ABC Support Brief Research Report #2:

Fidelity of Implementation of Intervention During 2019-2020 Experimental Pilot Study

Overview

To assess intervention fidelity, three external observers (trained research team members) conducted observations of approximately 25% of all 20-minute intervention sessions at randomly determined time points during the intervention phase. Observers used the *ABC Support Implementation Observation* measure to code their observations. This measure incorporates two formats frequently used to evaluate intervention implementation. The first is a checklist format with operational definitions of 21 intervention steps, or components, whereby the observer noted the occurrence or nonoccurrence of each step (Roach, Lawton, & Elliott, 2014). The second is a rating scale format used to rate both teacher characteristics (e.g., level of enthusiasm) and student behaviors (e.g., pay attention) that contribute to overall intervention effectiveness. Teacher characteristics during intervention implementation were rated using a 4-point Likert scale ranging from "very low" (1) to "very high" (4); occurrence of student behaviors during the intervention session were rated using a 3-point scale ranging from "< 50% of time" (1) to "> 50% of time" (3) (O'Donnell, 2008).

Observations of fidelity of implementation yielded three types of information: (1) *session integrity*, average percentage of intervention components implemented correctly across observation sessions (ranging from 0% to 100%); (2) *component integrity*, percentage of observation sessions in which the teacher implemented each intervention step correctly (ranging from 0% to 100%); and (3) average item ratings for each teacher characteristic (ranging from 1.00 to 4.00) and student behavior (ranging from 1.00 to 3.00). Consistent with recommended benchmarks for evaluating integrity, 80% or above reflected "high integrity," and 50% or lower was "low integrity" (Perepletchikova & Kazdin, 2005).

Session Integrity

Fidelity observation data revealed overall high (> 80%) *session integrity* (see Table 1). Research team members observed between three and six intervention sessions for each teacher (15-30% of all sessions), with an average of 4.43 sessions observed (24.8%). The overall average session integrity was 95% (average range across teachers = 90-98%). Session integrity for individual sessions ranged from 82-100%. Table 1 also presents the average item rating for six teacher characteristics[1] and for seven student behaviors[2], averaged across all intervention sessions for each teacher.

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[1] The six teacher characteristics are overall fidelity; enthusiasm; effectiveness; amount of praise; specificity of praise; and amount of teacher direction and support.
[2] The seven student behaviors are pay attention; follow directions; participate appropriate; show interest; show enthusiasm and enjoyment; overall reading success; and overall behavior success.

Table 1. Session Integrity across Teachers

Teacher	Number of Observations (% of intervention sessions)	Average Session Integrity (%)	Range (%)	Teacher Characteristics (average across sessions)	Student Behaviors (average across sessions)
01	3 (15.0%)	90%	86-94	3.17	2.93
02	5 (22.7%)	94%	89-98	3.57	2.86
03	6 (30.0%)	98%	95-100	3.96	2.93
04	3 (23.5%)	95%	90-100	3.94	2.90
05	5 (27.8%)	97%	95-100	3.42	2.32
06	5 (29.4%)	93%	82-100	3.58	2.75
07	4 (26.7%)	96%	84-100	3.79	3.00
Average	**4.43 (24.8%)**	**95%**	**82-100**	**3.63**	**2.81**

Component Integrity

With one exception, the average component integrity was also high across teachers (see Table 2). Average component integrity ranged from 75% to 100%. As shown in Table 2, five intervention components (blue font) were implemented 100% of the time by all teachers (review expectations; implement first timed reading; prompt expectations for second timed reading; implement third time reading; and provide rewards). Teachers implemented two intervention components (red font), on average, less than 90% of the time, specifically graphing and giving feedback/praise for reading (75%) and for behavior (88%).

Table 2. Component Integrity across Teachers

Intervention Component	Average Implementation	Range (%)
1: Review expectations	**100%**	**N/A**
2: Set goals	96%	83-100
3: Prompt expectations for 1st reading	96%	75-100

4: Implement 1st timed passage reading	**100%**	**N/A**
5: Feedback + recording + praise for reading	95%	87-100
6: Feedback + recording + praise for behavior	96%	78-100
7: Prompt for modeling of reading	92%	67-100
8: Model reading	95%	67-100
9: Prompt expectations for 2nd reading	**100%**	**N/A**
10: Implement 2nd timed passage reading	96%	83-100
11: Provide reading error correction	91%	60-100
12: Feedback + recording + praise for reading	91%	67-100
13: Feedback + recording + praise for behavior	97%	80-100
14: Prompt expectations for 3rd reading	95%	67-100
15: Implement 3rd timed passage reading	**100%**	**N/A**
16: Feedback + recording + praise for reading	98%	93-100
17: Feedback + recording + praise for behavior	92%	73-100
18: Graph and give feedback for reading (WCPM)	**75%**	**40-100**
19: Graph and give feedback for behavior (points)	**88%**	**67-100**
20: Reward reading and behavior	**100%**	**N/A**
21: Review *I Can Read* chart	98%	83-100

Ratings of Teacher Characteristics

Ratings of teacher characteristics observed during fidelity observations indicated overall high (3) to very high (4) levels of teacher characteristics that may contribute to the effectiveness of intervention implementation (see Table 3). There was little variation in the ratings of four characteristics across teachers and sessions (≤ 1.00). Although the average ratings for specificity of praise (3.66) and amount of teacher direction (3.61) were high, the minimum-maximum range for each characteristic was ≥ 1.25, indicating some variability across teachers in their specific praise and explicit direction during the intervention sessions.

Table 3. Average Ratings of Teacher Characteristics across Teachers for all Observed Sessions

Teacher Characteristic	Average Rating Across Teachers	Range
Overall fidelity of implementation	3.58	3.00 – 4.00
Teacher's enthusiasm	3.55	3.00 – 4.00
Overall effectiveness of session	3.80	3.50 – 4.00
Amount of praise delivered	3.59	3.00 – 4.00
Specificity of praise related to READ expectations	3.66	2.50 – 4.00
Amount of teacher direction and support provided	3.61	2.75 – 4.00

Summary

Several mechanisms were designed specifically to facilitate teachers' implementation of the *ABC Support* intervention, including two teacher-training sessions; access to an online video-based demonstration of an intervention session; ongoing consultative support; manualized, semi-scripted intervention procedures; and a laminated intervention implementation guide. Based on multiple indicators reported above (session integrity, component integrity, and observer ratings), these procedures contributed to a high level of fidelity of implementation of *ABC Support* by teachers.

References

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Roach, A. T., Lawton, K. M., & Elliott, S. N. (2014). Best practices in facilitating and evaluating the integrity of school-based interventions. In P. L. Harrison & A. Thomas (Eds.), *Best practices in school psychology: Data-based and collaborative decision making* (pp. 133-146). Bethesda, MD: National Association of School Psychologists.