# Disaggregating Adult Learning Practices To Identify What Matters Most in Explaining Learning Outcomes

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# Purpose of the Presentation

- Summarize the results from a meta-analysis of studies investigating the effects of different adult learning methods on learner outcomes

- Present additional findings from the meta-analysis to identify the adult learning method practices that mattered most in terms of explaining changes and improvements in learner knowledge, skills, attitudes, and self-efficacy beliefs

- Describe the conditions under which learner outcomes are maximized and the implications of those conditional relationships for practice

# Research Synthesis of Adult Learning Studies[a]

- Research synthesis of studies of accelerated learning, coaching, guided design, and just-in-time-training
- 58 randomized control design studies
- 2,095 experimental group participants and 2,213 control or comparison group participants
- Combination of studies in university and nonuniversity settings
- Learner outcomes included learner knowledge, skills, attitudes, and self-efficacy beliefs
- The influence of the adult learning methods on the learner outcomes was estimated by weighted Cohen's $d$ effect sizes for the differences on the post test scores for the intervention vs. nonintervention group participants

[a] Dunst, C.J., Trivette, C.M., & Hamby, D.W. (2010). Meta-analysis of the effectiveness of four adult learning methods and strategies. *International Journal of Continuing Education and Lifelong Learning,* 3(1), 91-112.

# Adult Learning Methods and Strategies

| Methods | Description |
| --- | --- |
| Accelerated Learning | "Creating a relaxed emotional state, an orchestrated and multi-sensory learning environment, and active learner engagement" (Meier, 2000). |
| Coaching | "Method of transferring skills and expertise from more experienced and knowledgeable practitioners to less experienced ones" (Hargreaves & Dawe, 1990). |
| Guided Design | "Method characterized by decision-making and problem solving processes that include procedures to using real world problems for mastering learning content (through) facilitator guidance and feedback" (Wales & Stager, 1998). |
| Just-in-Time Training | "Training methods and strategies used in the context of real-life challenges in response to learner requests for guidance or mentoring" (Beckett, 2000). |

# Characteristics Used to Code and Evaluate the Adult Learning Methods[a]

*Planning*

Introduce      Engage the learner in a preview of the material, knowledge or practice that
is the focus of instruction or training

Illustrate      Demonstrate or illustrate the use or applicability of the material, knowledge
or practice for the learner

*Application*

Practice      Engage the learner in the use of the material, knowledge or practice

Evaluate      Engage the learner in a process of evaluating the consequence or outcome
of the application of the material, knowledge or practice

*Deep Understanding*

Reflection      Engage the learner in self-assessment of his or her acquisition of knowledge
and skills as a basis for identifying "next steps" in the learning process

Mastery      Engage the learner in a process of assessing his or her experience in the
context of some conceptual or practical model or framework, or some
external set of  performance standards or criteria

[a] Donovan, M. et al. (Eds.) (1999). *How people learn.* Washington, DC: National Academy Press.

# Most Effective Adult Learning Method Practices

| Characteristic | Practice | Mean Effect Size |
|---|---|---|
| *Introduction* | Out of class activities/self-instruction | 0.64 |
| | Classroom/workshop presentations | 0.63 |
| | Pre-class learner exercises | 0.54 |
| *Illustration* | Instructor role playing/simulations | 0.55 |
| | Learner informed input | 0.53 |
| *Practicing* | Real life learner application | 0.94 |
| | Real life learner application/role playing | 0.86 |
| *Evaluation* | Self assessment of strengths/weaknesses | 0.94 |
| *Reflection* | Identify performance improvement goals | 1.27 |
| | Journaling/behavior suggestions | 0.82 |
| *Mastery* | Standards-based assessment | 0.86 |

Cumulative Effects of Different Combinations of
the Most Effective Adult Learning Method Practices
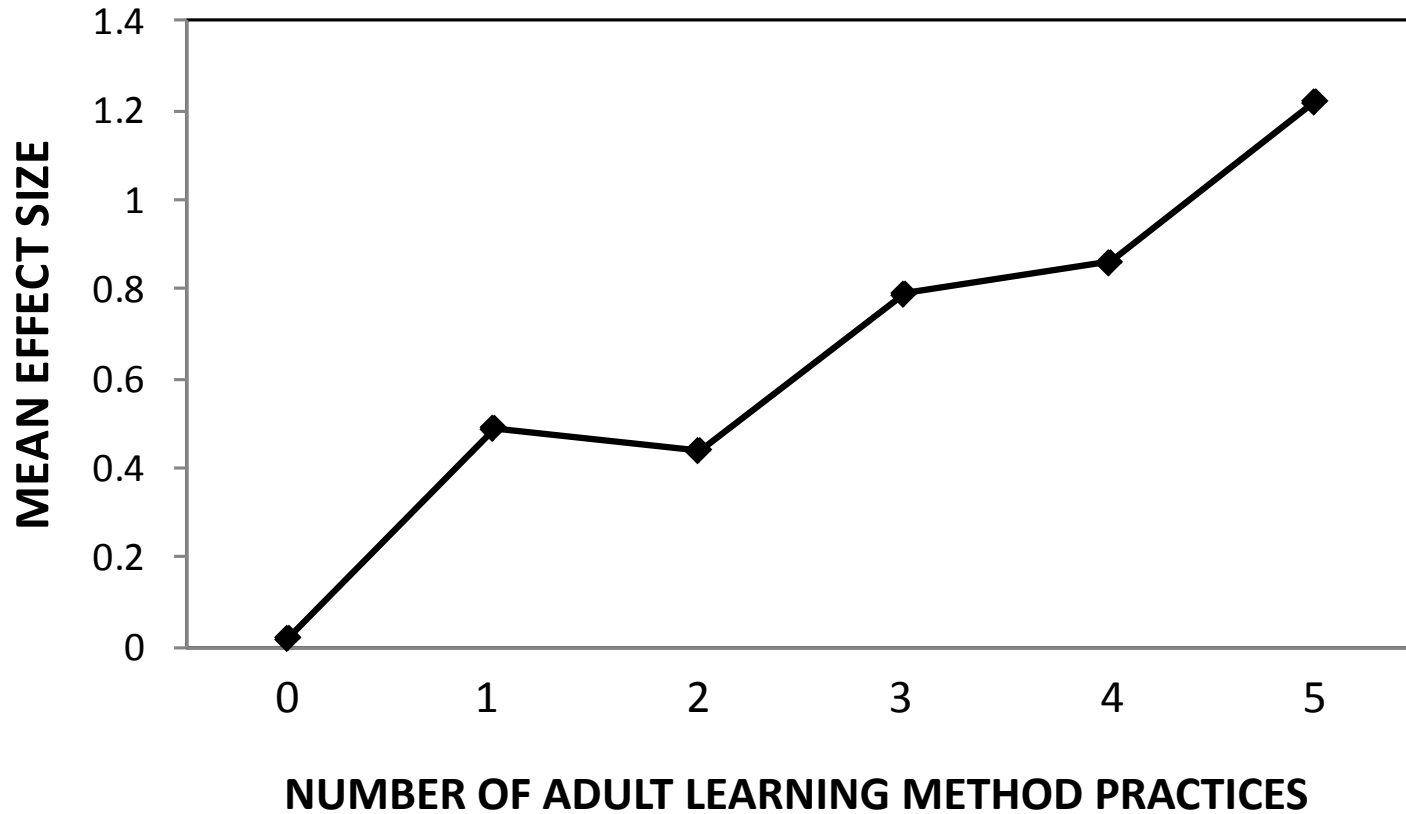
# Moderators of the Relationships Between the Use of the Most Effective Practices the Learner Outcomes

- Type of Outcome Measure
- Hours of Intervention
- Number of Study Participants
- Intervention Setting

The influences of the combined use of the most effective practices and the moderators were evaluated by a series of 3 Between Number of Adult Learning Method Practices (0–1, 2–3, 4–5) X 2 Between Moderator Group Analyses
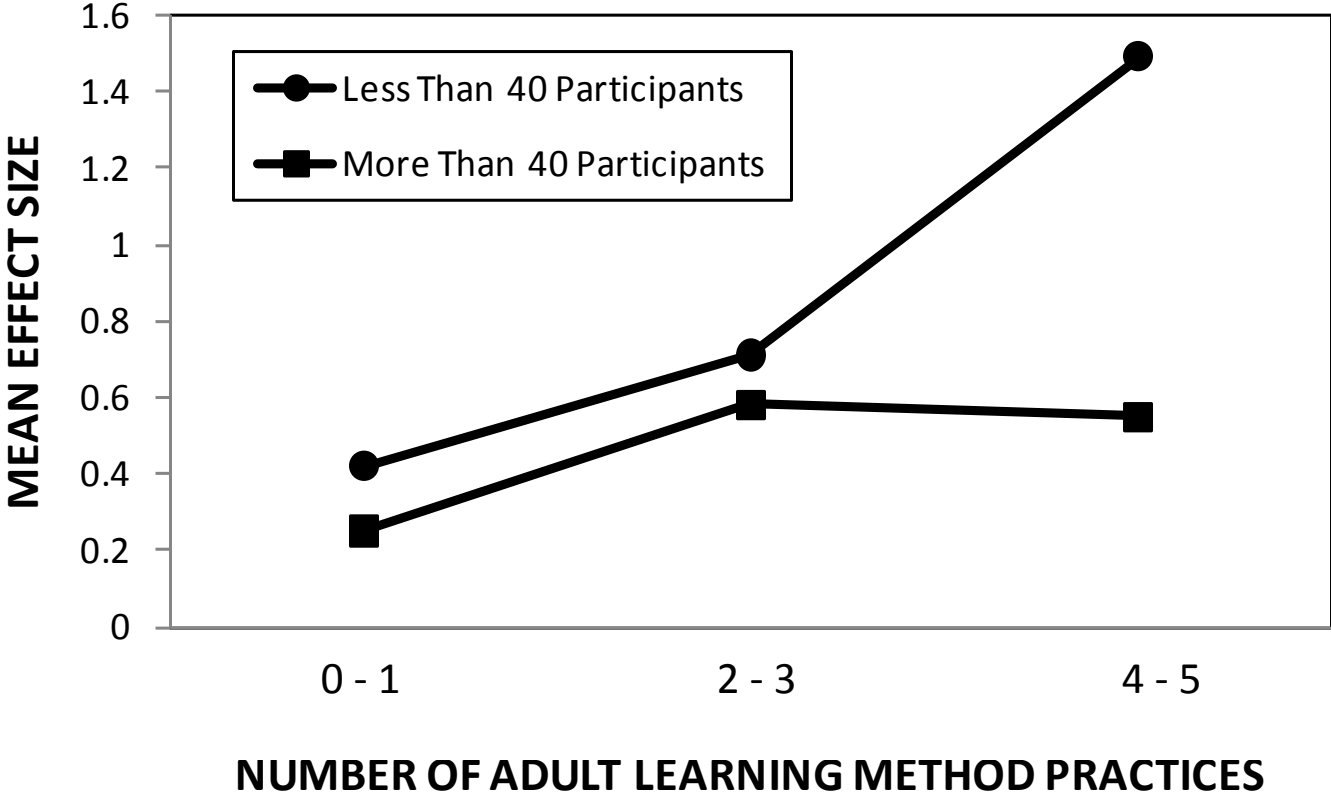
Relationship Between Different Combinations
of Practices and Type of Learner Outcomes
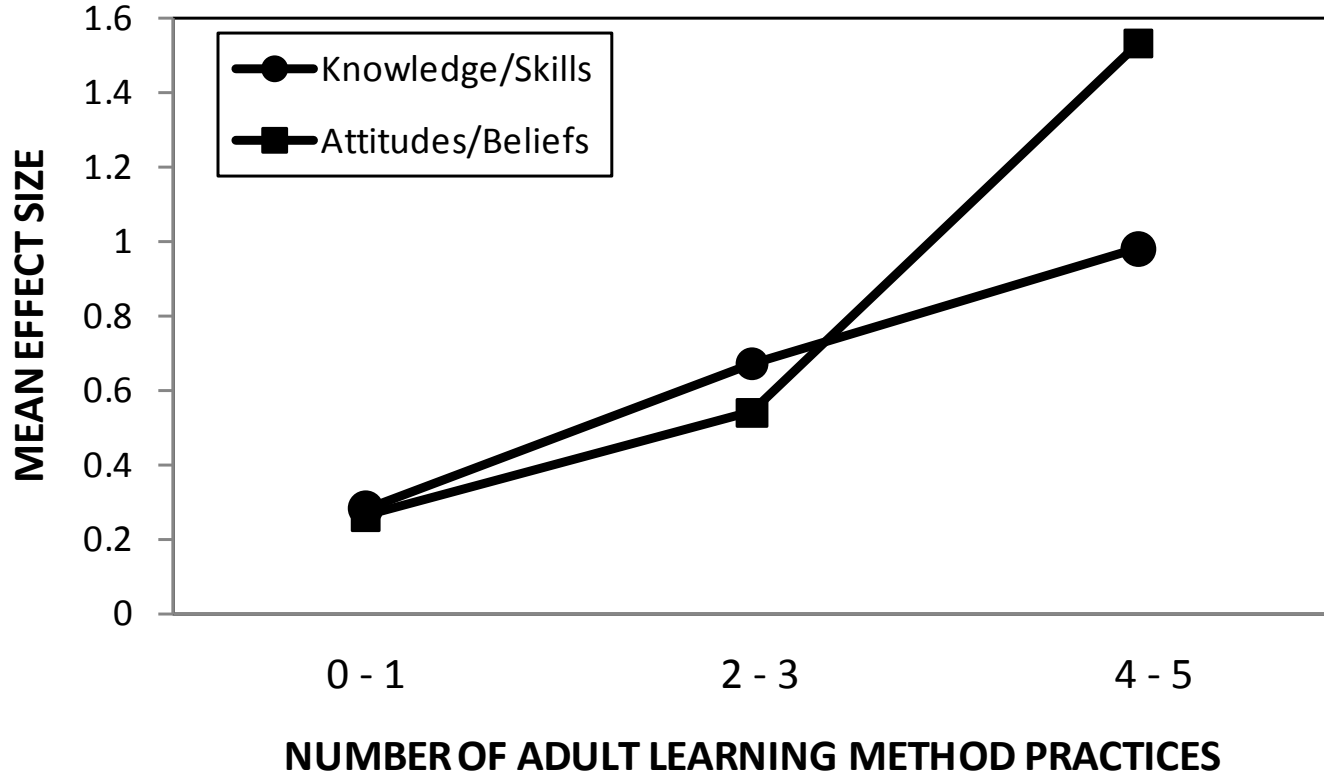
Relationship Between Different Combinations
of Practices and Hours of Instruction

MEAN EFFECT SIZE

More Than 20 Hours
Less Than 20 Hours

NUMBER OF ADULT LEARNING METHOD PRACTICES
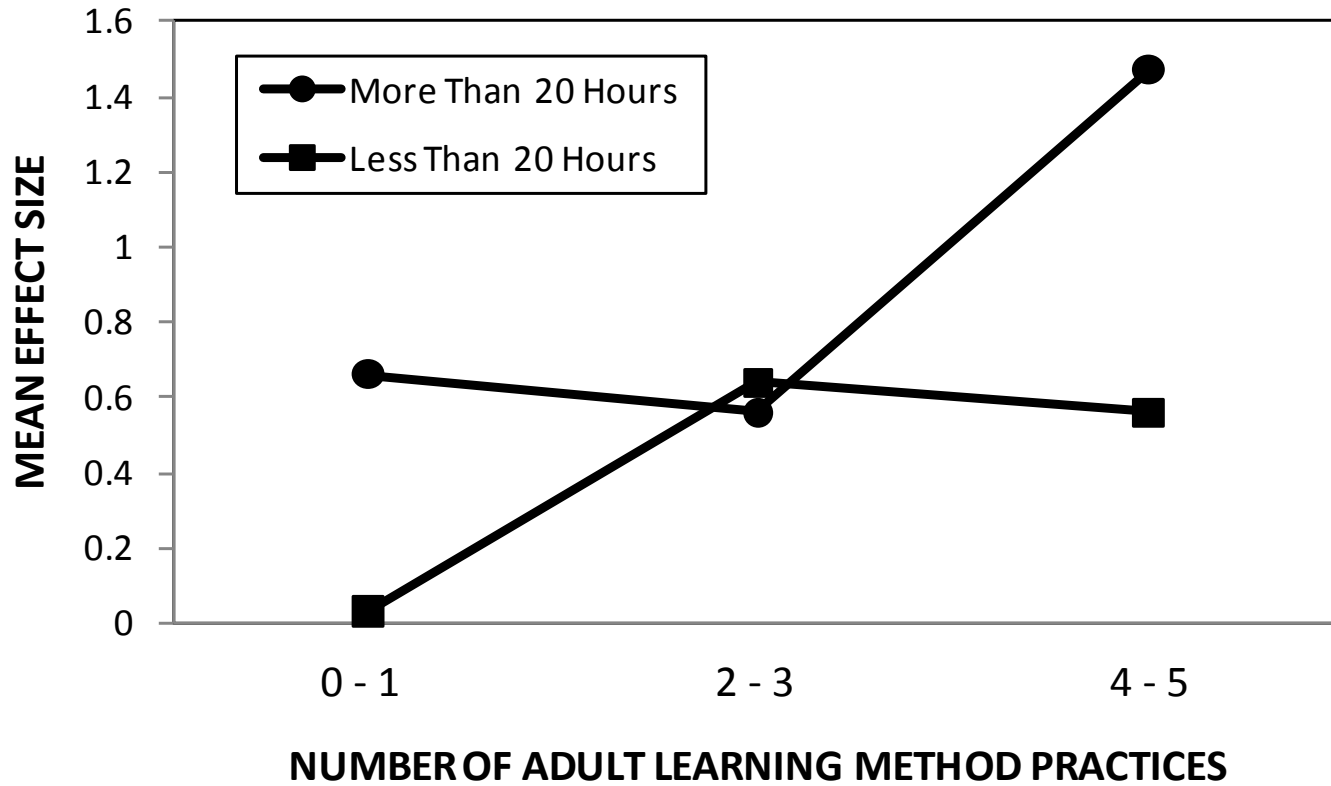
Relationship Between Different Combinations
of Practices and Number of Study Participants

Relationship Between Different Combinations
of Practices and Type of Learner Setting
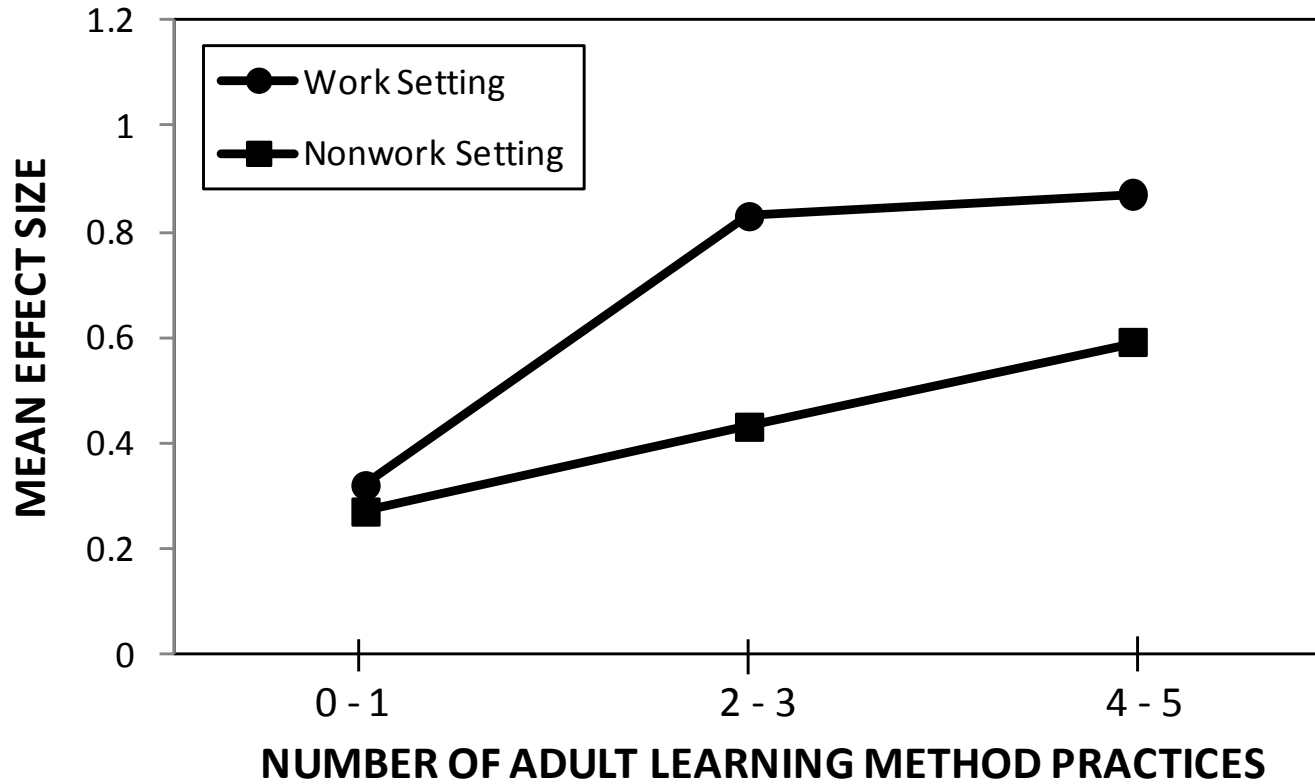
# Conclusions

- The findings from the disaggregation of the effect size results showed that practices that more actively involved learners in the learning process had larger effects on learner knowledge, skills, attitudes, and self-efficacy beliefs, and that a combination of those practices had optimal effects on learner outcomes

- The influences of the adult learning method practices were also optimized when the practices were used with a small number of learners where instruction or training was afforded in the participants' work settings for more than 20 hours on multiple occasions

- The results help identify the conditions under which adult learning method practices are most likely to have optimal learner benefits