Multiple Baseline Designs

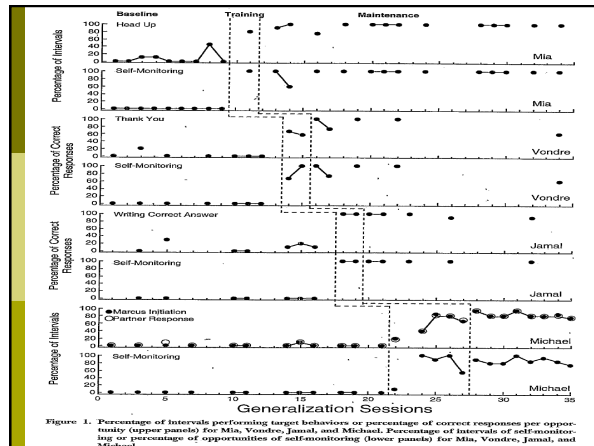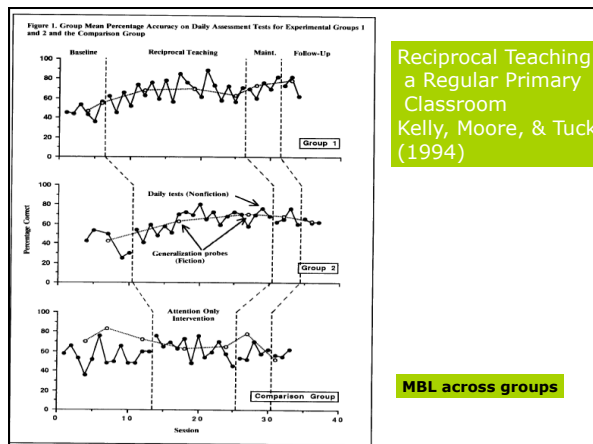Week 10

Multiple Baseline Designs

- Most widely used design

- Really is several A-B designs replicated within the same study

- Logic is staggered introduction of IV

- Should have at least 3 tiers
  - Across Settings (conditions)
  - Across Behaviors
  - Across Participants [or Across Groups]

Multiple Baseline Designs

- Intervene on first tier when baseline data (on all tiers) is stable

- Look for immediacy of effect

- Also look to see if introduction of the IV on a tier is associated with changes in the baseline of remaining tiers

- Set a criterion level to be used to know when to implement the IV in the next tier

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Figure 1. Percentage of intervals performing target behaviors or percentage of correct responses per opportunity (upper panels) for Mia, Vondre, Jamal, and Michael. Percentage of intervals of self-monitoring or percentage of opportunities of self-monitoring (lower panels) for Mia, Vondre, Jamal, and Michael.

Slide 1

Figure 1. Group Mean Percentage Accuracy on Daily Assessment Tests for Experimental Groups 1 and 2 and the Comparison Group

Reciprocal Teaching a Regular Primary Classroom
Kelly, Moore, & Tuck (1994)

MBL across groups

Slide 2

Considerations

◻ Dependent variables must be independent of each other but also functionally similar

◻ Not suitable for interventions that might have carryover/interactive effects

◻ Interventions must result in quick change in DV

◻ Ethical concerns about extended baselines

Slide 3

Multiple Baselines are Appropriate When

◻ Target behavior is not reversible

◻ More than one person needs the intervention or the intervention is needed in more than one setting

◻ It isn't ethical to withdraw the intervention to demonstrate experimental control

Slide 4

Strengths of Multiple Baseline Designs

◻ Doesn't require withdrawal of an effective intervention to demonstrate functional relationship

◻ Sequential implementation of intervention is similar to teachers' typical practice

◻ Generalization is assessed through the design

◻ Easy to understand and use

Limitations of Multiple Baseline Designs

- Dependent variables may covary

- Design is not as strong as a withdrawal design

- Intervention is generally only applied in one intervention phase

- Can be time consuming/require more resources than other designs

MBL Across Settings

- Participant demonstrates target behavior across three or more **settings** (conditions)

- Select an intervention that is likely to have the same effect across multiple settings

- Settings should be functionally similar but also independent of one another

- Use a consistent measurement procedure for each setting

Treating selective mutism in a paediatric rehabilitation patient by altering environmental reinforcement contingencies
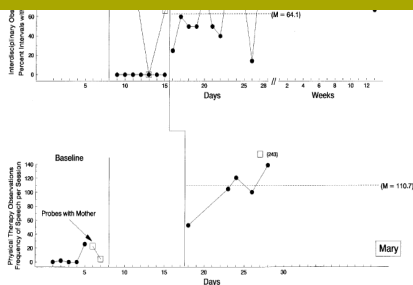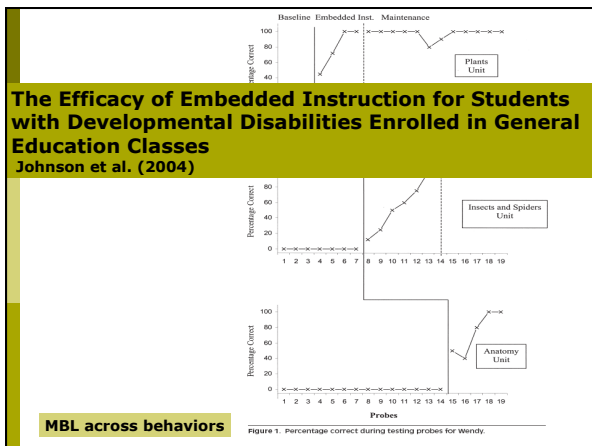ADRIANNA AMARI, KEITH J. SLIFER, ARLENE C. GERSON, ELIZA SCHENCK and ALANA KANE (1999)

Figure 1 Percentage of 30 minute intervals across the day (upper panel) and frequency per 30 minute physical therapy session (lower panel) of audible speech recorded across baseline and treatment conditions.
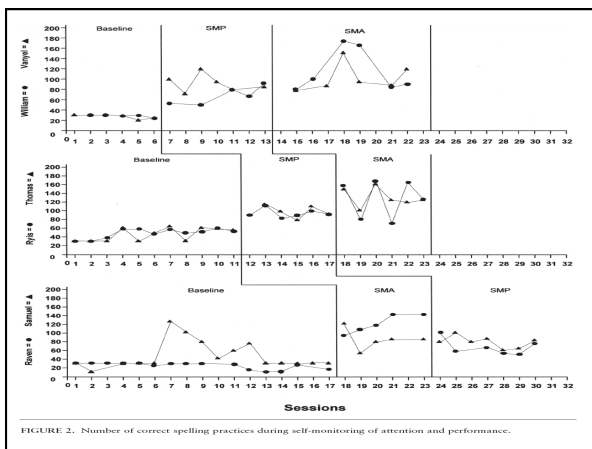
MBL across settings

MBL Across Behaviors

- Single participant who demonstrates three or more **behaviors** that require intervention

- Behaviors should be likely to respond to a similar intervention

- Behaviors should be functionally similar but independent

- Use a consistent measurement procedure for each behavior

The Efficacy of Embedded Instruction for Students with Developmental Disabilities Enrolled in General Education Classes
Johnson et al. (2004)

MBL across behaviors

Figure 1. Percentage correct during testing probes for Wendy.

MBL Across Participants

- Three or more **individuals** with same/ similar behaviors who are likely to respond in a similar way to the intervention

- Use consistent measurement procedures with each participant/behavior

FIGURE 2. Number of correct spelling practices during self-monitoring of attention and performance.

Summary (Richards et al., 1999):

| Appropriate to Use When:	Not appropriate to Use When:
The target behavior is reversible	Target behaviors are not functionally similar or when they covary
The intervention cannot be withdrawn for ethical reasons	There is only one person in one setting and/or one target behavior in need of intervention
There is more than one individual, target behavior, or setting in need of intervention	More than one intervention phase is desirable to demonstrate a functional relationship
	When sufficient resources are not present to implement design correctly

Variations of Multiple Baseline Designs

Multiprobe Designs

- Collect data intermittently rather than continuously (sampling)
  - Conduct sessions continually but collect data intermittently but consistently
  - Collect data at "strategic points"

- Can also be used to collect data on generalization
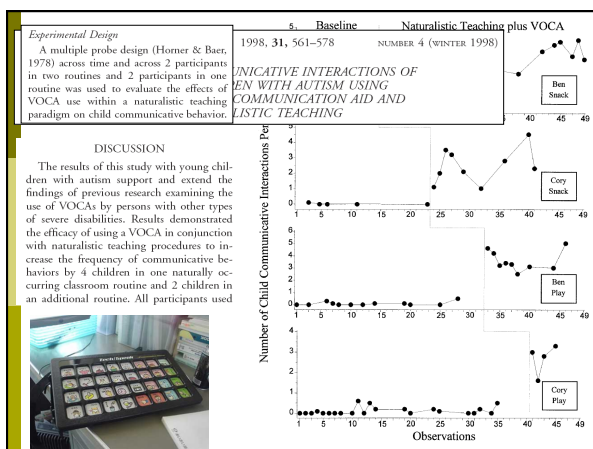
Coming up . . . .
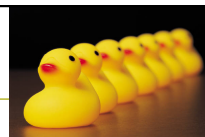
Week 10

- Discussion of Comparative Designs, Part 1 (multitreatment and alternating treatments designs)

- Read:
  - Chapter 12 in the Gast text, pp. 329-357
  - Freeman et al. (2004) (Yunji) presenting this)
  - Tincani (2004) (Samantha presenting this)