

# The Efficacy and Feasibility of Implementing Technology-Based Feedback Interventions to Improve Teachers' Classroom Performance

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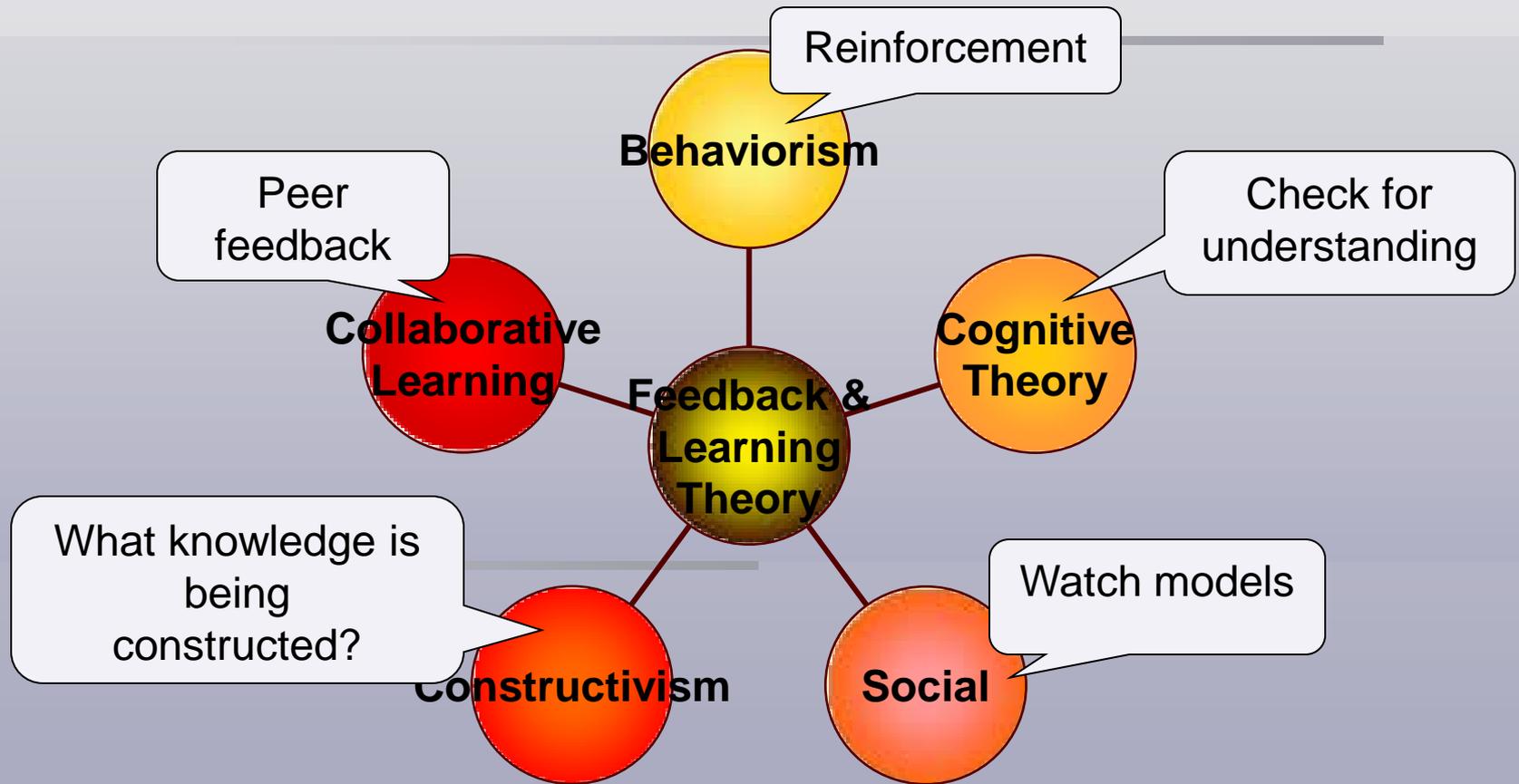
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# Feedback: A Theoretical Dilettante



# Factors to Consider in Giving Constructive Feedback

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- Content
  - Manner
  - Timing
  - Frequency
-

# Graphical Feedback

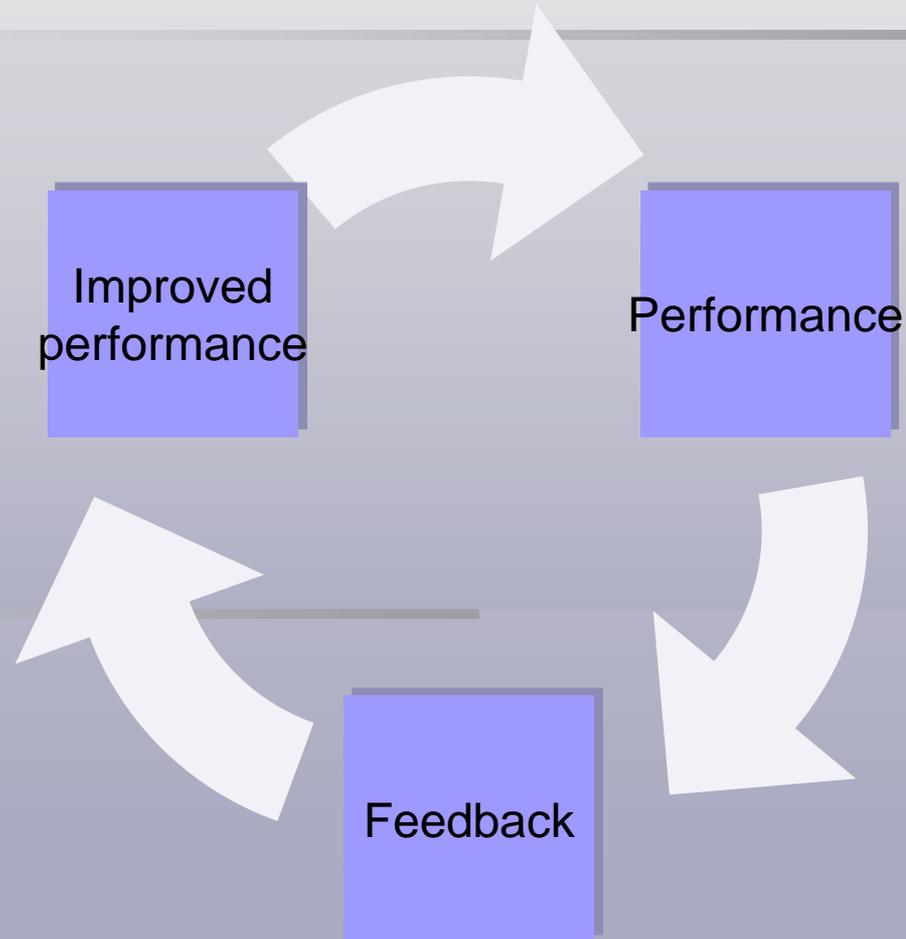
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search ID: jhan74

**“Your sales figures drop off dramatically during the winter months.”**

# Notion of Feedback



# Feedback Studies in Early Childhood

- Many feedback studies have occurred in elementary school classrooms.
- Studying and discussing efficacy in *early childhood* classrooms is needed because ecologies differ.

# Technology-Based Mechanisms

- Much research about technology-based mechanisms for providing feedback is current and has not yet been published

# Rationale for This Presentation

- Amy Casey's descriptive study indicates that teachers receive little feedback in relation to what they would like to receive.
- For a variety of mechanisms, we will offer
  - quantitative data and
  - anecdotal evidence about barriers to implementation.

# How Do Teachers Know How They're Doing?

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- Method
  - Developed questionnaire
  - Nationwide data collection
- Participants
  - Randomly selected from national mailing lists of Head Start and NAEYC-accredited centers
  - Employed for at least 12 months
  - 344 lead teachers of 3-, 4-, and 5-year-olds

1. **Frequency and usefulness of training activities.** The first item shows how to report how often you participated in training activities and how useful they were.

**HOW OFTEN** (ENTER NUMBER OF TIMES IN SPACES PROVIDED)

**HOW USEFUL** (CIRCLE ONE RATING)

In the past 12 months,

		NOT AT ALL USEFUL	NOT VERY USEFUL	A LITTLE USEFUL	USEFUL	VERY USEFUL	EXTREMELY USEFUL
[Example] I attended an in-service or workshop about <b>behavior management</b> <u>2</u> times.	N/A	1	2	3	4	5	6
a. I attended an in-service or workshop about <b>behavior management</b> _____ times.	N/A	1	2	3	4	5	6
b. I read a book or article about <b>behavior management</b> _____ times.	N/A	1	2	3	4	5	6
c. I watched an expert/consultant use <b>behavior management</b> skills in my classroom _____ times.	N/A	1	2	3	4	5	6
d. I received feedback about my use of <b>behavior management</b> skills (after being observed) _____ times.	N/A	1	2	3	4	5	6
e. I attended an in-service or workshop about <b>following lesson plans</b> _____ times.	N/A	1	2	3	4	5	6
f. I read a book or article about <b>following lesson plans</b> _____ times.	N/A	1	2	3	4	5	6
g. I watched an expert/consultant <b>follow lesson plans</b> _____ times.	N/A	1	2	3	4	5	6
h. I received feedback about how well I <b>follow lesson plans</b> (after being observed) _____ times.	N/A	1	2	3	4	5	6
i. I attended an in-service or workshop about <b>promoting children's engagement</b> _____ times.	N/A	1	2	3	4	5	6
j. I read a book or article about <b>promoting children's engagement</b> _____ times.	N/A	1	2	3	4	5	6
k. I watched an expert/consultant use strategies to <b>promote children's engagement</b> _____ times.	N/A	1	2	3	4	5	6
l. I received feedback about my <b>promotion of children's engagement</b> (after being observed) _____ times.	N/A	1	2	3	4	5	6
m. I attended an in-service or workshop about <b>working with adults (parents, therapists)</b> _____ times.	N/A	1	2	3	4	5	6
n. I read a book or article about <b>working with other adults</b> _____ times.	N/A	1	2	3	4	5	6
o. I watched an expert/consultant <b>work with other adults</b> _____ times.	N/A	1	2	3	4	5	6
p. I received feedback about how I <b>work with other adults</b> (after being observed) _____ times.	N/A	1	2	3	4	5	6

# Program Type Made a Difference

- Teachers in Head Start centers reported receiving more feedback than teachers in non-Head Start centers ( $d = .19$  to  $.31$  across feedback topics)
- Teachers in recently-accredited centers reported receiving more feedback than teachers in centers that were NAEYC accredited before October 2006 (when new standards were adopted;  $d = .17$  to  $.59$  across feedback topics)

# Teachers' Perceptions

- Approximately 55-65% of teachers reported receiving feedback about the topics listed on the questionnaire
- Of those who received feedback, the modal number of times it was received was once or twice
- They reported that they would like to receive feedback monthly (41%) or weekly (16%)
- They rated feedback as useful

# Implications

- Creating guidelines for the provision of feedback could result in teachers receiving more information about their classroom practices
- Teachers think feedback is useful; therefore, most will be receptive to receiving information about their behavior
- Teachers want to receive feedback frequently

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# Effects of E-mail Feedback on Preschool Teachers' Use of Recommended Practices

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Erin E. Barton, Ph.D., BCBA-D

# Rationale

- **Feedback is rare; teachers are asking for feedback** (Casey & McWilliam, 2009; Snyder, Artman, Kinder, Pasia, & Hemmeter, 2008 )
- **Professional development without feedback is ineffective** (Fixsen, Naoom, Blase, Friedman, & Wallace, 2005; Joyce & Showers, 2002)
- **Recent research indicates email feedback might be related to increases in teachers' use of recommended practices in early childhood**

# Rationale

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- Kinder, Roberts, Kaiser, & Wright (2010)
  - Pre-service graduate students
  - Video and email feedback
  - Use of Enhanced Milieu Teaching
- Barton & Wolery (2007)
  - Pre-service graduate and undergraduate students
  - Email feedback and goal setting
  - Use of language expansions & descriptive praise

# Rationale

- Why email?
  1. Can be sent immediately after the observation without interrupting the schedule
  2. Allows receiver time to read and reflect on her own time
  3. Written record
  4. Include questions about the observation
  5. Create an informal dialogue
  6. Allows for more than one observation at a time

# Study #1: Research Questions

- Is email feedback related to increases in teachers' use of recommended practices?
  - Teachers attending monthly workshops on using PBS in early childhood
  - No follow-up feedback
  - Program Director wanted feedback related to workshops:
    - Pre-corrections
    - Descriptive praise
    - Choice

# Study #1: Setting

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- Inclusive preschool classroom inside a community shelter for families experiencing homelessness
  - 5+ children from local Head Start agency
  - 5+ children from local early intervention agency
  - 5+ children with families staying at the shelter

# Study #1: Participants

<b>Name</b>	<b>Gender</b>	<b>Age</b>	<b>Coursework in ECE</b>	<b>Paid Exp in ECE</b>
Allie	Female	37	>2 years	8 years
Sahalie	Female	22	None	5 months
Marcus	Male	22	None	2 months

# Study #1: Target Behaviors

- **Pre-corrections**

- Teacher makes statements about expected behaviors or contextually relevant pro-social behavior in the absence of an inappropriate behavior

- **Descriptive Praise**

- Verbal approval that is contingent and specific to the child's behavior, restating the child's behavior within 5s after the behavior

- **Choice**

- Teacher provides a verbal choice between two objects, materials, or activities to one child. The choice must be contextually relevant and functional.

# Study #1: Intervention

- Email with verbatim and frequency feedback on all three behaviors sent immediately after the observation

# Study #1: Methods

- Design: Multiple baseline across teachers
- Measurement system: Direct observation during 15-min sessions using event sampling during the same activity
- IOA: Averaged above 80% across behaviors, teachers, and conditions

Dear Sahalie,

Thank you for participating in our email feedback project!

Today during "job circle" we observed you and counted your use of three specific verbal behaviors. These behaviors are descriptive praise, providing a choice, and pre-correction. During job circle you used **8** descriptive praise statements! This is great!! Well done!! For example, you said:

**Frequency counts**

- This is a great morning, everyone is sitting nicely!
- This friend is sitting so nicely
- I & F are waiting patiently
- Good job listening, M!!!

You did use **1** pre-correction statement during job circle today. These are statements that tell one child exactly what you want her/ him to do before she/ he performs an inappropriate behavior. Pre-corrections are statements about expected behavior or contextually relevant pro-social behavior in the absence of an inappropriate behavior. For example, during job circle you said:

**Verbatim examples**

You can go ask C to share a job

You did not use any choice statements during job circle today. These are verbal statements indicating a choice between two objects, materials or activities to one child. You may have used these at other times of the day but we only observed during job circle.

**Request for a response**

The choice must be contextually relevant and functional! For example:

During job circle, "A do you want to sit here or next to Joey?"

During breakfast: "T do you want a spoon or a fork for your pancake?"

We look forward to observing you using these behaviors next time!!

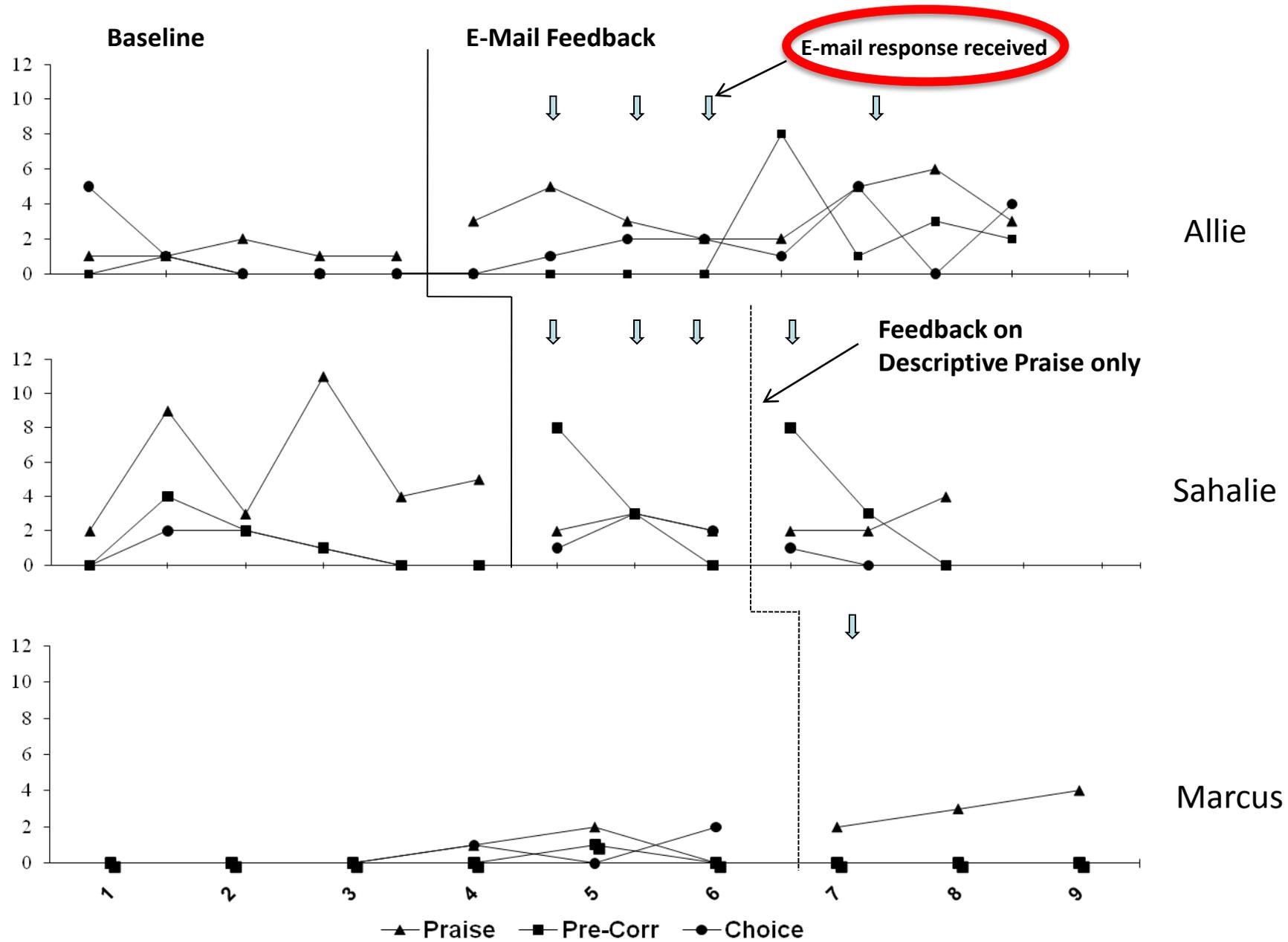
Please email me back ([erin.barton@gmail.com](mailto:erin.barton@gmail.com) or [ebarton@uoregon.ed](mailto:ebarton@uoregon.ed)) with the times you work next week. (This is to make sure you have received this email and read this message!!)

Thanks and also let me know if you have any questions!

--Erin Barton 541-346-2523

# Study #1: Results

- Teachers increased their use of descriptive praise
- Teachers increased their use of choice and pre-corrections during certain activities
- Over time, the use of the strategies decreased with feedback
- Observations were difficult to schedule due to teacher and schedule changes



# Study #1: Implications

- Sometimes email alone might not be enough to support teachers to increase use of several complex strategies at once
- Email feedback might only be effective when teachers regularly check email prior to study implementation
- The feedback might need to be contextually relevant
- Get classroom schedule in writing

# Study #1: Future Research

- Examine effects of email feedback on one behavior at a time
- Involve the program director
- Add charts / graphs
- Ask teachers to select target behaviors

# Study #2: Rationale

- Systematic Replication of Study #1
  1. Program Director copied on all emails
  2. Teachers select targets
  3. Email checks prior to starting study
  4. Email focuses on one behavior at first

# Study #2: Research Question

- Is email feedback related to increases in teachers' use of non-directive teaching strategies?
  - Teachers attending workshops related to social emotional development and responsive teaching sponsored by local Head Start and early intervention agency

# Study #2: Setting

- Inclusive preschool classroom inside a community shelter for families experiencing homelessness
  - 5+ children from local Head Start agency
  - 5+ children from local early intervention agency
  - 5+ children with families staying at the shelter

# Study #2: Participants

<b>Name</b>	<b>Gender</b>	<b>Age</b>	<b>Coursework in ECE</b>	<b>Paid Exp in ECE</b>
Jonathan	Male	24	None	1+ year
Marcy	Female	24	M.Ed in ECSE	> 1 year
Tasha	Female	23	M.Ed in ECSE	> 1 year

# Study #2: Intervention

- Teachers were asked to ***select target behaviors*** they wanted feedback on and to rank them

1. Pre-corrections
2. Choice
3. Descriptive praise
4. Language expansions
5. Incidental teaching
6. Other?

All three teachers:

1. Choice
2. Descriptive Praise\*
3. Emotion Labeling

# Study #2: Intervention

- Focused on ***one behavior*** at first
- ***Email checks*** before baseline
  - Emails sent 3 times to each participant with request for response
  - 100% response rate

# Study #2: Intervention

- Email with **5 components** (Hemmeter et al., in press; Schepis, Reid, Ownbey, & Parsons, 2001)
  1. Greeting
  2. Data with supportive feedback
  3. Corrective feedback
  4. Response request
  5. Closing statement
- **Program director copied** on all emails
- Added graph for one participant with low levels (Casey & McWilliam, 2008)

Hi Marcy!!!

It was great coming to your center again—I wasn't able to observe you the past couple of days, so I was glad to be able to today!

← 1. Greeting

Today when I observed you during breakfast you gave choices 2 times:

"Are you done with it or do you just want to put it down?"

"Do you need an inside body or an outside body?"

You gave a choice to help a child figure out if he was done with breakfast, and a choice which helped a child figure out appropriate behavior. Both choices were used successfully!

← 2. Data with supportive feedback

Here are a few reminders of other ways you can use choice in the classroom:

Asking if a child wants to serve the food him/herself (e.g. "Would you like to scoop it out yourself, or do you want me to do it for you?")

Asking her if she is finished ("Would you like some more toast or are you finished?")

allowing a child to choose between seats ("Do you want to sit at this spot or that spot?")

redirecting behavior by choosing to participate in an activity or not ("Do you want to sit here and eat breakfast, or do you need to go take a break?")

Giving choices about when a child wants to do something ("Are you ready to do it now, or do you want to do it in one minute?")

← 3. Corrective feedback

**PLEASE SEND ME A QUICK E-MAIL BACK ([XXX@uoregon.edu](mailto:XXX@uoregon.edu) or [XXX@aol.com](mailto:XXX@aol.com)) and let me know that you received this message!!**

← 4. Request for response

I look forward to coming to visit again and seeing how you increase your use of this strategy!

← 5. Closing encouragement statement

Thanks and also let me know if you have any questions!

Take care,

XXX

# Study #2: Target Behaviors

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## ■ Choice

- Teacher provides a verbal choice between two objects, materials, or activities to one child. The choice must be contextually relevant and functional.

## ■ Descriptive Praise

- Verbal approval that is contingent and specific to the child's behavior, restating the child's behavior within 5s after the behavior

## ■ Emotion Labeling

- Teacher models an emotion labeling statement directed at one child. Statement must be contextually relevant and functional.

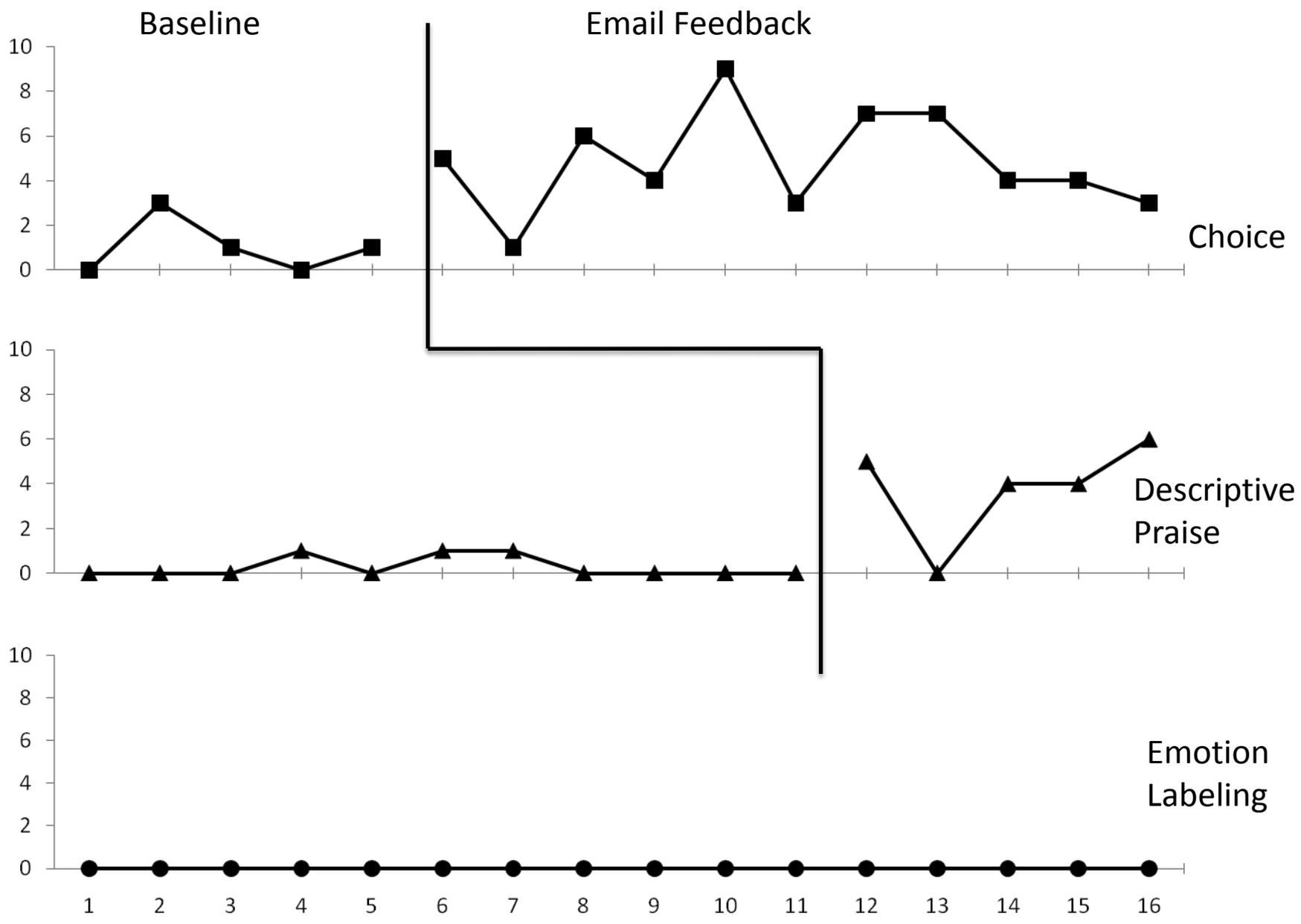
# Study #2: Methods

- Design: Multiple baseline ***across behaviors*** across teachers
- Measurement system: Direct observation during ***10-min sessions*** using event sampling during snack
  - Averaged about once per week per teacher
- IOA: Averaged above 90% across behaviors, teachers, and conditions
- Procedural Fidelity: 100%
  - 5 components, sent the same day, responses received

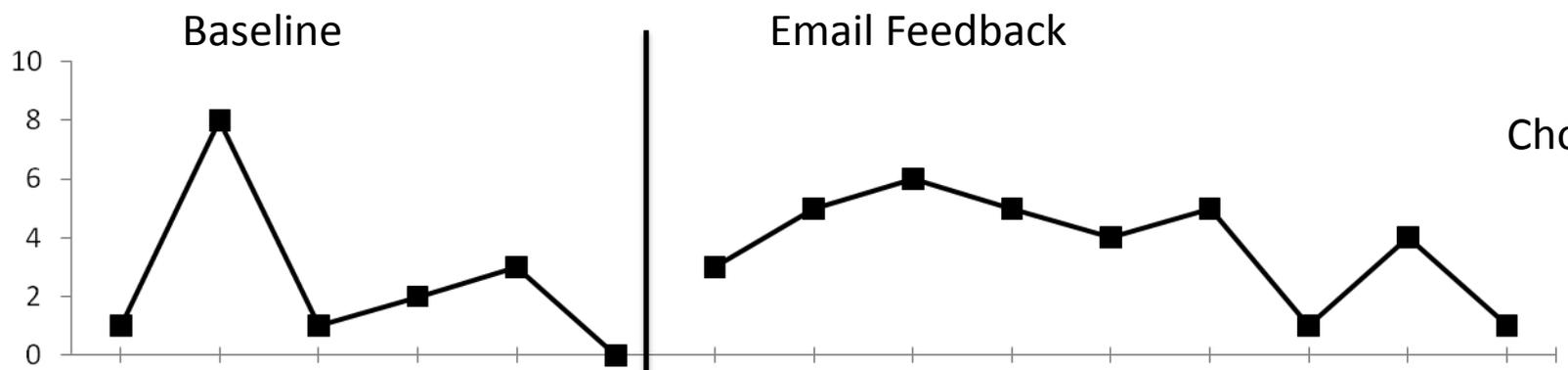
# Study #2: Results

- All three teachers wanted to focus on choice first
- Teachers responded to all emails
- Target behaviors displayed variability in baseline
- Choice and DP had an immediate increase with email feedback for two teachers
- Rates of choice decreased with addition of DP
- Study put on hold due to program director changes

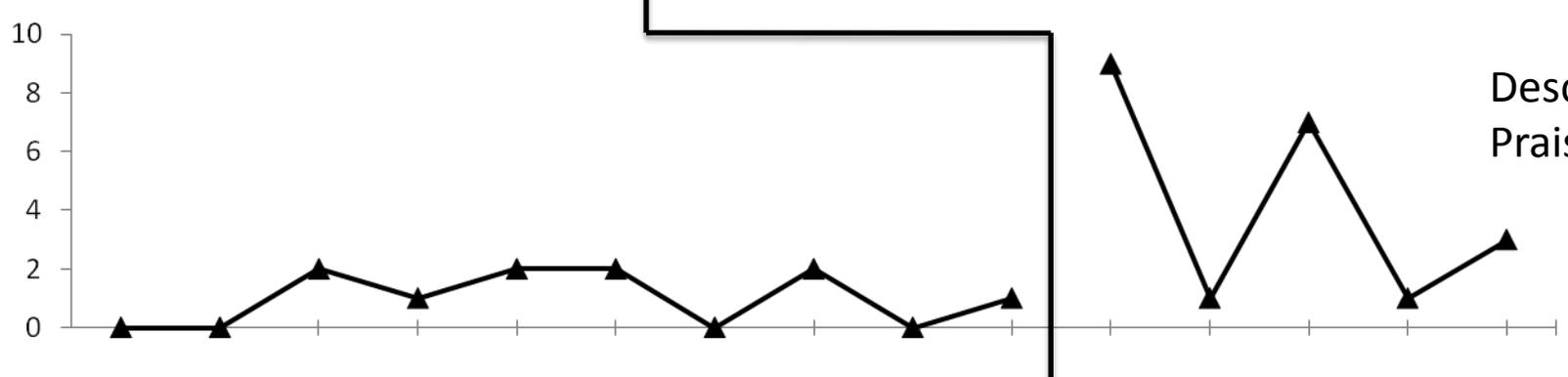
# Jonathan



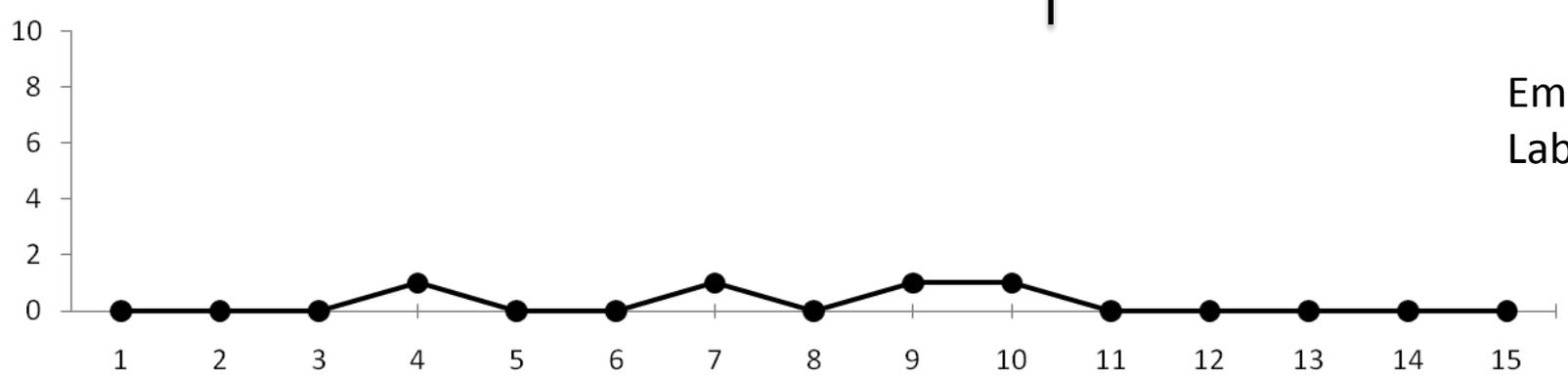
Tasha



Choice

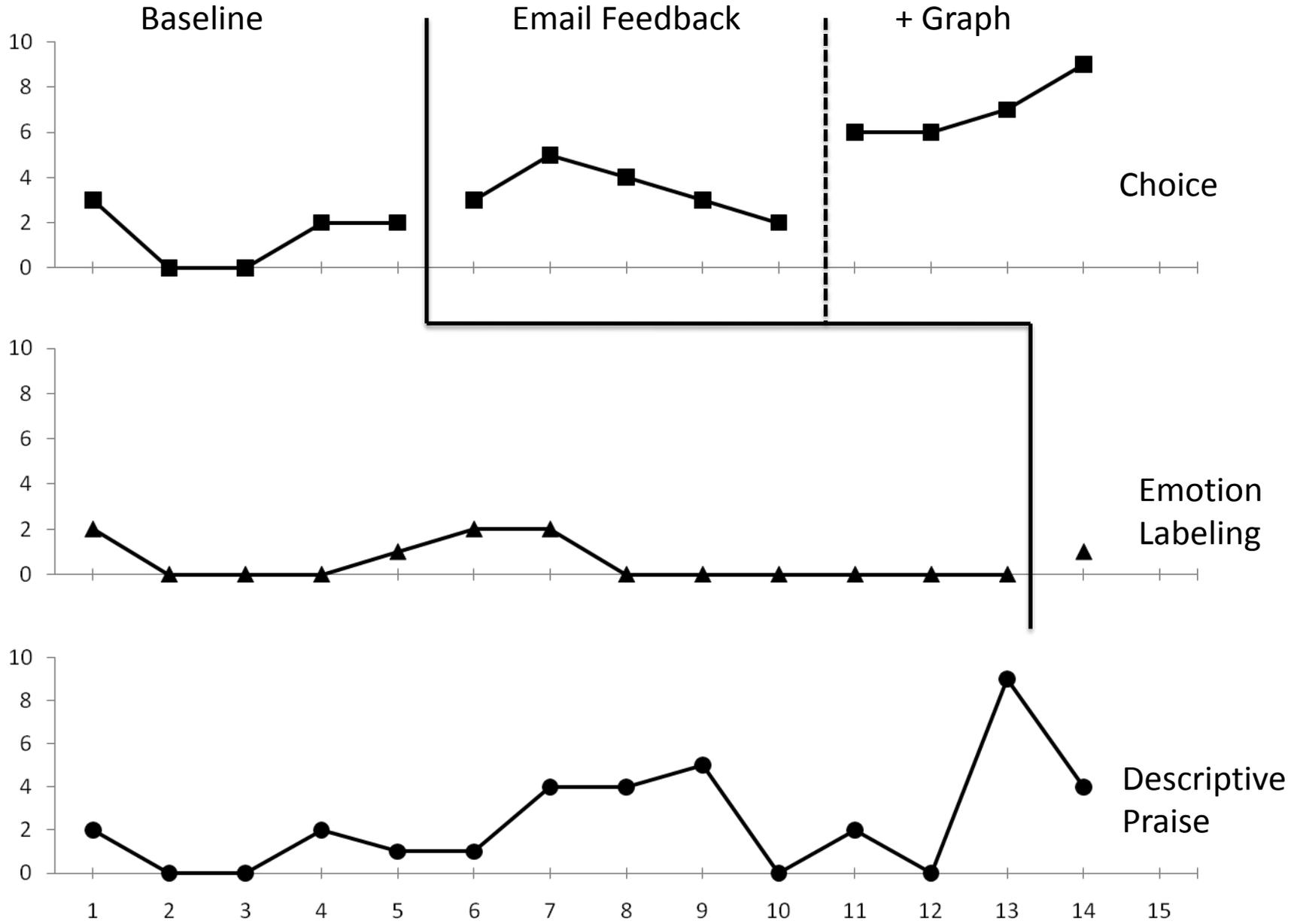


Descriptive Praise



Emotion Labeling

# Marcy



# Study #2: Conclusions

- Teachers selected target which may have inflated baseline levels
- Addition of DP was related to decreases in choice
- Adding program director to emails may have increased response rate
- Target behaviors increase was minimal across teachers
- Study will continue in summer

# Acknowledgments

- Lois Pribble, Doctoral Student
- Ching-I Chen, Doctoral Student
- Young-Ah Park, Doctoral Student

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# Impact of Performance Feedback Delivered via Electronic Mail on Preschool Teachers' Use of Descriptive Praise

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Mary Louise Hemmeter, Ph.D., Patricia Snyder,  
Ph.D., Kiersten Kinder, M.Ed., and Kathleen  
Artman, Ph.D.

# Research Questions

- Does training and email based performance feedback increase teachers' use of descriptive praise?
- Is teachers' use of descriptive praise associated with classwide challenging behavior?
- What are teachers' perspectives about the acceptability of email feedback?

# Participants

	Teacher Demographic Information					Technology	
	Ethnicity	Highest Degree Earned	Certification	Years at current teaching position	Years of Paid Teaching Experience	Comfort w/computers and technology	Frequency of checking email
<b>A</b>	AA	B.A., Child Development and Family Relations	No	5 mo., first time as lead teacher	11 yrs.	Very Comfortable	Daily
<b>B</b>	C	High School Diploma	No	5 mo.	6 yrs.	Very Comfortable	Daily
<b>C</b>	C	B.A., Early Childhood Education	Early Childhood Education	5 mo., first time as lead teacher	5 yrs.	Very Comfortable	Multiple times daily
<b>D</b>	AA	Child Development Associate's Degree (CDA)	No	15 yrs.	15 yrs.	Fairly Comfortable	Weekly

Ethnicity Codes -AA, African American; C, Caucasian; H, Hispanic; O, Other

# Experimental Design

Multiple probe across teachers design

Phases:

- Baseline
- Training plus feedback
- Maintenance

Generalization probes

# Measures

- During Circle Time, we observed and recorded the following:
  - teacher behavior: whether a nonverbal praise, praise, or descriptive praise occurred
  - challenging behavior: whether a challenging behavior occurred in the group (yes or no)

# Definitions

## Adult Behavior

**Non Verbal Praise** – teacher makes a gesture that indicates approval

**Praise** – teacher is affirming child's or the group's behavior, but does not include reference to a specific behavior

**Descriptive Praise** - teacher affirms a child's or the group's behavior by making a comment that communicates exactly what is being demonstrated

## Child Behavior

**Challenging Behavior** - behavior that interferes with the child's or other's interaction with the activity or environment, or is harmful to the child or others. Exclusive of stereotypic behaviors.

# Training

- Each teacher in the study participated in an individual, high-quality, interactive workshop. Workshop consisted of:
  - explanation of the different types of feedback children can receive from teachers and the importance of describing desired behaviors to children
  - direct modeling of using nonspecific praise, nonverbal praise, and descriptive praise
  - discussion of examples from similar classrooms and practice vignettes/self tests
  - handouts with sample starter phrases for descriptive praise
  - action plan for each teacher's classroom

# Coaching

- Teachers received several weeks of coaching.
- We observed in each classroom approximately twice per week and took data.
- After each observation we sent each teacher an email message.

# Email Feedback

## Email Feedback Protocol (see handout):

- Opening Comment: general & positive statement
- Supportive Feedback: data provided on number of descriptive praise statements
- Corrective Feedback: example of missed opportunity or incorrect implementation. Web link to video model.
- Planned Action: embedded response prompt
- Closing Comments: general, positive and encouraging

# Video Models

- Pulled from CSEFEL footage to highlight use of descriptive praise in context
- Brief clips (30sec-2min)
- Accessed via OAK
- Teachers had guest usernames and passwords
- Researchers were able to control teacher access to videos.
- <https://oak.vanderbilt.edu/webapps/login/>

# Watching the Videos

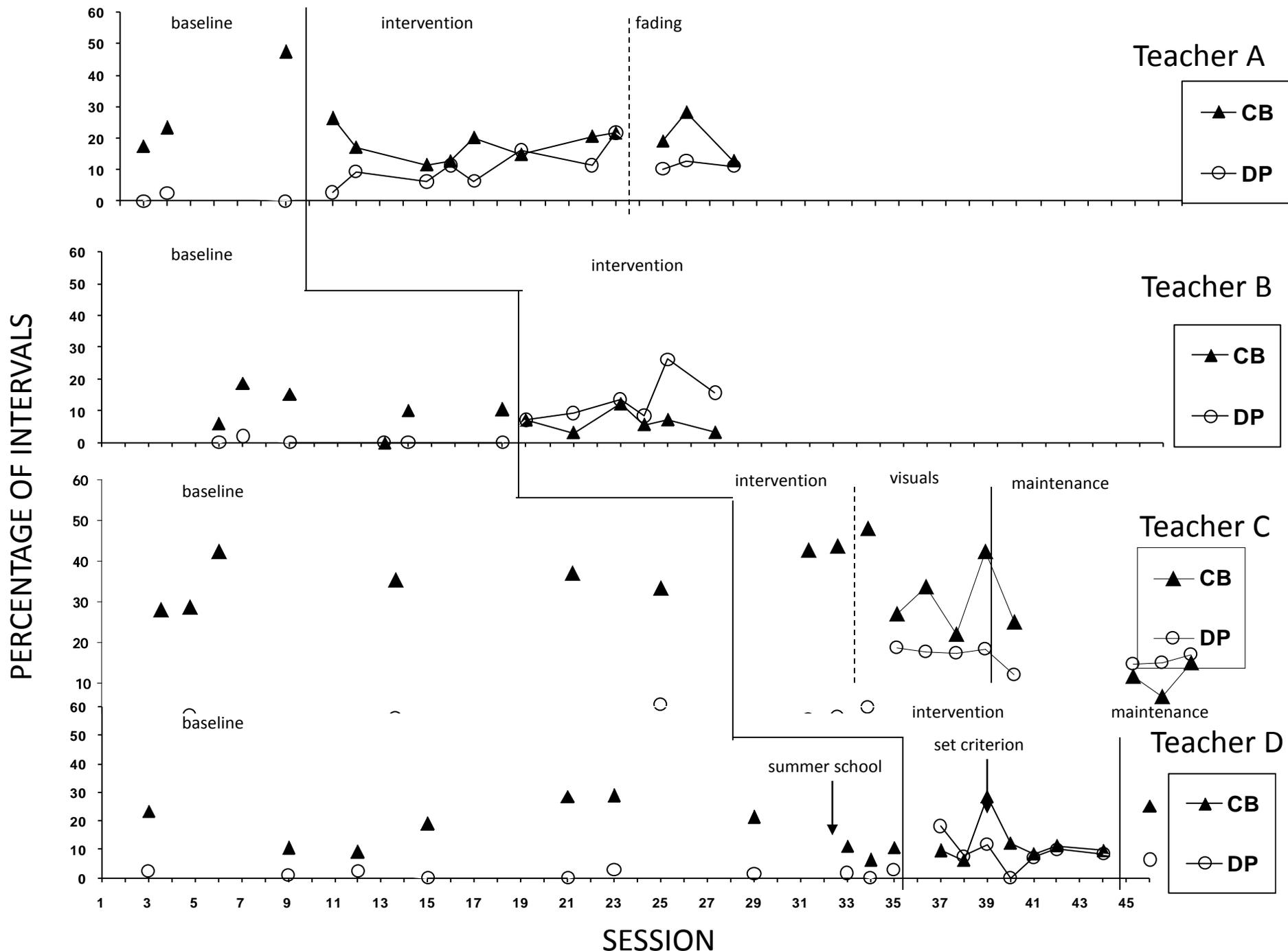
The screenshot shows a Windows Internet Explorer browser window displaying the Blackboard Academic Suite interface. The address bar shows the URL: [https://oak.vanderbilt.edu/webapps/portal/frameset.jsp?tab=courses&url=/bin/common/course.pl?course\\_id=\\_59039\\_1](https://oak.vanderbilt.edu/webapps/portal/frameset.jsp?tab=courses&url=/bin/common/course.pl?course_id=_59039_1). The page title is "OAK Online Access to Knowledge". The main content area is titled "High Speed Video Links" and lists several video resources:

- Caterpillar 1**: [Caterpillar Wrap-Up](#) (2.85 Mb)
- Caterpillar 2**: [Caterpillar Sharing](#) (3.473 Mb)
- Circle Time: Stepstool**: [Circle Time: Stepstool](#) (2.228 Mb)
- Cot Helper**: [Cot Helper](#) (10.948 Mb)  
Watch how this teacher involves students in transition routines and uses specific praise to keep them engaged in the activity.
- Hand Raising**: [Hand Raising](#) (3.583 Mb)
- Sharing in Housekeeping**: [Sharing in Housekeeping](#) (2.812 Mb)  
This teacher uses good strategies to praise children's social skills during Center Time.
- Emotions- Proud Face**: [Proud Face](#) (1.989 Mb)  
This teacher focuses on a child's accomplishments during an emotion activity.
- Recess Bench Helper**: [Bench Helper](#) (1.985 Mb)  
Praise happens on the playground, too.
- Emotions- Sad Face**: [Sad Face](#) (4.163 Mb)  
This is an emotion activity. The teacher uses descriptive praise during circle.

A red arrow points to the "Dial-Up Video Links" button in the left-hand navigation menu. The Windows taskbar at the bottom shows the Start button, several open applications (including "endmaster's Buddy Li...", "Microsoft PowerPoint...", and "Blackboard Academic..."), and the system clock showing 6:47 PM.

- You will automatically go to the High Speed Video page.

- If you have a dial-up internet connection, click "Dial-Up Videos"



# Results: Teacher Questionnaire

1

2

3

4

strongly disagree

disagree

agree

strongly agree

1. Using descriptive praise in my classroom was <u>easy</u> to do.	3.5 (3-4), .58
2. I see <u>fewer</u> class wide challenging behaviors during the targeted activities since starting to use descriptive praise.	3
3. It did <u>not</u> take a lot of time to learn how to use descriptive praise to encourage appropriate behaviors.	3.5 (3-4), .58
4. The training was effective and easy to understand.	3.75 (3-4), .50
5. It did <u>not</u> take too much time to use descriptive praise with the children.	3.25 (2-4), .56
6. I would recommend using descriptive praise to another teacher.	3.75 (3-4), .50
7. The observers were unobtrusive and did not disrupt my classroom day.	3.75 (3-4), .50
8. The email feedback I received was helpful.	3.75 (3-4), .50
9. I would like to receive feedback via email for other training purposes.	3.5 (3-4), .58
10. The links to video examples were helpful.	2.75 (2-3), .50

Mean (range), standard deviation

# Teacher Comments on Using Descriptive Praise

- Some of the benefits teachers described were:
  - Praises helped behaviors and expectations
  - Children wanted to hear it
  - It's easy to make
  - It's positive for everyone
- Teachers noted a struggle with thinking of new descriptive praise statements.
- All noted they would continue to use this strategy.
- Teachers also said feedback was helpful, and they would like to receive feedback via email in the future.

# Supporting Teachers' Implementation of Recommended Practices: Effects of Distance Coaching on Teachers' Use of a Tiered Model of Intervention and the Effects on Child Behavior

Kathleen Artman, Ph.D., and Mary Louise Hemmeter, Ph.D.

# Rationale

- Challenging behavior is a prevalent problem in early education settings (Gilliam, 2005; Kupersmidt, Bryant, & Willoughby, 2000; Qi & Kaiser, 2003)
- The *Teaching Pyramid* intervention promotes social-emotional competence and prevents challenging behavior (Fox et al., 2003).
- Systematic training and support are necessary to help teachers learn to use recommended practices like the *Teaching Pyramid* (Fixen, Naoom, Blase, Friedman, & Wallace, 2003).



# Research Questions

- What are the differential effects of training with distance coaching (videotaped observation plus performance feedback) versus training without follow-up on teachers' implementation of the *Teaching Pyramid* intervention? What are the effects on overall classroom climate?
- What are the effects of teacher implementation of the *Teaching Pyramid* intervention on children's behavior and social-emotional development?

# Design

- Small-scale randomized group experimental design
- Nesting:

Cohorts ( $n = 2$ )

Centers ( $n = 9$ )

Teachers ( $n = 33$ )

Children ( $n = 409$ )

- Repeated measures at four points in time

# Procedures

**Wave 1  
(Jan/Sept):**

TPOT

CLASS

Classwide  
Behavior

SSIS

**Wave 2  
(Feb/  
Oct):**

TPOT

Classwide  
Behavior

SSIS

**Wave 3  
(Mar/Nov)  
:**

TPOT

Classwide  
Behavior

SSIS

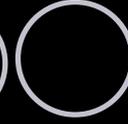
**Wave 4  
(Apr/Dec):**

TPOT

CLASS

Classwide  
Behavior

SSIS



Training  
Workshop  
(Jan/Sept)

Distance  
Coaching  
begins

Distance  
Coaching  
ends

# Project Website

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12/1/09 - 3 min 17 sec [kathleen](#) Viewers: 1
-  [Week 5: Feelings Cube Friends](#)  
12/1/09 - 1 min 42 sec [kathleen](#) Viewers: 1

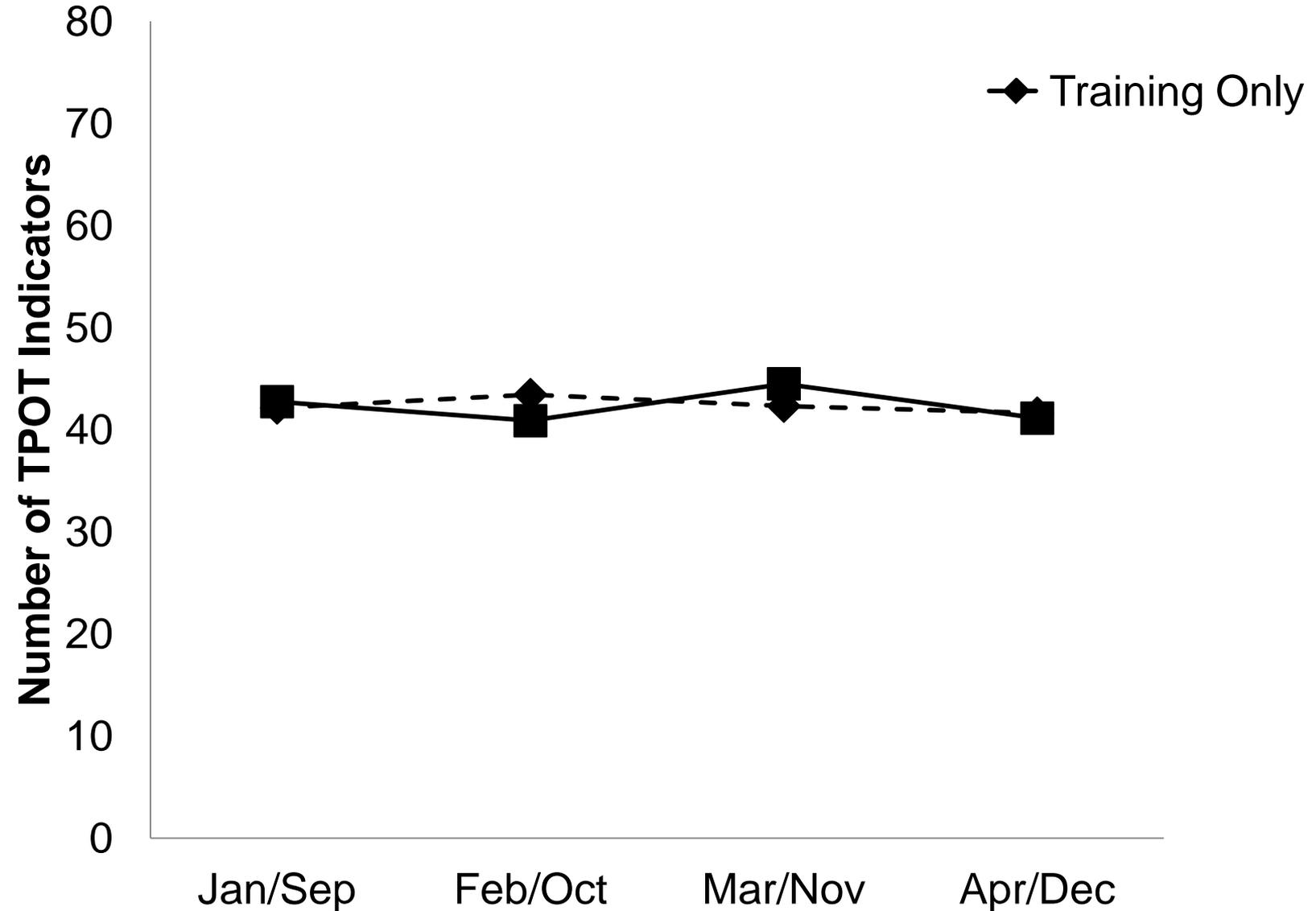
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-  [Week 1: Scavenger Hunt](#)  
Here's this week's video clip. Remember to click the Mail link at the top of the screen to read your weekly email...  
10/28/09 - 3 min 52 sec [kathleen](#) Viewers: 1
-  [Week 2: Playground](#)  
11/12/09 - 1 min 15 sec [kathleen](#) Viewers: 1
-  [Week 3: Community Solutions](#)  
11/19/09 - 3 min 7 sec [kathleen](#) Viewers: 1
-  [Week 4: Feeling Cube and Colors](#)  
12/1/09 - 3 min 17 sec [kathleen](#) Viewers: 1
-  [CSEFEL Sample Affection Activity](#)  
12/1/09 - 38 sec [kathleen](#) Viewers: 1

# Measures

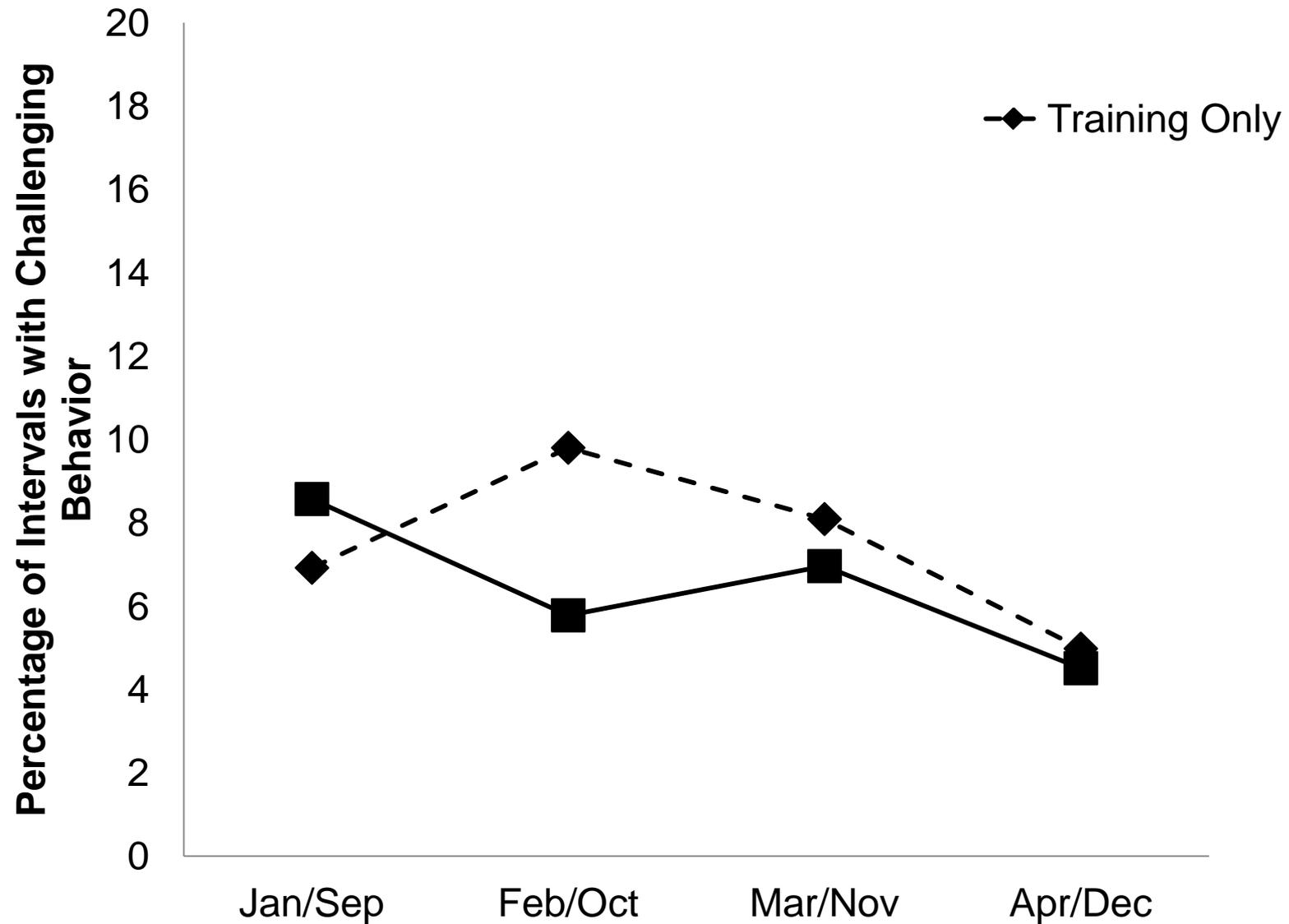
- Observational Measures (Main Effects and Ancillary Analyses):
  - TPOT
  - CLASS
  - Classwide Challenging Behavior
- Child Social Skills and Problem Behavior: Social Skills Improvement System (Gresham & Elliott, 2009)
- Social Validity

# Raw TPOT Scores by Treatment Group



		Training Only		Training + Coaching	
		Pre-	Post	Pre-	Post
Emotional Support	Positive Climate	5.31	4.88	5.00	5.06
	Negative Climate	1.32	1.58	1.19	1.14
	Teacher Sensitivity	4.44	4.30	4.34	4.32
	Regard for Student Perspectives	4.37	4.5	4.17	4.14
	<b>Total Domain Score</b>	<b>5.19</b>	<b>5.03</b>	<b>5.08</b>	<b>5.09</b>
Classroom Organization	Behavior Management	4.75	4.5	4.56	4.88
	Productivity	5.15	4.83	4.56	4.80
	Instructional Learning Format	3.69	2.97	3.43	3.17
	<b>Total Domain Score</b>	<b>4.53</b>	<b>4.10</b>	<b>4.19</b>	<b>4.28</b>
Instructional Support	Concept Development	1.31	1.38	1.7	1.45
	Quality of Feedback	1.58	1.66	1.88	1.86
	Language Modeling	2.38	2.39	2.55	2.17
	<b>Total Domain Score</b>	<b>1.76</b>	<b>1.81</b>	<b>2.04</b>	<b>1.83</b>

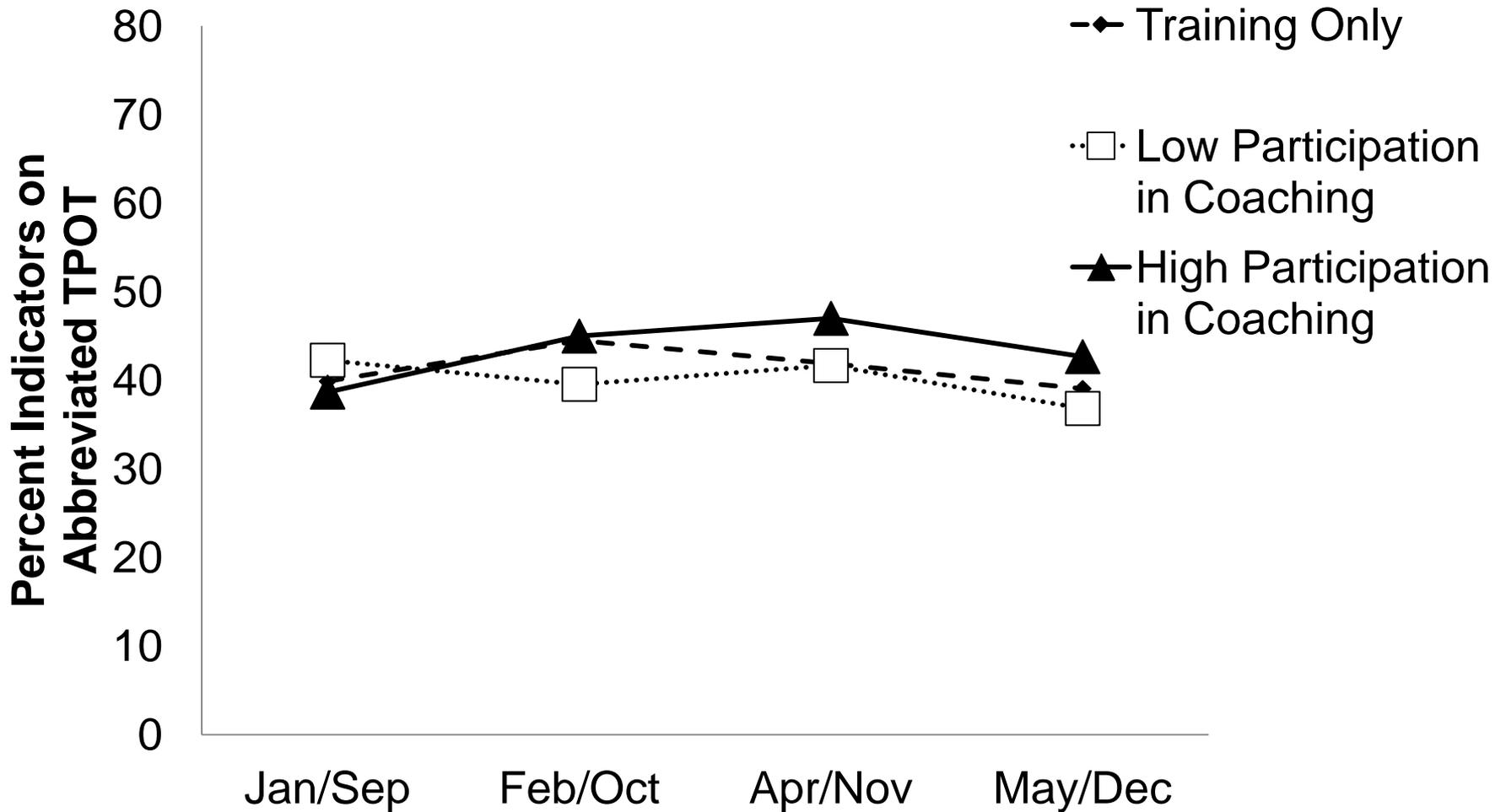
# Classwide Challenging Behavior



# Ancillary Analyses: Relationship between Participation in Coaching and Outcomes

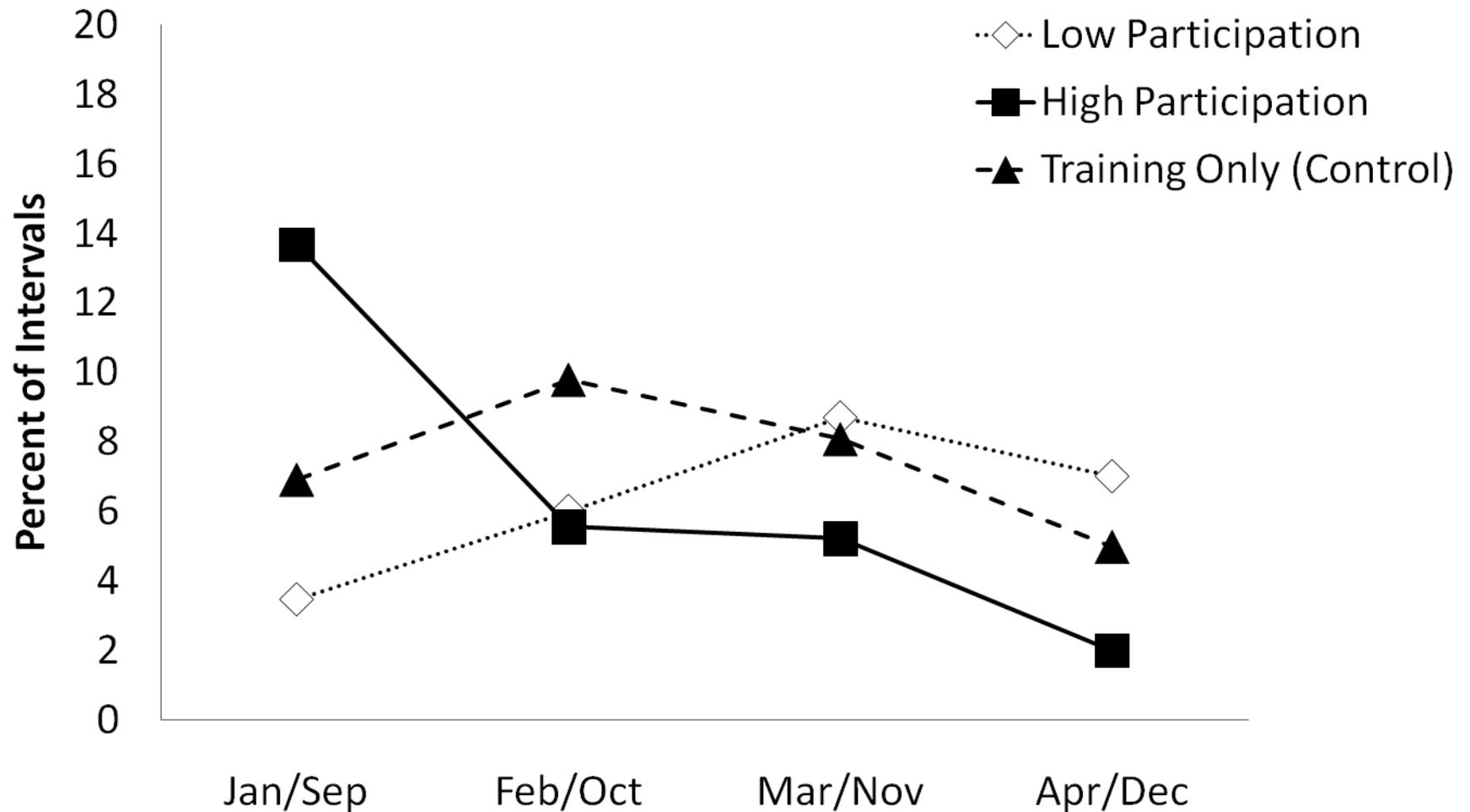
- Data were collected on teachers' website access and email responses.
- Each teacher was assigned a score based on her participation (1 point for each video viewed or email response).
- Data were analyzed descriptively for patterns based on participation.

# TPOT Scores by Participation



		Low Participation Pre-	Post-	High Participation Pre-	Post-
Emotional Support	Positive Climate	4.72 (1.23)	4.82 (1.40)	5.60 (.78)	5.60 (.29)
	Negative Climate	1.16 (.20)	1.09 (.23)	1.25 (.35)	1.25 (.31)
	Teacher Sensitivity	4.23 (1.25)	4.07 (.98)	4.60 (.29)	
	Regard for Student Perspectives	4.07 (.98)	3.91 (.89)	4.40 (.14)	
	<b>Total Domain Score</b>	<b>4.97 (.85)</b>	<b>4.93 (.79)</b>	<b>5.34 (.32)</b>	
Classroom Organization	Behavior Management	4.61 (1.04)	4.91 (.85)	4.45 (.69)	
	Productivity	4.32 (.84)	4.59 (1.09)	5.10 (.45)	
	Instructional Learning Format	3.14 (1.18)	2.86 (1.06)	4.10 (.63)	3.85 (.55)
	<b>Total Domain Score</b>	<b>4.02 (.89)</b>	<b>4.12 (.85)</b>	<b>4.55 (.47)</b>	
Instructional Support	Concept Development	1.63 (.44)	1.48 (.36)	1.85 (.82)	1.40 (.38)
	Quality of Feedback	1.84 (.64)	1.70 (.56)	1.95 (1.04)	
	Language Modeling	2.38 (.75)	1.98 (.52)	2.90 (1.01)	2.60 (.80)
	<b>Total Domain Score</b>	<b>1.95 (.54)</b>	<b>1.72 (.43)</b>	<b>2.23 (.71)</b>	

# Classwide Challenging Behavior by Participation

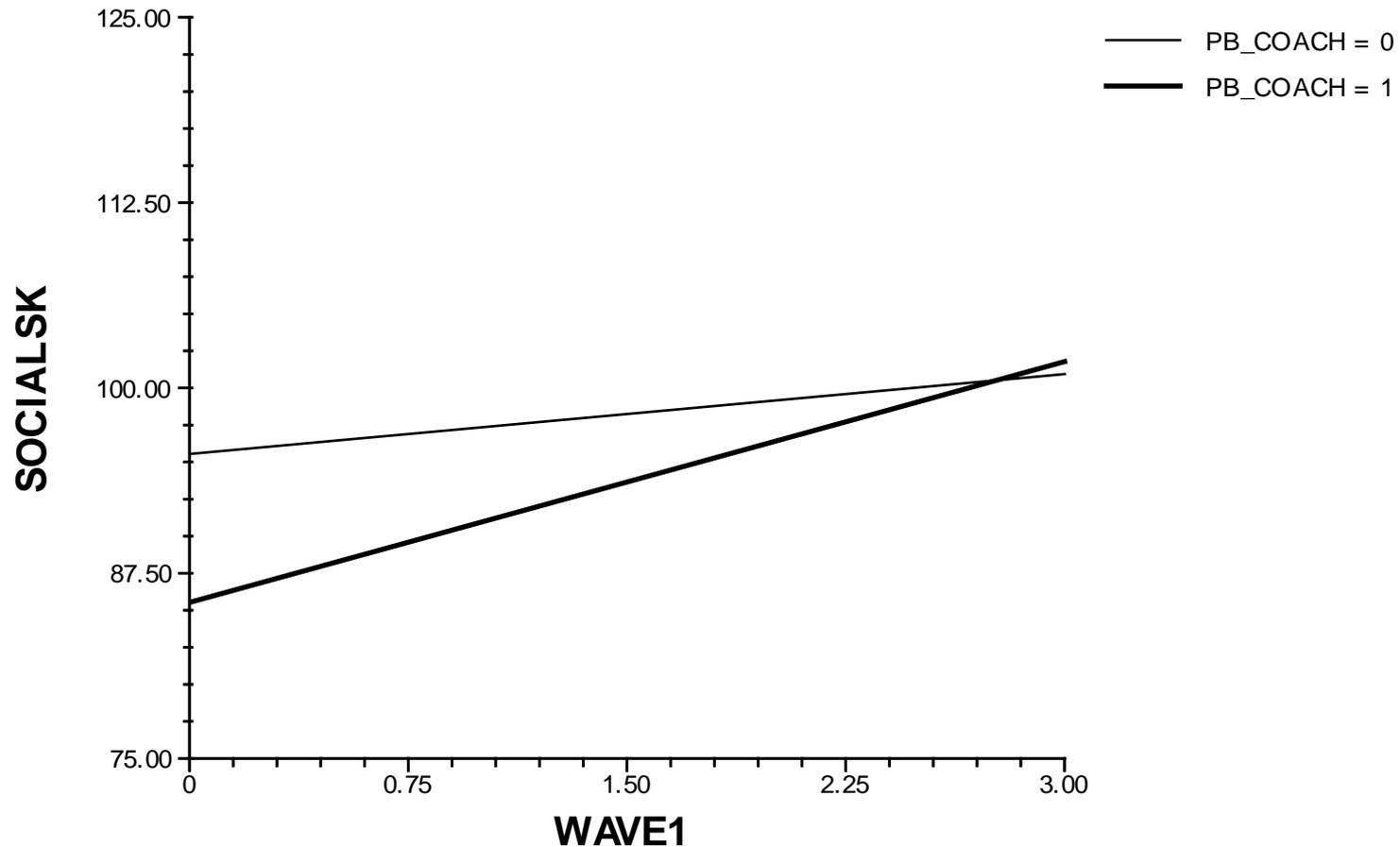


# Child Social Skills and Problem Behavior

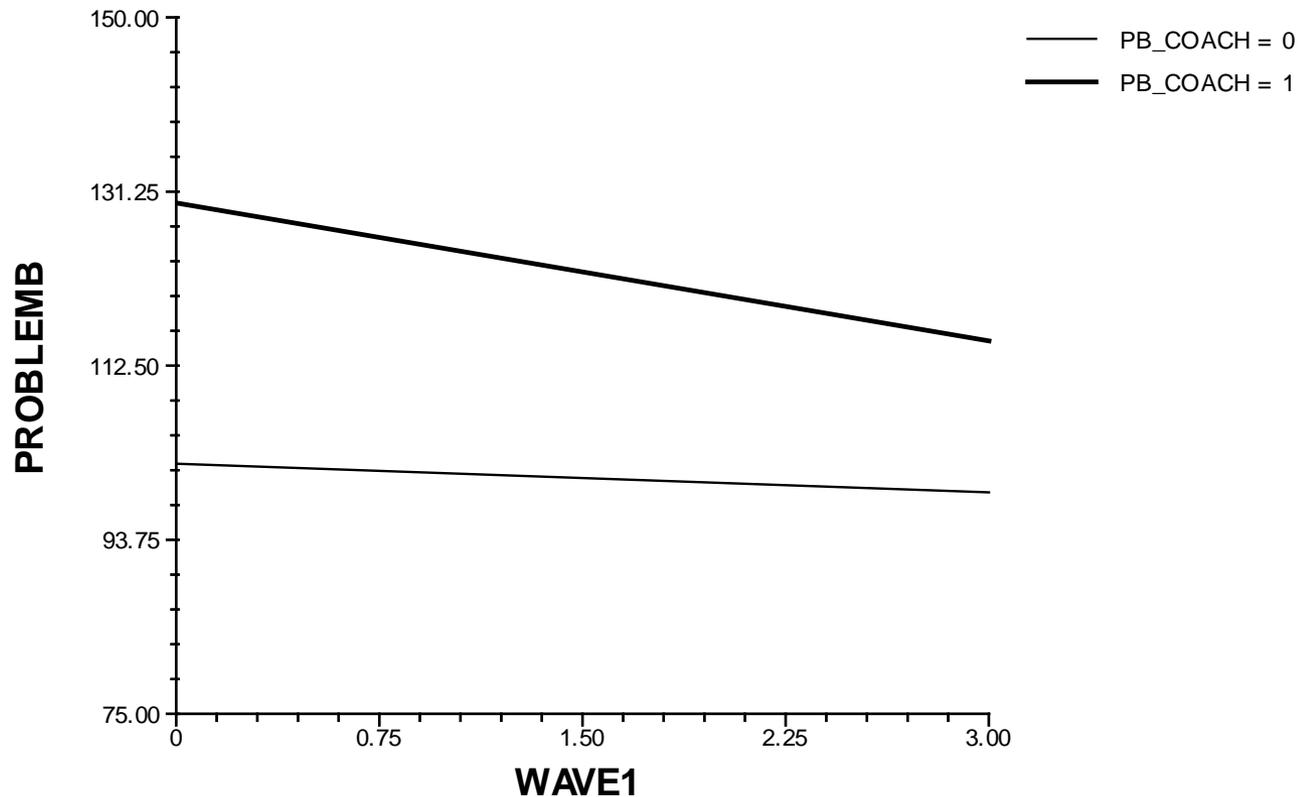
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- Measured with the Social Skills Improvement System rating scale (Gresham & Elliott, 2008).
- Teachers completed a rating scale on each child whose parent provided consent.
- Rating scales were completed at four points in time.
- Data were analyzed using HLM.

# Interaction between Coaching and Social Skills for Children with Problem Behavior



# Interaction between Coaching and Problem Behavior for Children with Problem Behavior



Themes	Benefits	Barriers
<b>Seeing oneself on Video</b>	Meaningful/ Enjoyment (6)	Dislike seeing self (3)
	Interactions with children (6)	Editing distracting (2)
	Reflection (5)	
	Non-judgmental (3)	
<b>Video Exemplars</b>	New/ useful ideas (4)	Short segments (1)
	Relevant to my class (2)	
<b>Feedback</b>	New/ useful ideas (5)	Prefer personal contact (7)
	Positive examples (3)	Could not/ did not access (4)
	Convenient (2)	
	Can share with team (2)	
<b>Filming</b>	Knew what to expect (2)	Initial fear of being filmed (11)
	Unobtrusive (5)	Child consent (5)
		Fear of kids “acting out” (4)
<b>Access</b>	Convenient at home (4)	Time at work (18)
		Work computers (7)
		Low-speed internet (6)
		Video problems (6)
		Time at home/family (2)
		Web-navigation (1)

# Implications for Research and Practice

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- Limitations
- Intensity of coaching
- Variability in participation
- Supports necessary to sustain professional development

# Conclusions

- Training alone is insufficient to change classroom practices.
- Web-mediated professional development is a promising approach for improving classroom climate and implementation fidelity, but research needs to be done on the intensity of coaching necessary for lasting change.
- Access to technology is still an issue in Head Start programs.
- Barriers such as fear of filming and lack of time must be considered while planning PD.
- Individualized, hybrid PD models (“High tech, High touch”) might improve outcomes.