Direct Behavior Rating: Overview of Use in Assessing Student Behavior within Multi-Tiered Models of Service Delivery

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University of Connecticut

Presentation for RISPA – Nov 2013
Purpose:

- To review critical features of Direct Behavior Rating (DBR) as a flexible, defensible, repeatable and efficient approach to behavior assessment.
- To understand how DBR might be applied within multi-tiered models of service delivery (RTI) – assessment for screening and progress monitoring purposes.
- To build skill in using DBR within decision making about student behavior supports.
Purposes of Assessment

- **Screening**
  - Who needs help?
- **Diagnosis**
  - Why is the problem occurring?
- **Progress Monitoring**
  - Is intervention working?
- **Evaluation**
  - How well are we doing overall?

Emphasized within a Multi-Tiered Service Delivery Framework (RTI)
School-based behavior assessment within RTI

- Current methods of behavior assessment were not built for multi-tiered assessment
- New options must possess four desirable characteristics...

Defensible  Efficient  Flexible  Repeatable

(Chafouleas, 2011; Chafouleas, Christ, & Riley-Tillman, 2009; Chafouleas, Volpe, Gresham, & Cook, 2010)
Direct Behavior Rating as an option...
DIRECT BEHAVIOR RATING:
What is DBR?

An emerging alternative to systematic direct observation and behavior rating scales which involves brief rating of target behavior following a specified observation period.

Chafouleas, Riley-Tillman, & Christ (2009); Chafouleas, Riley-Tillman, & Sugai (2007); Chafouleas, Riley-Tillman, & McDougal (2002); Christ, Riley-Tillman, & Chafouleas (2009)
Example Scale Formats for DBR

Source: Chafouleas, Riley-Tillman, & Christ (2009)

**Single Item Scale**

**Academically Engaged**

% of Total Time

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>0%</td>
<td>10%</td>
<td>20%</td>
<td>30%</td>
<td>40%</td>
<td>50%</td>
<td>60%</td>
<td>70%</td>
<td>80%</td>
<td>90%</td>
<td>100%</td>
</tr>
</tbody>
</table>

**Interpretation:** The student displayed academically engaged behavior during 80% of the observation period.

**Multi-Item Scale**

<table>
<thead>
<tr>
<th>Did the student follow class rules?</th>
<th>Never</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of points earned: 5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Interpretation:** The student earned 84% (5/6) of possible points during the observation period.
A little background...

Other Names for DBR-like Tools:
- Home-School Note
- Behavior Report Card
- Daily Progress Report
- Good Behavior Note
- Check-In Check-Out Card
- Performance-based behavioral recording

Contemporary Defining Features:
- SDO
- BRS

Used repeatedly to represent behavior that occurs over a specified period of time (e.g., 4 weeks) and under specific and similar conditions (e.g., 45 min. morning seat work)
RESEARCH: Project VIABLE (2006-2011) and Project VIABLE II (2009-current)

Develop instrumentation and procedures, then evaluate defensibility of DBR in decision-making

- Rating Procedures
- Behavior Targets
- Scale Design
- Method Comparisons
- Rater Training

Evaluate defensibility and usability of DBR in decision-making at larger scale

- Large student/teacher samples assessed at year 1
- Smaller student samples followed annually over 4 years across grades/teachers
- A handful of behavior intervention cases involving DBR use
- Teacher input regarding usability and perceptions

Funding provided by the Institute for Education Sciences, U.S. Department of Education
How does DBR work?
Interpretation: The student displayed *academically engaged* behavior during 80% of large group math instruction today.

Interpretation: The student received a 6 for *attention* during group circle time activities today.
DBR Targets: “The Big 3” General Outcomes

**Academic Engagement:**
Actively or passively participating in the classroom activity.

**Respectful:**
Compliant and polite behavior in response to adult direction and/or interactions with peers and adults.

**Disruptive Behavior:**
A student action that interrupts regular school or classroom activity.
How do I use the DBR scale?

- Ratings should indicate how much you did the behavior.
- *For example:* During Independent Reading, if you paid attention about half of the time, that would be like a so-so face – and you could give a rating of 5.
How do I use the DBR scale?

- Ratings should indicate how much you did the behavior.
- Another way to anchor your rating is to think in terms of Low, Medium, and High.

<table>
<thead>
<tr>
<th>Low</th>
<th>Medium</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
<td>5</td>
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<td>9</td>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>

- Never
- Sometimes
- Always
How do I use the DBR scale?

- BEFORE rating, pay attention to the behavior and the scale.

For example, lower score for ‘Disruptive’ shows better behavior, whereas a higher score on the other items indicates better behavior.
Practice!

But first, a few logistical points to consider...
1) Complete top portion of the form, and review the behavior definitions and rating directions

<table>
<thead>
<tr>
<th>Date:</th>
<th>Student:</th>
<th>Activity Description:</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>T</td>
<td>W</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rater:</td>
</tr>
</tbody>
</table>

**Behavior Descriptions:**

- **Academically engaged** is actively or passively participating in the classroom activity. For example: writing, raising hand, answering a question, talking about a lesson, listening to the teacher, reading silently, or looking at instructional materials.

- **Respectful** is defined as compliant and polite behavior in response to adult directions and/or peer interactions. For example: follows teacher direction, pro-social interaction with peers, positive response to adult request, verbal or physical disruption without a negative tone/notation.

- **Disruptive** is student action that interrupts regular school or classroom activity. For example: out of seat, fidgeting, playing with objects, acting aggressively, talking/yelling about things that are unrelated to classroom instruction.

☐ Check if no observation today
2) Have the form ready for completion following each pre-identified observation period

✓ For example: Reading block, independent seat work
3) Immediately following the activity period, complete the ratings.

- Only complete the ratings if...
  - you are confident you directly observed the student for a sufficient amount of time
  - you are able to complete the form soon after the end of the activity

<table>
<thead>
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<tbody>
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<td>T</td>
<td>W</td>
</tr>
</tbody>
</table>

Rater:

<table>
<thead>
<tr>
<th>Observation Time:</th>
<th>Behavior Descriptions:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start: _________</td>
<td>Academically engaged is actively or passively participating in the classroom activity. For example: writing, raising hand, answering a question, talking about a lesson, listening to the teacher, reading silently, or looking at instructional materials.</td>
</tr>
<tr>
<td>End: _________</td>
<td>Respectful is defined as compliant and polite behavior in response to adult directions and/or peer interactions. For example: follows teacher direction, pro-social interaction with peers, positive response to adult request, verbal or physical disruption without a negative tone/connotation.</td>
</tr>
</tbody>
</table>

☐ Check if no observation today

Disruptive is student action that interrupts regular school or classroom activity. For example: out of seat, fidgeting, playing with objects, acting aggressively, talking/yelling about things that are unrelated to classroom instruction.
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- Only complete the ratings if...
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</thead>
<tbody>
<tr>
<td>M T W Th F</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Rater: |

<table>
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<tr>
<th>Observation Time:</th>
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- **Disruptive** is student action that interrupts regular school or classroom activity. For example: out of seat, fidgeting, playing with objects, acting aggressively, talking/yelling about things that are unrelated to classroom instruction.
Let’s Practice...

- **Academically Engaged:** Participating in the classroom activity.

  - *Examples*: writing, raising hand, answering a question, talking about a lesson, listening to the teacher, reading silently, or looking at instructional materials.
Following the video, we will rate Jessie’s **Academically Engaged** behavior.
How would you rate Jessie’s Academically Engaged behavior?
**Academically Engaged**

Participating in the classroom activity.

**For example:** writing, raising hand, answering a question, talking about a lesson, listening to the teacher, reading silently, or looking at instructional materials.

<table>
<thead>
<tr>
<th>Low</th>
<th>Medium</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>Occasionally</td>
<td>Very frequently</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>9</td>
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<td>9</td>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>

**Academically Engaged**

Participating in the classroom activity.

**For example:** writing, raising hand, answering a question, talking about a lesson, listening to the teacher, reading silently, or looking at instructional materials.
Let’s Practice…

• **Disruptive:**
  Action that interrupts regular school or classroom activity.

  *Examples:* out of seat, fidgeting, playing with objects, acting aggressively, talking/yelling about things that are unrelated to classroom instruction.
Following the video, we will rate Tyler’s **Disruptive** behavior
How would you rate Tyler’s **Disruptive** behavior?

0: **Never** (0%)
1-3: 
4-6: **Sometimes** (50%)
7-9: 
10: **Always** (100%)
**Disruptive**
Action that interrupts regular school or classroom activity.

*For example:* out of seat, fidgeting, playing with objects, acting aggressively, talking/yelling about things that are unrelated to classroom instruction.

<table>
<thead>
<tr>
<th>Low</th>
<th>Medium</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 1 2 3</td>
<td>4 5 6 7</td>
<td>8 9 10</td>
</tr>
<tr>
<td>Never</td>
<td>Occasionally</td>
<td>Very frequently</td>
</tr>
<tr>
<td></td>
<td>A little less than half the time</td>
<td>A little more than half the time</td>
</tr>
<tr>
<td></td>
<td>Sometimes</td>
<td>Always</td>
</tr>
</tbody>
</table>
Practice... Questions and Comments?

Visit the On-Line Training Module

Direct Behavior Rating:
Use in Assessment of Student Behavior

Project Directors: Sandra M. Chafouleas, T. Chris Riley-Tillman, Theodore J. Christ, & George Supai
Design & Development: Rose Jaffrey & Jamison Judd

Correct Score: AE 9  RES 10  DB 0
Applications for DBR-SIS across Tiers for Screening and Progress Monitoring

- **Tier 1 (80%)**
  - Extant Data and Direct Behavior Ratings

- **Tier 2 (15%)**
  - Direct Behavior Ratings and Extant Data

- **Tier 3 (5%)**
  - Multi Method using SDO, DBRs and/or Rating Scales
Screening...
Goal for Screening... Correct Identification of Students in Need

<table>
<thead>
<tr>
<th>Test Outcome</th>
<th>Condition (as determined by &quot;Gold standard&quot;)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Condition Positive</td>
</tr>
<tr>
<td>Test Outcome Positive</td>
<td>True Positive</td>
</tr>
<tr>
<td>Test Outcome Negative</td>
<td>False Negative (Type II error)</td>
</tr>
</tbody>
</table>

- **False Positive (Type I error)**
- **True Positive**
- **False Negative (Type II error)**
- **True Negative**

**Positive predictive value** = \( \frac{\Sigma \text{ True Positive}}{\Sigma \text{ Test Outcome Positive}} \)

**Negative predictive value** = \( \frac{\Sigma \text{ True Negative}}{\Sigma \text{ Test Outcome Negative}} \)

**Sensitivity** = \( \frac{\Sigma \text{ True Positive}}{\Sigma \text{ Condition Positive}} \)

**Specificity** = \( \frac{\Sigma \text{ True Negative}}{\Sigma \text{ Condition Negative}} \)

Figure Source: [http://en.wikipedia.org/wiki/Sensitivity_and_specificity](http://en.wikipedia.org/wiki/Sensitivity_and_specificity)
Preliminary Research to Identify Individual Student Risk

- Promising results for use of DBR-SIS data to inform screening decisions.
- Focus was on each individual DBR-SIS target, or within a gated approach.
- Overall DBR-SIS diagnostic accuracy was consistently in the moderate range.
  - AE performed consistently well, particularly in higher grade levels.
  - DB performed well in lower grades. Performance in advanced grades varied.
Current Directions

• **Replication of findings** –
  ▫ do we see the same patterns in larger, more diverse samples?

• **Time-specific cut scores** –
  ▫ do risk scores vary across the school year and by grade?

• **Number of screenings needed** –
  ▫ do we need to screen 3x per yr?

• **Strength of approach** –
  ▫ is information consistent across a wider range of grade levels, and is it sufficiently strong for decision making?
VIABLE-II - Year 1 Data

Johnson, Miller, Chafouleas, Welsh, Riley-Tillman, & Fabiano (in prep)

• Sample: Approximately 1800 public-school students enrolled in 192 classrooms in CT, MO, NY
  ▫ lower elementary (1st and 2nd),
  ▫ upper elementary (4th and 5th)
  ▫ middle school (7th and 8th)
• Procedures: teacher rated 3x points over school year
• Conclusion: Time point and grade can vary findings.
  ▫ In Lower Elementary, AE best balance across time.
  ▫ In Upper Elementary, DB best balance during fall and winter but spring AE or DB maybe.
  ▫ For Middle School, AE best balance for fall, but mixed for AE/DB in winter and spring.
• Implication: What happens when you combine scores?

Values and 95% Confidence Intervals for Area Under the Curve (AUC) Statistics for Performance of Average AE, DB, RS by Grade Group and Time Point.
### Rules utilized for determining optimal threshold for each grade level and time point

<table>
<thead>
<tr>
<th></th>
<th>Sensitivity</th>
<th>Specificity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Best</strong></td>
<td>0.9</td>
<td>0.9</td>
</tr>
<tr>
<td></td>
<td>0.8</td>
<td>0.08</td>
</tr>
<tr>
<td></td>
<td>0.9</td>
<td>0.7</td>
</tr>
<tr>
<td></td>
<td>0.8</td>
<td>0.8</td>
</tr>
<tr>
<td></td>
<td>0.8</td>
<td>0.7</td>
</tr>
<tr>
<td><strong>Worst</strong></td>
<td>0.7</td>
<td>0.7</td>
</tr>
</tbody>
</table>

Smallest SN/SP discrepancy

**Directions**: Recommending combination scores in screening, slightly varied cuts by grade and time.
Riley-Tillman, Methe, & Weegar (2009 – *Assessment for Effective Intervention*)

- **Sample**: First grade classroom with 14 students
- **Design**: B-A-B-A
- **Intervention**: modeling and prompting of silent reading
- **Measures**: researcher-completed SDO, teacher-completed DBR-SIS
- **Conclusion**: DBR data can be sensitive to classroom-level intervention effects, maps closely to resource-intensive SDO
Progress Monitoring...
INDIVIDUAL STUDENT MONITORING OF RESPONSE: DBR-SIS in Behavior Consultation Cases

Chafouleas, Sanetti, Kilgus, & Maggin (2012 – Exceptional Children)

Sample: 20 teacher-student dyads in elementary grades

Design and Intervention: A-B intervention involving behavioral consultation and DRC-based intervention. Five options for “change metrics” were calculated.

Measures: researcher-completed SDO, teacher-completed DBR-SIS

Conclusion: Change (in expected directions) in student behavior across phases and sources. High correspondence between DBR-SIS and BOSS absolute change metrics suggests that students were ranked similarly across the two measures with regard to intervention responsiveness. Provides preliminary support for the use of DBR-SIS to differentiate between those who have or have not responded to intervention.

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
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</thead>
<tbody>
<tr>
<td><strong>DBR-SIS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disruptive Behavior</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline</td>
<td>4.26</td>
<td>1.97</td>
</tr>
<tr>
<td>Intervention</td>
<td>2.58</td>
<td>1.41</td>
</tr>
<tr>
<td>Academic Engagement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline</td>
<td>4.97</td>
<td>2.28</td>
</tr>
<tr>
<td>Intervention</td>
<td>6.82</td>
<td>1.50</td>
</tr>
<tr>
<td>Compliance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline</td>
<td>5.74</td>
<td>1.93</td>
</tr>
<tr>
<td>Intervention</td>
<td>7.34</td>
<td>1.31</td>
</tr>
<tr>
<td><strong>BOSS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>On-task</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline</td>
<td>69.98</td>
<td>19.76</td>
</tr>
<tr>
<td>Intervention</td>
<td>81.94</td>
<td>14.22</td>
</tr>
<tr>
<td>Off-task</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline</td>
<td>44.82</td>
<td>21.01</td>
</tr>
<tr>
<td>Intervention</td>
<td>28.69</td>
<td>18.54</td>
</tr>
</tbody>
</table>
INDIVIDUAL INTENSIVE STUDENT MONITORING: Kindergarten Example

Chafouleas, Kilgus, & Hernandez (2009 – Assessment for Effective Intervention)

• **Sample**: full day K inclusive classroom, 2 teachers and 22 students

• **Measures**: teacher-completed DBR-SIS following am and pm over Nov-March for ALL students

• **Conclusion**: “Local” cut-score comparisons can be useful in examining individual student performance. Periodic re-assessment of all may be needed to re-confirm appropriate comparison

<table>
<thead>
<tr>
<th>Target Behavior</th>
<th>Rating Time</th>
<th>FALL M (SD)</th>
<th>SPRING M (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Engagement</td>
<td>AM</td>
<td>8.72 (1.31)</td>
<td>9.40 (0.63)</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>8.25 (2.03)</td>
<td>9.37 (0.88)</td>
</tr>
<tr>
<td>Disruptive Behavior</td>
<td>AM</td>
<td>1.30 (1.47)</td>
<td>0.60 (0.62)</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>1.61 (2.08)</td>
<td>0.42 (0.52)</td>
</tr>
</tbody>
</table>
Students as Monitors of Responsiveness

**DIRECT BEHAVIOR RATING (DBR)**

**IN INTERVENTIONS TO TEACH STUDENTS HOW TO SELF-MONITOR AND EARN TEAM-BASED REWARDS**

By Rose Jaffery and Sandra M. Chafoules

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**Potential Benefits of Using Interventions with Self-Monitoring and Group Contingencies:**

- Provides immediate and consistent feedback about student behavior
- Promotes student awareness of behavior
- Encourages student to take responsibility
- Increases communication between student and adult about student performance
- Helps student develop a sense of independence and self-sufficiency

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**DIRECT BEHAVIOR RATING (DBR) DESCRIPTION:**

Direct Behavior Rating (DBR) is described as offering an efficient, defendable, repeatable, and flexible tool for linking assessment, communication, and intervention purposes. In this document, we focus on demonstrations of the flexibility of DBR in relation to how it can be used in an evidence-based intervention package. Specifically, the intervention package consists of student self-monitoring and an interdependent group contingency reward system. Flexibility of DBR is demonstrated in that the format of the DBR scales used for self-monitoring is varied based on teacher preference.

**What are the intervention components discussed in this document?**

- Students evaluate and record their own behavior (self-monitoring) and work in teams (interdependent group contingency) to gain points for good behavior in order to earn rewards (incentives).

**Information offered through this document includes:**

- Procedural information about interventions using DBR, self-monitoring, and interdependent group contingency
- Materials for teaching students how to (a) self-monitor their behavior using DBR forms and (b) use teacher feedback and an interdependent group contingency incentive system to earn rewards for good behavior.

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**Why might this intervention package be useful?**

- The self-monitoring component can help students learn self-awareness of their own behavior. In order to increase the likelihood that the students will rate their behavior accurately and engage in appropriate behavior, the students earn points for good behavior and can earn bonus points for being accurate self-raters (e.g., coming within 1 point of a teacher’s rating).
- If a team’s total points meet or exceed a pre-determined weekly goal, each student receives a reward.
- When rewards are only offered contingent upon a student’s entire team engaging in appropriate behavior, students are often encouraged by their peers to act appropriately. This interdependent group contingency reward system relies on peer influence to shape student behavior.
- The format of the self-monitoring forms allows for daily data collection in order to monitor student progress efficiently over time.

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**Coming soon...**

- comparison of teacher ratings, student ratings, and external observations
What are the possibilities across assessment, communication, intervention?
"I was surprised at how easy it was to complete the Direct Behavior Rating forms. This information is really valuable in helping me understand what’s happening in my classroom." - Sue, Kindergarten teacher

What is Direct Behavior Rating (DBR)?

DBR involves rating of behavior following a specified observation period, and then sharing of that information to inform decisions. As an example, a teacher might use DBR to rate how well Johnny paid attention in math class. Then, that teacher might share that rating with Johnny and, as part of an intervention, link a consequence (e.g. sticker) to that rating. DBR tools have a long history of use as a component of behavior support plans (e.g., self-management, behavior contract), as well as the method for collecting information about behavior change over time (e.g., monitoring effects of medication for ADHD). Other common terms for DBR tools have included home-school note, good behavior note, behavior report card, etc.
Questions, comments, and thanks....

Website: www.directbehaviorratings.org
Contact: Sandra.chafouleas@uconn.edu