Behavior intervention plan implementation fidelity

Jillian Nelson

Iowa State University

Follow this and additional works at: https://lib.dr.iastate.edu/etd

Recommended Citation
Nelson, Jillian, "Behavior intervention plan implementation fidelity" (2020). Graduate Theses and Dissertations. 18194.
https://lib.dr.iastate.edu/etd/18194

This Thesis is brought to you for free and open access by the Iowa State University Capstones, Theses and Dissertations at Iowa State University Digital Repository. It has been accepted for inclusion in Graduate Theses and Dissertations by an authorized administrator of Iowa State University Digital Repository. For more information, please contact digirep@iastate.edu.
Behavior intervention plan implementation fidelity

by

Jillian Nelson

A thesis submitted to the graduate faculty
in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE

Major: Education (Special Education)

Program of Study Committee:
Angela Prince, Major Professor
Kere Hughes-Belding
Linda Lind

The student author, whose presentation of the scholarship herein was approved by the program of study committee, is solely responsible for the content of this thesis. The Graduate College will ensure this thesis is globally accessible and will not permit alterations after a degree is conferred.

Iowa State University
Ames, Iowa
2020

Copyright © Jillian Nelson, 2020. All rights reserved.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>ABSTRACT</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHAPTER 1. INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>Definition of Terms</td>
<td>3</td>
</tr>
<tr>
<td>Purpose Statement</td>
<td>4</td>
</tr>
<tr>
<td>CHAPTER 2. REVIEW OF THE LITERATURE</td>
<td>5</td>
</tr>
<tr>
<td>Functional Behavioral Assessments and Behavior Intervention Plans</td>
<td>5</td>
</tr>
<tr>
<td>Behavior Intervention Plan Implementation</td>
<td>6</td>
</tr>
<tr>
<td>Barriers to Implementation</td>
<td>7</td>
</tr>
<tr>
<td>Promoting Implementation Fidelity</td>
<td>8</td>
</tr>
<tr>
<td>Classwide Behavior Plans</td>
<td>8</td>
</tr>
<tr>
<td>Applied Behavior Analysis</td>
<td>9</td>
</tr>
<tr>
<td>Collaborative Consultation</td>
<td>9</td>
</tr>
<tr>
<td>Teacher Self-Monitoring</td>
<td>10</td>
</tr>
<tr>
<td>CHAPTER 3. METHOD</td>
<td>11</td>
</tr>
<tr>
<td>Research Questions</td>
<td>11</td>
</tr>
<tr>
<td>Setting</td>
<td>12</td>
</tr>
<tr>
<td>Participants</td>
<td>12</td>
</tr>
<tr>
<td>Students</td>
<td>12</td>
</tr>
<tr>
<td>Research Design</td>
<td>14</td>
</tr>
<tr>
<td>Survey</td>
<td>14</td>
</tr>
<tr>
<td>Social Validity</td>
<td>17</td>
</tr>
<tr>
<td>CHAPTER 4. RESULTS</td>
<td>18</td>
</tr>
<tr>
<td>Research question 1: Do adults supporting students with behavior plans know what is in the students’ BIPs?</td>
<td>18</td>
</tr>
<tr>
<td>Research question 2: Does BIP implementation fidelity increase when the classroom teacher and paraprofessionals use a collaborative approach?</td>
<td>20</td>
</tr>
<tr>
<td>Paraprofessional Outcomes</td>
<td>21</td>
</tr>
<tr>
<td>Research question 3: Does a relationship exist between structured BIP fidelity and student behavior?</td>
<td>24</td>
</tr>
<tr>
<td>Student Behavior Outcomes</td>
<td>24</td>
</tr>
<tr>
<td>Research question 4: How does increased BIP fidelity impact student access to classroom instruction?</td>
<td>29</td>
</tr>
<tr>
<td>Student Outcomes: Time Spent Out of Instruction</td>
<td>29</td>
</tr>
<tr>
<td>Social Validity</td>
<td>33</td>
</tr>
<tr>
<td>Summary of Results</td>
<td>33</td>
</tr>
</tbody>
</table>
CHAPTER 5. DISCUSSION..................................................................................................................35
  Summary of Findings ......................................................................................................................38
  Recommendations .........................................................................................................................39
  Limitations of the Study ..................................................................................................................40
  Future Research ............................................................................................................................40
  Conclusion ........................................................................................................................................41

REFERENCES ....................................................................................................................................42

APPENDIX. IRB APPROVAL ............................................................................................................46
Students with disabilities, specifically students with behaviors that interfere with their learning or the learning with others, often miss out on classroom instruction. Schools have developed functional behavioral assessments and behavioral intervention plans (BIPs) for individual students in order to create a desired behavior change. Studies have found that these behavioral intervention plans are often not implemented with fidelity and result in poor outcomes for these students. The purpose of this study was to examine how well BIPs are being implemented with fidelity when a collaborative approach is implemented and how, when followed with fidelity, students are positively impacted. I worked with paraprofessionals in the classroom in a collaborative way in order to increase BIP fidelity. This study specifically looked at adult knowledge of student BIPs, adult BIP fidelity data, student behavioral achievement data, and time spent out of the classroom due to problem behaviors. Results indicated that when adult BIP implementation fidelity increased, there were positive outcomes for students. Limitations and future research are provided.
CHAPTER 1. INTRODUCTION

Students with disabilities, especially those with behavior disorders (BD), exhibit behaviors that interfere with their own learning and the learning of others in the classroom. These behaviors may include simple behaviors (e.g., calling out-of-turn or out-of-seat behavior), or complex ones (e.g., physical aggression or self-injurious behaviors). Before 1997, consequences to problem behavior included suspensions, expulsions, or removals from the classroom (Walker & Barry, 2017). The Individuals with Disabilities Education Act (IDEA) provides students who qualify for special education services with individualized education programs (IEPs) and access to a free and appropriate education (FAPE).

The IDEA also provided disciplinary provisions for students who received special education and related services. With the reauthorization of IDEA in 1997, schools were required to address challenging behaviors using positive behavior supports, including FBAs and BIPs. An FBA uses data collection and analysis to hypothesize a function, or the reason why, a student exhibits a problem behavior. FBA data is used to create an individualized BIP, with the focus of decreasing problem behavior and increasing socially appropriate behavior using preventative, teaching, and response strategies (Iowa Area Education Agencies, 2018). Implementing this plan as intended is known as implementation fidelity or treatment fidelity.

Implementation fidelity is crucial, because it helps those working with the student to determine if unsuccessful outcomes are due to ineffective interventions or due to the failure to implement the intervention as intended (Swanson, et al., 2011) and allows greater access to the general education classroom to receive core instruction. Previous research has shown that many educators struggle to implement interventions as planned (Cochrane & Laux, 2007; Swanson, et al., 2011; Cook et al., 2012; Blood & Neel, 2007). This is concerning, because low levels of
implementation are correlated with poorer student outcomes (Collier-Meek, et al., 2017).

According to Harn, et al. (2013), implementing the plan with a 90% or higher fidelity helped
ensure confidence that the intervention was implemented as intended when looking overall at
BIP implementation. When BIPs are not implemented with fidelity, the result includes less of
desired behavioral change (Walker & Barry, 2017).

Low implementation fidelity occurs due to various barriers. Teachers who implemented
BIPs reported struggling with barriers such as managing student behavior, balancing competing
responsibilities, and meeting the needs of other students (Collier-Meek, et al., 2017). For
students to make progress, fidelity is important to ensure adults who are working with students
are implementing BIPs as written. When high fidelity is met, data analysis can help with
decision-making regarding changes to BIP implementation. This results in positive outcomes for
both students and teachers.

There are various ways that schools have worked to address BIP implementation
fidelity, including frameworks, strategies, and mentoring programs to help teachers self-monitor
their progress. Direct or indirect methods have been used. Examples of direct methods include
observations and recording, and examples of indirect methods include self-reports, rating scales,
and interviews (Cochrane & Laux, 2007). One example of a support program for teachers was a
peer monitor. Teachers chose a peer who provided observations and feedback on a weekly basis.
This performance feedback included areas of strength and improvement for implementation
(Gable, et al., 2001). Hagermoser Sanetti, et al. (2015) found that collaborative consultation and
performance feedback benefited student outcomes by increasing academic engagement and
decreasing disruptive behavior.
Other studies have examined self-monitoring to assist with intervention implementation (Fallon, et al., 2017; Mouzakitis, et al., 2015; Pinkelman & Horner, 2017).

Students with challenging behaviors need to be in their least restrictive environment (LRE), and this often requires the use of an FBA and BIP. When the FBA is used to create the student’s BIP, it is important that this plan is implemented with fidelity. The goal is for students with BD to be in the general education classroom as much as possible so they are able to receive core instruction. According to the National Center for Education Statistics (2017), only 48.5% of students identified with an emotional disturbance are in the general classroom in a regular school for 80% or more of the time. Sometimes students are placed in self-contained programs due to behaviors and the difficulty of implementing BIPs with fidelity. This is difficult for teachers, due to barriers of managing classroom behaviors, BIP complexity, and competing responsibilities. Bettini, et al. (2019) found through interviewing four EBD teachers that they shared concerns about extra responsibilities and limited planning time. These teachers also shared concern about limited time to train and support paraprofessionals. When schools are proactive about addressing these barriers, supports can be put into place to ensure fidelity and help ensure students are receiving core instruction in the general education setting.

**Definition of Terms**

Due to the variance in definitions for behavior terminology, the following terms have been defined. For the purposes of this paper, an *intervention* is a specific program or set of steps or strategies used to help a specific area of need. *Implementation fidelity* refers to putting the plan that was created for the student into action as intended or implementing the plan as intended. *Functional behavioral assessment* (FBA) uses systematic and behavioral analysis to hypothesize the reason why a student shows a problem behavior.
Behavioral intervention plan (BIP) is an individualized plan created for a student that focuses on preventative, teaching, and consequence strategies to decrease problem behavior and increase socially acceptable behavior.

**Purpose Statement**

The purpose of this study was two-fold. The first purpose was to examine the impact of a collaborative approach on BIP implementation fidelity in one middle school self-contained classroom. The second purpose was contingent upon the first: to examine the impact on students when BIPs were implemented with fidelity. There are often barriers that prevent teachers from implementing a BIP as intended. A system of supports needs to be in place to ensure high fidelity is occurring. When this is done, it is easier to proactively address student behaviors and to know if the intervention is not working due to lack of fidelity or due to a mismatched intervention (Hirsch, et al., 2017). If it is the latter, the IEP team can modify the intervention or try a new intervention to meet student needs with teaching appropriate replacement behavior. The specific research questions for this study are:

1) Do adults supporting students with BIPs know what is in the BIP?
2) Does BIP implementation fidelity increase when the classroom teacher and paraprofessionals use a collaborative approach?
3) Does a relationship exist between structured BIP fidelity and student behavior?
4) How does increased BIP fidelity impact student access to classroom instruction?
CHAPTER 2. REVIEW OF THE LITERATURE

Students with disabilities, especially those who receive special education and related services as students with BD, often demonstrate behaviors that interfere with their own learning and the learning of others. According to Allday, et al. (2011), “teachers have consistently reported feeling under-educated and unprepared to manage challenging behaviors, often requesting that students who exhibit these behaviors be placed in self-contained classrooms” (p. 140). According to the National Center for Education Statistics (2017), almost 19% of students who receive special education services as students with emotional disturbance are in the general education classroom less than 40% of the time. Many educators struggle to implement interventions as planned. This is concerning, because low levels of implementation correlated with poorer student outcomes (Collier-Meek, et al., 2017). There are many barriers that interfere with high implementation fidelity in schools. These barriers can be systemic due to school-wide system supports or classroom-specific due to managing other students and balancing responsibilities. It is important that schools acknowledge and address barriers to implementation fidelity. Knowledge of these barriers should be used to help with decision making to create a process or plan that helps to promote high implementation fidelity for students with BIPs (Cochrane & Laux, 2007). Schools are responsible to provide students with BD the special education and related services to make progress toward their IEP goals. In a review of over five hundred studies related to various prevention and intervention programs, Hirsch, et al. (2017) reported these programs were two to three times more effective when implemented with fidelity.

Functional Behavioral Assessments and Behavior Intervention Plans

Before 1997, consequences to problem behaviors in schools often included suspensions, expulsions, or classroom removals (Walker & Barry, 2017). IDEA 1997 included disciplinary
provisions for students who receive special education and related services beginning. Since the IDEA 2004 reauthorization, IEP teams now develop FBAs and BIPs to address challenging behavior (Walker & Barry, 2017). FBA uses systematic behavioral analysis to hypothesize a function, or reason why, a student exhibits a problem behavior (e.g., to escape, avoid, or gain access to something). Data gathered from the FBA is used to create an individualized BIP. The focus of the BIP is to decrease problem behavior and increase desired behavior by utilizing evidence-based behavioral interventions to use direct instruction to replace problem behavior with an acceptable behavior that meets the same function (Walker & Barry, 2017). To be effective and efficient, BIPs should include prevention, teaching, and consequence strategies that directly meet the function that was determined by the FBA (Strickland-Cohen & Horner, 2015).

**Behavior Intervention Plan Implementation**

BIP implementation fidelity is problematic in schools. To know if a plan is effective or not, it must be implemented with fidelity. According to Harn, et al. (2013), high implementation fidelity is defined as 90% or higher confidence that the intervention was implemented as intended. Hagermoser Sanetti, et al. (2015) defined fidelity at 80% or higher. Cochrane and Laux (2007) surveyed school psychologists’ perceptions of implementation fidelity for BIPs. Nearly 11% of participants stated they always measured implementation fidelity when they developed, monitored, and evaluated interventions; 50% said they sometimes measured implementation fidelity; and 39% said they never measured implementation fidelity. These findings supported their hypothesis that implementation fidelity was not often occurring (Cochrane & Lane, 2007).

Research suggests that lower levels of fidelity are associated with poorer student outcomes (Hagermoser Sanetti, et al., 2015; Cook, et al., 2012). In the absence of systematic consultative support, most teachers do not implement classroom-based interventions with fidelity for more than ten days (Hagermoser Sanetti, et al., 2015). This is concerning because students
need to be in the classroom receiving instruction. When BIPs are not being followed with fidelity, students may have to leave the classroom due to behaviors. Cook, et al. (2012) evaluated the relationship between evidence-based BIPs, the fidelity with which the BIPs were implemented, and student outcomes. They surveyed 139 Positive Environments Network of Trainers (PENTs) about the implementation of BIPs over different time and found that implementation fidelity was significantly related to whether or not student behavior improved. They also found that evidence-based BIPs were likely to be implemented with higher levels of reported fidelity than BIPs missing key evidence-based components.

Blood and Neel (2007) studied how the FBA process was used in creating BIPs for students with emotional/behavior disorders (EBD) in one school district. They did a file review of students with EBD in self-contained classrooms and interviewed teachers about how they utilized FBAs and BIPs. A lack of knowledge about the process was found. None of the teachers were able to identify the behavioral goal or report what was in the BIP when asked about the plan for individual students. This is particularly concerning, because fidelity of implementation is considerably low if teachers cannot state what is in the BIP.

**Barriers to Implementation**

Individuals are more likely to remain consistent with intervention implementation when they identify and proactively address potential barriers (Collier-Meek, et al., 2018). Teachers who implemented BIPs reported struggling with barriers that were related to their own role, such as managing student behavior, balancing competing responsibilities, and addressing the needs of other students. Other potential barriers to high implementation fidelity included intervention complexity, time, materials, teacher preparation, teacher stress and burnout, teacher support, intervention knowledge, and school climate (Collier-Meek, et al., 2017).
These barriers, as well as, philosophical differences about discipline and behavior management, can be difficult for schools to address (Killu, et al., 2006).

Accepting and agreeing with the BIP can be hard for some teams working with challenging behaviors. Often there are differences in behavioral philosophy and discipline. One member of the team may feel strongly about a strategy based on perception, while another member may oppose the strategy based on their perception of its effectiveness. Therefore it can be difficult for a team to agree on the BIP and implement it with fidelity because of these personal beliefs. A BIP is more likely to be implemented as planned if the school personnel like it after considering the complexity of the intervention and the potential effectiveness (Gable, et al., 2001). It is important that schools also remember that teachers are often not provided with much, if any, pre-service training that enables them to implement BIPs in their classrooms (Pinkelman & Horner, 2017). When schools are aware of these potential barriers and are proactive in addressing them, high implementation fidelity can be met.

**Promoting Implementation Fidelity**

Even though there are barriers to implementation fidelity, there are multiple supports that schools can utilize to help school personnel implement BIPs as intended. While there is a lack of research in the area of BIP implementation fidelity, some studies strategies have shown promising results using classwide-behavior plans, applied behavior analysis (ABA), collaborative consultation, and teacher self-monitoring.

**Classwide Behavior Plans.**

Fallon, et al. (2017) studied three teachers who implemented specific strategies relevant to behavior management for the entire class. Their study included a self-monitoring phase and a self-monitoring + feedback phase. When a teacher’s implementation was below 80% for three days, the self-monitoring + feedback phase was added. Using the combination of self-monitoring
and performance feedback, all three teachers implemented more components of the classwide plan than during the baseline or self-monitoring phases alone.

**Applied Behavior Analysis.**

Collier-Meek, et al. (2017) studied an ABA approach to promoting BIP implementation fidelity. ABA is an evidence-based intervention of socially significant behavior that focuses on environmental variables that explain why the behavior occurs and what to do change to alter and change the behavior (Collier-Meek, et al., 2017). These principles have resulted in the creation of intervention procedures to enhance, reduce, and maintain behaviors. In this study, a teacher was more likely to implement the plan when they had visual reminders to do so and praise from colleagues that was contingent on high levels of fidelity. This approach was successful using the ABA principles of a target behavior, a stimulus prompt, and positive reinforcement.

**Collaborative Consultation**

Multiple studies examined the positive effects of collaborative consultation between teachers to promote BIP implementation fidelity (Gable, et al., 2001, Hagermoser Sanetti, et al., 2014; and Hagermoser Sanetti, et al., 2015). According to Hagermoser Sanetti, et al. (2015), performance feedback was an evidence-based intervention when promoting implementation fidelity. They tested this theory by adding in a consultation piece to increase fidelity. This study included four teacher participants. A consultant worked with each teacher to develop a behavior support plan for a student including reaching agreement on strategies and answering any questions. A standard consultation phase followed where there was no formal script and the consultant met with the teacher briefly for 5-10 minutes once a week to answer questions. When fidelity declined below 80% for two consecutive days, the teachers moved into the implementation-planning phase. The consultant met with the teacher to go over the behavior support plan, review each step, and consider revisions. Three of the four teachers had an
increase in their implementation after the implementation-planning phase, while one of the four teachers remained constant. Ultimately, the collaborative approach demonstrated greater BIP implementation fidelity.

**Teacher Self-Monitoring.**

Self-monitoring is another method that has been studied to promote BIP implementation fidelity. Pinkelman and Horner (2017) created a research design that looked at three student-staff dyads utilizing self-monitoring to increase implementation fidelity. They measured self-monitoring fidelity, collecting problem behavior data, entering data into a system, and reviewing the data weekly. Following the introduction to treatment, there was an increase in fidelity that remained high and resulted in improved student behavior (Pinkelman & Horner, 2017).

Mouzakitis, et al. (2015) studied the impact of self-monitoring on the BIP implementation fidelity among four teachers. Their study was implemented in an inclusion program for students with autism spectrum disorders in a public elementary school. Four teachers were chosen and trained to use self-monitoring to improve implementation of the BIPs for students in their classrooms. This study included a self-monitoring phase and a self-monitoring plus performance feedback phase. One teacher was able to show maintenance at criterion levels for fidelity within the self-monitoring phase. The authors found that when performance feedback was added to self-monitoring, fidelity improved to criterion desired and was maintained by the other three teachers. When performance feedback was removed, two of the three teachers maintained the desired fidelity (Mouzakitis, et al., 2015).

Other strategies to promote intervention implementation include: teacher intervention choice, video modeling, systematic check-ins, support-by-request, classroom environment alterations, and teacher training on FBAs and BIPs (Collier-Meek, et al., 2017; Hagermoser Sanetti, et al., 2015; Opartkiattikul, et al., 2016).
CHAPTER 3. METHOD

I was the special education teacher of the self-contained program for students with BD in this study. In this program, some students are in the room full-time, and others go out to general education classes. At the time of this study, I was in my fourth year teaching students with BD in grades 5-8. I previously worked in a smaller rural district working with students with BD in grades K-6. Prior to the start of the study, I completed human subjects training and acquired Institutional Review Board (IRB) approval through Iowa State University. A copy of the IRB approval letter is available in Appendix A.

This study was created using a single-case research design to examine the effects of the BIP implementation fidelity intervention on two dependent variables: behavioral progress toward IEP goals and amount spent outside of class due to problem behaviors. The study utilized an ABA research design that included a baseline phase, intervention phase, and a posttreatment follow-up (Engel & Schutt, 2008). Specific methodology is discussed below. The purpose of this study was to examine the impact of a collaborative approach on BIP implementation fidelity and to examine the impact on students when BIPs were implemented with fidelity.

Research Questions

Based on existing literature, I developed the following four research questions:

1) Do adults supporting students with BIPs know what is in the BIP?
2) Does BIP implementation fidelity increase when the classroom teacher and paraprofessionals use a collaborative approach?
3) Does a relationship exist between structured BIP fidelity and student behavior?
4) How does increased BIP fidelity impact student access to classroom instruction?
Setting

This study took place in a self-contained special education program for students with BD in a middle school that serves grades 5-8 in central Iowa. At the time of the study, over 1,000 students were enrolled in the middle school. Of these, nearly two-thirds were eligible for free or reduced lunch (Iowa Department of Education, 2019). This special education program had one teacher, two paraprofessionals, and seven students who received the majority of their education in this setting. The program was set up in two adjoining classrooms, and the students were split between the rooms. A behavior interventionist was hired to support the students with BD at this school.

Participants

The participants in this study were two paraprofessionals. One paraprofessional worked primarily with two fifth grade students, and the other worked primarily with three seventh grade students. All names of participants and students in this study are pseudonyms. Megan was a white female in her late 20’s who primarily worked with the seventh-grade students. She was a second-year paraprofessional in this self-contained program. Theresa was a white female in her early 50’s who primarily worked with the fifth-grade students. She was a third-year paraprofessional with two years of previous experience in 1:1 support for a student with BD in general education classrooms.

Students

David was a fifth grade student of white descent who qualified for free and reduced lunch. He received special education services in the areas of behavior, reading, and math. In the area of behavior, David received specially designed instruction for appropriately interacting with peers and adults, communicating his needs appropriately, and utilizing coping skills when he felt upset or anxious. Progress toward this IEP goal was monitored using a social skills rubric. David
also had IEP goals in reading and math. His academic deficits created frustration for David during his day. He also received related services in the forms of school-based counseling and individualized community-based therapy from an agency that provided their services at the middle school. During this study, David did not participate in general education classes.

Grant was a fifth grade student of white descent who had a medical diagnosis of ADHD. He received special education services in the area of behavior for compliance, appropriately interacting with peers, using appropriate language, and being safe. Progress toward this IEP goal was monitored using a social skills rubric. Grant was on grade level for all academic areas but did not participate in general education classes during this study.

Carter was a seventh grade student of white descent who qualified for free and reduced lunch. He received special education services in the area of behavior for following directions and using appropriate language. Progress toward this IEP goal was monitored using a point sheet based on his percentage of following directions and using respectful language. To address Carter’s mental health needs, he received the related services of school-based counseling and mentoring. This was Carter’s third year receiving services in a self-contained classroom. During this study, he was temporarily integrated into two general education classes; however, shortly thereafter, there was an increase in problem behaviors. The IEP team determined this setting was no longer the least restrictive environment for Carter, and a placement change was made before the study was completed.

Taylor was a seventh grade student of white descent and who qualified for free and reduced lunch. He received special education services in the areas of math and behavior. In the area of behavior, Taylor received specially designed instruction for positively interacting with peers and adults when upset, working independently, and using problem-solving strategies to
resolve conflict. Progress toward this IEP goal was monitored using a social skills rubric. During this study, Taylor participated in three general education classes per day.

Noah was a seventh grade multi-racial student who qualified for free and reduced lunch. He received special education services in the area of math, reading, and behavior. In the area of behavior, Noah received specially designed instruction for compliance and for respectfully interacting with adults and peers. Progress toward this IEP goal was monitored using a point sheet. A percentage was calculated for Noah’s use of following directions and interacting respectfully with adults and peers. During this study, Noah participated in three general education classes per day.

**Research Design**

**Survey**

To answer research question one (RQ 1), I created an eight-question survey that was administered using Qualtrics. The purpose of RQ 1 was to allow paraprofessionals to demonstrate their knowledge of FBAs and BIPs in general, rather than their student-specific knowledge. Survey questions are provided in Table 1. The first five questions were open-ended and phrased to promote a anonymity within their responses. Question six gave a yes or no option to answer. Questions seven and eight used a Likert-type scale to measure self-perceptions of BIP knowledge and confidence of BIP implementation. Possible responses to question seven included very well, most of the time, some of the time, and hardly ever. Possible responses to question eight included extremely comfortable, somewhat comfortable, neither comfortable nor uncomfortable, somewhat uncomfortable, and extremely uncomfortable. The online distribution allowed for accessibility and anonymity. The survey was completed by both paraprofessionals.
Table 1.

**Survey completed by paraprofessionals**

<table>
<thead>
<tr>
<th>Survey Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is the purpose of an FBA?</td>
</tr>
<tr>
<td>What is the purpose of a BIP?</td>
</tr>
<tr>
<td>Can you name at least two ways to prevent behaviors for a student you work with?</td>
</tr>
<tr>
<td>Can you name at least two ways to respond to a student’s behavior you work with?</td>
</tr>
<tr>
<td>Do you know what the replacement or alternative behavior is for a student you work with?</td>
</tr>
<tr>
<td>Do you have a checklist or tool that you use or follow to remind you of what is in the students plan?</td>
</tr>
<tr>
<td>How well do you feel like you follow each student’s BIP?</td>
</tr>
<tr>
<td>How comfortable do you feel working with challenging behaviors?</td>
</tr>
</tbody>
</table>

To answer research questions two and three (RQ 2 & RQ 3), I implemented a single-case research design to examine the effects of the BIP fidelity of implementation intervention using a collaborative approach on two dependent variables: behavioral progress toward IEP goals and amount of time spent removed from instruction due to problem behaviors. The study utilized an ABA research design that included a baseline phase, intervention phase, and a posttreatment follow-up (Engel & Schutt, 2008). This posttreatment follow-up helped identify if there is an effect from the intervention after a break. I was able to identify if there was a relationship between the intervention of BIP fidelity and progress made behaviorally and time spent out of the classroom by use of this design. ABA can also help to provide support for the effectiveness of a specific intervention when replicated (Engel & Schutt, 2008).

The baseline phase lasted one week. During baseline, I observed at least one of the paraprofessionals for ten minutes each day, documented time students removed of instruction each day, and progress monitored student behavior weekly. These observations utilized the fidelity checklist for observation (see Table 2). After one week of baseline, the four-week intervention phase was implemented. This intervention utilized a collaborative approach between
the special education teacher and two paraprofessionals. During the intervention, I provided a checklist of each student’s BIP for paraprofessionals to use for self-monitoring. I also provided paraprofessionals with a sheet that had more general evidence-based strategies for working with students with BD. Using the same process as during baseline, ten-minute observations continued during intervention phase to check BIP implementation fidelity. If fidelity was less than 80%, I met with the paraprofessional within 24 hours to discuss the BIP and any concerns. A one-week break followed intervention phase. This was followed by a one and a half week maintenance phase (that included a three-day observation of a school holiday) when the self-monitoring piece was removed.

Table 2.

_Fidelity check template used in paraprofessional observations._

<table>
<thead>
<tr>
<th>Core Components of Instruction</th>
<th>Completed?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prevent Component</td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Yes</td>
</tr>
<tr>
<td>2.</td>
<td>Yes</td>
</tr>
<tr>
<td>Teach Component</td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Yes</td>
</tr>
<tr>
<td>2.</td>
<td>Yes</td>
</tr>
<tr>
<td>Reinforce Component</td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Yes</td>
</tr>
<tr>
<td>2.</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Total (# Yes / # Total)

Percent Score

Notes: BIP = behavior intervention plan; checklists were individualized for each student

For RQ 2 and RQ 3, visual analysis of data was performed based on level, trend, and variability. Level was defined as where the data points are in relation to the vertical axis. Trend was defined as the overall direction of the data path using increasing, decreasing, or no trend. Variability was reported as the range of the data points around the trend line (Winn, 2018).

To answer research question four (RQ 4), I collected data on students’ time spent out of
instruction daily. Each student’s initials were placed on the left-hand side for each week. Each
day, the number of minutes each student spent away from instruction due to problem behaviors
was documented. Time spent removed from instruction included taking a break from any class,
being pulled out of any class due to disruptions, or having to deescalate in the special education
classroom. This data collection helped to analyze if a student is missing more or less instruction
as the weeks continued, and is another piece of information to analyze when considering changes
to the BIP.

Social Validity

Social validity was used to measure the paraprofessionals’ view of the intervention.
Specifically, I wanted to know if they thought this approach benefitted them. This approach is
more likely to be implemented with fidelity when there is acceptability. Following maintenance,
a two-question survey was given to the paraprofessional participants:

a) Was it helpful to meet frequently to go over student BIPs and concerns?

b) Was it helpful to have a checklist to follow of each student’s BIP?
CHAPTER 4. RESULTS

The purpose of this study was to examine the impact of a collaborative approach on BIP implementation fidelity and to examine the impact on students when BIPs were implemented with fidelity. Students with disabilities, particularly those with BD, express behaviors that may impact their learning and other’s learning in the classroom. To help these students gain access to necessary core instruction, individualized BIPs were created by the IEP team. To help these students be successful in the classroom, BIPs need to be implemented with fidelity.

Collaborative consultation and teacher self-monitoring were two strategies that have been used to increase implementation fidelity (Gale, et al., 2001, Hagermoser Sanetti, et al., 2014; and Hagermoser Sanetti, et al., 2015). These strategies were combined to create a protocol and implemented with paraprofessionals to increase BIP fidelity. The research questions were: 1. Do adults supporting students with behavior plans know what is in the students’ BIPs? 2. Does adult BIP fidelity increase when a collaborative approach is used? 3. Does a relationship exist between structured BIP fidelity and behavior? 4. How does increased BIP fidelity impact student access to classroom instruction? This chapter will present the results the study in five sections: (a) results related to adult knowledge; (b) results related to paraprofessional implementation; (c) results related to behavioral achievement; (d) results related to social validity; and (e) a summary of the findings.

Research question 1: Do adults supporting students with behavior plans know what is in the students’ BIPs?

To answer research question one (RQ 1), I created an eight-question survey that was administered using Qualtrics (see Table 1). The questions were created to be broad, so the adults can answer honestly and anonymously. Knowing that paraprofessionals receive limited training, it was anticipated that some answers would not be known. One paraprofessional did not know
what an FBA was, while the other said the purpose was to target specific behavior within the BIP. The same paraprofessional that said she did not know what an FBA was, said that the purpose of the BIP was to tell paraprofessionals what supports should be given to students. The other paraprofessional identified a BIP as an overall behavior plan for a student. Question three asked them to identify two preventative measures. One paraprofessional correctly identified two preventative strategies, while the other identified strategies that could be used, but ones that were not identified in the BIP. Similarly, on question four, one paraprofessional correctly identified two response strategies that were in the BIP, and the other paraprofessional named general strategies that were not in the BIP. One paraprofessional said she knew what the replacement skill was for a student and that she had a checklist or tool that was used to help follow the BIP, while the other paraprofessional answered “no” to questions three and four. Question seven asked how well you feel like you follow each student’s BIP with responses limited to very well, most of the time, some of the time, and hardly ever. One paraprofessional answered, very well, and the other answered, most of the time. Both paraprofessionals answered that they felt extremely comfortable working with challenging behaviors.

This survey provided insight prior to beginning the intervention. It was important that both paraprofessionals knew that the contents of a BIP, in general, was to provide supports to students and that both felt they follow the BIP at least most of the time or very well. Both expressed their confidence managing challenging behaviors. The answers, given for preventative and response strategies and knowing the replacement behavior, gave me the information that they needed to clarify each student’s BIP. Overall, this survey let me know what the paraprofessionals already understood to support their students in the classroom.
Research question 2: Does BIP implementation fidelity increase when the classroom teacher and paraprofessionals use a collaborative approach?

To answer RQ 2, I implemented a single-case research ABA design. These observations utilized the fidelity checklist for observation (see Table 2). Each student’s BIP was completed using the fidelity checklist that matched information the paraprofessionals received for self-monitoring. Each paraprofessional was given each student’s BIP in non-technical terms to allow for easier understanding of the strategies. I reviewed each strategy with each paraprofessional and gave examples of what each strategy looked like and/or sounded like. Paraprofessionals were given the opportunity to ask clarification questions. When an observation was completed, I identified if each step was being completed as listed on the fidelity checklist. After the observation was completed, I calculated a percentage as to how well the BIP was being implemented. If the data showed that the percentage was below 80%, I met with that paraprofessional within 24 hours, reviewed the BIP, and discussed concerns to implementing the plan as intended.

Each paraprofessional received a student checklist for each student with whom they worked. Theresa received a checklist for David and Grant, and Megan received a checklist for Carter, Taylor, and Noah. I also provided paraprofessionals with a sheet that had more general evidence-based strategies for working with students with BD.
Baseline data was collected prior to the start of the study. IEP data was collected weekly and graphed to monitor growth for each student. After the intervention phase, there was a one-week break, and then a one and a half-week maintenance phase when the self-monitoring piece was removed.

**Paraprofessional Outcomes**

Each paraprofessional received a checklist of each student’s BIP to help self-monitoring of BIP implementation. I monitored the paraprofessional’s fidelity of implementation during the intervention. If fidelity was below 80% on an observation, I met with the paraprofessional that day or the next day to discuss any questions or concerns to the student’s BIP. An observation was considered to be followed with fidelity if 80-100% of the BIP was being followed.

**Theresa’s Fidelity of Implementation**

Theresa’s fidelity of implementation was monitored with David and Grant. Visual analysis of Theresa’s graph shows an increasing trend in fidelity with David and a high level of improvement. Theresa started with 60% and 70% fidelity with David at baseline. Theresa had an increase in fidelity throughout intervention, break, and maintenance phases. She ended with 100% fidelity with David. Visual analysis of Theresa’s graph shows an increasing trend in fidelity with Grant and a high level of improvement. Theresa started with 64% and 42% fidelity with Grant at baseline. Theresa had an increase in fidelity throughout intervention, break, and maintenance phases. Her fidelity implementation reached as high as 91%. She ended with 67% fidelity with Grant during maintenance (see Figure 1).
Megan’s Fidelity of Implementation

Megan’s fidelity of implementation was monitored with Taylor and Noah. Visual analysis of Megan’s graph shows no trend in BIP fidelity during intervention phase with Taylor. Megan’s fidelity data for implementing Taylor’s BIP started with an average of 69% at baseline. All fidelity observations showed a 60% or higher fidelity score, with an average fidelity
percentage of 75% for all observations. BIP implementation ended with 100% fidelity during maintenance phase. In Megan’s fidelity implementation with Noah, visual analysis shows an increasing trend with a high level of fidelity. Megan’s fidelity data for implementing Noah’s BIP started with an average of 76% during baseline. All fidelity observations showed a 60% or higher fidelity score, with an average fidelity percentage of 83% for all observations. BIP implementation ended with 100% fidelity during maintenance phase (see Figure 2).

Figure 2

*Megan’s Fidelity of Implementation*
Research question 3: Does a relationship exist between structured BIP fidelity and student behavior?

To answer RQ 3, the single-case research ABA design study previously described was used. Paraprofessional fidelity data was monitored throughout the study as well as individual student IEP behavior goals. This data helped to indicate any relationship between an increase in BIP fidelity and student behavior.

Student Behavior Outcomes

David’s Behavior Progress

David’s behavior was monitored using a social skills rubric that measured positive interactions with adults and peers, communicating his needs appropriately, and self-regulating. David started with scores of three, four, and four points on his social skills rubric during baseline phase and ended with eight points during maintenance indicating an increase in progress toward his IEP goal. During the break phase, David received eleven points on his rubric for two weeks. David’s scores varied from a score of three to a score of thirteen points. His graph shows an increasing trend, demonstrating that he made progress in the area of behavior throughout the course of the study (see Figure 3).
**David’s Behavior Progress Monitoring Data**

**Grant’s Behavior Progress**

Grant’s behavior was progress monitored using a social skills rubric that monitors communicating his needs appropriately, positively interacting with adults and peers, and taking breaks appropriately. Visual analysis displays variable data throughout the study. Grant started with scores of four, seven, and six points on his rubric during baseline phase and ended with nine points on his rubric during maintenance phase indicating a high level of achievement with an increasing trend (See Figure 4).
Taylor’s behavior was monitored using a behavior rubric that focuses on the skills of positively interacting with peers, positively interacting with adults, working independently, and using strategies to problem solve. Taylor started with scores of seven, eight, and eight during baseline and ended with a score of ten during maintenance. Visual analysis suggests a moderate level of achievement. His scores had low variability throughout the course of the study. Taylor’s graph shows a decreasing trend during intervention phase, indicating that when BIP fidelity increased, his behavior progress decreased (see Figure 5).
Figure 5

*Taylor’s Behavior Progress Monitoring Data*

**Noah’s Behavior Progress**

Noah’s behavior was progress monitored using of a point sheet with a rating scale of zero, one, or two based on redirections needed to follow directions during each period of the day. Totals are added up each day and an average is calculated for the week. Noah’s graph shows a slight decreasing trend with low variability in his data. Noah’s data points ranged between 70% and 89% (see Figure 6), indicating increased progress toward his IEP goal. Noah’s behavior was also progress monitored in the area of respectful language. His behavior is tracked through the use of a point sheet using a rating scale of zero, one, or two based on redirections needed to use respectful language during each period of the day. Totals are added up each day and an average is calculated for the week. Visual analysis of Noah’s trend line shows no trend with little variability in his data. Data ranged from 80%-94%, with the data being in moderate-high level (see Figure 6).
Figure 6

*Noah’s Behavior Progress Monitoring Graph: Respectful Language and Following Directions*
Research question 4: How does increased BIP fidelity impact student access to classroom instruction?

To answer RQ 4, I collected data on students’ time spent out of instruction daily. Each student’s initials were placed on the left-hand side for each week. Each day, the number of minutes each student spent away from instruction due to problem behaviors was documented. Time spent away from instruction included taking a break from a general education class, being pulled out of a general education class due to disruptions, or having to leave instruction in the self-contained room to take a break or deescalate. This data collection helped to analyze if a student is missing more or less instruction as the weeks continued, and is another piece of information to analyze when considering changes to the BIP.

The data was analyzed. Observations were analyzed to maintain fidelity at or above 80%. If fidelity fell below 80%, I met with that paraprofessional within 24 hours to review the student’s BIP and see what additional support is needed or what questions they had. Time spent in class and paraprofessional fidelity observation data was graphed and trendline analysis was used.

Student Outcomes: Time Spent Out of Instruction

Each student’s graph showing time spent out of instruction follows. Time spent out of instruction was documented daily. Averages were calculated for the different phases throughout the study. Time spent out of instruction was only documented, if the missed time was due to problem behaviors that kept the student from receiving instruction.

David’s Time Spent Out of Instruction

David’s time spent out of instruction decreased throughout the study starting with his baseline. The graph shows a decreasing trend. He missed an average of 60 minutes of instruction during baseline, and an average of 41 minutes of instruction during intervention. The trend
started to decrease with some variance each week. David’s time spent out of instruction decreased, meaning he was demonstrating fewer problem behaviors and was able to gain more access to instruction compared to the start of the intervention. This decreasing trend continued through the break and maintenance phases. During maintenance, David’s time spent out of instruction ended at an average of 17 minutes (see Figure 7).

![David's Time Spent Out of Instruction](image)

**Figure 7**

*David’s time spent out of instruction*

**Grant’s Time Spent Out of Instruction**

During baseline, Grant missed an average of 15 minutes of instruction and missed an average of 24 minutes of instruction during intervention. Grant’s data was variable with a larger number of time spent out of instruction one week and the next week limited to no time spent out of instruction. Grant’s graph shows a decreasing trend. This means that as BIP fidelity increased, Grant’s time spent out of instruction decreased as he was showing fewer problem behaviors and was able to gain access to more instruction. During maintenance, Grant’s time spent out of instruction ended at an average of 10 minutes (see Figure 8).
Figure 8

*Grant’s Time Spent Out of Instruction*

**Taylor’s Time Spent Out of Instruction**

During baseline, Taylor missed an average of seven minutes of instruction during baseline, and an average of five minutes during intervention. Taylor’s graph shows an increasing trend during intervention phase. However, most of his time spent out of instruction was zero minutes; during five weeks, he spent time out of instruction due to problem behaviors. Taylor’s data was stable for most of the study, but then became variable during mid-November. His data then went back to zero minutes spent out of instruction for the rest of the duration of the study. Taylor’s time spent out of instruction ended at an average of zero minutes during maintenance (see Figure 9).
Noah’s graph shows an increasing trend in time spent out of instruction. This means that he was demonstrating more problem behaviors resulting in more time spent away from instruction. Noah’s trend line started increasing at the start of November and peaked at the end of November during the break phase of the study. During the break from intervention, Noah’s time spent out of instruction averaged 16 minutes. Visual analysis of Noah’s graph indicates variance in his data. Noah’s graph shows a majority of weeks having spent zero minutes out of instruction. Noah’s time spent out of instruction ended at an average of six minutes (see Figure 10).
Social Validity

Social validity was measured after maintenance to gain feedback on acceptability of the collaborative approach from paraprofessionals. For question one – was meeting frequently to discuss student BIPs and concerns helpful? – both paraprofessionals said yes, it was helpful to meet frequently, at least weekly, to go over BIPs and any concerns and that it was helpful to have a checklist to follow. For question two – was it helpful to have a checklist to follow with each student’s BIP? – both paraprofessionals replied yes, it was helpful to have a checklist to follow. This collaborative approach seemed to have been accepted by both paraprofessionals which makes it more likely to be implemented with fidelity.

Summary of Results

Findings from this study indicated varied levels of behavioral growth. Results were broken down into behavior achievement outcomes, time spent out of instruction, and adult participant outcomes. Theresa, who worked with David and Grant, had an increase in BIP fidelity with both students. She started at 60% with David and a low of 42% with Grant. She
ended with 100% fidelity for David and 67% for Grant. Her trend lines show a more drastic change in the slope than Megan’s trend lines. David and Grant had social skills rubrics that were monitored weekly. Both students increased their rubric scores during intervention.

Megan worked with Taylor, and Noah. She had an increase in her BIP fidelity with Noah, but no trend in her BIP fidelity with Taylor during intervention. She started with an average of 69% fidelity for Taylor and an average of 76% fidelity for Noah. She ended with 100% fidelity during maintenance for Taylor and Noah. Her trend lines for BIP fidelity implementation increased at a slighter trend than Theresa’s BIP implementation. Taylor had a slight decreasing trend during intervention with his behavior rubric scores. Noah showed a slight decreasing trend in following directions goal with scores ranging from 70-89% throughout the study. In the area of respectful language, he showed no trend, but was already scoring 87% to 88%. Carter experienced a placement change during the study, resulting in incomplete data.

Each student’s time spent out of instruction due to problem behaviors was documented daily. Out of the five students, four completed the study. Two students had a decreasing trend in time spent out of instruction during intervention phase and two students had an increase in time spent out of instruction toward the end of intervention before break and maintenance phases.
CHAPTER 5. DISCUSSION

The purpose of this study was to examine how well BIPs are being followed and how, when followed with fidelity, students are impacted. Studies indicate that adults have a hard time implementing BIPs as planned (Cook et al., 2012; Blood & Neel, 2007). This is a problem because lower BIP implementation fidelity is related to poorer student outcomes correlated with low levels of fidelity with BIP implementation (Collier-Meek, et al., 2017). Data was collected in the areas of IEP progress monitoring goals for behavior, BIP fidelity observations, and time spent out of instruction due to problem behaviors. The data was analyzed using visual analysis across two paraprofessional participants with their BIP implementation between five students.

RQ1 considered the knowledge of adults who supported students with BIPs. Previous research indicated that there are barriers to BIP implementation fidelity. Collier-Meek, et al. (2017), had found barriers to include intervention knowledge, support, stress and burnout, and intervention complexity. Allday, et al. (2011) had found that teachers reported feeling under-educated and underprepared to manage challenging behaviors. In this study, an anonymous survey given to the two paraprofessionals via Qualtrics. Information gathered shows that both paraprofessionals went into the study with different levels of knowledge around BIPs. One paraprofessional expressed greater knowledge of specific strategies in student BIPs. The other paraprofessional, who had less professional experience, was less knowledgeable about specific strategies that were outlined in student BIPs.

Results from this study indicated that training needs to be given to paraprofessionals around FBAs and BIPs, ideally at the start of each school year. This could provide a review for some paraprofessionals, and give the needed information to new staff. It would be important for paraprofessionals to know what an FBAs and BIPs are, how they are created, and why they are
used and why they work when implemented with fidelity. Clarifying the difference between overall behavior strategies and specific strategies outlined in each student’s BIP is also something that needs to be addressed according to information gathered from the survey. This survey showed that a checklist of each student’s BIP could be helpful for paraprofessionals to have quick access to individual BIPs.

RQ 2 focused on the relationship between BIP fidelity and using a collaborative approach with paraprofessionals. Previous research indicated that when BIPs are implemented with fidelity, it creates positive outcomes for students. For instance, Hagermoser Sanetti, et al. (2015), found that collaborative consultation and performance feedback benefited student outcomes by increasing academic engagement and decreasing disruptive behavior. In this study, Theresa’s implementation fidelity increased for both students throughout the course of the study and had a high level of achievement with her BIP implementation during intervention.

Megan worked with the Noah, Taylor, and Carter in this study, with Carter’s behavior data being incomplete. Implementation fidelity increased slightly for Noah, but there was no trend in implementation fidelity for Taylor. BIP implementation remained at no trend during intervention with Taylor. Her implementation trend lines during intervention show that she did not increase in her implementation as much as Theresa did. As a result, Megan’s students did not make as much progress towards their behavior goals as Theresa’s did.

RQ3 examined the relationship between structured BIP fidelity and behavior achievement for students. Walker and Barry (2017) stated that when BIPs are not implemented with fidelity, the result includes less of a desired behavioral change. Similar findings came from Cook, et al. (2012); they found that implementation fidelity was significantly related to whether student behavior improved. Not only does fidelity improve student behavior, but also when behavior is
improved students are able to gain access to instruction. This leads to better academic outcomes.

In this study, Theresa supported two 5th grade students. Implementation fidelity increased for both students throughout the course of the study. As a result, both David and Grant showed increasing trend lines in behavior achievement.

Megan supported the 7th grade students. Megan’s BIP fidelity for Noah increased slightly for Noah during intervention but had no trend for implementing Taylor’s BIP. Taylor’s progress on his behavior rubric also made no trend during intervention. Noah had a slight decrease in following directions, and had no trend with respectful language. One reason for no trend in Noah’s behavior achievement could be that 80-95% is already a high level of achievement and close to his IEP goal attainment. Even though Noah did not make progress in that area, he remained in the target range for those behaviors. He continued to have IEP goals in these areas due to the process of working him back out into the general education setting. Megan’s BIP implementation data suggest there is a correlation between behavior achievement and BIP fidelity. She did not make as much progress with her implementation, and Noah and Taylor did not make progress during intervention with their behavior. Megan did end the study with 100% implementation of Taylor’s BIP during maintenance.

RQ4 considered how increased BIP fidelity impacts student access to classroom instruction. Previous research indicated that when BIP fidelity is increased, students are able to have more access to instruction. According to the National Center for Education Statistics (2017), almost 19% of students who qualified for special education services as students with EBD were in the general education classroom less than 40% of the time. Previous research showed that for a student to have access to instruction in the classroom, the student’s BIP needs to be followed with fidelity. Collier-Meek, et al. (2017) found that low levels of implementation
correlate with poorer student outcomes. In this study, two students demonstrated behavioral progress toward IEP goals during intervention. David and Grant’s time spent out of instruction decreased significantly during intervention. Theresa’s implementation of both BIPs increased during intervention, suggesting a positive correlation between increasing BIP fidelity and decreasing time spent away from instruction. This means that both David and Grant gained more access to instruction during intervention. Noah and Taylor had an increase in time spent out of instruction during intervention. Both of these students had outliers in their data. Most data points were zero minutes spent out of instruction, with three data points each during intervention phase that affected their trend line to increase in time spent out of instruction. Megan’s implementation of Noah and Taylor’s BIPs did not increase for Taylor’s BIP, and only slightly for Noah’s BIP again suggesting that there is a correlation between BIP implementation and student time spent out of instruction due to behaviors.

Social validity was measured by asking both paraprofessionals if they found it helpful to meet frequently and discuss student BIPs and concerns and if a checklist was a helpful tool. Both paraprofessionals answered yes to both questions and said meeting at least weekly was ideal. This indicated that devoting time to talk with paraprofessionals at least weekly and providing a self-monitoring checklist increased BIP implementation fidelity.

**Summary of Findings**

Consistent with previous research, in this study, there were relationships between BIP fidelity and student behavioral outcomes as measured by progress toward IEP goals behavior achievement and time spent out of the classroom. Cook, et al. (2012) found that implementation fidelity was significantly related to whether student behavior improved. In this study, one paraprofessional increased in her BIP implementation more than the other paraprofessional, and that implementation resulted in positive student outcomes. Theresa improved in her BIP
implementation, and both of her students showed behavior progress during intervention and a significant decrease in time spent out of instruction. Megan’s BIP implementation with Taylor did not increase and his behavior achievement decreased and had an increase in time spent out of instruction. Her implementation of Noah’s BIP only increased slightly and Noah did not make progress with either behavior goal as well as increased his time spent out of instruction. When BIP fidelity is increased through collaboration and self-monitoring, students make progress toward their behavioral IEP goals and spend more time in classroom instruction.

**Recommendations**

This study demonstrated the positive impact of BIP implementation fidelity on the academic and behavioral outcomes of students with BD in a self-contained special education program. In this study, when using a collaborative approach was used with the special education teacher and paraprofessionals, BIP fidelity increased and students made progress behaviorally. Students were also able to gain more access to instruction because they were not being sent out of class or not leaving class due to problem behaviors.

Special education teachers are encouraged to work closely with paraprofessionals through collaboration, self-monitoring, and feedback (Gable, et al., 2001; Hagermoser Sanetti, et al., 2015; Fallon, et al., 2017). The special education teacher should meet with paraprofessionals at the start of the year to initially go over the function of each student’s behavior and each student’s BIP. The teacher can also use this time to stress the importance of following the BIP and explain why it is important. Paraprofessionals can be given each student’s BIP in the form of a checklist to help them easily see the plan and follow it. As the year continues, special education teachers and paraprofessionals should meet weekly to review student BIPs and address concerns or questions. Throughout each week, paraprofessionals can follow a checklist for each student’s BIP to help them self-monitor if they are implementing the plan as intended (Mouzakitis, et al.,
The special education teacher can do fidelity checks through 10-minute observations to verify if paraprofessionals are implementing the BIPs with fidelity.

**Limitations of the Study**

Several limitations need to be considered when interpreting results. First, there was limited time to complete observations during the school day due to multiple grade levels, teaching responsibilities, and other scheduling difficulties. Having more data points over a longer period of time would better inform the observation process. This study was brief, resulting in a small amount of data. Second, there was a limited number of students in this study. This particular self-contained program served multiple grade levels and students transitioning in and out of the program, depending on required levels of support and IEP team decisions. This leads to a third limitation. Throughout the course of this study, one of the participants had a placement change, and there were three other students added to the classroom. There was changing dynamics of student personalities and the adjustment to change impacted student behaviors. The adjustment of new students also impacted adult participants because they had to balance building new student relationships and learning new BIPs in a short amount of time. Because one of the students had a placement change during intervention phase, his data could not be completed.

Finally, this study did not have interobserver reliability. I was the only person collecting fidelity data. If this study were to be replicated, making accommodations to have another person also perform fidelity observations would be beneficial to help with data reliability.

**Future Research**

Future research should consider lengthening the time of data collection to further analyze and compare results from this study to future data. Along with analyzing behavior achievement, the relationship between academic achievement progress and BIP fidelity should
be considered. This study focused on behavior progress. It would be beneficial to examine the effect of increased BIP implementation and student academic achievement.

This study showed that the paraprofessionals had different levels of knowledge regarding FBAs and BIPs. Collier-Meek, Sanetti, and Fallon (2017) and Killu, et al. (2006) discussed knowledge of the interventions as barriers to BIP implementation. Future research should analyze the impact of paraprofessional training about FBAs and BIPs on BIP fidelity of implementation.

This study focused on working with paraprofessionals in the special education setting. Previous research has indicated positive student outcomes when a collaborative approach and self-monitoring are implemented (Fallon, et al., 2017; Mouzakitis, et al., 2015). Future research could implement a collaborative and self-monitoring approach with general education teachers for students who receive the majority of their education in general education classrooms, especially in relation to student engagement problem behaviors.

**Conclusion**

Students with BD often exhibit behaviors that interfere with their own learning and the learning of others in the classroom. This has resulted in mandates that require schools to perform FBAs and create BIPs for students to help them be successful in their least restrictive environment. In order for students to make progress, the intervention that was created by the team must be implemented with fidelity. If the student is now showing growth, improvement, or progress, the team cannot know if it is due to the lack of implementation fidelity or due to a mismatched intervention. Even though there are barriers that get in the way of implementing the intervention, such as time and resources, schools can make implementation fidelity a priority through show positive outcomes.
REFERENCES


https://nces.ed.gov/fastfacts/display.asp?id=59

APPENDIX. IRB APPROVAL

Date: 08/20/2019
To: Jillian Nelson
Angela M Prince, Ph.D.
From: Office for Responsible Research
Title: Increasing Behavior Plan Implementation (BIP) Fidelity Among Middle School Teachers
IRB ID: 19-379
Submission Type: Initial Submission  Exemption Date: 08/20/2019

The project referenced above has been declared exempt from most requirements of the human subject protections regulations as described in 45 CFR 46.104 or 21 CFR 56.104 because it meets the following federal requirements for exemption:

2018 - 1: Research, conducted in established or commonly accepted educational settings, that specifically involves normal educational practices that are not likely to adversely impact students’ opportunity to learn required educational content or the assessment of educators who provide instruction. This includes most research on regular and special education instructional strategies, and research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods.

2018 - 2 (i): Research that only includes interactions involving educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior (including visual or auditory recording) when the information obtained is recorded by the investigator in such a manner that the identity of the human subjects cannot readily be ascertained, directly or through identifiers linked to the subjects.

The determination of exemption means that:

- You do not need to submit an application for continuing review. Instead, you will receive a request for a brief status update every three years. The status update is intended to verify that the study is still ongoing.

- You must carry out the research as described in the IRB application. Review by IRB staff is required prior to implementing modifications that may change the exempt status of the research. In general, review is required for any modifications to the research procedures (e.g., method of data...
collection, nature or scope of information to be collected, nature or duration of behavioral interventions, use of deception, etc.), any change in privacy or confidentiality protections, modifications that result in the inclusion of participants from vulnerable populations, removing plans for informing participants about the study, any change that may increase the risk or discomfort to participants, and/or any change such that the revised procedures do not fall into one or more of the regulatory exemption categories. The purpose of review is to determine if the project still meets the federal criteria for exemption.

- **All changes to key personnel** must receive prior approval.

- **Promptly inform the IRB of any addition of or change in federal funding for this study.** Approval of the protocol referenced above applies only to funding sources that are specifically identified in the corresponding IRB application.

**Detailed information about requirements for submitting modifications for exempt research can be found on our website.** For modifications that require prior approval, an amendment to the most recent IRB application must be submitted in IRBManager. A determination of exemption or approval from the IRB must be granted before implementing the proposed changes.

Non-exempt research is subject to many regulatory requirements that must be addressed prior to implementation of the study. Conducting non-exempt research without IRB review and approval may constitute non-compliance with federal regulations and/or academic misconduct according to ISU policy.

Additionally:

- All research involving human participants must be submitted for IRB review. **Only the IRB or its designees may make the determination of exemption**, even if you conduct a study in the future that is exactly like this study.

- **Please inform the IRB if the Principal Investigator and/or Supervising Investigator end their role or involvement with the project** with sufficient time to allow an alternate PI/Supervising Investigator to assume oversight responsibility. Projects must have an eligible PI to remain open.

- **Immediately inform the IRB of (1) all serious and/or unexpected adverse experiences** involving risks to subjects or others; and (2) **any other unanticipated problems involving risks** to subjects or others.

- **Approval from other entities may also be needed.** For example, access to data from private records (e.g., student, medical, or employment records, etc.) that are protected by FERPA, HIPAA or other confidentiality policies requires permission from the holders of those records. Similarly, for research conducted in institutions other than ISU (e.g., schools, other colleges or universities, medical facilities, companies, etc.), investigators must obtain permission from the institution(s) as required by their policies. **An IRB determination of exemption in no way implies or guarantees that permission from these other entities will be granted.**

- Your research study may be subject to post-approval monitoring by Iowa State University’s Office for Responsible Research. In some cases, it may also be subject to formal audit or inspection by federal agencies and study sponsors.

- Upon completion of the project, transfer of IRB oversight to another IRB, or departure of the PI and/or Supervising Investigator, please initiate a Project Closure in IRBManager to officially close the project. For information on instances when a study may be closed, please refer to the IRB Study Closure Policy.

Please don’t hesitate to contact us if you have questions or concerns at 515-294-4566 or IRB@iastate.edu.