Monitoring Core Features of Tier 2 Systems and Practices in High Schools

Angus Kittelman
Mimi McGrath Kato

3.30.23 5:00 – 6:00 pm
River Terrance 2

Session Overview

- Describe differences between measuring systems and practices within MTSS
- Identify core features of Tier 2 systems and practices
- Describe how measurement of Tier 2 systems and practices are unique in high schools
- Share novel research in high schools
Acknowledgements

- Co-presenters: K. Brigid Flannery & M. Kathleen Strickland Cohen

- 3-year IES-funded development and innovation project focused on adapting a Tier 2 intervention for high schools (PI: Flannery)

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Questions

- What are the differences between implementing systems and practices within an MTSS framework?
- Which come first and why?
**Practices vs. Systems**

- Practices identify...
  - Actions of implementers
  - Populations
  - Characteristics/skills expected by implementers
  - Contexts for implementation
  - Expected outcomes

- Systems are...
  - Structural components & processes to facilitate implementation of practices
  - Build supportive infrastructures that embed practices into routines in organizations
  - Safeguards that protect against abandonment of practices

Horner & Kittelman (2021)
Systems..

Positive Behavioral Interventions and Supports Implementation Blueprint:
PBI S District Systems Fidelity Inventory (DSFI)

Technical Assistance on Positive Behavioral Interventions and Supports
U.S. Department of Education, Office of Special Education Programs
Version 0.2.2020 September 28

Questions

- Are Tier 1 systems important for implementing Tier 2 practices and systems?
- If so, what systems are needed at Tier 1 to build supportive infrastructures for Tier 2?
Readiness for Advanced Tiers?

✓ Tier 1 school team trained/active
✓ Tier 1 implemented with fidelity for 1 to 2 years
✓ Tier 1 classroom systems established and used by school personnel with fidelity
✓ Implementing and using a data collection and decision systems
✓ Data indicate positive effects of Tier 1 implementation on student outcomes

Why Tier 2?

Tier II is an additional layer of prevention to reduce number of students in need of individualized supports

• More time and instruction for skill development
• More structure and predictability (during a routine/subject or across the day)
• Structured performance feedback
• Development of self-management skills (self-monitoring, self-instruction, self-correction)

Individualized, Tier III
For students requiring more intensive supports for academic, social, or mental health services.

Targeted, Tier II
For targeted or group-based interventions for students needing additional support beyond the Universal or Tier I system.

Universal, Tier I
School-wide and Classroom-wide systems for all students and all staff in all settings.
Core Features of Tier 2 Organizational Systems

- Efficient Tier 2 team with behavioral expertise
- Use of data-based decision making (fidelity and outcome)
- Student screening and identification
- Training and ongoing support (staff, students, families)
- Coordinated with Tier 1 and Tier 3 systems
  - Teaching/Training
  - Acknowledgement

www.pbis.org/pbis/tier-2
BEP-FIM

- Measures core components of CICO systems
  - ✓ Tier 2 or Tier 2/3 team
  - ✓ Student identification systems
  - ✓ Data system
  - ✓ Data-based decision making

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### Core Features of Tier 2 Practices

<table>
<thead>
<tr>
<th>Standardized Routines and Procedures</th>
<th>Continuously Available</th>
<th>Function Based</th>
<th>Explicit Instruction</th>
<th>Progress Monitoring &amp; Feedback</th>
<th>School-family Communication</th>
<th>Fading strategies</th>
</tr>
</thead>
</table>

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Horner, Todd, Filter, McKenna, Benedict, & Hawken, 2004

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**Evaluation Question**

<table>
<thead>
<tr>
<th>Does the school employ a CICO coordinator whose job is to manage the CICO (10-15 hours per week, allocated)</th>
<th>[ ] No CICO Coordinator</th>
<th>1 = CICO Coordinator but less than 10 hours per week, allocated</th>
<th>2 = CICO Coordinator, 10-15 hours per week, allocated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does the school budget contain an allocated amount of money to manage the CICO (e.g., money for resources, DIF, referrals, etc.)</td>
<td>[ ] No</td>
<td>1 = Yes</td>
<td></td>
</tr>
<tr>
<td>Do students who are referred to CICO receive support within a week?</td>
<td>[ ] No</td>
<td>1 = Yes</td>
<td></td>
</tr>
<tr>
<td>Does the administrator serve on the CICO team or review CICO data on a regular basis?</td>
<td>[ ] No</td>
<td>1 = Yes, but not consistently</td>
<td>2 = Consistently</td>
</tr>
<tr>
<td>Do 90% of CICO team members state that the CICO system has been taught/reviewed in an annual basis?</td>
<td>[ ] No</td>
<td>2 = Yes, 3 = Yes, but not consistently</td>
<td>4 = Consistently</td>
</tr>
<tr>
<td>Do 90% of students on the CICO receive feedback and progress monitoring (e.g., verbal, written) from the teacher?</td>
<td>[ ] No</td>
<td>2 = Yes, 3 = Yes, but not consistently</td>
<td>4 = Consistently</td>
</tr>
<tr>
<td>Do 90% of students on the CICO receive feedback from their parents?</td>
<td>[ ] No</td>
<td>2 = Yes, 3 = Yes, but not consistently</td>
<td>4 = Consistently</td>
</tr>
<tr>
<td>Do the CICO coordinator meet DIF after the third referral?</td>
<td>[ ] No</td>
<td>2 = Yes, 3 = Yes, but not consistently</td>
<td>4 = Consistently</td>
</tr>
</tbody>
</table>

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*Horner, Todd, Filter, McKenna, Benedict, & Hawken, 2004*
Measures Core Components of CICO Practice Implementation

Acknowledgement: Dr. Tim Lewis

High School Implementation of SWPBIS

Flannery & Kato, 2012
CICO-Secondary (PI: K. Brigid Flannery)

Preserve Core Features

Invitation, Enrollment & Training focused on 1) Self-Monitoring and 2) use of Mobile Application

Student Recommended for CICO

DAILY
- Check In
- Coordinator Monitoring & Support (Mobile Application)
- Check Out

WEEKLY
- Home Communication
- Goal Review

BI-WEEKLY
- Team Review

Kato, Kittelman, Lissman, & Flannery (2022)

CICO-Secondary (PI: K. Brigid Flannery)

Adjust for HS Context

<table>
<thead>
<tr>
<th>Developmental Level</th>
<th>School Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student as partner (goal setting, self regulation topic of training, revisited during intervention)</td>
<td>Multiple Check in/Check out locations</td>
</tr>
<tr>
<td>Self-Scoring</td>
<td>Multiple nomination pathways – utilize existing systems</td>
</tr>
<tr>
<td>Weekly caregiver contact</td>
<td>Teacher training and follow up</td>
</tr>
</tbody>
</table>

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### Core Feature

<table>
<thead>
<tr>
<th>Tier 1 and 2 Organizational Systems Fidelity Measures</th>
<th>TFI Tier 1</th>
<th>TFI Tier 2</th>
<th>CICO-Secondary Intervention Development Checklist</th>
<th>CICO Fidelity of Implementation Measure (CICO-FiM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tier 2 Organizational Systems</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nomination Protocol</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Tier 2 Team</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Data System</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Data Decision-Making</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Professional Development</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Fading Procedures</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coordinated with Tiers 1 and 3</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tier 2 Practice Fidelity Measures</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Check-In Facilitator/Coordinator Fidelity Checklist</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Check-Out Facilitator/Coordinator Fidelity Checklist</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Teacher/Student Fidelity Checklist or Electronic Point Card</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Caregiver Progress Reports</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### CICO-Secondary Evaluation Studies

1. Kittelman et al. (2019)
   - Piloted with 5 students in 1 high school
   - Positive effects for student who participated with high fidelity
     - Increased academic engagement; decreased disruption

2. Kato et al. (2023)
   - Implemented with 23 students (44% w/IEP) in 2 high schools
   - Significant correlation between student/teacher fidelity and behavioral expectations (88% fidelity overall)
   - Majority of teacher comments were positive or positive/corrective

3. Kittelman et al. (under review)
   - Single-case experimental study with 3 student (2 w/IEPs)

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"Great turnaround, thanks for working hard after your break!"
Single-Case Study: CICO-Secondary

(Kittelman, Lissman Cohen, Kato, Flannery, Horner, Izzard, St. Joseph, & Mowery., under review)

Research Questions:
1. Can CICO-Secondary be implemented with fidelity?
2. Is there a functional relation between implementation of CICO-Secondary and improved student outcomes?
3. Do students and school personnel perceive CICO-Secondary to be socially acceptable?

Setting
• One public high school in the pacific northwest
• Implemented CICO-Secondary during 2019-20, 2021-22 school years

<table>
<thead>
<tr>
<th>Participant</th>
<th>Characteristics</th>
<th>A-Day</th>
<th>B-Day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tracy</td>
<td>9th grade, White, female, no IEP</td>
<td>English</td>
<td>Science</td>
</tr>
<tr>
<td>John</td>
<td>9th grade, White, male, with IEP</td>
<td>Algebra</td>
<td>Science</td>
</tr>
<tr>
<td>Dan</td>
<td>9th grade, White, male, with IEP</td>
<td>Social Studies</td>
<td>Science</td>
</tr>
</tbody>
</table>

- Systems and CICO fidelity
  - Systems fidelity
    - 2019-20 TFI Tier 1 fidelity = 83%
    - 2019-20 TFI Tier 2 fidelity = 77%
    - CICO-Secondary Intervention Development Checklist = 80%
  - CICO fidelity
    - Check-in (x1)
      - Greet teacher (x4)
      - Self-rate (x4)
      - Teacher-rate (x4)
    - Check-out (x1)

Setting and Questions

- 1 high school in Pacific Northwest (1,391 students)

<table>
<thead>
<tr>
<th>Student</th>
<th>Grade</th>
<th>Gender</th>
<th>Race</th>
<th>IEP</th>
<th>A-Day</th>
<th>B-Day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tracy</td>
<td>9</td>
<td>F</td>
<td>White</td>
<td>No</td>
<td>English</td>
<td>Science</td>
</tr>
<tr>
<td>John</td>
<td>9</td>
<td>M</td>
<td>White</td>
<td>Yes</td>
<td>Algebra</td>
<td>Science</td>
</tr>
<tr>
<td>Dan</td>
<td>9</td>
<td>M</td>
<td>White</td>
<td>Yes</td>
<td>Social Studies</td>
<td>Science</td>
</tr>
</tbody>
</table>

- Personnel
  - 5 teachers (2 per student): John, Dan same science teacher but different periods
  - 3 coordinators: 2 White females, 1 Black male

- RQs
  - CICO-Secondary implemented with fidelity?
  - Functional relation between CICO-Secondary and improved student outcomes?
  - Students and staff perceive CICO-Secondary as socially acceptable?
Method

- **Observation**
  - 2 school years due to COVID-19 (2019-20 & 2021-22)
    - John and Dan (Feb 2022 – March 2020)
    - Tracy (April 2022 – June 2022)

- **Measures**

<table>
<thead>
<tr>
<th>Fidelity</th>
<th>Behavior</th>
<th>Acceptability</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 components per class</td>
<td>Academic engagement</td>
<td>9-item self-report measure (1 = strongly disagree; 6 = strongly agree)</td>
</tr>
<tr>
<td>1) Student greet</td>
<td>1. 7/10-s whole interval</td>
<td></td>
</tr>
<tr>
<td>2) Student self-rate</td>
<td>Disruptive behavior</td>
<td></td>
</tr>
<tr>
<td>3) Teacher self-rate</td>
<td>2. 10-s partial interval</td>
<td></td>
</tr>
<tr>
<td>2 components per day</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1) Morning check-in</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2) Afternoon check-in</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Method

- **Interobserver agreement (IOA)**
  - Collected across 27% of students/phases
    - IOA 94% for academic engagement
    - IOA 96% for disruption

- **Procedures**
  - Baseline (A), CICO-Secondary training, intervention (B)

- **Design and analysis**
  - Nonconcurrent multiple baseline design
  - Visual analysis
  - Between-case standardized mean difference (BC-SMD) (Pustejovsky et al., 2014)
Results

▪ RQ1: Procedural Fidelity
  ▪ Overall mean/range
    ▪ Tracy = 70.9%; rng = 50 - 100%
    ▪ John = 77.5%; rng = 50 - 100%
    ▪ Dan = 86.9%; rng = 50 - 100%

<table>
<thead>
<tr>
<th>Student</th>
<th>Days of Participation</th>
<th>Check-In</th>
<th>Greet Teacher</th>
<th>Self-Rate</th>
<th>Teacher Rate</th>
<th>Check-Out</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tracy</td>
<td>13</td>
<td>100%</td>
<td>62%</td>
<td>60%</td>
<td>73%</td>
<td>100%</td>
</tr>
<tr>
<td>John</td>
<td>12</td>
<td>100%</td>
<td>62%</td>
<td>75%</td>
<td>79%</td>
<td>100%</td>
</tr>
<tr>
<td>Dan</td>
<td>6</td>
<td>100%</td>
<td>72%</td>
<td>83%</td>
<td>83%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Results

▪ RQ2: Student Outcomes
  ▪ Academic engagement
    ▪ Tracy: Baseline = 55.6%; Intervention = 75%
    ▪ John: Baseline = 53.2%; Intervention = 72.2%
    ▪ Dan : Baseline = 45.1%; Intervention = 80.1%
  ▪ Disruption
    ▪ Tracy: Baseline = 4.3%; Intervention = 2.6%
    ▪ John: Baseline = 9.8%; Intervention = 7.2%
    ▪ Dan: 86.9: Baseline = <1%; Intervention = 5.1%
  ▪ Effect size
    ▪ BC-SMD: 1.05, SE = 0.21; CI [0.63, 1.47]
Recommendations for Implementation of Tier 2 Systems in High Schools

- Ensure core components of Tier 1 system are in place
- Take time to build buy in with implementing staff
- Ensure sufficient FTE available and provide thorough training
  - Protected time (check ins/outs)
  - Flexible time (student/teacher/caregiver follow up as needed)
- Remember to progress monitor ... ask, “is it working?”
- Regularly assess and work to improve/maintain fidelity (TFI, BEP-FIM)

Recommendations for Implementation of Tier 2 Practices in High Schools

- Train teachers in person (email is insufficient)
- Adjust for your context but keep core features in place
- Ensure teams have system to summarize fidelity and outcome data
- Respond quickly to low fidelity (have an available list of strategies)
  - Peer support
  - Re-training
  - Adjust acknowledgements as needed
- Establish decision rules to evaluate whether implementation/adaptions are effective
  - Increase in performance
  - Increase in fidelity
Resources of Installation of Tier 2 Organizational Systems & Practices


References

Session Review

✓ Identified differences between measuring systems and practices within MTSS
✓ Identified core features of Tier 2 systems and practices
✓ Described how measurement of Tier 2 systems and practices are unique in high schools
✓ Shared novel research in high schools (CICO Secondary Single Case study)

Mark your calendar now
for the 2023 National PBIS Leadership Forum!

This two-day forum is designed to support school, state, regional, and local educational leaders, together with community and family partners, to increase the effectiveness of school environments through PBIS. Sessions and topic-specific strands will provide guidance and tools for strengthening prevention-based systems that support the social, emotional, and behavioral needs of students to ensure engagement in learning.

Registration opens in May!

The National PBIS Leadership Forum is a technical assistance activity of the Center on PBIS
Thank you!

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- K. Brigid Flannery: brigidf@uoregon.edu
- Kathleen Strickland-Cohen: kathleen.strickland@utah.edu