

In-Depth Analysis of Near Transfer Effects after Memory Training

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Introduction

- ★ Memory strategy training effective (i.e., immediate gains in trained tasks) Gross et al., 2012; Gross & Rebok, 2011; Hertzog et al., 2009; Strickland-Hughes & West, 2017
- ★ Multifactorial, multi-week, multi-strategy group training approaches emphasizing memory beliefs beneficial Gross & Rebok, 2011; Payne et al., 2012; Sheffler et al. (under review); West et al., 2008; West & Hastings, 2011
- ★ Practical impact (e.g., generalization, duration) controversial Gray et al., 2022; McDaniel & Bugg, 2012; Noack et al. 2014; Traut et al., 2021
- ★ Memory self-regulation emphasis, e.g., monitoring skills, direct encouragement, and memory beliefs, *may* promote near transfer effects Bailey et al., 2010; Cavallini et al. 2010; Hertzog & Dunlosky, 2012; West & Strickland-Hughes, 2015
- ★ Five-week long Everyday Memory Clinic (EMC) improved targeted memory (name, list, story recall), strategy use, beliefs Bagwell & West, 2008; Hastings & West, 2009; West et al., 2008; West & Hastings, 2011
- ★ Brief (one-week) replication improved targeted memory (name recall), strategy use, and memory self-efficacy Strickland-Hughes & West, 2022

Research Aims

- ★ **Aim 1.** Test near transfer effects for associative memory
- ★ **Aim 2.** Define effective strategy use for transfer memory tasks
- ★ **Aim 3.** Explore role of memory self-regulation in transfer effects

Methods

Study Design

- ★ RCT, 2 time (within: pretest, posttest) × 2 condition (between: Trained, Control)

Training

- ★ **Program:** One-week including 2-hr. group class and 2-3 hrs. homework practice
- ★ **Content:** Association and visualization strategies for names paired with faces
- ★ **Approach:** Self-regulatory emphasis, e.g., repeated practice, modeling, social support, self-pacing

Participants

- ★ *N* = 122 community-dwelling adults 53 to 90 years old (*M* = 73, *SD* = 8)
- ★ Healthy, English-speaking, no cognitive impairment
- ★ Majority female (79%), Caucasian (92%), and well-educated (*M* = 17, *SD* = 3)

Measures

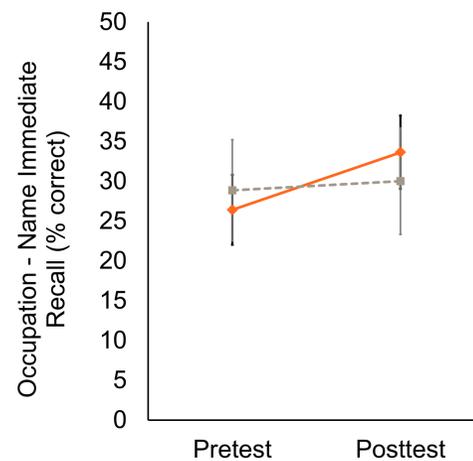
- ★ **Occupation – name verbal association:** 30 pairs, half concrete (e.g., STONE; FARMER); % correct on tests of immediate name recall, delayed name recall (40 min.), and delayed recognition of correct/incorrect pairs (75 min.)
- ★ **Object – location visual association:** 24 items (e.g., scissors) placed in 3 × 4 array representing 12 rooms in a house; % items correctly replaced at 40 min. delay
- ★ **Strategy use:** Retrospective checklists with 15-16 strategies varied in complexity

Discussion

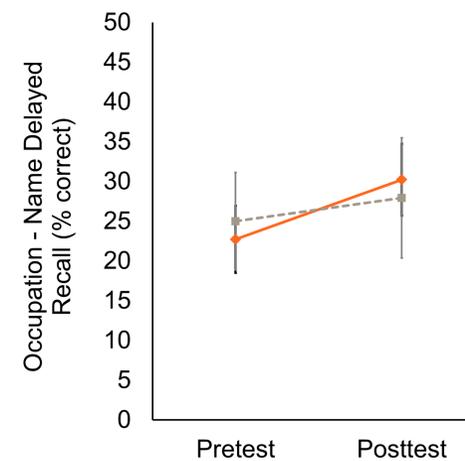
- ★ Direct value of training heightened if not limited to target task
- ★ Spontaneous generalization of trained strategies and selection of effective strategies for most similar associative memory tasks
- ★ Potential to incorporate brief training format into existing programming
- ★ Brief training “dose” may limit potential benefits from self-regulatory focus
- ★ Need to replicate with diverse samples and active comparison groups

Aim 1 Results: Near Transfer Effects

- ★ Pretest-posttest improvement for trained, but not control, group on occupation-name recall (immediate and delayed)
- ★ No evidence of transfer to occupation-name recognition, $F(1, 119) = 0.85, p = .359, \eta^2 = .01$, or to object-location recall, $F(1, 110) = 0.5, p = .825, \eta^2 < .01$,



$F(1, 116) = 4.69, p = .032, \eta^2 = .04$

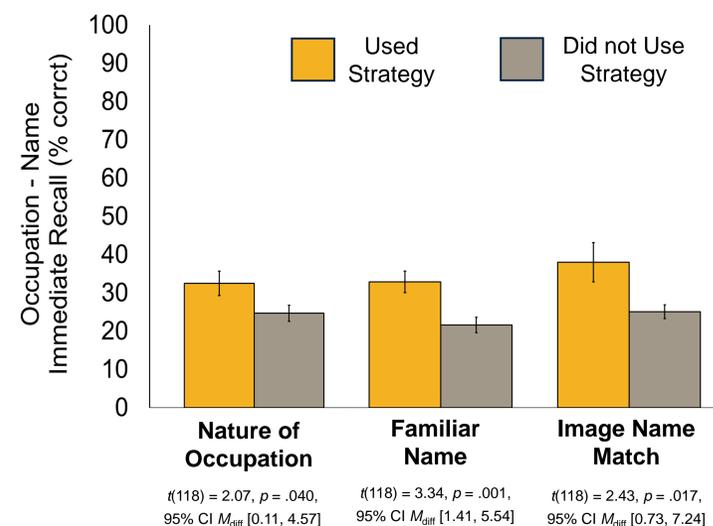


$F(1, 116) = 4.26, p = .041, \eta^2 = .04$

Aim 2 Results: Effective Strategy Use

Three “effective” strategies identified based on pretest immediate occupation-name recall

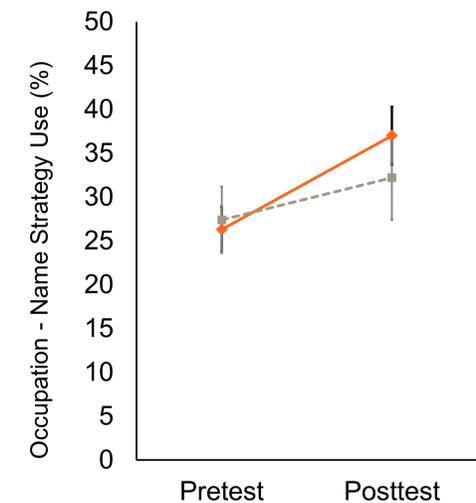
- ★ **Nature of Occupation:** “I tried to think about the nature of the occupation, e.g., barbers cut hair with scissors; judges are wise and wear robes.”
- ★ **Familiar Name:** “I associated the name with the name of someone else I know.”
- ★ **Image Name Match:** “I created an image in my mind of a person with the occupation next to a concrete object that fits the name, e.g., ‘The astronaut Kohn with an ice cream cone.’ ‘The painter North painting an arrow pointing north.’”



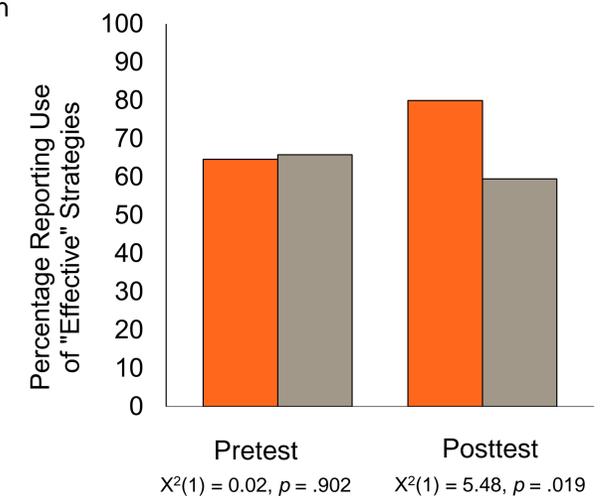
$t(118) = 2.07, p = .040, 95\% \text{ CI } M_{diff} [0.11, 4.57]$
 $t(118) = 3.34, p = .001, 95\% \text{ CI } M_{diff} [1.41, 5.54]$
 $t(118) = 2.43, p = .017, 95\% \text{ CI } M_{diff} [0.73, 7.24]$

Aim 3 Results: Self-Regulation and Transfer

- ★ Pretest-posttest gains in number of strategies used for trained, but not control, group on both occupation-name and object-location tests
- ★ More frequent use of at least one effective strategy by trained group than control group at posttest; similar frequency of use between groups at pretest
- ★ Limited evidence for relationship between near transfer and other self-regulatory factors, e.g., prepost gains in memory self-efficacy
- ★ No evidence for mediation of transfer via self-regulatory factors



$F(1, 115) = 5.43, p = .022, \eta^2 = .05$



$\chi^2(1) = 0.02, p = .902$ $\chi^2(1) = 5.48, p = .019$

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More Info
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