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Impact of a goal setting procedure on the work performance of young adults with behavioral/emotional/learning challenges

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The Impact of a Goal Setting Procedure on the Work Performance of Young Adults with
Behavioral/Emotional/Learning Challenges

by

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A thesis submitted in partial fulfillment
of the requirements for the degree of
Master of Arts in Applied Behavior Analysis
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Contextual Fit

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ABSTRACT

The population consisting of young people with Behavioral/Emotional/Learning challenges typically experiences poorer outcomes related to employment, in part due to lower performance levels. Effective strategies, which have a positive impact on work performance for this population, are needed. Goal setting has been used to bring about behavior change, or increase ‘motivation’, in many fields of study. Goal setting can be conceptualized as an establishing operation (EO), which increases the reinforcing value of goal achievement, and thereby increases the probability of the occurrence of behaviors related to reaching the goal, i.e., task completion. This study empirically examined the impact of a goal setting procedure on work-related behaviors through the use of a single-case experimental design, to detect the individual results of the goal setting intervention, which included the manipulation of environmental events to explain behavior change, or ‘motivation’. It was hypothesized that the goal setting procedure would have a positive impact on work performance for these young people with challenges in a work-type setting. Results showed that the goal setting procedure did have a positive impact on the work performance of both participants, especially when additional prompts were included in the goal setting procedure. Although goal setting may serve as an EO, the goal setting procedure, which included additional elements such as prompts and feedback, seemed to be more effective.

Chapter One

Introduction

The population with emotional/behavioral and learning challenges is at risk for negative outcomes, especially around the area of transition related to the employment domain (Vander Stoep, Davis, & Collins, 2000; Hinshaw, 1992; Parker & Asher, 1987). Studies show that this population experiences about one-third poorer outcomes in securing jobs and is significantly more likely to be unemployed, underemployed, or employed part-time in comparison to their peers who do not have such challenges (Vander Stoep et al., 2000; Wagner, 1993). Behavioral approaches that are effective and compatible with this population, which focus on improving work performance, are needed to bring about improved transition in the employment domain. (Lehman, 2002).

Motivational Theory

Motivational theory has been a focus of much research. It basically seeks to determine what causes a change of behavior. Researchers, clinicians, and laypeople want to know: what motivates people, that is, what causes behavior change? Several fields have an invested interest in motivational theory.

One such field that has done extensive research on the topic of motivation is the industrial/organizational field. This field has looked at the goal setting theory to determine its effects on work performance (Erez & Early, 1985; Steers, 1975; Dewhirst & Boling, 1976; Erez & Kanfer, 1983; Erez & Zidon, 1984; Beehr & Love, 1983; Locke, 1968; Latham & Yukl, 1975b, Mento, Cartledge, & Locke, 1980). Goal setting has

been defined as a procedure involving techniques, which identify what the individual is trying to accomplish (goals), and assumes that these goals are immediate regulators of human action (Locke, Shaw, Saari, & Latham, 1981; Erez & Kanfer, 1983). Goal setting is supported in the literature as an effective means to increase work performance. Locke et al.'s 1981, *Goal Setting and Task Performance*, a review of laboratory and field studies from 1969-1981, found that 90% of studies which used goal setting on task performance showed a statistically significant change. A study done by Erez, Early, & Hulin (1985) looked at the effects of goal setting on a simulated scheduling task. The study included 120 male and female college students and employed a 3 X 2 factorial design, consisting of three conditions of goal setting – participative, representative, and assigned goals. Utilization of the goal setting procedures improved performance on this simulated scheduling task. Another study, conducted by Weldon & Yun, (2000) looked at how goal setting would affect the accuracy of reports for 31 teams of nurse surveyors working in a state department of health. Accuracy was defined as the percentage of the total number of deficiencies (i.e., a deviation from the guidelines found in nursing homes during an inspection) reported, where the documentation was completely correct. This study used statistical measures to evaluate the results of the group data and reported group means and standard deviations of the results. The results of this study showed that goal setting had a statistically beneficial impact on improving accuracy. Studies such as these show the changes that goal setting can bring about.

The abovementioned studies have been successful in showing the effectiveness of goal setting on work performance. However, they are not without their limitations. Most of these studies employed group designs, simulated work tasks in laboratory settings, and

were analyzed using statistical methods. Although these methodological approaches are appropriate for addressing certain types of research questions, they do not permit an analysis of the impact of a procedure on an individual and an assessment of the extent to which the level of behavior change is socially significant (Baer, Wolf & Risley, 1968). Another drawback to these studies in this field is the use of mentalistic concepts such as instinct, drive, and desire to explain human behavior. Although these terms are still commonly used as the “explanation” for a person’s actions, they do not assist in an understanding of the determinants of human behavior (Locke et al., 1981).

Behavior analysis is another field that has a strong interest in the concept of motivation (Skinner, 1953; Keller & Schoenfeld, 1950; Michael, 1982; Michael, 1993). Where other fields may focus on mentalistic concepts to explain behavior, behavior analysis is a science that focuses on the role of the environment, instead of internal events, to understand the determinants of behavior. It does not necessarily rule out internal, genetic, and/or historical factors; but it does not rely on them to explain behavior. Therefore, factors such as those aforementioned do not suffice as an explanation of motivation in the field of behavior analysis. Instead, this science seeks to identify variables that exercise control over behavior, to arrive at an analysis of the interaction of the environment and behavior (Baer et al., 1968).

Central to behavior analysis is the concept of the three-term contingency, also known as the ABC’s of behavior analysis. The events that determine behavior fall into the three parts of this contingency, or the ABC’s: antecedents, behavior, and consequences (Cooper, Heron, & Heward, 1987). When behavior occurs, it occurs in relation to antecedents, which refer to the state or condition of the environment that

preceded the emission of a response, and consequences, which refer to stimuli that follow the behavior. An example of this three-term contingency is eating a raspberry. The properly colored fruit (antecedent stimulus) when eaten (the behavior), would be reinforced (consequence) by its sweet taste. The discriminating features of the sight of the raspberry would have been established by previous reinforcement experience with the eating of similar berries. As Cooper et al. (1987) state, “virtually everything known about the prediction and control of human behavior is incorporated into this three-term contingency ... and all applied behavior analysis procedures involve manipulation of one or more of components of this three-term contingency” (p. 30).

Traditionally, behavior change has mostly been brought about by consequence manipulation (Smith & Iwata, 1997). More recently, greater attention has been given to antecedent manipulation in order to bring about behavior change (Carr & Durand, 1985; Durand & Carr, 1987, 1992; Durand & Crimmins, 1987, 1988; Marcus & Vollmer, 1996). The potential of antecedent manipulation is very intriguing because it, unlike consequence manipulation, focuses on what happens before the behavior and has the possibility of preventing problematic behavior, whereas consequence manipulation takes place after the occurrence of behavior.

An example of antecedent manipulation is illustrated in the case of Mary, a 23-year-old woman with mental retardation. She received behavior consultation because staff had been working with her for months to overcome extremely disruptive and agitated behaviors she engaged in when she was instructed to take a shower in the morning before getting dressed and eating breakfast. Staff had attempted many methods, including positive reinforcement for compliance, use of a “task card” to sequence the

required steps for showering, and a time-out procedure contingent on the problem behaviors. However, none of these methods was successful and Mary continued to engage in the problematic behaviors in the morning. Through a functional assessment, it was learned that Mary engaged in problematic behaviors related exclusively to the morning shower routine, perhaps because she seemed challenged in the morning with waking up and having enough time. The intervention that was recommended and implemented was to move the shower routine from the morning to evening. The intervention, which was an antecedent manipulation, was very effective in eliminating the problem behavior long-term. Although this case only required a simple antecedent manipulation, it illustrates how behavior can be changed from developing procedures which focus on manipulating antecedents (Luiselli, 1998).

A relatively innovative, yet not very well understood concept, which is part of the antecedent class, is referred to as “establishing operations” (EOs) (Smith & Iwata, 1997). An EO is an environmental event, operation, or stimulus condition that has two functions: (a) it alters the effectiveness of other events as reinforcers or punishers and (b) it alters the frequency of behaviors associated with these reinforcing or punishing events (Michael, 1993; McGill 1999). An example that illustrates an EO is that of food deprivation, which (a) increases the reinforcing value of food; and (b) alters the frequency of behaviors that lead to food consumption, (e.g., putting food in mouth, chewing, swallowing). By identifying and manipulating EOs, one can gain control over behavior and exert ‘pre-behavior’ control.

In the field of behavior analysis, EOs, which are environmental antecedent variables, may prove useful in explaining the functioning of motivation. As Smith &

Iwata (1997) state, “EOs are dynamic influences whose effects are motivational in nature” (p. 348). EOs alter how much people *want* something, e.g. food or water, because they increase the reinforcing or punishing value, which has an evocative effect of increasing the frequency of behaviors associated with these reinforcing or punishing events (Michael, 1982). Thus, events that fit the criteria for EOs should establish motivation.

Goal Setting as an Establishing Operation (EO)

Although there are limitations, such as those aforementioned in other fields where previous studies of goal setting have occurred, the beneficial effect of goal setting on task performance is one of the most robust and replicable findings in the psychological literature (Locke et al., 1981). When the goal setting is conceptualized as an EO, it would be assumed that established goals would increase the reinforcement value of task completion, as defined by the established “goal”, thereby increasing the behaviors which lead to task completion.

Goal setting is often used to improve performance in a variety of settings. It is used to ‘motivate’ individuals toward improvement by setting specific targets of achievement, which may ‘motivate’ individuals to persist through adversity to reach their preset targets.

Goal Setting Procedure

Goal setting consists of several elements and is perhaps better understood within the framework of a procedure. Goal setting procedures, which have been used in different studies, to help participants reach their preset targets, are not made up of the same elements, however; several goal setting elements have been identified in the

literature to be effective in increasing the likelihood of participants reaching their preset targets (Early, 1985; Locke et al., 1981; Erez & Zidon, 1984; Erez & Kanfer, 1983; Mento, 1980; Beehr & Love, 1983).

One of the empirically supported elements of a goal setting procedure is participation. Participation allows participants to have input in setting the goal and may provide a feeling of control to the individual, which has been associated with better goal acceptance (Early, 1985; Erez & Kanfer, 1983). Furthermore, participation can open the dialogue in the goal setting procedure, which can lead to the generation of information, including addressing concerns, answering questions, and asking for help/instruction, etc. (Beehr & Love, 1983; Early, 1985; Erez & Zidon, 1984; Steers, 1975; Mento, 1980). Challenging and specific goals are another important element of a goal setting procedure. Research shows that goals, which are challenging and specific, yet reasonable, lead to better performance (Locke et al., 1981). Developing a strategy or plan to reach the set goal is also an important element (Locke et al., 1981). The plan that is developed for reaching the goal will include the strategy the individual will use to reach the set goal. A goal setting procedure, which includes these elements, can serve as an EO to increase the behavior associated with goal achievement.

To further increase the likelihood of participants meeting their goals, additional elements, which are empirically supported, should also be included in the goal setting procedure. These additional elements are prompting and feedback. Prompting provides support to the participants as they attempt to reach their set goals and is an important element in a goal setting procedure (Lock et. al., 1981; Latham & Saari, 1979). Feedback provides participants with knowledge about their performance, and when this element is

included in goal setting, performance has been shown to improve (Early, 1985; Beehr & Love, 1983; Locke et al., 1981).

Contextual Fit

When considering applied research, as was the case in this study, it is important that the intervention has good contextual fit in the setting. Contextual fit refers to the compatibility between the intervention and the individuals the intervention will involve (Albin, Luchshyn, Horner, & Flannery, 1996). The location in which the goal setting intervention was to be utilized was an applied simulated work setting that educated young adults, teaching them skills they could apply to jobs in the community. The young adult participants, who were the target population of this study, were individuals identified with behavioral, emotional, and/or learning challenges. A goal setting procedure which incorporated elements such as participation; challenging and specific goals, yet reasonable goals; a plan to reach the set goals; and feedback about performance, seemed to have good contextual fit. The intervention integrated the participants into the goal setting procedure so that they participated in setting the goal; developing the plan to reach the goal; asked any questions or address any concerns they had; and asked for any help or instruction throughout the session if they needed it. The goal setting procedure, which was used, was individualized and allowed the young participants independence, yet provided structure and resources to assist the participants in being successful, and fit into the existing daily routines of those involved (Albin et. al., 1996).

In addition to the intervention having good contextual fit, the persons implementing the intervention also had to be compatible with the participants and the environment in order to improve the contextual fit of the intervention. Compatibility of

the implementers with the participants was especially important with this population because this population often has difficulty relating with authority figures. This study sought to remove this ‘authority’ issue by utilizing persons in the environment with whom the participants already had a good relationship. Additionally, these persons in the environment needed to have experience and some degree of leadership qualities. Persons were identified that fit these criteria and they were selected as coworker mentors.

Coworker mentors have been shown to have good contextual fit, as well as bring about behavior change with individuals in applied work settings (Granucci, Westerlund, & Clark, 2004). Because coworker mentors are already familiar with the work environment, and with the individuals in the environment, they have an understanding of the way the environment functions and usually also have an understanding of the individuals in the environment. Coworker mentors are looked at as ‘insiders’ rather than people who are coming in from the ‘outside’ to help the individuals. Therefore, using coworker mentors, who are an already established part of the environment, is often less stigmatizing for the individuals being assisted than using individuals from outside the environment. Coworker mentors should improve the contextual fit of the intervention as they have an understanding of the system in which the individuals work, an understanding of the individuals in the environment, established relationships with these individuals, and will decrease the stigmatization of the individuals being assisted because they are a natural part of the environment.

Purpose of this Study

This study empirically examined socially important work-related behaviors through the use of a single-case experimental design, to detect the individual results of

the goal setting procedure, which was implemented in an applied setting. The goal setting procedure included the manipulation of environmental events to aide in understanding the determinants of behavior change or ‘motivation’. Goal setting was conceptualized as an EO, and as such, should increase the reinforcing value of goal achievement and thereby increase the probability of the occurrence of behaviors related to reaching the goal, i.e., task completion. A goal setting procedure, which was designed to have good contextual fit and included the abovementioned, empirically supported elements, was studied for treatment effects. It was hypothesized that the goal setting procedure would cause an improvement in work performance for these young people with challenges in an applied work-type setting.

Chapter Two

Method

Setting

This study took place at Pinellas Technical Educational Center (PTEC). The programs at PTEC provided ‘hands-on’ training where the students learned skills that paralleled actual jobs found in the community. This study was conducted in the Cosmetology area of PTEC. The program housed a cosmetology styling salon where patrons from the school and community made appointments for services preformed by the students at reduced rates. Students of the Cosmetology program developed their related skill repertoire through training on a variety of job tasks, related to cosmetology, both on fellow students and patrons. Students of the Cosmetology program were overseen by an instructor who had many years of experience in cosmetology, as well as in the field of education. Some of the services provided by the students at the salon included: shampooing; hair cutting; roller setting; hair styling using hot irons, styling products, and blow dryers; chemical treatments such as hair coloring and perming; and nail care services. During the study there were approximately 25 students enrolled in the program. These students were a combination of high school and adult students, ranging in age from about 16-years-of age to 40-years-of-age.

Participants

Two participants were a part of this study in which they used a goal setting procedure to improve their work-related performance. One participant was identified as

having a learning disorder as well as emotional challenges, and the other participant was identified as having a learning disorder as well as behavioral challenges. Student participation in this study was based on approval from individuals themselves, the principal, the ESE specialist, the instructor of the students, and consent from parents for participants under the age of 18. The ESE specialist and the Cosmetology program instructor identified possible students for the study based on their challenges, as well as the instructor's knowledge of the students' ability to be at least somewhat flexible and consistent in attendance. Participants were informed that they would receive a \$200 stipend for their participation in all required sessions up to 20 sessions and \$15 for each additional session of participation past the initial 20. The study included about 30 sessions for each student, ranging from 3-5 sessions per week. To protect the students' confidentiality, a pseudonym was used with all data sets.

'Rose' and 'Abby' were the two participants involved in the study. Rose was a female of African American decent who was 18-years-of-age. She had dropped out of high school and returned to the Cosmetology program at PTEC, to seek a vocational trade. She had not been successful in high school due, at least in part, to her learning disabilities in reading and in math. It was also reported that Rose had emotional challenges, which caused her difficulty with social relations. Rose attended the Cosmetology program daily from 7:00 am to 12:30 pm, Monday through Friday, to fulfill the requirements of the program on a full-term basis. Abby was a Caucasian female who was 16-years-of-age. She was enrolled in high school, as a junior, during the time of the study. She attended the Cosmetology program for two and a half hours each morning to earn credit in cosmetology and then attended academic classes the rest of the day, to earn

typical academic credit. Abby sought training in cosmetology to better prepared her for gainful employment upon graduation. Abby had a learning disability in reading and in math and was identified as exhibiting some behavioral challenges around the area of social skills.

Coworker Mentors

Two coworker mentors were chosen, from among those recommended by the instructor, to facilitate the goal setting procedure. Coworker mentors were identified from the more advanced population of cosmetology students who were receiving training at PTEC. These advanced students were more experienced and had been in the program for longer than the participants in the study. Each participant was assigned her own coworker mentor. Coworker mentors were selected because of their advanced status and their ability to guide and mentor a student, as well as their compatibility with the participants in the study. Coworker mentors were matched with the student with whom they had the closest relationship to improve contextual fit. The coworker mentors were trained to proficiency in the goal setting procedure prior to their facilitation of the procedure with their participant. Coworker mentors received a stipend of \$200 for their participation in the sessions required to complete this study.

‘Kay’ and ‘Josie’ were the coworker mentors in this study. Kay was a Caucasian female who was 35-years-of-age. She was seeking education at PTEC in the Cosmetology program in order to fulfill the board certification requirements to become a licensed cosmetologist. She attended the Cosmetology program from 7:00 am to 12:30 pm. She was the coworker mentor for Rose. Josie was a Caucasian female who was 18-years-of-age and in her senior year of high school, earning a special diploma in

Cosmetology. She attended the Cosmetology program from 7:00 am to 12:30 pm. She was the coworker mentor for Abby.

Target Behaviors

Target behaviors were identified by the investigator through consulting with the classroom instructor, the ESE specialist, and through direct observation of task performance in the actual setting. Behaviors that were being targeted for change needed to be related to terminal behaviors that would improve the individual's employability in the community.

The behaviors that were targeted for change were termed: 'Approached/Accepted' and 'Service Hours'. Approached/Accepted was operationally defined as the participant initiating the offer of a service of any kind, which received credit in the program, to another student or client in the program. As long as the participant initiated the offer of a service, an approach was counted. Each offer made had to be to a different student in order for it to count as another occurrence of the target behavior. If the participant initiated the offer of a service and the person accepted the offer, an acceptance was counted. An approach was not counted if the participant did not offer the service, nor was an acceptance counted if the participant did not offer the service that was performed. In other words, if the person that received the service asked for the service, neither an approach, nor an acceptance was counted – the participant was required to approach and offer the service.

The researcher did not develop a specific script for the participants to use when approaching others. The rationale for allowing the participants to develop their own dialogue for the Approached/Accepted target behavior was that it would allow for the

participants to practice formulation of dialogue that was natural for them to use, which was thought to generalize better to the community setting. Also, approaching other students in the program to perform services was already a natural part of the Cosmetology program prior to the implementation of this study. Therefore, although the participants were not engaging in the Approached/Accepted behavior frequently in baseline, it was thought that they were probably somewhat familiar with approaches that either they made previously, or that were made to them from other students. If the participants were not comfortable developing the Approach dialogue on their own, the goal setting procedure, which will be discussed in more detail under the procedure section, had a component, which prompted their coworker mentor to ask them if they had any concerns or questions and an offer for continued help if they requested it.

Approached/Accepted was identified as a target behavior because it was determined through direct observation and consultation with the instructor and ESE specialist that both Rose and Abby typically did not interact with many other students or exert effort to offer services to others, but instead worked mainly on the mannequins. In the Cosmetology profession, it is important that the stylist interact well with others, especially with her clients, to build a customer base. It is also important to offer services to clients to increase sales for the stylist, as well as the company and to meet the needs of the client. Hence, the rationale for including Approached/Accepted as a target behavior that Rose and Abby would focus on for improvement through goal setting, was to increase their ability to approach clients and get the client to accept the service they offered, which would help build a strong customer base by extending services the customer may find appealing and also to increase sales for themselves and for the

company, increasing access to reinforcement for themselves and making them a valuable employee.

The second target behavior was 'Service Hours'. Service Hours were defined as hours the participants gained through completing services that earned them credit through the program. Services were supposed to be being performed prior to the start of this study, as students completed Service Hours for credit toward their grade each semester and toward their requirement for taking the Cosmetology board exam. Services included such tasks as: shampooing; scalp treatments; hair styling; cutting; perming and coloring; facials; etc. Services could be performed on a mannequin or a person and were not dependent upon the participant approaching and asking to conduct the service. Any service that fell within the program's criteria for earning credit that was performed by a participant and received the instructor's approval counted as engaging in Service Hours.

Service Hours were identified as a target behavior because it was determined through direct observation and consultation with the instructor and ESE specialist that both Rose and Abby did not complete many Service Hours daily, leading to low productivity. While conducting direct observation to determine fitting target behaviors, Rose and Abby were observed sitting in the classroom for extended periods of time, sometimes sleeping, or spending extended amounts of time completing a service that should only take a fraction of the time to complete. The rationale for targeting Service Hours, was to allow Rose and Abby the opportunity to learn that their productivity could be increased through goal setting, leading to an increase in earnings for them and making them more valuable employees in the community. Also, by increasing Service Hours,

Rose and Abby would be earning credit toward a higher grade for the semester as well as credit toward their requirement for the Cosmetology board exam.

Service Hours were not completely independent of the other target behavior, Approached/Accepted. It was possible that Service Hours could have affected Approached/Accepted, as it was possible that Approached/Accepted could affect Service Hours. For instance, by targeting Approached/Accepted for increase, Service Hours could have concomitantly been increased, especially when the Accepted portion of this behavior increased, as more Accepted could have directly increased Service Hours. Conversely, by targeting Approached/Accepted for increase, Service Hours could have been concomitantly decreased, as the participants could have been taking time away from completing Service Hours to spent time toward reaching their Approached goal. In consideration of this threat to internal validity, Service Hours were selected as a target behavior for this study because the possible concomitant effects, as mentioned above, were determined to be minimal. The concomitant effect was determined to be minimal because the Accepted portion of the goal was low for both participants. In addition to the possible concomitant effects being minimal, the social importance of targeting Service Hours was determined to be quite significant in consideration of improving longer-term employment outcomes for these individuals, as they both exhibited challenges around productivity.

Procedures

Procedure 1: Goal Setting Procedure (GSP)

Once the participants, coworker mentors, and appropriate target behaviors were identified, baseline data were collected on the target behaviors of each participant.

During baseline, coworker mentors were neutral stimuli in the training environment and did not play any specific role. They were identified as potential coworker mentors during this time, but were not approached for their participation until the end of baseline. Once the coworker mentors gave consent for participation, they were informed of who their participant was and were then trained on the goal setting procedure (GSP) just prior to intervention.

GSP training with coworker mentor. The researcher trained the coworker mentor in the GSP. The training for the coworker mentor consisted of the following being conducted by the researcher: (See Appendix A for the GSP Training form and proficiency sheet used with coworker mentors)

- Explained overall GSP
- Explained GSP form with an example
- Modeled appropriate verbal behavior for the steps involved with the facilitation of the goal setting procedure meeting
- Modeled and explained how and when to prompt and give appropriate feedback and specific verbal praise during sessions
- Conducted behavior rehearsals with the coworker mentor until she mastered proficiency in the GSP

The GSP training with the coworker mentor took about 30-45 minutes with each coworker mentor. Once the coworker mentor demonstrated proficiency in the GSP with 100% accuracy, she began the GSP intervention on the first behavior with the identified participant.

GSP with coworker mentor and participant. Once the coworker mentor was trained on the GSP, she then started intervention by facilitating the GSP meeting with her participant. The GSP intervention started with a meeting that consisted of the following:

- The coworker mentor asked the participant to meet with her in a private area closed off from other students for a brief meeting, which started with the introduction of the coworker mentor role to the participant.
- The coworker mentor used GSP recording form to record the goal setting information as she facilitated the GSP meeting with her participant.
- Coworker mentor acted as facilitator in GSP:

(See Appendix B for GSP form, which coworker mentor used during the GSP meeting. Example is provided with the form in Appendix B, but the form the coworker mentor used was without the example, providing space for the coworker mentor to record the participant's responses)

1. Gave status on current level of performance/accuracy, recognizing quality performance
2. Discussed the need for improvement, giving rationales
3. Asked participant to set a specific goal that the student felt was challenging yet realistic to meet
4. Asked participant to discuss how she planned on meeting the goal she set
5. Asked participant if she had any questions or concerns regarding the goal, how to reach it, or anything else related to the goal she set answered any questions and addressed any concerns the participant had

6. Told the participant that she, (the coworker mentor), would be happy to provide any help the participant may need to learn how to reach her goal any time she requests it
7. Told participant that the coworker mentor would prompt her prior to the beginning of each session and provide feedback to her after each observed session and prior to the next session to be observed, in numerical fashion, and would provided specific verbal praise, when appropriate, so that participant knew how she was doing daily

During all GSP sessions, the coworker mentor provided a daily prompt at the beginning of the session and on-going daily numeric feedback to the participant on her performance of the target behavior at the end of the session and then again prior to the next session to be observed. Specific verbal praise was also given, when appropriate. The researcher observed coworker mentor providing prompt, feedback, and specific verbal praise with the participant and provided informal feedback to the coworker mentor, away from the participant, for at least the first three sessions, and then faded the observation and feedback, as no further feedback was needed. Intermittent casual observations throughout the study were conducted to ensure coworker maintenance of prompts, feedback, and specific verbal praise.

Procedure 2: Goal Setting Procedure Plus (GSP+)

Literature shows that goal setting is effective, but this literature used mostly group designs to determine treatment effects. This study used single-case design to detect individual effects of GSP. Because of the sensitivity this design allows, it was thought that consistency related to meeting the daily goal might be a challenge. GSP+ was an

additional procedure developed to be used if the participant's behavior was not consistently approaching or meeting the goal after four consecutive sessions. GSP+ was the same procedure as GSP except in the GSP+ condition, additional prompts from the coworker mentor to the participant were included throughout the session, rather than only prompting once at the beginning of the session. If goal setting had an impact, yet it was not consistent, it was determined that the lack of consistency could be at least partly attributed to the infrequent interaction with the coworker mentor. Because the coworker mentors had a pre-established relationship with the participants and were already in the environment, increased prompting provided additional support through antecedent manipulation to increase the frequency of the target behavior, without increasing the probability of counter control; in other words GSP+ appeared to have good contextual fit in the environment.

Prior to implementing GSP+, the researcher met with each coworker mentor individually in a private area and discussed the rationale for increased prompts. Since the coworker mentor knew the participant, the researcher asked the coworker mentor what she felt would be an acceptable, yet effective, schedule of prompts for her participant. The researcher explained and modeled the increased prompting behavior to the coworker mentor and created a form for the coworker mentor that included the scheduled prompts, which served to remind the coworker mentor to prompt. (See Appendix C for an example of this form.) Once the coworker mentor understood GSP+, she initiated a meeting with the participant. The coworker mentor showed the participant a graph of her performance and explained that she wanted to provide additional support to the participant to help her meet her daily goal. At that point, the participant was asked if she would like to change

her goal. The coworker mentor then explained that she would help the participant by approaching her throughout her work time, as exhibited on the schedule, and prompt her to engage in the target behavior. The participant was asked if the schedule for additional prompts was acceptable. If acceptable, the meeting was concluded. If the schedule for prompts was not acceptable, the participant was to be asked to take part in deciding on a schedule that was acceptable.

Design

A multiple baseline experimental design across behaviors was used to analyze treatment effects of the GSP the GSP+ on the target behaviors. Baseline data were taken on both target behaviors for both participants. During baseline, both participants were told to do as normal and were asked to start tracking their daily Approached/Accepted behavior. Service Hours were calculated every few days by gaining access to the participants' log with their permission. The coworker mentors did not play a role during baseline. Both participants' baseline data for Approached/Accepted were low and stable and were therefore ready to be intervened upon at the same time. GSP was implemented on Approached/Accepted for both Rose and Abby. Typically, the intervention would have been staggered, but because the plan included a multiple baseline across behaviors, it was acceptable to intervene simultaneously, especially because it was thought that the participants' attendance might not be very regular. Baseline data on Service Hours continued to be taken as the GSP was implemented on Approached/Accepted. During the GSP condition, Rose and Abby worked toward their daily goals with their coworker assisting them with daily feedback and providing assistance to the participant if it was requested.

As baseline Service Hour data continued to be taken, some confounds arose which prohibited a condition change for either participant. Once GSP was implemented on Approached/Accepted for Rose, it seemed to generalize to Service Hours. It generalized so much that Rose was performing the top level of Service Hours possible in a day's time for many sessions. Through identification of daily Acceptances (i.e., services were being performed) not being recorded in Abby's log as Service Hours completed, it was determined that all of Abby's Service Hours were not being recorded and, although the issue was rectified, it was determined that the data were not reliable enough for implementation of treatment.

On-going analysis of the GSP data for both participants revealed the need for the use of the second procedure, GSP+. Rose's Approached/Accepted behavior was the first behavior upon which the GSP+ intervention was implemented. Rose's coworker mentor was trained on GSP+ and Rose and her coworker mentor met to discuss the changes involved with GSP+. Rose's goal did not change for GSP+ and an agreeable prompting schedule was developed. During the GSP+ condition, Rose continued to work toward her set goal with her coworker mentor providing the additional prompts. Abby's Approached/Accepted behavior remained in the GSP condition and Service Hour data continued to be taken in baseline for both Rose and Abby. As Rose's Approached/Accepted behavior became stable in the GSP+ condition and Abby's Approached/Accepted behavior decreased in rate, GSP+ was implemented on Abby's Approached/Accepted behavior. Abby's coworker mentor was trained on GSP+ and Abby and her coworker mentor met to discuss the changes involved with GSP+. Abby increased her goal from 3 Approached to 4 Approached and from 2 Accepted to 3

Accepted and an agreeable prompting schedule was developed. GSP+ data were collected on the Approached/Accepted behavior and baseline data were collected on Service Hours of Rose and Abby through the end of the study. Due to time constraints, which prohibited further availability of the participants, follow-up sessions were not conducted.

Measurement

In order to implement goal setting for the entire time the participants could engage in the target behaviors, rather than to have them set a goal and only work toward meeting it part of the day, lengthy sessions were required. The only feasible way to collect data with goal setting being consistently implemented throughout the session was to rely largely on permanent product and self-tracking. Approached/Accepted data were collected through self-tracking. The form found in Appendix D was given to the participants at the beginning of the session. Each participant used this form to track her Approached/Accepted data throughout the session. This form was used to calculate daily Approach/Accepted data. Several reliability checks were put in place to increase the dependability of the data. For instance, as seen on the data sheet, a column was included for the student who was approached to sign their initials. Also, any service that was performed through the 'Acceptance' aspect of the target behavior was to be recorded and, in order for the service to be recorded, it needed to be approved by Mr. Powers, the classroom instructor. Additionally, the researcher performed casual observations of the participants engaging in the Approached/Acceptance behavior to ensure through direct observation that the actual target behavior was occurring.

Service Hour data were collected through permanent product. All hours that were performed in a session were already being recorded prior to the beginning of the study. The amount of Service Hours earned was determined through a calculation from a worksheet that paralleled the worksheet the instructor used to calculate the students' grades. Because the students' grades were based partly on productivity, meaning the number of Service Hours they performed, the sheet was adapted to calculate the number of Service Hours completed daily. The system that was already in place for students to record their 'Service Hours' was used to track daily Service Hour data in this study. In order for a student to record Service Hours, the student had to complete a service and have it approved by Mr. Powers. In order for the service to be approved, it had to meet Mr. Powers's standard for completion. The form found in Appendix E was used to calculate daily Service Hour data from the recorded Service Hours of each participant. On this form, the daily number of services recorded by the participant in their log was transferred to the 'number of services completed' column for the matching 'Cosmetology Duty'. That number was multiplied by the hourly value, which had been pre-assigned by the program prior to involvement of this study. The product of this calculation was the Service Hours. All Service Hours for the day were totaled and graphed for Service Hours.

Interobserver Agreement

A second observer, who was independent of the researcher, served as the interobserver agreement data scorer. The interobserver agreement data were taken by a graduate level student, studying Applied Behavior Analysis. The second observer received copies of the data sheets and did not confer with the researcher about data

scoring. The researcher conducted training on interobserver agreement data collection and actual interobserver agreement data collection did not begin until high interobserver agreement was obtained through training and calibration. Interobserver agreement occurred for 98% of the sessions. The scores were compared for reliability. The interobserver agreement scores needed to be an average of 85% or better to be considered adequate. Agreement was defined as the scores matching for each target behavior. Agreement was computed by dividing the number of agreements by the number of agreements plus disagreements and multiplying by 100. Agreement was 100% for all sessions.

Social Validity

A questionnaire was administered to the participants and the coworker mentors at the end of the study. The questionnaire included questions that were designed to gather specific information about the usefulness of goal setting to the participants and the coworker mentors (see Appendix F for the questionnaires that were administered). It was important to collect social validity data because such data report the value the intervention had to the participants. The effectiveness of the intervention is important, but so also is the social value that it has to the participants (Wolf, 1978).

Chapter Three

Results

Multiple Baseline Analysis

The GSP had a positive impact on the work performance of the young people in a work-type setting and the GSP+ brought about an increase in consistency of meeting or exceeding the goal. Figure 1 illustrates the daily number of Approached/Accepted for Rose during the baseline, GSP, and GSP+ conditions. Rose's percentage of goal criterion met under the GSP and GSP+ conditions on her set goal of 4 Approached and 2 Accepted is illustrated in Table 1. During baseline sessions, Rose's daily mean rate of Approached was .4, as was the daily mean rate of Accepted. At the start of the GSP condition, Rose set her daily goal at 4 for Approached and 2 for Accepted. During the GSP condition, Rose's daily mean score for Approached increased to 1.6 and Accepted to .8. Out of 10 sessions under the GSP condition, Rose met or exceeded her Approached goal for 1 session, or 10%, and her Accepted goal for 3 sessions, or 30%. Rose's daily goal remained at 4 Approached and 2 Accepted for the GSP+. During the GSP+ condition, Rose's daily mean score for Approached increased to 3.06 and the daily mean rate for Accepted increased to 2.06. Out of 15 sessions under the GSP+ condition, Rose met or exceeded her Approached goal for 5 sessions, or 33%, and her Accepted goal for 11 sessions, or 73%.

Figure 2 illustrates the daily number of Approached/Accepted for Abby during the baseline, GSP, and GSP+ conditions. Abby's percentage of goal criterion met under

the GSP and GSP+ conditions on her set goal of 3 and 4 Approached and 3 and 2 Accepted is illustrated in Table 1. During baseline sessions, Abby's daily mean rate of Approached was 0, as was the mean rate of Accepted. At the start of the GSP condition, Abby set her daily goal at 3 for Approached and 2 for Accepted. During the GSP condition, Abby's daily mean rate of Approached increased to 1.5 and Accepted to .94. Out of 18 sessions under the GSP condition, Abby met or exceeded her Approached goal for 3 sessions, or 16%, and her Accepted goal for 6 sessions, or 33%. Abby reset her daily goal to 4 Approached and 3 Accepted for the GSP+ condition. During the GSP+ condition, Abby's daily mean rate for Approached increased to 3 and the daily mean rate for Accepted increased to 2. Although Abby's mean rates increased for Approached and Accepted, out of 5 sessions under the GSP+ condition, Abby only met or exceeded her new Approached goal for 2 sessions, or 40%, and her Accepted goal for 0 sessions, or 0%.

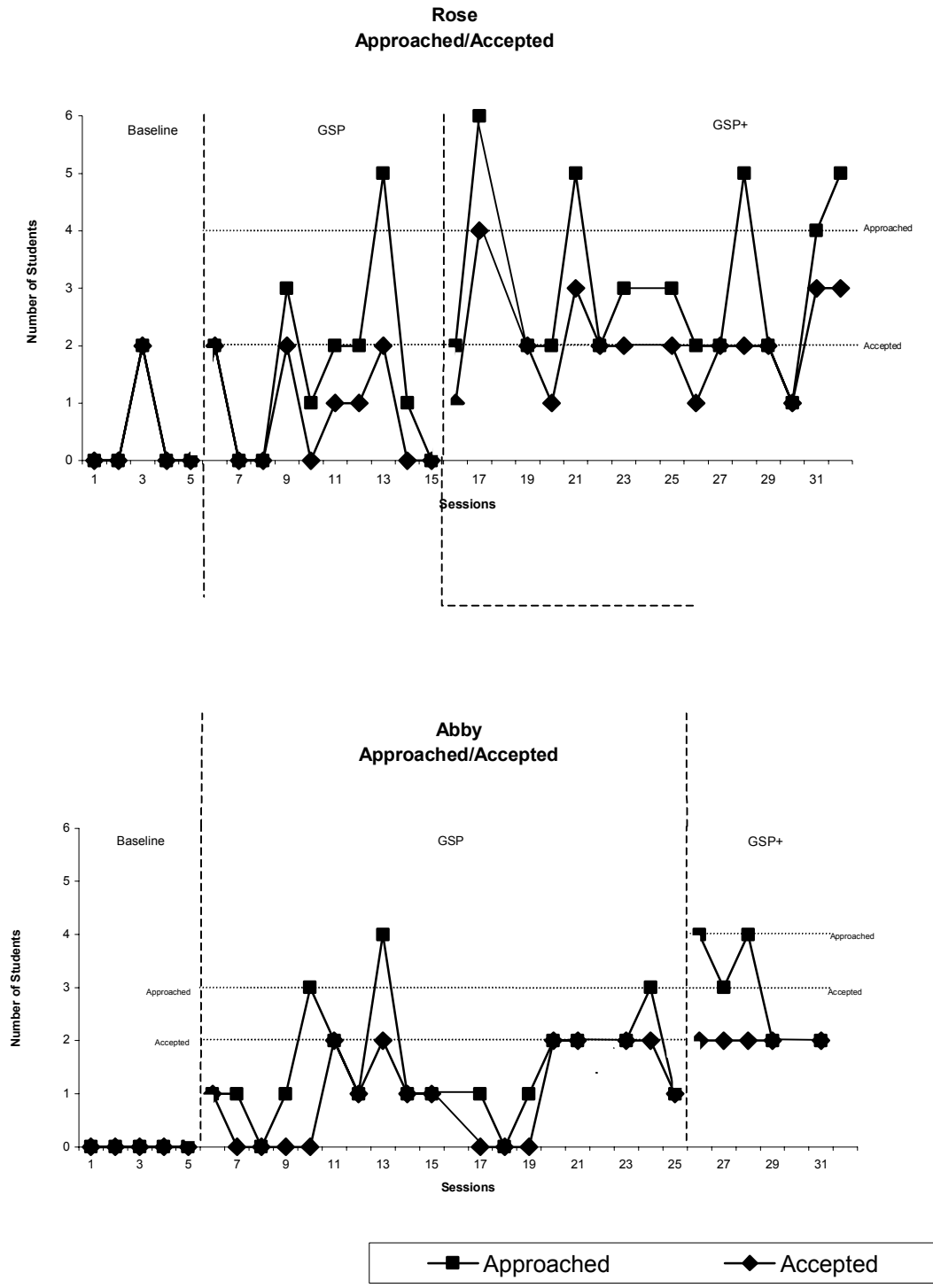


Figure 1. Daily Rate of Approached/Accepted for Rose and Abby

Participant	Target Behavior	Set Goal	GSP	Set Goal	GSP+
Rose	Approached	4	10%	4	33%
	Accepted	2	30%	2	73%
Abby	Approached	3	16%	4	40%
	Accepted	2	33%	3	0%

Table 1. Percentage of Goal Criterion Met Across Conditions With Set Goals

Means and Ranges

Table 2 represents the mean scores and data ranges of the target behaviors for the two participants, Rose and Abbey. Two target behaviors are represented in the table: Approached/Accepted and Service Hours. Approached/Accepted data were collected across baseline, GSP, and GSP+ conditions. Service Hours remained in baseline due to confounds that prohibited a condition change. However, although Service Hours data were all baseline data, the scores are shown across the different categories of baseline, GSP, and GSP+ for ease of comparison to the Approached/Accepted represented across conditions. Service Hours data were calculated according to the condition changes for Approached/Accepted, e.g. GSP data occurred from session 6 through session 25 for Abby, so the data for Service Hours listed under GSP, correlate to these same sessions.

As previously noted, during GSP, Rose set her daily goal at 4 for Approached and 2 for Accepted. Rose’s daily mean score for Approached during baseline was .4, as was Accepted. During the GSP condition, her daily mean score increased to 1.6 from .4 for Approached and to .8 from .4 for Accepted. During the GSP+ condition, Rose’s daily

mean score increased to 3.06 from 1.6 for Approached and to 2.06 from .8 for Accepted. From mean baseline scores, Rose's daily mean Approached score increased from .4 to 3.06 and her mean Accepted score increased from .4 to 2.06. The range of scores in baseline was 0 to 2 for Approached and Accepted. During GSP, the range was 0 to 5 for Approached and 0 to 2 for Accepted. During GSP+, the range was 1 to 6 for Approached and 1 to 4 for Accepted. During the GSP+ sessions, there were no occurrences of zero scores for Approached or Accepted.

Rose's mean score for Service Hours during the baseline condition of Approached/Accepted was 1.26 per hour. During the GSP condition, her mean score for Service Hours increased to 2.03 per hour. Under the GSP+ condition, Rose's mean score for Service Hours increased again to 2.99 per hour. The range of scores for Service Hours in baseline was .9 to 1.5. During GSP, the range was .56 to 4.16. During the GSP+, the range was .5 to 4.62.

During GSP, Abby set her goal at 3 for Approached and 2 for Accepted. She increased her goal prior during GSP+ to 4 for Approached and 3 for Accepted. Abby's mean score for Approached during baseline was 0, as was Accepted. During the GSP condition, her daily mean score increased to 1.5 from 0 for Approached and .94 from 0 for Accepted. During the GSP+ condition, Abby's daily mean scores increased to 3 from 1.5 for Approached and to 2 from .94 for Accepted. The range of scores in baseline was 0 to 0 for Approached and Accepted. During GSP, the range was 0 to 4 for Approached and 0 to 2 for Accepted. During GSP+, the range was 2 to 4 for Approached and 2 to 2 for Accepted. During the GSP+ sessions, there were no occurrences of zero scores for Approached or Accepted.

Abby's mean score for Service Hours during the baseline condition of Approached/Accepted was .6 per hour. During the GSP condition, her mean score for Service Hours decreased slightly to .5 per hour. Under the GSP+ condition, Abby's mean score for Service Hours increased to .85 per hour. The range of scores for Service Hours in baseline was .0 to 1.8. During GSP, the range was 0 to 1.33. During the GSP+, the range was .26 to .8.

Participant	Target Behavior	Mean Score per Session			Data Ranges		
		BL	GSP	GSP+	BL	GSP	GSP+
Rose	Approached	.4	1.6	3.06	0-2	0-5	1-6
	Accepted	.4	.8	2.06	0-2	0-2	1-4
	Service Hours	1.26	2.03	2.99	.9-1.5	.56-4.16	.5-4.62
Abby	Approached	0	1.5	3	0-0	0-4	2-4
	Accepted	0	.94	2	0-0	0-2	2-2
	Service Hours	.6	.56	.85	0-.8	0-1.33	.26-.8

Table 2. Mean Score per Session and Data Ranges for Rose and Abby

Table 3 illustrates the percentage of Approached and Accepted data points that fell at or above the mean Approached/Accepted score of the previous condition for Rose and Abby. Analyzing the percentage of Approached/Accepted data points that fell at or above the mean Approached/Accepted score of the previous condition shows the

increasing trend of the overall Approached/Accepted data outside of the set goal criterion. This analysis is provided for illustration of identifying the increasing trend across conditions, as well as for ease of comparing data scores between participants. The baseline mean data score for Rose was .4 Approached and .4 Accepted. Under the GSP condition, 70% of the Approached data and 50% of the Accepted data were at or above the mean of the previous condition. The GSP mean data score for Rose was 1.6 Approached and .8 Accepted. Under the GSP+ condition, 93% of the Approached data and 100% of the Accepted data were at or above the mean of the previous condition. The baseline mean data score for Abby was 0 Approached and 0 Accepted. Under the GSP condition, 89% of the Approached data and 61% of the Accepted data were at or above the mean of the previous condition. The GSP mean data score for Abby was 1.5 Approached and .94 Accepted. Under the GSP+ condition, 100% of the Approached data and 100% of the Accepted data were at or above the mean of the previous condition.

Participant	Target Behavior	BL Mean	% At or Above BL mean	GSP Mean	% At or Above GSP mean
Rose	Approached	.4	70%	1.6	93%
	Accepted	.4	50%	.8	100%
Abby	Approached	0	89%	1.5	100%
	Accepted	0	61%	.94	100%

Table 3. Percentage of Approached/Accepted Data Points At or Above Mean of Previous Condition

Questionnaires

Both participants and coworker mentors filled out social validity questionnaires at the end of the study. The Coworker Mentor questionnaire was designed to parallel the Participant questionnaire. The questionnaires were designed with a Likert scale which ranged from 1-5, with 1 being strongly disagree, 2 being disagree, 3 being neither agree or disagree, 4 being agree and 5 being strongly agree. Both participants agreed that goal setting helped them to improve their work performance. Both coworker mentors strongly agreed that goal setting helped their participant to improve her work performance. One participant responded that she strongly agreed and the other participant agreed that she liked goal setting. Both coworker mentors strongly agreed that they were comfortable implementing the goal setting procedures. One participant strongly agreed and the other participant agreed that goal setting would help her improve behavior in other areas of her life. One coworker mentor strongly agreed and the other coworker mentor agreed that her participant seemed to like using goal setting. Both participants agreed that they would use goal setting in other areas of their life. Both coworker mentors strongly agreed that they would use this goal setting procedure in the future when they work with young people to help them improve their performance. The participants rated the following as aspects of goal setting that helped them the most: setting a challenging and specific goal, participating in the goal setting, and developing a plan to meet the goal. The coworker mentors rated the following as aspects of goal setting that helped their young person the most: setting a challenging and specific goal, participating in setting the goal, developing

a plan to meet the goal, getting feedback about their performance and prompting (prompting was included as a written comment under 'other'). See Appendix F for the questionnaires.

Chapter Four

Discussion

The experimental analysis shows that GSP impacted the work-related behavior of the participants by bringing about an increase in the number of different students approached for a service and the number of different students who accepted a service from the baseline condition. The experimental analysis shows that GSP+ further impacted work-related behavior, bringing about an additional increase in the number of different students approached for a service and the number of different students who accepted a service from the GSP condition. GSP improved goal attainment from baseline for both participants, but GSP+ data generally show more consistency around meeting or exceeding the set goals. Although there was an impact in the GSP condition, at times the target behavior was still at zero. During GSP+, the target behavior for both participants never dropped to zero. When looking at the mean scores across the participants, an interesting trend can be seen that supports the aforementioned results. From baseline to the GSP condition, the mean score for Approached increased with almost the same amount of impact for both participants, e.g., Rose goes from .4 to 1.6 and Abby goes from 0 to 1.5. The mean score for Accepted showed similar results, as the mean score for Accepted increased from .4 to .8 for Rose and 0 to .94 for Abby. The same trend of mean score increase was seen across participants when the condition changed from GSP to GSP+. For example, Rose's mean Approached score under GSP was 1.6 and then increased to 3.06 under the GSP+ and Abby's mean Approached score under GSP was

1.5 and then increased to 3 under the GSP+ condition. The typical trend across conditions for both participants was that the score doubled, respectively, showing that additional support through prompts further increased the effectiveness of the goal setting procedure.

Similar trends were seen across conditions for both participants' percentage of actual set goal criterion. Rose met her set Approached goal 10% of the time under GSP, which increased to 33% of the time under GSP+. Rose met her Accepted goal 30% of the time under GSP, which increased to 73% of the time under GSP+. Abbey met her set Approached goal 16% of the time, which increased to 40% of the time under GSP+. A different trend was seen for Abby on her set Accepted goal, as she met her set goal 33% of the time under GSP but when she increased her goal under the GSP+ condition, she never met her set goal, resulting in 0% of Accepted goal met under GSP+. This change in trend was probably due to the change in her goal. Abby was asked if she wanted to change her goal going into GSP+ and, although she increased her goal, it was thought that other contingencies may have played a role in Abby changing her goal, which may have led to the low percentage of meeting the newly set goal.

GSP and GSP+ also may have impacted Service Hours, which stayed in baseline but can be seen to increase across the condition changes for Approached/Accepted for Rose and also across the from GSP to GSP+ for Abby, e.g., Rose's mean Service Hours score was 1.26 in baseline, 2.03 in GSP, and 2.99 in GSP+; and Abby's Service Hours score was, .56 in GSP, and .86 in GSP+. It was also interesting to see the changes in range for Approached and Accepted across conditions. It was apparent that the high end of the range continued to increase for Rose across conditions and the low end only

changed from 0 to 1 under the GSP+ condition. The range was different for Abby, as her high end increased in GSP but then decreased in GSP+. The same effect was seen for Abby's the low end, as it only changed from 0 to .26 under the GSP+ condition.

Although the increase in Approached/Accepted may have concomitantly increased Service Hours to some degree, it was determined that Service Hours scores increased, at least for Rose, beyond the possible effect which increased Approached/Accepted could have caused.

Another interesting way to see the upward trend of the data is to analyze the percentage of Approached/Accepted data that were at or above the mean of the previous condition. This analysis shows the general trend of the data outside of the set goal criterion and allows comparisons to be made between the participants. The percentage of Approached/Accepted data that fell at or above the mean of the previous condition, for both participants, increased from baseline to the GSP condition and then again from the GSP condition to the GSP+ condition. Under the GSP+ condition, Approached/Accepted data for both participants were close to or at 100% of being at or above the mean of the previous condition (GSP). As seen in the discussion section of the percentage of actual set goal criterion that was met, the goals were not met daily; however the percentage of the Approached/Accepted for both participants does increase across conditions, bringing about an overall improvement in performance.

Previous goal setting literature purports that goal setting is effective in bringing about a behavior change (Locke et al., 1981). This study shows support for this claim, as goal setting impacted work-related behavior in this study. Most of the previous research included studies, which used group designs, simulated work tasks in laboratory settings,

and analyzed results using statistical methods. Previous literature in the area of work-related performance did not have a strong base of single-case experimental design, which can detect the individual differences of the participants' behavior. This study employed a single-case experimental design, which showed the individual results of the positive impact of goal setting across conditions, instead of using a group design and analysis of the results using statistical methods. This study was also conducted in an applied setting rather than a controlled setting, showing that goal setting is effective, even in applied work-type settings where the researcher had less control over many of the environmental variables.

The science of Behavior Analysis focuses on the role of the environment, instead of internal events, to understand the determinants of behavior. Often, behavior change, or 'motivation', is explained by internal or private events, which do not assist in understanding the determinants of behavior. Goal setting may be conceptualized as an establishing operation (EO), which may help lead to an understanding of the determinants of behavior. In other words, when goal setting is conceptualized as an EO, it would be assumed that established goals would increase the reinforcement value of task completion and thereby increases the behaviors that lead to task completion, resulting in goal attainment. Behavior change can be seen across the goal setting conditions, leading to, or exceeding, goal attainment during many sessions and improving overall performance in across conditions. Many elements of the goal setting procedures fell within the margins which support the conclusion of the EO explaining the behavior change, or 'motivation', (e.g., participation; specific, yet challenging goals; a plan to meet the goals); however to increase the likelihood of the behavior change and to increase the consistency of the

behavior change, additional elements that fell outside the margins which support the conclusion of the EO independently explaining the behavior change were included, (e.g., feedback and prompting). These additional elements may have helped bring about the behavior change through environmental events outside of the relationship of individuals and their established goals. Therefore, although the behavior change seen in this study may be due to the EO, definite conclusions cannot be drawn about the EO being the only aspect that led to the behavior change, or ‘motivation’. However, although determination of which environmental variables led to the behavior change, cannot be made from this study, the conclusion can be made that manipulation of environmental events explain behavior. This conclusion helps in understanding the determinants of human behavior, as this study relied on environmental events, not internal events, to bring about behavior change

Furthermore, although behavior change has traditionally been brought about mainly through consequence manipulation, this study incorporated many elements of antecedent manipulation in the goal setting procedures to bring about behavior change, e.g., participation of goal setting; setting a challenging, yet realistic goal; developing a plan to meet goal, prompting. Again, specific conclusions cannot be drawn about the effectiveness of antecedent manipulation because there was an element of consequence manipulation, involving feedback, that was a part of the goal setting procedures; however the results of this study do show that the goal setting procedures, which consisted mainly of antecedent manipulation, were effective in bringing about behavior change. Therefore, although the results are not conclusive, some amount of support is shown for antecedent manipulation to help bring about behavior change.

The young adult participants, who were the target population of this study, were individuals identified with behavioral, emotional, and/or learning challenges. Effective interventions that help improve outcomes in domains such as employment are needed (Lehman 2002). In order for an intervention to be effective, typically there must be good contextual fit, i.e., compatibility between the intervention and the individuals the intervention involved (Albin et al., 1996). The goal setting procedures used in this study incorporated elements such as participation; challenging and specific, yet reasonable, goals; a plan to reach the set goals; prompting; and feedback about performance, in order to increase compatibility. Using goal setting as an intervention, especially when combined with additional prompts, was shown to be effective in improving outcomes in an employment-type setting.

Another element that was considered to improve contextual fit was the implementers of the intervention. A characteristic of this population is difficulty with authority figures; therefore, not only were the elements of the intervention important, but so was the person in ‘authority’ very important to the success of the intervention. This study sought to remove this ‘authority’ issue by utilizing persons in the environment with whom the participants already had a good relationship. Additionally, these persons in the environment needed to have experience and some degree of leadership qualities. Persons were identified that fit these criteria and they are selected as coworker mentors. Previous research supports the positive impact coworker mentors can have when they are used to implement the intervention (Granucci et al., 2004). This study used coworker mentors to implement the goal setting interventions. Because coworker mentors were not experimentally studied independent of other variables, conclusive results cannot be

drawn about the effectiveness of coworker mentors on the behavior change. However, from previous experience with this population, it was determined that the relationship between participant and implementer, especially for this population, was a very important aspect of bringing about desired behavior change, so an indirect conclusion can be drawn that coworker mentors improved the contextual fit of the intervention, as this study does show that coworker mentors were a part of bringing about a positive behavior change.

This study was not without limitations. One limitation of this study lies within the data collection method. In order to implement goal setting for the entire time the participants could engage in the target behaviors, rather than to have them set a goal and only work toward meeting it part of the day, long sessions were required. The only way to collect data with goal setting being consistently implemented was to rely largely on permanent product and self-tracking. Several reliability checks were put in place to increase the validity of the data; however, direct observation is a preferred data collection method. Another limitation is that the goal setting procedures included several elements. The procedure had an impact, but it is unclear which elements were most effective. Additionally, due to a lack of time, because the school semester was ending, the intervention was not faded; therefore, maintenance of the behavior change cannot be determined. Lastly, although experimental control is shown in the design, better control could be exhibited. Due to confounds found in the second target behavior, the original plan to exhibit control across behaviors was changed after Rose and Abby's behavior was already intervened upon, at the same time, going into GSP.

Several suggestions are made for future research. Follow-up studies could include more direct observation as well as implementing the GSP intervention across

participants at different times to determine if similar results are found. Additionally, these studies should include a follow-up condition to determine if the behavior change maintains or if better programming of generalization/maintenance is needed, especially after utilizing and fading prompting from coworker mentors. Conducting component analyses would help determine which elements, or which combination of elements are most effective in bringing about behavior change in relation to goal setting. This is especially important to determine if the EO can independently explain behavior change without the inclusion of the other elements used in this study. Additional studies could employ different types of single-case experimental designs to analyze goal setting treatment effects. For instance, it would be interesting to analyze treatment effects of goal setting using a changing criterion design or a reversal design. Lastly, additional research should address the relationship between coworker mentors and contextual fit, to experimentally determine the direct impact of the coworker mentor role on the behavior change of this population in work-type settings.

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Appendices

Appendix A: Goal Setting Procedure Training with Coworker Mentor

Coworker Mentor: _____

Participant to work with: _____

Date: _____

Explain overall goal setting procedure: (make familiar with general goal setting procedure)

Explain the goal setting procedure form with an example: (use the 'Goal Setting Procedure Form' with the example for training and train on specific steps of the goal setting procedure)

Model appropriate verbal behavior for the steps involved with the facilitation of the goal setting procedure meeting: (e.g. how to discuss the participant's current task performance, give rationales for improvement, ask the participant to set a challenging yet realistic goal, etc.)

Model and explain how and when to prompt and give appropriate feedback and specific verbal praise during sessions.

Conduct behavior rehearsals with the coworker mentor until she masters proficiency in the goal setting procedures: (researcher will use the GSP Proficiency Form on following page to rate proficiency)

Appendix A (Continued)

GSP Proficiency Form

Steps to coworker mentor proficiency in facilitating GSP meeting with participant:

1. Provided current level of performance/accuracy, recognizing quality performance
2. Discussed need for improvement/provided rationale which included benefits improvement will bring
3. Asked participant to set a goal that he/she feels is challenging, yet realistic, to meet
4. Asked participant how he/she plans on meeting the goal he/she is setting
5. Asked participant if he/she has any questions or concerns regarding the goal, how to reach it or anything else related to the goal he/she has set and answered any questions/address any concerns he/she may bring up
6. Let participant know that coworker mentor will be happy to provide any help with suggestions or teaching that he/she may want to help meet the goal and that he/she only has to let coworker mentor know that he/she wants coworker mentor's help and it is available
7. Told the participant that coworker mentor will provide daily prompt and feedback to him/her on how he/she is doing in regard to meeting the goal
8. Recorded information on form in appropriate space provided

Steps to coworker mentor proficiency during GSP sessions:

1. Prompted participant
2. Gave feedback to the participant in numeric fashion
3. Gave specific verbal praise

100%=successful performance of all 11 steps for Proficiency

Trial	Score	Trial	Score	Trial	Score
1	%	5	%	9	%
2	%	6	%	10	%
3	%	7	%	11	%
4	%	8	%	12	%

Appendix B: Goal Setting Procedure Form

Participant: Abby Coworker Mentor: Josie

Target Work Task: Approached/Accepted

Dates: 3/1 through 5/1

1. Current level of performance/accuracy: (make sure to recognize quality performance!)

“Abby I wanted to meet with you today to discuss your performance on approaching different students to offer them services and getting them to accept your offer. Currently, you are performing services with accuracy, but you are performing most of your services on the mannequins.”

2. Discuss need for improvement: (explain what benefits improvement will bring)

“Before you know it, you are going to be working in the community on real people and you will be able to make a lot more money for yourself if you are comfortable asking people, i.e., your clients/family/friends to perform services on them. By getting them to accept your offer, you will increase the amount of money you make and you will build your customer base so that you have people who come to you that can perform services on.”

3. Ask participant to set a specific goal that he/she feels is challenging, yet realistic, to meet: (record that goal here)

“So, what I want you to do is to set a specific goal that you feel is challenging, yet realistic for you to meet daily. I want you to set a goal for the number of different students you will approach daily and offer a service to and then I want you to set a goal for the number of those students that you approach that you will get to accept the service that you offer.” (Coworker mentor records goal here: Abby sets Approach goal for 3 and Acceptance goal for 2)

4. Ask participant how he/she plans on meeting the goal he/she is setting: (write down the steps for meeting the goal)

“Okay, so you have set a goal your goal at 3 for Approaches and 2 for Acceptances. It is fine if you do more than 3 Approaches and 2 Acceptances, especially if you need to do more than 3 Approaches to meet your 2 Acceptances. Let’s talk about how you plan to achieve that goal you set. Can you tell me how you will meet at least 3 Approaches and 2 Acceptances every day?” (Coworker mentor records plan here: Abby plans to start approaching students, offering them a service when she arrives each day. If a student says ‘no’, she will move on to the next person until she gets at least 3 Approaches and 2 Acceptances each day.)

Appendix B: (Continued)

5. Ask participant if he/she has any questions or concerns regarding the goal, how to reach it, or anything else related to the goal he/she set and answer any questions/address any concerns he/she may bring up: (record any questions or concerns participant has)

“Alright, so you have set your goal for 3 Approaches and 2 Acceptances and you have laid out a plan to reach your goal. Are there any questions or concerns that you have that I can help you with?” (Coworker mentor records questions/concerns: Abby has no questions/concerns at this time.)

6. Let participant know that you will be happy to provide any help with suggestions or teaching that he/she may want to help meet the goal and that he/she only has to let you know that he/she wants your help and it is available: (record any help that you are to provide the participant here)

“If you want any suggestions or help with reaching your goal throughout the study, just let me know and I will be happy to help you. Remember, if you are having difficulty making your Approaches or getting Acceptances, let me know and I can provide you with help. Is there anything that you know you would like me to help you with?” (Coworker mentor records any help she will provide to the participant: Abby did not request any help.)

7. Tell the participant that you will provide daily prompt and feedback to him/her on how he/she is doing in regard to meeting the goal. Let him/her know that you will provide this feedback at the end of the daily session and again before the next daily session, in numerical form and will provide verbal praise when appropriate.

“I also wanted to let you know that I will provide feedback to you on how you are doing. At the end of the daily session, I will look over your data sheet and let you know how you did in numeric form on Approaches and Acceptances and then before the next daily session, I will remind you of how you did on the previous session and remind you of your daily goal that you set for yourself, as well as give you verbal praise when it is appropriate.”

Appendix C: Prompting Form Used by Coworker Mentors

Today's Date:		Number Student Had at Each Prompt Time	
Prompt Time	CWM Initials	Approaches	Acceptances
7:00			
8:00			
9:00			
10:00			
11:30			
12:20			

Total Approached/Accepted: _____

Goals: _____

Appendix D: Tracking Sheet for Approached/Accepted

Your Code Name: _____

Today's Date: _____

Student Approached (Have them sign their initials)	Service you Offered to Perform	Did you Perform the Service on This Person? Yes or No (If yes, write "YES" and have them sign their initials)
		/
		/
		/
		/
		/
		/
		/
		/
		/
		/

Goal: _____

Goal: _____

Actual # Approached today: _____

Actual # Accepted today: _____

Appendix E: Service Hour Calculation Form

Student Code Name: _____ Date: _____

Cosmetology Duties	Number of Services Completed	X Hour Value	=	Service Hours
Bacteriology/Sanitation		.25		
Shampooing, conditioning		.33		
Scalp Treatments		1.0		
Hair Styles		1.5		
Hair Cuts		1.5		
Facials		1.0		
Maniucure, Pedicure and Nail Extensions		1.0		
Permanent Waves and Relaxers		2.0		
Hair Colors and Lighteners		1.5		

Your Student's Goal _____ Today's Total Service Hours _____

Appendix F: Social Validity Questionnaire

For Participants

Please rate your answer on a scale from 1 to 5.

1=strongly disagree

2=disagree

3=neither agree or disagree

4=agree

5=strongly agree

1. Goal setting helped me to improve my work performance

1 2 3 4 5

2. I liked using goal setting

1 2 3 4 5

3. Goal setting would help me improve my behavior in other areas of my life

1 2 3 4 5

4. I will use goal setting to improve other areas of my life

1 2 3 4 5

5. Circle the aspects of goal setting you feel **helped you the most**:

A. Participating in setting the goal B. Setting a challenging & specific goal

C. Developing a plan to meet my goal D. Getting feedback about my performance

E. **Other**: (please list any other aspects you feel helped you)

Appendix F: (Continued)

For Coworker Mentors

Please rate your answer on a scale from 1 to 5.

1=strongly disagree

2=disagree

3=neither agree or disagree

4=agree

5=strongly agree

1. Goal setting helped the participant to improve his/her work performance:

1 2 3 4 5

2. I was comfortable implementing the goal setting procedures:

1 2 3 4 5

3. The participant(s) I used goal setting with seemed to like using goal setting:

1 2 3 4 5

4. I will use this goal setting procedure in the future when I work with young people to help them improve their work performance:

1 2 3 4 5

Circle the aspects of goal setting you feel **helped the young person most**:

- A. Participating in setting the goal B. Setting a challenging & specific goal
- C. Developing a plan to meet the goal D. Getting feedback about performance
- E. **Other** (please list below any other aspects you feel helped the young person):