

An Evidence-Based Approach to Professional Development in Early Childhood Intervention

Carl J. Dunst, Ph.D.

Orelena Hawks Puckett Institute

Asheville and Morganton, North Carolina, USA

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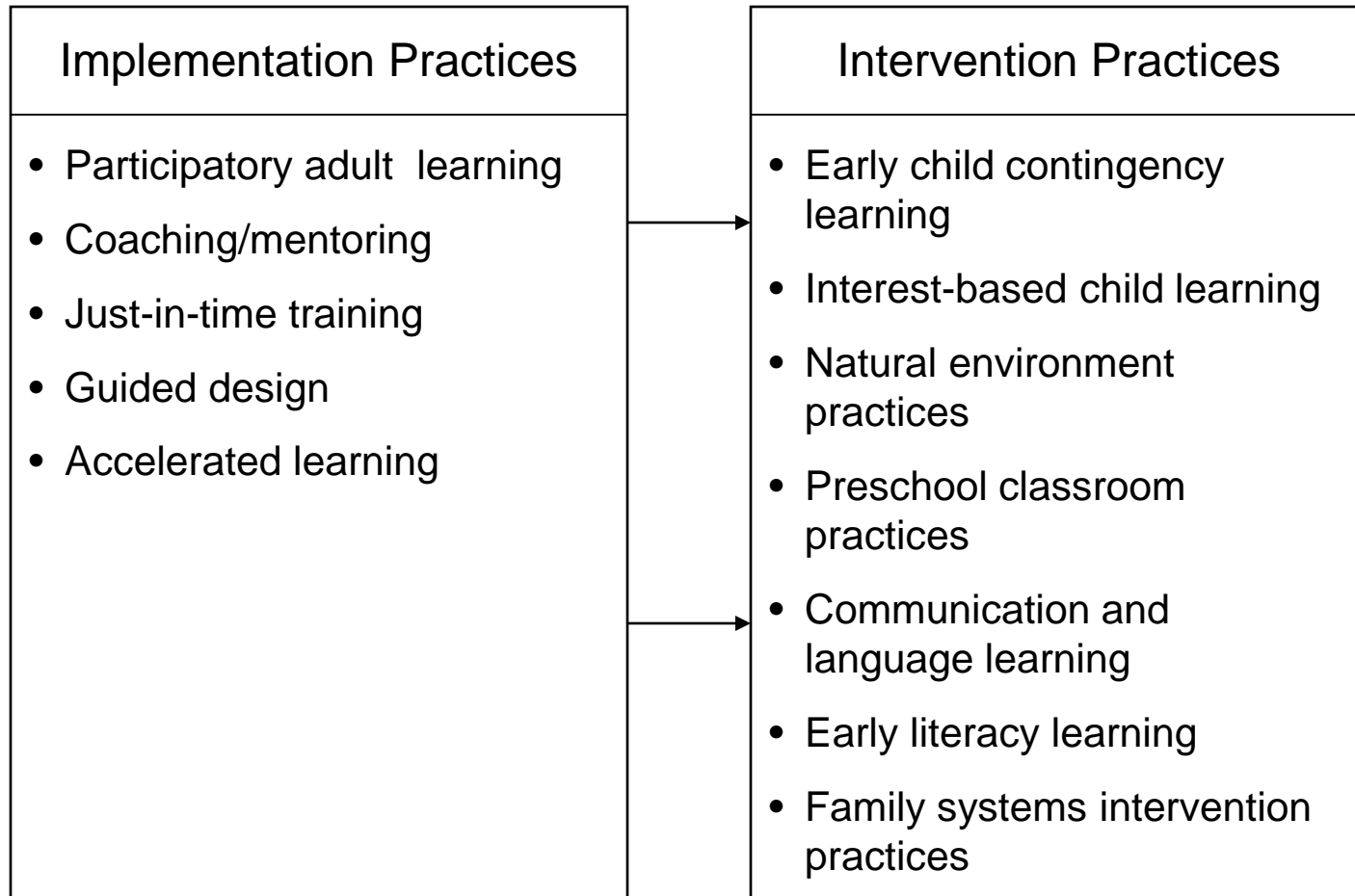
Purpose

- Describe the key characteristics of an evidence-based approach to professional development
- Describe the evidence base for a participatory approach to professional development
- Describe the findings from an evaluation study using the evidence-based professional development practices

Two Types of Evidence-Based Practices

- Evidence-Based Intervention Practices
 - Early childhood intervention practices
- Evidence-Based Implementation Practices
 - Adult learning methods

Relationship Between the Two Types of Practices



Research Synthesis of Adult Learning Studies^a

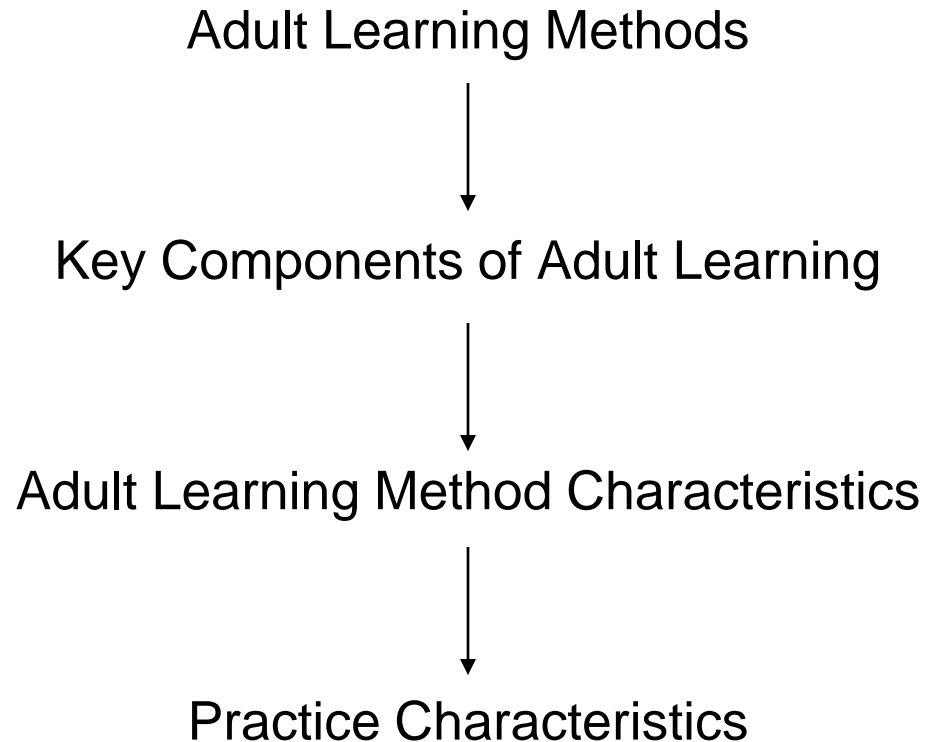
- Research synthesis of studies of accelerated learning, coaching, guided design, and just-in-time-training
- 58 randomized control design studies
- 2,095 experimental group participants and 2,213 control or comparison group participants
- Combination of studies in university and nonuniversity settings
- Learner outcomes included learner knowledge, skills, attitudes, and self-efficacy beliefs

^a Dunst, C.J. et al. (in press). Meta-analysis of the effectiveness of four adult learning methods and strategies. *International Journal of Continuing Education and Lifelong Learning*.

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).

Unpacking and Disentangling “What Matters Most”



Characteristics Used to 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

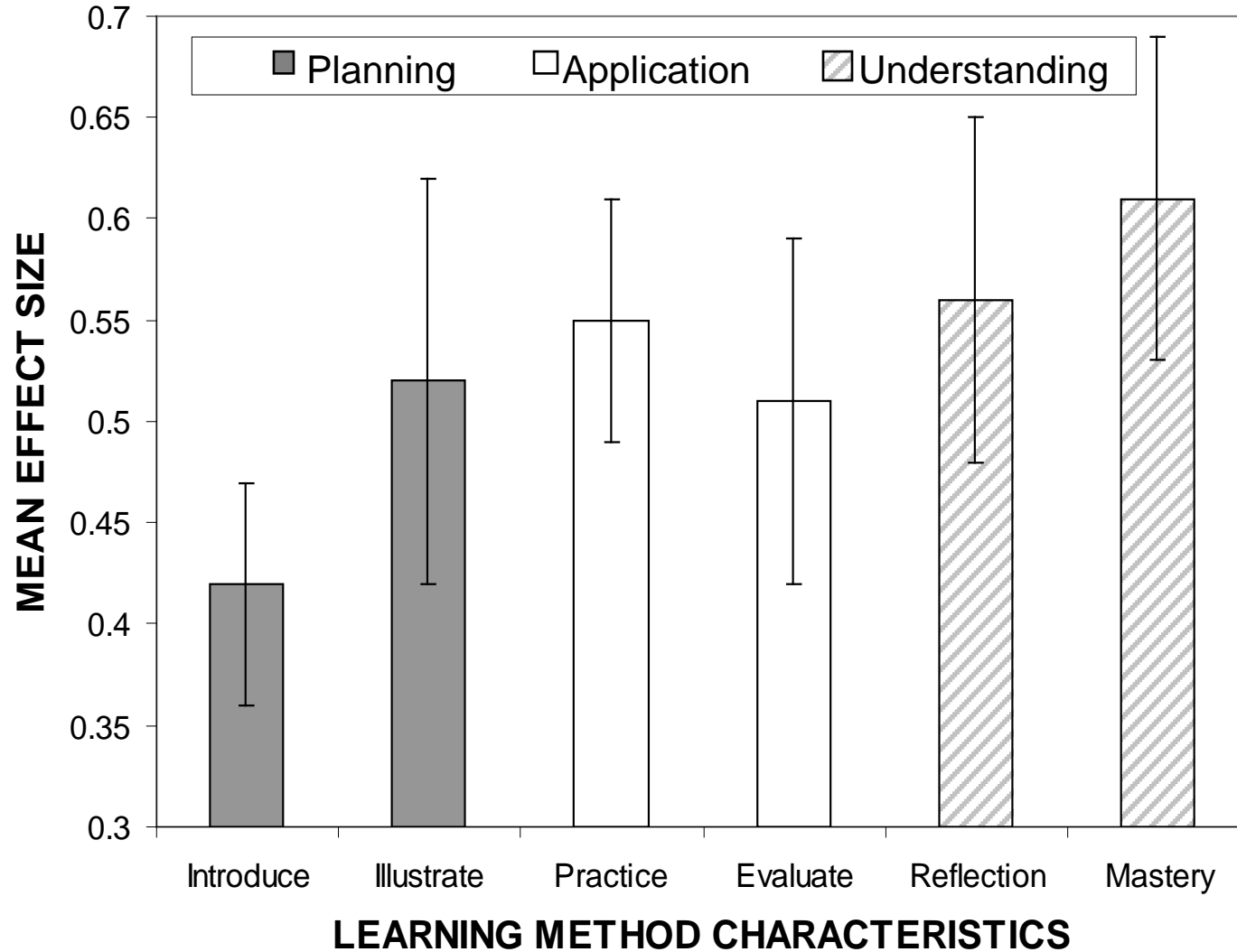
- | | |
|----------|--|
| Practice | Engage the learner in the use of the material, knowledge or practice |
| Evaluate | Engage the learner in a process of evaluating the consequence or outcome of the application of the material, knowledge or practice |

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 standards or criteria |

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

Major Findings from the Research Synthesis



Effect Sizes for Introducing Information to Learners

Practices	Number		Mean Effect Size (<i>d</i>)	95% Confidence Interval	Z
	Studies	Effect Sizes			
Out of class activities/self-instruction	9	11	.64	.52 - .77	10.43**
Classroom/workshop lectures	21	31	.63	.53 - .72	13.14**
Pre-class exercises	5	5	.54	.38 - .71	6.44**
Dramatic readings/imagery	4	8	.28	.07 - .49	2.57*
Dramatic readings	15	21	-.01	-.14 - .12	0.15
Imagery	4	6	-.02	-.19 - .15	0.25

*p. < 01. ** p < .0001.

Effect Sizes for Illustrating/Demonstrating Learning Topic

Practices	Number		Mean Effect Size (<i>d</i>)	95% Confidence Interval	Z
	Studies	Effect Sizes			
Role playing/simulations	14	21	.55	.42 - .68	8.20**
Learner input	4	4	.53	.34 - .72	5.41**
Real life example/real life + roleplaying	3	4	.45	.14 - .76	2.85*
Instructional video	4	6	.34	.00 - .68	1.97

*p. < 01. ** p < .0001.

Effect Sizes for Learner Practicing/Application

Characteristics	Number		Mean Effect Size (<i>d</i>)	95% Confidence Interval	Z
	Studies	Effect Sizes			
Real life application	9	13	.94	.79 – 1.09	12.15**
Real life application + role playing	5	7	.86	.61 – 1.03	6.75**
Problem solving tasks	13	19	.49	.39 - .58	10.10**
Learning games/writing exercises	6	8	.38	.23 - .54	4.80**
Role playing (skits, plays)	8	14	.35	.19 - .51	4.21**

*p. < 01. ** p < .0001.

Effect Sizes for Learner Evaluation

Practices	Number		Mean Effect Size (<i>d</i>)	95% Confidence Interval	<i>Z</i>
	Studies	Effect Sizes			
Assess strengths/weaknesses	7	9	.94	.65 – 1.22	6.49**
Review experience/make changes	16	24	.47	.38 - .56	10.19**

* $p < .01$. ** $p < .0001$.

Effect Sizes for Learner Reflection

Practices	Number		Mean Effect Size (<i>d</i>)	95% Confidence Interval	<i>Z</i>
	Studies	Effect Sizes			
Performance improvement	4	6	1.27	.89 – 1.65	6.56*
Journaling/behaviour suggestion	5	5	.82	.52 – 1.12	5.33**
Group discussion about feedback	13	19	.49	.39 - .58	10.10**

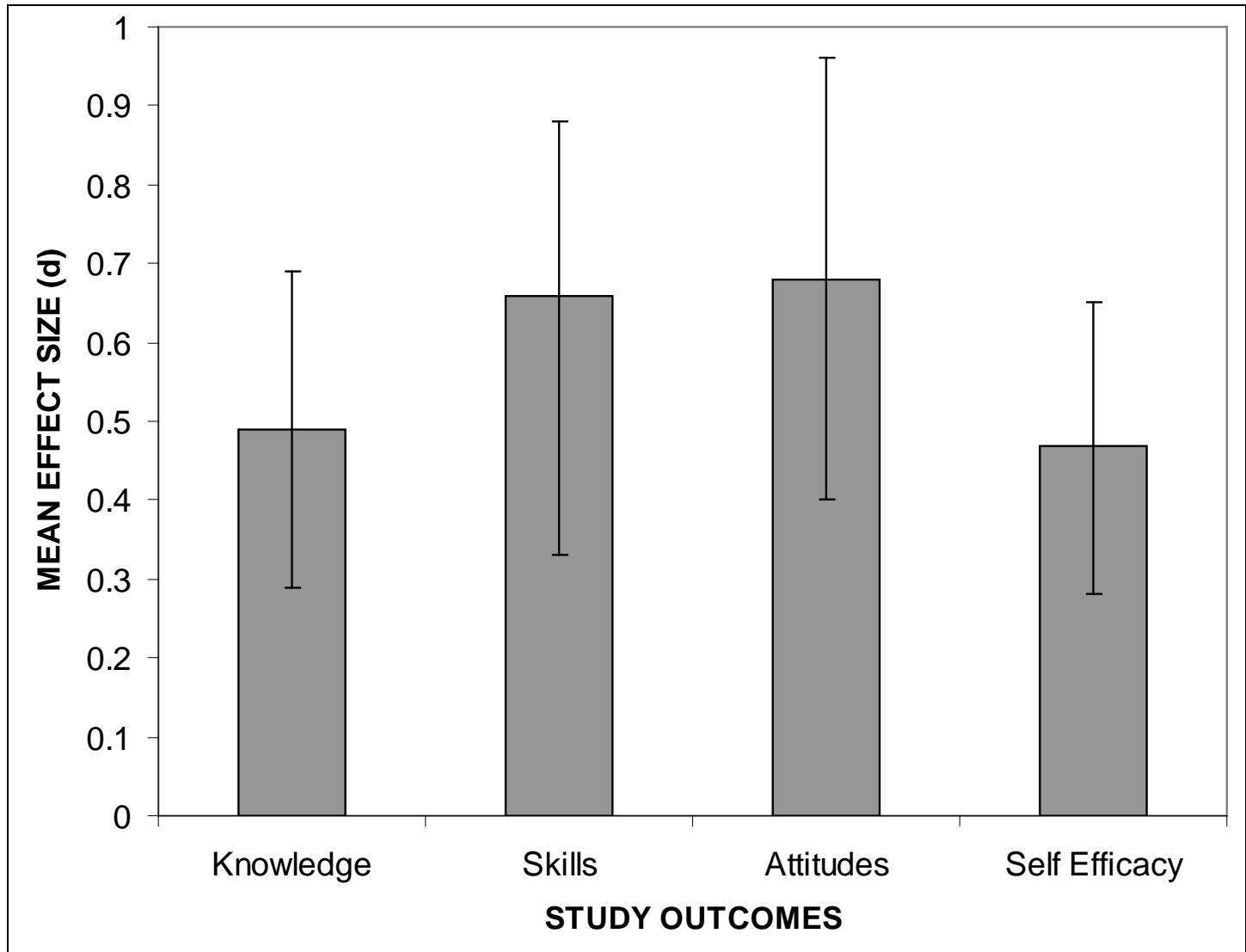
* $p < .01$. ** $p < .0001$.

Effect Sizes for Self-Assessment of Learner Mastery

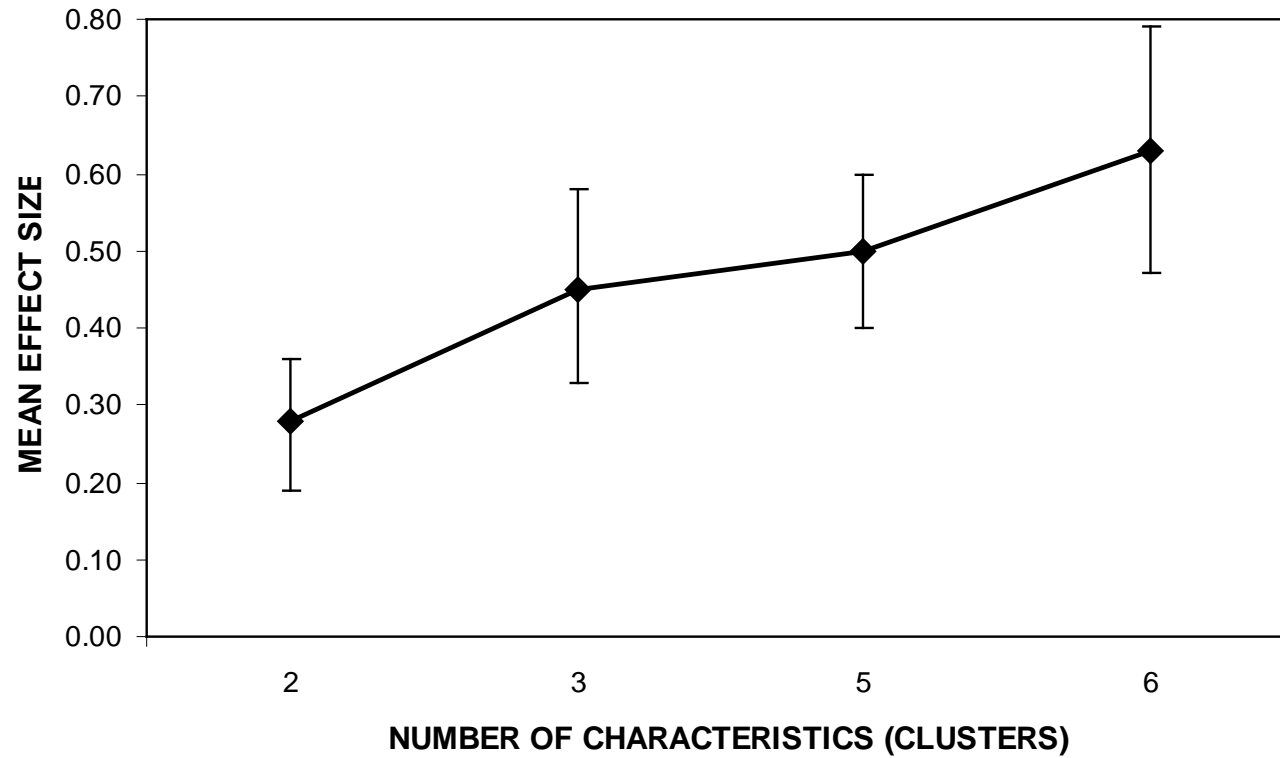
Practices	Number		Mean Effect Size (d)	95% Confidence Interval	Z
	Studies	Effect Sizes			
Standards-based assessment	8	11	.86	.72 - .99	12.47**
Self-assessment	13	19	.49	.39 - .58	10.10**

* $p < .01$. ** $p < .0001$.

Effect Sizes for the Four Study Outcomes



Cumulative Effects of the Adult Learning Characteristics



Moderators of the Effectiveness of the Adult Learning Methods

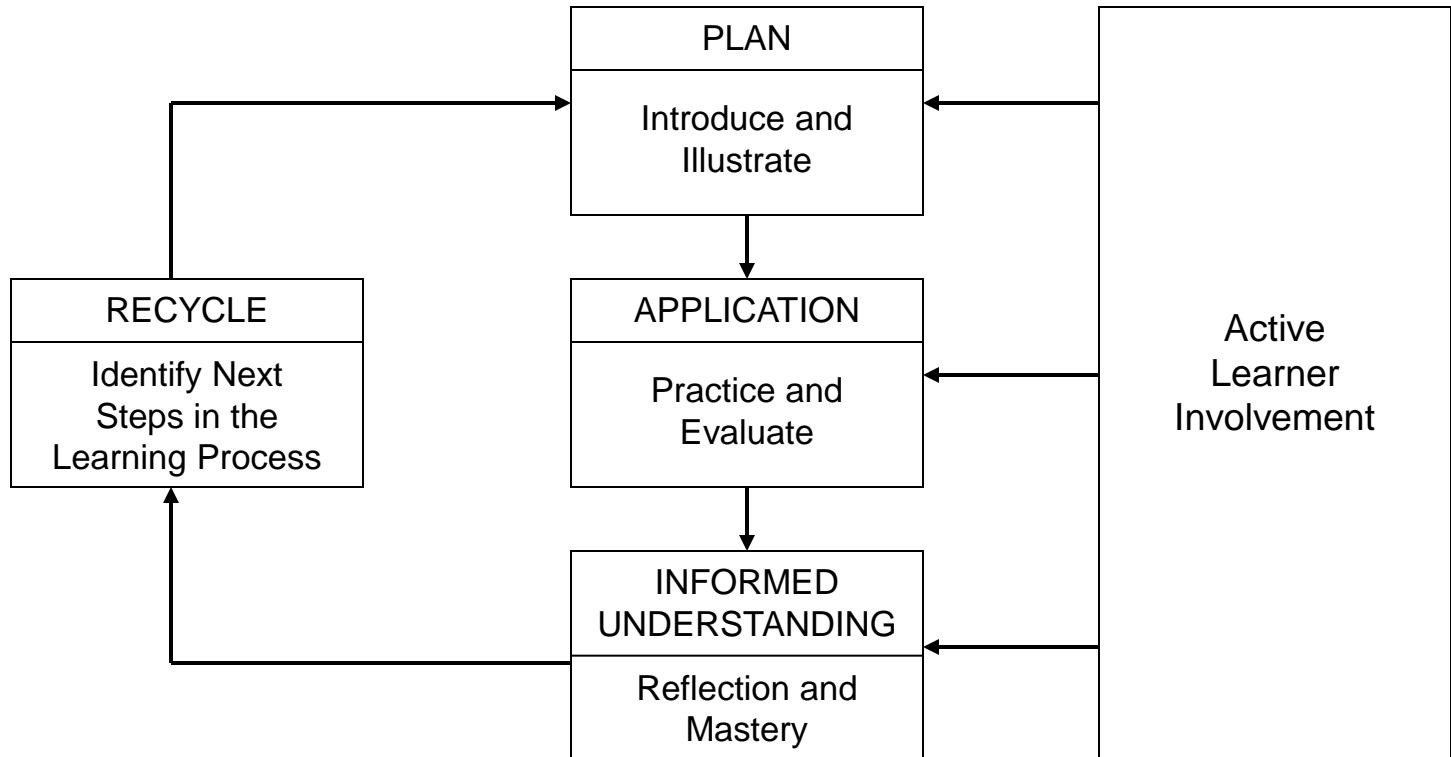
Moderators	Number		Mean Effect Size	95% Confidence Interval
	Studies	Effect Sizes		
<i>Learners</i>				
Practitioners	21	31	.70	.60 - .80
College Students	37	51	.29	.22 - .35
<i>Setting</i>				
Work Environment	11	16	.64	.53 - .74
University Classroom	46	64	.32	.25 - .38
<i>Number of Participants</i>				
Small (9 to 34)	15	22	.91	.71 - 1.11
Medium (35 to 75)	25	36	.48	.38 - .58
Large (76 to 300+)	18	24	.33	.26 - .40
<i>Length of Training</i>				
1 to 10 hours	16	23	.21	.13 - .30
11 to 40 hours	23	35	.55	.44 - .67
40 + hours	18	22	.60	.51 - .70

Evidence-Based Adult Learning Method

Findings from the meta-analysis were used to develop an adult learning method called PALS (Participatory Adult Learning Strategy) that emphasizes active learner participation in learning new material or practices and instructor/trainer guided learner experiences

PALS

(*P*articipatory *A*dult *L*earning *S*trategy)



Trainer and Trainee Roles in the Different Phases of PALS

PALS Phases	Trainer Roles	Trainee Roles
<i>Introduction</i>	<ul style="list-style-type: none"> Preview learning topic Describe key elements/provide examples Include trainee input Illustrate/demonstrate application 	<ul style="list-style-type: none"> Complete pretraining preview Pre-class/workshop exercises Provide input on the learning topic In-class/workshop warm-up exercises
<i>Application</i>	<ul style="list-style-type: none"> Facilitate application Observe trainee application Provide <i>in vivo</i> feedback/guidance Facilitate learner assessment of options 	<ul style="list-style-type: none"> Provide examples of application Trainee role playing, games, etc. Implement/practice use of the subject matter Evaluate use of the knowledge or practice
<i>Informed Understanding</i>	<ul style="list-style-type: none"> Establish learning standards Engage learners in self-assessment Provide guidance to learners Provide behavioural suggestions 	<ul style="list-style-type: none"> Standards-based evaluation Conduct self-assessment Trainer-guided learner reflection Journaling Group discussions of understanding
<i>Repeat Learning Process</i>	<ul style="list-style-type: none"> Joint planning Trainer guidance Trainer/trainee mentoring 	<ul style="list-style-type: none"> Joint planning Identify needed information/experiences Trainer/trainee mentoring

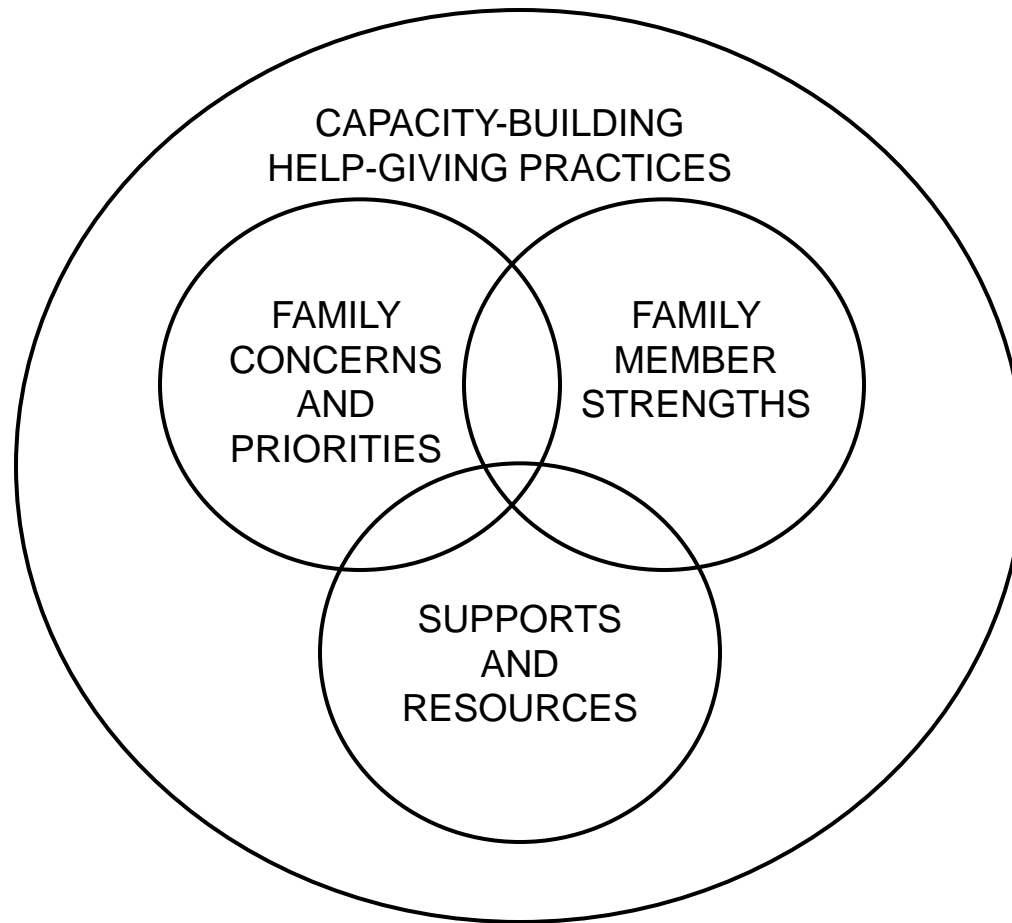
Promoting Adoption of Evidence-Based Practices Using PALS

- Family-systems early intervention practices
- Early childhood intervention classroom practices
- Early childhood literacy learning practices
- Everyday early childhood language learning practices
- Head Start teacher effectiveness project
- Early Head natural learning environments project

Promoting Adoption of Family-Systems Intervention Practices

- 473 early intervention practitioners in 46 United States
- 5 types of training (presentations, day and multi-day workshops, field-based and enhanced field-based)
- Participants randomly assigned to complete the study outcome measure at one or six months after training
- Outcome measure included self-assessment of the usefulness of the training content and the extent to which the training improved participants' abilities to work with families

Major Components of the Family-Systems Intervention Model Constituting the Focus of In-service Training

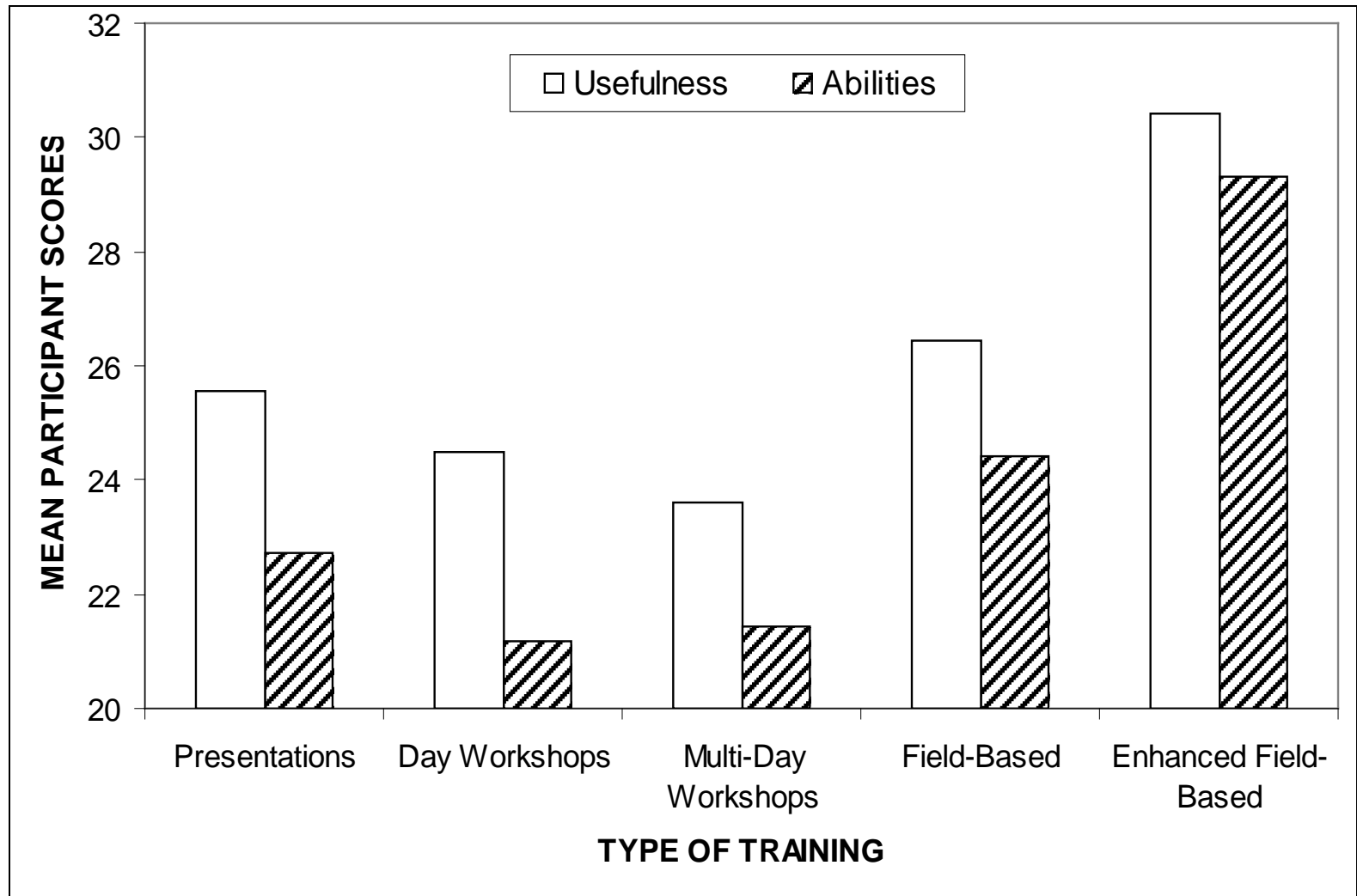


Characteristics of the Different Types of In-service Training

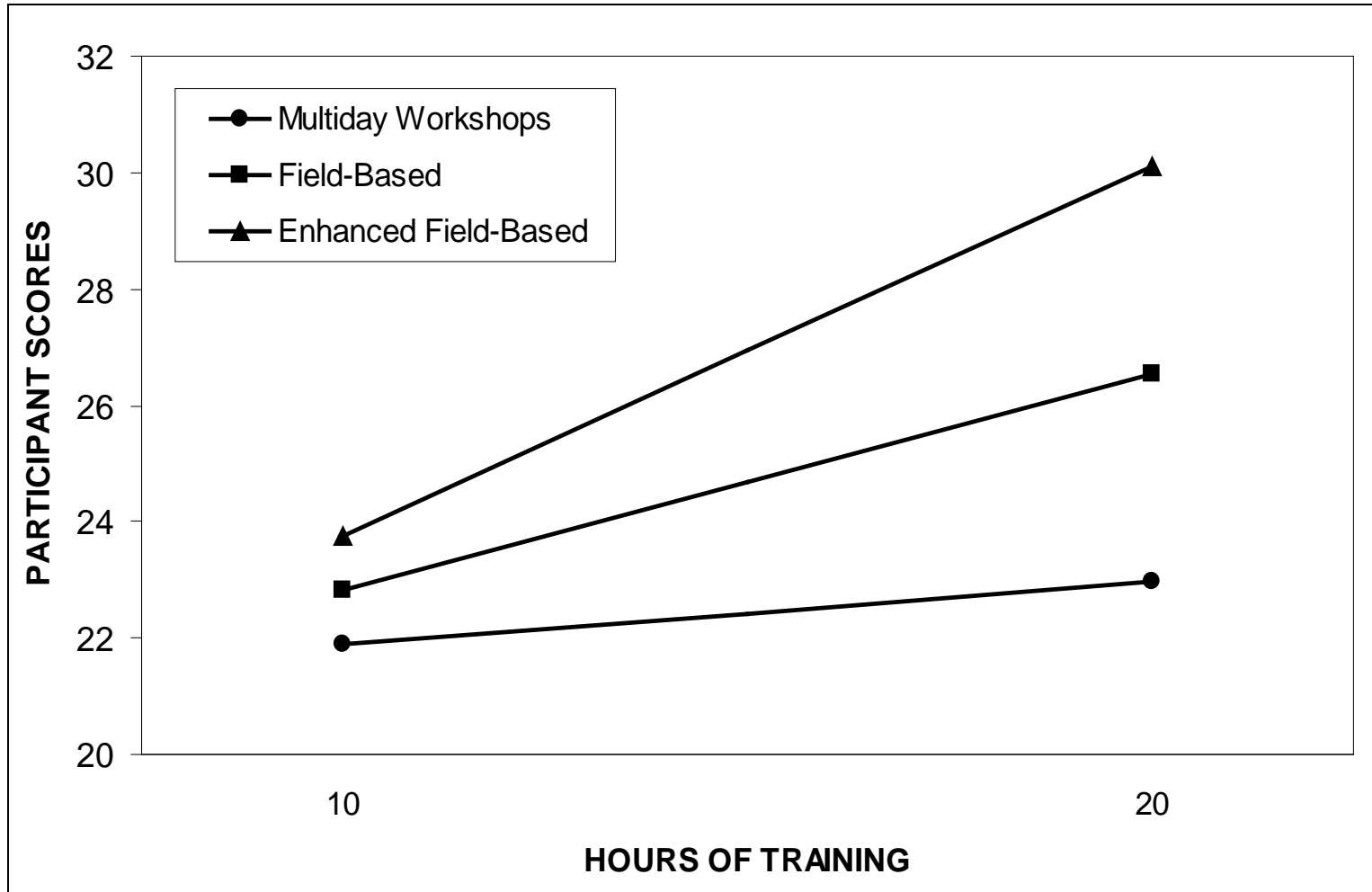
Practice Characteristics	Type of In-Service Training				
	Conference Presentations	Half Day/ Full Day Workshops	Multi-Day Workshops	Field-Based Training	Enhanced Field-Based Training
Trainer introduction of the practice	+	+	++	++	++
Trainer illustration of use of the practice		+	+	++	++
Trainee application/use of the practice	-		+	+	++
Trainee evaluation of his/her use of the practice	-	-		+	++
Trainee reflection on his/her learning	-	-		+	++
Trainee assessment of learner mastery	-	-	-	++	++
Multiple learning sessions	-	-	+	++	++

NOTE. - = No activity or opportunity, = limited opportunity, + = multiple opportunities, and ++ = multiple and varied opportunities.

Participants' Judgments of the Different Types of Training



Interaction Between Hours and Type of Training for Improved Family Systems Intervention Abilities



Conclusions

- PALS includes practices that have been found effective in promoting practitioner adoption of different kinds of early childhood practices
- Participatory adult learning is an effective professional development method applicable to a wide range of usages
- Additional analyses of the use of PALS are expected to shed light on which characteristics of the practices matter most in terms of affecting learner outcomes