from pre- to post-assessment.
- Pre-intervention knowledge predicted post-intervention knowledge; pre-attitudes predicted post-attitudes.
- Pre-intervention knowledge also predicted post-intervention attitudes.
- Post-intervention knowledge and attitudes showed a reciprocal predictive relationship.
- Findings support the KAP model: knowledge shapes attitudes, which influence behavior.

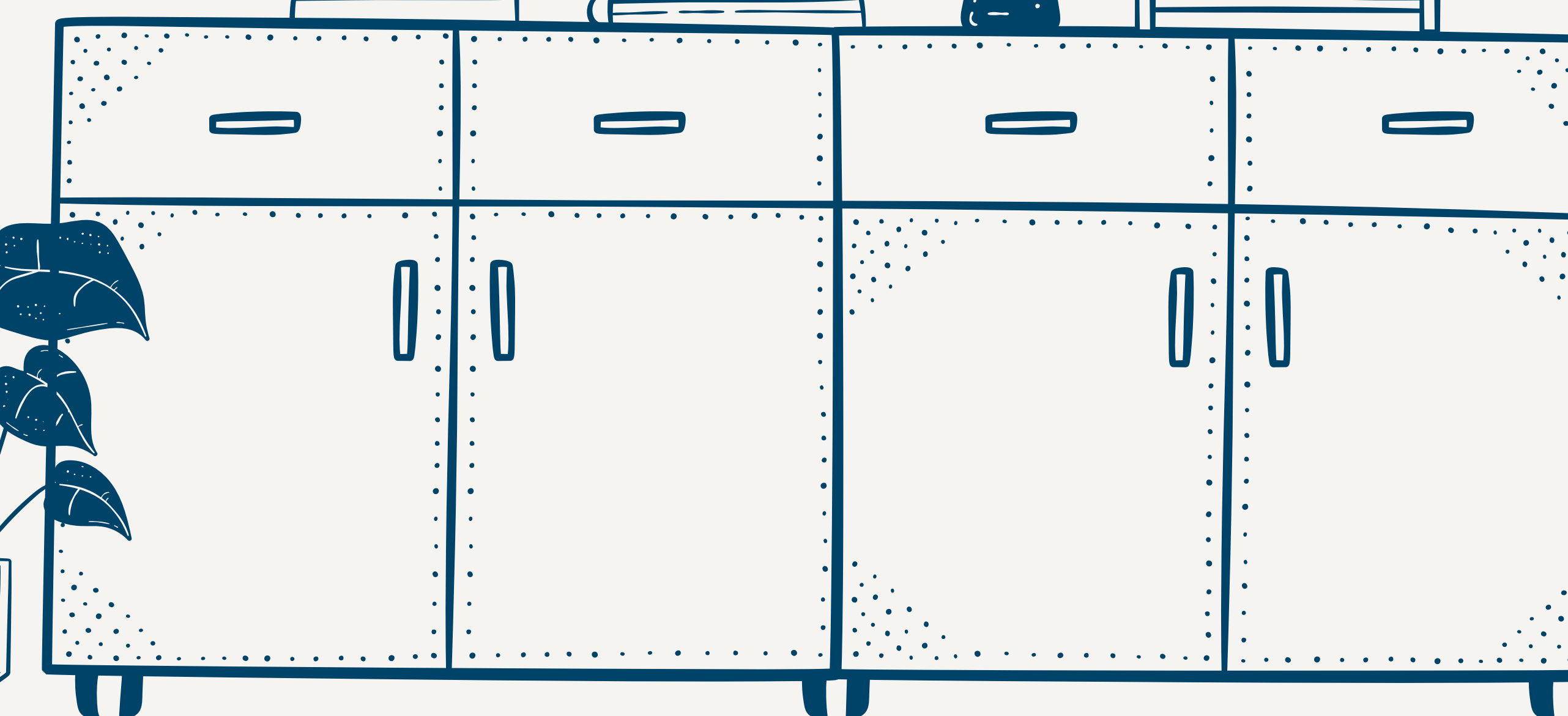
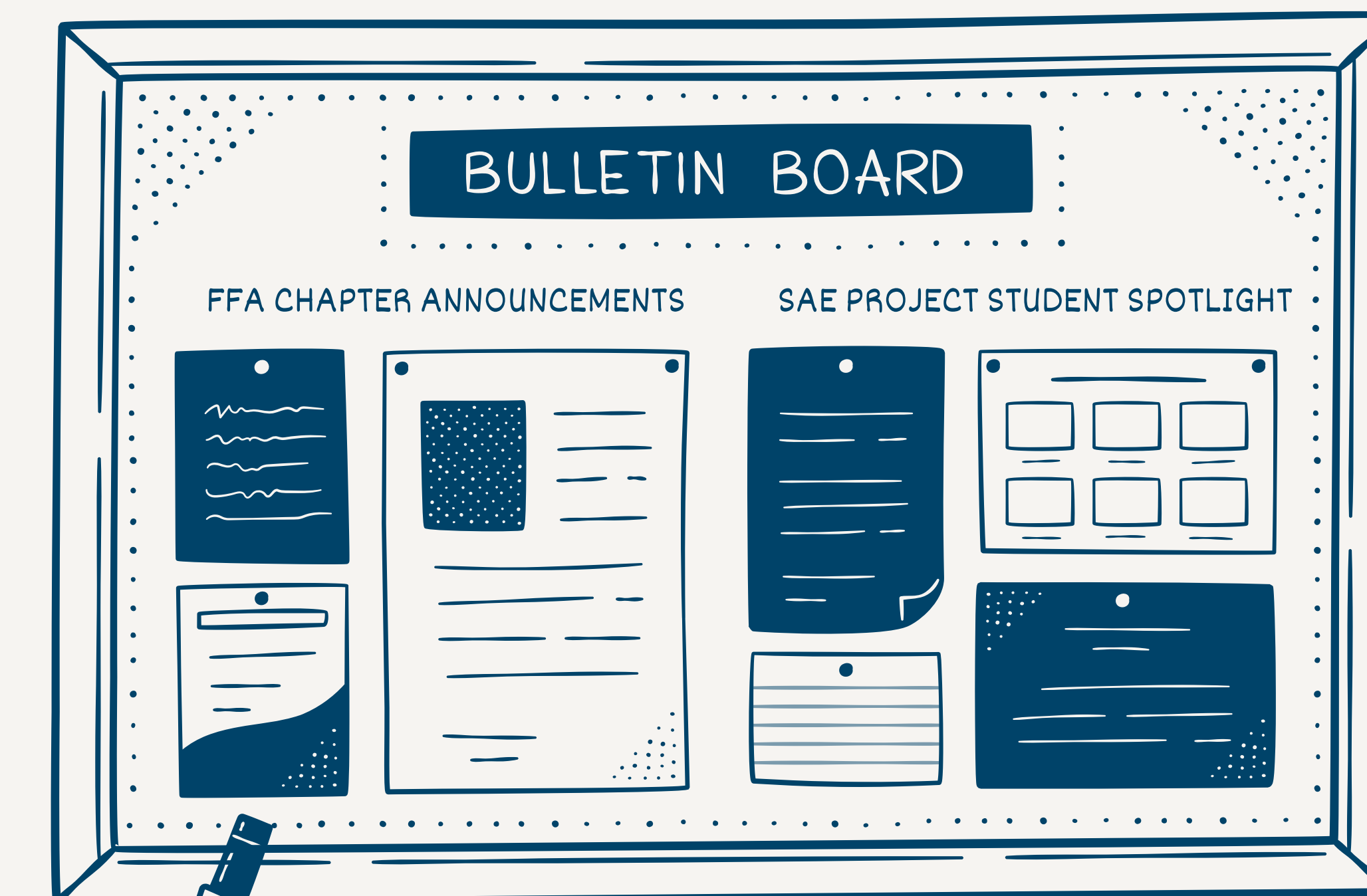
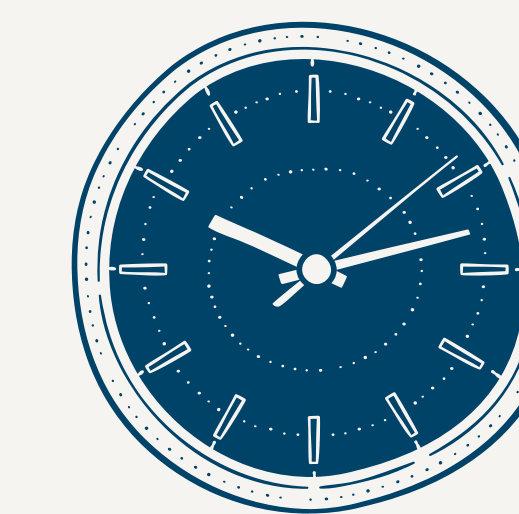
Recommendations:

- Agriculture is “too important” to leave to a few; agricultural literacy must be prioritized.
- Progress has been made with frameworks (NALLM), assessments, and innovative educational programs.
- Programs should target outcomes tied to human behavior, not just knowledge gain.
- Future research should explore skills, values, motivation, norms, and prior experiences as drivers of behavior.
- Long-term research needed to evaluate sustained impacts on sustainability-related behaviors and practices.

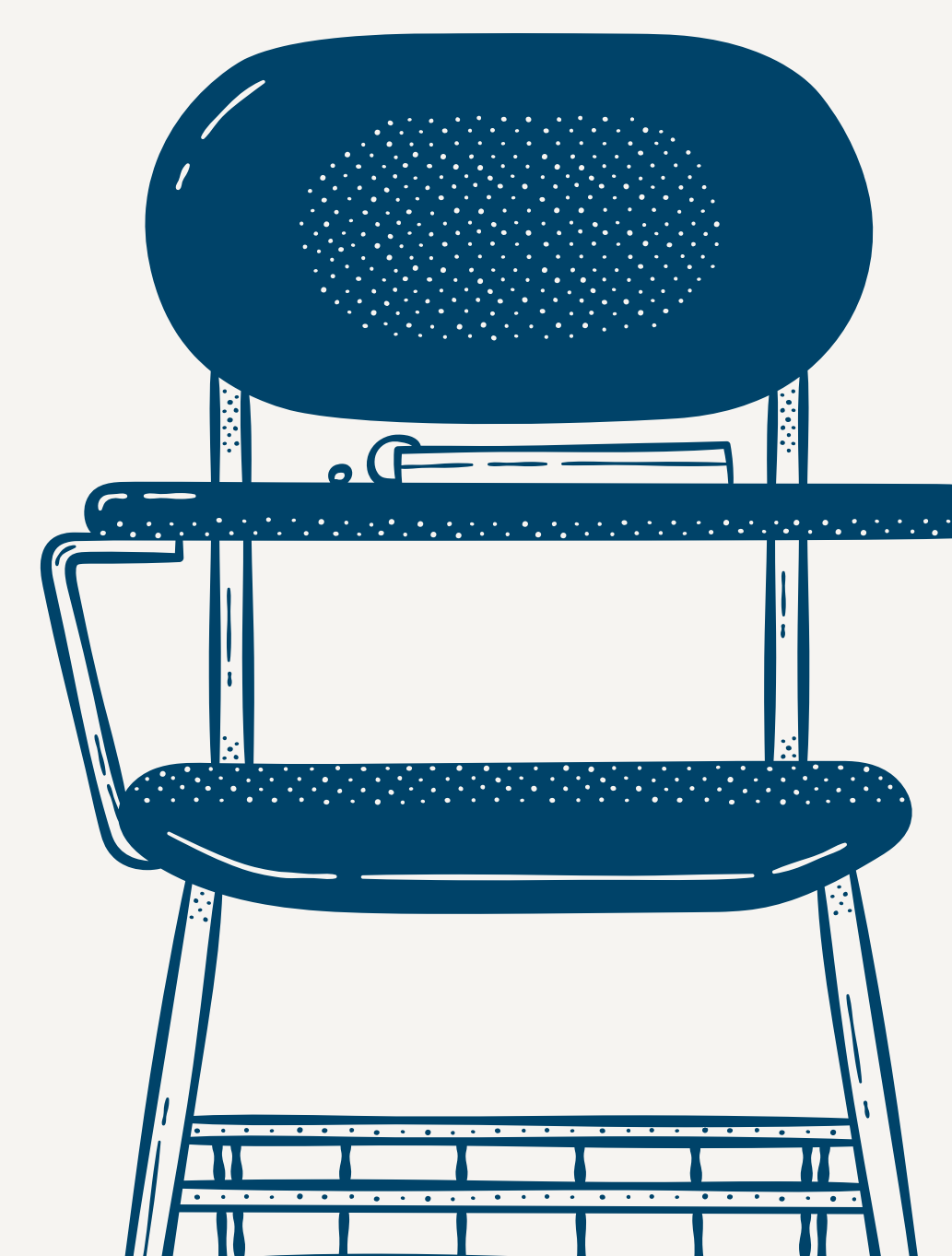
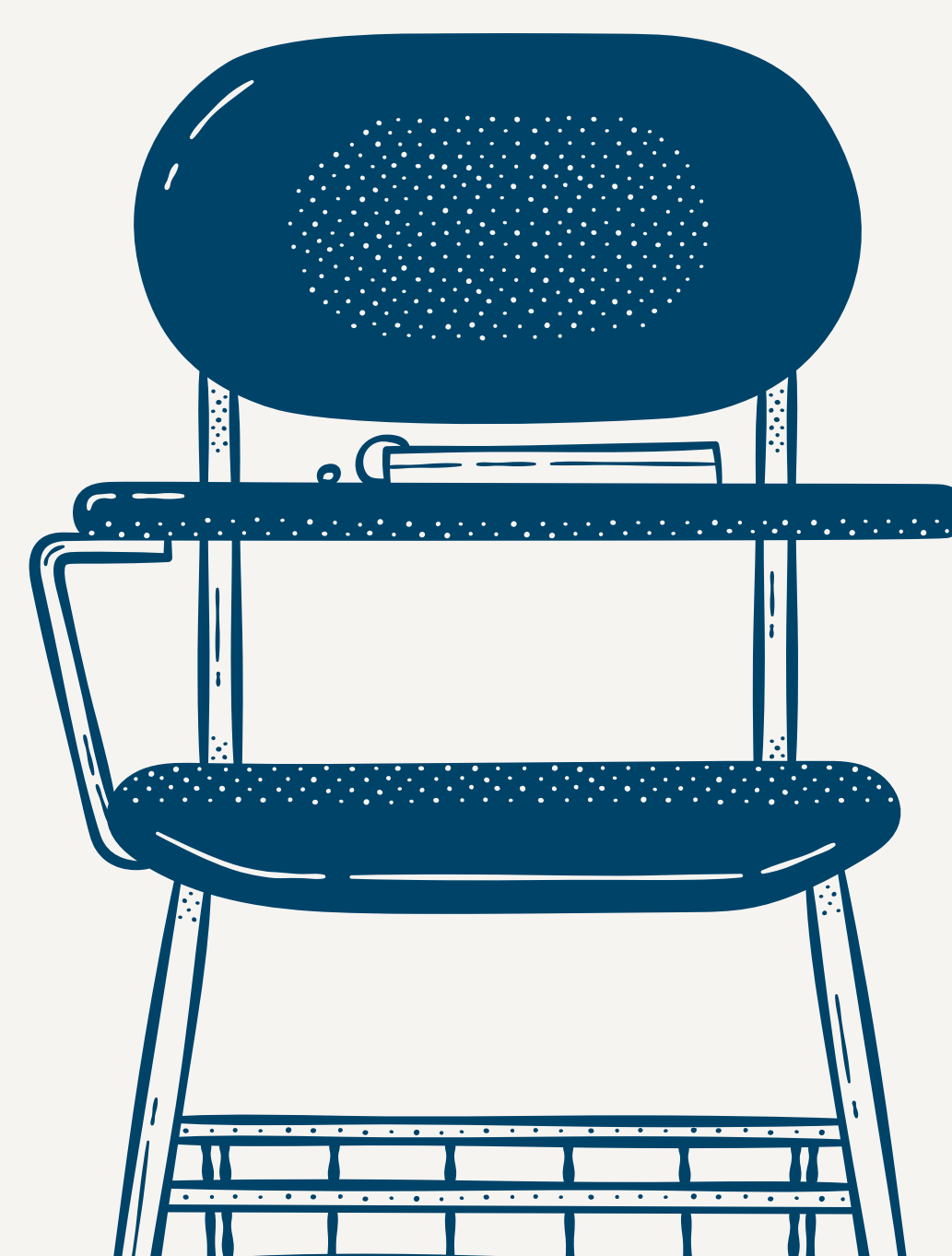
RESULTS

- Knowledge Gains:
 - Pre-test: M = 7.15 (SD = 2.05) → Post-test: M = 8.67 (SD = 2.22)
 - Significant increase, $p < .001$; Large effect ($d = 0.93$)
- Attitude Gains:
 - Pre-test: M = 4.84 (SD = 0.74) → Post-test: M = 5.35 (SD = 0.86)
 - Significant increase, $p < .05$; Moderate effect ($d = 0.60$)
 - Attitude shift: Somewhat positive → More positive
- Correlations:
 - Pre/Post knowledge: $r = .71^*$
 - Pre/Post attitudes: $r = .73^*$
 - Pre-knowledge ↔ Post-attitude: $r = .52^*$
 - Post-knowledge ↔ Post-attitude: $r = .56^*$
- Regression Findings:
 - Strongest predictor: Pre-attitudes → Post-attitudes ($\beta = .73^*$)
 - Pre-knowledge → Post-knowledge ($\beta = .71^*$)
 - Post-attitudes ↔ Post-knowledge ($\beta = .56^*$)
 - Pre-attitudes → Post-knowledge ($\beta = .52^*$)

(* = significant at .001 level)



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