Using Classroom-level PBIS Interventions to Manage Off-task and Disruptive Behaviors

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Positive Psychology: Our Greatest Scientific Ally?*

• A strengths based approach
• Address behavior challenges by increasing competence
• Competence involves character building reflecting six virtues: wisdom, courage, humanity, justice, temperance, and transcendence
• Improve QOL by focusing on social and emotional wellbeing
• Create institutions that enable positive affect
• Widespread application across populations and venues

Line of Research: PBIS

Individualized Supports 5% of Students

Secondary Group Supports 10-15% of Students

School-wide Positive Behavioral Supports 80% of Students

FBAs, WRAP Around

Instructional Strategies, CICO, SST

School wide strategies

Examples

Active Supervision and Precorrection, Timely Transition Game

Peer Med - NHT
OTRs
BSP
GN
CCC
Error Correction
Token Economies
Rules/Routines

Technology
iPad
iPod
FBAs (reducing task difficulty)
Academics and Behavior

- Students with Emotional Disturbance (ED) are characterized as having slow learning rates, delayed cognitive development, and difficulty identifying significant task features.
- Two significant characteristics of students with learning and behavioral problems are deficits in learning and memory (Kavale & Forness, 1992; Scruggs & Mastropieri, 1986).
- Students with ED also tend to be passive learners, who display slow acquisition rates for new knowledge and skills (Tucker, Sigafoos, & Bushell, 1998).

Academics and Behavior

- Many of these students are behind academically and over a period of time the discrepancy between their skill level and the level of their normally achieving peers widens (Lambert, Cartledge, Heward, & Lo, 2006).
- Students’ difficulties remembering academic content often translates into school failure (i.e., academic tests).
Elements of effective practices

• An underlying key element of effective instruction is giving high rates of opportunities to respond (OTR) so that students are encouraged to actively respond. An opportunity to respond (OTR) is a teacher questioning or cueing technique that “refers to the number of times the teacher provides academic requests that require students to actively respond”.

Key Terms

• An active student response (ASR) occurs when a student answers either verbally or in written form to a teacher question. When a teacher asks a student, “What is the capital of Ohio?” the question acts as an antecedent to set the occasion for a correct student response, “Columbus”.

5 (Miller, 2009, p. 189)
The importance of active student engagement

- Both general and special education teachers seek to provide the most effective learning environments for all of their students.
- Overall, 53.7% of the students with disabilities spend more than 80% of their school day inside regular classrooms.
- 23.7% spending more than 40% of their day in regular classrooms.
- 17.6% spending less than 40% of their day in regular classrooms (U. S. Department of Education, 2008).
A need for effective instruction strategies

• As a result of these inclusion efforts, general education teachers are increasingly in need of more effective instructional skills and strategies
• One strategy is choral responding

Choral Responding

*Choral Responding*

*What is it?* Choral responding occurs when all students in the class verbally respond in unison to a teacher question (Heward, 1994; Heward et al., 1996).

Examples of choral responding are when students simultaneously respond, “16” after the teacher asks the entire class, “What is 4 times 4?” Or the students say, “Red” in response to the teacher’s question, “What is the color of a stop sign?”
Choral vs. Individual Responding

• Key findings from literature review (Haydon, Marsicano, & Scott, accepted).
• 1. Choral responding is seen to be a generally more effective instructional strategy than individual responding in terms of increasing active student responding (ASR).
• 2. Results for correct responding and on-task behavior were not as substantial but still favored choral responding.
• 3. In specific settings, choral responding was more effective for increasing ASR during whole group instruction in general education classrooms and during small group instruction (Godfrey et al., 2003; Haydon et al., 2010; Kamps et al., 1994). In terms of correct responding, results between the two types of responding were not as substantial.
• 4. In terms of on-task behavior, results were more substantial in favor of choral responding during whole group instruction but not as considerable during small group instruction.
• 5. These results indicate that the impact of choral responding on on-task behavior may be related to group size.
Challenge

• How do I get my students to actively participate during large group discussion?
  – Choral responding

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Haydon, Mancil, and VanLoan (2008)

Figure 1. Opportunities to respond per minute during phases of the study. The dotted line shows criterion rate of three OTR per minute.
Figure 2. Percentage of participant’s intervals on-task during phases of the study.

Figure 3. Disruptions and correct responses per minute. Solid data points show rate of disruptive behavior; open data points show rate of correct responses on science definitions.
Challenge

• What if all my students *do not* respond?
  – Use mixed responding (mixture of 70% choral and 30% individual).

*Figure 4-1. Rate of disruptive behavior per minute. Open circles = individual responding, closed squares = choral responding and open triangles = mixed responding.*
Figure 4-2. Percentage of intervals off-task. Open circles = individual responding, closed squares = choral responding and open triangles = mixed responding.

Figure 4-3. Percentage of active student responding. Open circles = individual responding, closed squares = choral responding and open triangles = mixed responding.
Challenge

• What if it gets too noisy in my room?
  – Unison hand raising (or fingers)

Haydon and Hunter (2011)
Rate of Teacher Redirection and Praise per Minute

Percentage of Intervals On-Task

Sessions

Baseline                SR             UR           SR                 UR                     Maintenance

James

Jerod
Challenge

• What if my students are not making adequate progress on my quizzes or tests?
  – Mnemonics strategy

Refine Instructional Delivery

• A recent study
Mnemonics

- **Keyword strategies**: The keyword in the keyword method is a concrete, acoustically similar proxy for unfamiliar information (e.g., vocabulary words, terminology, people, places) that can then be associated with the to-be-remembered information (e.g., mini cooper for Minnesota).

- **Pegword mnemonics**: The pegword in the pegword method is a rhyming proxy for a number (e.g., one is bun, two is shoe, three is tree) and is used to remember numbered or ordered information.

- **Letter strategies**: Letter strategies are the most commonly known mnemonic strategies and include acronyms, in which each letter represents a word, such as “HOMES” to represent each of the Great Lakes (i.e., Huron, Ontario, Michigan, Erie, Superior).

- **Reconstructive elaborations**: In addressing the complex requirements of content area learning, it is necessary to combine a number of mnemonic strategies to address different memory needs.

Literature review

- Scruggs and Mastropieri (2000) synthesized the literature of empirical investigations of mnemonic strategy instruction and suggested that these strategies are extremely powerful when applied experimentally with students with special learning needs.
Research Question

• To date, however, only one investigation (Scruggs & Mastropieri, 1989) has been identified that examined the effects of mnemonic instruction on the social studies learning of high school students with LD
• No studies investigated the mnemonics strategy with middle school and high school students with MD
• There is a need for implementing efficient and effective strategies to increase accuracy levels of learning trials (Skinner, 2010)
• How does a choral responding procedure compare to a mnemonics strategy during group instruction on the, on-task behavior and daily quiz scores during a geography lesson for students identified with multiple disabilities in an Urban High School?

Challenge

• What is an effective way to get teachers to implement a strategy so they like it and continue to use it over time?
Consultative model

- Look for teacher strengths
- Solution focused model
  - Early 80s, Insoo Kim Berg, Steven de Shazer
  - The miracle question
  - Scaling questions
  - Coping questions
  - Problem-free talk
- Look for what teachers are already doing well
  - Training loosely
- Current study- teacher was trying to engage students
- She had an unorganized delivery of instruction
- Look for Keystone variables
- Coached her in the learning trail, instructional delivery, instructional strategies

Method
Participant (Teacher)

- Teacher:
  - Female
  - Years teaching= 1st year
  - Has taken a classroom management class and an ABA for Teachers class

Participants

*Students:*

- Four students who have been identified as having multiple disabilities and placed in a self-contained classroom
- All four students were male, African American, and according to district records, had a combination of a cognitive disability and/or learning difficulties, adaptive behavior deficits, speech and language difficulties, and behavior problems.
- RJ: Grade 7 (AGE 13y 7m) IQ, 55
- Nate: Grade 7 (AGE: 13y 7m) IQ, 64
- TJ: Grade 9 (AGE: 15 y 9m) IQ, 47
- Dane: Grade 9 (AGE: 15y 6m) IQ, 50
Settings and Materials

- 7-9th grade special education classroom with 9 students
- Large group teacher-directed geography academic activity
- States of the United States recognition and recall practice with SMART Board
- Training videos/laptop computer/journal articles
- Data collection sheets

Dependent Variables

- On-task behavior
- 5-item daily quiz scores
- 1-week delayed recall test
Experimental Procedures

1. Assessment of identification of states
2. Baseline
3. Teacher training
4. Comparison of Choral Responding and Mnemonics strategy
   1. Choral responding
   2. Mnemonics strategy
5. 1-week delayed recall test

Experimental Procedures-Baseline

1. Teacher used the SMART Board to teach continents
2. Mode of questioning was volunteer/individual
3. A paraprofessional was in the room and was directed to not interact with any of the students during the study
Implementation

- The 50 states from the U.S. were assigned to 4 sets (A, B, C, D) of 10 states each. The last two sets consisted of 4 states plus Hawai and 4 states plus Alaska.
- Sets were constructed randomly
- Presentation of the states moved from the west to the east coast of the United States. Hawai and Alaska were included on the west coast.
- Teacher determined mastery level for each set and according to the pace of district curriculum

Implementation

How to implement. In order to successfully implement choral responding teachers should:
- Develop questions with one correct answer.
- Ask questions with short (one to three) word answers.
- Provide a wait time (thinking pause) of 3 sec between asking the question and prompting the students to respond.
- Use predictable phrases or clear signals to cue students to respond, “Get ready”.
- Present questions at a fast lively pace.
Teacher Training

- **Step one**
  - Review the operational definition of OTR (choral responding) and discuss rationale for increasing on-task student behavior and quiz scores
  - Show several video clips of teachers using high rates of OTR (choral responding)
  - Discuss rationale and purpose of using mnemonic strategy: activate prior learning

Teacher Training

- The teacher practiced and demonstrated using `choral responding in front of the class for two 5-minute sessions
- Researcher guided the teacher in helping students select keywords for states
  - Rather than mini-soda (soda can), mini cooper (car) on top of Minnesota
- OTR rate was approximately 5/min
- Total time was one 30-minute training session for choral responding and one 45-minute session for the development of the mnemonics
Video

- Choral responding

Implementation of mnemonics strategy

*How to implement.*

- Same as choral responding but with pictures
- Teacher-made and student-made mnemonic strategies.
- Teacher used a combination of both
- According to the teacher, previous efforts to teach this geography had been unsuccessful as demonstrated by baseline data.
Video

• Mnemonics strategy

Experimental Design

• Alternating treatments design (Barlow & Hayes, 1977)
• Alternated between the two conditions
  • Choral responding (A) followed the mnemonics strategy (B) so that the sequence of the conditions is A-B-A-B etc.
Data Analysis

- Sessions were 4-8 minutes
- Data recorded via data sheets
- 5-item quiz scores
- On-task percentage (Intervals)
- One week retention tests on 48 states
- All graphed using Microsoft Excel
- Analyzed according to level, trend (slope and magnitude), and variability (Kennedy, 2005)

Interobserver Agreement (IOA)

- Was calculated for 29% of sessions (Kazdin, 1982)
- For on-task behavior, interval agreement was calculated on the occurrence and nonoccurrence of the behavior
- Quiz scores and test scores were calculated using the total agreement formula, summing the total number of correct responses and dividing the smaller total by the larger total and multiplying by 100%.
Treatment Adherence

- A checklist was used to record (1) percentage of the 3 step sequence completed (cue, question and feedback). For each step in the procedure reviewed, a check was given if the teacher implemented the step correctly
- For the percentage of the 3 step sequence completed, percentage agreement formula was used
- For each step in the sequence: total agreement formula was used

Social Validity

- Collected on the intervention process and outcomes
  - Likert type scale completed by teacher
  - Likert type scale completed by three of the four participants
IOA

• On-task: Mean= 94.16% (range 83.30- 100%)
• Quiz scores and test score: Mean= 100%
• IOA collected on 29% of the sessions

Treatment Adherence

• Sequence of steps= 100%
• Each step
  • Cue (100%)
  • Asked question (100%)
  • Feedback given (100%)
Results

Dependent Variables

- On-task, means:
  - RJ BL= 54.8% (range=37.0-69.0%)
  - RJ Mnemonics= 92.8% (range=71.0-100.0%)
  - RJ Choral= 93.3% (range=80.0-60.0%)
  - Nate BL= 57.0% (range=42.0-690.0%)
  - Nate Mnemonics= 94.9.% (range=73.0-100.0%)
  - Nate Choral= 100.0%
  - TJ BL= 46.3% (range=33.0-69.0%)
  - TJ Mnemonics= 97.7% (range=92.0-100.0%)
  - TJ Choral= 78.7% (range=50.0-100.0%)
  - Dane BL= 61.0% (range=50.0-77.0%)
  - Dane Mnemonics= 97.7% (range=86.0-100.0%)
  - Dane Choral= 81.2% (range=20.0-100.0%)
Dependent Variables

• Quiz Scores
  – RJ Mnemonics= 75.0% (range=40.0-100.0%)
  – RJ Choral= 46.6% (range=40.0-60.0%)
  – Nate Mnemonics= 88.6% (range=80.0-100.0%)
  – Nate Choral= 63.3% (range=40.0-80.0%)
  – TJ Mnemonics= 68.6% (range=20.0-100.0%)
  – TJ Choral= 20.0% (range=0.0-40.0%)
  – Dane Mnemonics= 90.0% (range=80.0-100.0%)
  – Dane Choral= 56.6% (range=20.0-80.0%)

Graphs

See pdf document
Dependent Variables

- One-week delayed recall test:

<table>
<thead>
<tr>
<th>Name</th>
<th>Quiz overall</th>
<th>Mnemonics</th>
<th>Choral responding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nate</td>
<td>72.9%</td>
<td>75%</td>
<td>68%</td>
</tr>
<tr>
<td>TJ</td>
<td>81.3%</td>
<td>90%</td>
<td>75%</td>
</tr>
<tr>
<td>Dane</td>
<td>66.6%</td>
<td>70%</td>
<td>64%</td>
</tr>
</tbody>
</table>

Discussion

- All four students performed better on 5-item daily quiz scores using the mnemonics strategy than during choral responding.
- For one student, TJ results were substantial in favor of the mnemonics strategy for the dependent variable of quiz scores.
- Results for on-task behavior were less clear cut.
  - For two students no substantial differences between conditions
  - For two students more variability in data during the choral responding condition
- Possible explanation for the positive results on quiz scores are: Rote rehearsal (choral responding) involves repetition and involves short-term memory; while elaborative rehearsal (mnemonics strategy) involves linking new information in short-term memory to old information already stored in long-term memory (Craik & Lockhart, 1972)
- Mnemonics strategy activates prior learning
Discussion

• Social Validity (teacher)
• The teacher rated questions using a 4-point likert scale, where (1) represented “not at all” and (4) “very much”
• The teacher rated the implementation of both strategies as not at all difficult, the training sessions were very helpful, very likely to use the interventions in the future, and rated the mnemonics strategy as seeing most improvement in all dependent variables
• The two teachers who taught in the other two classrooms with students with MD incorporated the mnemonics strategy into their lesson plans

Discussion

• Social Validity (students)
• Three out of four students rated questions using a 4-point likert scale, where (1) represented “not at all” and (4) “very much”
• All three students indicated that they were more on-task during choral responding and during the Mnemonics strategy in comparison to baseline.
• Two of the three students indicated that they learned more, preferred answering questions, and overall liked using the Mnemonics strategy.
• Observations during the test indicated that the all three students asked How did I do?”
Discussion

• Limitations
  – Study is limited by small sample size
  – Low overall scores on the 1-week delayed recall test for 1 of 3 students
  – One student attrited before the administration of the 1-week delayed recall test
  – Dependent measures of these strategies impact most strongly on recall of academic content
  – Mnemonics strategy is a non-generative approach to learning. One state or word at a time.

• Future research
  – Compare different types of mnemonic strategies (keyword vs. pegword etc.)
  – Compare teacher made versus student made mnemonics
  – Systematic replication of mnemonics strategy with students with MD

A look towards the future

• What about the use of technology?
  – iPad during math class
iPad Results Why?

- The iPad technology promoted active student learning by providing immediate *corrective feedback* on student errors.
- The iPad technology provided *immediate feedback* on correct responses thus possibly reinforcing each correct response and increasing the probability of responding to questions in the future.
- During the WS condition, corrective feedback was *not* provided and the student was *not* provided with an immediate evaluation of their performance during the session.
Thank You for Your Attendance

Questions/Comments can be directed to:

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