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Incremental Changes in Expectations to Improve Engagement Among Students with Behavioral Problems

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Incremental Changes in Expectations to Improve Engagement Among Students with Behavioral

Problems

by

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Abstract

 Teachers are required to meet the needs of every student, but relatively limited research has

been conducted with secondary students who have behavior problems. Further, there is

essentially no research pertaining to secondary students who have almost entirely withdrawn

from school. This study evaluated the effectiveness of an intervention consisting of incremental

goal setting and positive feedback on the engagement of secondary age students with emotional

and behavioral problems and significant academic disengagement. Participants were four

secondary age students with behavior problems identified by school staff as at risk for academic

failure and dropout due to low participation. Effects of the intervention were evaluated using a

multiple baseline across students design with an embedded changing criterion design with

generalization probes conducted in a second setting. Data indicated that the package resulted in

improvements in student engagement and productivity for two participants, with the other two

showing variability in responsiveness.

Chapter I

Statement of the Problem

Outcomes for Students with Emotional and Behavioral Disorders

High school students with emotional and behavioral disorders (EBD) have consistently had higher suspension and drop out rates than special education students in all other disability categories (Bradley, Doolittle, & Bartolotta, 2008; U.S. Department of Education, 2008; Wagner, Kutash, Duchnowski, Epstein, & Sumi, 2005). Students with EBD also are unlikely to enroll in postsecondary education, with rates of attendance approximately 30% compared with 47.3% of individuals with learning disabilities (LD) (Newman, Wagner, Cameto, & Knokey, 2009). In addition, approximately 40% of students with EBD will not finish high school. In fact, students with EBD are five times more likely to drop out than their peers without disabilities and twice as likely to drop out than their peers identified with other disabilities (Snyder & Dillow, 2012). They also experience high rates of arrest and are incarcerated more often than adolescents in all other disability groups (Davis, Banks, Fisher, Gershenson, & Grudzinskas, 2007; Newman et al., 2011). For instance, in a study of incarcerated juveniles with disabilities, nearly 67% were identified with EBD (Krezmien, Mulcahy, & Leone, 2008).

Based on consistently poor outcomes, it is clear that academic and behavioral intervention has failed to resolve the critical problems experienced by this population of students. One explanation for the lack of progress pertains to limited research for adolescents with behavioral problems. For example, a recent review of 1300 published studies between 1990 and 2014 found only one experimental study that tested dropout prevention for adolescents with EBD (Sullivan & Sadeh, 2016). Unfortunately, emphasis on early intervention over the past decade has resulted in the majority of research being conducted with young populations of children with

EBD (Kern et al., 2015). Therefore, although successful intervention methods for young individuals with challenging behaviors have emerged, research with middle and high school aged students with EBD is limited (Kern, Hilt, & Gresham, 2004).

Factors Contributing to Poor Student Outcomes

Fredericks and colleagues (2004) conducted a review of literature and identified three aspects of student engagement, which include behavioral, emotional, and cognitive. Behavioral engagement refers to student participation in school (i.e., academic behaviors within the classroom, social contexts, and extracurricular). Emotional engagement refers to the students' positive or negative feelings toward teachers, other students, and the school and has an influence on the student's inclination to complete school work. The last area is cognitive engagement, which occurs when students make a personal investment in their learning.

Higher levels of school engagement are associated with numerous positive outcomes for students (Chapman, Buckley, Sheehan, Sochet, & Romaniuk, 2011; Hawkins, Catalono, Kosterman, Abbot, & Hill, 1999). For example, research has shown that school engagement leads to emotional wellbeing, reduced risky behaviors (e.g., violence and driving-related injuries), and persistence in completion of high school (Chapman et al., 2011; Hawkins et al., 1999). Lack of student engagement and productivity within the classroom does not occur overnight; engagement in learning typically decreases gradually as students progress through their K-12 academic careers (Conner & Pope, 2013; Scott, Hirn, & Alter, 2014). A variety of both teacher- and student-related variables contribute to a lack of engagement and productivity for students with behavioral problems.

Teacher variables. There are several teacher behaviors that contribute to the poor outcomes demonstrated by students with behavioral problems. These variables are teacher training and experience and disciplinary actions.

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Teacher training and experience. One potential explanation for the poor outcomes

among students with behavioral problems pertains to teacher knowledge and experience.

Research on the preparation that preservice teachers receive suggests that they may not have

sufficient training regarding the best strategies, curriculum, and procedures to effectively

program for students with EBD (Allday, Neilsen-Gatti, & Hudson, 2013; Nelson, 2000). For

example, an examination of university course syllabi analyzing the kinds of information that

general education, pre-service teachers received found a lack of training related to social,

emotional and behavioral problems (State, Kern, Starosta, & Mukherjee, 2011). Further,

teachers of students with EBD frequently lack full certification (Billingsley, Fall, & Williams,

2006), are more likely to be emergency certified, have less teaching experience (Henderson,

Klein, Gonzalez, & Bradley, 2005), and self-report greater limitations in their ability to provide

academic instruction and manage classroom behaviors (Sutherland, Denny, & Gunther, 2005).

Additionally, special education teachers for students with EBD have fewer years of teaching

experience compared to other special education teachers (e.g., teachers of students with LD,

visual and hearing impairments) (Cook, Landrum, Tankersly, & Kauffman, 2003). Further,

teachers self-report that they lack the skills to use best practices in behavior management or best

practices in inclusion (Henderson, Klein, Gonzalez, & Bradley, 2005). A study of 51 general and

special education teachers who self-reported their behaviors within the classroom using the *Scale*

for Assessing Emotional Disturbance (SAED; Epstein & Cullinan, 2010) revealed that general

education teachers reported using strategies to help students with learning problems (e.g.,

explicit direct instruction, teacher proximity, room arrangement) but few strategies (e.g., verbal

reinforcement, behavior contract) that supported students identified with emotional disturbance

(Evans, Weiss, & Cullinan, 2012).

Student success or lack of success greatly depends on teacher behavior (Hattie, 2009).

Teachers with greater skill report significantly less disruptive behavior compared to teachers

with less skill. For example, teachers rated the behavior of 332 pre-school students using the

Caregiver Teacher Report Form/2-5 (CTRF; Achenbach, 1997) and the Social Skills Rating

System, Preschool Version (Gresham & Elliot, 1990). Analysis of responses indicated years of

teaching experience was a significant predictor of the CTRF scores, with teachers with fewer

years of experience indicating higher levels of child problem behavior than teachers with more

years of experience (Kaiser, Cai, Hancock, & Foster, 2002).

Further, teachers actually give students with behavioral problems more negative feedback

than their peers without problem behaviors (Hirn & Scott, 2014). Of 827 total observations

(including 11,956 total min) of students in grades 9-12 with and without challenging behaviors,

Hirn and Scott (2014) found that students with EBD received negative feedback an average of

0.11 times per min compared to an average of 0.05 times per min for peers without challenging

behavior. In addition, research indicates teachers offer less direct instruction and do not provide

specialized instruction for students with EBD; instead, they rely on independent seat work and

whole class instruction, which leads to a lack of engagement and problem behaviors (Hayling,

Cook, Gresham, State & Kern, 2008; Scott, Hirn, & Alter, 2014).

Teacher disciplinary actions. Punitive disciplinary approaches tend to be applied more

frequently with students with EBD compared to students without EBD who engage in similar

behavior problems (Hetrick, Kern, & Dever, under review). Students with EBD have

significantly higher rates of detentions, suspensions, and expulsions in comparison to students

with other disabilities and their peers without disabilities (Anderson, Kutash, & Duchnowsky,

2001; Krezmien, Leone, & Achilles, 2006). In fact, data from the Special Education Elementary

Longitudinal Study (SEELS) and the National Longitudinal Transition Study-2 (NLTS-2, Wagner et al., 2005) showed that 72.9% of youth classified with EBD had been suspended or expelled at least once across a school year, compared to 27.6% of students with other disabilities, and only 22% of students in the general population. When students are suspended, they are not engaged in school and usually fall behind academically (Noltemeyer, Ward, & Mclouhlin, 2015). Further, students with EBD are more likely to be sent to alternative schools for drugs, weapons, or injury (or threat of) to themselves or others (U.S. Department of Education, 2008). Teachers need effective methods to interact positively and proactively to promote student engagement and productivity and reduce problem behaviors.

Student variables contributing to poor outcomes. Clearly, teachers are not fully addressing the needs of students with behavioral problems. However, there are also a variety of student-related variables that contribute to a lack of engagement and productivity. These variables are a lack of engagement, a lack of student skills and/or previous school experiences.

Student lack of engagement and problem behavior. Active engagement includes behaviors that indicate the student is performing tasks as expected other than simply listening or observing (e.g., choral responding, raising hand, answering a question, talking with group members about an assignment, writing or typing). Passive engagement includes the behaviors of listening and observing (e.g., looking at a teacher who is talking, watching a video, reading a PowerPoint). Off-task behavior includes behavior incompatible with actively or passively engaging in a task (e.g., looking out a window, drawing, sleeping, talking to peers about non-related topics, walking around the room).

Students with behavioral problems demonstrate low rates of both active and passive engagement in the classroom (Hayling, Cook, Gresham, State, & Kern, 2008), particularly when

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compared with their peers (Hirn & Scott, 2014). Of the 11,956 min of direct observation of students with and without challenging behaviors, Hirn and Scott (2014) found that students with EBD were not only less actively engaged than their typical peers (36% versus 47%) but also less passively engaged (28% versus 36%). Additionally, these students displayed more frequent off-task behavior (27% versus 10%) and more disruptive behavior (rate of 0.15 per min versus 0.04 per min) than non-targeted peers. Lack of engagement over the long term has also been connected with youth risk-taking behavior and violence (Chapman et al., 2011).

    Lack of academic success. Students with EBD are less successful academically than any other subgroup of students with or without disabilities (Landrum, Tankersley, & Kauffman, 2003). A meta-analysis of 25 studies with 2,486 students revealed that students with EBD perform at a significantly lower level than students without disabilities across subjects and settings (Reid, Gonzalez, Nordness, Trout, Epstein, 2004). Additionally, research has consistently found large academic deficits across all areas of content for students with EBD (Bradley et al., 2008; Reid, Gonzalez, Nordess, Trout, & Epstein, 2004; Wagner et al., 2005; Wagner et al., 2006). Further, grade point average (GPA) is one variable that foretells the level of perseverance in continuing education beyond high school for adolescents with EBD. In the Educational Longitudinal Study of 2002, students were followed from grade 12 until 2 years after high school and GPA was examined as an indicator of student general academic achievement. Findings indicated that individuals with higher GPAs in grade 12 were more likely to continue their education following high school (Lee, Rojewsky, Gregg, & Jeong, 2015). Academically, students with EBD receive the highest number of D's and F's compared to all other disability groups (Wagner et al., 2003).

Lack of self-determination skills. Martin, Miller, Ward, and Wehmeyer (1998) summarized multiple definitions of self-determination in the literature and developed the following definition:

> Self-determination is a combination of skills, knowledge, and beliefs that enable a person to engage in goal-directed, self-regulated, autonomous behavior. An understanding of one's strengths and limitations together with a belief in oneself as capable and effective are essential to self-determination. When acting on the basis of these skills and attitudes, individuals have greater ability to take control of their lives and assume the role of successful adults (p. 2).

In school settings, self-determination skills are correlated with academic achievement for students with LD and also predict higher GPA and fewer absences and disciplinary procedures for middle school students with EBD (Herron, & Martin, 2015; Zheng, Gaumer Erikson, Kingston, & Noonam, 2014). Further, self-determination has been identified as a predictor of improved post-secondary employment for individuals with disabilities (Mooney, Ryan, Uhing, Reid, & Epstein, 2005; Test et al., 2009). Unfortunately, the self-determination skills of secondary students identified with EBD are significantly lower than for students with other disabilities (e.g., LD, cognitive disabilities) (Carter, Lane, Pierson & Glaeser, 2006; Carter, Trainor, Owens, Sweden, & Sun, 2010; Houchins, 2002). Students need to be taught skills such as setting realistic goals, evaluating progress towards self-selected goals, advocating for opportunities and supports, and accepting responsibility for their actions (Test et al., 2004). They should also be given the opportunity to try self-determination skills within the classroom (Benitez, Lattimore, & Wehmeyer, 2005; Carter et al., 2010).

Learned helplessness. Engagement can be further diminished by a student's belief that outcomes are not under his/her control, which may explain why students do not attempt to make changes in their behavior when they have the ability to do so (Diener & Dweck, 1980; Seligman, Maier, & Greer, 1968). Learned helplessness occurs when individuals perceive that their behavior cannot control or impact events in their environment (Maier & Seligman, 1976). Learned helplessness can lead students to believe failures are inevitable and unbeatable, regardless of effort put forth (Diener & Dweck, 1980). In studies with dogs (e.g., Seligman, 1975; Seligman & Maier, 1967) that were placed in situations in which they could not escape electric shocks, they did not attempt escape shock in a later condition when they could easily do so. Hiroto (1974) subsequently tested the theory of learned helplessness with humans. College students were given the impression that they had complete control (i.e., researcher stated correct manipulation would result in noise termination) or possibly only chance at control (i.e., researcher stated their actions might not result in noise termination) of removing a loud noise by moving a sliding knob on top of a box. In spite of equal opportunity, students with the highest perception of their ability to escape (i.e., students who believed they had control) were most successful with identifying the correct pattern of behavior needed to eliminate the sound. Students who believed stopping the sound was up to chance were less successful because they made fewer attempts and therefore did not stop the sound as frequently. When students believe that they have some control over their learning environment, they are more likely to make attempts at work completion and therefore are more likely to find academic success.

Increasing Student Engagement

Higher levels of school engagement are associated with numerous positive outcomes for students including emotional wellbeing and persistence in school completion, whereas lower levels are associated with a variety of negative outcomes such as risk-taking behavior, substance

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abuse, and dropping out of high school (Chapman et al., 2011; Hawkins et al., 1999). Thus, teachers need effective strategies to promote the engagement of secondary students with behavioral problems within the classroom.

Fortunately, there are ways to break the cycle of disengagement and contribute to school engagement and productivity. One variable demonstrated to be associated with increased engagement within the classroom is self-determination. Self-determination skills have been linked with positive outcomes such as increased academic performance (Mooney et al., 2005; Test et al., 2009) and improved employment (Test et al., 2009; Wehmeyer & Palmer, 2003). In special education classrooms, increasing self-determination typically includes the following strategies: (a) offering choices, (b) increasing student decision making, (c) teaching problem solving, (d) assuring students set and attain goals, (e) teaching self-advocacy, (f) increasing self-awareness, (g) enhancing self-knowledge, and (h) teaching self-regulation (Wehmeyer & Field, 2007). The current study evaluated the effectiveness of an intervention consisting of incremental goal setting and positive feedback on the engagement of secondary age students with emotional and behavioral problems and significant academic disengagement.

Choice making. Choice making is one aspect of self-determination (Reeve, Nix, & Hamm, 2003). Choice making requires that individuals have certain necessary skills, motivation, and supports in place to make personally meaningful decisions (Carter et al., 2010). Research shows that by making small instructional changes in choice-making opportunities, teachers can reduce the occurrence of problem behaviors and increase student engagement. For example, Shogren, Faggella-Luby, Bae and Wehmeyer (2004) completed a meta-analysis of 13 single subject studies, including 30 participants. The findings revealed that providing simple choice (i.e., allowing students to pick the order of task completion, allowing students to choose between

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two activities) as an intervention significantly reduced problem behavior within special education classrooms, supported by analysis calculating the percentage of nonoverlapping data points and the percentage of zero data points. Choice making also is effective with older students. For example, Skerbetz and Kostewicz (2013) demonstrated that, when adolescents with or at risk for EBD were able to provide input into the classroom through making choices, their engagement and productivity improved. Research also has demonstrated that allowing middle school students with EBD to choose the lesson topic, how they would complete topics, and their work partners resulted in an increase in engagement and a decrease in disruptions in the classroom (Kern, Bambara, & Fogt, 2002). Making choices is a key part of self-determination and can increase engagement and productivity.

Goal setting. Goal setting is defined as students expressing the intention to earn a specified criterion of proficiency, usually within a designated period of time (Locke & Latham, 2002). Setting goals has been demonstrated to positively impact motivation for students with disabilities and increase behaviors such as paying attention during class, finishing work, and asking for support (Solberg, Howard, Gresham, & Carter, 2012). According to Codding and Smyth (2008), goal setting is effective because it makes the results of change in behavior explicit and also provides for continuous monitoring of progress toward each goal. For students with behavioral problems, setting goals may lead to more engagement and productivity within the classroom.

Positive feedback. Student feedback refers to the reaction that a teacher gives in response to student behavior and this can be either positive or negative (Catania, 1968). Feedback can be related to a task (i.e., correctness or incorrectness), a process (i.e., how a task was done), self-regulation (i.e., to make individual more aware of process), or of the person

him/herself (i.e., praise or criticism of the person themself) (Hattie, 2009) and is positively correlated with on-task behavior (Apter, Arnold, & Stinson, 2010). Positive feedback indicates approval and success (e.g., smile, head nod, specific praise) whereas negative feedback indicates disapproval or success (e.g., corrective statements, shaking head). Research suggests that positive feedback may enhance goal setting (Bandura, 1997; Krenn, Wurth, & Hergovich, 2013).

According to social cognitive theory (Bandura, 1997), after students receive positive feedback, they are more likely to set higher goals and achieve these goals, if the goals are perceived as attainable. A synthesis of 12 meta-analyses, including 196 studies and 6,972 effect sizes revealed that teacher feedback had an average effect size of 0.79 (Hattie & Timperley, 2007). This was substantially higher when compared to other typical influences on educational achievement, such as use of homework (0.41), use of a calculator (0.24) and smaller class size (0.12) (Hattie, 1999). With potential for such a strong impact, researchers recommend that teachers provide at least three positive statements for every negative (Stichter et al., 2009).

Combining effective procedures. Research has demonstrated that combining the previously described practices can result in an effective intervention package. For example, Martin et al. (2003) hypothesized that goal setting could be designed as self-determination contracts that would outline expected performance, include self-evaluation, provide opportunities to self-regulate and make adjustments (i.e., goal setting), as well as allow for reinforcement. They tested their hypotheses with eight male students, ages 9-10, who were labeled with EBD and attended a residential treatment facility. In the first phase (baseline), the teacher showed students self-determination contracts without providing instruction on how to use them. In the second phase, the teacher awarded bonus points if students completed the contract by indicating what they would accomplish that day. In the third phase, the teacher gave a detailed explanation

of how students could use and adjust the contracts by setting higher or lower goals. Outcomes

were measured by evaluating the correspondence between the student's plan and his actual

performance. Correspondence of outcome variables included (a) writing a daily goal (range =

78.38%-93.38%), (b) competing work (range = 69.5%-89.13%), (c) evaluating the

quality/quantity of work (range = 36.60%-60.75%), and (d) adjusting the goal for the following

school day (range = 50.08%-73.38%). Means were found to improve across the four variables

from pre-intervention to 30 days following intervention (i.e., pre-intervention, day 5 of

intervention, day 10 of intervention, day 15 of intervention, day 20 of intervention, day 25 of

intervention and day 30 of intervention). In addition, significant improvements were obtained on

the Woodcock-Johnson Psychoeducational Battery, which was used to assess academic

performance (Martin et al., 2003), suggesting that students continued to make academic progress.

This study is important because it implemented an intervention package of self-selected goal

setting and teacher feedback and evaluated the effects on productivity for students with EBD.

Further research needs to be conducted to evaluate the effectiveness of a similar package, applied

with older students in a typical school setting.

Purpose

The purpose of this study was to evaluate the effectiveness of an intervention consisting

of incremental goal setting and positive feedback on the engagement of secondary age students

with behavioral problems and significant academic disengagement. It was hypothesized that this

type of intervention would be effective because it would break the pattern of disengagement by

combining the elements of self-determination (with a focus on choice-making), goal-setting, and

positive feedback. Further, the intervention was intended to address lack of engagement that

may be a result of learned helplessness (Diener & Dweck, 1980; Maier & Seligman, 1976). In

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addition, this intervention addressed the theory that adolescents, particularly those with behavior problems, often perceive that they have no opportunity for choice/input at school and therefore feel less connected with the material and activities (Ryan & Deci, 2009; Wang & Eccles, 2013). Finally, the intervention considered the hypothesis that, as students see their grades dropping and feel increased pressure to produce, they may become increasingly disengaged. Thus, the opportunity to set small and incremental goals was likely to decrease learned helplessness. In addition, the use of goal setting can be enhanced by positive feedback. This study intended to fill a gap in the literature by identifying an approach for increasing effort among students who have demonstrated lack of engagement, participation, and work completion in the classroom. The specific research questions were:

1. Will a student-determined, goal-setting intervention with positive teacher feedback improve the academic engagement, measured by direct observation, and productivity via permanent product, of secondary school students with behavior problems? Research supports that younger students with emotional and behavioral challenges have been responsive to self-determined, goal setting for incremental improvements. Therefore, it was hypothesized that this type of intervention would also be effective with older students. Because the intervention involved students receiving a combination of supports within the classroom, it was likely that the intervention would result in higher engagement and greater productivity.

2. Will a student-determined, goal-setting intervention with positive teacher feedback improve the students' self-report of school connectedness as assessed by the School Engagement Questionnaire?

It was hypothesized that when given self-determination through choice paired with positive teacher feedback, students would report greater school connectedness.

3. Will teachers implement all intervention components (i.e., fill out teacher portion of contract, give positive feedback, meet with student to review performance) with fidelity, evaluated by a fidelity checklist?

It was hypothesized that following training and practice, teachers would implement all components with an acceptable level of fidelity.

4. Will students and teachers find a combination of student-determined, goal-setting intervention with positive teacher feedback acceptable, as rated by the School Intervention Form (SIRF) Student and Teacher version?

It was hypothesized that students and teachers would rate the intervention as acceptable. It was hypothesized that students would find the intervention acceptable because it relied on self-determination skills and teachers would find the intervention feasible and acceptable because it does not require much extra planning and few additional resources to be implemented.

Chapter II

Review of Literature

Outcomes for Students with Emotional and Behavioral Disorders

Analysis of nationally representative data has made clear that individuals with EBD consistently experience the poorest school outcomes when compared with all other disability categories (Bradley et al., 2008; Newman et al., 2011; Simpson et al., 2011). Several analyses for this population have utilized data from the Special Education Elementary and Longitudinal Study (SEELS), the National Longitudinal Transition Study-2 (NLTS-2) and the *38th Annual Report to Congress on the Implementation of the Individuals with Disabilities Education Act* (IDEA)*, 2016*. The SEELS data included parent and teacher surveys for a sample of more than 11,000 elementary and middle school students, aged 6-12 years who attended schools in randomly selected school districts in the U.S. (including 30 specialized schools exclusively comprised of students with special needs) from 1999-2000. The NLTS-2 data included more than 11,000 adolescents from 501 school districts and 38 specialized schools in grades 7-12 aged 13-16 years from 2000-2001. Data from SEELS and NLTS-2 indicated that students with EBD experience the highest suspension rates compared to students in all other disability categories (i.e., 44% for students with EBD, 21% for students identified with other health impairments, and 17% for students identified with LD; Bradley et al., 2008). Additionally, the *38th Annual Report to Congress on the Implementation of the Individuals with Disabilities Education Act* (IDEA)*, 2014*, which provided information on all individuals with disabilities who receive services through IDEA including information from all 50 states, the District of Columbia, the freely associated states (The Federated States of Micronesia, the Republic of Palau, and the Republic of Marshall Islands), the Bureau of Indian Education, the Commonwealth of Puerto Rico and the

outlying areas of American Samoa, Guan, the Northern Mariana Islands, and the Virgin Islands indicated that from 2013-14, students with EBD were 2.5 times more likely to be suspended for more than 10 days per year than the next highest disability category (i.e., other health impairments), 1.8 times more likely to be sent to an alternative school for incidents involving weapons, drugs or serious bodily injury than the next highest disability category (i.e., LD), and 1.6 times more likely to receive in-school suspension for more than 10 cumulative days compared to the next highest disability category (i.e., other health impairments).

Moreover, Fabelo and colleagues (2011) analyzed individual student records for all students in 3,900 public middle schools, high schools, and juvenile justice facilities in Texas. This study included 928,940 students across 2000-2008 (with students being monitored for up to 6 years). Consistent with other analyses, the authors found that students with EBD were most likely to be suspended or expelled, with 90.2% of these students having received at least one disciplinary action over the course of the study.

Exclusionary punishments, such as suspensions and expulsion, result in missing valuable learning time and have been correlated with other negative outcomes. For example, Fabelo and colleagues (2011) found that receipt of suspension and expulsion was associated with school failure, grade retention, negativity towards school, involvement in the juvenile justice system, and drop out. Specifically, 31% of all students who were suspended or expelled even one time were retained at least once. Additionally, 48% of students who received exclusionary discipline 11 or more times across their secondary career were involved in the juvenile justice system.

Further, receipt of exclusionary punishments may actually increase the likelihood of engaging in problem behavior. For example, Schiraldi and Zeidenberg (2001) found that students who were not in school were more likely to carry a weapon, use alcohol or other drugs,

engage in fighting, and use substances. Students who used substances were also less likely to be in school (Godley, 2006) and more likely to engage in delinquent behavior within the community (Nichols, 2004).

Although the dropout rate for high school students without an identified disability has been decreasing in recent years (U.S. Department of Education; USDOE, 2014), students with EBD have the lowest graduation rate compared to students in all other disability categories (USDOE, 2010; 2015). For example, results from the *38th Annual Report to Congress on the Implementation of the Individuals with Disabilities Education Act* (IDEA)*, 2016* found a 13.0% decrease in students with EBD who graduated from high school from 2004-05 to 2013-14 with a yearly dropout rate of 35.2% for these students. Further, Villarreal (2015) analyzed national- and state-level data (collected from all 50 states as well as the District of Columbia), which were obtained from the Data Accountability Center (DAC, 2011) and included 5,830,191 students identified with disabilities. Of these school-aged students, 388,023 were identified with ED. Similarly, an analysis using descriptive statistics found that 37% of students with EBD dropped out.

Failure to complete high school prohibits students from becoming productive, healthy adults (Bureau of Labor Statistics, [BLS], 2012). In fact, individuals with behavioral problems have poor outcomes following high school. Newman et al. (2011) analyzed NLTS-2 data to determine the post-high school outcomes for youth with disabilities following high school. Results indicated that those with EBD were the least likely to participate in community groups (e.g., sports team, religious clubs, volunteer or community service activities) compared to individuals in other disability groups. Only 53% of individuals with EBD attended any type of education following high school. This rate is higher than just three other disability groups,

individuals with intellectual disabilities (with 28.7% attending some college), autism spectrum disorders (43.9%) or multiple disabilities (32.8%).

Furthermore, there is an overrepresentation of adolescents with behavioral problems in the criminal justice system, which is related to school discipline and school dropout. For example, Fabelo and colleagues (2011) found that 48% of students who received exclusionary discipline 11 or more times across their secondary career were involved in the juvenile justice system. Additionally, individuals who dropped out of school were more likely to spend time in jail than those who finished high school. According to Newman et al. (2011), 75% of youth with EBD were involved with the criminal justice system at least once during their lifetime, which was significantly higher ($p < .01$) than all other disability categories (range = 26%-55%). Among all disability groups, they were the most likely to be arrested, to have spent the night in jail, or to have been on probation in the previous 2 years (Newman et al). Although these numbers are staggeringly high, they might also underrepresent the true number. Leone, Krezmien, Mason, and Meisel (2005) indicated that since individuals often enter correctional facilities after they have left school, the facilities may not have to access information related to their special education status. Due to a lack of available information, studies rely on student self-report. For example, Quinn and colleagues (2005) reported that in 2000, all state correctional systems in the United States were asked to survey all incarcerated youth under the age of 22. Seventy-six percent of agencies responded with results from 33,831 youth. Of these youth, 8,613 indicated that they had been previously identified with a disability and among those, 47.7% indicated emotional disturbance as their primary disability. Even though the percentage of incarcerated individuals with a disability indicates almost half had a diagnosis of EBD, these

data may be an underrepresentation due to the inaccuracy of self-reports (Goodman, Hinden, & Khandelwal, 2000; Stone & May, 2002; Teye & Peaslee, 2015).

Additionally, involvement in the juvenile justice system could be associated with later difficulties with employment. Lanctot and colleagues (2007) conducted a longitudinal study with 931 students during both adolescence and adulthood (i.e., late 20s). They found that even when behavior problems were similar during youth and into adulthood, adolescents who were incarcerated experienced greater job instability during adulthood than adolescents who had not been incarcerated.

Contributing Factors to Poor Student Outcomes

Teacher variables. The reasons for the consistently poor outcomes among students with behavioral problems are multifaceted. Numerous teacher variables have been identified to play a role. These variables include a lack of teacher training in working with students with behavioral problems, a lack of skills to plan and implement effective instruction, and an over-use of negative discipline.

Teacher training and experience. Students with EBD need a specialized, individualized education provided by capable professionals (Kostewicz & Kubina, 2008). Unfortunately, teachers are not receiving adequate training to meet the needs of students with behavioral problems. Analysis of SPeNSE data conducted by Cook, Landrum, Tankersly, and Kauffman, (2003) indicated that teachers of students with EBD had fewer years of teaching experience compared with both regular education teachers and teachers in other areas of special education, reported not feeling prepared to work with students with EBD due to a lack of preparation, and were less likely to follow the students' individualized education programs (IEPs) than teachers of students with other disabilities.

Moreover, an examination of university course syllabi analyzing the kind and amount of training future general education teachers received related to working with individuals with behavior problems identified a lack of training related to social, emotional and behavioral problems (State, Kern, Starosta & Mukherjee, 2011). Syllabi from a random sample of 26 colleges and universities that offered certification in elementary education were evaluated. Descriptive statistics of coded information pertaining to content related to social, emotional, and/or behavioral problems indicated that most institutions offered minimal classes (i.e., 15.4% offered no course, 46.2% offered one course, 19.2% offered two courses, 15.4% offered three courses, and 3.8% offered four courses). When evaluating specific course content, overall, they found little pre-service education provided specifically rated to interventions for students with behavior problems or managing behaviors within the classroom.

Allday, Neilsen-Gatti, and Hudson (2013) conducted another study of the curriculum offered by 109 colleges and universities from across the country that provided training to earn a bachelor in elementary education. Analysis of university websites and college catalogues found that graduation from programs required an average of 124.39 credit hours ($SD = 8.47$). Of these hours, an average of 2.35 ($SD = 1.27$) credit hours were allocated to learning the characteristics of disabilities, 1.2 ($SD = 1.99$) credits were dedicated to inclusion of students with disabilities, and an average of 1.55 ($SD = 1.44$) credits were focused on classroom management. Although teachers may get some form of instruction related to working with students with behavior problems and classroom management, this instruction is limited. Therefore, teachers may not have the skill or preparation to implement effective instruction to meet the needs of learners with emotional and behavioral problems.

The Study of Personnel Needs in Special Education (SPeNSE), which was conducted by the U.S. Department of Education's Office of Special Education Programs (OSEP) from 1999-2000, has been used to evaluate teacher qualifications and experience. Billingsley, Fall, and Williams (2006) utilized the SPeNSE database to compare demographic characteristics and qualifications of 859 K-12 teachers of students with EBD to 3,687 special education teachers in other areas (e.g., learning support, intellectual disabilities, autism spectrum disorders). They used chi-squared Automatic Interaction Detection of weighted estimates and found that teachers of students with EBD were significantly younger ($M = 42.31$, $SE = 0.61$) than other special education teachers ($M = 43.37$, SE = 0.28); t (221) = -20.859, p < .01). Although the mean age is similar, the difference is apparent in the percentage of teachers across age categories. For example, 30.49% of teachers with EBD are 45-50 years of age whereas 40.61% of other special education teachers are 45-54 years of age. Additionally, analysis indicated that teachers of students with EBD had been teaching for significantly fewer years ($M = 7.24$) than other special education teachers ($M = 11.08$). Moreover, EBD teachers who were not fully certified often had emergency certification (10.36%), had no teaching certification at all (2.08%), or had certifications in a field outside of special education (3.65%). Further, Henderson, Klein, Gonzalez, and Bradley (2005), also analyzing SPeNSE data, found comparable results in terms of lack of certification and teaching experience and additionally discovered that teachers of students with EBD differed from other special education teachers in that they were less likely to have a master's degree (52.9% versus 60.3%, $p = .021$).

These differences could be especially problematic as teachers with fewer years of teaching experience rate problem behavior as more problematic than teachers with greater years of experience. For example, 15 teachers with a variety of teaching experience (range = 4-27

years of teaching) were asked to rate the behaviors of 332 children (mean age = 3.5 years) using the Social Skills Rating System Pre-School Version (Gresham & Elliot, 1990) and the Caregiver Teacher Report Form/2-5 (CTRF; Achenbach, 1997). Years of teaching experience was a significant predictor of the CTRF scores, with teachers with fewer years of experience indicating higher levels of problem behavior than teachers with more years of experience (Kaiser, Cai, Hancock, & Foster, 2002).

Not surprisingly, when teachers do not have experience and full certification, they are less prepared to meet the needs of their students. For example, Sutherland, Denny, and Gunter (2005) surveyed 109 teachers of students with EBD to examine the needs and differences of fully licensed teachers (82.6%) and those with emergency certification (17.4%) in four school districts in the mid-eastern United States. Although experienced teachers self-reported limitations in their ability to provide academic instruction to students with EBD, less experienced or emergency-certified teachers reported even more perceived limitations than fully licensed teachers in the areas of planning instruction, providing instruction, classroom management, behavior and social skills, families, and collaboration. Significant differences resulted in the areas of planning instruction, $t\,(1,103) = 2.17$, $p = .032$, and classroom management, $t\,(1,101) = 2.89$, $p = .005$, where fully licensed teachers had greater feelings of competence than emergency certified teachers.

Teacher skills. Regardless of the behavior and skills students bring into the classroom, the probability that they will experience academic success relies greatly on the teacher's instructional behavior (Hattie, 2009). For SPeNSE data collection, surveys were used to obtain teacher self-reports of their use of behavioral management. Analyzing these data, Henderson, Klein, Gonzalez, and Bradley (2005) found that teachers of students with EBD ($n = 859$)

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perceived they had less skill interpreting standardized test results, case-managing, and practicing inclusion than special education teachers in other disability areas ($n = 3,687$). In addition, Henderson et al. found that teachers often failed to provide academic differentiation or behavioral differentiation to proactively manage behaviors. Although research has demonstrated that there are fewer problem behaviors observed in classrooms where teachers provide evidence-based behavioral interventions, such as reinforcement and praise, research has also demonstrated that teachers often fail to use positive attention and positive feedback in the classroom (Shores, Gunter, & Jack, 1993). For example, Hirn and Scott (2014) conducted 827 observations of student and teacher behavior in classrooms where at least one student was targeted as EBD to assess whether teacher interactions with students with EBD and those without EBD differed. They found that overall teachers gave lower rates of positive feedback ($M = 0.03$/min) and negative feedback was much higher ($M = 0.11$/min). Additionally, interactions with students with and without EBD differed. Teachers provided more negative feedback to students with EBD with a mean of once every 9 min with a positive to negative feedback ratio of 1:3.76. For their peers without EBD, teacher provide less negative feedback with a mean of once every 20 min resulting in a positive to negative feedback ratio of 1:1.42.

Teachers also offer less direct instruction in addition to not providing specialized instruction. Scott, Hirn, and Alter (2014) completed 1,197, 15-min direct observations of teacher and student behavior in elementary ($n = 294$) and high schools ($n = 903$) using the Multiple Option Observation System for Experimental Studies (Tapp, Wehyby, & Ellis, 1992). Use of frequency, duration, Pearson correlations and t-tests found that teaching behaviors changed from elementary school to high school. For example, teaching behavior (i.e., whole group, small group, or individual instruction where the teacher was the facilitator) decreased from 71% of

observations in elementary school to 55% of observations in high schools. Additionally,

Hayling, Cook, Gresham, State and Kern (2008) conducted a study of 90 classrooms (58 in PA

and 32 in CA), including 135 participants. Staff in both public and private/nonpublic schools

were asked to refer students who had the most significant behavior challenges and most

participants had diagnoses of EBD. Classrooms in private/nonpublic schools were only self-

contained EBD whereas classrooms in public schools varied in type (e.g., general education,

learning support, emotional support, partial hospitalization, autism support). Data were collected

twice throughout the school year on the type of activity occurring in each classroom (e.g., whole-

class instruction, small group instruction, cooperative learning, one-on-one instruction) including

academic and non-academic activities. Descriptive and inferential statistics indicated that

practices in self-contained Emotional Support classrooms (48% of classrooms observed) did not

substantially differ from general education classrooms (36% of classrooms observed) and

regardless of setting or state, the most frequent activities in these classrooms for students with

EBD were independent seatwork (M = 42% of the time) and whole class instruction (M =36% of

the time). Individualized or specialized instruction was uncommon.

  Teacher disciplinary actions. Teachers, especially those without experience and training,

often rely on methods of dealing with problem behaviors that are punitive, such as removal from

the classroom or suspension, perhaps because they do not have the skills to implement positive,

less punitive measures. Additionally, teachers may over-rely on punitive disciplinary measures.

For example, Schiraldi and Zeinberg (2001) evaluated data on youth crimes from the Berkeley

Media Studies Group and the Justice Policy Institute, which included survey data from 3,000

high school seniors every year from 1976-1998. They found that the number of suspensions and

expulsions almost doubled from 1.7 million students in 1974 to 3.2 million students in 1998 even

though overall, the rates of school victimization (e.g., stolen personal item, damaged personal property, injured or threatened with or without a weapon) remained similar or decreased.

Reliance on punitive procedures is particularly problematic for students with EBD, who receive disciplinary referrals at a much higher rate than their peers. Anderson, Kutash, and Duchnowski (2001) analyzed national data from beginning elementary school (i.e., kindergarten or first grade) and the end of elementary school (i.e., fifth or sixth grade) from a sample of 8,000 students with diagnoses of EBD or LD. Using repeated measures with follow-up MANOVAs, results indicated that students with EBD received more behavioral referrals than students with LD. Further, Krezmien, Leone, and Achilles (2006) analyzed short term (i.e., less than 10 days) and long-term (i.e., 10 days or more) suspension data in Maryland from 1995-2003. They found that there was an overall increase in suspensions from a total of 85,071 in 1995 to 134,998 in 2003. Using logistic regression to analyze suspension rates based on the predictors of race and disability, they found that regardless of race (i.e., White, African American, Hispanic, Asian, American Indian), when considering disability category (i.e., no disability, cognitive disabilities, speech/language impairment, emotional disturbance, other health impairment, learning disability, autism spectrum disorders, and other disabilities), students with EBD received the highest number of suspensions. Another analysis of the SEELS and NLTS-2 data concluded that students with EBD received a high rate of suspension and expulsion. Weighted frequencies and means of students with EBD were compared across the SEELS and NLTS-2 studies. Behavioral indicators showed that 72.9% of secondary students with EBD were suspended or expelled compared to 27.6% of students with other disabilities and 22.0% of the general education population (Wagner, Kutash, Duchnowski, Epstein, & Sumi, 2005).

Student variables. In addition to teacher variables, numerous student variables that individuals with behavioral problems experience may contribute to their poor outcomes. These can include a lack of academic engagement in the learning process, a history of academic failure, a lack of self-determination and autonomy in the classroom as well as emotional and behavioral problems. The combination of teacher variables, on-going failures, and lack of ability to provide input can lead to a state of learned helplessness.

Lack of engagement. Classroom engagement has been identified as a predictor of student success (Hattie, 2009). Higher levels of school engagement have been linked to numerous positive outcomes such as decreased use of alcohol and drugs, increased feelings of life satisfaction and wellbeing, and persistence in high school completion (Chapman, Buckley, Sheehan, Shochet, & Romaniuk, 2011; Lewis, Huebner, Malone, & Valois, 2011; Shochet, Dadds, Ham & Montague, 2006). Further, classroom engagement has been identified as one of the strongest predictors of student success (Hattie, 2009).

Feelings of school connectedness play a prominent role in shaping adolescent behavior. For example, 540 9th grade general education students (ages 13-15) from five schools in Australia completed the Australian Self-Reported Delinquency Scale (ASRDS; Mak, 1993) along with the School as a Caring Community Profile-II (Lickona & Davidson, 2003). Analysis of the assessment results, using logistic regression, found that lower levels of school engagement significantly contributed to a variety of negative outcomes, such as increased transportation related risk-taking injuries (e.g., motorcycle and driving-related injury), $X^2(1) = 14.34$, $p < .001$, and violence injuries (e.g., fighting), $X^2(1) = 14.34$, $p < .001$. Students with increased school connectedness engaged in less risky behavior (Chapman et al., 2011).

Unfortunately, research has demonstrated that engagement decreases as students progress through school. Scott, Hirn, and Alter (2014) completed 1,197, 15-min direct observations of teacher and student behavior in elementary ($n = 294$) and high schools ($n = 903$) using the Multiple Option Observation System for Experimental Studies (Tapp, Wehby, & Ellis, 1992). Frequency and duration data were analyzed and found that student engagement decreased from 95% engagement in elementary school to 82% engagement in high schools, and student disruptive behavior increased from a rate of 1 per 33 min in elementary school to a rate of 1 per 11 min in high school.

For students with behavioral problems, decreases in school engagement are more pronounced as they are more likely than their peers to demonstrate off-task and disruptive behaviors. For example, Hirn and Scott (2014) completed observations in general education, high school classrooms where there was a least one targeted student with EBD with evidence of problem behavior. EBD students were considered eligible if they had demonstrated problem behaviors in the classroom that resulted in at least three discipline referrals and did not to respond to typical disciplinary procedures. Using the Multiple Option Observation System for Experimental Studies Version 3 (MOOSES; Tapp, & Wehby, 1995) for data collection during 15-min observation sessions, the authors calculated active engagement (e.g., reading, writing, answering questions), passive engagement (e.g., listening or looking at the teacher), and off-task behavior (e.g., sleeping or working on something not assigned by the teacher). Results indicated that targeted EBD students were actively engaged for 36% of the observations compared to 47% active engagement for their peers. Further, students with EBD were passively engaged for 28% of observational time compared to 36% for their peers and students with EBD were off-task for

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27% of observational time compared to 10% for their peers. Overall, students with EBD were engaged 18% less and off-task 17% more than their typical peers.

In another study by Hayling, Cook, Gresham, State, and Kern (2008) observations were conducted of 135 students, the majority of whom had diagnoses of EBD and were referred to a larger study due to significant problem behaviors. Two 30-min observations were conducted across 90 elementary, middle school, and high school classrooms in Pennsylvania and California where 36% of classrooms were general education, 48% were self-contained emotional support classrooms, 9% were learning support classrooms, and 7% were considered other (e.g., partial hospitalization). Analysis using descriptive and inferential statistics indicated overall relatively low rates of student engagement (i.e., on average, 77% of intervals) and relatively high rates of problem behavior (i.e., on average, 11% of intervals). Moreover, data showed a significant correlation between engagement and disruption, indicating that less engaged students were also more disruptive.

Hirn and Scott (2014) also analyzed the rate of and disruptive behavior (e.g., making noising or threatening comments) of students identified with EBD compared to their unidentified peers. They found that EBD students engaged in more disruptive behavior, at a mean rate of 0.15 per min or once about every 6.7 mins, compared to their nondisabled peers, at a mean rate of 0.04 per min or approximately once every 25 mins. Together, these data provide support for the need of additional classroom strategies to increase engagement for students with EBD, especially for older students.

Lack of academic success. Lack of academic success is another variable that contributes to poor outcomes among students with behavioral problems. Students with EBD perform significantly worse academically in areas of reading, math, and writing compared to students in

other disability categories as well as their peers without disabilities. A meta-analysis of 25 studies published between 1961-2000, including 2,486 students, found that students with EBD demonstrated significant academic deficits with 75% of students with EBD scoring below the mean academically. Results indicated that these shortfalls were seen across all subjects with the largest discrepancies in math (-.81) and spelling (-.81), and performance was significantly lower than students without disabilities (Reid, Gonzalez, Nordness, Trout, & Epstein, 2004).

National data also have revealed that individuals with EBD have had consistently poor academic outcomes across grade levels and time. For instance, analysis of SEELS and NLTS-2 data compared academic ability, reported as average percentile rankings of Woodcock Johnson III reading and math subtests, of students with EBD at the elementary (i.e., first-fifth grade), middle (i.e., sixth-eighth grade) and high school levels (i.e., ninth-twelfth grade). Results indicated that of the 1,081 participants aged 6-12 from the SEELS data and the 1,077 participants aged 13-16 from the NLTS-2 data ($N = 2158$), 61% of students were in the bottom 25th percentile for reading and that 43% were in the bottom 25th percentile for math (Wagner et al., 2006; Wagner, Kutash, Duchnowski, Epstein, & Sumi, 2005).

More recently, Bradley, Doolittle, and Bartolotta (2008) analyzed national data, including SEELS, NLTS-2, and the National Adolescent and Child Treatment Study (NACTS; Greenbaum et al., 1996). The NACTS study included 812 students with EBD (aged 8-18) across seven years (i.e., 1985-1992). Results of student outcomes found that the clear majority of students with EBD achieved below expected grade level in reading and math (i.e., 75% and 95% respectively). Even more recently, Gage, Wilson, and MacSuga-Gage (2014) used propensity score matching (PSM; Rosenbaum & Rubin, 1984) to compare the writing performance of 114 students with EBD to both a matched sample and a full sample of 3,187 students without disabilities using

results of the Connecticut State Mastery Test (CMT), which assesses reading, mathematics, and writing. The authors matched the participants in two steps. The first step used logistic regression to predict EBD status based on demographic characteristics (i.e., grade, race, socioeconomic status, English learner status, and gender). The second step included a matching macro to identify the best nonidentified student match for each student with EBD. Using the direct assessment of writing portion of the CMT (i.e., scored by trained judges), they found that students with EBD performed significantly worse than their peers. Overall, 80% of students with EBD scored at the basic or below basic level compared to 30% of their peers ($M = 0.0$, $SD = 1.0$) on the writing measure.

Wagner, Kutash, Duchnowski, and Epstein (2005) found that students with EBD had the lowest grades compared to students from all disability categories. These pervasive academic deficits can impact students over the long-term as students with higher grade point averages (GPA) are more likely to persist in postsecondary education (Lee, Rojewsky, Gregg, Jeong, 2015). Conversely, for individuals who have consistently poor performance across subjects and low GPAs, negative effects can be observed beyond high school. Data from the NLTS-2 included 10,760 students (770 students with either LD or EBD and 9,990 without disabilities) who were followed students from grade 12 until 2 years after high school. The purpose was to analyze the influence of selected risk and resilience factors on college persistence for individuals with or without LD or EBD where persistence was defined as completing a 2-year post-secondary education or enrolling in a 4-year program. The authors used GPA to indicate student general academic achievement. Findings indicated that although the GPA of youth with disabilities was lower than their peers without disabilities ($M = 2.167$), those with higher GPAs were more likely to continue their education following high school. Further, adolescents with

EBD were approximately 70% less likely to enroll or persist in college compared to peers without disabilities (Lee et al., 2015). These data indicate that poor academic performance can have a long-term impact. Students with EBD need classroom strategies to increase their engagement and productivity, which should in turn have a positive impact on their GPA.

Lack of self-determination skills. Poor self-determination skills may also explain the outcomes of students with behavioral problems. Self-determination is multifaceted and skills can vary. Deci and Ryan (1985) proposed the organismic integration theory (OIT), which describes a self-determination continuum. At one end of the continuum is a lack of motivation followed by extrinsic motivation in the center, and intrinsic motivation on the other end of the continuum (as cited in Ryan & Deci, 2000). When people are unmotivated, they do not perform tasks or just go through the motions without a real purpose. This could be because they do not believe they have the skills to perform the task (Bandura, 1986) or think that no matter what they do, they will fail (Seligman, 1975).

Researchers have postulated three components of self-determination, which include an internal locus (i.e., internal agreement with actions taken), volition (i.e., the feeling of freedom gained by following one's own will or desires), and perceived choice (i.e., the ability to choose between options; Reeve, Nix, & Hamm, 2003). According to Field, Martin, Miller, Ward, and Wehmeyer (1998), having self-determination skills means that an individual has the necessary supports, ability, and motivation to manage his/her life in individually significant ways. In order to have self-determination, students need to demonstrate autonomy, competence and relatedness and together, these areas provide what is needed to learn, demonstrate appropriate classroom functioning, and experience psychological wellbeing (Jang et al., 2009; Ryan & Deci, 2000).

Further, Test et al. (2009) completed a review of secondary transition literature to find in-school predictors of improved post-secondary outcomes. They analyzed publications between 1984 and 2009. Using 22 articles, 26,480 total participants, and stepwise regression, the authors identified 16 evidence-based predictors of positive post-school outcomes (i.e., education, employment and/or independent living) for students with disabilities. One predictor was the presence of self-determination skills in high school, which predicted post-school employment with a large effect (range = .70-.86).

Students need to be taught skills such as setting realistic goals, evaluating progress toward self-selected goals, advocating for opportunities and supports, and accepting responsibility for their actions (Test et al., 2004). Individuals with strong self-determination skills can discuss their strengths and interests, make personal decisions regarding future actions, request assistance and support when need, and display leaderships skills (Carter, Trainor, Owens, Sweden, & Sun, 2010). Further, self-determination skills have been linked to improvements in academic performance as well as positive post-secondary education and improved employment (Mooney, Ryan, Uhing, Reid, & Epstein, 2005; Test et al., 2009).

Research indicates that students with EBD have fewer self-determination skills than students with other disabilities (Carter, Lane, Pierson, & Glaeser, 2006; Houchins, 2002; Seo, Wehmeyer, Palmer, & Little, 2015). Wolman, Campeau, DuBois, Mithaug, and Stolarski (1994) measured the global self-determination skills using teacher reports on the *American Institutes for Research Self-Determination Scale* (AIR scale) of 196 high school students aged 14.5-20.8 (M = 17.3), where 49 were students with mild/moderate cognitive disabilities, 50 were students with EBD, and 97 were students with LD. The AIR is a global measure of student capacity for self-determination (e.g., making connections to needs and wants), ability for self-determination (e.g.,

knowing how to meet own goals), perceptions of the efficacy of self-determination (e.g., setting

goals that might be different than teacher expectations), and knowledge of self-determination

(e.g., being able to act upon plans). Examples of questions include: "Student knows how to

make choices, decisions, and plans to meet own goals and expectations" and "Student feels free

to set own goals and expectations, even if they are different from the expectations others have for

the student." The researchers found that although teachers reported that opportunities for

students to engage in self-determined behaviors at school were similar among disability groups,

the self-determination skills of secondary students with EBD were significantly lower than for

students with LD and cognitive disabilities (Carter, Trainor, Owens, Sweden, & Sun, 2010).

Another study by Seo, Wehmeyer, Palmer and Little (2015) evaluated the self-

determination skills of 724 adolescents (ages 11-20) who were identified with EBD (n = 120) or

LD (n = 604). Regression and confirmatory factor analyses of student responses on the four

subscales of the *Arc's Self-Determination Scale* (i.e., autonomy, self-regulation, psychological

empowerment, and self-realization) revealed that students with EBD had significantly lower

mean scores in the autonomy subscale, $\Delta \chi^2 (1) = 12.453$, $p < .01$, which resulted in lower

overall scores of self-determination (*M* = 93.28) compared to students with LD (*M* = 97.52).

Fortunately, being given the opportunity to learn and try self-determination skills allows

students to make improvements in school and beyond (Benitez, Lattimore, & Wehmeyer, 2005;

Carter et al., 2010). A study by Herron and Martin (2015) used the student version of the

American Institutes for Research Self-Determination Scale (AIR; Wolman, Campeau, DuBois,

Mithang, & Stolarski, 1994) to evaluate 36 middle school (grades 6-8) students (ages 11-15) with

EBD. The student version of the scale has three self-determination components including: (a)

thinking (i.e., identifying needs and setting goals); (b) doing (i.e., making choices and plans to

meet goals); and (c) adjusting (altering plans to meet goals). Using multiple regression analysis,

the authors found that with opportunity to learn and practice self-determination skills, the

number of school absences decreased, r (34) = −.404, p < .05, GPA increased as student

attendance increased, r (34) = −.422, p < .05 and the number of school disciplinary referrals

decreased, r (34) = −.426, p < .05.

In another study Kelly and Shogren (2014) used a multiple baseline across participants

design to test the effects of the *Self-Determination Learning Model of Instruction* (SDLMI) on

the off-task behavior of four, 14-16-year-old students with EBD. The SDLMI teaches a variety

of skills related to self-determination including (a) choice-making, (b) decision-making, (c)

problem-solving, (d) goal-setting, (e) self-management, and (f) self-advocacy/leadership skills

through answering 12 questions in a problem-solving order (e.g., "What do I want to learn,"

"When do I start?"). Students used answers to the questions to define their goals and create a

plan and self-monitor for 60-min periods. Results indicated that all students decreased their off-

task behavior and those decreases were maintained following removal of the intervention.

Giving students the opportunity to set goals and incorporate choice into activities allows

increased self-determination that can lead to improved motivation and appropriate behavior

within the classroom.

Learned helplessness. Learned helplessness may also account for the poor outcomes

among students with behavioral problems. Learned helplessness, first studied by Seligman

and Maier (1967), is the phenomenon where animals, subjected to unavoidable electric shock,

do not attempt to escape from future shocks even when the circumstances have changed so

that the situation is easily escaped. Learned helplessness has been found to occur not only

with animals in research studies, but also with people (Hiroto, 1974). For example, some

students who have experienced previous academic failure do not make future attempts to succeed, even when they are able. When people perceive their behaviors are extraneous to the results, they may be said to demonstrate learned helplessness (Diener & Dweck, 1980; Seligman, Maier, & Greer, 1968).

Diener and Dweck (1980) stated that all individuals can be placed in one of two categories: (a) mastery-oriented individuals who are inclined to put an emphasis on motivational factors and perceive failure as conquerable and (b) helpless individuals who attribute their difficulties to lack of capacity and view failure as undefeatable. Dweck and Reppucci (1973) found that mastery-oriented students indicated achieving success because they put in effort and believed that they could duplicate this success in the future whereas individuals with learned helpless indicated that past success was not related to future consequences.

Hiroto (1974) tested the theory of learned helplessness with humans. This study involved a noise experiment with 96 college students who were randomly assigned to one of three main groups (a) a control group that heard no noise following the example, (b) a group that heard noise that was inescapable, and (c) a group that heard noise that was escapable. Students were given examples of the noise, a box with a sliding knob on top, and directions. They were told that they would need to figure out how to stop the noise when it sounded; if they guessed correctly it would stop, otherwise the sound would continue. However, in addition to these directions, half of the participants in the inescapable noise group and half of the participants in the escapable noise group were also told that they had no control over the tone and ultimately it would be up to the researcher to decide whether it stopped or not (i.e., a chance condition). Results indicated that students in the escapable noise group were most successful, students in the

unescapable were less successful than the escapable group, and those in the chance condition of unescapable were the least successful (i.e., made the least attempts). Overall, this study showed than when people had no control or perceived no control, they made attempts at change fewer times than those who had control and/or perceived control.

There appears to be no empirical research examining learned helplessness in individuals with EBD and limited research with students with special needs. One study by Valas (2001) examined 1,833 Norwegian students having a diagnosis of LD, and regular education students who were low achieving (LA) or not low achieving (NLA) in grades 4 (n = 727), 7 (n = 596), and 9 (n = 537). Helmert contrasts were used to test the differences between NLA and LD and LA students as well as the difference between LA and LD students on the variables of attribution to ability, attribution to work, expectations (including verbal performance and mathematics), and helplessness. Helplessness was measured by teacher ratings of a modified *Motivation to Learn* scale (Stipek, 1993). Attributions related to ability and work were measured by student reported items on a 4-point Likert scale with researcher-created questions such as "Low achievement in mathematics is due to low effort in mathematics" and "Doing well in mathematics depends primarily on good abilities in mathematics." Performance expectations were also measured on a researcher-created 7-point Likert scale (from very bad to very good) with questions such as "If you did your best in mathematics, what would you expect your performance to be?" A multivariate analysis found that students who were LD and LA demonstrated significantly more helplessness ($p < .001$), and they indicated that their success in verbal performance and mathematics was related to ability. Conversely, NLA students attributed success in verbal performance and mathematics to work. Individuals may experience learned helpless if they believe that no matter what they do, they will fail; however, if a shift in thinking can be placed

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on effort rather than outcome (i.e., mastery oriented focus), then these individuals may have a change in their mindset and become more productive.

A Cycle of Disengagement

Students in the classroom are often off-task; however, research has demonstrated that students with EBD are off-task more frequently than their typical peers (Baker, Clark, Maier, & Vigor, 2008). When students are consistently off task and display challenging behaviors, teachers may react by reducing attention and instruction (Shores, et al., 1993). Because teachers lack knowledge to manage behaviors and provide academic support (State et al., 2011; Sutherland et al., 2005), students become further behind academically and subsequently are punished, often with exclusionary practices, which results in further loss of instructional time and feelings of helplessness (Diener & Dweck, 1980; Wagner et al., 2005). Suspensions and fighting behavior may be interconnected as students with EBD engage in twice as much fighting than students in any other disability category and also receive the most exclusionary discipline (Bradley et al., 2008). These negative experiences result in a cycle of disengagement that can lead to a lack of engagement and productivity (see Figure 1).

Variables that Contribute to School Engagement and Productivity

Fortunately, research has demonstrated there are variables that can improve outcomes for students with behavioral problems. These include increasing self-determination skills and autonomy by allowing students to make choices, or provide input into their own education. Additionally, goal setting and positive feedback have been linked to school engagement and productivity.

Choice-making/providing input. Self-determination skills have been linked to improvements in academic performance as well as positive post-secondary education and

improved employment (Mooney, Ryan, Uhing, Reid, & Epstein, 2005; Test et al., 2009). One

feature of self-determination is perceived choice (Reeve, Nix, & Hamm, 2003). Research has

found that incorporating choice increases on-task behavior while decreasing problem behavior

(Bambara, Anger, & Kroger, 1994; Vaughn & Horner, 1997). Beyond finding improvements in

education and employment, choice making is considered essential for a high quality of life (Felce

& Perry, 1995).

Research has demonstrated that incorporating choice can positively impact the

performance (i.e., increase engagement and decrease problem behavior) of elementary students

with EBD (Dwyer, Rozewski, & Simonsen, 2012; Jolivette, Wehby, Canale, Massey, 2001;

Romaniuk et al., 2002) as well as middle school students with EBD. For example, Kern,

Bambara and Fogt (2002) provided choices for six 13-14-year-old males with EBD in a

university affiliated private school. Examples of providing choice included allowing students to

vote on the activity at the beginning of each lesson, choose whether to work on a computer or

with a peer, and choose materials for each activity. Single subject analysis using a reversal

design revealed that when given choice, the participants increased their academic engagement

and decreased instances of disruptive behavior. Similarly, Skerbetz and Kostewicz (2013) tested

providing choice for five 13-year-old students with or at risk for EBD in a regular education,

inclusive setting in a public charter school. They analyzed the effects of having a choice or no

choice on four dependent variables including (a) task engagement, (b) work completion, (c) task

accuracy, and (d) amount of time to complete the assignments using 15 s momentary time

sampling for 7-min work periods. The choice condition included the option of one of four types

of assignments (i.e., cloze sentences, writing sentences, fill in the blank, and word maps); the no

choice condition was a randomized pre-selection and assignment of the same four types of

assignments. A reversal design demonstrated that two students showed clear increases and two students had moderate increases in engagement and work completion, four students completed assignments with greater speed and accuracy, and one student demonstrated no change. Additionally, four of the students reported that having a choice helped them to complete classroom assignments. To date, there has been no research with the choice intervention to evaluate engagement and disruptive behaviors with high school students (ages 14-18) who are educated in a public school.

Goal-setting. Goal setting is another strategy that has been shown to increase the engagement and productivity of students. Locke and Latham (2006) indicated that as goals become more specific, they are more likely to be accomplished. In addition, research suggests that goal setting may be most effective when the task has a low level of difficulty and the goals are specific, clear, and reachable (DeShon & Alexander, 1996; Ilgen & Davis, 2000; Kluger & DeNisi, 1996; Krenn, Würth & Hergovich, 2013).

Two types of goals have been identified as embodying distinguishing patterns of learning processes: mastery and performance goals (Senko & Harackiewicz, 2005). Mastery goals focus on student learning of new skills and making improvements in other areas, assessing how much students learn. On the other hand, performance goals focus on ability and emphasize accomplishment in comparison to others and consider ability over effort, such as determining how well a student can perform on an exam compared to a reference group (Ames, 1992; Dweck & Legget, 1988; Hidi & Harackiewicz, 2013). Kaplan et al. (2002) conducted a longitudinal study that included 338 students and 25 math teachers across 60 classrooms. The classrooms they attended were categorized as either mastery or performance-based and students and teachers completed surveys regarding perceived student disruptive behavior in the classroom. Results

using hierarchical linear modeling indicated that teachers reported less disruption in classrooms that were mastery-based than in classrooms where instruction used performance-based methods. Further, students reported there was less negative behavior in mastery classrooms than performance classrooms. They concluded that practices in mastery-oriented classrooms promote the idea that students are in school to learn and improve upon their current skill level whereas performance-based classrooms focus on ability to demonstrate proficiency in meeting teacher-determined goals, such as scoring well on exams (Kaplan, Gheen, & Midgley, 2002).

As discussed in the concept of learned helplessness, individuals who are mastery oriented place greater emphasis on effort rather than outcome (Diener & Dweck, 1980). Similarly, with students who create mastery goals that focus on the learning of new skills, the emphasis is placed on the process, amount learned, and effort rather than the performance in comparison to peers or teacher evaluation (e.g., a grade on an assignment) (Ames, 1992; Dweck & Legget, 1988; Hidi & Harackiewicz, 2013). This suggests that an important intervention focus would be student accomplishment based on effort, followed by small, incremental changes.

Positive feedback. Positive feedback refers to verbal responses provided following academic or social behavior that confirms the response is correct or appropriate (Hirn, 2011). Research has shown that when teachers use positive feedback, students with EBD may actually engage in more on-task behaviors and decrease problem behaviors. For example, Kennedy and Jolivette (2008) analyzed the effects of teacher given positive feedback on the amount of time spent outside of the classroom (e.g., being sent out for behavioral reasons, walking out, serving in-school suspension) for two 12-year-olds with EBD who were being educated in a self-contained classroom in a residential treatment facility. Using a multiple baseline across class periods, results indicated that positive verbal feedback decreased the amount of time that the

students were out of the classroom. The study included one baseline phase and two consecutive

phases with increases in the average amount of positive teacher feedback; feedback in Phase I

was increased by teachers setting their own goal to increase from their baseline mean by one

positive comment (e.g., if baseline mean was 4 comments, teachers would give five during Phase

I). Similarly, feedback in Phase II was set by teachers adding two additional positive comments

above their baseline mean. Participant 1 was out of the classroom a range of 0%-90% ($M =$

25%) of time during baseline, which decreased to a range of 0%-13% ($M = 3$%) with seven

occurrences of positive teacher feedback in Phase I and to a range of 0%-9% ($M = 2$%) with an

average of eight occurrences of positive teacher feedback in Phase II. The second student was

out of the classroom a range of 0%-49% ($M = 34$%) of time during baseline and decreased to a

range of 0%-45% ($M = 13$%) with an average of five occurrences of positive teacher feedback in

phase I and to a range of 0%-27% ($M = 14$%) with an average of seven occurrences of positive

teacher feedback in Phase II. One week later during a maintenance phase, the first student

received 14 positive comments and was out of the room for 0% of the observation and the

second student received nine occurrences of positive feedback and was out of the classroom 0%

of the observation.

Another study by Swinson and Knight (2007) evaluated the quality and quantity of

teacher feedback on the behavior of 24 secondary students selected for consistently

demonstrating challenging behavior. Analysis of observational data of student behavior found

that targeted students were significantly more likely to engage in challenging behavior (e.g., out

of seat, shouting out, distracting others, arguing, inattentive) than their peers ($t = 4.605$, df $= 347$,

p < 0.001). Additionally, observations of students and teachers using momentary time sampling

found that there was a positive relationship between student on-task behavior and teacher use of

positive feedback; specifically, positive feedback directed to a targeted student regarding his/her

work resulted in more on-task behavior. Further, Blaze, Olmi, Mercer, DuFrene and Tingstom

(2014) analyzed the effect of teacher praise on engagement and disruption of high school

students in four classrooms. Teachers were given MotivAiders, which vibrated to prompt them

to use praise. A multiple baseline withdrawal design across four teachers was used to determine

the effects of loud/public praise and quiet/private praise. Results of visual analysis indicated that

both loud and quiet praise increased engagement by a mean of 31% and decreased disruptive

behavior by a mean of 20%. When evaluating the difference between treatment where praise

(either loud or quiet) was delivered compared to no treatment, there was a significant effect, F

$(1, 2.9) = 51.8$, $p = .006$, on engagement favoring the praise condition. There was not a

significant difference between loud and quiet praise. There was also a significant difference

between intervention and no treatment, F $(1, 2.8) = 32.3$, $p = .01$, on disruptive behavior. When

students received more praise, their rates of disruptive behavior significantly decreased

compared to not receiving praise. These studies show the importance of positive feedback in

increasing the school-appropriate behaviors of students with EBD.

     According to social cognitive theory (Bandura, 1997), after students receive positive

feedback, they are more likely to set higher goals and achieve those goals, if the goals are

perceived as attainable. When older students receive positive reinforcement related to their

performance, they are more likely to increase the level of difficulty of their goals. For example,

in a study by Krenn and colleagues (2013) that took place at the University of Vienna, 413

students participated to determine how feedback affected performance and goal setting. Students

completed a computer task three times and received either positive or negative feedback from the

program after each performance. After receiving either positive or negative feedback, students

were given one of the following three options for the next set: "maintain the standard," "raise the standard," or "abort." If they chose to practice to maintain, they believed the difficulty level would remain constant whereas they believed that raising would increase the difficulty. Abort would end the session. Pearson chi-square tests, used to compare the participants' goals after receiving either positive or negative feedback, showed a significant difference between the two conditions. Following positive feedback, 84.7% of students chose to raise the difficulty level while only 12.7% of students chose to raise it following negative feedback. This study supports that when feedback suggests students have accomplished their goal, they are more likely to adjust their performance accordingly and set a higher goal in the future.

Combining Effective Procedures

Intervention may be most effective when delivered in a package where effective procedures are combined, including multiple self-determination strategies. Martin, Mithaug, Cox, Peterson, Van Dycke, and Cash (2003) claimed that students need to learn strategies to self-regulate and become motivated, which should be included within interventions. They discussed several approaches that have been historically used to teach self-management strategies, including the Adaptability Instructional Model (Mithaug, Martin, & Agran, 1987), the Self-Determined Learning Model of Instruction (Wehmeyer, Palmer, Agran, Mithaug, & Martin, 2000), the ChoiceMaker Self-Determination Curriculum (Martin & Huber Marshall, 1995), and the Self-Determined Learning Theory (Mithaug, Mithaug, Agran, Martin, & Wehmeyer, 2003). The investigators claimed that each theory underlying the approach focuses on making adjustments in goals and behavior, which is essential for success. Furthermore, they stated that if students learned how to match their adjustments with their self-identified needs and interests, even greater success would be found. The authors indicated a belief that teachers may be

unaware of strategies, such as self-determination contracts, that would outline expected performance, include self-evaluation, provide opportunities to self-regulate and make adjustments, as well as allow for reinforcement that could lead to student improvement.

Martin and colleagues (2003) illustrated how effective practices can be combined to increase the engagement and productivity of students with EBD. Their study included eight male students, ages 9 and 10, who had been identified as having severe behavioral problems (including fire starting, pet killing, and tantrums) and were placed in a residential treatment facility. The students were tested to be performing academically at one to three years below their current grade level, but fell in the average to above average intelligence range. In addition, most had experienced physical or sexual abuse, extreme parental neglect, and parental substance abuse. Seven were taking psychotropic medications and six also had previously been diagnosed with conduct disorder and attention deficit hyperactivity disorder. The teacher of these students wanted to use the strategy of self-determination contracts to improve behavior in the area of self-regulation.

An interrupted time-series action design was used for each phase. In the first phase, the teacher showed students the self-determination contracts without instructing the students on how to use them. In the second phase, the teacher awarded bonus points if students completed the entire contract. In the third phase, the teacher gave a detailed explanation in how students could use and make adjustments in the contracts.

There were two dependent measures for this study. The first included "correspondence between: (a) plan and work, (b) work and self-evaluation, (c) self-evaluation and adjustment statements, and (d) adjustment statements. The second measure was the students' plan for the next day" (Martin et al., 2003, p. 436). During plan and work, students selected an amount of

time to work (usually 20 or 30 min) and a number to tell how much they planned to complete. A specific rubric was used to score each contract daily into a correspondence percentage. Each percentage of correspondence was determined based on the student's plan and actual performance, allowing for adjustments for the following day. For example, if a student stated he would complete 20 math problems in 20 min but only finished 10 in 20 min, then he would receive a 50%. If the same student said he needed 10 min more, the following day's plan would allow extra time for the new percentage. Bonus points were awarded as contracts and work were completed. The second dependent measure consisted of performance on the Woodcock-Johnson Psychoeducational Battery score, administered at pre- and post-intervention.

One-way repeated ANOVAs were used to determine if significant differences occurred across the variables. After the first week, each was found to be significant: (a) plan and work, $F (6, 42) = 4.34$, $p = .002$; (b) work and self-evaluation, $F (6, 42) = 2.5$, $p = 0.037$; (c) self-evaluation and adjustment statements, $F (6, 42) = 21.86$, $p < 0.01$; and (d) adjustment statements and the students' plan for the next day, $F (6, 42) = 3.57$, $p = 0.006$. However, after the 25th day when the teacher stopped giving points, each score dropped indicating students valued receiving teacher feedback and points. Furthermore, regarding the Woodcock-Johnson pre- and post-test scores, significant differences were found for reading, math, language, and knowledge subtests. The results indicated that students who received instruction and implemented the use of a contract that allowed for adjustments with bonus points for contract completion completed academic tasks independently and improved academic performance. The teacher and other classroom observers indicated that students displayed an overall increase in appropriate social behavior because of the use of the contracts (Martin et al., 2003).

This study demonstrated that combining effective practices can increase the engagement and productivity for even students with severe emotional and behavioral problems. Limitations of the study were (a) the inclusion of a small number of participants (i.e., only one teacher and eight students), (b) the inclusion of only relatively young participants (i.e., 9-10 years), (c) the inclusion of only male participants, (d) implementation in only one classroom, and (e) implementation in a residential treatment facility. Further research is needed to determine if a similar intervention would be effective for older students in a public high school setting with a variety of teachers and classroom formats.

Chapter III

Method

Setting and Participants

The location for this study was in a public high school located in Northeastern, PA. The school included 2,725 students in grades 9-12. Eighteen percent of the population received free or reduced lunch. Baseline and intervention took place in two co-taught regular education classrooms and generalization data occurred in five classrooms with one teacher in each classroom ($N = 5$). There were five settings because one student changed classrooms at the end of a semester whereas the others remained in the same settings. Students followed a block schedule where classes were approximately 90 min in length.

Participants in this study included a convenience sample of four, secondary age students (16-17 years of age) who were identified by teachers and school counselors as chronically disengaged students with significant behavioral problems attending grades 10-11. Criteria for inclusion were: (a) low rates of classroom engagement, assessed by less than 40% engagement during designated class; (b) failure to complete or turn in at least 50% of assigned work; (c) attending 80% or more of school days in the past 2 months; and (d) poor engagement and failure to turn in assigned work across at least two additional class periods. Potential participants for the current study were first identified by school counselors who met and created a list of students they considered to be extremely disengaged and had failed to respond to previous intervention. Next, teachers who were identified as willing to participate in the intervention by administrators also gave a list of students in their classrooms who they also considered to be extremely disengaged. Both lists were compared and students identified by both school counselors and teachers were considered potential participants. Administrators checked student grades and work

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completion across classes to ensure each potential participant had difficulty in multiple classrooms. All students were considered eligible for the study based on teacher reports that they were completing 50% or less of assigned in-class work daily.

After potential participants were found to be eligible, the first five students for whom student assent (see Appendix A) and parent consent were obtained (see Appendix B) served as participants. Based on the schedules of these students and the teachers who were willing to provide intervention, two classrooms teachers, one with three student participants and one with two student participants were included. One student was transferred to an alternative setting during baseline condition, so was dropped from the study.

Terry was a 16-year-old African American student in 10th grade who received free and reduced lunch. He received special education services under the disability category of emotional disturbance. Terry's intervention setting was his biology I class and his generalization setting was his English composition class.

Kevin was a 16-year-old African American student in 10th grade who received free and reduced lunch. He received special education services under the primary disability category of speech or language impairment and a secondary category of specific learning disability; his individualized education plan (IEP) indicated he had a specific learning disability in reading. Kevin's intervention setting was his biology I class and his generalization setting was his English literature class.

Francis was a 16-year-old African American student in 10th grade who received free and reduced lunch. He did not have an IEP but was receiving services as an English as a Second Language (ESL) student; his first language was French. Francis' intervention setting was his biology I class and his generalization setting was his social studies class.

Bobby was a 17-year-old Caucasian student in 11th grade. He did not receive free and reduced lunch or have a diagnosed disability. Bobby's intervention setting was his algebra I class and his generalization setting was his English class.

The two participating teachers who implemented intervention completed a 5-items demographic questionnaire (see Appendix C). Four items were open-ended (e.g., How many years have you been teaching) and one utilized item (comfort providing instruction for students with emotional and behavioral problems) was answered on a 7-point Likert scale where 1 represented not comfortable at all and 7 represented extremely comfortable. Teachers completed this survey at the end of the study.

One intervention teacher was a 42-year-old Caucasian female with 15 years of teaching experience. She had a master's degree in education and certification in special education. She indicated that she had worked with many students with EBD "throughout the years in my classes, but not any ES [emotional support] classes." She indicated a 4 for her level of comfort providing instruction for students with EBD, but added that this was dependent on her knowledge regarding the subject matter being taught.

The second teacher was a 35-year-old Caucasian female with 13 years of teaching experience. She had a master's degree in education and was certified in special education. She stated she "was an emotional support IEP case-manager for 1.5 years and I have students with ED labels in some of the math classes I teach." She responded 5 for her level of comfort proving instruction for students with EBD. Demographic information was not requested from the five teachers in generalization classrooms who did not provide intervention.

Materials

A classroom contract (see Appendix D) was used for this study. The contract was a document used daily that allowed (a) teachers to explicitly state the expectations of students in the class for the period and report whether the content was new or review (b) students to choose a daily goal for themselves in the areas of engagement (i.e., asking questions, answering questions, offering comments, minutes engaged) and productivity, and report their perceptions on the difficulty of the day's assignments along with how they were feeling.

Measures and Data Collection

Dependent variables. Two primary dependent variables (i.e., student engagement and productivity) and one secondary variable (i.e., school engagement) were used.

Student engagement. Student engagement was defined as looking at the teacher while he/she is talking, looking at/following along with reading or other visual materials, completing written assignments as instructed, appropriately interacting with peers while staying on-topic when collaboration is requested, and asking questions, answering questions, raising a hand in an attempt to contribute, or offering comments that are appropriate and related to the assignment.

Engagement data were collected using direct observation of student behavior by graduate students in special education, school psychology, or counseling psychology at Lehigh University who were blind to the purposes of the study. A 15 s momentary time sampling was used during the observations (see Appendix E). For one intervention classroom, the observation duration was 60 min, rotating every minute between three students. For the second intervention classroom, the observation duration was 40 min, rotating every minute between two students. When one student was transferred to an alternative setting, the same procedure was followed only no data were collected every other min. At the end of the observation period, the

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percentage of engagement for each student was determined by totaling the number of intervals

engaged and dividing that number by the total number of observational intervals, then

multiplying by 100.

   Student Productivity. The second dependent variable was productivity. Productivity was

the amount of written classwork completed and turned into the teacher. Productivity was

assessed using permanent product data, collected daily. Percentage completion was assessed by

determining the percentage of work that was completed and turned into the teacher. This

percentage was determined by assigning each required item on an assignment a point value (e.g.,

one point for each math problem), then dividing the number of points allocated to completed

items by the number of points for total required items. If the required work was a writing

assignment, points were allocated for portions completed. For example, if the assignment

required three paragraphs with a minimum of five sentences in each paragraph, the percentage

was calculated by determining how many sentences out of 15 were completed and submitted. At

the end of each observation session each intervention teacher allocated productivity and total

points.

   School engagement. The secondary dependent variable was school engagement. This

was assessed using the School Engagement Questionnaire (SEQ), administered to each student

before and following intervention by the primary researcher. The SEQ is a self-report that

measures high school student's perceptions of their effort or investment in core classes including

English, mathematics, and social studies. There are four questions related to engagement in

school-related topics (i.e., homework, attendance, classroom attention, and classroom

concentration) and a 6-point Likert scale is used to answer each question. For example, the

question, "How often do you really pay attention during each of these classes?" is answered on

the scale from one (almost every day) to six (never). The questionnaire was scored by adding responses to each question, which produced a total composite score where higher scores indicate stronger self-reported school engagement. This assessment took students approximately 10-20 min to complete. For high school students, reliability was reported as .86 for math, English and social studies (Taylor et al., 1994). Taylor and colleagues (1994) also reported evidence of criterion-related validity, through positive correlations with the SEQ and student grades, and construct validity, through correlations of engagement with student ratings of academic ability and feelings of school importance.

Teacher behavior. Data were collected on the positive and corrective feedback given by the teacher directly to the target students. Data collectors were the same individuals who collected student engagement data. These individuals indicated a P for positive feedback (e.g., I like how you are working today), and a C for corrective feedback (e.g., "You need to begin working on your assignment now"). Data on teacher behavior were collected to determine if there were individual teacher differences in the type and frequency of feedback given during baseline and intervention conditions. Positive and corrective comments were counted from any teacher in the classroom (i.e., intervention teacher, co-teacher, substitute co-teacher) as long as they were directed specifically to the targeted student; these data were only collected during observation minutes where the target student was the focus and did not include occurrences in the classroom when the target student was not being monitored.

Social validity. After intervention ended, the students and teachers gave feedback using the School Intervention Rating Form (SIRF) for students (Appendix F) and teachers (Appendix G). The student SIRF is a 6-item survey that assesses acceptability of the intervention with questions pertaining to understanding, like, helpfulness and side effect. Each item is rated on a

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7-point Likert scale. The teacher SIRF is a 21-item survey on a 7-point Likert scale with four

open-ended questions. The teacher SIRF assesses intervention acceptability in areas related

understanding, effectiveness, cost, time, willingness, and side effects. The SIRF was adapted

(Kern & Gresham, 2002) from the Teacher Acceptability Rating Form-Revised (TARF-R;

Reimers & Wacker, 1988) by retaining pertinent questions and content but making terminology

relevant to students and revising the wording accordingly. For example, "How much discomfort

is your learner likely to experience as a result of these procedures?" was changed to "Rate how

uncomfortable the intervention made you feel." The TARF-R has good psychometric properties

with an overall internal consistency coefficient of .92 and coefficients for composites ranging

from .69 to .95 (Finn & Sladeczek, 2001).

Treatment integrity. Treatment integrity for training and intervention implementation

was assessed.

Student and teacher trainings. Treatment integrity data were collected on teacher and

student trainings. During 100% of trainings, an observer assessed, by listening to an audio

recording of the session, whether the training was provided with fidelity using the teacher and

student training fidelity checklist (see Appendix H). Using the checklist, the observer

determined whether each major component of the training was delivered by indicating yes or no.

This included assessing if the researcher (when training the teacher) or the teacher (when training

the student) discussed and/or practiced the following: (a) described that the intention of

intervention was to provide gradual changes in behavior, (b) viewed samples of blank as well as

completed contracts and discussed examples that were applicable to the way the teacher being

trained provided instruction (e.g., an English teacher who used lecture and independent seat work

for written assignments heard examples related to how the student was expected to engage

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during lecture times and how many sentences were required during independent writing times), (c) ensured that the teacher and student understood what would happen if the student did not meet his goals (i.e., make supportive encouraging prompts and/or discuss why goals were not met), (d) explained that each student would select daily goals, and (e) discussed that the teacher would specify the work needed to be completed to earn 100% productivity for the day. If trainer fidelity did not reach 100% on any occasion, an additional training to cover material with low integrity was planned; however, this was not needed. Fidelity for training with both intervention teachers was 100%.

Intervention implementation. Data on teacher implementation of intervention procedures also were collected (see Appendix I) by observers and the teachers themselves. For 100% of sessions, teachers were asked to determine if each of five steps of the intervention was met or not by indicating yes or no for the following: (a) teacher provided a copy of the contract (see Appendix D) within the first 5 min of class; (b) teacher provided explicit instructions on the contract regarding what the student was required to do during the instructional period to earn 100% productivity; (c) teacher conferenced with the student during the last 5 min of the period and provided praise for any effort observed in on-task behavior; (d) teacher calculated the percentage of productivity that the student completed and told the student this percentage during the conference at the end of the period; and (e) teacher offered at least two encouraging comments with not less than 3 min between each comment if, during the period, the student refused to participate. However, this teacher self-evaluation was only a recommendation, not required of teachers, and data were not collected to determine if this step happened daily. For at least 25% of sessions an observer who was blind to the purposes of the study also determined if the above steps of the intervention had been completed. If teachers did not meet 80% fidelity

during a single observation (i.e., teacher self-assessment or as assessed by an observer), the researcher planned re-training by meeting with the teacher to review the intervention methods and role-playing procedures before the next scheduled observation session; however, this was not necessary. Additionally, the teachers were provided with the same checklist to refer for reminders of his/her role during intervention. During the training, intervention teachers were prompted to self-assess using the fidelity checklist. Although teachers were prompted to complete this step and were given blank copies of the form, these were not requested daily and there were no checks to ensure whether teachers did this daily.

During treatment fidelity assessment days, data collectors were present during the entire 90 min block to ensure that all steps could be observed, if they occurred. The mean overall treatment fidelity for both teachers across all intervention sessions and students was 94.0% (range = 80.0%-100%). For intervention classroom one (i.e., with three students) the mean fidelity was 88.0%. For intervention classroom two (i.e., with one student) fidelity was 100%.

Interobserver agreement. Interobserver agreement (IOA; Cooper, Heron, & Heward, 2007) data were collected for intervention integrity, direct observations, and permanent products and by trained observers who were blind to the purposes of the study. IOA data were collected by a second observer during 34.88 % of observation sessions, distributed across participants and goals. Direct observation agreement was assessed during 27.87% of intervention sessions and 52.0% of generalization sessions.

IOA was assessed during 100% of teacher and student trainings. For IOA, a second observer independently coded training fidelity from audio recordings using the teacher and student training fidelity checklist (see Appendix H) in the same manner as treatment fidelity. Agreement was calculated on a point-by-point basis. IOA for all training sessions was 100%.

IOA for engagement was calculated for agreements, disagreements, and the total. If total agreement IOA was less than 80% during any single session for any variable, the researcher planned to review the definitions and coding procedures followed by repeated, simultaneous observations/coding with the primary researcher until 80% was reached for two consecutive sessions. This situation occurred with only one data collector. IOA for agreements was calculated on an interval-by-interval basis using only intervals where the primary data collector indicated a student was engaged in instruction. The total number of agreements was divided by the total number of agreements and disagreements and then multiplied by 100. Mean IOA for occurrences was 82.40% (range = 67.5%-96.69%) in intervention classroom one, 81.61% (range = 65.22%-100.0%) in intervention classroom two, and 75.79% (range = 14.29%-95.89%) in generalization settings. IOA for nonoccurrence was calculated on an interval-by-interval basis using only intervals where the primary data collector indicated a student was not engaged in instruction. The total number of agreements was divided by the total number of agreements and disagreements and then multiplied by 100. Mean IOA for nonoccurrences was 74.4% (range = 55.56%-87.96%) in intervention classroom one, 80.23% (range = 64.71%-100.0%) in intervention classroom two, and 78.64% in generalization settings (range = 52.5%-94.12%). Total agreement was calculated by dividing the number of intervals or points with agreement by the total number of intervals or points and then multiplying by 100. Overall, the total mean IOA was 90.0% (range = 75.0%-100.0%). For intervention classroom one the total mean IOA was 88.74% (range = 77.98%-96.89%), for intervention classroom two the total mean IOA was 89.58% (range = 14.29%-95.89%), and for the generalization settings, the total mean IOA was 91.0% (range = 75.0%-96.25%).

For productivity, a second scorer assigned points to 26.23% of completed assignments and agreement was coded on an item-by-item basis. If 80% agreement was not reached on the total student productivity for any session, then re-training was planned followed by repeated, simultaneous scoring until 80% has been reached for two consecutive assignments; however, this was never needed. IOA was calculated by dividing the number of agreements by the number of agreements plus disagreements. The total agreement for productivity across students was 96.17% (range = 80.6%-100.0%). The mean IOA for productivity for Francis was 98.26% (range = 95.65-100.0%), for Kevin was 91.99% (range = 82.35%-97.96%), for Bobby was 97.08% (range= 83.33%-100.0%), and for Terry was 93.53% (range = 80.6%-100.0%).

IOA for teacher behavior was obtained by a second observer coding the frequency of positive and corrective feedback during each interval given by the teacher to only the targeted student for at least 25% of observations. IOA was assessed by determining whether or not observers agreed on the frequency during each interval. Total agreement was calculated for both positive teacher feedback and corrective teacher feedback by dividing the total number of intervals with agreements by the total number of intervals with agreements plus disagreements and dividing by 100%. For intervention classroom one (i.e., the one with three intervention students), the mean agreement for corrective feedback was 75.17% (range= 50.0%-100%) and the mean agreement for praise was 83.33% (range= 0.0%-100.0%). For intervention classroom two (i.e., the classroom with only one student in intervention), the mean agreement for corrective feedback was 100% and the mean for positive feedback was 95.83% (range= 75.0%-100%). The overall mean agreement for teacher corrective feedback was 73.64% (range = 0%-100%) and for positive teacher feedback was 75.06% (range= 0.0%-100%). Low IOA (i.e., 0.0%

agreement) occurred during sessions where only one instance of either positive or corrective feedback was observed.

Experimental Design

A multiple baseline across students design with an embedded changing criterion design (Hall, 1976) was used to evaluate the effects of the intervention on engagement and productivity. In addition, generalization probes were collected in a second setting. Intervention was introduced across students in a staggered fashion after a stable baseline of not less than five data points.

For the changing criterion design, following baseline, students were asked to increase their engagement or productivity goals in a stepped fashion after meeting criterion for the previous goal. To determine the initial criterion, mean engagement and productivity during baseline for each student was calculated. Students had the choice of increasing their engagement and productivity by 10% or 15% for either dependent variable (i.e., the same or different goals could be set for each). After students displayed engaged behavior and productivity that met or exceeded their selected goal for five consecutive days, the process repeated with a new goal established of 10% or 15% increase from the previous goal. Throughout baseline and intervention, data were collected for student engagement and productivity in a second classroom to determine if generalization occurred.

Procedures

Pre-baseline. Prior to baseline, students were administered the Student Engagement Questionnaire. In addition, data collectors were present in the classroom collecting data (which were not used) for six school days. This purpose of this observation was to allow students and teachers to become comfortable with the presence of additional adults in the room (i.e., reduce

possible reactivity). It also served as additional training time for data collectors who were

encouraged to ask questions of the primary researcher as they arose.

Baseline. During baseline phases, typical classroom procedures were followed. Teachers

engaged with students in the classroom without any change from previous routine interactions;

however, teachers were instructed to hold the amount of written student work constant across

days. Quality indicators of single-subject research indicate that five or more data points are

acceptable in determining a predictable pattern of behavior (Horner et al., 2005).

Teacher training. After baseline data were stable for each student, his teacher was

trained in the intervention. The researcher explained that the intervention was intended to

produce gradual, incremental changes in student behavior; that with small successes, the student

would be likely to continue to make improvements over time. A sample of the classroom

contract was given to the teacher along with examples of completed contracts. The researcher

explained that teachers needed to specify the work to be completed during the period (e.g., 25

math problems and completion of three pages of guided notes, one essay with a minimum of 11

sentences and read pages 123-129), completion of which would total student productivity of

100%. The teacher was instructed to provide a copy of the contract to participating students

daily. Then, the researcher explained that each student determines his goals; the first goals

would each be either a 10% or 15% increase above their baseline mean as chosen by the student.

Additionally, teachers were asked to provide supportive, encouraging comments with examples

if students did not want to fill out the contract that day. An example could include the teacher

stating, "You have been doing such an excellent job making improvements this week! It would

be great to see you continue to make progress!" If a student chose not to participate and set

goals at the beginning of class (i.e., did not fill in his portion of the contract), the teacher was

instructed to make two or three encouraging comments at intervals of not less than 3 min and then discontinue prompting and document that the student refused to participate on that day, without providing negative comments and/or body language. The teacher was instructed to discuss why this happened with the student during a conference at the end of the period. The researcher also explained to the teacher when the student met the goal for five consecutive days, he would select a new goal with a 10%-15% increase in engagement and productivity. The teacher was instructed to praise the student during the daily conference and/or before their next intervention class together after he met five consecutive days at or above his selected goal for both productivity and engagement.

Student training. After baseline data were stable, the teacher previously trained in the intervention trained each participating student. The teacher explained that the intervention was intended to produce gradual, incremental changes in student behavior; that with small successes, the student was likely to continue to make improvements over time. A sample of the classroom contract was given to the student (see Appendix D). The teacher explained that he/she would specify the work assigned and that each segment of work assigned equals a total productivity of 100% for the period. The teacher explained to the student that he will determine goals each day and that the teacher would meet with the student briefly at the end of each period to discuss his performance during the period. Additionally, the teacher explained that every few days (as instructed by their teacher), the expectation of work and productivity will increase and that the student is given the option (i.e., 10% or 15%) for the new criterion. The teacher explained that student should work to demonstrate engaged behavior and productivity at or above his selected criterion/goal. She informed him that following five consecutive days of performance at or above their goal, he will select the next goal. Sample contracts with examples of teacher

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expectations were given to the student to practice filling out the form (see Appendix J). Each student had the opportunity to ask questions of the teacher until he understood the procedures.

Intervention. Intervention occurred following training of both teachers and students and consisted of providing choice/input, goal setting and positive feedback. At the beginning of the class period, the teacher presented a contract (see Appendix D) to each student individually. The contract required that the teacher portion (i.e., the top box) was filled in by or during the first 5 min of class, which explained clearly and exactly what was expected in the classroom to reach 100% productivity on that day. Once the student received the contract, he made a choice about how much work he was willing to complete by looking at the expected work for the day (written on the contract by the teacher) and how many minutes they agreed to be engaged; these goals were expected to meet or exceed the previous goal for engagement and productivity. Once the student portion was completed, the student returned the contract to the teacher who kept it until the conference at the end of the period where she showed it to the student as part of the discussion. During the class, the teacher interacted with and responded to the participating students, providing positive or corrective feedback or neutral prompts in the same manner as other students in the class.

At the end of the period, the student and teacher had a brief conference during which time they reviewed the student's daily goal and determined whether the student met his goal for productivity. This was determined by the teacher, who calculated the percentage of productivity and compared it to the student's goal. For engagement, data collectors provided information about daily percentage to the teacher who discussed progress with the student at the conference either that day or on the following day. During the conference, emphasis was placed on the teacher noticing and acknowledging any increase in participation, no matter how small it was

(e.g. one more sentence completed). Specifically, the teacher provided praise to the student for effort and any evidence of work demonstrated (e.g., "I really like how you made effort to complete some work today," or "I noticed that you answered a question, that is a nice way to participate").

On the back of the contract, three standardized questions were answered daily (see Appendix D). At the end of the session and before the conclusion of the conference, students responded to the questions, "How hard is the work" on a scale from 1 (*very easy*) to 5 (*really hard*) and "How do you feel today" on a scale from 1 (*not well*) to 5 (*great*). Teachers indicated whether or not the content was new or review by circling one of the choices. If the student did not meet the goal, then the students' answers to these questions could have facilitated the conference discussion about why they did not meet their goal (evaluation) and what could be done to correct the issue (adjust).

If at any time during the intervention, a student failed to meet both his productivity and engagement goals for three consecutive days, a plan was in place that his goals would be dropped by 10%. This was intended to help re-engage a student whose goals may have been too difficult and/or a student relapsing into the cycle of disengagement; however, this was never needed. At the conclusion of the intervention, students were assessed a second time using the Student Engagement Questionnaire to determine their perceived level of school connected in participating classrooms.

Data Analysis

Baseline data for direct observation of engagement and permanent product for productivity were compared to the data collected during the intervention phase through visual analysis to determine if the intervention resulted in a change in trend, level, or variability.

Means during baseline and intervention (and at each goal level) also were analyzed. In addition, percentage of all non-overlapping data points (PAND) was calculated by counting the total number of all data points in the intervention phase that did not overlap between baseline and intervention phases (Parker, Hagan-Burke, & Vannest, 2007). The percentage of overlap was determined by diving the number of overlapping points by the total number of points and subtracting that percent from 100.

Additionally, student daily feedback on the contract as well as pre-intervention and post-intervention scores on the SEQ were analyzed. Scores from the SEQ were evaluated to determine if there were changes in the score for each student from pre- to post- and if there were differences in perceptions of engagement in intervention classrooms compared to the generalization classrooms.

Chapter 4

Results

Classroom Engagement

Francis. Francis was in the baseline condition for five consecutive days (see Figure 2). During baseline, he exhibited large variability (range = 15.0%-73.61%) and a mean engagement of 38.72%. Francis selected an initial goal at 49%, 10% above his baseline mean. There was an immediate increase in performance from the last baseline point when intervention was implemented (i.e., 15.0% to 82.5%). Francis did not meet his goal on the second day of intervention (i.e., earned 41.3%), but exceeded his goal for the next five consecutive days. His mean engagement was 61.80% during Goal 1. Once Francis met his goal for five consecutive days, he was asked to select a goal for Goal 2 at either 10% or 15% above his Goal 1. Francis selected to increase his Goal 1 by 10% or to reach 59% engagement for his Goal 2. Francis demonstrated a drop in engagement for the first day of his Goal 2 with 57.57% but then exceeded his goal for the next three days, which resulted in a Goal 2 mean of 75.77%. For the first day of Goal 2, the intervention teacher rounded down the number of items she asked Francis to complete (i.e., requirement of one additional item would have put his goal at 71% and she reported making a mistake in her calculations); therefore, although he was 1.5% below where his goal should have been, since he met the teacher indicated goal, it was counted as met for data collection purposes. Further, during this goal, the primary researcher made an error in data recording and double counted one day. This error was not caught until after the goal change occurred, resulting in Francis only being required to meet his goal for four consecutive days before he began is Goal 3, rather than five as described in the procedures. During both Goal 1 and Goal 2, decreased variability was observed. When asked to select his Goal 3, Francis chose to increase his Goal 2 by 10%; his Goal 3 engagement goal became 69%. Again, on the first day

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of Francis' new goal, he demonstrated a drop in engagement (i.e., 40.0%). The second day of Goal 3, he exceeded his goal and then he demonstrated a drop to 45.0% on the third day. However, following the third day in Goal 3, Francis exceeded his goal daily for six consecutive school days. For Francis, as procedures indicated, he should have moved to Goal 4 after five consecutive days of meeting his goal; however, he remained in Goal 3 one additional day. This was due to discussion of research that indicates goal setting may be most effective when the goals are perceived as attainable and not too difficult (DeShon & Alexander, 1996; Ilgen & Davis, 2000; Kluger & DeNisi, 1996; Krenn, Würth & Hergovich, 2013). The primary researcher was concerned that asking Francis to again increase his goal might cause him to feel it was too difficult and return him to the cycle of disengagement by placing an emphasis out outcomes rather than effort (Diener & Dweck, 1980). Ultimately, it was determined that having him set another goal would be appropriate, but this change occurred a day late. His Goal 3 engagement mean was 75.05%.

During Goal 3, in spite of demonstrating a high level of engagement (i.e., consistently approximating 80% engagement), Francis was asked to create a new goal and begin Goal 4. Francis again selected to increase his previous goal by 10% (i.e., increase from 69% to 79% engagement). Francis was only in Goal 4 for one school day due to the end of the school year, but demonstrated 90.0% classroom engagement.

Because Francis was engaged for 73.61% of the observation on the second day of baseline, the percentage of all non-overlapping data (PAND) was 57.69%. Additionally, because this data set appears to have an outlier as the second data point in baseline that may negatively impact the evaluation of the intervention (Ma, 2006), the percentage of data exceeding the median (PEM) was also calculated. The PEM for Francis' engagement was 100%.

Kevin. Kevin was in the baseline condition for 10 school days (Figure 2). During this time his performance was variable (range = 22.5%-60.0%) and his mean engagement was 43.60%. When asked if he wanted to set his Goal 1 engagement goal at 10% or 15% above his baseline mean, Kevin selected to set his Goal 1 at 54%, which was 10% above his baseline mean. There was an immediate increase in his engagement from the last baseline session (i.e., 22.5% to 80.0%). Kevin did not meet his engagement goal during three observations, which resulted in a higher level of variability during intervention than baseline; however, there was a slight change in level with a mean of 66.03% (see Figure 2). Kevin was in Goal 1 for seven days, and exceeded his goal for four consecutive days. During Kevin's Goal 1, the primary researcher made an error in data recording and double counted one day. This error was not caught until after the goal change occurred and resulted in Kevin only being required to meet his goal for four consecutive days rather than five as described in the procedures before he began is Goal 2. Kevin was asked to select a new goal for Goal 2 either 10% or 15% above his Goal 1. Kevin selected to increase his Goal 1 by 10% or to reach 64% productivity for his Goal 2. On the first day of intervention in Goal 2, Kevin demonstrated a drop in engagement to 33.80%; however, for the four consecutive days that followed, he exceeded his goal. However again on the sixth day of Goal 2, he again demonstrated a drop (i.e., 44.23%) and did not meet his goal. For the last three days in Goal 2, he exceeded his goal and, at the end of intervention, demonstrated an upward trend. Kevin's Goal 2 mean engagement was 70.57%, which exceeded his goal by 6.57%. For Kevin's engagement, the PEM was 87.5% and the PAND was 57.69%.

Bobby. Bobby was in the baseline condition for 17 school days (Figure 2). During this time, his performance was highly variable (range = 27.5%-79.75%) and he exhibited a mean engagement of 60.25%. When asked if he wanted to set his Goal 1 at 10% or 15% above his

baseline mean, Bobby selected to set his goal at 70%, which was 10% above his baseline mean. There was an immediate increase in his engagement from the last baseline session (i.e., 61.25% to 88.75%), which was stable for three consecutive days. On the fourth day in intervention, Bobby demonstrated a decrease in engagement to 45.0%. Bobby demonstrated variability in his performance the remainder of his time in intervention (i.e., 14 school days during Goal 1) and did not attain five consecutive days at or above his goal before school year ended and the study concluded. Although Bobby did not consistently meet his goal, his mean engagement increased 8% from the baseline condition (i.e., from a mean of 60.25% to a mean of 68.08%). For Kevin's engagement, the PEM was 57.14% and the PAND was 19.36%.

Terry. Terry was in the baseline condition for 15 school days. During this time, he exhibited variability in his engagement (range = 8.8%-62.5%) and a mean engagement of 31.14%. When asked if he wanted to set his Goal 1 goal at 10% or 15% above his baseline mean, Terry selected to set his goal at 46%, which was 15% above his baseline mean. Terry demonstrated an immediate change in performance (i.e., 25.0% to 43.05%). Even though he did not meet his goal on the first day of intervention, for the next four days he exceeded his goal (see Figure 2). Although Terry did not meet his goal for five consecutive days and had a low point on the last day of data collection, his level of variability decreased from baseline condition to intervention.   Overall, his mean productivity increased 15% from the baseline condition (i.e., an increase from a mean of 46.59% to a mean of 61.88%), which approximated the goal he set for himself at 62%. For Terry's engagement, the PEM was 83.33% and the PAND was 23.81%.

Engagement Generalization

In addition to monitoring classroom engagement within the intervention settings, participant engagement was monitored within a generalization setting (i.e., another general

education class where the student was identified as struggling, but did not receive intervention) (see Figure 2). In the generalization setting, baseline data were not collected for Francis. His mean engagement during intervention was 64.26% (range = 11.25%-93.75%). Kevin's mean engagement during baseline was 65.65% (range = 48.75%-69.44%) and during intervention his mean engagement was 72.64% (range = 56.67%-88.1%). Terry's mean engagement during baseline was 22.19% (range = 7.5%-51.25%) and during intervention his mean engagement was 48.13% (range = 23.75%-72.5%). Bobby's mean engagement during baseline was 86.25% (range = 85.0%-87.5%) and during intervention, his mean engagement was 67.72% (range = 0.0%-92.5%). Differences in engagement for Bobby could be the result of a different setting (i.e., he started a different English class following baseline, but prior to intervention, with a new teacher).

Productivity

  Francis. During baseline, Francis exhibited high variability in his productivity (range = 4.55%-100.0%) and a mean productivity of 44.27% (see Figure 3). Francis selected to set his initial goal at 59%, 15% above his baseline mean. There was an immediate change in level from the final baseline point to the first intervention point (i.e., 37.15% to 100%). Francis met or exceeded his initial goal for five consecutive days with a mean of 75.74%. Because he met his goal for five consecutive days, he was asked to select Goal 2, at either 10% or 15% above his initial goal. Francis selected to increase his goal by 10% or to reach 69% productivity. Francis exceeded his goal for five consecutive days. His mean was 94.2% for productivity. Since he met/exceeded his goal for five consecutive days, Francis was again asked to select a new goal at either 10% or 15% above his Goal 2. Francis chose to increase his third goal by 10%, which became 79%. For the remainder of the study (i.e., 10 days), Francis met or exceeded his Goal 3

for productivity with a mean of 98.45%. Francis' mean performance and goals can be found in Table 1. Additionally, after each new goal change there was less variability in Francis' performance.

The percentage of all non-overlapping data (PAND) and the percentage of data exceeding the median (PEM) for each participant can be found in Table 2. Francis completed 100% of his work on day 1 of baseline, therefore the PAND was 16.0%. Because this data set appears to have an outlier as the first data point in baseline that may negatively impact the evaluation of the intervention (Ma, 2006), the PEM was also calculated. The PEM for Francis' productivity following intervention was 100%.

Kevin. During baseline, Kevin exhibited high variability in his productivity performance (range = 7.14%- 100.0%) and a mean productivity of 54.99% (see Figure 3). When asked if he wanted to set his initial goal at 10% or 15% above his baseline mean, Kevin selected to set Goal 1 at 65%, which was 10% above his baseline mean. There was an immediate change in level from his last two baseline points (i.e., 58.33% to 100%) as well as a decrease in his variability. Kevin exceeded his initial goal for five consecutive days with a mean of 88.0%. Because he met his goal for five consecutive days, he was asked to select a new goal at either 10% or 15% above his Goal 1. Kevin selected to increase his goal by 10% or to reach 75% productivity for his Goal 2. For the remainder of Goal 2 (i.e., 11 days), Kevin demonstrated greater variability in Goal 2 than Goal 1 and did not meet his goal for five consecutive days. Even with greater variability during Goal 2 than Goal 1, Kevin demonstrated less variability in both Goal 1 and Goal 2 than he did during the baseline condition. The variability resulted in an overall mean of 79.36% for Goal 2. Kevin's mean performance and goals can be found in Table 1.

Because Kevin demonstrated a high range of variability during the baseline condition, the percentage of all non-overlapping data (PAND) was 7.69%. The PEM for Kevin's productivity following intervention was 87.5%.

Bobby. During baseline, Bobby exhibited high variability (range = 13.33% - 96.0%) and a mean productivity of 54.85%. When asked if he wanted to set his initial goal at 10% or 15% above his baseline mean, Bobby selected to set his Goal 1 at 65%, which was 10% above his baseline mean. Bobby demonstrated increasing variability throughout intervention (i.e., 14 school days) and did not attain five consecutive days at or above his goal before the study concluded (i.e., the school year finished). However, Bobby's level of variability for productivity decreased from the baseline condition to intervention. Although Bobby did not consistently meet his goal, his mean productivity increased nearly 10% from the baseline condition to an intervention mean of 63.13%, which approximated the goal he set for himself at 65%.

Again, because Bobby demonstrated a high range of variability during the baseline condition, the percentage of all non-overlapping data (PAND) was 12.9%. The PEM for Bobby's productivity following intervention was 71.42%.

Terry. Terry exhibited high variability in his productivity performance during baseline (range = 9.09%-100.0%) and mean productivity of 46.59% (see Figure 3). When asked if he wanted to set his initial goal at 10% or 15% above his baseline mean, Terry selected to set his goal at 62%, which was 15% above his baseline mean.

Although he exceeded his goal on four days, Terry did not meet his goal for five consecutive days and had a dramatically low point on the last day of data collection. Data also were highly variable during intervention. In spite of this, his mean productivity increased 15%

from the baseline condition (i.e., an increase from a mean of 46.59%% to a mean of 61.88%), which met the goal he set for himself at 62.0%.

Terry too demonstrated a high range of variability during the baseline condition, thus the percentage of all non-overlapping data (PAND) was 23.81%. The PEM for Terry's productivity following intervention is 83.33%.

Productivity Generalization

In addition to monitoring classroom engagement within the intervention settings, participant productivity also was monitored within a generalization setting (Figure 3). In the generalization setting no baseline data were collected for Francis. His mean productivity was 74.0% (range = 20.0%-100.0%), with an overall upward trend throughout intervention. Kevin's mean productivity was 100.0% during baseline and was 79.17% (range = 50.0%-100.0%) during intervention. Terry's mean productivity during baseline was 5.56% (range = 0.0%-22.22%) and during intervention was 100.0%. Bobby switched from one English class to another one week after the study began due to the semester change. Although the second English teacher agreed to participate, in spite of multiple attempts after each observation session, this teacher never gave any information regarding Bobby's classroom productivity. His generalization productivity was only collected once during baseline and was 100%.

School Engagement

Using the SEQ, all students were asked to respond to four questions regarding their engagement prior to intervention as well as following intervention. Students completed separate questionnaires for their intervention and generalization classrooms (see Table 3). Changes in answer responses were seen for Francis, who indicated increasing the amount of time he put into homework each week for the intervention classroom, but he also noted a decrease in the amount

of time he spent on homework in the generalization setting. Further, Francis reported paying

attention more often (i.e., *fairly often* to *usually*) and less instances of mind wandering (i.e.,

fairly often to *seldom)* in both the intervention and generalization settings. Kevin also noted

decreases in the amount of time he spent working on homework in both the intervention and

generalization classrooms as well as a decrease in his attention in the generalization setting (i.e.,

usually to *fairly often*). Bobby also reported a decrease in the amount of time he spent on

homework in the generalization setting. In addition, Bobby indicated an increase in the amount

of attention he was paying in the intervention setting (i.e., *fairly often* to *usually*) and a decrease

in mind wandering in both the intervention and generalization settings (i.e., *fairly often* to

seldom). Terry also reported decreases in the amount of time he spent working outside of the

classroom for both the intervention and generalization settings. Another change was he indicated

decreases in cutting class in both settings.

Student attendance was monitored throughout the study. Francis was present for 100% of

days, Kevin was absent on two days (i.e., once during baseline and once during intervention),

Bobby was absent on three days (i.e., twice during baseline and once during intervention), and

Terry was absent on five days (i.e., four times during baseline and once during intervention).

Daily Student Feedback

Each day during intervention, teachers were asked to indicate whether the content was

new or review and students were asked to give feedback. At the end of the session, students

gave feedback on two standardized questions using a 5-point Likert scale. Analysis of responses

(see Table 4) indicated three of the participants, with the exception of Kevin, gave higher mean

scores (indicating more perceived difficulty) and more variation in the range of scores when the

content was new compared to review. Also, all four students were more likely to give higher

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mean scores for how well they felt that day when the content was review compared to new. Terry only had one day of review during intervention, so there is no range of scores.

Teacher Behavior

The number of positive and corrective teacher comments, which were directed specifically at a targeted student, are reported in Table 5.

Positive Teacher Comments. The average observation session frequency of positive comments that the targeted student in the intervention classroom with only one target student (i.e., Bobby) was 0.52 per session (range = 0-4). In the classroom with three targeted students, the mean frequency of positive comments the three intervention students received was 0.10. Francis received a mean frequency of 0.18 (range = 0-1) positive comments per each observation session, Kevin received a mean frequency of 0.07 (range = 0-1) positive comments per session, and Terry received a mean frequency of 0.05 (range = 0-1) positive comments.

The frequency of positive feedback observed were similar during baseline compared to intervention. For positive feedback, Francis received a mean of 0.2 comments per observation session during baseline and a mean of 0.17 comments per session during intervention, Kevin received a mean of 0.0 positive comments per session during baseline and a mean of 0.11 during intervention, Bobby received a mean of 0.5 positive comments per session during baseline and a mean of 0.54 during intervention, and Terry received a mean of 0.06 positive comments per observation session during baseline and a mean of 0.0 during intervention.

Corrective Teacher Comments. The average frequency of corrective comments that the targeted student in the intervention classroom with only one target student (i.e., Bobby) was 1.05 (range = 0-5) per observation session. In the classroom with three targeted students, the mean frequency of positive comments the three intervention students received was 1.25; that is Francis

received a mean frequency of 0.89 (range = 0-5) corrective comments per each observation session, Kevin received a mean frequency of 0.96 (range = 0-3) corrective comments per o session, and Terry received a mean frequency of 2.5 (range = 0-5) corrective comments per session.

There were differences in the frequency of corrective feedback observed during baseline compared to intervention. Francis received a mean of 2.2 corrective comments daily during baseline and a mean of 0.61 comments per observation session during intervention, Kevin received a mean of 1.2 corrective comments per session during baseline and a mean of 0.82 during intervention, Bobby received a mean of 0.56 corrective comments per session during baseline and a mean of 0.85 during intervention, and Terry received a mean of 02.56 corrective comments per observation session during baseline and a mean of 0.67 during intervention.

Social Validity

Francis. On the SIRF, Francis marked 7, the highest rating, (i.e., *very well/very much*,) to questions asking about how well he understood the intervention and how easy he thought it was it was. He indicated a score of 4, which is in the middle, indicating that he liked the classroom contract some. He selected the highest rating (i.e., *nothing*) for the item that asked whether there were things he did not like about the intervention and selected the second highest rating to indicate it did not make him feel uncomfortable. When asked whether the intervention helped him to improve how he did in school, he marked 7, the highest category, (i.e., *helped a lot*).

Kevin. On the SIRF, Kevin marked 6, the second highest rating (i.e., one away from very well/very much) to questions asking about how well he understood the intervention and marked a 7 (i.e., *very easy/liked a lot*) to indicate he thought the intervention was easy and that he liked the intervention. He selected the highest rating (i.e., *nothing*) for the items that asked whether there

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were things he did not like about the intervention and to indicate there was nothing about the intervention that made him feel uncomfortable. When asked whether the intervention helped him to improve how he did in school, he marked 6, which was one away from the highest category (i.e., *helped a lot*).

Bobby. On the SIRF, Bobby marked 7, the highest rating (i.e., *very well*) to the questions asking about how well he understood the intervention and to indicate he thought the intervention was easy. Bobby selected a 6, which is one below the highest rating to indicate that he liked the intervention. Additionally, he selected the highest rating (i.e., *nothing*) for the items that asked whether there were things he did not like about the intervention and to indicate there was nothing about the intervention that made his feel uncomfortable. When asked whether the intervention helped him to improve how he did in school, he marked a 4, which was a middle choice (i.e., *helped some*).

Terry. On the SIRF, Terry marked 6, the second highest rating (i.e., one away from *very well/very much*) to questions asking about how well he understood the intervention and how easy he thought it was it was, and how much he liked the intervention. He selected the highest rating (i.e., *nothing*) for the items that asked whether there were things he did not like about the intervention and to indicate there was nothing about the intervention that made his feel uncomfortable. When asked whether the intervention helped him to improve how he did in school, he marked a 7, which was the highest category (i.e., *helped a lot*).

Intervention Teacher 1. For nine items that related to positives aspects of the intervention (e.g., clarity, acceptability, reasonableness, effectiveness, affordability, likability, fit in the classroom routine, and likelihood of making improvements for the student), reported on a 7-point Likert scale from *not at all* to *very*, the teacher's mean score was 5.2 (range = 4-7),

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indicating favorable opinions. A second set of six items related to potential problems associated with the intervention (i.e., costs, disadvantages to implementation, time needed, disruptive, undesirable side effects, teacher perception of student discomfort). For these items, reported on a 7-point Likert scale from *little/not at all* to *very/many,* the teacher's mean score was 2.0 (range = 1-3) indicating teachers perceived the intervention resulted in little negative impact on their time, was not disruptive to the classroom environment or costly, and was not uncomfortable to implement. Additionally, there were three items relating to the teacher's evaluation of students (e.g., severity of behaviors, her level of concern), rated on a 7-point Likert scale where lower scores equated to less concern or severity (i.e., *no concern at all, not at all serious, not at all severe*) and higher scores reflected great severity or concern (i.e., *great concern, very serious*, *very severe*). These items received an average score of 4.0 (all items given a score of 4). The remaining two items related to the teacher's willingness to carry out the intervention and changes to the classroom routine, rated on a 7-point Likert scale from *not at all willing* to *very willing,* received a mean score of 6.5 (range = 6-7), indicating high acceptability.

For the four open-ended items, the teacher stated that students seemed more engaged with their independent work, kept away from disruptive peers and increased their work completion. The intervention components she found to be most effective were setting expectations prior to class and competition among students. She indicated that she did not believe having no consequences other than a lack of positive feedback for not meeting a goal was effective and that a barrier for her implementation was not having privacy when carrying out conversations with students at the end of class. Additionally, although there was not a prompt or question, the teacher made an additional note on the assessment that some students in the intervention would

get loud, compete, or comment to one another, which resulted in a lack of privacy for the students receiving the intervention.

Intervention Teacher 2. For nine items that related to positive aspects associated with the intervention, scored on a 7-point Likert scale from *not at all* to *very,* the teacher's mean score was 5.3 (range = 4-7), indicating a favorable impression. For the second set of six items related to potential problem associated with the intervention, reported on a 7-point Likert scale from *little/not at all* to *very/many,* the teacher's mean score was 1.5 (range = 1-3). Additionally, for the three items relating to the teacher's evaluation of students, the teacher's mean score was 4.3 (range = 3-5). The remaining two items related to the teacher's willingness to carry out the intervention and change the classroom routine and the teacher's mean score was 6.0 (both items scored 6).

For the four open-ended items, the teacher stated that the student's grade in the class and class participation improved. The intervention components she found to be most effective were making the student self-aware of his time on task and problems completed compared to the daily expectations. She indicated that although the student was aware of his expectations and goals, there were still days when he did little. When questioned about barriers, the teacher indicated that sometimes it is difficult to set expectations for an amount of written work to be completed because often this expectation depends of student understanding and/or the amount of time in class that day.

<center>**Chapter V**</center>

<center>**Discussion**</center>

Summary of Findings and Related Issues

The results of this study indicate that clear goal setting with student incorporated choice and a gradual increase in academic expectations resulted in increases in student engagement and productivity following teacher positive teacher feedback and supports past research, which suggests that students will be more likely to attain goals when they receive positive feedback (Krenn, Wurth, & Hergovich, 2013) and the goals are specific (Locke & Latham, 2006). In this study, all participants increased the amount of work they completed and how engaged they were during intervention, albeit some more than others. These outcomes are consistent with a previous study on the topic (Martin, et al., 2003).

Substantial variability in performance occurred among participants, which may be explained by unrelated life events for the students. For example, during Goal 2 of Kevin's intervention, he found out his mother's cancer, which was previously in remission, had returned. Not surprisingly, his affect was poor in the days that followed. During this time, he asked to leave the classroom to go talk to a counselor on two occasions. The teacher told him he could leave during the last 10 min of class, so performance may have suffered throughout class. For these two occasions, he did not leave the room until data collection ended and he conferenced with his teacher; although he left the room a little early, neither the data collection nor the intervention were eliminated on these days. During several observations of Kevin during Goal 2, data collectors noted that he had his head down on the desk and he was argumentative with his peers and teachers. Additionally, during Goal 1 of intervention for Bobby, he was having difficulty meeting his goal. The primary researcher met with him to check in and ask how he

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perceived things were going. Bobby indicated that he was exceptionally sleepy since he had recently gotten a new puppy that was keeping him up at night. This intervention does not include a mental health component or include strategies for use within the home environment; therefore, variability in classroom performance seems likely. Also, although Bobby was not successful at earning five consecutive days at or above his Goal 1 goal, his mean productivity increased to approximate the goal (i.e., his goal was 65% and his mean was 63.13%). This was similarly observed with his engagement. Although he did not consistently meet his goal, he increased his mean engagement from 60.25% to 68.08%, when his goal was 70%. This, paired with the decrease in variability observed in the students' performance, suggests that students may perform better as a result of the intervention, even if they do not consistently meet their goals.

Within the generalization settings, in general, it did not appear that student performance in their intervention setting resulted in similar performance in another classroom. Improvements in engagement in one setting did not translate to improvements in engagement in another setting. For productivity, however, Francis and Terry showed improvements in both the generalization and intervention settings following intervention. These data should be considered cautiously because they are not experimental and data were not collected for all participants. For example, no baseline generalization data were collected for Francis or for Bobby due to an end of the semester schedule change. Although his English teacher agreed to participate for data collection as the generalization setting and this class was flagged by administration as a general education class where he was having the most trouble, when the semester change occurred, Bobby switched to a new English class with another teacher. The new teacher agreed to participate, but even after repetitive requests, he never gave information pertaining to Bobby's productivity performance, although he allowed continued observation. Nonetheless, data for Francis and

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Terry are promising, suggesting the possibility that the cycle of disengagement may be altered across settings when effective interventions are put into place.

Furthermore, this intervention package seems to be related to improved feelings of school connectedness. When evaluating the SEQ responses of students for the intervention settings, two students indicated increases in paying attention following intervention, two students indicated less mind wandering following intervention, and one student reported less class cutting behavior following intervention. Unfortunately, one student indicated increases in class-cutting behavior; however, the dates when this student was not in school following intervention also correspond with his self-report of getting a new puppy at home. He did not skip any class where he was present for any part of the school day (i.e., if he was in school, he stayed all day and went to all classes). These data should be considered cautiously, however, since they are pre-post only.

Although homework was not addressed in any way throughout the study, according to pre- and post-assessment analysis of the SEQ, all students, except for Francis and Bobby in the intervention setting only, reported decreases in the amount of time they spent engaged in homework each week. These self-described decreases in homework could have several explanations. One explanation could be that as students became more engaged and completed more work while in school, thus less outside work was required simply because the work was finished. Another explanation could be that at the time of post-assessment, students were preparing for the end of the year and less homework could have been assigned, resulting in a less frequent assessment from the students. It should be noted that Bobby's intervention classroom did not have the expectation that students complete work outside of the classroom; although they were encouraged to practice, they were not given homework assignments. He offered this reason for marking he did no homework outside of classwork.

Teachers were likely to consistently implement all intervention components. However, the mean treatment fidelity in one intervention classroom was lower than the other (i.e., 88% compared to 100%). For the classroom with lower fidelity, the teacher was outside of the classroom on two occasions for the beginning minutes of class. As procedures indicated, a fidelity check could not indicate a step occurred if it was not observed and she was not observed giving the contract to the student during the first five min of class. The teacher indicated that when a student was just beginning in intervention following baseline or occasionally when a student was beginning a new goal, she completed steps of the intervention (i.e., giving the contract to the student, discussion of expectations and student completion of the contract) in a separate classroom so students would have more privacy, support and feel more comfortable asking questions, if they had any. This level of support was observed on multiple occasions by the primary researcher but, according to procedures, data collectors could not mark a step occurred if they had not observed it. It should be noted that the data collector's notes indicated the teacher and a student returned from the classroom together on these occasions, supporting the teacher's report. Another time, the teacher did not provide the students with their contracts within the first 5 min of class because her co-teacher was providing an impromptu review as a result of student questioning at the beginning of class and she did not want to interrupt; however, according to the intervention teacher, she provided students their contracts before the planned lesson began. Another day, the observer did not observe the teacher provide copies of the classroom contract although the data collector observed that they were filled in at the end of class. There was only one occasion when it appeared that the teacher clearly did not implement one of the steps of the intervention as intended. This occurred when the student refused to participate and she did not provide any encouragement.

Research has demonstrated that students with behavior problems are more likely to receive negative and corrective feedback than their peers (Hirn & Scott, 2014; Hirn, Scott, & Alter, 2014). Data on teacher positive and corrective feedback were collected to determine if there were individual teacher differences (e.g., a teacher provides a much higher frequency of positive feedback) across intervention settings, which would allow us to speculate whether any disparity resulted in variation in student behavior. These data indicated that in intervention classroom 1, the mean number of corrective feedback the teacher gave to the students per observation session reduced from baseline to intervention for all target students (i.e., Francis' mean corrective feedback reduced from 2.2 to 0.61, Kevin's reduced from a mean of 1.2 to 0.82, and Terry's reduced from a mean of 2.56 to 0.67) and in intervention classroom 2, corrective feedback increased for the target student (i.e., Bobby's increased from 0.56 to 0.85). Additionally, the mean number of positive feedback the teacher gave to the students remained similar from baseline to intervention for two target students (i.e., Francis' mean positive feedback remained similar from 0.2 to 0.17, Kevin's increased slightly from a mean of 0.0 to 0.11), Bobby's remained similar from 0.5 in baseline to 0.54 during intervention, and Terry's reduced slightly from a mean of 0.06 in baseline to a mean of 0.0 in intervention). For Bobby, although his corrective feedback increased during intervention, his intervention teacher reported "making more of an effort" to keep him on-task and focused, which may account for the higher frequency of prompts or corrective feedback.

Even though the positive praise during baseline and intervention appears to have remained similar, the data collection for this study always ended before the conferences at the end of the period. Fidelity checks indicated that teachers consistently praised students during this time as procedures indicated; therefore, praise occurred daily, which was not captured by

data collection. These results are promising and suggest that the classroom environment became more positive and less punitive when the intervention package was implemented.

Additionally, although the scoring fidelity for productivity was high at 97.17% and errors had little impact on overall productivity scores, there were differences in the scores when the teachers reported the number of completed items and the secondary observer reported the number of completed items in spite of the fact that both counted a total number of completed items. An error analysis conducted by the primary researcher determined that the calculation errors were completed by the teachers and that the calculations completed by a secondary observer were accurate. There were errors in both intervention settings although more errors in the classroom where the teacher provided intervention for three students (45.5% of assignments checked) compared to the classroom where the teacher provided intervention for one student (18.2% of assignments checked). This was not surprising given that the teacher needed to calculate the percentage of productivity for multiple students. This classroom also had a larger mean of expected items to be completed (i.e., approximately 45 daily compared to approximately 15). However, the error was large in some cases and never favored the student. For example, on one occasion, the teacher scored the student's productivity for the day at 48.07% when the check indicated he should receive 59.62%. On another day, the same teacher reported the student earned 51.85% when the check indicated he should have earned 62.96%. These errors could be noteworthy for several reasons. First, it could indicate that the intervention is somewhat less feasible when applied simultaneously to multiple students and/or when there are regularly a large number of items to account. Further, teachers may have unknown bias when scoring the work of students with more problematic behavioral concerns. Research has demonstrated that students with behavior problems are less successful academically than any other subgroup of students

with or without disabilities (Landrum, Tankersley, & Kauffman, 2003); however, there may be teacher bias that negatively affects the actual grading procedures. Last, students may have made more progress than was reported due to simple mistakes in calculation.

The teacher and student scores on the SIRF suggest that they liked the intervention. Everyone reported perceiving the intervention to be easy and the teachers rated that it fit easily into the current routines of the classroom. One intervention teacher commented that there was a lack of privacy in the classroom that might have made the students uncomfortable, but also indicated that competition among the students made the intervention considerably more effective. All three of the students in that classroom indicated that there was nothing that they did not like about the intervention, two students scored that there was nothing that made them feel comfortable (i.e., a 7 on the scale) and one student scored a 6 out of 7, indicating a very small level of discomfort related to the intervention.

Future Research

All participants demonstrated variable levels of engagement and productivity during the initial observations for qualification in the study as well as during baseline. This suggests that although the students were considered disengaged, they were completing some work or were engaged at some points during the lesson. Allowing students to gradually increase their performance and providing positive feedback for smaller successes, rather than expecting a substantial and immediate increase, may effectively promote continued successes. This is consistent with research findings that when the emphasis is on improvement, students engage in more appropriate classroom behaviors (Ames, 1992; Dweck & Legget, 1988; Hidi & Harackiewicz, 2013; Kaplan, Gheen, & Midgley, 2002). Additional research might consider student performance during baseline to create the first goal. For example, if a student's data

were highly variable, but included few high performing days during baseline, then the mean would be inflated. This could result in the setting of a goal that might seem unreachable on a more typical day. Future research could consider the removal of the outlying data points during baseline, which might result in more feasible goals and promote greater success.

Although there were two primary dependent variables, in future research, students may not need to have two separate goals since both seemed to increase when targeting productivity (i.e., one begets the other). Although students set an engagement goal, they were not directed to monitor their engagement using any method (e.g., self-monitoring) and students did not receive any teacher feedback regarding their engagement during the session prior to the end of class conference. It appeared that when students were completing their work, they were also engaging in appropriate, on-task behaviors. Additionally, because their productivity goal was concrete, they knew immediately whether they had met or exceeded their goal regardless of teacher feedback. Furthermore, teachers could consider alternate ways of collecting data on student engagement if momentary time sampling is not feasible. Future research could benefit from determining whether setting a goal for only productivity would yield the same results. Another option is to consider adding a self-monitoring component where the student is responsible for determining his/her own level of engagement.

When this intervention was developed, participating students in the study being aware of any other participating students in their intervention classrooms was not expected. These students were all good friends prior to the study and figured out within the first few weeks of the study that they were all participating. This occurred because the students met with the primary researcher prior to data collection and intervention when assent was obtained and with the teacher outside of the classroom for training and practice on understanding and filling in the

contract and to set-up and increase goals. After a few weeks of observation, the students had

discussed their participation in the study outside of the classroom and began occasionally

competing to see who had earned higher percentages. Prior to intervention commencing with

Terry, he began asking his peers how they were performing, questioning when he was going to

begin intervention, and stating his plans to out-perform their work. This was not anticipated, but

the competition seemed to foster continued improvement. Future research might examine

whether formally structuring a teamwork component would enhance intervention effects.

Further, when analyzing students' daily self-reports regarding the level of difficulty of

the assignments as well as how they felt that day, it was not surprising that most students

indicated greater perceived difficulty on days where content was new rather than review, as

unfamiliar tasks are generally more difficult than those in which students received previous

instruction and practice. When examining outliers, it did not appear that there was a relationship

between students reporting not feeling well or perceiving the work to be harder and goal

attainment. Similarly, reporting very easy work or feeling great did not ensure that students met

their goal. However, it was interesting that when material was review, students reported feeling

better on their daily report of "How do you feel today?" Specifically, when responding to this

question and when content was review, the mean range across students was 4.0-5.0 (where

higher scores indicate feeling better) compared to a mean range of 2.67-4.5 when content was

new (see Table 4). This may indicate that when students have familiarity and experience with

classwork, it may lead to more positive feelings.

Also, it did not appear that days with fewer required items or the day's activity (e.g.,

independent seat work or group work) predicted higher engagement or productivity. For

example, on one day, Francis was expected to complete five items within a group setting to meet

his goal and on another 97 items in a mix of independent work and group work. For both of these days, he indicated the work was a medium level of difficulty (i.e., a score of 3 on a scale of 1 to 5 with 5 being most difficult), and he did not feel bad or good (i.e., a score of 3). Further, during one observation session, Bobby was expected to independently complete three warm-up math problems, three math problems pertaining to a new lesson, and two additional practice problems. On this day, he indicated the work was *A little hard* (i.e., a score of 4) and he felt *Pretty good* (i.e., a score of 4 on a scale of 1 to 5 with 5 being most favorable). On another day, Bobby was expected to independently complete three warm-up problems, eight practice problems, and 17 notes. On this day, he indicated the work was a medium level of difficulty (i.e., a score of 3) and he felt *Pretty good* (i.e., a score of 4). Although these findings may indicate that students can increase their productivity and engagement regardless of the required work, type of activity, or perceived difficulty of the lesson, future research might examine the balance between new and review material and long-term student success. Further, future research could consider the use of high-probability instruction sequences (i.e., easy problems preceding more difficult) with fading to increase student productivity (Belfiore, Basile, & Lee, 2008). This could be implemented at the beginning of a new goal and/or on days when a student is demonstrating a lower percentage of work completion to increase motivation and promote success.

As past research has demonstrated (Hirn &Scott, 2014; Shores, Gunter, & Jack, 1993), the participants in this study received far fewer positive teacher comments than corrective comments. Most days, students received no positive comments throughout the observation. However, positive comments were given at the end of class discussion as part of the intervention. Because of this, the data reported do not capture that the intervention students received more

positive reinforcement as a result of having participated in the intervention. Future research should examine whether greater intervention effects can be obtained by adding positive comments throughout class. Also, observations captured the students expressing happiness (e.g., smiling, dancing) when they met their goals. Future research might examine whether goal attainment is associated with general improvements in student affect.

Further, although it appeared that the intervention was effective for all types of instruction (e.g., direct instruction, video, self-guided through web quest) and formats (e.g., independent, in pairs, in groups), additional research should be conducted to determine if it is equally effective under differing circumstances that commonly occur in typical high school settings. That is, more nuanced analyses could evaluate intervention effectiveness based on specific activity type. In addition, the intervention effects could be evaluated in classrooms without support staff.

Additionally, although the intervention package may be effective for many students, elements such as choice or verbal positive feedback from teachers could in fact be punishing for some. For example, Elwell and Tiberio (1994) found that although all students liked positive feedback, some adolescent preferred a more discreet form (e.g., written note, nod) to verbal. All participants in the study reported little to no discomfort resulting from the intervention; however, Francis indicated feeling some type of discomfort. Future research could consider individualizing the package based on student preferences by asking prior to beginning intervention if each element is acceptable and/or if there is anything to be done to help the student feel more comfortable.

Finally, it appeared that two of the students may have improved their productivity in another classroom when experiencing success in the intervention classroom. Future research

could assess teacher's perceptions of student performance within other settings using more rigorous methodological procedures to see if data support student behavior change across settings.

Limitations

Several limitations warrant discussion. One is the potential of experimenter bias. Due to an inability to find daily data collectors along with last minute cancellations, the primary researcher collected 18.03% of direct observation data. During these sessions, IOA was not assessed. The minimal amount of data collected by the researcher somewhat mitigate this concern. In addition, data collected by the researcher are consistent with data collected by naïve observers, also reducing the likelihood of experimenter bias.

During two students' Goal 2, the primary researcher made an error in data recording. This mistake entailed adding the daily percentage for engagement two times on the spreadsheet for both Francis and Kevin. This mistake was not detected until after goal change took place. For Francis and Kevin, this mistake meant both students only spent four consecutive days in Goal 2 rather than five as procedures indicated. This error does not negatively impact the quality of the study as described in quality single-subject research as outlined by Horner and colleagues (2005) but should be noted as there was a deviation from the plan, as detailed in the methodology.

Another limitation was a lack of consistency among daily work samples. Although teachers were asked to keep daily work as consistent as possible for research purposes, there was much variation in the types and amount of work students were expected to complete daily (range = 5-107 items). Further, on some days students worked independently and on other days they worked in pairs or groups, so although the teachers tried to closely monitor what work was

completed, there could have been copying. Additionally, differences in assignment format and assignment difficulty may have impacted student engagement. For example, when students were allowed to work with a peer or on a computer, they may have been more or less on-task than when they worked independently.

Beyond a lack of consistency among work samples, only student completion of assignments was evaluated, and not quality or accuracy. Further, teachers did not always consistently rate the amount of work completed. For example, on one occasion, the teacher was monitoring Kevin's progress in class and twice had asked him to make changes, which he did. At the end of the session, the teacher reported he only completed 65% of the work even though all of the questions were answered. When questioned, the teacher said that she normally assessed the quality and felt that since he did "minimal" work that day, he only earned a 65%. The inconsistency of this particular teacher's ratings of Kevin's work was confirmed through an evaluation of fidelity. Kevin's work received the lowest fidelity score (i.e., 91.99% agreement) among the participants. It is unclear whether this was just a consistent error or if there were more negative feelings toward the student from the teacher that inadvertently affected her reporting of his progress.

Additionally, limited generalization data were collected for all students, except perhaps Terry. As a result, little can be concluded about how the intervention affected students outside of the intervention setting. Further, no baseline data were collected for Francis; therefore, there is no comparison to intervention.

Finally, although this study was conducted in general education settings in a public high school, the circumstances might not have been similar to many high school classroom contexts. One reason is that in each intervention classroom there were two co-teachers present daily.

Having two teachers daily made it very easy for one to share the contract and meet with the student without taking any time away from other students. Thus, the results cannot be generalized to a typical, high school classroom with one teacher. Further, the study included only four students, also limiting generalization of the findings. It would be important to replicate this study across additional students and in different types of classrooms.

Conclusion

There is a critical need for effective interventions for students with emotional and behavioral problems at the secondary level. There has been limited research with this age group, in spite of consistently poor outcomes (Davis et al., 2007; Krezmien et al., 2008; Newman et al., 2009; Newman et al., 2011; Schifter, 2011; Snyder & Dillow, 2012. Increasing student engagement and fostering more positive interactions with teachers can lead to increased academic success in school (Chapman et al., 2011; Hawkins et al., 1999; Lee et al., 2015). Further, incorporation of self-determination, goal setting, and positive feedback within the classroom may foster students' positive experiences and skills, both in school and beyond.

The current study adds to the literature by combining these effective practices into one intervention that, according to the report of teachers in the current study, can fit easily and affordably into the daily routine. This study builds on the work of Martin and colleagues (2003) to determine effects with older students, in public high school general education classrooms. The effects of the intervention package are promising, considering that all four participants made at least some gains following the intervention. Further research is needed to determine if these results generalize to other students and to assess maintenance of intervention effects.

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Figure 1. Cycle of Disengagement
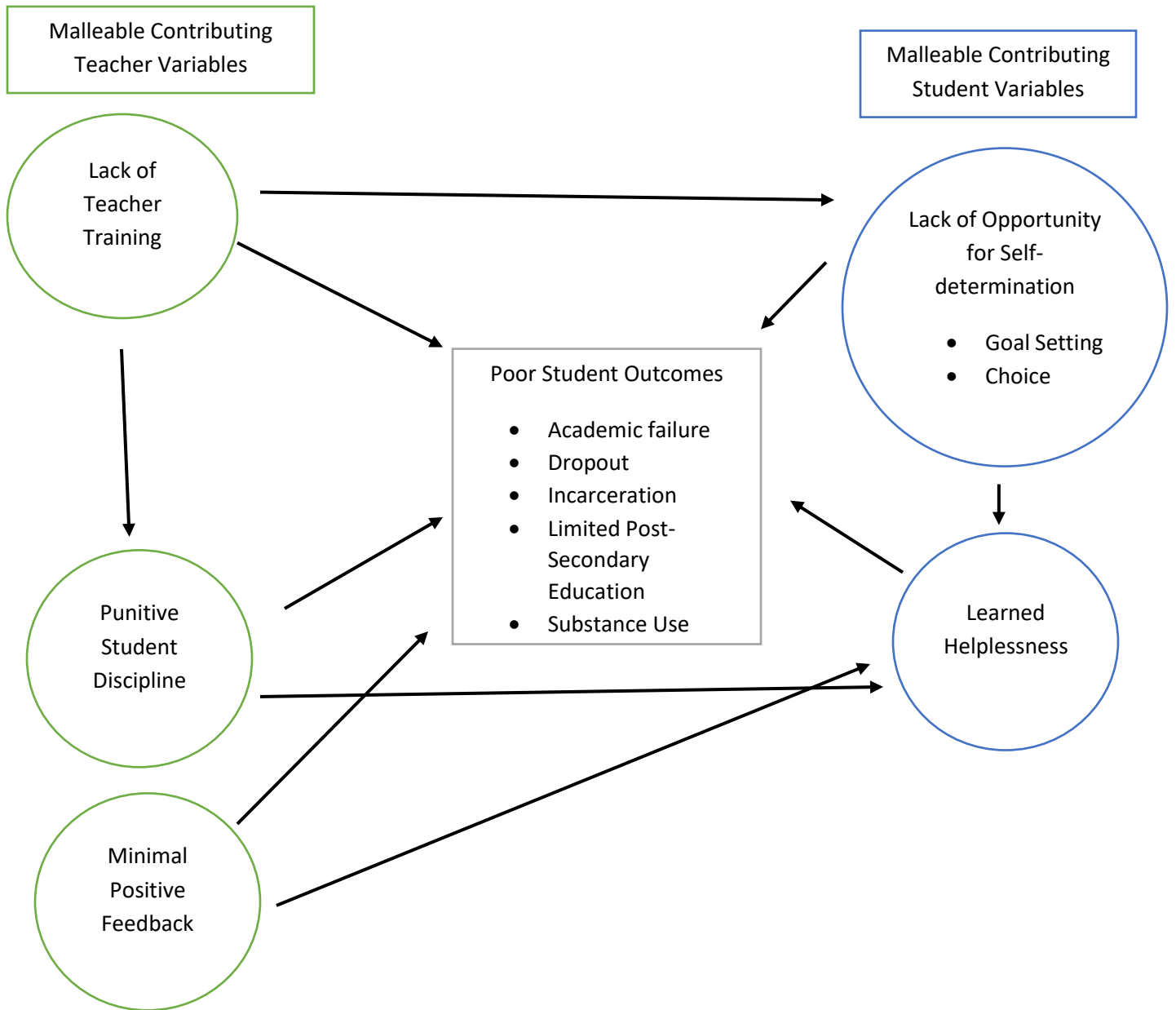
Figure 2. Student Engagement Data
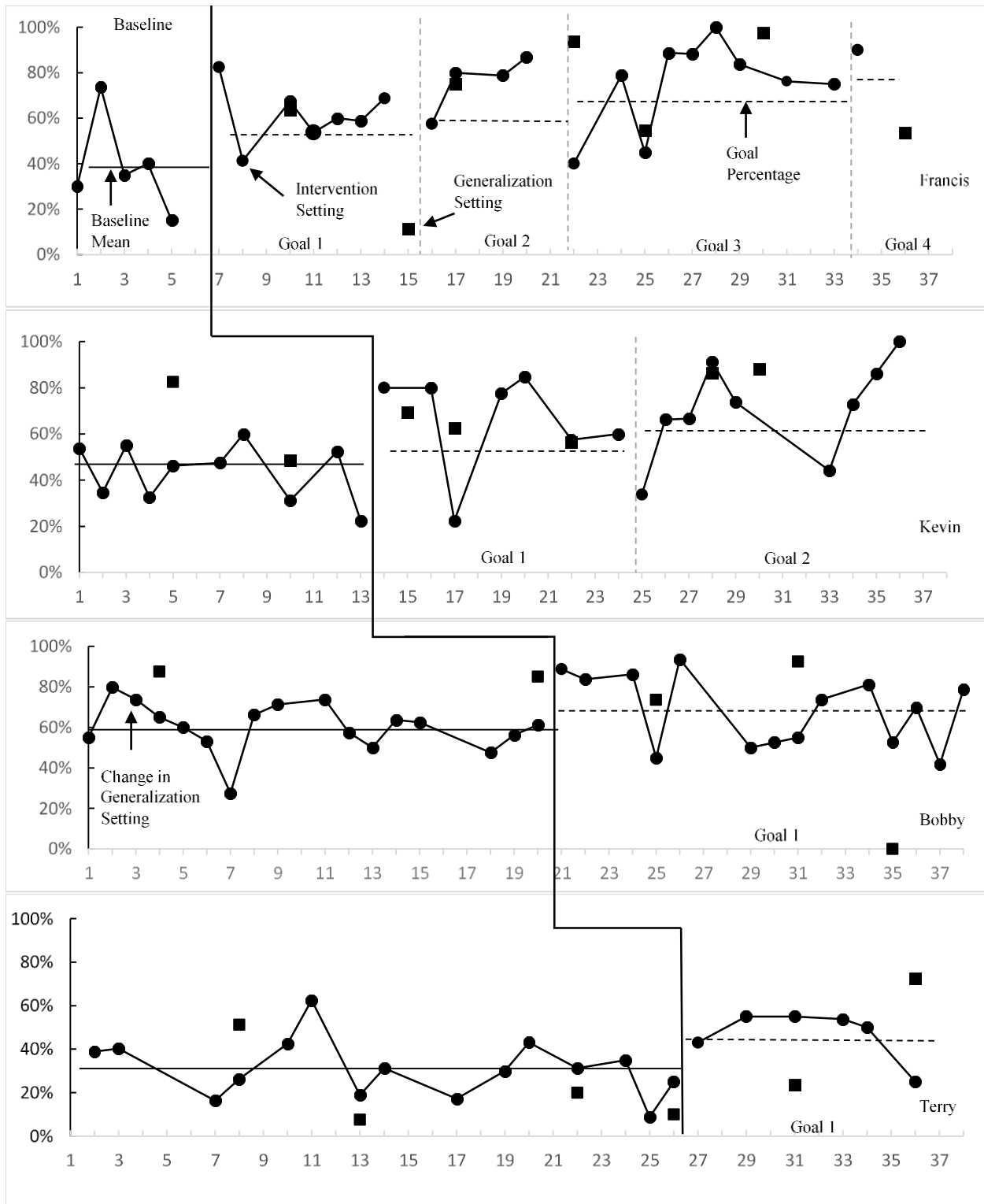
Figure 3. Student Productivity Data
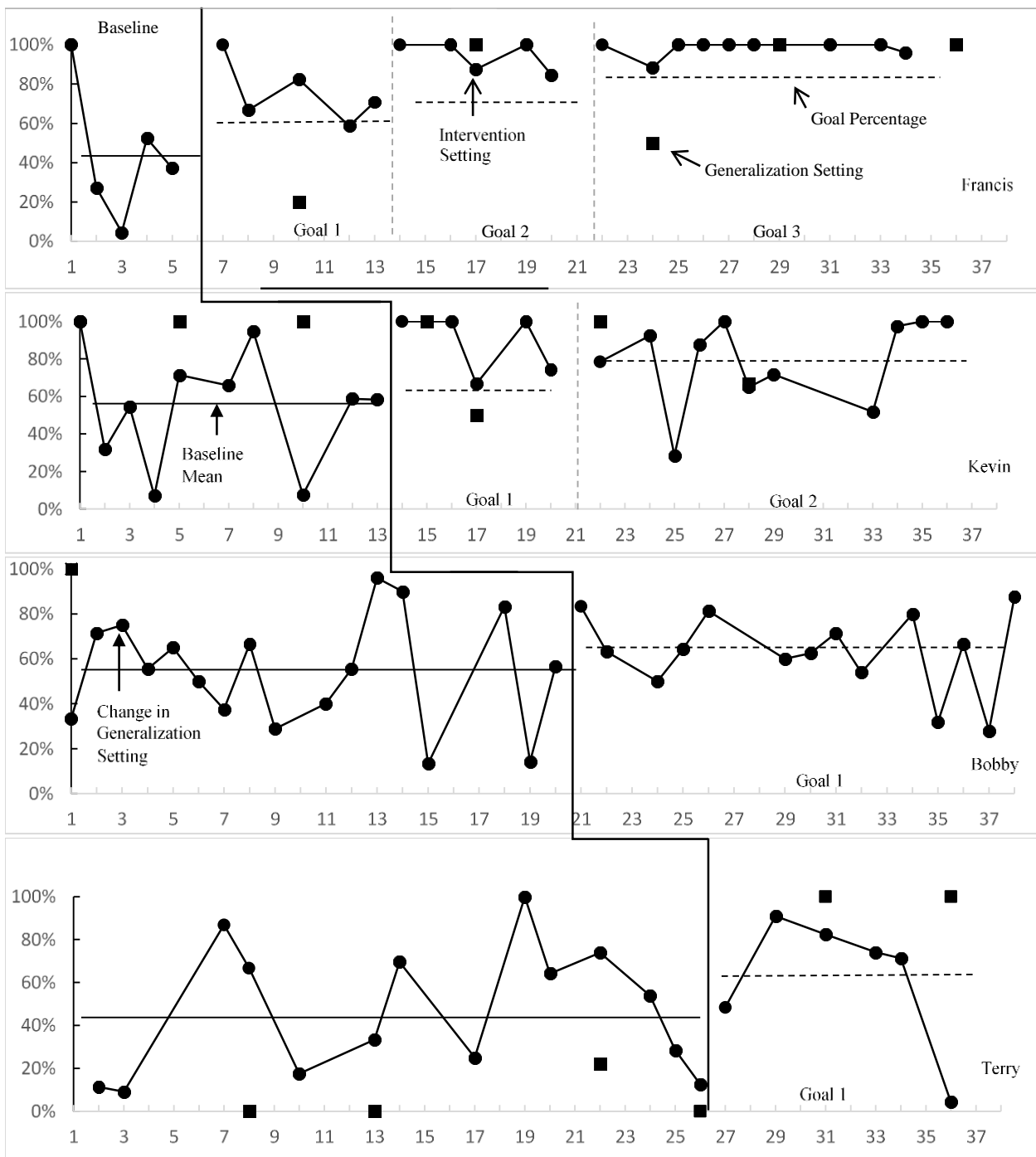
Table 1

Goals and Means for the Primary Dependent Measures Across Participants

Primary Dependent Variable	Baseline Mean	Goal 1		Goal 2		Goal 3		Goal 4	
		Goal	Mean	Goal	Mean	Goal	Mean	Goal	Mean
Francis									
Productivity	44.27%	59%	75.74%	69%	94.42%	79%	98.45%	NA	NA
Engagement	38.72%	49%	61.80%	59%	75.77%	69%	75.09%	79%	90.0%
Kevin									
Productivity	54.99%	65%	88.0%	75%	79.36%	NA	NA	NA	NA
Engagement	43.60%	54%	66.03%	64%	70.57%	NA	NA	NA	NA
Bobby									
Productivity	54.85%	65%	63.13%	NA	NA	NA	NA	NA	NA
Engagement	60.08%	70%	68.08%	NA	NA	NA	NA	NA	NA
Terry									
Productivity	46.59%	62%	61.88%	NA	NA	NA	NA	NA	NA
Engagement	31.14%	46%	46.98%	NA	NA	NA	NA	NA	NA

Table 2

Descriptive Statistics of Intervention Effects

Student/ Descriptive Statistic	Francis		Kevin		Bobby		Terry	
	Pro	Eng	Pro	Eng	Pro	Eng	Pro	Eng
PAND	16.0	57.69	7.69	57.69	12.9	19.36	10.0	23.81
PEM	100	100	87.5	87.5	71.42	57.14	83.33	83.33

Note. Pro = Productivity; Eng = Engagement

Table 3

Student Responses to School Engagement Questionnaire (SEQ)

SEQ Question	How much time do you put into homework each week, including assignments?		How often do you cut (an unexcused absence)		How often do you really pay attention during this class?		How often does your mind wander in this class?	
Setting/Timing	Pre	Post	Pre	Post	Pre	Post	Pre	Post
				Francis				
Intervention Classroom	**About 15 min**	**About 30 min**	Never	Never	**Fairly often**	**Usually**	**Fairly often**	**Seldom**
Generalization Classroom	**About an hour**	**About 30 min**	Never	Never	**Fairly often**	**Usually**	**Fairly often**	**Seldom**
				Kevin				
Intervention Classroom	**About an hour**	**About 30 min**	Never	Never	Usually	Usually	Fairly often	Fairly often
Generalization Classroom	**2 or 3 hours**	**About an hour**	Never	Never	**Usually**	**Fairly often**	Fairly often	Fairly often
				Bobby				
Intervention Classroom	None	None	**Never**	**A few times a year**	**Fairly often**	**Usually**	**Fairly often**	**Seldom**
Generalization Classroom	**About 2 or 3 hours**	**About 30 min**	Never	Never	Usually	Usually	**Fairly often**	**Seldom**
				Terry				
Intervention Classroom	**About an hour**	**None**	**A few times a month**	**A few times a year**	Usually	Usually	Always	Always
Generalization Classroom	**About 30 min**	**None**	**Once or twice a week**	**A few times a year**	Fairly often	Fairly often	**Fairly often**	**Always**

Note. Differences in student responses from pre-to post-test are in boldface.

Table 4

Student Responses to Daily Intervention Questions

Student/Question	"How hard is the work?"				"How do you feel today?"			
	New Content		Review		New Content		Review	
	Mean	Range	Mean	Range	Mean	Range	Mean	Range
Francis	2.91	1-5	2.33	1-3	2.67	1-4	4.0	2-5
Kevin	1.25	1-2	1.67	1-3	4.5	4-5	4.67	4-5
Bobby	3.33	3-4	2.33	1-3	3.67	3-4	4.17	3-5
Terry	2.6	1-3	1.0	N/A	4.0	2-5	5.0	N/A

Note. Students responded on 5-point Likert scale from 1 (*Very Easy*) to 5 (*Really Hard)* to indicate "How hard is the work?" Students responded on 5-point Likert scale from 1 (*Not Well*) to 5 (*Great)* to answer "How do you feel today?"

Table 5

Mean Positive and Corrective Comments Received by Students Per Observation Session

Student	Mean Positive Teacher Comments Received Daily During Baseline	Mean Positive Teacher Comments Received Daily During Intervention	Overall Mean Positive Teacher Comments Received Daily	Mean Corrective Teacher Comments Received Daily During Baseline	Mean Corrective Teacher Comments Received Daily During Intervention	Overall Mean Corrective Teacher Comments Received Daily
Francis	0.2	0.17	0.18	2.2	0.61	0.89
Kevin	0.0	0.11	0.07	1.2	0.82	0.96
Bobby	0.5	0.54	0.52	0.56	0.85	1.05
Terry	0.06	0.0	0.05	2.56	0.67	2.5

Appendix A

Student Assent Form

This form is to ask you to participate in a research project through Lehigh University for interventions for students with social, emotional, and behavioral challenges. The study will be conducted by Beth Custer, graduate student, under the supervision of Dr. Lee Kern, Professor in the College of Education at Lehigh University.

The study will test to improve performance in academic areas and will involve changing instruction in your classroom. The classroom changes will focus on increasing your participation in academic lessons through daily goal setting.

You may feel uncomfortable being observed or with the time it takes to talk with your teacher(s) about your daily goals. The possible benefits to you are improvements in academic performance.

Any data or answers to questions will remain confidential with regard to your identity. All information collected through this research project that personally identifies you will not be shown to anyone without permission from you and your parents, except as specifically required by law.

You may decide whether or not to participate. You are free to withdraw from this study at any time. This will not change your relationship with Lehigh University or your school. When completing the study assessments, you may skip any questions that are uncomfortable to answer.

If you have any questions about this study and what is expected of you in this study, you may call Beth Custer at 570-854-6747 or Dr. Lee Kern at 610-758-3267.

To confirm that you have read and understood the above information, that you have received answers to any questions you asked, and to consent to participate in the study, please sign below.

_____
Date   Student's Signature

I, the undersigned, have defined and fully explained the study to the above subject. *(Use this statement only if the subject may need assistance in reading or understanding the consent form.)*

_____
Date   Investigator's Signature

Appendix B

Parent Consent Form

This form requests your permission for your child to participate in a research study on interventions for students with social, emotional, and behavioral challenges through Lehigh University. The study is being conducted by Beth Custer, graduate student, under the supervision of Dr. Lee Kern, Professor in the College of Education at Lehigh University. The purpose of the study is to test strategies to increase academic performance in the classroom.

The procedures involve evaluating interventions implemented in your child's classroom. The study will test different ways to improve performance in academic areas, which will involve changing instruction in your child's classroom. The classroom changes will focus on increasing his/her participation in academic lessons through daily goal setting and teacher feedback along with observations. Your child will also be video recorded for data collection.

The possible benefits to your child from participation in this study are improvements in academic performance. Any data or answers to questions will remain confidential with regard to your child's identity. Any information collected through this research project that personally identifies the student will not be voluntarily released or disclosed without your separate consent, except as specifically required by law.

The possible risks associated with the study are that your child are minimal and may including feeling uncomfortable being observed in his/her classroom and talking with his/her teacher daily about his/her performance.

Your decision whether or not to participate is voluntary. You are free to withdraw your child from this study at any time without jeopardizing your relationship with Lehigh University or your child's school.

If you have any questions about this study and what is expected of you in this study, you may call Beth Custer at 570-854-6747 or Dr. Lee Kern at 610-758-3267.

To confirm that you have read and understood the foregoing information, that you have received answers to any questions you asked, and consent to have your child participate in the study, please sign below.

_____
Date   Signature of minor subject's parent or guardian

I, the undersigned, have defined and fully explained the study to the above subject.

_____
Date   Investigator's Signature

Appendix C
Teacher Demographic Information Form

1. What is your age?
2. What is the highest level of education you've received? What degrees have you earned including any specialty certifications?

3. How many years have you been teaching?

4. Have you worked with students with emotional and behavioral disorders?

5. What is your level of comfortability in providing instruction for students with emotional and behavioral problems?

1	2	3	4	5	6	7

Not at all   Somewhat   extremely

comfortable   comfortable   comfortable

Appendix D

Classroom Contract

Name: Date: Class:

Specific description of work to be completed during this period by all students (how many problems, sentences, comments, etc.):

Note: "Being engaged" means looking at the teacher while they are talking, looking at/following along with reading or other visual materials, writing for a given assignment, appropriately interacting with peers/staying on-topic when collaboration is requested or allowed by the teacher, asking questions, answering questions, or offering comments that are appropriate and related to the assignment

Weekly Goal for Engagement	Today, I will be engaged for __ minutes of the period

Weekly goal and what is needed to reach goal: Ex: 65% and 24 math problems	My percentage goal for productivity **today** is: Ex: I will complete and turn in at least 80% of my classwork.	% Productivity- how much of the required class work was completed and turned in today?

TEACHER:

Today, Circle one: Is the work new or review

STUDENT:

1. Rate: How hard is the work?

Very easy	A little easy	Medium	A little hard	Really hard
◯	◯	◯	◯	◯

2. Rate: How do you feel today?

Not well	A little off	Not bad or good	Pretty good	Great
◯	◯	◯	◯	◯

Appendix E

Data Collection Tool

Momentary Time Sampling

Directions: At every 15-second interval, indicate whether the student is engaged in on-task behavior (+) or another behavior (-).

Behavior Definition: On-task behavior includes looking at the teaching while they are talking, looking at/following along with reading or other visual materials, engaging in writing for a given assignment, appropriately interacting with peers/staying on-topic when collaboration is requested, raising a hand in an attempt to contribute (calling on by teacher is not necessary), asking questions or answering questions that are related to the assignment (hand raising is not necessary).

Teacher Behavior: Indicate a C in the interval if the teacher gives corrective feedback, a P if the teacher gives positive feedback at targeted student only.

Data Collection Sheet   Date: Teacher:

Initials of Student A: Initials of Student B:

Activity																				
Time	0:15-1:00				1:15-2:00				2:15-3:00				3:15-4:00				4:15-5:00			
Seconds	:15	:30	:45	:00	:15	:30	:45	:00	:15	:30	:45	:00	:15	:30	:45	:00	:15	:30	:45	:00
Student	A				B				A				B				A			
Engagement																				
Teacher Comments																				

Activity																				
Time	5:15-6:00				6:15-7:00				7:15-8:00				8:15-9:00				9:15-10:00			
Seconds	:15	:30	:45	:00	:15	:30	:45	:00	:15	:30	:45	:00	:15	:30	:45	:00	:15	:30	:45	:00
Student	B				A				B				A				B			
Engagement																				
Teacher Comments																				

Activity																				
Time	10:15-11:00				11:15-12:00				12:15-13:00				13:15-14:00				14:15-15:00			
Seconds	:15	:30	:45	:00	:15	:30	:45	:00	:15	:30	:45	:00	:15	:30	:45	:00	:15	:30	:45	:00
Student	A				B				A				B				A			
Engagement																				
Teacher Comments																				

Activity																				
Time	15:15-16:00				16:15-17:00				17:15-18:00				18:15-19:00				19:15-20:00			
Seconds	:15	:30	:45	:00	:15	:30	:45	:00	:15	:30	:45	:00	:15	:30	:45	:00	:15	:30	:45	:00
Student	B				A				B				A				B			
Engagement																				
Teacher Comments																				

Activity																				
Time	20:15-21:00				21:15-22:00				22:25-23:00				23:15-24:00				24:15-25:00			
Seconds	:15	:30	:45	:00	:15	:30	:45	:00	:15	:30	:45	:00	:15	:30	:45	:00	:15	:30	:45	:00
Student	A				B				A				B				A			
Engagement																				
Teacher Comments																				

Activity																				
Time	25:15-26:00				26:15-27:00				27:15-28:00				28:15-29:00				29:15-30:00			
Seconds	:15	:30	:45	:00	:15	:30	:45	:00	:15	:30	:45	:00	:15	:30	:45	:00	:15	:30	:45	:00
Student	B				A				B				A				B			
Engagement																				
Teacher Comments																				

Appendix F

School Intervention Rating Form (SIRF)-Student
(Adapted from the Treatment Acceptability Rating Form)

Please complete the following questionnaire. For each item, please bubble the number that best indicates for feeling about the intervention and the results of the intervention on your school performance.

1. How well do you understand the intervention?

◯	◯	◯	◯	◯	◯	◯
1	**2**	**3**	**4**	**5**	**6**	**7**

Not at all   **Somewhat**   **Very well**

2. How easy was the intervention for you to do?

◯	◯	◯	◯	◯	◯	◯
1	**2**	**3**	**4**	**5**	**6**	**7**

Not at all   **Somewhat**   **Very well**

3. How much do you like the intervention?

◯	◯	◯	◯	◯	◯	◯
1	**2**	**3**	**4**	**5**	**6**	**7**

Not at all   **Somewhat**   **Very well**

4. Were there things you did not like about the intervention?

◯	◯	◯	◯	◯	◯	◯
1	**2**	**3**	**4**	**5**	**6**	**7**

Not at all   **Somewhat**   **Very well**

5. Did the intervention help to improve how you do in school?

◯	◯	◯	◯	◯	◯	◯
1	**2**	**3**	**4**	**5**	**6**	**7**

Not at all   **Somewhat**   **Very well**

6. Did anything about the intervention make you feel uncomfortable?

◯	◯	◯	◯	◯	◯	◯
1	**2**	**3**	**4**	**5**	**6**	**7**

Not at all   **Somewhat**   **Very well**

Appendix G

School Intervention Rating Form (SIRF)- Teacher

(Adapted from the Treatment Acceptability Rating Form- Revised)

Please complete the following questionnaire. For each item, please circle the number that best indicates your feelings about the **Goal Setting Intervention** and the results of the intervention on your student's behavior. Please answer the open-ended questions at the end of this form in detail.

1. How clear is your understanding of the intervention after having used it in your classroom?

1	2	3	4	5	6	7
Not at all			Somewhat			Very
clear			clear			clear

2. How acceptable did you find this intervention to be regarding your concerns about your student/classroom?

1	2	3	4	5	6	7
Not at all			Somewhat			Very
acceptable			acceptable			acceptable

3. How willing were you to carry out this intervention?

1	2	3	4	5	6	7
Not at all			Somewhat			Very
willing			willing			willing

4. Given your student's behavioral problems, how reasonable did you find the intervention to be?

1	2	3	4	5	6	7
Not at all			Somewhat			Very

reasonable   reasonable   reasonable

5. How costly was it to carry out this intervention?

1	2	3	4	5	6	7

Not at all   Somewhat   Very

costly   costly   costly

6. To what extent were there disadvantages in implementing this intervention?

1	2	3	4	5	6	7

Not at all   Some   Many

7. How likely is this intervention to make permanent improvements in your student's behavior?

1	2	3	4	5	6	7

Not at all   Somewhat   Very

likely   likely   likely

8. How much time each day was needed for you to carry out this intervention?

1	2	3	4	5	6	7

Little time   Moderate amount   Much time

was needed   of time needed   was needed

9. How effective was this intervention?

1	2	3	4	5	6	7

Not at all	Somewhat	Very
effective	effective	effective

10. Compared to other adolescents with behavior problems, how serious are your student's problems?

1	2	3	4	5	6	7
Not at all			Somewhat			Very
Serious			serious			serious

11. How disruptive was it to the class to carry out this intervention?

1	2	3	4	5	6	7
Not at all			Somewhat			Very
disruptive			disruptive			disruptive

12. How effective was this intervention package for your student?

1	2	3	4	5	6	7
Not at all			Somewhat			Very
effective			effective			effective

13. How affordable was this intervention for your classroom?

1	2	3	4	5	6	7
Not at all			Somewhat			Very
affordable			affordable			affordable

14. How much did you like the procedures used in the intervention?

1	2	3	4	5	6	7
Not at all			Somewhat			Very much

15. To what extent did undesirable side-effects occur as a result of this intervention?

1	2	3	4	5	6	7
Not at all			Somewhat			Very
likely			likely			likely

16. How much discomfort did your student experience during the course of this intervention?

1	2	3	4	5	6	7
No			Some			Very much
Discomfort			discomfort			discomfort

17. How severe are your student's behavioral difficulties now?

1	2	3	4	5	6	7
Not at all			Somewhat			Very
Severe			severe			severe

19. How willing were you to change your classroom routine to carry out this intervention?

1	2	3	4	5	6	7
Not at all			Somewhat			Very
willing			willing			willing

20. How well did carrying out this intervention fit into the classroom routine?

1	2	3	4	5	6	7
Not at all			Somewhat			Very
well			well			well

21. To what degree are your student's behavioral problems of concern to you?

1	2	3	4	5	6	7
No concern			Somewhat			Great
At all			concerning			concern

22. What changes have you noticed in the student/classroom performance?

23. What components of the intervention have you found to be most effective?

24. What components of the intervention were not effective?

25. What were some of the barriers to implementation?

Appendix H

Student and Teacher Training Fidelity

Area of Fidelity	**Circle** Yes or No
Did the researcher state that the intervention is intended to produce gradual, incremental changes in student behavior; that with small successes, the student will be likely to continue to make improvements over time?	Yes or No
Did the researcher provide a sample of the contract form?	Yes or No
Did the researcher explain that teachers need to specify the work to be completed (e.g. 25 math problems and completion of 3 pages of guided notes, one essay with a minimum of 11 sentences and read pages 123-129) and that each segment of work assigned equals a total productivity of 100% for the period?	Yes or No
Did the researcher explain that the teacher is required to provide a copy of the contract daily to participating students?	Yes or No
Did the researcher explain that goals will be determined by the student each day?	Yes or No
Did the researcher give examples of how the teacher will provide supportive, encouraging prompts if students do not want to fill it out that day at least twice with not less than three minutes between each prompt before discontinuing prompt without providing negative body language or comments?	Yes or No
Did the researcher explain that if the student is not making progress, that the teacher and student will discuss why this happened during the conference at the end of the period?	Yes or No
Did the researcher provide several copies (blank for teachers and filled out teacher portion for students) to allow for practice?	Yes or No

Appendix I

Teacher Fidelity Checklist

1) Did the teacher provide the student with a copy of the contract within the first five minutes of class? Circle: yes or no

2) Did the teacher provide explicit instructions regarding what the student is required to do during that instructional period to earn 100% productivity? Circle: yes or no

3) Did the teacher consult with the student during the last five minutes of the period and provide praise for any effort observed in on-task behavior? Circle: yes or no

4) Did the teacher calculate the percentage for productivity and record for the period? Circle: yes or no

5) If the student refused to participate, did the teacher offer at least two encouraging comments with at least three minutes between each comment? Circle: yes, no or N/A

Appendix J

Sample Completed Classroom Contract for Training

Name: Date: Class:

Specific description of work to be completed during this period by all students (how many problems, sentences, comments, etc.)-listen to direct instruction for approximately 15 min and fill in 10 notes in guided notes handout -work with partners to complete 10 example problems -teach class one example problem

Note: "Being engaged" means looking at the teacher while they are talking, looking at/following along with reading or other visual materials, writing for a given assignment, appropriately interacting with peers/staying on-topic when collaboration is requested or allowed by the teacher, asking questions, answering questions, or offering comments that are appropriate and related to the assignment

Weekly Goal for Engagement	Today, I will be engaged for __ minutes of the period
35% or 21 minutes	*25*

Weekly goal and what is needed to reach goal: Ex: 65% and 24 math problems	My percentage goal for productivity **today** is: Ex: I will complete and turn in at least 80% of my classwork.	% Productivity- how much of the required class work was completed and turned in today?
75% or 15 notes and problems	*80%*	85%

TEACHER:

Today, Circle one: Is the work new or (review)

STUDENT:

1. Rate: How hard is the work?

Very easy	A little easy	Medium	A little hard	Really hard
⬭	⬤	⬭	⬭	⬭

2. Rate: How do you feel today?

Not well	A little off	Not bad or good	Pretty good	Great
⬭	⬭	⬭	⬤	⬭