

Delta Journal of Education

Volume 1 Number 1 Spring 2011

Special Edition on Health and Wellness



Training Teachers to Implement Components of a Functional Behavior Assessment in a Rural School District: Taking Steps toward a Proactive Classroom

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Abstract

The Individuals with Disabilities Education Act (IDEA) (1997) mandates the use of proactive, positive measures of discipline in schools, thereby challenging how educators approach behavior problems exhibited by students. The use of Functional Behavioral Assessments (FBA) is proposed as an alternative to an overreliance on reactive and punitive measures. Thus the aim of the study was to train rural educators on three primary components of the FBA. Rural educators were targeted due to the data regarding high teacher attrition rates in rural education (Henry, 1986; Lemke, 2010) and the two primary concerns rural educators share are (a) problems with behavior management in the classroom and (b) student discipline (Lemke, 2010). In an effort to address the needs of these educators, this investigation set out to improve positive behavioral interventions by providing training on the basic principles of FBA. Results demonstrated 95% of participants reported FBA trainings were useful in dealing with problem behaviors in the classroom.

Key Words: FBA, behavior, positive behavior supports, effective teaching practices

Training Teachers to Implement Components of a Functional Behavior Assessment in a Rural School District: Taking Steps toward a Proactive Classroom

The Individuals with Disabilities Education Act (IDEA) (1997) requires the use of proactive, positive measures of discipline in schools, thereby challenging how educators approach behavior problems exhibited by students with disabilities. Rather than relying on reactive, punitive measures, schools are expected to implement preventative measures of discipline that teach and reinforce appropriate behaviors (IDEA, 1997). The use of a FBA is designed as an alternative method of dealing with behavior disruptions. FBA is a positive behavior support (PBS) strategy recommended by IDEA (1997) to manage students' behavior problems as well as promote rule governed behaviors in schools.

A comprehensive FBA requires a multi-assessment approach including both direct and indirect measures with data collection serving as a major accountability component (Asmus, Vollmer, & Borrero, 2002; Watson & Steege, 2003). The multi-assessment approach to a FBA involves the following procedures: (a) record review, (b) behavior rating scales, (c) interviews, (d) problem identification, (e) measurement of the occurrence of the problem behavior through direct observation, (f) identification of antecedents and consequences of the problem behavior, (g) development of a hypothesis defining the function (attention, escape/avoidance, access to tangible items, sensory; (Cooper, Heron, & Heward, 2007) of the targeted behavior problem, and (h) an experimental analysis of the hypothesized function (Watson & Steege, 2003).

Thus, including all components of a comprehensive FBA could be cumbersome for teachers to conduct in a classroom setting and thus is often the responsibility of a trained behavior specialist or a board certified behavior analyst (BCBA). However, without individuals on staff who have been trained as behavior specialists or are BCBA's, conducting the FBA becomes part of the teachers' duties, often the special education teacher or the inclusive classroom teacher. With the teacher's role already being maximized, conducting a comprehensive FBA is often not manageable. In an effort to decrease the amount of time needed and maintain the rigor of the FBA process, a simplified version consisting of three basic problem-solving components was created by the primary researcher to educate rural teachers (special educators and general educators) on the premise of the FBA and enable them to conduct a FBA within the confines of the classroom especially when trained behavior specialists are not available which is often the case in a rural school district (Lemke, 2010; Gehrke & McCoy, 2007). These basic components included: (a) creating an operational definition of the problem (target) behavior so that an alternative (positive) replacement behavior can be determined, (b) collecting data on the target behavior and interpreting the data, and (c) identifying function-based intervention strategies specific to the target behavior.

Before a targeted behavior can undergo analysis, it should be defined in a clear, objective, and concise manner (Cooper et al., 2007, p. 65). Therefore, operationally defining a behavior is an initial primary component in the FBA process. The operational definition facilitates the monitoring of a student's progress toward a behavior (improvement) goal. If a target behavior is not well-defined, the ability to accurately and reliably measure the behavior during data collection and analysis is lost (Cooper et al., 2007). Operationally defined behaviors are monitored with greater ease. On the contrary, when behaviors are defined in vague and general terms; measurement of the

behavior is unreliable and may inhibit the development of an accurate, appropriate replacement behavior.

The next component is collecting data on the operationally defined target behavior. With direct and repeated measurement, behavior change can be documented over time. Effective, accurate data collection from the start is important to determine how to manipulate environmental consequences to replace students' maladaptive behaviors with appropriate behaviors.

Lastly, when teachers alter the environment (i.e., in the classroom) in relation to the purpose or function that a target problem behavior serves for the student (i.e., to get attention or avoid a demand), the problem behavior should decrease and a proactive behavior will serve as a replacement (Lalli, Browder, Mace, & Brown, 1993). These results can be achieved through identifying and manipulating the environmental antecedents and consequences of a behavior and then reinforcing a positive replacement behavior. Thus, the rationale for the present study was to improve positive behavioral interventions and supports (PBIS) in one rural district by providing consultation and direct teaching on three primary components of a FBA.

Focus on Rural Education

The segment of the educational system represented by rural and small schools is considerable, and the problems they face are real and deserve attention (Lemke, 2010). Recent research in education addressed the needs of special educators in rural and small schools specifically related the challenges that are faced by this demographic. Lemke (2010) found rural school districts do not have adequate access to qualified special education teachers, making it difficult to compete with larger, urban and suburban schools. One reason for this is that rural schools continue to struggle with the recruitment and retention of capable special education staff (Gehrke & McCoy, 2007), and special education staff are more often the teachers faced with behavioral issues in the classroom.

The data reported in the literature regarding teacher attrition rates are also representative of serious problems within the rural school districts; with twenty-six percent of new teachers leaving the profession after their first two years and sixty percent of all teachers resigning after their first five years of teaching in a rural school (Henry, 1986; Lemke, 2010). "The most frequently cited reasons are that they leave to accept jobs that pay more and they are unable to cope with the problems of teaching" (Henry, 1986, p. 17). Two of the more common concerns that beginning teachers in rural schools share are (a) problems with behavior management in the classroom and (b) student discipline issues (Lemke, 2010). Muse and Thomas (1992) note that teachers in rural education have to be well-organized in their class preparation and use of resources as they may have to be more innovative with fewer educational resources allocated to those in rural areas. In addition to a lack of resources, it is likely to be more difficult for small schools to locate qualified professionals (i.e., school psychologists, behavior specialists, and BCBAs) to provide consultation services, professional development, and on-going trainings as compared to the larger, urban schools. Therefore, rural schools are at a disadvantage with respect to access to trained professionals, teacher training opportunities and resources all of which make effective classroom management strategies less available in these schools.

Purpose of Study

In an effort to address the needs of educators in rural school districts, this study proposed a method to train teachers in small schools on the main components of a FBA. The aim was to improve classroom behavior management strategies by shifting the focus from reactive measures to PBIS that are supported by educational policy (i.e., IDEA, 1997). As rural schools gain greater access to training on effective behavior management strategies such as FBA, the recruitment and retention of special education teachers in rural areas is likely to improve as well.

Research Questions

The current study addressed the four research questions provided below.

1. Following training, how well were teachers able to write operational definitions for both a problem behavior and replacement behavior?
2. Following training, how accurately did teachers interpret data during baseline and intervention conditions?
3. Following training, how well did teachers formulate a statement related to the identified function of the problem behavior?
4. At a five-month follow-up, did teachers maintain skills learned in training?

Method

The present investigation consisted of a preliminary survey to gain an understanding of teachers' perceptions of the FBA process followed by three in-service trainings for teachers in a rural school district. The three basic problem-solving skills commonly associated with an FBA addressed in this study were the following: (a) an operation definition of the problem (target) behavior and an alternative (positive) replacement behavior, (b) data collection and interpretation, (c) identification of function-based interventions. Teachers' knowledge was evaluated with a pre- and post-test self-assessment questionnaire provided before and after trainings. Teachers attended each of the three trainings in groups ranging from five to twelve individuals. Trainings were held in a school auditorium.

Participants

Participants recruited from a rural public school district in the Southeastern United States included a total of 38 teachers (n=38). Nine schools from the district were represented. At the time of the study, there were no BCBA's located in the district and only ten BCBA's were located within the state with eight of those ten residing in metropolitan areas. Of the participants, 45% of teachers held special education certification and 55% of teachers held regular education certification. Special education teachers included representatives from grades pre-school through twelfth grade. General education teachers included representatives from kindergarten, third and fourth grades, and an alternative school, grades 5-8. Ninety-five percent of participants were female.

Their teaching experience ranged from one to 32 years ($M=12$ years, $SD=10.5$ years) in grades pre-school through twelfth grade. Approximately 74% of the teachers held a bachelor's degree, 24% percent held a master's degree, and 2% held a specialist's degree.

Table 1

Type/Class, Mean Years of Teaching Experience, Degree, and Gender of Teacher Participants

Type/Class	<i>M (SD)</i> years of teaching experience	Degree (<i>n</i>)			Gender (<i>n</i>)	
		BS	MS	EdS	M	F
Special education						
K-4	15.5 (12.3)	5	1	0	0	6
5-8	14.6 (14.3)	4	1	0	0	5
9-12	16.2 (11.7)	3	2	1	1	5
Regular education						
K-4	10.9 (9.1)	11	4	0	0	15
Alternative school						
5-8	4.7 (3.4)	5	1	0	1	5
Total	12.0 (10.5)	28	9	1	2	36

Materials

Training materials varied for each training session depending on the topic; however, materials consistently included presentation overheads which were also given to each teacher as a packet. The first and the third sessions utilized training materials which contained identifying replacement behaviors, written scenarios focusing on writing operational definitions, and formulating function-based response statements. The second training session topic concentrated on using data to inform decisions. The materials included: (a) completed data collection forms focusing on data collection methods, (b) a completed graph interpretation form with a yes and no response rubric at the bottom (to assist with interpretation of data) (i.e., was baseline data present, was intervention data present, did behavior show an improvement in intervention, did the behavior remain stable, did the behavior get worse), (c) blank data collection forms for practice and future use in the classroom (i.e., frequency count, ABC forms, weekly school note forms), (d) a blank graph form, (e) a blank behavior summary form, and (f) an example of a completed behavior summary form.

Approximately five months following the last of the three training sessions, teachers who attended all three training sessions were asked to anonymously complete a training evaluation form and a behavior summary form with information provided in a scenario. The training evaluation form was used to assess teachers' acceptance of the

presented topics. The information obtained from the behavior summary form was used to evaluate maintenance of skills acquired during the trainings by comparing teachers' current performance with their performance on written exercises completed during trainings.

Procedures

Teachers attended three 2-hour trainings over the course of approximately two months at the beginning of the school year. Training sessions were administered approximately two and a half weeks apart. The researcher utilized didactic instruction, modeling, rehearsal, and feedback as instructional methods throughout all training sessions. In addition, written exercises and case studies were utilized in all training sessions. Following the completion of each written exercise, all teachers were given an opportunity to share their answers with the group. Upon responding, the researcher provided direct verbal feedback to the volunteer teacher and entire group following each volunteer's answer. Before proceeding in a training session or ending the training session, teachers evaluated their own performance using a rubric designed by the primary researcher. Following all training sessions, the researcher collected the written exercises completed in that session so interobserver agreement (IOA) could be calculated to ensure that teachers were correctly scoring their own work.

During the first training, the researcher provided an explanation and examples of operational definitions for both problem behaviors (i.e., Tardy: John is outside of the classroom when the bell rings) and replacement behaviors (i.e., On time: John is present in the classroom before/when the bell rings). The training addressed identifying inadequate definitions and/or those not worded positively. Teachers then received direct instruction in writing operational definitions for a target problem behavior and a replacement behavior. The first written exercise was presented as a handout with a description of a student's problem behavior written in vague terms (i.e., 5-year-old male displayed a disruptive behavior in the hallway). Teachers were asked to determine whether or not the definition failed to be written adequately and/or failed to be worded in a positive manner. The directions for the writing operational definitions task were as follows: "Given the scenario, please indicate why the definition is not adequate by placing a check beside (a) is too vague and does not use specific terms or (b) fails to be stated positively. Then provide an improved operationally defined definition and a replacement behavior." A scenario for the teachers to practice writing operational definitions was similar to the following: Carter, a 6-year-old male identified as at risk exhibits off-task behavior. In addition, the document with the scenario provided asked teachers to practice writing operational definitions of target behavior and replacement behavior for a case that is occurring in their classroom or one that has occurred in the past. After marking which of the two criteria the definition failed, the teachers were asked to rewrite the definitions. Nine handouts contained different descriptions of students and problem behaviors; therefore, very few teachers in a training session received an identical scenario during this written exercise.

The second written exercise was presented as a handout and asked teachers to write an operational definition of a problem behavior and a replacement behavior that was exhibited by a student from the current school year or a prior school year. Following

completion of the exercise, teachers were asked to score the responses of a peer teacher using one identical to the one used by the researcher to assess definition adequacy. After a peer teacher scored the written exercise, it was given back to its owner.

During the second training, the researcher briefly reviewed writing operational definitions. However, most of the material presented in this training session focused on measuring the occurrence of a problem behavior during a baseline and intervention phase, transferring data from data collection forms to a graph, and visually interpreting the data represented in graphic form. Teachers received instruction in utilizing an A-B-C, frequency count, and weekly school note data collection form. The researcher presented completed data forms for all three data collection methods and demonstrated how to transfer the data to a graph. The data represented on graphs matched the data provided on the completed data collection forms.

Two written training exercises were presented to each teacher who attended the training. Each teacher received identical written training exercises. The first written exercise included two frequency count forms. One of the frequency count forms represented baseline data over a one-week period, and the other frequency count form represented intervention data over a one-week period. Teachers were asked to transfer the recorded data to a graph, interpret the graphed data, and complete a rubric provided.

The second written exercise included two weekly school notes. One of the weekly school notes represented baseline data and the other weekly school note represented intervention data. Teachers were asked to (a) compute the recorded points across behaviors for each week day, (b) transfer the data to a graph, (c) interpret the graphed data, and (d) complete a rubric provided at the bottom of the graph handout in order to evaluate their performance.

During the third training, the researcher briefly reviewed writing operational definitions and methods of data collection. In addition to the review, verbal and written information on situations involving attention and escape reinforcement contingencies in a school setting were provided. The researcher presented information on formulating function-based proactive and reactive responses to problem behaviors maintained by attention or escape contingencies. From example scenarios the researcher identified antecedents, contingencies, and function-based proactive and reactive responses to a target problem behavior.

Each teacher received an identical scenario and was asked to identify an antecedent and contingency (e.g., escape, attention, other) to the problem behavior and formulate a function-based proactive and reactive response to the behavior with the information presented in the scenario. Teachers were also asked to complete a rubric in order to evaluate their performance on the function-based response statement component on the behavior summary form. The rubric consisted of answering yes or no to the following: (a) identified an antecedent, (b) identified a contingency, (c) response statement identified a proactive response related to the antecedent or contingency, and (d) response statement identified a consequence to the problem behavior related to the contingency.

Data Collection

To evaluate operational definitions, the researcher applied a rubric to behavioral definitions in written exercises completed during the trainings. Behavioral definitions received a maximum of four points, with one point assigned for passing each of the following criteria: (a) problem behavior definition was not vague and used specific terms, (b) problem behavior definition was stated positively, (c) replacement behavior definition was not vague and used specific terms, and (d) replacement behavior definition was stated positively.

Teacher skills in graphing and interpreting data were assessed from written materials collected during the second training sessions. The researcher evaluated data collection materials on the following five criteria and assigned one point for each criterion passed: (a) baseline data were present, (b) intervention data were present, (c) three data points in the baseline phase were present, (d) three data points in the intervention phase were present, and (e) the correct interpretation of the data trend was circled. A maximum of five points were available.

The researcher evaluated function-based responses by examining the relationship between the teacher-identified antecedent and contingency to the problem behavior with the teacher-identified response to the problem behavior and replacement behavior. One point was assigned for the presence of each of the following components: (a) an antecedent, (b) a contingency, (c) a proactive response statement related to the antecedent or contingency of the problem behavior (i.e., teacher provided praise for keeping pencil and eyes on paper on desk), and (d) a response statement identified a consequence to the problem behavior related to the contingency (i.e., instructed peers to ignore talking-out behavior). An antecedent and contingency were accurately identified if the teacher identified an event that occurred in the child's environment either prior to (antecedent) or following (contingency) the target problem behavior. Four possible points were available.

Data Analysis

Data were obtained from (a) written exercises completed by teachers during the trainings and (b) written materials (e.g., behavior summary forms) submitted approximately five months following the last training session. Data from training exercises and five month follow-up assessments were summarized into the percentage of responses then coded with particular characteristics on each dependent variable using SPSS statistical software package. For example, the percentage of teachers who obtained specific scores (i.e., 0%, 25%, 50%, etc.) on the rubric for each dependent variable (i.e., writing operational definitions) and the percentage of teachers who passed individual components (i.e., writing a positively stated replacement behavior) within each rubric for each dependent variable were calculated. Since individual components within each rubric were one point each, a passing score was 100% (e.g., 1/1=100%).

Results

The results for the study are organized below beginning with the pre-test evaluation, the components of the FBA that were directly taught during the trainings (a) operational definitions, (b) data collection and interpretation, (c) function-based responses and the follow-up evaluation.

Pre-test

Data indicated that 31% or fewer of all teacher respondents from the current district agreed or strongly agreed that they had received prior training in writing operational definitions, collecting data, designing proactive interventions, and designing reactive interventions. Thus, the overwhelming majority had not received academic or professional development training on components of a FBA.

Table 2

Percentage of Teacher Responses on Pre-test

	Strongly Disagree	Disagree	Agree	Strongly Agree
	1	2	3	4
1. Prior to the trainings provided this year, I had received training on <i>writing operational definitions</i> .	53%	21%	10%	16%
2. Prior to the trainings provided this year, I had received training on <i>collecting data</i> .	37%	32%	21%	10%
3. Prior to the trainings provided this year, I had received training on <i>designing proactive interventions</i> .	53%	21%	10%	16%
4. Prior to the trainings provided this year, I had received training on <i>designing reactive interventions</i> .	53%	21%	10%	16%

Operational Definitions

Thirty-three teachers attended one of the training sessions on writing operational definitions, and each teacher completed two written exercises where he/she wrote an operational definition for a problem behavior and a replacement behavior (Dittmer-McMahon, 2001). Therefore, the researcher evaluated a total of 66 problem behavior definitions and 66 replacement behavior definitions gathered from the first training sessions. Of the 66 problem behavior definitions evaluated, 68.18% passed both criteria (i.e., not vague and stated positively), and 31.82% failed either one or both of the criteria. Of the 66 replacement behavior definitions evaluated, 65.15% passed both criteria, and 34.85% failed either one or both criteria. The majority of teachers wrote positively stated

(i.e., do vs. don't) definitions for problem and replacement behaviors that were specific and not vague. Table 3 delineates the percentage of problem behavior and replacement behavior definitions that passed each criterion.

Table 3

Percentage of Problem Behavior and Replacement Behavior Definitions That Passed Each Criterion

Definitions	Criterion		
	Stranger test	Stated positively	Passed both criteria
Problem behavior definition	72.27%	95.45%	68.18%
Replacement behavior definition	65.15%	92.42%	65.15%

The segregated results indicated that teacher respondents stated the problem behavior the student engaged in or the pro-social behavior (i.e., replacement behavior) the student should engage in with greater accuracy than they defined the problem behavior or pro-social behavior with specificity.

Data Collection and Interpretation

Thirty-five teachers attended one of the training sessions on data collection and graph interpretation and completed two written exercises yielding a total of 70 graphs. Of the 70 graphs evaluated, 60% passed all five criteria and 40% failed one or more of the criteria. Therefore, the majority of teachers graphed and accurately interpreted data that represented three data points in the baseline phase and three data points in the intervention phase. Table 4 delineates the percentage of teacher-completed graphs that passed each of the five criteria.

Table 4

Percentage of Teacher Completed Graphs That Passed Each Criterion

Criterion	Percentage
Baseline data were present	100.00%
Intervention data were present	100.00%
Three data points in the baseline phase were present	100.00%
Three data points in the intervention phase were present	100.00%
The correct interpretation of the data trend was circled	60.00%

The results indicated that 100% of teacher respondents accurately graphed baseline and intervention data; however, only 60% of teacher respondents circled the correct interpretation of the data trend. Of the 40% of teacher respondents who misinterpreted the graphed results, 85.71% did not circle one of the four graph interpretation options (i.e., behavior/performance improved during intervention, behavior/performance remained variable during intervention, behavior/performance deteriorated during intervention, or behavior/performance stabilized during intervention). The remaining 14.29% of teachers who received a score of zero on the graph interpretation component misinterpreted the results by circling an incorrect interpretation option.

Function-Based Responses

Thirty-two teachers attended one of the training sessions on formulating function-based responses to problem and replacement behaviors, and each teacher completed an identical written exercise during the training session. Of the 32 written exercises evaluated, 68.75% passed all four criteria, and 31.25% failed one or more of the four criteria. Therefore, the majority of teacher respondents identified an antecedent and contingency to a problem behavior and then linked them to a proactive and reactive response to the problem behavior. Table 5 delineates the percentage of teacher respondents who passed each component criterion.

Table 5

Percentage of Teachers Who Accurately Identified Components of Function-Based Responses

Components of function-based responses	Percentage
Antecedent to problem behavior	84.38%
Contingency to problem behavior	96.88%
Function-based proactive response	84.38%
Function-based reactive response	81.25%

The segregated results indicated that a majority of 84.38% and 96.88% of teacher respondents accurately identified an antecedent and contingency, respectively, to the problem behavior. Approximately 13% of teacher respondents identified the contingency to the problem behavior with greater accuracy than the antecedent. Of the teacher respondents who misidentified the antecedent or contingency to the problem behavior, 20% and 100%, respectively, left the component blank; the remaining 80% of teacher respondents who misidentified an antecedent to the problem behavior provided

information that did not describe an event that occurred in the child's environment prior to the target problem behavior.

A majority of 84.38% and 81.25% of teacher respondents formulated a function-based proactive and reactive response, respectively, to the problem behavior. Approximately 4% of teacher respondents identified the proactive response with greater accuracy than the reactive response. Of the 15.62% of teacher respondents who received a score of zero on the proactive response component, 40% left the component blank. And of the 18.75% of the teacher respondents who received a score of zero on the reactive response component, 50% left the component blank.

Follow-Up Data

Approximately five months following the last training session, 17 teacher respondents completed a graph, interpreted the data, and formulated function-based responses with information provided in a scenario. Examining the data from this written exercise allowed the researcher to assess skill maintenance and generalization in the following two areas: (a) data collection and interpretation, and (b) formulating function-based responses. Of the 17 graphs evaluated, 58.82% passed all five criteria, and 41.18% failed to circle the correct interpretation of the data trend. Therefore, the majority of teachers who completed the behavior summary form with information from the follow-up scenario graphed and accurately interpreted data that represented three data points in the baseline phase and three data points in the intervention phase. Table 6 delineates the percentage of teacher respondents who graphed data that passed each of the five criteria.

Table 6

Percentage of Teachers Who Graphed Data That Passed Each Criterion

Criterion	Percentage
Baseline data were present	100.00%
Intervention data were present	100.00%
Three data points in the baseline phase were present	100.00%
Three data points in the intervention phase were present	100.00%
The correct interpretation of the data trend was circled	58.82%

The segregated results indicated that 100% of teacher respondents accurately graphed baseline and intervention data; however, only 58.82% of teacher respondents circled the correct interpretation of the data trend. Of the 41.18% of teacher respondents who received a score of zero, 100% did not circle one of the four graph interpretation options.

The researcher also evaluated 17 teacher-identified antecedents, contingencies, and function-based responses from information provided in a scenario. A majority of 58.82% of teacher respondents passed all four of the component criteria. Therefore, the majority of teachers who completed the behavior summary form with information from the follow-up scenario identified an antecedent and contingency to a problem behavior

and then linked them to a proactive and reactive response to the problem behavior. Table 7 delineates the percentage of teacher respondents who passed each component criterion.

Table 7

Percentage of Teachers Who Accurately Identified Components of Function-Based Responses

Components of function-based responses	Percentage
Antecedent to problem behavior	100.00%
Contingency to problem behavior	94.12%
Function-based proactive response	58.82%
Function-based reactive response	94.12%

The segregated results indicated that 100% of teacher respondents who completed the behavior summary form with information from the follow-up scenario accurately identified an antecedent to the problem behavior, and 94.12% accurately identified a contingency to the problem behavior. Given the identification of the antecedent and contingency to the problem behavior, 58.82% of teacher respondents then linked the contingency to a proactive response, and 94.12% of teacher respondents then linked the contingency to a reactive response to the problem behavior.

Inter-Observer Agreement

A second rater scored 50% of scenarios and examples utilized in the trainings as well as 33% of written materials completed by teachers during training sessions. Inter-observer agreement (IOA) was computed by dividing agreements by agreements plus disagreements and multiplying the quotient by 100 (Kazdin, 1982). Prior to conducting the trainings, the researcher and a second training rater evaluated scenarios and examples utilized in the trainings and obtained 100% IOA. The researcher and second rater obtained 95% (range of 91-100) IOA on operational definition written exercises, 100% IOA on data collection and interpretation written exercises, and 95% (range of 89-100) IOA on function-based response written exercises.

Social Validity

Social validity refers to the extent to which the behaviors are deemed appropriate, intervention procedures acceptable and important behaviors are produced from the intervention (Cooper et al., 2007). Nineteen teacher participants who attended all three training sessions completed a training evaluation form. Information gathered from the training evaluation form allowed the researcher to obtain information on teachers' acceptance of the topics presented in the trainings. The training evaluation form was

created by the researcher and tailored to the training topics presented in this study. Scores were represented on a 4-point Likert type scale (i.e., strongly disagree to strongly agree). While the training evaluation form is not a validated instrument, it was modeled after other instruments (i.e., IRP-15) with acceptable psychometric properties (Martens, Witt, Elliott, & Darveaux, 1985). Questions on the training evaluation form were evaluated across teacher responses by computing percentage of rankings for individual questions. Results from the training evaluation form are outlined in Table 8.

Table 8

Percentage of Teacher Responses on Training Evaluation Form

Question	Percentage of teacher responses			
	Strongly Disagree	Disagree	Agree	Strongly Agree
	1	2	3	4
1. I found the information on <i>writing operational definitions</i> useful in addressing classroom behavior problems.	0%	0%	58%	42%
2. I found the information on <i>collecting data</i> useful in addressing classroom behavior problems.	0%	0%	53%	47%
3. I found the information on <i>designing proactive interventions</i> useful in addressing classroom behavior problems.	0%	5%	42%	53%
4. I found the information on <i>designing reactive interventions</i> useful in addressing classroom behavior problems.	0%	5%	47%	48%
5. The use of these techniques is appropriate for addressing classroom behavior problems before making a referral.	0%	0%	47%	53%
6. These techniques should be reserved for members of teacher support teams.	37%	37%	10%	16%
7. I will <i>write operational definitions</i> to address future problem behaviors exhibited by students in the classroom.	0%	0%	79%	21%
8. I will <i>collect data</i> to address future problem behaviors exhibited by students in the classroom.	0%	5%	69%	26%
9. I will use <i>proactive strategies</i> to address future problem behaviors exhibited by students in the classroom.	0%	0%	58%	42%
10. I will use <i>reactive strategies</i> to address future problem behaviors exhibited by students in the classroom.	0%	0%	63%	37%
11. <i>Writing operational definitions</i> is practical in the amount of time it requires.	0%	10%	58%	32%
12. <i>Collecting data</i> is practical in the amount of time it requires.	0%	21%	53%	26%
13. <i>Designing proactive interventions</i> is practical in the amount of time it requires.	0%	5%	63%	32%
14. <i>Designing reactive interventions</i> is practical in the amount of time it requires.	0%	5%	69%	26%

An overwhelming 95% to 100% of teacher respondents indicated that they found the information on writing operational definitions, collecting data, and designing proactive and reactive interventions useful in addressing classroom behavior problems. Further, they indicated they would write operational definitions, collect data, and design proactive and reactive interventions to address future problem behaviors exhibited by students in the classroom. In addition, 79% to 95% of teacher respondents indicated that they found writing operational definitions, collecting data, and designing proactive and reactive interventions practical in the amount of time each activity required. The acceptability of the training material was also assessed.

The training evaluation form was used to assess teachers' acceptance of (i.e., "Collecting data is practical in the amount of time it requires") on the presented topics. The training evaluation forms were placed in teachers' school boxes with instructions to complete the forms and return them to a school office with no identifying information. The training evaluation form was created by the researcher and tailored to the training topics presented in this study. Scores were represented on a 4-point Likert type scale (i.e., strongly disagree to strongly agree). While the training evaluation form was not a validated instrument, it was modeled after other instruments (i.e., IRP-15) with acceptable psychometric properties (Martens et al., 1985). Questions on the training evaluation form were evaluated across teacher responses by computing percentage of rankings for individual questions.

Discussion

Research Question 1

Operationally defining behaviors is a key procedural step in problem identification and the completion of subsequent assessment steps. When a problem behavior is inadequately identified, progression to further assessment steps is impeded or based on incomplete information. Teachers are important individuals in their students' environment, and parents and other school personnel rely on the information they provide about specific behaviors exhibited in the classroom. Therefore, teachers must adequately identify student behaviors to facilitate clear communication about behaviors that are often discussed in generalities (i.e., Johnny is a lazy child). In addition, operational definitions are a required component on individualized education plans (IEPs) for students receiving special educational services.

Teachers participating in the present study who attended one of the first training sessions on writing operational definitions defined two problem behaviors and two replacement behaviors following the presentation of training materials. Results indicated that a majority of 68.18% and 65.15% of teacher-written problem and replacement behavior definitions, respectively, were operationally defined. Behavioral definitions were stated positively more often than they were written using specific terms. Writing behavioral definitions with specificity that enables two people to agree on its occurrence can be more challenging than rephrasing the behavior to a do vs. don't description. The checklist format did not require teachers to write behavioral definitions and the general behavioral descriptions (i.e., is disorganized, stays off-task) provided did not require teachers to consider the specifics of students' problem behaviors. Therefore, writing

behavioral definitions that used specific terms was a skill that teachers had little experience employing, and they needed additional practice and feedback in order to implement accurately and consistently.

The training evaluation form completed by teacher participants completing all three training sessions indicated that 100% found the information useful in addressing classroom behavior problems. In addition, 100% of teacher respondents indicated that they would continue to write operational definitions to address future problem behaviors exhibited by students in the classroom, and 90% of teacher respondents indicated that writing operational definitions was practical in the amount of time it requires. These results indicated that teachers were not resistant to writing operational definitions. Skill deficiencies in writing operational definitions (i.e., using vague and not specific terms and/or negatively stated definitions) should be addressed through feedback during teacher consultation and review of behavioral goals on students' IEPs. Once problem identification occurs, the next step involves measuring its occurrence in specific or multiple settings across time.

Research Question 2

Data collection is an essential component in any assessment process, a required component on students' IEPs, and an activity that teachers conduct daily. However, most often teachers utilize academic grades and less often utilize measurements of behavioral performance in their classes. Therefore, introducing behavior measurement methods for teachers to employ such techniques was necessary.

Teacher participants in the present study who attended one of the second training sessions on data collection completed two graphs with data provided on two types of data collection forms (i.e., frequency count and school note). Above each graph was a section where teachers could interpret the data trend by circling a data description (i.e., behavior/performance improved during intervention, behavior/performance remained variable during intervention, behavior/performance deteriorated during intervention, or behavior/performance stabilized during intervention). Results from data gathered during the second training sessions indicated that 100% of teacher respondents accurately graphed the data. Only 60% of teacher respondents accurately interpreted the data with 85.71% of the 40% of teacher respondents who received a score of zero not circling one of the four graph interpretation options. Therefore, the graph interpretation results might indicate that 40% of teacher respondents are lacking graph interpretation skills. Despite the absence of responses on the data interpretation component, the majority of teacher respondents accurately completed the following five components: (a) baseline data were present, (b) intervention data were present, (c) three data points in the baseline phase were present, (d) three data points in the intervention phase were present, and (e) the correct interpretation of the data trend was circled. The accurate completion of the five criteria by the majority of teacher participants indicates that most teacher participants acquired data collection and interpretation skills.

Data gathered from the follow-up scenario, completed approximately five months following the last training session, yielded results similar to those obtained from exercises during the training sessions. All teacher respondents accurately graphed data that represented at least three data points during both a baseline and intervention phase.

Only 58.82% of teacher respondents accurately interpreted the data with 100% of the 41.18% of teacher respondents who received a score of zero not circling one of the four graph interpretation options.

The training evaluation form completed by teacher participants completing all three training sessions indicated that 100% found the information useful in addressing classroom behavior problems. In addition, 95% of teacher respondents indicated that they would continue to collect data to address future problem behaviors exhibited by students in the classroom, and 79.00% of teacher respondents indicated that collecting data was practical in the amount of time it requires. These results indicated that teachers were not resistant to collecting data to address problem behaviors. However, for teachers to collect and include measurements of behavioral performance, accountability procedures need to be present. Data on which behavioral performance is monitored should be required materials that can be reviewed by the director of special services, parents, and/or paraprofessionals. In addition, teacher support teams should include data measuring the occurrence of target problem behaviors in their files. Data depicting students' behavioral performance provides school personnel a method by which to make objective decisions concerning improvement or deterioration following intervention implementation. In addition, data can be useful when communicating with parents and making decisions about the necessity of further assessment. Once the current level of the target behavior has been measured, an intervention should be developed that focuses on decreasing the occurrence of the problem behavior and increasing the occurrence of a pro-social behavior.

Research Question 3

Proactive interventions involve the use of strategies that reduce the likelihood that problem behaviors will occur in the future. Students receiving special education services should have operationally defined replacement behaviors identified on their IEPs as well as a behavioral intervention plan (BIP) outlining positive, proactive interventions to teach and reinforce the replacement behaviors. No longer is utilizing only reactive, punitive measures to address student behaviors that are problematic in the class setting acceptable. When implementing proactive strategies, these strategies must be functionally linked to the problem behavior in order for the intervention to effectively address the problem behavior.

Teacher participants in the present study who attended one of the third training sessions completed one behavior summary form with information from a scenario. The teacher respondents identified an antecedent and contingency to the problem behavior and then linked them to a proactive and reactive response to the problem behavior. The proactive response identified a teacher response following occurrences of the replacement behavior (i.e., pro-social behavior). The reactive response identified a teacher response following occurrences of the problem behavior. Results indicated that a majority of 84.38% and 96.88% of teacher respondents identified an antecedent and contingency, respectively, to the problem behavior. In addition, a majority of 84.38% and 81.25% of teacher respondents linked the contingency to a proactive and reactive response, respectively, to the problem behavior. These results indicated that the majority of teacher respondents developed skills in writing function-based proactive and reactive responses

to problem behaviors; however, they only linked the contingency to the function-based responses. Therefore, teachers might need additional training in identifying and implementing antecedent control procedures that reduce the likelihood of the occurrence of the problem behavior.

Data gathered from the follow-up scenario completed approximately five months following the last training session indicated that a majority of 100% and 94.12% of teacher respondents identified an antecedent and contingency, respectively, to the problem behavior. In addition, a majority of 58.82% and 94.12% of teacher respondents identified a function-based proactive and reactive response, respectively, to the problem behavior. These results indicated that teacher respondents were able to accurately identify a function-based strategy to implement following the occurrence of the problem behavior (i.e., reactive) more often than following the occurrence of the replacement behavior (i.e., proactive). These results suggest that teachers might need additional support in addressing problem behaviors by reinforcing the replacement behavior, thereby decreasing the likelihood that the problem behavior occurs. In addition, support in consistently implementing identified strategies with integrity is likely necessary to ensure or enhance the effectiveness of teacher-identified interventions.

The training evaluation form completed by teacher participants completing all three training sessions indicated that 95% percent found the information useful in addressing classroom behavior problems. In addition, 100% of teacher respondents indicated that they would continue to use proactive and reactive strategies to address future problem behaviors exhibited by students in the classroom, and 95% of teacher respondents indicated that designing proactive and reactive interventions was practical in the amount of time it requires. These results indicated that teachers were not resistant to designing proactive and reactive interventions to address problem behaviors.

Research Question 4

Skill maintenance is an important factor in the generalization of training effects overtime. For this reason, the current study investigated maintenance of skills learned in training with a five-month follow-up exercise. Results demonstrated the majority of teachers (58.82%) passed all five criteria presented after five months, indicating generalization of skills was successful for most participants. More specifically, although correct interpretation of the trend represented by FBA data was not identified by some participants, all respondents accurately graphed baseline and intervention data provided. Furthermore, the majority of teachers were able to link the antecedent and contingency to the problem behavior presented in the follow-up exercise; a key component of the FBA process taught in a training five months earlier.

Limitations

Results of this study should be considered while keeping the following limitations in mind. First, because this study was conducted in a rural southeastern school district caution should be taken when looking at the generalization of these results to other regions of the United States and with teachers whose demographics differ from those of this study.

Secondly, because the three training sessions were conducted across different days, teacher attendance at all three trainings could not be assured. Therefore, participant characteristics describe teacher participants who were present at the majority (two or more) of the trainings. While attendance at all three training sessions was mandatory for special education teachers and there were additional opportunities for teachers to attend a makeup training, attrition still presented an issue. The majority of attrition occurred among teachers who taught at the junior high school and high school levels. This might be explained by the positive association found between teacher attendance and administrator support for the trainings.

Finally, writing exercises collected during the training exercises were provided to participants without requiring teachers' identifying information. This contributed to the third limitation of the study, because conducting a comparison of responses between teachers of different grade levels as well as between general education and special education teachers was not possible.

Future Research

Changing policies and adding duties to teachers' existing job requirements can be met with resistance and lack of adherence by teachers. Therefore, teachers should be provided incentives and support when they are required to make changes to their teaching procedures and complete additional paper work. While adhering to education policy such as IDEA is required, teachers need support as they attempt to implement new strategies. It is recommended that educators be given several opportunities to be trained and should continue to demonstrate the use and effectiveness of the recommended techniques. One method to extend training to all school personnel is to first train a core group of school staff. Then schools could utilize these individuals to provide ongoing training and support to additional personnel. This pyramidal training style is cost-effective and efficient and would prove extremely beneficial for rural school districts that have limited funding for district-wide professional development programming.

Teacher trainings are often conducted in a limited amount of time. Training on conducting an FBA and developing and implementing a behavior plan requires a substantial amount of time. The six hours allotted to this training series did not provide an adequate amount of time to ensure skill maintenance and generalization for the majority of teacher participants. Therefore, school districts, rural and urban, interested in presenting information on the subject matter need to consider the amount of time needed to teach these skills in an effort to gain maintenance and generalization of effects.

Although one of the goals of this investigation was to provide techniques that could be employed with ease, findings suggest teachers believed data were difficult to interpret. A high percentage (40%) of teacher respondents left the component related to the interpretation of the level, trend, and variability of the data blank. This finding suggests that interpreting data may be arduous for teachers and that additional research on teacher training methods in data interpretation should be conducted.

Finally, while the procedures of this study did not include training teachers in all components of a comprehensive FBA, three essential components of a FBA were targeted and teachers were provided with a set of techniques to effectively address problem behaviors. However, future research might consider a comparison study that

investigates the effectiveness of a comprehensive FBA training to the brief FBA utilized in this study.

References

- Asmus, J. M., Vollmer, T. R., & Borrero, J. C. (2002). Functional behavioral assessment: A school based model. *Education and Treatment of Children, 25*(1), 67-90.
- Barlow, D. H., Hayes, S. C., & Nelson, R. O. (1984). *The scientist practitioner: Research and accountability in clinical and educational settings*. New York: Pergamon Press.
- Cooper, J.O., Heron, T.E., & Heward, W.L. (2007). *Applied Behavior Analysis* (2nd ed.). Upper Saddle River, NJ: Pearson Education, Inc.
- Dittmer-McMahon, K. I. (2001). An evaluation of functional behavior assessments as implemented by teacher support teams after training. (Doctoral dissertation, Mississippi State University, 2001). *Dissertation Abstracts International*. (UMI No. 3015900)
- Gehrke, R. S., & McCoy, M. K (2007). Considering the context: Differences between the environments of beginning special educators who stay and those who leave. *Rural Special Education Quarterly, 26*(3), 32-40
- Henry, M. (1986). Strengths and needs of first-year teachers. *Teacher Educator, 2*, 10-18.
- Individuals with Disabilities Education Act (1997), 20 U.S.C. § 1401-1485.
- Kazdin, A. E. (1982). *Single-case research designs: Methods for clinical and applied settings*. New York: Oxford University Press.
- Lalli, J. S., Browder, D. M., Mace, F. C., & Brown, D. K. (1993). Teacher use of descriptive analysis data to implement interventions to decrease students' problem behaviors. *Journal of Applied Behavior Analysis, 26*(2), 227-238.
- Lennox, D. B., & Miltenberger, R. G. (1989). Conducting a functional assessment of problem behavior in applied settings. *Journal of the Association for Persons with Severe Handicaps, 14*(4), 304-311.
- Lemke, J. C. (2010). Attracting and retaining special educators in rural and small schools: Issues and solutions. *Rural Special Education Quarterly, 29*(1).
- Marrs, L. (1983). *A bandwagon without music: Preparing rural special educators*. Bellingham, WA: Western Washington University.
- Martens, B. K., Witt, J. C., Elliott, S. N., & Darveaux, D. X. (1985). Teacher judgments concerning the acceptability of school-based interventions. *Professional Psychology: Research & Practice, 16*(2), 191-198.
- Moore, J. W., Edwards, R. P., Sterling-Turner, H. E., Riley, J., Dubard, M., & McGeorge, A. (2002). Teacher acquisition of functional analysis methodology. *Journal of Applied Behavior Analysis, 35*(1), 73-77.
- Mueller, M. M., Edwards, R. P., & Trahan, D. (2003). Translating multiple assessment techniques into an intervention selection model for classrooms. *Journal of Applied Behavior Analysis, 36*(4), 563-573.
- Muse, L., & Thomas, G. (1992). Elementary education. In M. W. Galbraith, (Ed.), *Education in the rural American community*, 45-72. Malabar, FL: Krieger.
- O'Neill, R. E., Horner, R. H., Albin, R. W., Sprague, J. R., Storey, K., & Newton, J. S.

- (1997). *Functional assessment and program development for problem behavior: A practical handbook*. New York: Brooks/Cole Publishing.
- Watson, T. S., Ray, K. P., Turner, H. S., & Logan, P. (1999). Teacher implemented functional analysis and treatment: A method for linking assessment to intervention. *School Psychology Review*, 28(2), 292-302.
- Watson, T. S., & Robinson, S. L. (1996). Direct behavioral consultation: An alternative to traditional behavioral consultation. *School Psychology Quarterly*, 11(3), 267-278.
- Watson, T. S., & Steege, M. W. (2003). *Conducting school-based functional behavioral assessments: A practitioner's guide*. New York: Guilford Press.