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Using Data to Inform an Educational Staff Training Manual: Pilot Study

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Cover Page Footnote

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Teaching staff, including paraprofessional or direct care staff, working in special education settings, serves a number of roles, such as implementing academic and behavioral programs. Additional responsibilities include rapport building, learning student schedules, completing or shaping skills of daily living for those students who cannot do so independently (e.g., feeding and toileting), classroom organization, and appearance, among others. When faced with many concurrent responsibilities, it is common for these professionals to fall short in implementation, as indicated by a significant body of research on improving treatment integrity (Carrol, Kodak, & Fisher, 2013; Codding, Feinberg, Dunn, & Pace, 2005; Fryling, Wallace, & Yassine, 2012; Hagermoser Sanetti et al., 2015; Solomon, Klein, & Poltitylo, 2012).

Treatment integrity, which refers to the degree of adherence by staff to a treatment plan (Noell, Witt, LaFleur, Mortenson, & LeVille, 2000) is often cited as a crucial component in the implementation of individualized interventions targeting both academic and social/emotional behaviors (Carrol, Kodak, & Fisher, 2013; Codding, Feinberg, Dunn, & Pace, 2005; Hagermoser Sanetti et al., 2015; Solomon, Klein, & Poltitylo, 2012). Low levels of procedural integrity of interventions targeting skill deficits may result in slower learning rates (Carrol, Kodak, & Fisher, 2013). Additionally, when low treatment integrity exists, it becomes difficult to make decisions based on the data collected under treatment conditions, as effects could be due to other variables (Fryling, Wallace, & Yassine, 2012). Ultimately, when low treatment integrity exists, there can be negative effects on student performance, as well as increased error in treatment decisions.

While the aforementioned treatment integrity research has focused on improving the treatment integrity of already-trained programs, there has been less focus on how to provide initial program training in a way that leads to acceptable initial treatment integrity. Two current evidence-

based procedures for initial training include Behavioral Skills Training (BST; Hine, 2014; Hogan, Knez, & Kahng, 2014; McCoy & McNaughton, 2018) and Phasing-in (Parsons, Bentley, Solari, & Reid, 2016). BST is a procedure used to train staff to implement behavior intervention plans and academic programs, such as discrete trial training, picture exchange communication systems (PECS), and Guided compliance. BST has two primary phases: The first involves verbal instruction and modeling. During this phase, a trainer describes the procedures to the trainee, giving explicit directions about implementing the procedures, as well as demonstrating how to implement the procedures. The second phase utilizes the rehearsal of procedures through role-playing. During this phase, trainees practice the procedures on a mock individual (i.e., the trainer) and receive feedback prior to implementing procedures with students (Hogan, Knez, & Kahng, 2014; McCoy & McNaughton, 2018).

In a typical training arrangement, once trainees have demonstrated proficiency during role-play, they are often immediately scheduled to work with students. However, a more gradual procedure may be in the best interest of the trainee and the students. Phasing-in has gained empirical support recently for improving the transition from training to staffing (Parsons, Bentley, Solari, & Reid, 2016). This procedure is used to integrate new staff into his or her new classroom environment. The process is aimed at transitioning unfamiliar staff to familiarity with the individuals with whom he or she will be working. Unfamiliar staff begins by observing familiar staff working with the individuals served. Next, the unfamiliar staff alternates steps with the familiar staff while receiving feedback. Finally, the unfamiliar staff (now familiar) implements academic and behavioral programs independently. While BST and phasing-in may improve initial treatment integrity, additional outcomes may be of interest to stakeholders.

Teacher-student relationships are another area of interest related to staff training and integration of providing educational services. Staff-student rapport has been cited as important for student performance, with findings that better rapport, or familiarity, is related to compliance and performance (Parsons, Bentley, Solari, & Reid, 2016). There are a number of programs that have a research record of improving these relationships, including Fun Time (Parsons, Bentley, Solari, & Reid, 2016), Teacher-Child Interaction Therapy (TCIT; McIntosh, Rizza, & Bliss, 2000), and Banking Time (Driscoll, Wang, Mashburn, & Pianta, 2011). Additional research has found relationships between student engagement and academic and behavioral outcomes (Hosan & Hoglund, 2017; Mason, Hajovsky, McCune, & Turek, 2017). Based on the assumption that student engagement with staff indicates a preference for and/or past positive experiences with that staff, the hypothesized and research-supported outcomes for these positive pairing programs are increased student engagement with new staff with whom they have had positive pairings. The inclusion of effective components of these procedures into a comprehensive training manual may have added benefits for staff success above basic academic and behavioral program training.

Although the findings above are promising in terms of implications for training new staff, many of these procedures are not examined in general education settings or with adult populations. Additional research is warranted, particularly when considering training new staff that may or may not have previous experience working with the special education population. Given these research findings-- as well as the efficiency of a comprehensive manualized approach within an education system that experiences some level of staff turnover-- it is surprising that no research to date has combined evidence-based procedures to develop a comprehensive manualized approach to staff training in special education.

The purpose of the current project was to develop and evaluate a comprehensive training manual for educational staff in a special education setting. A number of research questions were involved in the planning of this project: 1) What perceptions did current staff have on the quality of their training experiences?; 2) Do current staff endorse developing and implementing a structured process for training new staff?; 3) Would a comprehensive training manual, developed by combining a number of research-based procedures and site-specific procedures improve new staff performance on academic program implementation, BSP implementation, and staff/student engagement?; and 4) Would staff report improved perceptions of staff training following the manualized training over the STP?

While our intention was to answer these research questions empirically, limitations in the number of participants and time limit our ability to draw cause and effect conclusions. Therefore, this project is classified as a pilot study, and our results and discussion are exploratory in nature. To answer our first and second question, a needs assessment was conducted, including staff surveys and focus groups with the behavior specialists and teaching staff. It was hypothesized staff would endorse low ratings of training quality and high ratings for improving training. Data from previous research and the needs assessment were then used to develop a multi-component training manual, intended to be comprehensive of all staff training needs. To answer our third question, observation data on treatment integrity, student target behaviors, and staff/student engagement were collected for veteran and new staff, in order to compare performance following new staff training. Our hypothesis was that new staff would have improved outcomes on all measures, except staff/student engagement, when compared to veteran staff. To answer our fourth question, the original survey, with slight modifications, was administered to new staff in order to compare

ratings of training experiences of veteran (needs assessment data) and new staff. Our hypothesis was that new staff would rate training experiences as better than would veteran staff.

Method

Participants and Setting

The current study took place in the northeastern United States at a residential school for individuals between the ages of five and 22 with a broad range of neurobehavioral challenges. This residential school included acquired or traumatic brain injury, genetic or chromosomal disorders, seizure disorders, and/or intellectual and neurodevelopmental disorders. The enrollment for the school was 50 students, and the staff to student ratio was one-to-two. Each classroom was comprised of a lead teacher, a teacher, and one-to-three direct care staff, as well as five to seven students. All students attended a 12-month full-day school program; however, approximately 60% of the students were also enrolled in the school's community-based residential home program. For a diagram of which measures were collected and reported for participant classifications, see Figure 1.

Needs Assessment. The needs assessment included three types of data collection: survey, teacher focus group, and behavior department focus group.

Survey

A needs assessment social validity survey was completed by 26, which corresponds to a response rate = 71.43 % of the total school staffing. Of the 26 respondents, eight were lead teachers, eight were teachers, and 19 were direct care staff. On average, respondents had worked in their current classrooms for 1.48 years.

Focus Group

All school staff, including those participating in the focus groups, were able to complete the needs assessment survey. The teacher focus group ($N = 9$) included nine female teaching staff. No other demographic information about teacher focus group participants was collected. The behavior department focus group ($N = 4$) included three females and one male participant. All behavior department focus group participants held the BCBA credential at the time of data collection.

Training

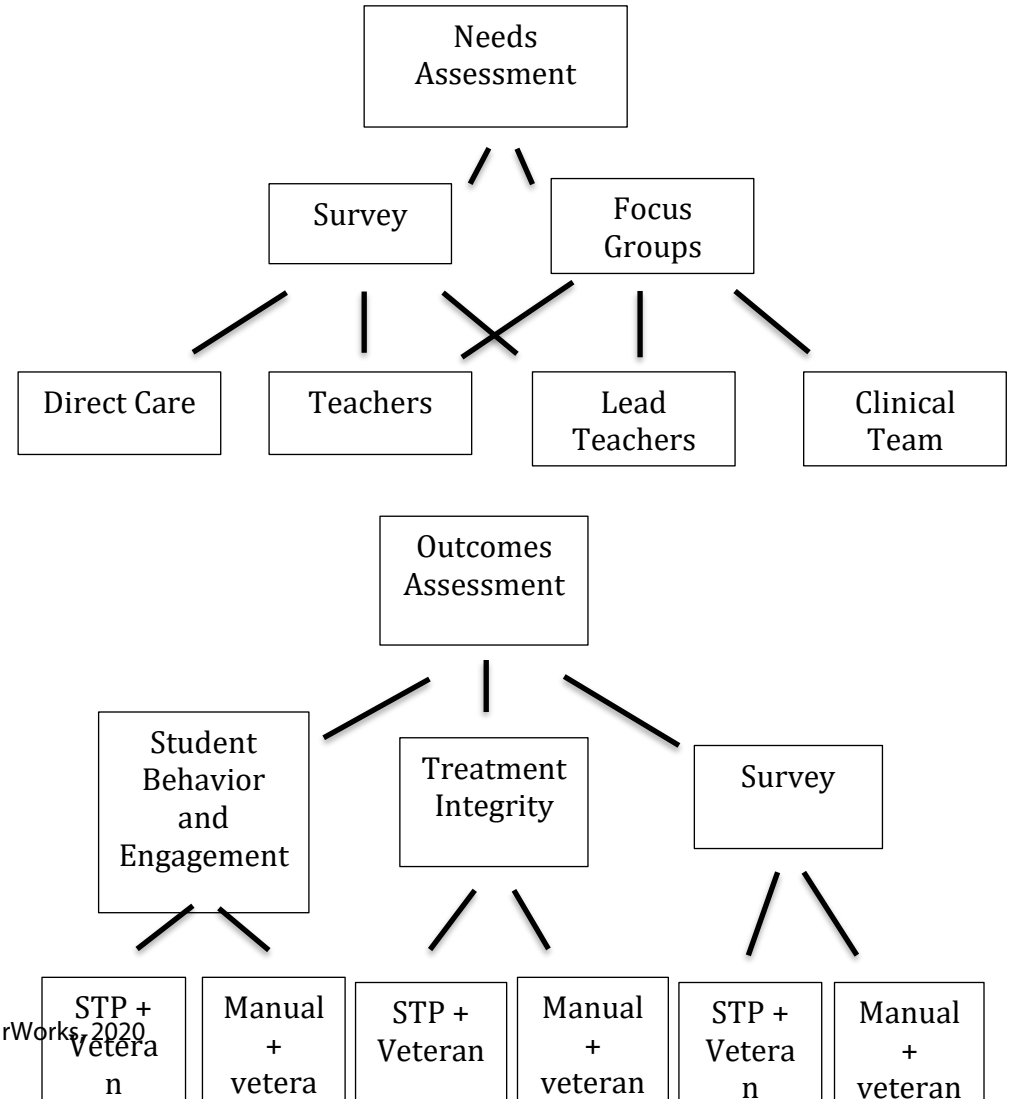
Two teachers underwent new staff training. One participant (Caucasian, female, 20 years old) followed STP training procedures, and one participant (Caucasian, female, 20 years old) completed manualized training procedures. The two new teachers began with a corporate orientation during their first week of employment. This week included training on company policies, first aid, and crisis intervention/behavioral safety management. The following week was designated for training within the school. During this time, the new teachers were not scheduled to provide direct services to any students (i.e., they were out-of-ratio in terms of staffing) while they received their site-specific training.

STP Training. The new teacher trained under STP completed an out-of-ratio week behavior support plan (BSP) training took, which took place in two 1-hour sessions with a member of the behavior department. During these sessions, the new teacher was trained on the five students in their assigned classroom, and the behavior department staff individually reviewed each component of the new teacher's students' BSP. They were also directed to conduct informal observations in the class. Please note that there were no explicit directions or forms for the new staff member to fill out or to guide them during informal observations. The new teacher met with

a member of the other departments in the school, such as Family Services, Education Administration, Human Resources, and Rehabilitation (speech and language therapy and occupational therapy), to get a brief orientation. Academic program training was provided by the lead teacher of each classroom; however, the procedures were not standardized, and the lead teacher was instructed to conduct the training as they typically would. No systematic phasing-in of staffing students was conducted. During times when formal training was not occurring, new staff was directed to observe students and classroom activities; however, little-to-no direction about these observations was given, and the observations were not monitored. Manualized training procedures will be discussed in the Training Components section below.

Figure 1

Flowchart of the Link Between Participant and Measure Completion.



Outcomes Assessment

Outcomes assessment was collected for each new staff discussed above (N = 2), as well as matched veteran staff (N = 5). For the purposes of this project, the veteran staff was defined as any lead teacher, teacher, or direct care staff member who had been working at the school for longer than six months. Two veteran staff were matched to the STP-trained staff, while three veteran staff were matched to the manual-trained staff. Demographic information was not collected for veteran staff.

Needs Assessment

Survey

A needs assessment social validity survey was completed by 26, which corresponds to a response rate = 71.43 % of the total school staffing. Of the 26 respondents, eight were lead teachers, eight were teachers, and 19 were direct care staff. On average, respondents had worked in their current classrooms for 1.48 years. The survey consisted of 10 questions with a five-point Likert scale: *Not at all* (1), *Minimally* (2), *Somewhat* (3), *Mostly* (4), and *Very* (5). The survey was developed by the authors and was specific to site-specific current and potential procedures for training. The purpose of the needs assessment survey was to evaluate staff perceptions of current procedures and the social validity of potential procedures. See Table 1 for a list of survey questions.

Teacher Focus Group

All school staff, including those participating in the focus groups, were able to complete the needs assessment survey. The teacher focus group (N = 9) included nine female teaching staff. No other demographic information about teacher focus group participants was collected. The

behavior department focus group (N = 4) included three females and one male participant. All behavior department focus group participants held the BCBA credential at the time of data collection.

The lead teachers and teachers of the school were invited to attend a focus group to express their concerns and ideas about new staff training. This meeting was held using a face-to-face modality during school hours. Due to staffing needs, either a lead teacher or teacher from each classroom attended the focus group, so that each classroom had teacher representation at the meeting. The first author facilitated the discussion to include the following topics: areas of need for overall staff training, areas of need for academic program training, areas of need for BSP training, and social validity of potential procedures (i.e., phasing-in, behavior skills training, and fun time). Once all participants had been given the opportunity to contribute to each topic, the next topic was introduced. The focus group was approximately one-hour in length. Researchers took notes of all comments during the focus group.

Table 1

Needs Assessment Survey Questions

Question	
1	How helpful did you find the initial BSP training with Behavior Department staff?
2	How prepared did you feel to work with students after the initial training you received on students' BSPs?
3	How helpful would it have been to review the BSP's independently before the training?
4	How helpful would it have been to role play implementing students' BSPs in your initial training (e.g., scenarios with modeling, practice, and feedback)?
5	Did your student interactions during your out-of-ratio experience help you build relationships with the students in your class?

6	How positive would you rate your relationships with the students in your class following your out-of-ratio experience?
7	How helpful would it have been to have structured fun time (e.g., engaging in a student's preferred activity) with individual students prior to staffing them?
8	Did the way you were integrated into the classroom adequately prepare you to work independently with students?
9	How comfortable did you feel staffing students independently following your out-of-ratio experience?
10	How helpful would it have been for you to be gradually phased in to independently staffing students (e.g., observe veteran staff, implement for short periods with feedback from classroom staff, implement for longer periods with feedback, independence)?

Note. Likert anchors are as follows: Not at all (1), Minimally (2), Somewhat (3), Mostly (4), and Very (5).

Behavior Department Focus Group

The Behavior Department of the school, consisting of three behavior specialists and the school's clinical director, met with the first author, also a member of the Behavior Department, to discuss ideas of improving new staff training. This meeting was held using a face-to-face modality during school hours. Participants were invited to share perspectives on how the BSP training could be improved, specifically what components should be included in the training. The focus group was approximately one hour in length. The first author took notes of all comments during the focus group.

Training Components

Two teachers underwent new staff training. One participant (Caucasian, female, 20 years old) followed STP training procedures, and one participant (Caucasian, female, 20 years old) completed manualized training procedures. Training components and manual materials were selected based on previous research, cited in the introduction, and results from the needs

assessment. The manualized training procedure included priming via structured observations and BSP exposure, BSP training utilizing BST components, and phasing-in procedures.

Student Observation Forms

In STP, new staff were instructed to observe students and classroom procedures during the out-of-ratio training week; however, as cited above, these observations were informal and not monitored. In order to make the best use of time during the out-of-ratio training week and to prime staff for future academic and behavior program training, a more structured approach to observations was developed and included in the manual:

- New staff was instructed to observe the students in the classroom they would be working in for approximately 15 minutes at a time.
- At least one observation for each student in the classroom was to be conducted on day one of training in order for staff to familiarize themselves with students before BSP training.
- Two more observations of each student were completed later in the week during unscheduled times.
- The areas for observation were selected by behavior department staff and were included in order for staff to observe minute, but important, details of each student's instructional arrangement and staff interactions. Each area for observation was related to potential student BSP components.

The observation form sections were chosen due to their prevalence in student BSPs. The following sections were included: (a) Tone and interaction style: The tone of voice and level of enthusiasm the staff uses when engaging with the student (e.g., neutral, upbeat); (b) Demand presentation: How the staff delivers demands (e.g., wording, complexity, offers choices, etc.); (c)

Praise/Attention: How the staff gives praise and attention to the student (e.g., tone, frequency, wording, etc.); (d) Student location: Where the student is located in the room, where staff is located in proximity to the student; (e) Student demeanor: Facial expressions, tone, level of engagement, etc.; (f) Student communication: Communication/language abilities (e.g., conversational, PECS, augmentative or alternative communication device, American Sign Language); (g) Preferred activities: Activities the student appears to enjoy (look for engagement, smiling, laughing, etc.); (h) Non-preferred activities: Activities the student does not seem to enjoy as much as other activities (look for non-compliance, verbalizing dislike, neutral facial expressions, etc.); (i) Student transitions: The student moving from one activity or location to another (e.g., look for transition warnings, staff location, student compliance, etc.); and (j) Activities of Daily Living (ADL): Level of independence/staff assistance with ADL's (e.g., feeding, toileting, handwashing, walking, etc.).

Behavior Support Plan Training

Before having one-on-one training with behavior staff, new staff reviewed students' BSPs and were required to complete a brief quiz on each student's BSP in the classroom they would be staffing. These questionnaires contained approximately ten questions on the most critical components of the BSP and were created by the behavior specialist overseeing each case. Questions were fill-in-the-blank, multiple-choice, true/false, and short answer. Prior exposure to the BSP and taking the quiz were included in the manual in order to prime staff for training. During the one-on-one training, behavior staff utilized a BST model for training new staff on student BSPs. Behavior staff reviewed the most important parts of the BSP (typically correlated to questions from the quiz) and modeled implementation. Role-plays were also done with the new staff on how to implement components of the BSP that the staff would likely have to implement or maybe more complex/challenging to carry out. Following the role-play, behavior department

staff and the new staff observed in the classroom and pointed out the implementation of components of the BSP *in vivo*. This training was conducted in one two-hour session, which was broken into two-halves with training for two to three students in each half.

Phasing-In

During the out-of-ratio week, new staff followed a phasing-in sequence for BSP implementation, data collection, and academic programs implementation and scoring with each student (see Table 2 for full training schedule). After the new staff had been trained on the students' BSPs and academic programs, they had opportunities to staff each student while getting feedback from veteran staff and behavior staff throughout the week. New staff was expected to work with students for short periods (five to 10 minutes) on days two through four. For example, the new staff observed veteran staff implement one academic program and any relevant behavior plan steps, then he/she would implement the next academic program while getting feedback from veteran staff. Once the new staff was performing without the need for corrective feedback, he/she would work with students for longer periods (one hour – half day) on days four through five while still being observed by veteran staff and receiving feedback.

Table 2

New Staff Training Schedule

Recommended Day	Task
1	Read BSPs for each student and complete accompanying quizzes.
1	Begin Observation Notes (at least one observation per student). Brief feedback from the behavior department on what behaviors to observe for each student and which staff to observe.
1 – 5	Observe behavioral crises (if available).
2	Train on BSPs for each student.
2 – 3	Practice data collection (15 minutes per student watching veteran staff).

2 – 3	Complete 1-2 additional Observation Notes per student (can be combined with data collection).
2 – 4	Briefly staff students (5-10 minutes each) while being observed by teaching and/or behavior staff.
3 – 5	Train on academic programs for each student.
4 – 5	Staff each student (at least 1 hour each) while being observed by teaching and/or behavior staff.
5	Complete any remaining pieces of training.

Outcomes Assessment

Student Behavior and Engagement Observation

Observations were conducted to measure the following dependent variables: (a) *Target Behavior* defined as any instance of the observed student displaying maladaptive target behaviors; (b) *Feedback* defined as any instance of veteran staff prompting or giving corrective feedback to staff; (c) *Staff-Initiated Interaction* defined as any instance of praise or attention toward the observed student that is initiated by the staff; (d) *Student Initiation* defined as any instance of the observed student independently initiating an interaction with the staff; (e) *Student Engagement* defined as the observed student engaging in an appropriate positive interaction (e.g., talking, listening, playing, etc.) with the staff during the last two seconds of each interval; and (f) *Compliance* defined as any instance of the observed student complying with a demand given by the staff within 15 seconds. These variables were selected due to their ability to answer research questions about student behavior, staff performance, and staff-student relationships. These variables were considered the most appropriate, as they could be measured by direct observation of the behaviors in question.

Observations between a student and staff (veteran or new) were 10 minutes in length during any activity occurring within the classroom. For time sampling procedures, observation intervals were 12 seconds long. Target Behaviors, Feedback, Staff-Initiated Interaction, and Student-

Initiated Interaction, were recorded using a partial-interval recording. Student Engagement utilized momentary time sampling. Compliance was recorded using an event recording procedure.

One of the researchers completed all observations. No interobserver agreement data were collected. The researcher first observed a veteran classroom staff with each student in the classroom while the new staff member was in her corporate orientation or out-of-ratio training week. Then, the new staff was observed by the researcher with this observation form during her first or second week of being in-ratio with students.

Treatment Integrity

Treatment integrity observation forms were based on procedures found in each student's individual BSP. Observations of the staff (veteran or new) were 15 to 30 minutes in length and took place when they were scheduled to work with a student during any activity occurring within the classroom. A percentage was calculated from the number of steps correctly implemented, divided by the number of correct and incorrect/missed steps, and then multiplied by 100. As total BSP steps varied across student, and not all steps should be implemented during an observation, only those steps which should have been implemented during the observation were recorded and used in treatment integrity calculations.

New Staff Survey

A survey similar to the one completed by veteran teachers during the needs assessment was given to new staff approximately one week after the completion of their out-of-ratio training week. The survey was similar for staff who underwent either STP training or the new manualized training; however, slight changes were made to make some questions past tense for the manualized training.

Results

Needs Assessment

Survey

On average, results indicated that staff found the type of behavior support plan (BSP) training they received as somewhat-to-mostly helpful. Specifically, respondents reported the type of behavior plan training they received to be either *very* helpful (*n* = 9), *mostly* helpful (*n* = 6), *somewhat* helpful (*n* = 7), *minimally* helpfully (*n* = 3), or *not at all* helpful (*n* = 1). Additionally, when asked how prepared they felt to work with students, participants reported feeling either *very* prepared (*n* = 5), *mostly* prepared (*n* = 8), *somewhat* prepared (*n* = 9), *minimally* prepared (*n* = 1), or *not at all* prepared (*n* = 1). They also reported that on average role-playing parts of the BSP would be somewhat-to-very helpful. Specifically, respondents reported role-playing would have been either *very* helpful (*n* = 11), *mostly* helpful (*n* = 7), *somewhat* helpful (*n* = 5), *minimally* helpfully (*n* = 2), or *not at all* helpful (*n* = 1). Staff responses indicated out-of-ratio interactions with students were somewhat-to-mostly helpful to build relationships with students. Specifically, respondents indicated these interactions were either *very* helpful (*n* = 7), *mostly* helpful (*n* = 6), *somewhat* helpful (*n* = 9), *minimally* helpfully (*n* = 2), *not at all* helpful (*n* = 1), or no response (*n* = 1). Results also indicated that, on average, staff reported structured fun time would be somewhat-to-mostly helpful. Specifically, respondents indicated structured fun time would be either *very* helpful (*n* = 4), *mostly* helpful (*n* = 15), *somewhat* helpful (*n* = 4), or *minimally* helpful (*n* = 3).

Staff reported a structured phasing-in would have been mostly-to-very helpful. Specifically, respondents reported structured phasing-in would have been either *very* helpful (*n* = 12), *mostly* helpful (*n* = 10), *somewhat* helpful (*n* = 1), or no response (*n* = 1).

Teacher Focus Group

During the focus group, qualitative data about teacher preferences for training was collected. Participants reported that phasing-in for both academic and behavioral programs was a primary need. Included with phasing-in, they suggested a checklist of things the new staff would need to do/know how to do by the end of their out-of-ratio week. The teachers also reported that more explicit applied behavior analysis (ABA) training might be helpful when explaining why the staff is instructed to use specific procedures or approach behaviors in certain ways, and why it is important to follow the BSPs. Additionally, the teachers stated they would like to have new staff observe high-intensity behaviors and gain experience responding to staff intercom pages for additional help during high-risk situations. Although survey data indicated some modest interest in having a structured fun time, teachers indicated that they did not endorse the utility of planned Fun Time during the focus group.

Behavior Department Focus Group

During this focus group, qualitative data indicate BSP training was considered the most important component to focus on and improve. Ideas to improve BSP training included specific training on data sheets (used to track the target behaviors of each student) and other materials (e.g., reward charts, student schedules) commonly used with students in the classroom. It was also suggested that new staff have the opportunity to read each student's BSP before the training session with the behavior specialist, with a quiz or guided notes worksheet indicating staff understanding of each BSP.

Based on the results of the needs assessment, especially considering the breadth of impact of potential changes and focus group buy-in, it was decided the manual would focus on BSP training and phasing-in for academic and behavioral programs.

Outcomes Assessment

Comparisons between veteran-STP and veteran-manual were used to examine outcomes in staff treatment integrity, student behavior, and staff-student engagement. Comparisons were matched by the student so that each veteran staff was observed implementing the same student plans as the STP or manual-trained staff. The training was completed, and outcomes data were collected for two new staff: one received STP training, and one received manual training. Results for each of the categories of outcomes are presented below.

Treatment Integrity

Three treatment integrity observations occurred for new STP-trained staff. Treatment integrity was 74.19% at observation one, 89.47% at observation two, and 81.48% at observation three. When matched by student observed to new staff who received STP training ($N = 1$), veteran staff ($N = 2$) treatment integrity was 93.75% at observation one, 81.25% at observation two, and 92.00% at observation three. Observations one and three observed the same veteran staff, while observation two was of the second veteran staff.

Two treatment integrity observations occurred for new staff who received manualized training. Treatment integrity for new staff ($N = 1$) was 88.24% for observation one and 96.67% for observation two. For comparison, veteran staff ($N = 2$) implementing the same student BSPs had treatment integrity of 88.89% at observation one and 86.04% at observation two.

Student Behavior

Low rates of student target behaviors and high rates of compliance were observed across all staff. Student target behaviors were observed to occur at very low rates with matched veteran (N = 2) and STP-trained staff (N = 1) over four observations. For veteran staff, target behavior occurred in 0%, 12%, 8%, and 6% of intervals observed over four observations. For new STP-trained staff, target behavior occurred in 0%, 4%, 2%, and 0% of intervals observed over four observations.

When matched to veteran staff (N = 2), student target behaviors were observed at a higher rate with manual-trained staff (N = 1). Target behaviors occurred in 4% of intervals observed during observation one and 0% of intervals observed during observation two for veteran staff. For new manual-trained staff, target behaviors occurred in 18% of intervals observed during observation one and 0% of intervals observed during observation two.

Student compliance was also recorded at the same time as student target behavior. Scores represent the ratio of compliance to opportunities for compliance, converted to a percentage. For veteran staff matched to STP-trained staff, compliance was 100%, 66.70%, 25%, and 50% across four observations. STP-trained staff was observed to gain compliance rates of 100%, 100%, 50%, and 75% across four observations. Both matched veteran staff and manual-trained staff gained compliance rates of 71.4% at observation one and 100% at observation two.

Staff-Student Engagement

Three measures of staff-student engagement were recorded during the same observation as student behavior reported above: staff-initiated engagement (partial-interval time sampling), student-initiated engagement (partial-interval time sampling), and student engagement (momentary time sampling). The percentage of intervals observed for each variable is reported for each below. Matched comparisons between veteran and STP-trained staff (four observations each)

indicate slightly lower levels of staff-initiated engagement for STP-trained staff (4%, 10%, 4%, and 2%) than veteran staff (8%, 6%, 6%, and 6%). An inverse finding was observed in the matched comparison observations (two observations) between veteran (8% and 12%) and manual-trained staff (12% and 12%), although differences are small for both comparisons.

Student-initiated engagement results indicate no difference between matched veteran (4%, 4%, 0%, and 0%) and STP-trained staff (2%, 2%, 0%, and 2%) or between matched veteran (4% and 4%) and manual-trained staff (2% and 6%) However, a slight increase can be seen from STP-trained staff to manual-trained staff.

Student engagement was observed to be higher with manual-trained staff (20% and 36%) than with STP-trained staff (26%, 18%, 2%, and 18%). Student engagement of veteran staff matched to STP-trained staff was 52%, 16%, 8%, and 2% across the four observations. Student engagement of veteran staff matched to manual-trained staff was 28% and 36% across the two observations.

New Staff Survey

Respondents for the new staff survey included one STP-trained staff and one manual-trained staff. Both STP-trained ad manual-trained staff reported initial BSP training was *very* helpful. While STP-trained staff reported feeling *very* prepared to work independently with students following BSP training, manual-trained staff reported feeling *mostly* prepared. Both respondents reported positive staff-student relationship building during training (STP: *very*; Manual: *mostly*). While STP-trained staff reported a structured fun time procedure would be *somewhat* helpful in building positive relationships with students, manual-trained staff reported this fun time would be *very* helpful. Manual-trained staff reported the integration from training to independently staffing students as *most* helpful, while STP-trained staff reported it as being *very*

helpful. STP-trained staff reported feeling *very* prepared to independently staff students following training, while manual-trained staff reported feeling *somewhat* prepared. Both groups reported phasing-in would be/was *very* helpful prior to independently staffing students.

Discussion

While the results of the current program evaluation represent important work and indicate some promising findings, additional replication and data collection are needed to make any substantial claims. Overall, the manual-trained staff was observed to have higher treatment integrity than veteran and STP-trained staff. However, students were also observed to emit target behaviors at higher rates when staffed with the manual-trained staff than veteran or STP-trained staff – although compliance with demands was observed to be fairly equal across groups. A potentially unexpected finding is that student target behaviors were observed to be higher when treatment integrity was higher with manual-trained new staff. One explanation for this observation might be that if low treatment integrity had previously led to intermittent reinforcement of target behaviors for students, a removal of that intermittent reinforcement (i.e., extinction), may have led to a sudden increase in the target behavior, known as an extinction burst (Fryling, Wallace, & Yassine, 2012; Lerman & Iwata, 1995).

While this is a potential explanation, the current study did not collect data to confirm this hypothesis, so other explanations should also be considered. Staff-student engagement observations indicate students were engaged with the manual-trained staff at higher rates than with STP-trained staff, although no real differences were observed for either condition between matched veteran comparisons. It should be noted that while strong differences between conditions were not evidenced in this study, the structure of the developed manual systematically combined

multiple evidence-based components, such as priming, BST, and phasing-in. With this in mind, the structure of the manual may offer a multi-component evidence-based intervention for staff training in special education settings that is sorely lacking, both in the research literature and in applied settings. While the authors have anecdotal experiences of organizations developing and using training manuals for new staff, we are unfamiliar with any published research that has examined the development and effectiveness of multi-component manuals for preparing staff to work with students. For this reason, despite the limitations, this pilot study is a strong starting point for future research in this area.

Several limitations should be noted for the current study. First, only one participant was included in each of the new staff conditions. While not ideal, there was no opportunity for additional participants during the pilot study, as no additional new staff meeting criteria were hired. Given the design and timeline of the current study, additional participants were not able to be utilized, as only staff hired as permanent staff in a given classroom were included. Additionally, rehired staff returning to employment in the school were not included, as they had prior knowledge of student BSPs and previous relationships with the students. Because so few participants were included, individual participant characteristics may have affected results. Building on this limitation, little social validity data for the manualized training was obtained, given only one new staff was included in this study.

An additional design and applied research limitation included the feasibility and reliability of the observations. As multiple outcomes were observed simultaneously, the degree of difficulty of the observations was high. To correct for this limitation, future applications of this manual might include only the dependent variable measures relevant to their desired outcomes or limit measures to one per desired outcome. For example, the observation form used in this study included three

measures of staff-student engagement, whereas one measure may have been sufficient. Additionally, no inter-observer agreement (IOA) data was collected. This data would have increased confidence in the reliability of the experimenter-constructed observation form. To address these limitations, additional research should replicate manual procedures with a larger sample, address potential concerns about data collection feasibility, and include IOA procedures during data collection.

Future research should also examine the individual manual components to determine which components may be responsible for effects, or if interactions between components lead to greater effects. Another consideration could be to include the fun time procedure (Parsons et al., 2016), or another positive pairing procedure to support staff-student positive relationships. This procedure was not included in the current manual, as needs assessment data indicated little buy-in for the procedure. However, given low levels of staff-student engagement and some reported social validity from the new staff survey, a procedure that aims to improve engagement and rapport may be warranted for inclusion in the training manual.

In conclusion, the current study aimed to develop and measure the effects of a structured format for new staff training in an educational setting for students with disabilities. The manual was developed using current best practices, as well as data collected during the Needs Assessment of staff at the direct care, teaching, and clinical levels. Specifically, priming, BST, and phasing-in procedures were incorporated into the manual. Staff buy-in for implementation was strong; however, data collection procedures may not be feasible outside of a research context. Data collection procedures that provide the necessary information and are also easy to implement should be considered in future research and applications of the manualized training. Future research or applications may consider reducing the number of dependent variables to increase the utility of the

observation form. Despite the limitations of this study, promising findings were observed in terms of improved treatment integrity and staff-student engagement. In settings with high staff turnover and new staff who may have little previous experience working with students with disabilities, a manualized procedure for staff training may be a solution to the inadequate training frequently observed in these settings.

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