

USING DIRECT BEHAVIOR RATING IN SELF-MONITORING TO IMPROVE MIDDLE SCHOOL BEHAVIOR

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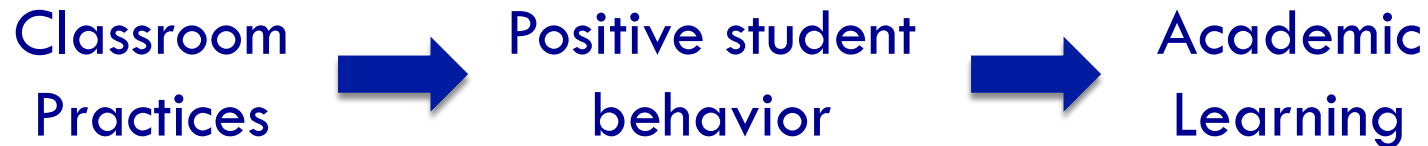
Advance Organizer



- Background Literature
 - Evidence-Based Practices
 - Group Contingency
 - Self-Management
 - Direct Behavior Rating (DBR)
- Purpose of Current Study
- Method
- Results
- Discussion

Evidence-Based Practice

- EBPs in behavioral domains often include focus on:



- EBPs for classroom behavior management are often
 - ▣ *skill-based* - help students gain the skills needed to perform the appropriate behavior
 - ▣ *reinforcement-based* - help motivate students to perform the appropriate behavior

(Epstein, Atkins, Cullinan, Kutash, & Weaver, 2008)

Evidence-Based Practice



- Two strategies that have been established as evidence based were used in the intervention package evaluated in the current study
 - ▣ Group Contingency → reinforcement strategy
 - ▣ Self-Management → skill-building strategy

Group Contingency Defined



- Reinforcement contingent on reaching predetermined level of performance
- Interdependent
 - All students within a group access reinforcers contingent on collective behavior (e.g., accruing points toward a combined total).

Rationale for Group Contingency



- Interventions with entire groups vs. interventions with individual students
 - ▣ Resource efficiency
 - If substantial amount of students require intervention supports, allocate resources at group level
 - May be preferable over implementing multiple (and sometimes competing) individual intervention support plans

Self-Management Defined

- Attempt to shift locus of control to the student
 - e.g., Personal goal setting, Self-monitoring, Self-evaluation/recording, Self-reinforcement, Self-charting
- Consensus?
 - Behavior is defined
 - Behavior is observed and recorded by the student
 - Self-monitoring
 - Often, external prompt (auditory or visual cue) used to signal observation and recording periods

(Briesch & Chafouleas, 2009; Dalton, Martella, & Marchand-Martella, 1999)

Self-Management Defined

- Other strategies include: self-evaluation, self-charting, and goal setting
 - ▣ Similar to purposes of formative assessment
 - e.g., ongoing streams of data are collected and recorded in a way that can be evaluated over time
 - ▣ Direct observation commonly used for formative assessment
 - Issues surrounding feasibility of repeated use:
 - Total time to complete multiple observations
 - High training demands
 - ▣ So what may be a good formative assessment method for use in self-management?

(Chafouleas, Riley-Tillman, & Sugai, 2007; Hintze & Matthews, 2004)

Direct Behavior Rating (DBR) as a Self-Management Tool

- Behavioral assessment method that combines the
 - ▣ *Efficiency* of behavior rating scales (e.g., simple and quick to complete)
 - ▣ *Repeatability* of systematic direct observation (e.g., for use in formative assessment)
- It is *flexible* (e.g., can be used for assessment, intervention, and communication purposes)
- Is also *defensible* given increasing evidence of technical adequacy for some DBR formats

(Chafouleas, Riley-Tillman, & Christ, 2009;
www.directbehaviorratings.org)

Example: Direct Behavior Rating – Single Item Scale (DBR-SIS)

- For example, here a teacher rated how well students were academically engaged during science lab using a DBR single-item scale (DBR-SIS; a scale format that has only one target rated per scale).



Interpretation: The student displayed academically engaged behavior during 80% of science lab today.

Summary



- Evidence supports use of *self-management* and *group contingencies* as effective intervention options for increasing positive student behavior
- Potentially effective and efficient for both *skill-building instruction* and *reinforcement of positive behavior*
- More work needed to evaluate effects at the *classroom level for older students*

Purpose of Current Study



- Research Questions
 - ▣ Will use of the intervention package increase appropriate student behaviors at class-wide level?
 - ▣ Will DBR-SIS data completed by teacher raters correspond to systematic direct observation (SDO) conducted by trained external observers?

Participants and Setting



□ Participants

- Two 8th grade teachers
 - Ms. S – Science Periods 1 and 5
 - Ms. B – Social Studies Period 3
- Special education coordinator

□ Setting

- Suburban public middle school in the Northeast

Materials



- Intervention implementation materials
 - ▣ DBR-SIS form used by students to record behavior (i.e., Academic Preparedness, Academic Engagement)
 - ▣ Team Tally Sheet
 - ▣ Team Graph
- Systematic Direct Observation Recording Form
- Treatment Integrity Checklist
- Weekly Check-In Meeting Protocol
- Usage Rating Profile – Intervention

Design



- Class-wide intervention
 - Multiple baseline single-case design across three 8th grade classrooms

Procedures



□ Baseline Phase

- Students were trained on how to self-monitor using the DBR-SIS form with 0-10 point scales (0=Not at all, 5=Some, 10=Totally) for each of the following behavioral goals
 - Academic Engagement
 - Academic Preparedness
 - Homework Completion
- Throughout the baseline phase, students self-rated their behavior and teachers checked for accuracy

Daily Self-Monitoring Sheet

Student's name: _____

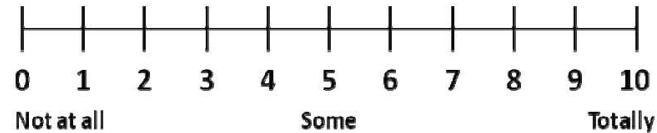
Day: M T W Th F

Date: _____

Directions: Place a mark along the line that best represents the degree to which you achieved the following:

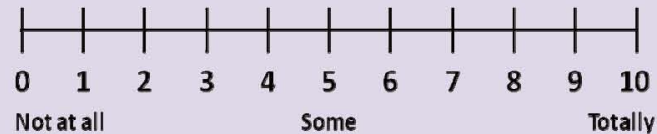
How well was I prepared for class?

Examples: Seated when bell rang, immediately began Schema Activators, instructional materials open, covered textbook/pen/pencil/paper ready, eye contact with teacher when lesson began



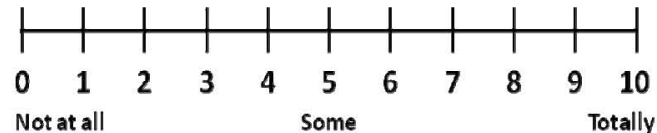
How engaged was I during class activities?

Examples: Writing, raising hand, answering a question, talking about a lesson, listening to the teacher, reading silently, taking notes appropriately, or looking at instructional materials



How well did I do with homework completion?

Examples: homework was written down in appropriate place, completed homework assignment (including any additional classwork), turned in assignment when requested



Average Rating:

of Bonus Pts Earned:

Total Points for Day:

Any Comments?

Teacher Initials: _____

Behaviors

- **How well was I prepared for class?**
 - Examples: Seated when bell rang, immediately began Schema Activators, instructional materials open, covered textbook/pen/pencil/paper ready, eye contact with teacher when lesson began
- **How engaged was I during class activities?**
 - Examples: Writing, raising hand, answering a question, talking about a lesson, listening to the teacher, reading silently, taking notes appropriately, or looking at instructional materials
- **How well did I do with homework completion?**
 - Examples: homework was written down in appropriate place, completed homework assignment (including any additional classwork), turned in assignment when requested

Student Training

Daily Self-Monitoring Sheet

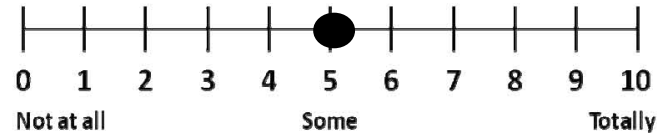
Student's name: Jackie

Day: (M) T W Th F Date: 2/14/11

Directions: Place a mark along the line that best represents the degree to which you achieved the following:

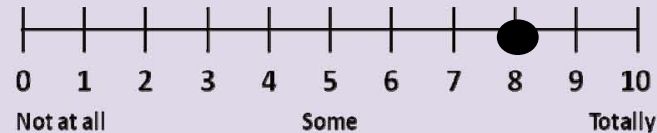
How well was I prepared for class?

Examples: Seated when bell rang, immediately began Schema Activators, instructional materials open, covered textbook/pen/pencil/paper ready, eye contact with teacher when lesson began



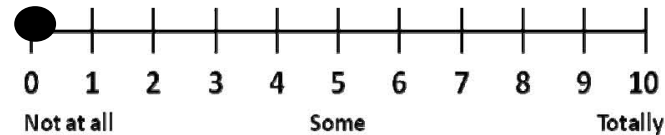
How engaged was I during class activities?

Examples: Writing, raising hand, answering a question, talking about a lesson, listening to the teacher, reading silently, taking notes appropriately, or looking at instructional materials



How well did I do with homework completion?

Examples: homework was written down in appropriate place, completed homework assignment (including any additional classwork), turned in assignment when requested



Add All Points:

(use teacher rating if different)

of Bonus Pts Earned:

(1 pt for each match within 1 pt)

Total Points for Day:

Any Comments?

Teacher Initials: _____

How do I know if I am rating accurately?

- When rating, remember to think about your behavior across the entire period, not just at the beginning, middle, or end
- Consider adding a “check” from another person, such as your teacher
 - ▣ After you complete your ratings, your teacher can come around and circle her ratings to see how closely you match
 - Remember, teacher ratings always determine “accuracy”!

How do I calculate the “Total Points” box?

- Add up the total number of points across each of the 3 behaviors (total of 30).
 - ▣ Remember, use the teacher rating as the “accurate” number of points.
- Bonus points can be earned if your rating falls within 1 point of the teacher rating.
 - ▣ Example: Teacher = 8, Student = 7 } **1 Bonus Point**
Teacher = 5, Student = 9 } **NO Bonus Point**
- Add the bonus points to the sum of the points earned on the three scales, writing the answer in the TOTAL POINTS box.

Student Training

Daily Self-Monitoring Sheet

Student's name: Jackie

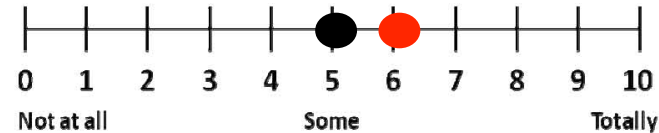
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Date: 2/14/11

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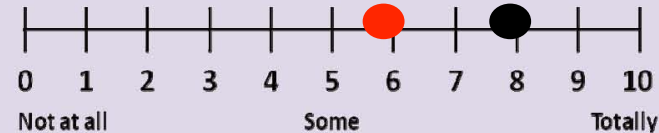
How well was I prepared for class?

Examples: Seated when bell rang, immediately began Schema Activators, instructional materials open, covered textbook/pen/pencil/paper ready, eye contact with teacher when lesson began



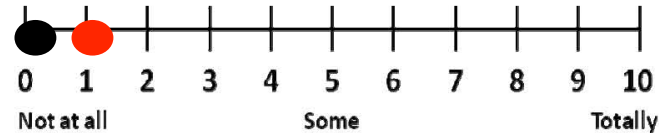
How engaged was I during class activities?

Examples: Writing, raising hand, answering a question, talking about a lesson, listening to the teacher, reading silently, taking notes appropriately, or looking at instructional materials



How well did I do with homework completion?

Examples: homework was written down in appropriate place, completed homework assignment (including any additional classwork), turned in assignment when requested



Add All Points:

(use teacher rating if different)

of Bonus Pts Earned:

(1 pt for each match within 1 pt)

Total Points for Day:

Any Comments?

Teacher Initials: _____

Student Training

Daily Self-Monitoring Sheet

Student's name: Jackie

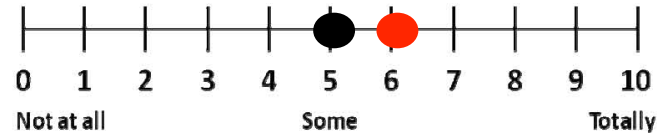
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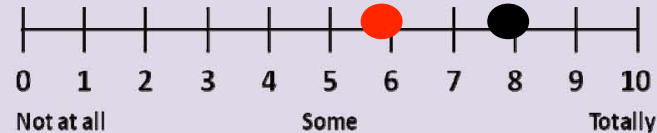
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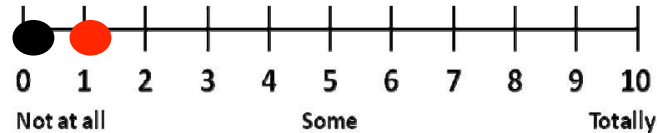
How engaged was I during class activities?

Examples: Writing, raising hand, answering a question, talking about a lesson, listening to the teacher, reading silently, taking notes appropriately, or looking at instructional materials



How well did I do with homework completion?

Examples: homework was written down in appropriate place, completed homework assignment (including any additional classwork), turned in assignment when requested



Add All Points:

(use teacher rating if different)

13

of Bonus Pts Earned:

(1 pt for each match within 1 pt)

2

Total Points for Day:

15

Any Comments?

Great job paying attention- remember that pencil!

Teacher Initials: SC

Homework Hotline Number: 555-5555

Procedures (cont.)



□ Intervention Phase

- Another training session occurred to explain the group contingency intervention
- Classes divided into 4-6 teams of 3-5 students each
- Students continued to rate own behavior using DBR-SIS form, but could now earn rewards if their cumulative point total reached a pre-specified goal

Procedures (cont.)



- Intervention phase (cont.)
 - Points were recorded on Team Tally Sheet daily
 - Each team's progress was tracked on Team Graphs posted in the classroom daily
 - At the beginning of class each day, teachers announced each team's average from the previous day
 - At the end of each week, teams who met or exceeded the goal (e.g., 120 points) earned a reward based on the multi-level reward system

Student Training

Team Tally Sheet

Teacher Name: *Chafouleas*

Team Name: *Rockets*

	Monday	Tuesday	Wednesday	Thursday	Friday
Date:	<i>2/23/09</i>				
Team Leader Name:	<i>Sally</i>				
Total Points Earned for Each Student on Team: <small>(Write a number for each student.)</small>	<i>25 - LS</i> <i>33 - SB</i> <i>16 - MM</i> <i>20 - TJ</i>	_____	_____	_____	_____
Average Points Earned by Team: <small>(Add all student points and divide by number of students on team)</small>	<i>94/4 =</i> <i>23.5</i>				

Total Points Earned for the Week: <small>(add average points row, Mon-Fri)</small>	
Were enough points earned for a team reward?	YES NO

What are the rewards?

- Rewards got better for each consecutive week the goal was met:
 - **Level I:** candy bar or soda (e.g., team reaches at least 120 points).
 - **Level II:** Level I reward plus pizza lunch or \$5 Dunkin Donuts gift card (e.g., team reaches 120 points over 2 weeks in a row).
 - **Level III:** Level I reward plus Level II or Level III \$10 movie gift card (e.g., team reaches 120 points over 3 weeks in a row).

Dependent Variables



- Teachers' DBR-SIS ratings of academic preparedness and academic engagement
 - ▣ DBR-SIS ratings of homework completion were excluded as homework was inconsistently assigned
- Systematic direct observation (SDO) was conducted by researchers once per week for 15 mins in each class to collect data on overall student engagement and off-task behavior.

Data Analysis



- Visual Analysis
- Effect Size
 - ▣ Comparison of means across phases
 - ▣ Standard Mean Difference

Results

- Treatment Integrity
 - ▣ Teachers earned performance feedback if adherence to the intervention steps <80% for two days/week
 - ▣ Overall, teachers demonstrated moderate to high, but variable, levels of adherence to intervention steps
 - ▣ Performance feedback increased adherence that maintained with some variability across Periods 5 and 1 for Ms. S, but not for Ms. B.

(see Sanetti , Chafouleas, Fallon, & Jaffery, 2010)

Results

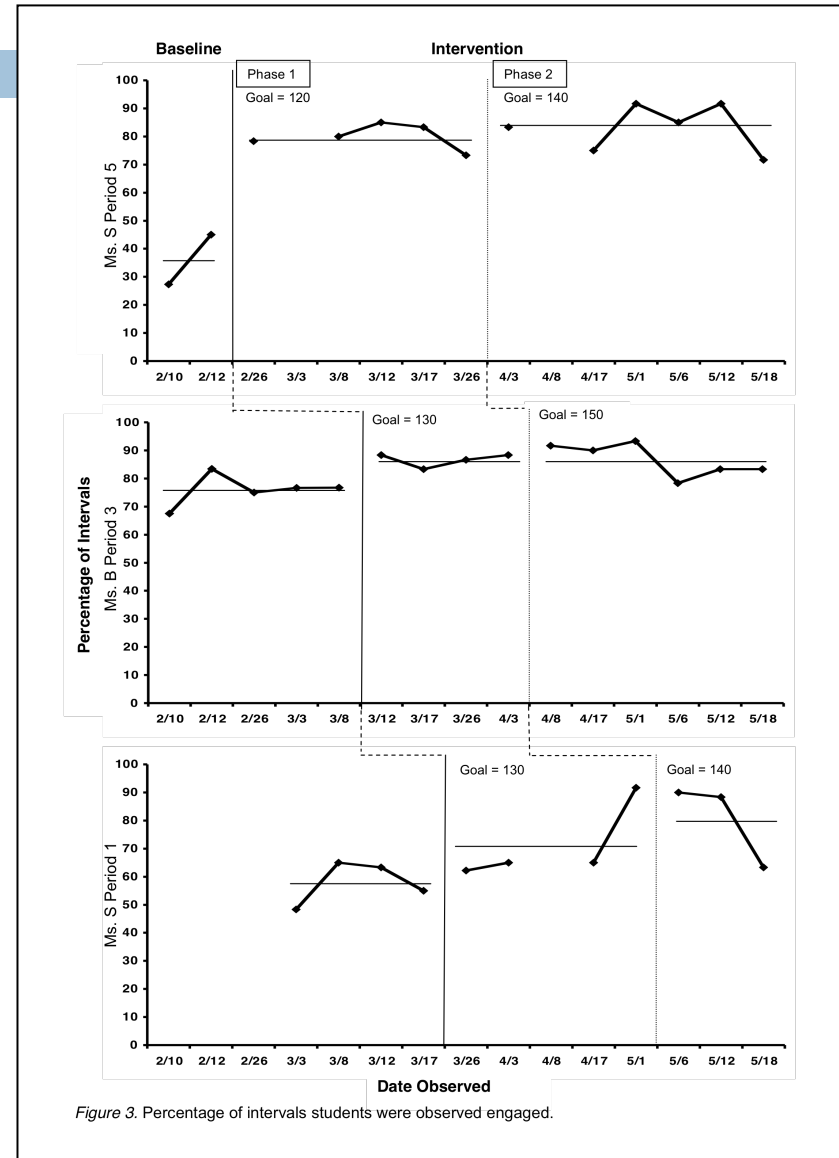
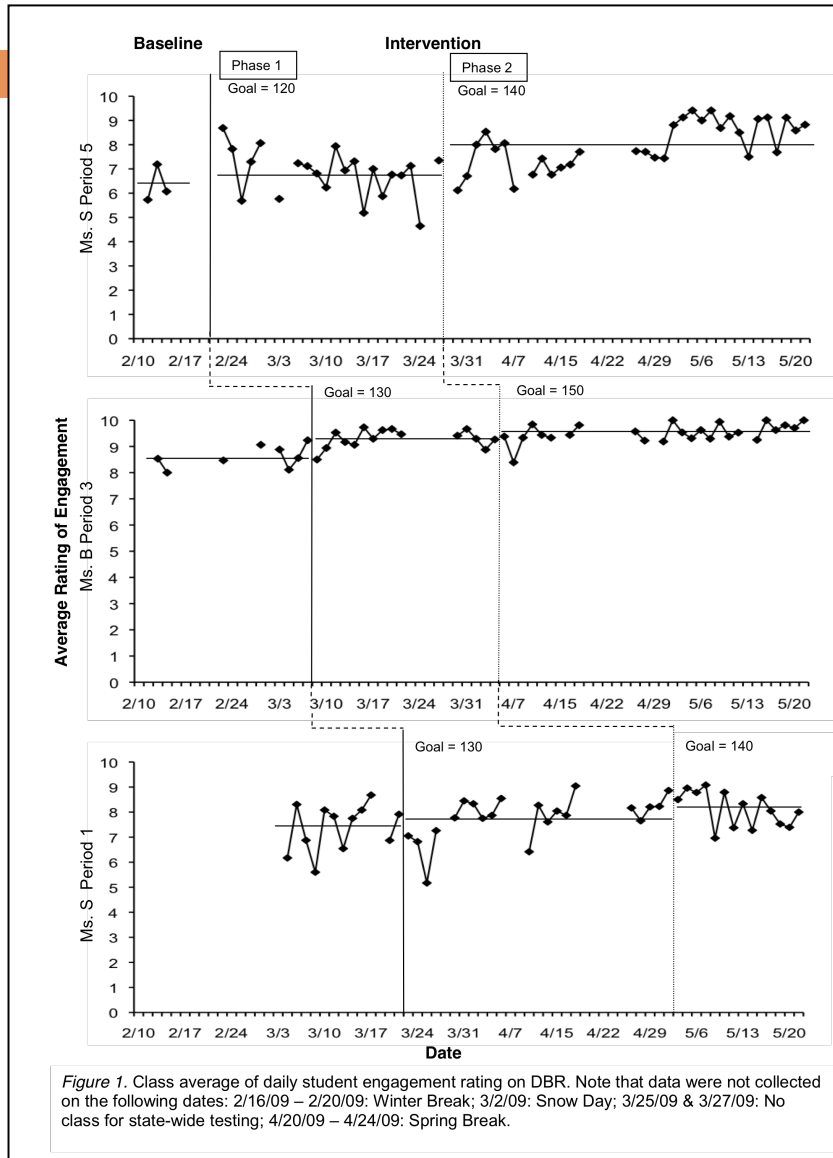


- Visual Analysis of DBR-SIS and SDO data
 - Ms. S Period 5
 - Ms. B Period 3
 - Ms. S Period 1

Results: Academic Engagement

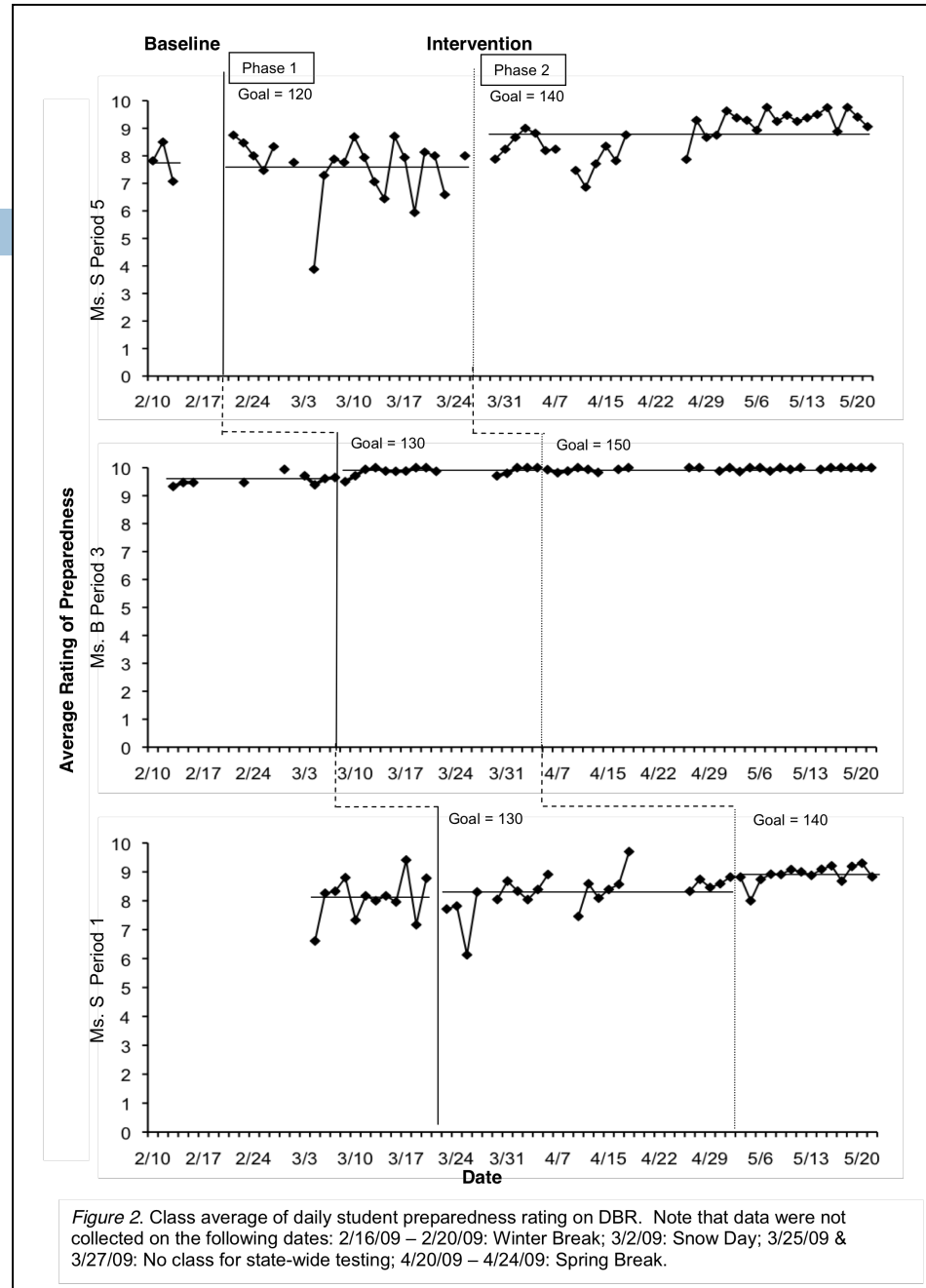
Figure 1. Teachers' ratings on DBR-SIS form

Figure 2. Researcher's observed data



Results: Academic Preparedness

Figure 3. Daily class average of teachers' ratings on DBR-SIS form.



Results: Off-Task Behavior

Figure 4. Percentage of intervals students were observed by researchers to be **Off-Task**.

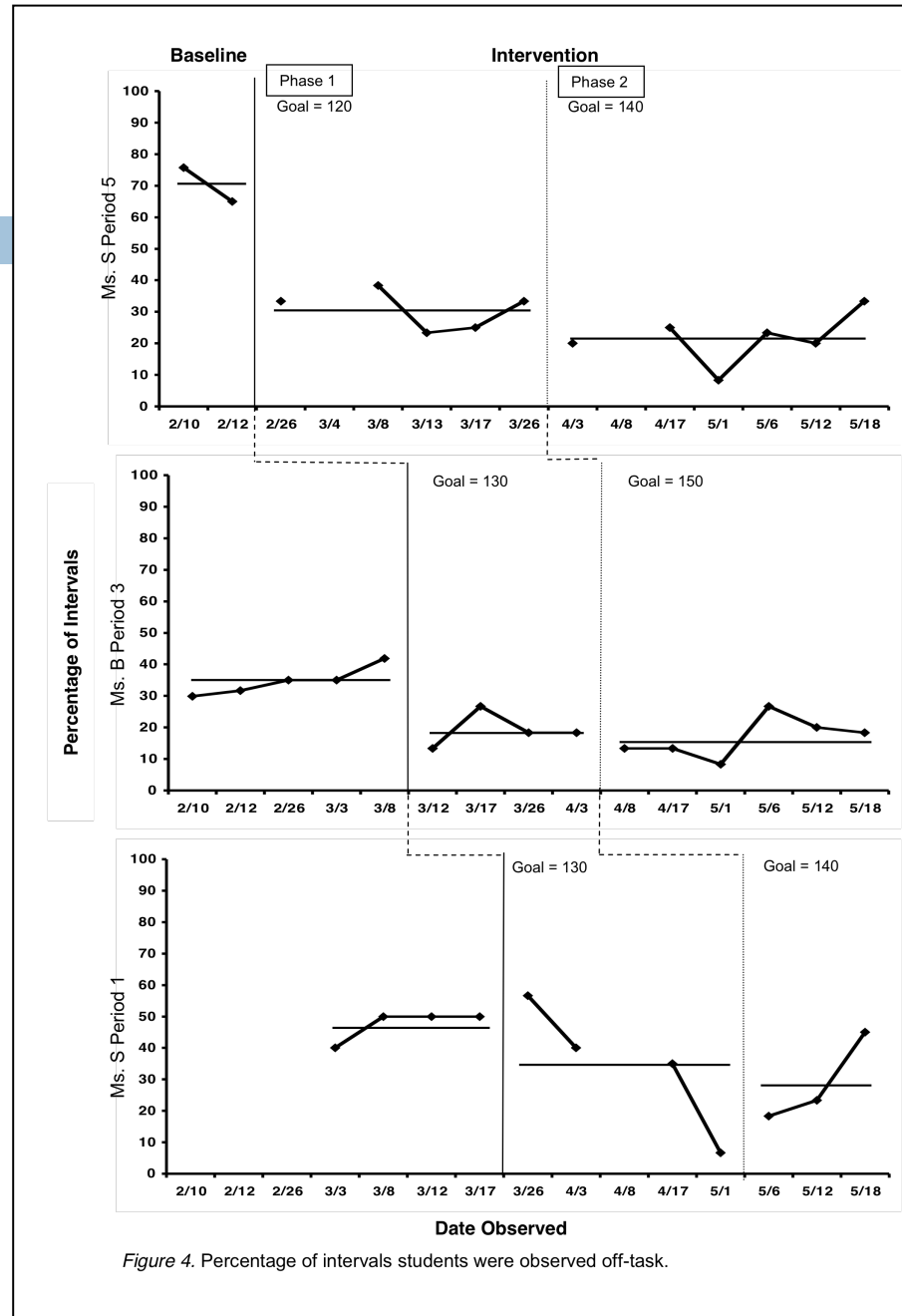


Figure 4. Percentage of intervals students were observed off-task.

Results

		Baseline		Intervention				Effect Size	
		M	(SD)	Phase 1		Phase 2		$\frac{M_{\text{Baseline}} - M_{\text{Phase1}}}{SD_{\text{Baseline}}}$	$\frac{M_{\text{Baseline}} - M_{\text{Phase2}}}{SD_{\text{Baseline}}}$
				M	(SD)	M	(SD)		
<i>Ms. S Period 5</i>									
DBR	Preparedness	7.8	(2.01)	7.6	(1.97)	8.8	(1.28)	0.10	-0.50
	Engagement	6.4	(2.80)	6.8	(2.31)	8.0	(1.72)	-0.14	-0.57
SDO	Engagement	36.2	(12.51)	79.0	(5.08)	83.1	(8.34)	-3.42	-3.75
	Off-Task	70.4	(7.60)	30.7	(6.30)	21.7	(8.16)	5.22	6.41
<i>Ms. B Period 3</i>									
DBR	Preparedness	9.6	(1.05)	9.9	(0.47)	9.9	(0.24)	-0.29	-0.29
	Engagement	8.6	(1.36)	9.3	(0.99)	9.6	(0.75)	-0.51	0.74
SDO	Engagement	75.9	(5.68)	86.7	(2.36)	86.7	(5.87)	-1.90	-1.90
	Off-Task	34.7	(4.58)	19.2	(5.53)	16.7	(6.41)	3.38	3.93
<i>Ms. S Period 1</i>									
DBR	Preparedness	8.1	(1.90)	8.3	(1.36)	8.9	(0.91)	-0.11	-0.42
	Engagement	7.4	(2.02)	7.8	(1.59)	8.1	(1.35)	-0.20	-0.35
SDO	Engagement	57.9	(7.75)	71.0	(13.86)	80.6	(14.94)	-1.69	-2.93
	Off-Task	47.5	(5.00)	34.6	(20.78)	28.9	(14.18)	2.58	3.72

Discussion



- Research Question 1: Will use of the intervention package increase appropriate student behaviors at class-wide level?
 - ▣ Overall, intervention package moderately effective
 - Improved student behavior at class-wide level
 - Students responded positively with most teams reaching and maintaining weekly goals
 - In general, teachers found the intervention to be highly acceptable, easy to understand, and easy to implement

Discussion (cont.)

- Research Question 2: Will DBR-SIS data completed by teacher raters correspond to systematic direct observation (SDO) by trained external observers?
- Overall correspondence, however SDO data may indicate more substantial improvement
 - Over-rating of behavior at baseline when using DBR-SIS?
- Overall decisions regarding intervention effectiveness may be similar regardless of data source
 - Need balance between precision and efficiency

(Riley-Tillman, Christ, Chafouleas, Boice-Mallach, & Briesch, 2010)

Discussion (cont.)



- Intervention Usability according to Usage Rating Profile-Intervention (URP-I) completed by teachers
 - Acceptability
 - Understanding
 - Feasibility
 - Systems Support

Limitations



- Teachers required immediate intervention, thus...
 - ▣ limited amount of baseline data points in the first class
 - ▣ baseline phase included self-monitoring
- Intervention reward system was somewhat complex and entirely researcher-funded
- Researcher involvement
- Small sample size → low generalizability
- Practical setting with teacher implementers → low control over factors influencing internal validity

Future Directions



- Improve feasibility for implementation in school systems
- Evaluate impact of increased student responsibility
- Further evaluation of highly efficient alternative methods of data collection
- Component analysis may facilitate understanding of which, when, and with whom various components in an intervention package might be selected

Recommendations

- Define problem behaviors and conditions prompting and reinforcing behaviors
- Hypothesize need to modify classroom learning environment to
 - ▣ decrease problem behavior
 - ▣ Teach and reinforce new skills to increase appropriate behavior and facilitate positive classroom climate
- Consider level of intervention focus (e.g., class-wide, individual) and intensity of supports (e.g., universal Tier I, targeted Tier II, intensive Tier III)
- Use same problem-solving model to create conceptually relevant interventions

(Epstein, Atkins, Cullinan, Kutash, and Weaver, 2008)

Questions?

All materials can be accessed at
www.directbehaviorratings.org