Observational Learning: Acquisition & Utility

ABAI

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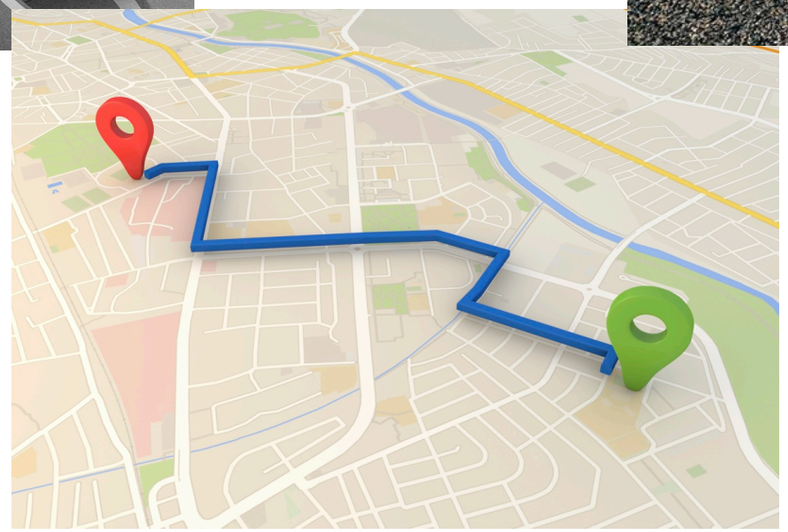
Order of Events

- Identify types of observation learning
  - Distinguish from other types of similar phenomenon
  - Why is observational learning important?
- How to induce observational learning
  - Testing for observational learning
  - Options for inducing OL
  - Analyzing results from inducing observational learning
- Using observational learning to inform clinical & educational decision making
  - Discussion/limitations

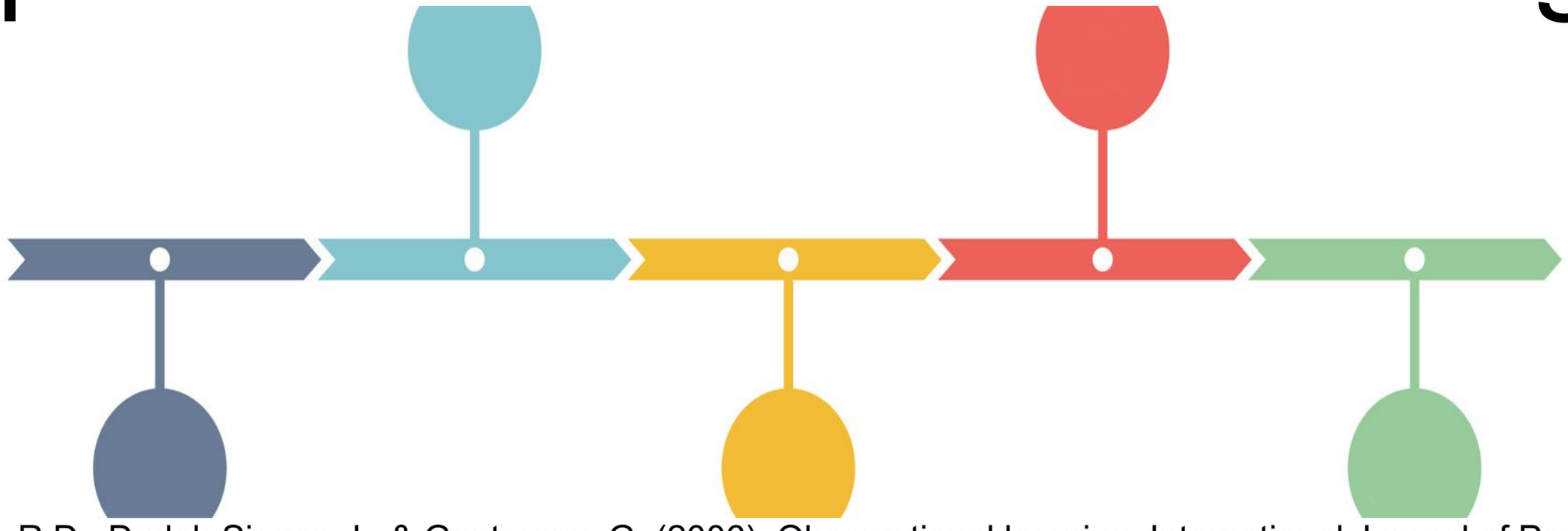
historical precedence for the current research



observational learning

OL

types of observational learning



- Greer, R.D., Dudek-Singer, J., & Gautreaux, G. (2006). Observational learning. International Journal of Psychology, 41(6), 486-499.

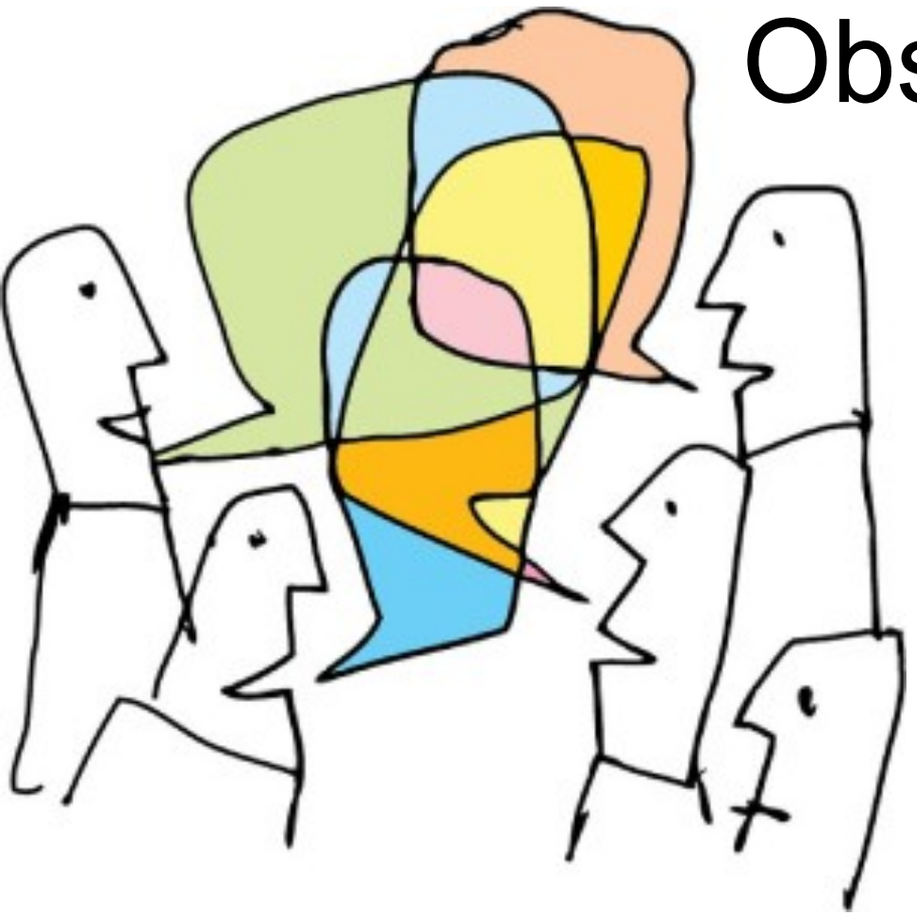
- Some of these terms include: social learning, modeling, copying, imitation, echoing, parroting & vicarious learning, vicarious reinforcement, generalized imitation, observation learning, emulation, Naming, etc
- Over the last 15 years research suggested empirical distinctions between observation that leads to:
- emission of previously acquired repertoire/response- performance tasks
- **acquisition of new skills/response**
- acquisition of conditioned reinforcers by observation
- acquisition of an observational learning repertoire

for our discussion...

- OL- acquiring new operants after observing individual(s) receive explicit instruction on the same or similar learning target (better outcomes w/ 3-term contingency)

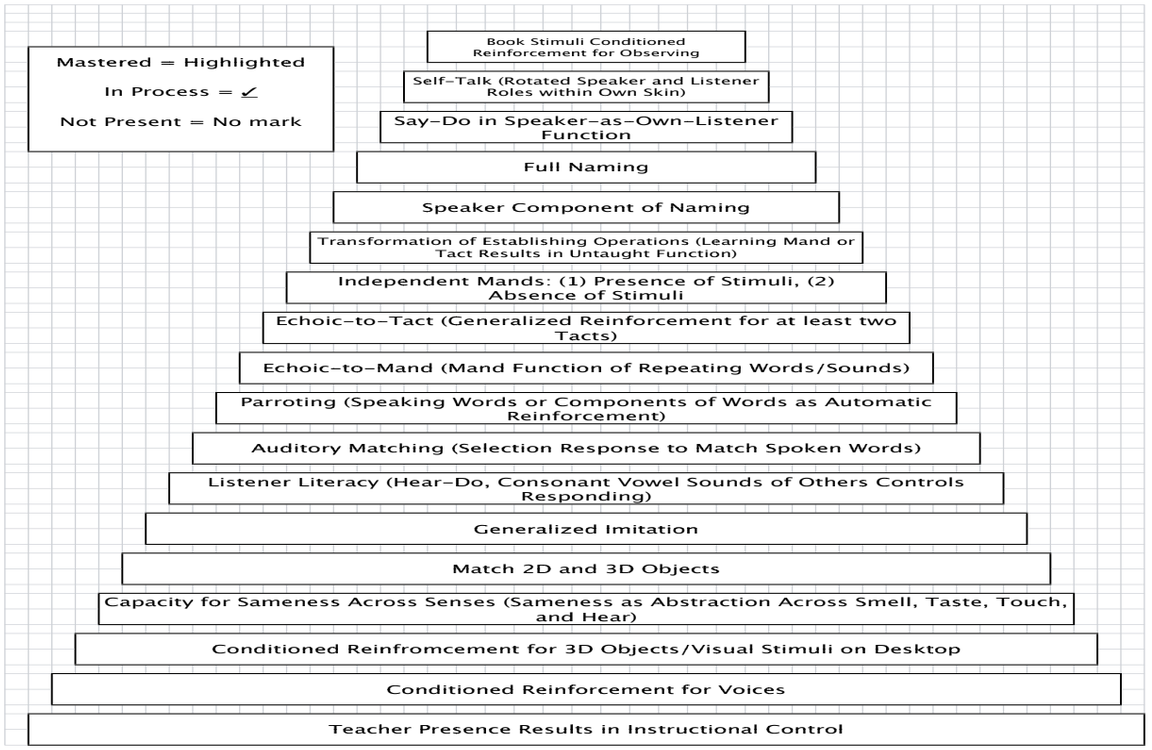
- OL repertoire- reliably producing evidence of OL across multiple content areas and environments. Generalized OL?

- Although separate and unique from other phenomena like imitation, modeling, and Naming they are likely important to OL.



Observational Learning as a verbal milestone

- Greer & Keohane (2005) purport that observational learning is essential to the development of higher order operants and is itself a milestone in the evolution of verbal behavior in children



- In addition they identify possible pre-requisites & co-requisites that facilitate the expansion of verbal capabilities of children via observational processes (listener; speaker-as-own listener; naming)

- Subsequently, even more complex forms of verbal behavior may hinge on the existence of an observational learning repertoire or its components (self-editing, monitoring, conversational units, problem solving)

observational learning in the general education classroom

Individuals Who Lack an Observational Learning Repertoire

Observational learning is likely a necessary component for success in a general education classroom.

Students who do not learn via observation appear to be less likely to: participate in group instruction, follow peer or teacher models, or capture social and contextual cues in their environment.

a line of distinction in the applied literature

A

Griffen, Wolery, and Schuster (1992)
Werts, Caldwell, and Wolery (1996),
(Egel, Richman, & Koegel, 1981),
Rehfeldt, Latimore, and Stromer (2003)

independent variable:
behavior change by observation is what we come to table with

B

Hewett, 1965;
Ingram & Johnson, 1987;
Masters & Driscoll, 1971;
Schoen & Ogden, 1995. Ledford & Wolery, 2015

? = Rosales-Ruiz & Baer, 1997

C

Delgado & Greer, 2009; Rothstein & Gautreaux, 2007; MacDonald & Ahearn, 2015; Spriggs, Gast & Knight, 2016; DeQuinzio & Taylor 2015; Taylor, DeQuinzio & Stine, 2012

dependent variable: taught or induced Observational Learning.

Observing responses

conditioned reinforcement
for
voices and faces

Indirect contact
with 3 term contingency

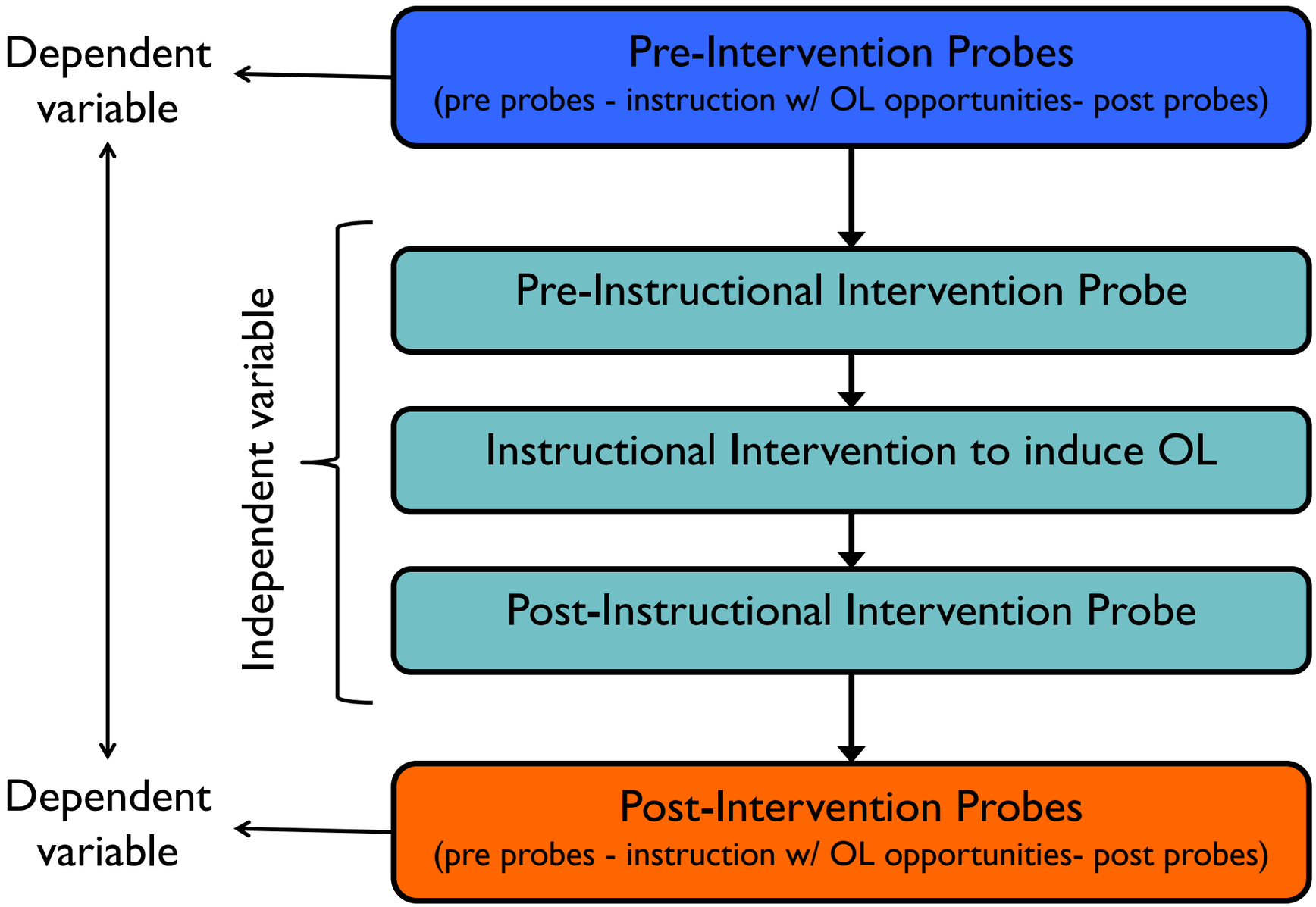
peer social reinforcement

discriminates between
different consequences

consistently monitors the environment
the things we care to see

Testing for and Inducing Observational Learning

Experimental Sequence



How can we teach or induce observational learning?

- **Yoking contingencies** between peers to create motivational operations for interdependence. Greer, R. D., Singer, J., & Gautreaux, G. (2006). Davies-Lackey (2005), Stolfi (2005); Gold (2013), Greer and Ross (2008)

- **Teaching individuals to monitor multiple behaviors**/events in the environment by collecting data accurately and reinforcing. Gautreaux, (2005); Taylor and DeQuinzio (2012); DeQuinzio & Taylor (2015); MacDonald & Ahearn (2015)

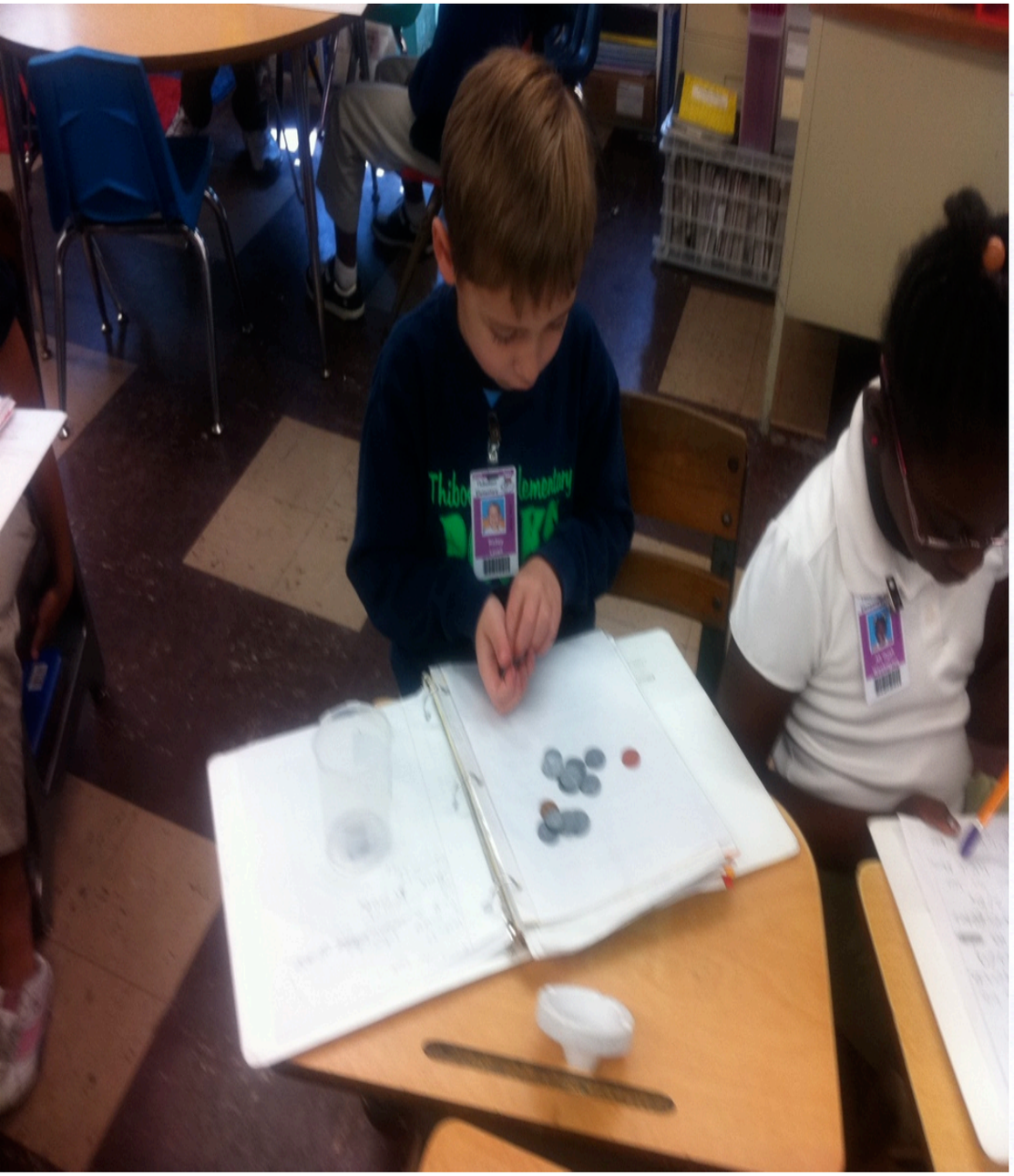
- **Engaging in peer tutoring** designed to teach how to reinforce tutor/tutee; collect data, determine accuracy. Pereira-Delgado, J. A. (2005), Gautreaux (2004)

Peer Yoked Contingency

Student 1 (dlu)	Student 2 (dlu)	Student 2 (olu) probe	Student 1 (olu) probe	Teacher or Team Points
Text respond	Point to	Text respond	Point to	
1. fat	run	fat	run	
2. cat	fun	cat	fun	
3. sat	sun	sat	sun	
4. rat	bun	rat	bun	
5. cat	sun	cat	sun	
6. sat	run	sat	run	
7. rat	bun	rat	bun	
8. fat	fun	fat	fun	
9. cat	bun	cat	bun	
10. rat	run	rat	run	
11. sat	fun	sat	fun	
12. fat	sun	fat	sun	
13. fat	run	fat	run	
14. sat	fun	sat	fun	
15. rat	sun	rat	sun	
16. cat	bun	cat	bun	
17. cat	sun	cat	sun	
18. sat	run	sat	run	
19. sat	fun	sat	fun	
20. rat	bun	rat	bun	
Total DLU	Total DLU	Total OLU	Total OLU	Teacher pts
				Team pts

Peer Tutoring

Monitoring Training



Name: [redacted]

Week 24 2/7-2/

Reading GLE 6 Categories			Language GLE 39a Pronouns (he/she/it/they)			Spelling GLE 42 (long vowel /y/)			Math GLE 7 & 8 Money		
Date	Type	(+) or (-)	Date	Type	(+) or (-)	Date	Type	(+) or (-)	Date	Type	(+) or (-)
PW 30	PP	8/8	PW 26	PP	4/4	PW 24	PP	10/10	366	PP	7/7
CW 30	PP	8/8	LA 90	PP	4/4	PW 25	PP	5/5	367-8	PP	9/9
ELL 30	PP	6/6	LA 91	PP	5/5	CW 25	PP	7/7	CW 108	PP	4/4
2/7	SG WG	+	LA 92	PP	5/5	ELL 25	PP	5/5	369-70	PP	10/10
2/8	SG WG	+	LA 93	PP	5/5	PW 27	PP	7/7	CW 109	PP	5/5
2/6	SG WG	+	2/7	SG WG	+	CW 27	PP	5/5	370-1	PP	
2/10	SG WG	+	2/8	SG WG	+	ELL 27	PP	5/5	CW 110	PP	9/9
	SG WG		2/6	SG WG	+	SP 53	PP	10/10	371-2	PP	6/6
Test	SG WG	6/6		SG WG		SP 54	PP	29/30	CW 111	PP	3/3
	SG WG		Test	SG WG	6/6	PW 29	PP	5/5	373-4	PP	10/10
	SG WG			SG WG		CW 29	PP	5/5	CW 112	PP	
	SG WG			SG WG		ELL 29	PP	5/5	2/7	SG WG	+
	SG WG			SG WG		2/8	SG WG	+	2/7	SG WG	+
	SG WG			SG WG		2/6	SG WG	+	2/7	SG WG	+
	SG WG			SG WG		2/10	SG WG	+	2/8	SG WG	
	SG WG			SG WG			SG WG		2/8	SG WG	+
	SG WG			SG WG		Test	SG WG	10/10	2/6	SG WG	+
	SG WG			SG WG			SG WG		2/10	SG WG	+
	SG WG			SG WG			SG WG		2/10	SG WG	
	SG WG			SG WG			SG WG			SG WG	
	SG WG			SG WG			SG WG		Test	SG WG	18/18
	SG WG			SG WG			SG WG			SG WG	
	SG WG			SG WG			SG WG			SG WG	
	SG WG			SG WG			SG WG			SG WG	
	SG WG			SG WG			SG WG			SG WG	
	SG WG			SG WG			SG WG			SG WG	
	SG WG			SG WG			SG WG			SG WG	
	SG WG			SG WG			SG WG			SG WG	
	SG WG			SG WG			SG WG			SG WG	

POST 6/6 POST 6/6 POST 10/10 POST 18/18

the purpose of this research

- To test the effects of a specific type of monitoring intervention on observational learning for children without disabilities in general education classes

Participants

	age	gender	VB	GE reading levels	DIBELS
Student 1a	8	Male	R/W	3.5	low risk
Student 2a	8	Male	R/W	2.7	some risk
Student 3a	9	Female	R/W	2.9	some risk
Student 1b	8	Male	R/W/Em-SE	3.3	low risk
Student 2b	8	Male	R/W	2.7	some risk
Student 3b	9	Female	R/W	2.8	some risk

Setting

- 3 Elementary Schools across 2 school districts
- 3rd grade inclusion classrooms
- 3 Classrooms with 1 target student each (3 control- will explain)
- Classroom ratio of 16-18:1 (2-3 students w/ IEPs)
- Suburban & Rural settings

Curricular Targets

Social Studies vocabulary examples:

amnesty, biome, caucus, crusade, preamble, propaganda, strait, gorge, quarry, hemisphere

Science vocabulary examples:

condensation, inertia, waning, waxing, constellation, seismograph, stalagmite, arthropod, luster, convection

Math vocabulary examples:

array, perimeter, symmetrical, algorithm, analog, attribute, abacus, congruent, frequency, tally

Experimental Sequence-modified multiple probe design

Pre-Intervention Probes

Daily small group probes

Weekly large group probes & teacher test

Intervention Procedures

Monitoring Training

Peer tutoring tutor monitors

Peer tutoring observer monitors

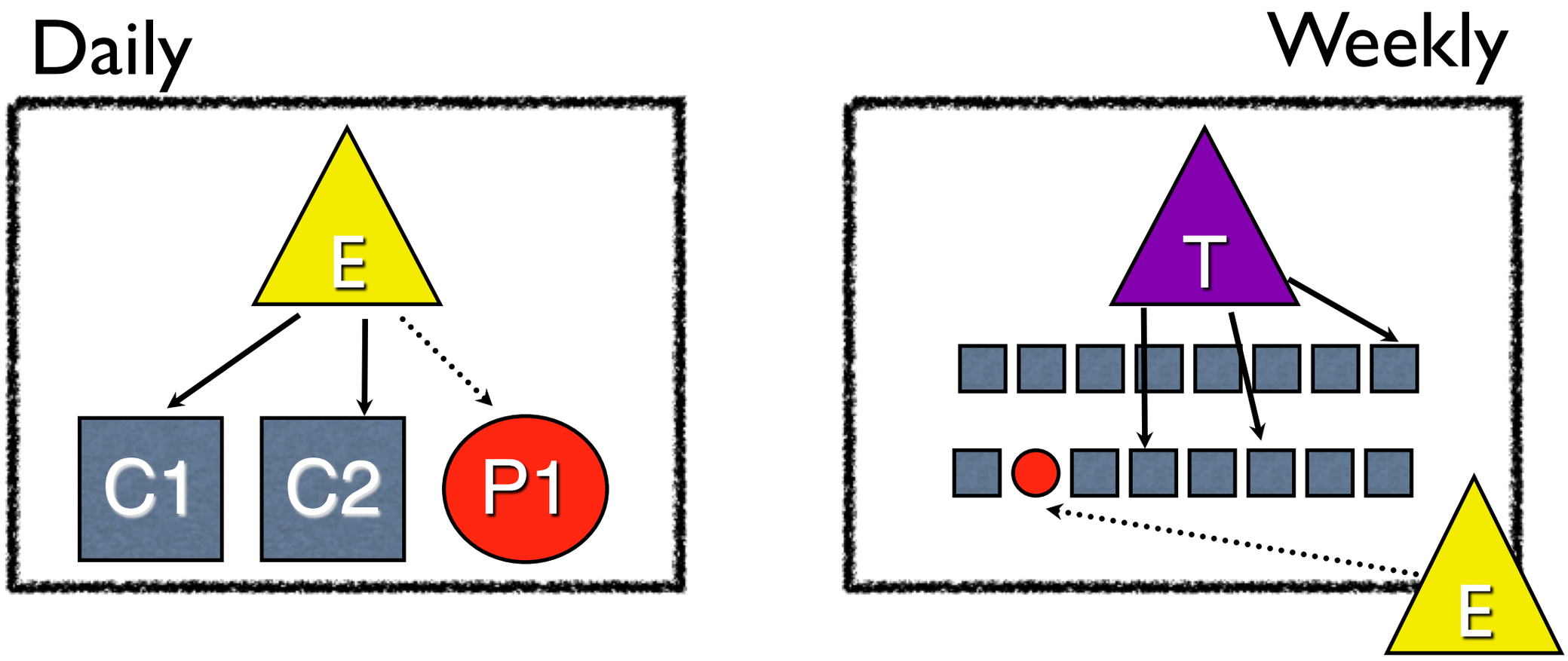
Large group monitoring

Post-Intervention Probes

Daily small group probes

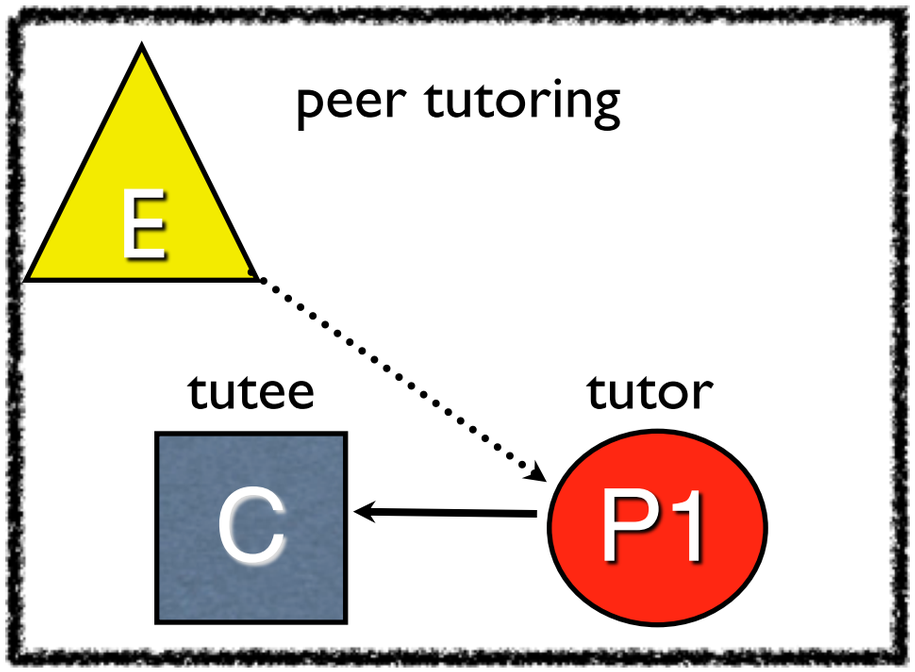
Weekly large group probes & teacher tests

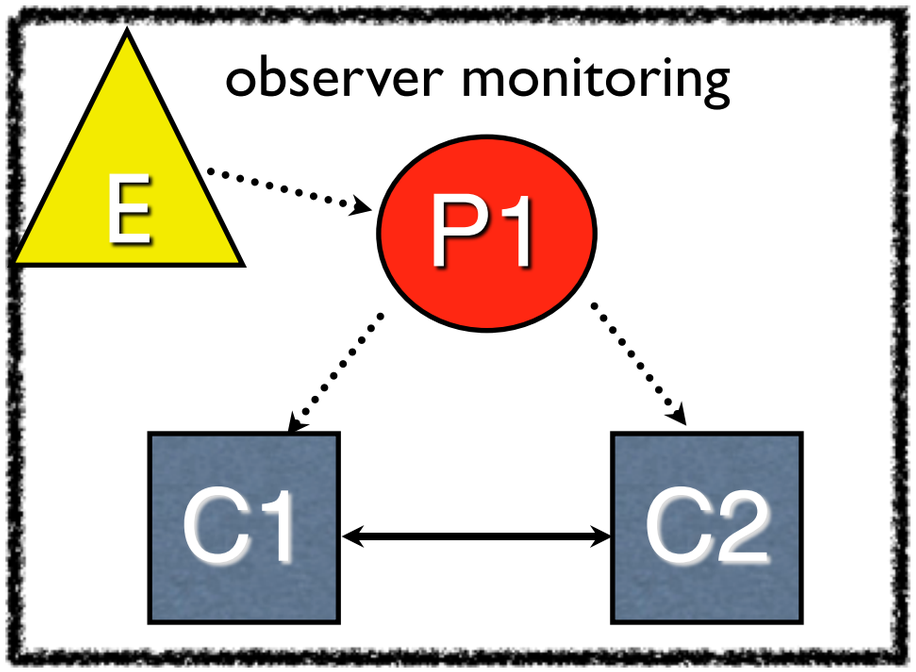
Dependent Variable: Pre & Post intervention Probe Schematic

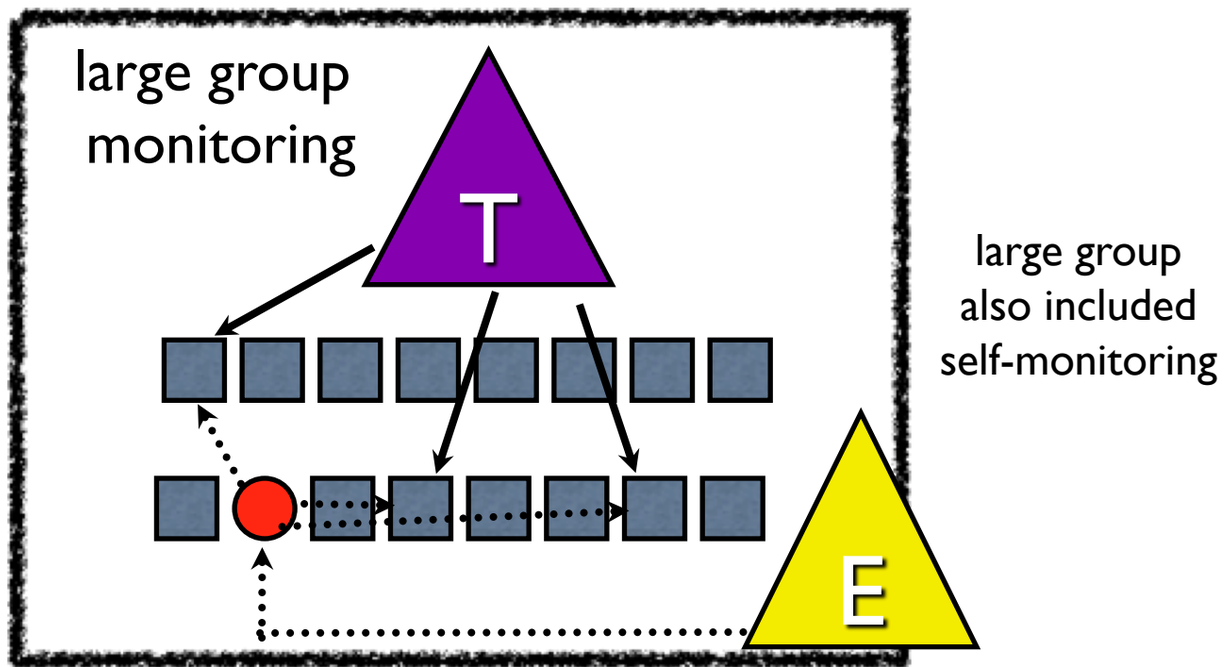


Independent Variable: Intervention Schematic Monitoring Training

the target student antecedents delivered, correct responses,
reinforcement or correction, duration, graphing



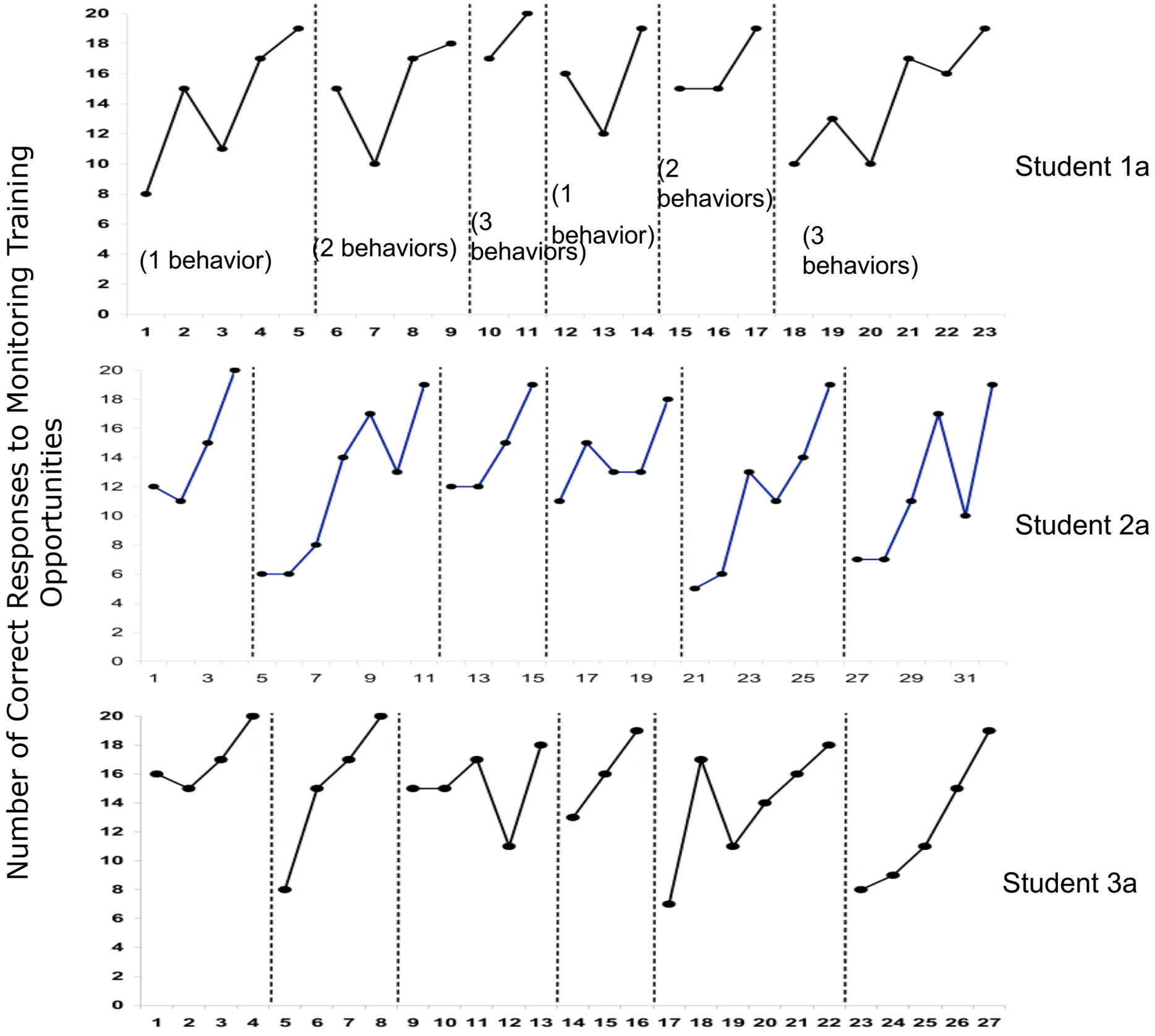




large group
also included
self-monitoring

interobserver & interscorer agreement

	Independent Variable- IOA			Dependent Variable-ISA	
	MT-PT	MT-Ob PT	MT-Class	Probes SG	Probes LG
IOA & ISA	98%	97%	84%	97%	99%


Number of Correct Responses to Monitoring Training Opportunities
(1 behavior)
(2 behaviors)
(3 behaviors)
(1 behavior)
(2 behaviors)
(3 behaviors)
Student 1a
Student 2a
Student 3a
Monitoring Training Sessions

RED= DAILY PROBES; GREY= WEEKLY PROBES

Pre-Monitoring training
post peer yoked probes
daily mean correct
responses = 6.67

weekly
mean correct
responses = 3.83

post-monitoring training
probes
daily correct responses =
15.11

weekly
mean correct responses =
12.83

Student 1a

daily mean correct
responses = 7.87

weekly
mean correct
responses = 4.2

daily correct responses = 14.67

Weekly mean correct
responses = 11.2

Student 2a

daily mean correct
responses = 5.56

weekly
Mean correct responses =
3.83

OSI Mean diff = 14.45

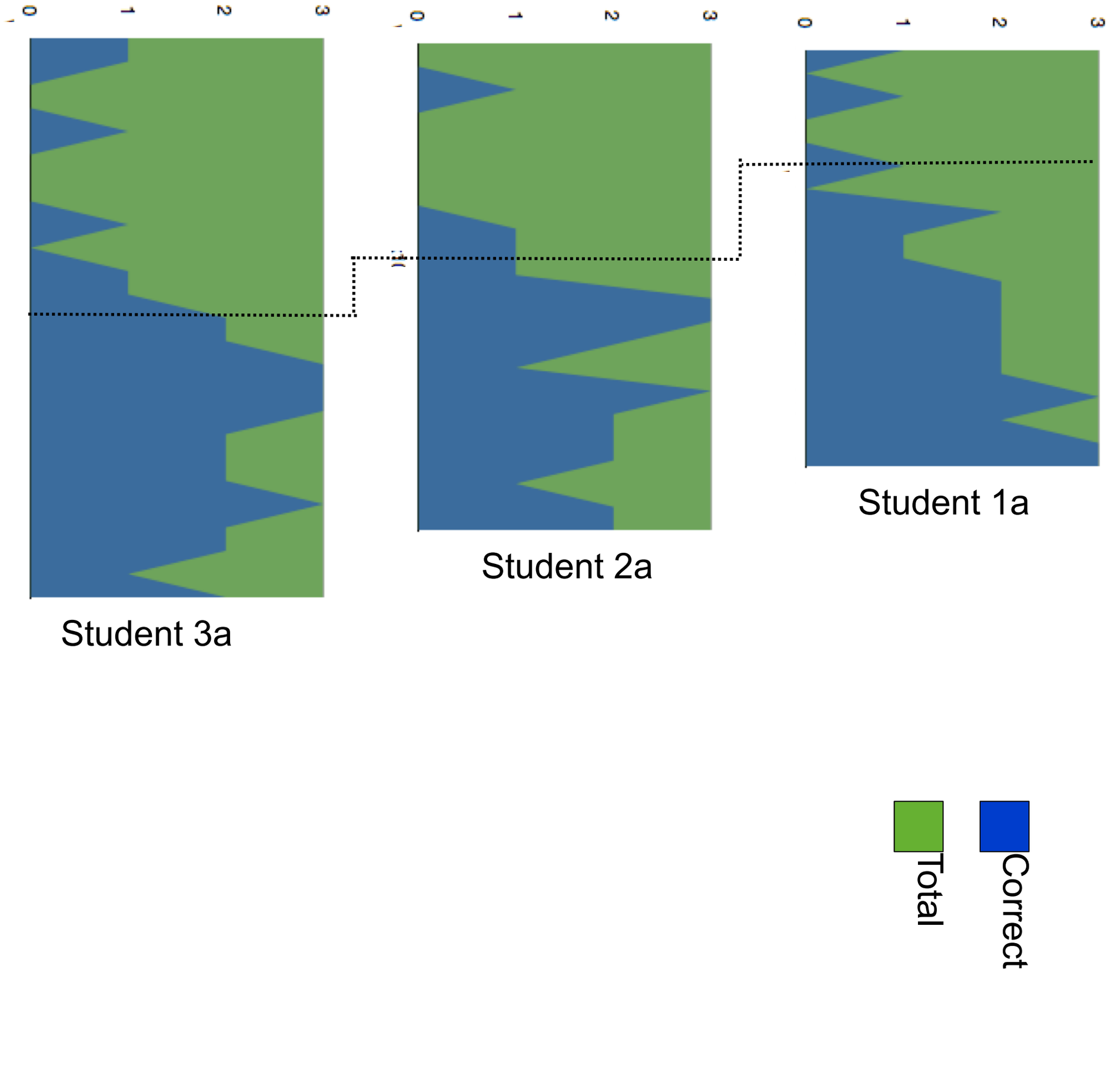
weekly mean correct
responses = 10.75

Student 3a

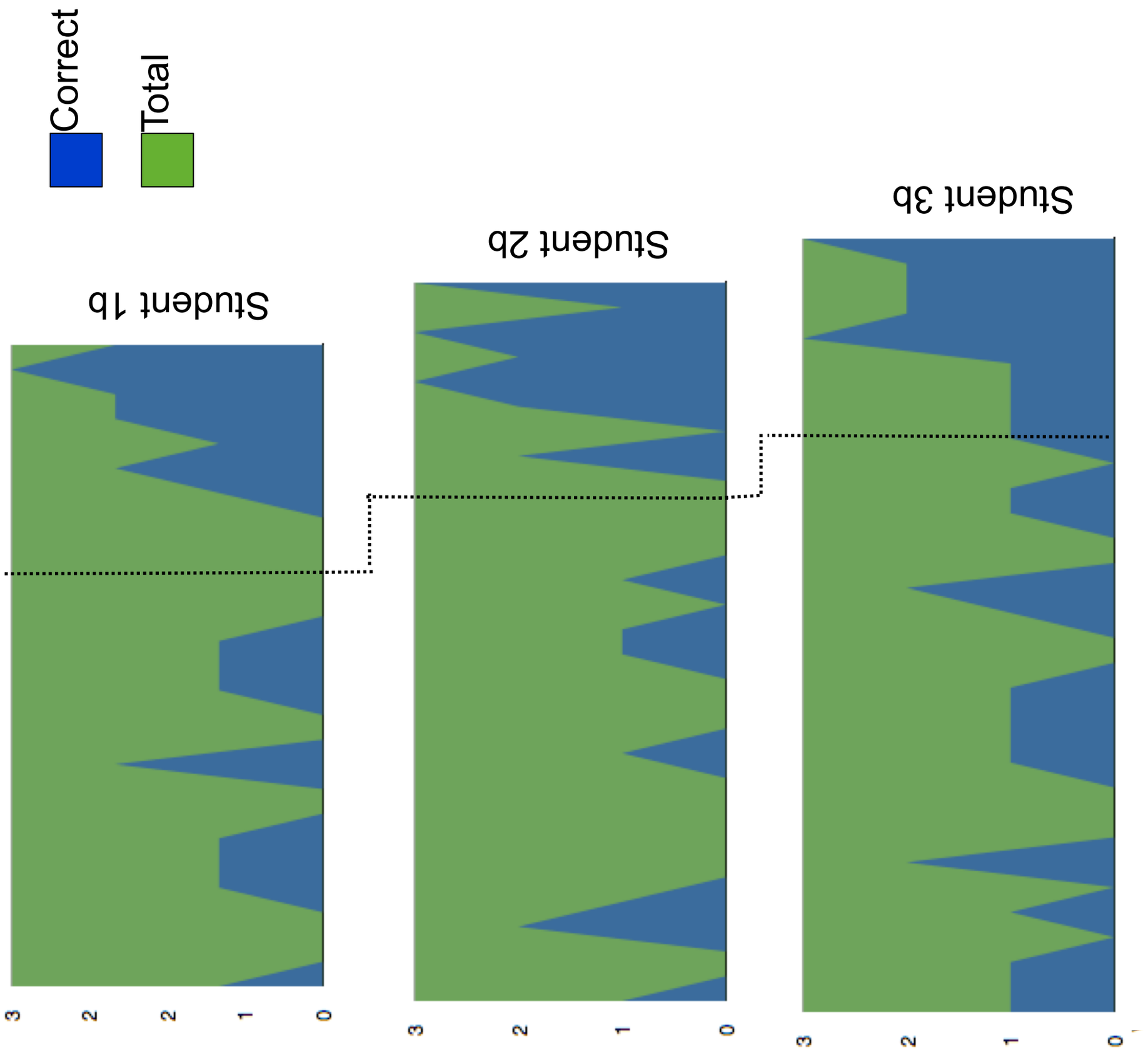
Correct Responses

Daily and Weekly Probe Sessions

Post test responses to weekly teacher quizzes



Post test responses to teacher weekly quizzes



Educational Implications for OL

- Barriers to Learning
- Decisions about Inclusion

(of course very controversial)

- Right to an Effective Education
- Success in Least Restrictive Environment
- Teacher training and professional development
- Limiting factors related to progress
- Misdiagnosis

Clinical Implications for OL

- Directly addresses the core deficits of autism- especially social and communication
- May help to determine the need for intensive highly specialized instruction
- Affects staffing ratio
- Affects rate of skill acquisition
- Target Pre-requisites for OL
- Reduction in hours or dismissal of services
- May allow you to address academics if related to OL

discussion and limitations

source of reinforcement

population

Peer social reinforcement

disabilities

neuro-typical

peer yoked contingencies

general education

monitoring responses missing

discussion and limitations

Instructional History

tutoring

Testing testing testing

Extraneous variables

missing data

studying

finding the source

discussion and limitations