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Group-Based Training on Trial-Based Functional Analysis

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Abstract

A functional behavior assessment (FBA) of challenging behavior has been identified as a High-Leverage Practice in the social/emotional/behavior area (HLPs; McLeskey et al., 2017). Despite the importance of FBAs to classroom practices, many FBAs are conducted outside of classroom settings. Evidence suggests that FBAs may be more effective when conducted in a child's typical classroom setting. A trial-based functional assessment (TBFA) is a variant of an FBA that is conducted by practitioners in a child's classroom environment. The purpose of this paper is to outline the important components that should be included in a TBFA group training designed for practitioners in the field.

Keywords

functional behavior assessment, group training

Abstract

A functional behavior assessment (FBA) of challenging behavior has been identified as a High-Leverage Practice in the social/emotional/behavior area (HLPs; McLeskey et al., 2017). Despite the importance of FBAs to classroom practices, many FBAs are conducted outside of classroom settings. Evidence suggests that FBAs may be more effective when conducted in a child's typical classroom setting. A trial-based functional assessment (TBFA) is a variant of an FBA that is conducted by practitioners in a child's classroom environment. The purpose of this paper is to outline the important components that should be included in a TBFA group training designed for practitioners in the field.

Group-Based Training on Trial-Based Functional Analysis

Review of Literature

An important role of a special education teacher is to intervene with challenging behavior that may limit a student's access to their least restrictive environment. Research suggests that a systematic assessment process to identify the function of a challenging behavior can help the teacher identify effective interventions that utilize positive rather than punitive interventions (Hanley, Iwata, & McCord, 2003; Simpson, 2005; Carr, Robinson, & Palumbo, 1990). In order for teachers to develop effective, positive interventions for challenging behavior, they must first be able to reliably conduct a functional assessment of the behavior. A functional assessment is so central to intervention development, that it has been identified as a High-Leverage Practice (HLP), an evidence-based educational practice to benefit all learners, in the area of social/emotional/behavior (SEB) practices (McLeskey et al., 2017).

There are many ways a teacher can conduct a functional assessment. In general, the term functional assessment can be defined as a way to identify a functional relation between environmental variables and the occurrence of the behavior. To determine this, teachers may use interviews (Bailey & Pyles, 1989), direct observation, or direct manipulation of environmental variables (Iwata, Vollmer, & Zarcone, 1990). Of the methods used to determine a functional relation, functional analysis is the most reliable way to demonstrate a causal relationship between specific environmental variables and the behavior (Asmus, Vollmer, & Borrero, 2002).

A type of functional analysis that can be used within typical school routines while maintaining experimental control is a trial-based functional analysis (TBFA). TBFA uses brief assessment trials under naturally occurring classroom events and contingencies (Sigafoos & Saggers 1995). TBFA might be preferable to traditional FBA methods because it has been found

to identify behavioral functions as accurately, but with considerably less time and less potential to reinforce undesirable behaviors (LaRue et al., 2010).

Individual coaching and feedback is a promising option for classroom teachers to learn TBFA (Bloom, Iwata, Fritz, Roscoe, & Carreau, 2011; Rispoli et al., 2015). However, individual training can be time and resource intensive. Group training could be a viable solution, such as an in-service or professional development training, but practices for those type of TBFA trainings have yet to be outlined. However, there is research to support different components of an in-service type training for practicing teachers. For example, teacher training for new skill development should include instructions, modeling, role-play, and feedback (Sawyer et al., 2017). Further, guidelines for educator in-service trainings indicate that integration of technology and incorporating training evaluations are important for enhancing the quality of training (Thornburg, Uline, & Wilson, 2006). Additionally, training should be proactive seminars because they develop a better understanding of the application to practice (Rhea, 1999). Developing an in-service training to become a proactive experience requires consideration of multiple parts. The topic will need to be of interest or importance to teachers and there should be one or more scenarios for attendees to facilitate teaching. Moreover, the training should give attendees an understanding of techniques and tools to draw on for practice (Rhea, 1999).

The purpose of this paper is to identify and define each of the necessary TBFA components, and illustrate how they can be translated into group training designed for practitioners in the field. We will outline multiple elements that we have employed for an effective and proactive TBFA in-service. We will review the direct implications this will have for educator preparation programs.

Group-Based Trial-Based Functional Analysis Training

We conducted an initial in-service of procedures with undergraduate and graduate teacher education and psychology students (Gross, Noel, Farmer, Hacherl, & Ritchie, 2019). The training included units for (a) Functional thinking; (b) Operational definitions with 20-item quiz; (c) Conducting FA Interview with 22-item quiz; (d) Identifying FA conditions; (e) Learning the TBFA protocol with 74-item quiz; (f) Graphing TBFA data with 16-item quiz; (g) Data-based decision making with 14-item quiz; and (h) Function-based interventions with 8-item quiz.

The materials for the TBFA training included (a) presenter and participant versions of PowerPoints, where the trainer version had answers to unit quizzes and participant versions did not, (b) a procedural checklist for the training and (c) a survey regarding training and facilitator satisfaction. There were two trainers who presented the in-service. Participants completed the quizzes at the end of each respective unit and had an opportunity to self-correct any errors. All participants demonstrated adequate accuracy before self-correction (i.e., 87% accuracy or greater) on outcomes assessments based on the training scenario (training materials available upon request). The training took a total of 3 hours and 34 minutes.

This initial training then led to the development of a training for practicing teachers that was delivered at a state-level conference. This paper will address the procedures we used to train current teachers to complete a TBFA. There are seven key components that should be addressed in a group-wide TBFA training, these include:

(1) Understand functions of behavior;

(2) Write clear, complete, and objective operational definitions;

(3) Conduct comprehensive interviews;

(4) Identify specific procedures for each condition;

(5) Learn TBFA protocol;

(6) Create bar graphs that represent the collected data; and

(7) Make instructional decisions based on the outcomes of the data.

Understand functions of behavior. Functions of behavior indicate why a student engages in a specific behavior. In order to adequately implement a TBFA, a practitioner must be able to narrow the potential explanations for a given behavior and consider only what the person is gaining (e.g. attention, sensory, or tangibles) or avoiding (e.g. attention, task demand, or sensory input). In order to this, a practitioner must be adept at identifying each part of the three-term contingency (i.e., antecedent, behavior, and consequence).

This content was covered in the *functional thinking* unit. In this unit, we covered the three-term contingency, types of consequences, and relating behavior to a function. Examples were given and discussed as a group, and trainers responded to questions regarding these basic principles.

Write objective, clear, complete, operational definitions. When deciding on what skill needs development (i.e. target behavior), teachers should write it in a way that is objective, clear, and complete. To be objective, the target behavior must refer only to observable events and not rely on inference or guessing. To be clear, the target behavior must be readable and unambiguous. It should be evident to someone who has never seen the target behavior before. To be complete, the target behavior should have definitive boundaries and should include examples and nonexamples of the target behavior.

We reviewed the components of operational definitions. We also provided methods to test the definitions to assure that they were objective, clear, and complete. Further, the use of examples and nonexamples were demonstrated for common behaviors children exhibit in schools. Attendees completed a worksheet with a series of paired statements, where they had to

circle the statement that was an example of an operational definition.

Conduct comprehensive interviews. TBFA implementation is greatly assisted by well-designed interview procedures to define the target behavior and corresponding events. Interviews should be designed to (a) operationally define a behavior, (b) identify effective and ineffective strategies, (c) identify conditions under which the behavior is likely or unlikely to occur, (d) develop a list of potential reinforcers, and (e) develop an initial hypothesis of the behavior's function. The benefit of an initial interview is that practitioners can use the information to better design their TBFA conditions (Dunlap et al., 1993).

A mock interview was conducted in order to provide a more realistic experience. A trainer completed a semi-structured interview that consisted of 22 questions with a graduate student. There was a script written prior to the training. The mock interview modeled asking the questions and asking follow-up questions if needed. The participants wrote the information needed for the TBFA on their own interview forms and then checked their information against a completed interview form.

Identify TBFA conditions. The conditions of the TBFA will mirror the potential functions of behavior and can be categorized as an attention condition, escape condition, tangible condition, and alone condition. The practitioner should take into account individual characteristics of the student before developing the specific TBFA conditions. For example, the practitioner will include identified nonpreferred tasks, such as handwriting or math worksheets, into the escape condition, or specific identified tangibles, such as iPad or pipe cleaners, into the tangible condition.

For the training, the four functions of behavior were reviewed after the mock interview was completed. These were then connected to determining what to include in the conditions

during the TBFA. A trainer provided examples and checked for understanding from the participants after each function was reviewed.

Learn TBFA protocol. In order to learn a TBFA protocol, the practitioner should have each of the procedures explained, modeled, and practiced with corrective feedback. This should include both the specific and more general TBFA procedures. Each of the TBFA conditions (i.e. attention, escape, tangible, and alone) will require specific steps, which may be individualized depending on the target behavior. Therefore, practitioners should be given multiple examples of how the protocol can be modified. Additionally, practitioners should be trained on the general rules of a TBFA, such as conducting trials throughout the day and embedding the trials in ongoing activities (Bloom, Iwata, Fritz, Roscoe, & Carreau, 2011).

A series of role-plays were designed to demonstrate the steps of the TBFA procedures. The role-plays included a trainer and a graduate student. Two scripted role-plays were completed for each of the four functions, where one was completed correctly and one was completed incorrectly by missing predetermined steps for each respective function. All trainees followed each role-play and completed a corresponding fidelity checklist to assess whether they could identify correct and incorrect steps.

Create bar graphs to represent the data. Data collected from a TBFA should be graphed before determining the function of behavior. In order to do this, practitioners need to determine the percentage of trials in which the target behavior occurred and graph that percentage against each of the four conditions. TBFA typically employ 10 trials of each of the four conditions of attention, tangible, escape, and sensory. Practitioners can visually compare each bar of the graph to determine the condition in which the behavior happens the most. The condition in which the behavior occurred most frequently is the probable function (Cooper,

2007).

During the *Graphing TBFA Data* unit, we reviewed how to create and use bar graphs in Microsoft Excel, as well as the procedures for data entry and rationale for using graphs. Participants then completed a worksheet where they had to tally and compute percentages of response under each of the four TBFA conditions. They then graphed the results.

Make instructional decisions based on the data. The final step to completing a TBFA is to use the information gained from a TBFA to guide instruction. The practitioner must be able to use the information gathered in a TBFA to develop a tailored intervention that matches the function of the target behavior. This requires practitioners to draw on their knowledge of skills and instructional strategies to develop a tailored plan adequately to address the target behavior (Scott & Kamps, 2007).

Two units were developed to cover making instructional decision based on data, data-based decision making, and function-based interventions. In the *data-based decision making* unit, decision trees were introduced for determining function and assuring fidelity to the TBFA procedures. Trainees completed a set of worksheets, where they were presented with 14 bar graphs and had to circle the bar for the most likely function. The *function-based interventions* unit included a presentation on how to match strategies to behavior functions. Trainees then completed an exercise where they matched functions to best fitting interventions.

Implications for Practice

Given the pragmatic advantages of TBFA for school settings, schools and school districts may benefit from training practitioners on how to accurately conduct a TBFA and use the information to develop a function-based intervention. Currently, the literature focuses on individualized training and coaching of practitioners (e.g., Bloom et al., 2011; Rispoli et al.,

2015); however, that may not be feasible for densely populated or rural districts. Therefore, there is a need for structured, group-based TBFA trainings that can be delivered in an in-service or professional development type setting.

We have outlined an eight-unit training that aligns with effective and proactive in-service practices. Portions of this training align with optimal training practices, such as instructions, modeling, and feedback (Sawyer et al., 2017). While the trainees did not directly role-play the full TBFA procedures, they did practice completing some parts, such as recording interview information, and using decision-making models when computing and reviewing data. Further we incorporated technology, through using PowerPoint slides to provide feedback on unit quizzes immediately after they were completed, as well provide a demonstration of how to use Excel to graph data. It might have been more powerful to have each trainee graph in Excel, but that would have been time and cost prohibitive. Moreover, we attempted to integrate multiple proactive elements (Rhea, 1999) to demonstrate some of the TBFA tools. This would include the end of unit quizzes, as well as the real-time data collection pieces, like the fidelity forms during the TFBA procedures role-plays.

In order to master the necessary components of a TBFA in an in-service type training, participants might benefit from having a basic level of prerequisite knowledge about conducting functional assessments. That is to say, an in-service such as this is likely insufficient to develop all the knowledge or skills to complete a TBFA. Rather, it might require training that is more direct with participants engaging in activities, like completing role-plays themselves (e.g., Sawyer et al., 2017). Developing this prerequisite knowledge should be the job of the educator preparation program (EPP). In order to assure best practices in EPPs, the essential concepts and practices should be covered in course- and fieldwork. This might require a specific course or

integrated sections within courses to assure this foundation is laid. This would give practicing teachers an FBA foundation to build from to conduct more nuanced functional assessment procedures, such as TBFA. After teacher candidates complete requisite courses, they could be eligible to attend a faculty-guided seminar, where proactive in-services with coaching follow-up might be an option for TBFA. Further, teachers who receive training in TBFA could use the procedures described in this paper to develop a TBFA training tailored to their district. The use of in-service with coaching to provide improved instruction for students with behavioral concerns may be a viable option, as these models have been effect with other instructional practices (e.g., Kretlow, Cooke, & Wood, 2012).

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