



2018

# The Implementation and Adoptability of Behavioral Skills Training in a Career Center

Vinthia Wiryananda Wirantana

University of the Pacific, [vinthiaw@gmail.com](mailto:vinthiaw@gmail.com)

Follow this and additional works at: [https://scholarlycommons.pacific.edu/uop\\_etds](https://scholarlycommons.pacific.edu/uop_etds)

 Part of the [Psychology Commons](#)

---

## Recommended Citation

Wirantana, Vinthia Wiryananda. (2018). *The Implementation and Adoptability of Behavioral Skills Training in a Career Center*. University of the Pacific, Thesis. [https://scholarlycommons.pacific.edu/uop\\_etds/3533](https://scholarlycommons.pacific.edu/uop_etds/3533)

This Thesis is brought to you for free and open access by the Graduate School at Scholarly Commons. It has been accepted for inclusion in University of the Pacific Theses and Dissertations by an authorized administrator of Scholarly Commons. For more information, please contact [mgibney@pacific.edu](mailto:mgibney@pacific.edu).

THE IMPLEMENTATION AND ADOPTABILITY OF BEHAVIORAL SKILLS  
TRAINING IN A CAREER CENTER

by

Vinthia W. Wirantana

A Thesis Submitted to the

Graduate School

In Partial Fulfillment of the

Requirements for the Degree of

MASTER OF ARTS

College of the Pacific  
Psychology

University of the Pacific  
Stockton, CA  
2018

THE IMPLEMENTATION AND ADOPTABILITY OF BEHAVIORAL SKILLS  
TRAINING IN A CAREER CENTER

by

Vinthia W. Wirantana

APPROVED BY:

Thesis Advisor:Carolynn Kohn, Ph.D.

Committee Member: Corey Stocco, Ph.D.

Committee Member: John O'Neill, Ph.D.

Department Chair: Carolynn Kohn, Ph.D.

Dean of Graduate School: Thomas H Naehr Ph.D.

THE IMPLEMENTATION AND ADOPTABILITY OF BEHAVIORAL SKILLS  
TRAINING IN A CAREER CENTER

Copyright 2018

by

Vinthia W. Wirantana

## DEDICATION

This thesis is dedicated to the three most important people in my life. To my mother, who cheerfully fought and defeated cancer at the time of this thesis. To my father, who supported her every step of the way. To my partner, Edwin, who can change the world if he wanted to, much like he changed mine.

## ACKNOWLEDGMENTS

My sincere gratitude and respect span across everyone I met at Pacific's Psychology Program. My greatest appreciation goes to Dr.Carolynn Kohn, who spent endless hours supporting and encouraging my professional and personal growth, and to Dr. Corey Stocco, who brought out the curiosity in everyone he meets including me. I want to thank Meagan Strickland and Ingrid Saavedra for spending countless hours watching training and interview videos despite their own pile of work. I am grateful to the undergraduate and graduate students in my research labs who provided valuable feedback that shaped this thesis. A special thanks to present and past students who kept me hopeful and well fed throughout the process including Nancy Thao, Manjot Sandhu, Amir Cruz-Khalili, Rutvi Patel, and Amanda Melendez. And lastly, my appreciation extends to Edwin Park, who learned basic behavioral principles from listening to my rant in exchange for his continuous support.

## The Implementation and Adoptability of Behavioral Skills Training in a Career Center

### Abstract

by Vinthia W. Wirantana

University of the Pacific  
2018

It is unclear if staff at career centers use, or are willing to use, empirically-supported procedures like behavioral skills training (BST) when teaching interview skills to college students. The purpose of this study was to assess the extent to which the typical career center training consisted of BST, to evaluate staff-implemented BST, and to measure student performance as a result of both training. Using non-concurrent multiple baseline design, three staff were taught to use BST to teach three students to answer interview questions. First, staff used their typical training procedure, and then, they used BST to teach student interview skills; their use of BST steps was measured during training with students. Student performance was measured as percentage of appropriate answers provided during simulated interviews conducted with the experimenter after training. Results showed limited use of BST in staff's typical training and increased use after BST training. One student improved after a typical career center

training and two students showed improvement after staff-implemented BST. Social validity reports from staff showed acceptance for some steps, but not all. Limitations to this study included small selection of interview questions, time constraint, and self-reported social validity measures. Future studies can evaluate alternative methods of BST delivery including computerized BST.

*Keywords:* behavioral skills training, career center, college students, interview



## TABLE OF CONTENTS

|  |    |
|--|----|
| LIST OF TABLES .....                         | 10 |
| LIST OF FIGURES.....                         | 11 |
| CHAPTER                                      |    |
| 1. Introduction .....                        | 12 |
| 2. Method .....                              | 16 |
| Participants and Setting.....                | 16 |
| Measurement and Interobserver Agreement..... | 17 |
| Experimental Design.....                     | 21 |
| General Procedure.....                       | 21 |
| 3. Results .....                             | 27 |
| Staff and Student Performance .....          | 27 |
| Social Validity Assessments.....             | 29 |
| Other Results .....                          | 31 |
| 4. Discussion.....                           | 33 |
| REFERENCES.....                              | 39 |
| APPENDICES                                   |    |
| A. PROPOSAL LITERATURE REVIEW .....          | 54 |
| Scope of the Problem .....                   | 55 |

Behaviors Associated with Successful Job Interviews ..... 56

Current Career Center Practices ..... 57

Behavioral Skills Training (BST) ..... 58

Train the Trainer: BST to Teach the Use of BST ..... 66

Summary and Current Study ..... 71

**B. PROPOSAL LITERATURE REVIEW REFERENCES ..... 73**

## LIST OF TABLES

| Table   | Page |
|---|------|
| 1. BST Steps Checklist and Definitions for Staff .....            | 45   |
| 2. Interview Questions and Criteria for Appropriate Answers.....  | 46   |
| 3. Experimenter Checklist and Definitions for Staff Training..... | 48   |
| 4. Social Validity Data for Staff.....                            | 49   |
| 5. Social Validity Data for Students.....                         | 51   |

## LIST OF FIGURES

| Figure                                      | Page |
|---|------|
| 1. Staff and Student Performance.....       | 52   |
| 2. Student Performance (Criteria Met) ..... | 53   |

## Introduction

College students report that getting a job is one of their main reasons for obtaining a degree (Eagan, Stolzenberg, Ramirez, Aragon, Suchard, & Rios-Aguilar, 2016) and interviews are the most common and preferred method used by employers to make hiring decisions (Macan, 2009). Each year, approximately 86% of college students visit career centers (National Association of Colleges and Employers [NACE], 2017a) and 51% reported using practice interview services (NACE, 2014). According to the National Association of Colleges and Employers (NACE, 2017b), student reports indicate that practice interviews are the most helpful service offered at career centers. Despite offering practice interviews at career centers, and the positive ratings from students, employers reported that interview skills are sorely lacking among recent graduates (Chronicle of Higher Education and Marketplace [CHEM], 2013). Because interview skills are unlikely to improve without instruction (e.g., Hollandsworth, Glazeski, & Dressel, 1978; Stocco, Thompson, Hart, & Soriano, 2017), it is important to offer interview training on college campuses. However, the extent to which staff use empirically-supported procedures to teach interview skills at career centers is unknown.

One version of evidence-based interview-training includes instructing and modeling target skills, followed by opportunities for students to practice skills and receive feedback from a staff (Gillen & Heimberg, 1980). Behavior analysts have

sometimes labeled this combination of procedures as behavioral skills training<sup>1</sup> (BST; e.g., Miltenberger, 2011). A number of studies have shown that varieties of BST have produced improvements in a variety of interview skills, including eye contact (Hollandsworth, Dresel, & Stevens, 1977), posture (Grinnell & Lieberman, 1977), positive self-statements (Schinke, 1979), and appropriate answers (Speas, 1979). However, a majority of these studies used group designs and statistical analyses that do not show the reliability of an effect across individuals, which is an important question for staff in a career center who often deliver services in a one-on-one format.

Studies using single-case designs have shown improvements in the interview skills of college students using BST. Hollandsworth et al. (1978) showed that BST produced decreases in speech disturbances (e.g., “ah’s,” stuttering, or omitting words) and increases in focused answers and number of questions of a college graduate. Generalization and probe sessions showed the participant maintained these skills by answering untrained questions. Additionally, observers rated his social skills at his job as a sales person at a retail store before and after training. His rating went from mostly “fair” to “excellent.” More recently, Stocco et al. (2017) extended Hollandsworth et al. by demonstrating that BST increased the appropriate answers, appropriate questions, smiling, or appropriate posture of five college students. All five participants improved their target behaviors; two participants maintained improvements on all target behaviors at the 9-week follow up. In addition to acquiring the target behaviors, participants rated themselves as being more confident in their interview skills and less anxious during

---

<sup>1</sup> Gillen and Heimberg (1980) described these same procedures as *social skills training*. In addition, Leaf et al. (2015) argued for distinguishing between BST and the teaching interaction procedure (TIP).

interviews, suggesting that college students find BST to be an acceptable form of interview training. Although these studies showed promising results for the use of BST to teach interview skills, in all of these studies a trained experimenter implemented BST. Given that 86% of students visited the career center (NACE, 2017) and trained experimenters would likely capture only a small selection, a majority of students looking to improve their skills would remain unexposed to BST.

One potential solution is to teach staff at career centers to use BST when teaching interview skills. The use of BST has been shown to effectively train parents, caregivers and staff to implement a functional analysis (Iwata et al., 2000) or a three-step compliance intervention (Miles & Wilder, 2009), conduct a preference assessment (Lavie & Sturmey, 2002), teach social skills to a child (Stewart, Carr, & LeBlanc; 2007; Dogan, King, Fischetti, Lake, Matthews, & Warzak, 2017), and teach practitioners to use BST to teach behavioral procedures (Parsons, Rollyson, & Reid, 2013). Most recently, Dogan et al. (2017) used a multiple baseline design to teach four parents to use BST in order to teach their respective children social skills. Experimenters recorded both the parents' use of BST steps and the child's performance on the target behavior. BST was divided into 15 steps in which parents were asked to engaged. Results showed parents successfully used BST to teach their children social skills and the parents' correct use of BST maintained and generalized to teaching other social skills. Parents also implemented BST with moderate to high accuracy in a short period of time; the longest training phase consisted of three 2-hour sessions. Parents also reported levels of acceptability and likelihood of using BST in the future. The authors suggested that the ease of learning BST and its high social validity bodes well for having non-professionals implement BST

in various settings (Dogan, et al., 2017). Few studies have taken BST to the broader community and no studies have assessed its use by staff when teaching interview skills at career centers.

Further research is needed on the interview training offered by career centers for college students. BST has been shown to improve the interview performance of college students, but whether the typical training offered at career centers includes components of BST is unknown. Moreover, although research has shown that caregivers can be taught to implement BST, no studies have demonstrated that staff at a career center can be taught to use BST when teaching interview skills. To address these gaps in the literature on interview training at career centers, the purpose of this study was to assess the extent to which typical training is comprised of BST and to evaluate the effects of BST on increasing the implementation of BST by staff. We evaluated staff-implementation of BST when teaching college students to answer interview questions because appropriate answers is a crucial aspect of interview performance (Hollandsworth, Kazelskis, Stevens, & Dressel, 1979). In addition, because the adoption of procedures depends on social validation (Schwartz & Baer, 1991), we asked staff to rate the acceptability of implementing BST at career centers. We also measured the corresponding acquisition of appropriate answers by college students.



## **Method**

### **Participants and Setting**

Participants included three staff-student dyads; each staff was paired with a different student. All aspects of this study were approved by a university human subjects committee. Before the start of sessions, staff and students read and signed an IRB-approved consent form. Participating staff included two females and one male from a career center at a medium-sized university. Staff reported approximately two (Staff 1), five (Staff 2), and three (Staff 3) years of experience teaching interview skills to college students. Staff 2's experience included teaching interview skills to students with disabilities.

Students were three males (Leo, Don, and Mike) ranging from junior standing to recent graduate. We recruited students by sharing flyers with university classes and advertising to department staff and students. Leo (paired with Staff 1) was an upper division, engineering student planning to apply for internship positions. Don (paired with Staff 2) was starting his upper division coursework in business; he reported no work history and limited professional experience. During the study, Don disclosed his diagnosis of Autism Spectrum Disorder because he asked for advice on discussing disclosure to future employers. Mike (paired with Staff 3) was a recent graduate looking for employment in environmental sciences. During the two months after graduation, and

before the start of this study, he reportedly participated in four interviews and frequently used services offered by the career center.

For all training sessions, staff-student dyads met at the career center in a meeting room or the staff member's office. The experimenter set up the video camera but left the room before training began. Simulated interviews took place in a meeting room or office on campus with the experimenter. Staff were not present for simulated interviews.

### **Measurement and Interobserver Agreement**

We collected data on staff and student performance from video recordings of sessions. Data on staff performance were collected during training sessions; student performance was assessed during separate, simulated interviews. The primary dependent measure was the number of BST steps implemented by staff. We based the steps on those described by Dogan et al. (2017) but modified them to better fit interview training (see Table 1). To code for staff performance, coders noted the number of topics that staff covered during training for each BST step. A topic consisted of a set of common interview questions with similar answer criteria. For this study, we assembled five topics of commonly asked interview questions (see Table 2). If the staff completed five topics for a BST step, coders marked the step as "all." Coders marked the step as "some," when the staff completed one to four topics for a BST step. Lastly, coders marked "none" if the staff missed the step. Career center training was terminated based on staff verbal feedback on whether they were "done" with training or not. We also calculated the duration and total number of sessions that staff spent to train their respective students using CC or BST. To measure training duration, we calculated the time between when

the experimenter left the room and the staff spoke until the staff said concluding remarks (e.g., “I think that’s all we have time for” or “Any last questions?” and the student said “no”).

A secondary dependent measure was the percent of appropriate answers that students provided during simulated interviews. All simulated interviews were conducted by the experimenter. During simulated interviews, students answered five questions, one from each topic in Table 2. We used a formula in Microsoft Excel to randomly select and sequence the specific questions included in a simulated interview. Questions and criteria for appropriate answers from Stocco et al. (2017) were modified based on feedback provided by the staff. Answers were scored as appropriate if the answer met all of the criteria. For example, an appropriate answer to action-based questions required students to describe a specific situation, explain the actions they took, and summarize the outcome. The appropriateness of an answer was partly determined by job advertisements selected by the students. Prior to the start of sessions, students emailed the experimenter three to five job advertisements appropriate for their degree and within their field of interest. We cycled through these advertisements across simulated interviews and training. For example, if the student provided three job advertisements, these were used during his first three days of simulated interviews. During the fourth day, we cycled back to the first job advertisement. Observers also referred to the advertisement assigned to a session when collecting data on appropriate answers. For example, to answer questions about the company information, students had to refer to the advertisement used for the day and reference the correct company during training and simulated interviews.

Two trained coders (training described below) independently viewed and recorded staff' training and implementation of BST; they also recorded students' simulated interview videos. The experimenter was the primary data collector and two graduate assistants alternated as IOA coders. IOA coders were provided with the videos, the list of questions and answer criteria (Table 2), data sheets, and the job advertisement relevant to the videos.

**Coder training for staff' use of BST.** The experimenter met with each coder individually for training. First, the experimenter defined each BST term and explained each step to the coder (Table 1). The experimenter provided examples of each step and the opportunity for coders to ask questions at any time during the explanation. Second, coders watched a video model of a training session; the video model was the same video used to train staff to use BST. Next, coders watched Staff 1's BST session with Leo (this session was not included in the IOA calculations). No limit was placed on the number of times coders were allowed to watch the video. When coders indicated they were finished viewing the video, coders and the experimenter compared answers. Coders were required to score 80% or higher in order to complete the training and begin coding videos; the experimenter's codes were used as the master code. Both coders met criteria after the first time. IOA was calculated for 40% to 60% of training sessions. Agreement on staff' implementation of BST steps was defined as both coders recording the occurrence and non-occurrence of the step for a topic. For instance, if the primary data collector and IOA coder reported that the BST step was implemented for the topic of "company background," it was considered an agreement. Similarly, if both primary data collector and IOA coder coded the non-occurrence of BST step for a topic, it was also considered

an agreement. To calculate IOA percentage, the total number of agreement was divided by total number of agreement plus disagreement multiplied by 100. Mean agreement for Staff 1 was 90% (no range), 84.7% for Staff 2 (range: 80% - 92%), and 87.5% for Staff 3 (range: 76% - 96%).

**Coder training for student performance.** The experimenter trained each coder separately. First, the experimenter read and explained the questions and answer criteria for each of the five topics (Table 2) to the coder; the experimenter gave coders the opportunity to ask questions at any time throughout the training. Second, coders watched video clips and two complete videos of simulated interviews from a previous study (Stocco et al., 2017); coders recorded students' answers as correct or incorrect. The experimenter compared coders' answers with the master key; the master key was created based on already coded answers from Stocco et al. (2017). Third, coders were given four videos of simulated interviews that the experimenter conducted with Leo. Coders' answers were then compared with a master record. To create the master record, the experimenter and the first graduate assistant coder independently coded Leo's videos. The experimenter, first coder, and faculty research advisors compared the results and discussed disagreements until a consensus was reached.

Coders were required to score 80% or higher in order to complete the training and begin coding study videos. If coders did not meet criteria, the experimenter provided feedback and the process was repeated (i.e., watch the video and code answers). One coder was replaced as she failed to meet criteria the second time; all other coders met criteria without need for additional training. Agreement was calculated for 100% of simulated interviews. Agreement on students' simulated interviews was defined as both

coders marking the question as either correct or incorrect. If one coder marked an answer correct and another coded marked as incorrect, it was considered a disagreement. To calculate IOA percentage, the total number of agreements was divided by total number of agreements plus disagreements and then multiplied by 100. Mean agreement for Leo was 91.4% (range: 60 - 100%) which included the four videos used for training (before consensus was reached), 100% for Don, and 77.4% for Mike (range: 40 - 100%).

**Training integrity.** Because the experimenter trained the staff to use BST, two graduate assistant coders assessed procedural integrity for 100% of training videos. Both coders were provided with a list of BST steps the experimenter used for training (Table 3). Coders marked “Yes” or “No” to indicate whether the experimenter completed a step during training. Training integrity was calculated by dividing the number of steps completed by the total number of steps multiplied by 100. Average procedural integrity for Staff 1 was 83.3%, Staff 2 was 100%, and Staff 3 was 94.4%.

## **Experimental Design**

We used a nonconcurrent multiple-baseline-across-staff design to evaluate the extent to which staff implemented BST before and after training. A nonconcurrent multiple-baseline-across-students design was used to assess corresponding improvements in students’ answers to interview questions.

## **General Procedure**

**Baseline.** The experimenter conducted simulated interviews to assess student answers to interview questions before experiencing training. Interviews were completed across two days. One day prior, the experimenter contacted the student via text or email

with a reminder of the appointment and included the job advertisement that was used for the day's interview(s). We instructed students to prepare for these interview as they typically would prepare for a job interview outside of our study. When students completed more than one simulated interview on the same day, the same job advertisement was used. Each interview was composed of one question from each of the topics in Table 2, resulting in a total of five questions. Similar to Stocco et al. (2017), the experimenter responded to all interviewee answers with neutral statements (e.g., "Uh huh", "Okay") and facial expressions to minimize the effects of feedback during simulated interviews.

**Career Center (CC) Training.** The primary purpose of these sessions was to assess the extent to which staff already used BST and the duration of the typical training at the Career Center. A secondary purpose was to assess corresponding changes in students' answers to questions. Each session block was composed of a CC training session followed by a minimum of one simulated interview.

The experimenter sent separate emails to the staff and student the day before each training session. The staff received instructions to teach students appropriate answers to interview questions using the typical training at the CC. Attached to the email were a list of questions and criteria (Table 2), excluding untrained questions, and one job advertisement to use for the day's training. The text or email to the student included meeting time, location, plans for the day, and one job advertisement (e.g., "You will meet with your staff for training and then with the experimenter for simulated interviews. You will be interviewing for the position of intern"). The experimenter provided staff with a printed copy of the list of questions and criteria, and job advertisement one hour before

the start of a session. The experimenter set up the camera before the session but was not present during training.

**Training.** We taught the staff to use BST to teach appropriate answers; the student was not present. The experimenter presented instructions and video models of BST steps, provided opportunities for staff to practice the skills, and delivered feedback (i.e., BST) (See Table 3 for steps).

At the start of training, the experimenter provided the staff with a handout describing the BST steps (see Table 1). Staff kept this handout for the remainder of the study and the experimenter referred to the handout when each step was reviewed with the staff. The experimenter also provided staff with a corresponding rationale and described how steps could be used to teach appropriate answers to interview questions (Table 2). Although staff were encouraged to ask questions throughout the training, the experimenter also prompted the staff to ask questions after describing the BST steps. After, staff watched a video model of the experimenter using BST to teach appropriate answers to a research assistant. In the video, the experimenter taught appropriate answers for the topic of “company background” (Table 2). Text appeared on the bottom-middle of the screen that identified the BST step being modeled by the experimenter; the text remained on the screen until the step was completed.

After instructing and modeling BST, the staff practiced implementing the steps by teaching appropriate answers to the experimenter. The staff chose one topic to use for training, but the experimenter went over answer criteria for all topics. The experimenter provided general praise (e.g., “That was beautiful! Keep going!”) for completing BST steps. When a staff missed a step, the experimenter provided corrective feedback (e.g.,



“You’re doing great, you tied these two concepts together and the only thing you need to add is to talk about the benefits of different management styles.”) and an additional opportunity to rehearse the step. Corrective feedback and rehearsal was repeated until the staff implemented the step. Training was completed when the staff implemented all BST steps for at least one topic.

**CC-Implemented BST.** Procedures were similar to CC Training with two exceptions. First, rather than teaching BST to staff, the experimenter instructed staff to use BST. Second, the experimenter provided feedback to the staff on their implementation if BST staff failed to use BST. Only Staff 3 needed corrective feedback from the experimenter because he skipped two BST steps in his training with the student. The experimenter scheduled a meeting with Staff 3 one week before his next meeting with Mike to provide feedback. During this meeting, the experimenter explained to Staff 3 that he missed some steps during training, which prompted the meeting; no data specific to his performance or the student’s interview performance were reviewed. The experimenter reviewed all of the BST steps, briefly modeled the steps, and asked Staff 3 to rehearse all of the steps until he correctly implemented all steps for at least one question topic.

The experimenter met with each staff individually after they completed the third BST session to review their performance (i.e., percent and number of BST steps correctly implemented) and their student’s data (i.e., percent of correct answers during simulated interviews). The experimenter showed and explained graphs that depicted staff performances. Although this review was not originally planned, it was implemented across all three staff after Staff 1 expressed concerns about repeated training sessions

during her third BST training session (i.e., she stated this was not something to which she was accustomed to doing in the CC). We opted to show her the data in order to address her concerns and to assess whether she wanted to continue with BST or discontinue her participation in the study (i.e., an ecological and social validity check); Staff 1 agreed to continue. This review session was then provided to Staff 2 and 3 after they completed their third BST sessions.

With the exception of Staff 2, these sessions continued until students' simulated interview data was stable across at least two simulated interviews. Immediately before the start of her sessions, Staff 2 stated that she was now able to participate in a total of six sessions and not the extended number originally discussed. Thus, unlike the other two students, Don scheduled all six sessions with Staff 2 prior to the start of training.

**Debriefing and Social Validity Assessment.** The experimenter debriefed each staff and student separately. When debriefing each student, the experimenter described the procedures used by staff during CC Training and CC-Implemented BST, highlighted the differences using video clips of the two trainings, and summarized the outcomes. Following the debriefing, each staff and student completed a social validity questionnaire with a graduate assistant. All meetings were video recorded. During the social validity assessment, each staff and student rated the effectiveness and acceptability of CC Training and BST (Tables 4 and 5). Staff 2 and 3 also rated the adoptability of BST to continue training for their students (Item D in Table 4); staff 1 did not provide this rating because her student scored 100%. Students also reported the number of times they would be willing to work with the CC in the future, total time spent, and preference of CC training, BST, neither, or no preference. The graduate assistant read each question and

the corresponding rating scale aloud before asking for a vocal rating from each staff and student; a visual printout of the rating scales were also placed in front of staff and students. After each rating, staff and students were given the opportunity to comment. The graduate assistant recorded staff and students' ratings and comments using pen and paper. This graduate assistant did not interact with staff and students during any other phases of the study.

## Results

### Staff and Students Performance

The left panel of Figure 1 displays data on BST steps implemented by staff. The x-axis shows session and the y-axis depicts each of the BST steps. Squares indicate whether staff covered all topics (black squares), some topics (grey squares), or no topic (white squares). Covering all topics was defined as the staff completing a BST step for all five topics. Covering some topics was defined as a staff completing a BST step for one to four topics. If a staff failed to complete a BST step for all five topics, this was defined as covering no topic. As illustrated by the number and inconsistency of white and gray boxes, typical CC Training included limited use of BST steps. BST was implemented at low levels during CC Training by Staff 1 ( $M = 50\%$ ), Staff 2 ( $M = 56.7\%$ ), and Staff 3 ( $M = 46\%$ ). When asked to indicate when they would end training if this were a typical CC training session, all three staff indicated one session. However, Staff 2 continued training because she scheduled her appointments in advance with Don and reported she would like to meet with him again after the first session. After receiving instruction on BST, all three staff performed BST steps, on average, at higher levels: 90% (Staff 1), 100% (Staff 2), and 95% (Staff 3). Overall, the number of BST steps implemented increased by 455.5% (Staff 1), 300% (Staff 2), and 200% (Staff 3) from CC Training to CC-Implemented BST.

Individual differences between each staff's typical CC training methods led to varying results and overall, results showed that during the CC phase, all staff made

limited use of BST steps. Staff 1 offered a straightforward mock interview session for Leo. Staff 2 provided additional counseling for Don in addition to teaching interview skills and Staff 3 used video recording with Mike. With the exception of Mike, these variations did not correspond to variations in student performance. During the CC Training phase, only Mike showed improvement in his interview skills. Upon completion of BST training, Staff 1 and 2 implemented all BST steps after the first training session and Staff 3 completed all BST steps after the second training session and continued to use all or nearly all of the BST steps to train their respective students.

The right panel of Figure 1 depicts the percent of correct answers made by students during simulated interviews. In each simulated interview session, students answered five questions. The x-axis shows session and the y-axis depicts the percent of correct answers denoted in increments of 20%. The horizontal black lines underneath session numbers indicate simulated interviews that were conducted on the same day; each line represents one day. During baseline, Leo, Don, and Mike scored on average 13.3%, 0%, and 5%, respectively. During the CC Training phase, Leo ( $M = 20\%$ ), Don ( $M = 2.5\%$ ), and Mike ( $M = 32\%$ ) showed minor improvements. During the CC-Implemented BST phase students showed minor to significant improvements in their scores, Leo ( $M = 85.7\%$ ), Don ( $M = 13.3\%$ ), and Mike ( $M = 52.5\%$ ). Leo was the only student to score 100%, and he did so during his last two simulated interviews. Leo's data were relatively stable across baseline and the CC Training phase and immediately increased when CC-Implemented BST was used. Don's data were stable but low throughout the study with a minor increase from 0% to 20% after the third BST session. Mike's data increased immediately in the CC Training phase and showed some variability before stabilizing at

20% in the last four sessions. Mike's data again increased immediately in the CC-Implemented BST phase, remaining at 60% for three data points before dropping and stabilizing at 40%.

### **Social Validity Assessments**

**Staff.** Using scales ranging from 1 to 7, with lower scores being less favorable, all staff rated the acceptability and effectiveness of the typical CC Training highly ( $M = 6.3$ , range: 6 - 7). One staff commented, "I think it's acceptable in a sense that we have a time constraint of either a 30 or 60 min appointment. Also, I would say that it goes over specific strategies and techniques that [students] can utilize moving forward." Staff rated the acceptability and effectiveness of BST less favorably ( $M = 5.3$ , range: 5 - 6 for acceptability;  $M = 5.6$ , range: 5 - 6 for effectiveness). One staff reported, "I think that [BST] works, I think the challenge with [BST] is the amount of time." Staff rated using a mixture of the CC Training and BST positively and reported they were most likely to use immediate feedback and repeated rehearsal in their future training with students ( $M = 6$ , range: 5 - 7).

Staff ratings of the effectiveness of specific components of BST showed preference for providing rationale for questions, rehearsal, and feedback. One staff found it valuable to give students the rationale for asking different interview questions and noted she started incorporating that step into her current training. Another staff commented on the importance of modeling good interview answers for students; although all staff discussed their concerns about providing a model answer because it might limit variability in students' answers. All staff responded most positively to the rehearsal and feedback components (for more detailed ratings, see Table 4). Staff shared they liked

certain parts of BST and that some components were redundant (e.g., providing rationale in every session) or unnecessary (e.g., providing an incorrect example). They also noted that some answer criteria were not applicable to some interview questions and that it was restricting students' answers to within the parameters of the answer criteria.

Staff rated the duration of BST sessions positively ( $M = 6.7$ , range: 6 - 7), but gave low ratings for the number of sessions ( $M = 2.3$ , range: 1 - 4). They all commented that BST required too many sessions, was not practical to schedule, and felt repetitive. All staff agreed the most effective duration for a training session is 40 to 60 minutes across 2 to 3 sessions. They reported they ideally would like to meet with students twice for a total training time of 80 to 120 minutes; however, they reported that they realistically are only able to meet with students once for 45 to 60 minutes. Additional staff ratings of BST are listed in Table 4

**Students.** Students' confidence ratings before and after the study were similar (Table 5). One student showed improvement in his anxiety rating, while two students showed no change.

Students' ratings of the effectiveness of CC Training were mixed. Don and Mike rated the effectiveness of training highly (7 and 6, respectively). Leo, who scored 100% on his last two simulated interviews, rated the training quite low (2), and noted that, "...it's a pretty good start for baseline evaluation, but not to learn." Compared to CC Training, Leo, Don, and Mike all rated the effectiveness of CC-Implemented BST positively (6, 7, and 7, respectively). All three students provided a rating of 7 when asked about having positive experiences with CC-Implemented BST. Don and Mike also

provided a rating of 7 when asked about positive experiences with CC Training; whereas, Leo provided a rating of 4. One point to note, though, Don reported that the trainings, "...seem the same because I'm being asked questions. I really just don't see the difference because I'm just being asked questions and I'm going through simulated interviews. I didn't know I was going through two different trainings." Even though the experimenter reviewed the difference in procedures immediately prior to the social validity assessment, it is possible that students did not differentiate between the two procedures.

All three students indicated they would chose BST if they came back to the CC for training. Leo reported, "I felt that I was able to learn a lot faster, in a shorter amount of time using the Behavioral Skills Training." Students reported that they would return to the CC as many times as needed allocating two to three times per week if they received training for another job interview skill (e.g., asking questions, nonverbal behaviors). However, they indicated they would only spend a total of 60 to 90 minutes to learn the skill, which does not support their previous report. One interviewee commented that he would spend, "probably as much as I needed to...but it would have to fit in my schedule." This could suggest repeated training is impractical or students are unfamiliar with the required time needed to learn a skill and could not provide a definitive answer.

## **Other Results**

**Training duration.** On average, staff spent approximately 2 hours on CC Training with a range of 36 minutes to 3 hours. They spent on average, 2.75 hours on



BST with a range of 2 hours to 3.5 hours. In total, staff spend an average of 4.5 hours training students ranging from 4 to 7 hours (for more detail, see Table 4).

**Simulated interview answer duration.** Pearson correlation coefficients were calculated between the duration of each student's simulated interview sessions and percent of correct answers. For both Leo and Mike, there were strong positive correlations between simulated session duration and percent of correct answers,  $r(12) = 0.799, p < 0.001$  and  $r(21) = 0.5862, p = .003$ , respectively. For Don, no clear correlation was observed,  $r(16) = 0.130, p = .607$ .

**Appropriate answers to trained and untrained questions by topic and phase.**

We analyzed each student's correct answer for each question in all five topics. Overall, no distinct patterns emerged; regardless of phases, students answered both trained and untrained questions similarly.

## Discussion

The purpose of this study was to assess the typical training procedure implemented by career center (CC) staff and to evaluate the effects of staff-implemented Behavioral Skills Training (BST) on college students' answers to interview questions. In addition, we asked staff and students to provide self-reported social validity ratings on various aspects of typical CC training and BST. Overall results showed that all staff made limited use of BST steps during the CC Training phase. After training, their use of BST steps increased compared to the CC Training phase. Student interview performance, used as a secondary measure of staff skill acquisition, improved for one student during the CC Training phase and for two students during the CC-Implemented BST phase. Our results clearly show that behavior analysts can use BST to teach career center staff to use BST to teach college students job interview skills. Social validity ratings suggest some parts of BST were acceptable and adoptable to the current training procedure at the career center.

Despite student improvements, we do not have enough evidence to state that CC-Implemented BST was more effective than the typical CC method. Only Leo showed an immediate increase that maintained when CC-Implemented BST was used compared to the typical CC method. In contrast, Leo's scores during CC Training phase were comparable to baseline. Neither training was particularly effective for Don, who showed little change in his performance. Don may require much more intensive training "dosage" to acquire these particular interview skills, as the time to successfully train

students to correctly answer these types of job interview questions can range from three to eight hours (Stocco et al., 2017). Unfortunately, we were unable to further assess the need for more training sessions because immediately prior to starting CC Training, Don's trainer, Staff 2, received a promotion that reduced her time to work with students and the time she could devote to the study; she was able to provide six training sessions across six days for the current study. She spent the first three days conducting CC Training sessions but reported she would typically spend more time with students similar in skill level to Don. However, due to her time constraints, we moved her to the BST phase for the remaining three sessions. Don's slight increase after the third BST session could suggest he required more training hours before we can see an increase in skill acquisition. Mike's performance showed immediate changes when CC Training and CC-Implemented BST were used. Both trainings were equally effective in showing improvement, although his performance was more stable during CC-Implemented BST phase. We would require additional data to conclude whether CC-Implemented BST was more effective than the typical CC Training. Future studies could replicate the procedure and evaluate the use of CC-Implemented BST with more students.

Social validity data from the current study suggest staff would not readily implement BST at the career center and would likely not make use of it on their own, largely due to the time required to properly implement BST. Dey and Real (2010) outlined the evolution of career centers as a job placement center to an all-inclusive service provider. In the 1940s and 1950s, career centers were solely focused on job placement by connecting students with employers for employment after graduation. As the times shifted, the role of career centers grew towards a counseling center where

students can discuss their interests, values, and skills with staff to find the best match for employment (Dey & Real, 2010). In recent years, career centers acquired additional responsibilities such as facilitating networking opportunities for students in events like job fairs and alumni gathering. As the function of career centers evolve, staff continue to take on increasing responsibilities. Students now use the career center to help them identify their career goals, connect with companies, search for jobs, develop job interview skills, and evaluate job offers (Schaub, 2012). Throughout the process, career center staff are required to be counselors in addition to trainers. Adding BST, which is time consuming and effortful, would require career center staff to expend additional response effort and time they no longer have. Therefore, rather than attempting to modify BST to fit into the career center model, it might be more feasible for behavior analysts to work with students who do not benefit from the usual services provided by career centers. It would ensure proper and adequate implementation of BST and allow career center staff to teach job interview skills to students who respond well to a brief training session as well as focusing on the myriad of other responsibilities that now comprise their job responsibilities. To achieve this goal, behavior analysts could establish stronger connections with university career centers. Future career services are shifting toward creating more connected services within the community, which suggests the need for career center staff to become facilitators who can collaborate with partners in the community to provide more inclusive services for students (Dey & Cruzvergara, 2014). Behavior analysts could potentially be one of these partners who can provide interview skills training for students. Another possibility would be for behavior analysts to acquire skills needed to be a career counselor (Normand & Kohn, 2013). Career

centers might be more open to implementing training procedures that were recommended by a career counselor with behavior analytic background rather than a behavior analyst with career service interests.

If experienced behavior analysts are unavailable to provide BST, other suggestions for reducing the need for staff to use BST include peer-implemented BST and computerized BST (Stocco, et al., 2017; O'Neill & Rehfeldt, 2017; Vanselow & Hanley, 2014). Peer-implemented BST may be an effective method for developing a mutual relationship that focused on achieving career and professional development. Both parties can exchange information, but mentors have more experience, authority, and achievement within the field of study which helps facilitate learning for the mentee (Jacobi, 1991). Based on this idea, peers could serve as effective mentors if given the proper training. Using similar procedures to the current study, future research could evaluate the use of BST by undergraduate career coaches at career centers to teach college students interview skills.

For settings that might not support peer coaches (e.g., lack of mentorship program or insufficient resources for training), computerized BST (CBST) might be an alternative. Vanselow and Hanley (2014) demonstrated the effectiveness of CBST with in-situ training in teaching children safety skills. Additionally, O'Neill and Rehfeldt (2017) used CBST to teach young adults with learning disabilities to provide appropriate answers to interview questions. A recent NACE benchmark report could suggest a need for computerized training for interview skills in the future. According to the NACE (2017), on-campus interview programs were on the decline, which was attributed to the increased use of video interview services; 55% of employers reported using video

interview services. Dey and Real (2010) also highlighted the integration of technology in delivering career center services such as virtual mock-interviewing, online resume building, counseling and advising. These services, while efficient, require further evaluation. It would be beneficial for future research in CBST to expand towards integrating technology in university career service delivery for college students.

Results of this study should be considered within the context of several limitations. First, because of time constraints, we ended training for Don and Mike after their data were stable rather than after they achieved skill mastery (i.e., scoring 100% in simulated interviews), which limits our ability to evaluate the effectiveness of staff-implemented BST. Relatedly, we did not set up a follow up plan to determine whether students' skill acquisition maintained or resulted in internship or job placement. Future researchers could outline skills mastery criteria to better evaluate the required training time to achieve mastery. Second, we measured social validity through self-report; positive verbal reports often do not match participants' actual use of the procedure (Pol, Reid, & Fuqua, 1983). Also, each staff worked with only one student. One staff noted he was unable to provide an accurate response to the effectiveness rating because he used BST with only one student. We opted for more simplistic measures because social validity was not the main focus of the study. Nonetheless, future studies could observe actual staff behaviors after training was completed or interview other members that would be affected by the training (e.g., potential employers) (Schwarz & Baer, 1991). Despite these limitations, results from the current study suggest it is feasible to implement BST at the career center that could potentially be effective in improving students' interview skills. Although staff reported they would not adopt the BST steps

we created as is, their reports suggest some acceptance towards each component, which is promising for behavior analysis to be adopted in other disciplines.

## REFERENCES

- Dey, F., & Cruzvergara, C. Y. (2014). Evolution of career services in higher education. *New Directions for Student Services, 2014(148)*, 5-18.  
doi:<https://doi.org/10.1002/ss.20105>
- Dey, F., & Real, M. (2010). Emerging trends in university career services: Adaptation of Casella's career centers paradigm. *NACE Journal, 71(1)*, 31-35.
- Dogan, R., King, M., Fischetti, A., Lake, C.M., Mathews, T., & Warzak, W. (2017). Parent-implemented behavioral skills training of social skills. *Journal of Applied Behavior Analysis, 50(4)*, 805-818. doi:<https://doi.org/10.1002/jaba.411>
- Eagan, K., Stolzenberg, E., Ramirez, J., Aragon, M., Suchard, M., & Rios-Aguilar, C. (2016). *The American freshman: Fifty-year trends, 1966-2015*. Higher Education Research Institute, Graduate School of Education & Information Studies, University of California, Los Angeles.
- Gillen, R. W., & Heimberg, R. G. (1980). Social skills training for the job interview: Review and prospectus. *Progress in Behavior Modification, 10*, 183-206.  
doi:<https://doi.org/10.1016/B978-0-12-535610-7.50011-6>



- Grinnell, R. M., & Lieberman, A. (1977). Teaching the mentally retarded job interviewing skills. *Journal of Counseling Psychology, 24*(4), 332-337.  
doi:<http://dx.doi.org/10.1037/0022-0167.24.4.332>
- Hollandsworth, J. G., Dressel, M. E., & Stevens, J. (1977). Use of behavioral versus traditional procedures for increasing job interview skills. *Journal of Counseling Psychology, 24*(6), 503-510. doi:<http://dx.doi.org/10.1037/0022-0167.24.6.503>
- Hollandsworth, J. G., Glazeski, R. C., & Dressel, M. E. (1978). Use of social-skills training in the treatment of extreme anxiety and deficient verbal skills in the job-interview setting. *Journal of Applied Behavior Analysis, 11*(2), 259-269.  
doi:10.1901/jaba.1978.11-259
- Hollandsworth, J. G., Kazelskis, R., Stevens, J., & Dressel, M. E. (1979). Relative contributions of verbal, articulative, and nonverbal communication to employment decisions in the job interview setting. *Personnel Psychology, 32*(2), 359-367. doi:10.1111/j.1744-6570.1979.tb02140.x
- Iwata, B. A., Wallace, M. D., Kahng, S., Lindberg, J. S., Roscoe, E. M., Connors, J., ... & Worsdell, A. S. (2000). Skill acquisition in the implementation of functional analysis methodology. *Journal of Applied Behavior Analysis, 33*(2), 181-194.  
doi:10.1901/jaba.2000.33-181
- Jacobi, M. (1991). Mentoring and undergraduate academic success: A literature review. *Review of Educational Research, 61*(4), 505-532.  
doi:<https://doi.org/10.3102/00346543061004505>

- Lavie, T., & Sturmey, P. (2002). Training staff to conduct a paired-stimulus preference assessment. *Journal of Applied Behavior Analysis, 35*(2), 209-211.  
doi:10.1901/jaba.2002.35-209
- Leaf, J. B., Townley-Cochran, D., Taubman, M., Cihon, J. H., Oppenheim-Leaf, M. L., Kassardjian, A., ... & Pentz, T. G. (2015). The teaching interaction procedure and behavioral skills training for individuals diagnosed with autism spectrum disorder: A review and commentary. *Review Journal of Autism and Developmental Disorders, 2*(4), 402-413. doi:<https://doi.org/10.1007/s40489-015-0060-y>
- Macan, T. (2009). The employment interview: A review of current studies and directions for future research. *Human Resource Management Review, 19*, 203-218.  
doi:10.1016/j.hrmr.2009.03.006
- Miles, N. I., & Wilder, D. A. (2009). The effects of behavioral skills training on caregiver implementation of guided compliance. *Journal of Applied Behavior Analysis, 42*(2), 405-410. doi:10.1901/jaba.2009.42-405
- Miltenberger, R. G. (2011). *Behavior modification: Principles and procedures* (5<sup>th</sup> ed.). Belmont, CA: Cengage Learning.
- National Association of Colleges and Employers (NACE). (2017a, October 25). Nearly 86 percent of class of 2017 visited career center. *NACE*. Retrieved from <https://www.naceweb.org/career-development/student-attitudes/nearly-86-percent-of-class-of-2017-visited-career-center/>

National Association of Colleges and Employers (NACE). (2017b). *The class of 2017 student survey report executive summary*. Retrieved from:

<https://www.nacweb.org/store/2017/the-class-of-2017-student-survey-report/>

National Association of Colleges and Employers. (2014). *The class of 2014 student survey report*. Retrieved from <http://www.nacweb.org/2012-student-survey.aspx>

Normand, M. P., & Kohn, C. S. (2013). Don't wag the dog: Extending the reach of applied behavior analysis. *The Behavior Analyst, 36*(1), 109-122.

doi:<https://doi.org/10.1007/BF03392294>

O'Neill, J. & Rehfeldt, R. A. (2017). Computerized behavioral skills training with selection-based instruction and lag reinforcement schedules for responses to interview questions. *Behavior Analysis: Research and Practice, 17*(1), 42.

doi:<http://dx.doi.org/10.1037/bar0000043>

Parsons, M., Rollyson, J., & Reid, D. (2013). Teaching practitioners to conduct behavioral skills training: A pyramidal approach for training multiple human service staff. *Behavior Analysis in Practice, 6*(2), 4-16.

doi:<https://doi.org/10.1007/BF03391798>

Pol., R. A., Reid, D. H., & Fuqua, R. W. (1983). Peer training of safety-related skills to institutional staff: Benefits for trainers and trainees. *Journal of Applied Behavior Analysis, 16*(2), 139-156. doi:<https://doi.org/10.1901/jaba.1983.16-139>

Schaub, M. (2013). The profession of college career services delivery: What college counselors should know about career centers. *Journal of College Student*

*Psychotherapy*, 26(3), 201-215.

doi:<https://doi.org/10.1080/87568225.2012.685854>

Schinke, S. P., Gilchrist, L. D., Smith, T. E., & Wong, S. E. (1978). Improving teenage mothers' ability to compete for jobs. *Social Work Research and Abstracts*, 14(3), 25-29. doi:<https://doi.org/10.1093/swra/14.3.25>

Schwartz, I., & Baer, D. (1991). Social validity assessments: Is current practice state of the art? *Journal of Applied Behavior Analysis*, 24(2), 189-204.  
doi:10.1901/jaba.1991.24-189

Speas, C. M. (1979). Job-seeking interview skills training: A comparison of four instructional techniques. *Journal of Counseling Psychology*, 26(5), 405.  
doi:<http://dx.doi.org/10.1037/0022-0167.26.5.405>

Stewart, K. K., Carr, J. E., & LeBlanc, L. A. (2007). Evaluation of family-implemented behavioral skills training for teaching social skills to a child with Asperger's disorder. *Clinical Case Studies*, 6(3), 252-262. doi:10.1177/1534650106286940

Stocco, C. S., Thompson, R. H., Hart, J. M., & Soriano, H. L. (2017). Improving the interview skills of college students using behavioral skills training. *Journal of Applied Behavior Analysis*, 50(3), 495-510. doi:<https://doi.org/10.1002/jaba.385>

The Chronicle of Higher Education and Marketplace (2013). *Survey of employers who hire recent college graduates with bachelor's degrees*. Retrieved from <http://chronicle.com/items/biz/pdf/Employers%20Survey%20Annotated%20Instrument.pdf>

Vanselow, N. R., & Hanley, G. P. (2014). An evaluation of computerized behavioral skills training to teach safety skills to young children. *Journal of Applied Behavior Analysis, 47*(1), 51-69. doi:<https://doi.org/10.1002/jaba.105>

Table 1

*BST Steps Checklist and Definitions for Staff*

| <b>Dependent Measures</b>              | <b>Operational Definition</b>   |
|--|---|
| Instruction                            |   |
| 1. Rationale for questions             | Explains why employers ask the question   |
| 2. Criteria for appropriate answers    | Outlines the criteria for appropriate answers   |
| Modeling                               |   |
| 3. One example of appropriate answer   | Provides one example of an appropriate answer that meets all criteria as specified under Instruction                          |
| 4. Explanation of appropriate answer   | Explains why the answer provided is considered appropriate  |
| 5. One example of inappropriate answer | Provides one example of an inappropriate answer that does not meet any or some of the criteria as specified under Instruction |
| 6. Explanation of inappropriate answer | Explains why the answer provided is considered inappropriate  |
| Rehearsal                              |   |
| 7. Opportunity for rehearsal           | Pauses for 10 – 60 seconds to allow student to respond after reading an interview question                                    |
| Feedback                               |   |
| 8. Immediate feedback                  | Provides feedback after student says the answer out loud  |
| 9. Criteria specific                   | Identifies and explains the component(s) of the answer that meet one or more of the criteria and the components that do not   |
| 10. Repeat rehearsal as needed         | Repeats rehearsal if one or more criteria are missing   |

Table 2

*Interview Questions and Criteria for Appropriate Answers*

| Topics                 | Simulated Interview Questions   | Criteria for Appropriate Answers   |
|------------------------|---|--|
| Company Information    | a. What aspect of this job attracts you the most?                     | Student's answers:<br>1. Stated something about the business in a positive way (e.g., company's mission, services provided, etc.)<br>2. Mentioned his/her professional goals<br>3. Described how the position/company's goals match with his/her professional goals                                      |
|                        | b. Why are you interested in this job?                                |  |
|                        | c. What do you know about our company?                                |  |
|                        | Untrained: Why do you think this position is a good fit for you?      |  |
|                        | Untrained: Why did you decide you wanted to interview with us?        |  |
| Interviewee Background | a. What kind of experience do you have in the field?                  | Student's answers:<br>1. Focused on experience(s) related to the job including transferable skills from their education<br>2. Explained how skills and/or experiences match the requirements for the position (e.g., social skills, if the position requires interacting with people)                    |
|                        | b. Tell me about a significant accomplishment you are most proud of?  |  |
|                        | c. What are your strengths and weaknesses?                            |  |
|                        | d. Why should we hire you?  |  |
|                        | Untrained: What can you contribute to this company if you were hired? |  |
|                        | Untrained: In what ways are you a good fit for this position?         |  |
| Work Habits            | a. What type of management style do you prefer to work under?         | Student's answers:<br>1. Explained the benefits of (a) working in groups, (b) working alone, (c) establishing rapport, and/or (d) working with different types of supervisors<br>2. Discussed specific skills/experiences related to (a) working in groups, (b) working alone, (c) establishing rapport, |
|                        | b. What steps do you take to establish rapport with others?           |  |
|                        | c. Describe your work style when working with others or alone.        |  |
|                        | Untrained: Do you prefer to work with people or alone?                |  |

|              |   |   |
|--------------|---|---|
|              | Untrained: Is there a type of work environment that you prefer?   | and/or (d) working with different types of supervisors<br>3. Tailored the answer to the requirements of the position  |
| Future Goals | a. Where do you see yourself in 5 years?  | Student's answers:<br>1. Focused on achieving professional goals<br>2. Described plans to progress beyond the position and/or field   |
|              | b. What is your vision of success?  |   |
|              | Untrained: What is your dream job?  |   |
|              | Untrained: What are your career goals?  |   |
| Action-based | a. Describe a time when you had to work with a difficult classmate, co-worker, or boss.   | Student's answers:<br>1. Described the specific task or situation<br>2. Explained the specific action taken by the interviewee related to the task or situation<br>3. Summarized the outcome of the task or situation |
|              | b. Tell me how you handled a difficult situation in a professional setting (e.g., work, school)   |   |
|              | c. Give an example where you showed leadership and initiative.  |   |
|              | d. Tell me about a situation when you were given unclear instructions or unable to comprehend the instructions. How did you complete the task if you could not ask for clarification? |   |
|              | Untrained: Tell me about a time when you worked as part of a team to accomplish a goal.   |   |
|              | Untrained: Describe a time where you had to prioritize tasks to complete a project.   |   |



Table 3

*Experimenter Checklist and Definitions for Staff Training*

| <b>Dependent Measures</b>                                    | <b>Operational Definition</b>   |
|--|---|
| Instruction  |   |
| 1. Present and explain “BST Steps Checklist and Definitions” | Presents a written copy of “BST Steps Checklist and Definitions” and explains each BST step and its corresponding definition              |
| 2. Present and explain “Criteria for Answers”                | Presents a written copy of “Criteria for Answers” and explains each question topic and its corresponding criteria for appropriate answers |
| 3. Opportunity to ask questions                              | Asks participant if he/she has any questions  |
| Modeling   |   |
| 4. Video modeling  | Shows the video recording of appropriate and inappropriate models of BST implementation   |
| Rehearsal  |   |
| 5. Opportunity for rehearsal                                 | Prompts the participant to teach the experimenter   |
| Feedback   |   |
| 6. Immediate feedback  | Provides feedback after participant completes each step on the BST checklist  |
| 7. Specific feedback   | Identifies and explains the component of the BST step(s) that was completed and the step(s) that was missed                               |
| 8. Positive and corrective                                   | Provides positive feedback if staff completes BST step(s) and corrective feedback if staff misses BST step(s)                             |
| 9. Repeat rehearsal as needed                                | Repeats rehearsal if one or more steps were missing   |

Table 4

*Social Validity Data for Staff*

| Questionnaire Items by Staff  | Staff 1 | Staff 2 | Staff 3 |
|---|---------|---------|---------|
| A. Acceptability and Effectiveness of CC training and BST<br>1 (Strongly Disagree), 4 (Neutral), 7 (Strongly Agree)               |         |         |         |
| I found the procedures I use in a <b>typical training session</b> with students to be an acceptable way to teach interview skills | 6       | 7       | 6       |
| I believe the procedures I use in a <b>typical training session</b> with students are effective in teaching interview skills      | 6       | 7       | 6       |
| I found the procedures used in <b>Behavioral Skills Training (BST)</b> to be an acceptable way to teach interview skills          | 5       | 5       | 6       |
| I believe <b>Behavioral Skills Training (BST)</b> was effective in teaching interview skills                                      | 6       | 6       | 5       |
| I believe the <b>instructions</b> component of BST was effective in teaching interview skills                                     | 4       | 7       | 6       |
| I believe the <b>modeling</b> component of BST was effective in teaching interview skills   | 4       | 4       | 7       |
| I believe the <b>rehearsal and feedback</b> component of BST was effective in teaching interview skills                           | 7       | 6       | 7       |
| Overall, I had a <b>positive reaction</b> to Behavioral Skills Training (BST)   | 4       | 5       | 7       |
| B. Likelihood of use in the future<br>1 (Not likely), 4 (Neutral), 7 (Very likely)  |         |         |         |
| Use <b>typical procedure</b> for future training  | 7       | 7       | 4       |
| Use <b>Behavioral Skills Training (BST)</b> for future training   | 2       | 5       | 6       |
| <b>Mixture</b> of typical and BST for future training   | 5       | 6       | 7       |
| C. Like and dislike<br>1 (Strongly Dislike It), 4 (Neutral), 7 (Strongly Like It)   |         |         |         |
| Instructions  | 4       | 6       | 6       |
| Modeling  | 4       | 3       | 6       |
| Rehearsal and Feedback  | 7       | 6       | 6       |
| Session duration  | 7       | 6       | 7       |
| Session count   | 1       | 2       | 4       |

| D. Recommendation for continuing training                         |                       |          |          |          |
|---|-----------------------|----------|----------|----------|
| 1 (Would not recommend at all), 4 (Neutral), 7 (Highly recommend) |                       |          |          |          |
|   | Continue with BST     | -        | 5        | 6        |
|   | Computerized BST      | -        | 3        | 2        |
|   | Semi-computerized BST | -        | 5        | 5        |
|   | Peer-implemented BST  | -        | 5        | 2        |
| E. Time Spent in Training for each Staff                          |                       |          |          |          |
|   | Number of sessions    | 1        | 5        | 3        |
| CC  | Total duration        | 36 m     | 2 h 46 m | 2 h 11 m |
|   | Mean                  | 36 m     | 33 m     | 44 m     |
|   | Number of Sessions    | 4        | 5        | 3        |
| BST   | Total duration        | 2 h 34 m | 3 h 29 m | 2 h 12 m |
|   | Mean                  | 38 m     | 42 m     | 44 m     |
|   | Total                 | 3 h 48 m | 7 h 19 m | 5 h 5 m  |

Table 5

*Social Validity Data for Students*

| Questionnaire Items by Students  | Leo | Don  | Mike |      |     |      |
|--|-----|------|------|------|-----|------|
| <b>A. Acceptability and Effectiveness of CC training and CC-Implemented BST</b>  |     |      |      |      |     |      |
| 1 (Strongly Disagree), 4 (Neutral), 7 (Strongly Agree)   |     |      |      |      |     |      |
| I found the procedures used in <b>CC training</b> to be an acceptable way to learn interview skills                      | 4   | 7    | 7    |      |     |      |
| I believe <b>CC training</b> was effective in teaching me interview skills   | 2   | 7    | 6    |      |     |      |
| Overall, I had a <b>positive reaction</b> to the CC training   | 4   | 7    | 7    |      |     |      |
| I found the procedures used in <b>Behavioral Skills Training (BST)</b> to be an acceptable way to learn interview skills | 5   | 7    | 6    |      |     |      |
| I believe <b>Behavioral Skills Training (BST)</b> was effective in teaching me interview skills                          | 6   | 7    | 7    |      |     |      |
| Overall, I had a <b>positive reaction</b> to Behavioral Skills Training (BST)  | 7   | 7    | 7    |      |     |      |
| <b>B. Confidence and Anxiety</b>   |     |      |      |      |     |      |
| 1 (Not confident/very anxious), 7 (Very confident/not anxious)   |     |      |      |      |     |      |
|  | Pre | Post | Pre  | Post | Pre | Post |
| Rate how confident you are in your interview skills  | 5   | 5    | 4    | 5    | 7   | 6    |
| Rate how anxious or nervous you feel during interviews   | 4   | 6    | 4    | 4    | 6   | 6    |

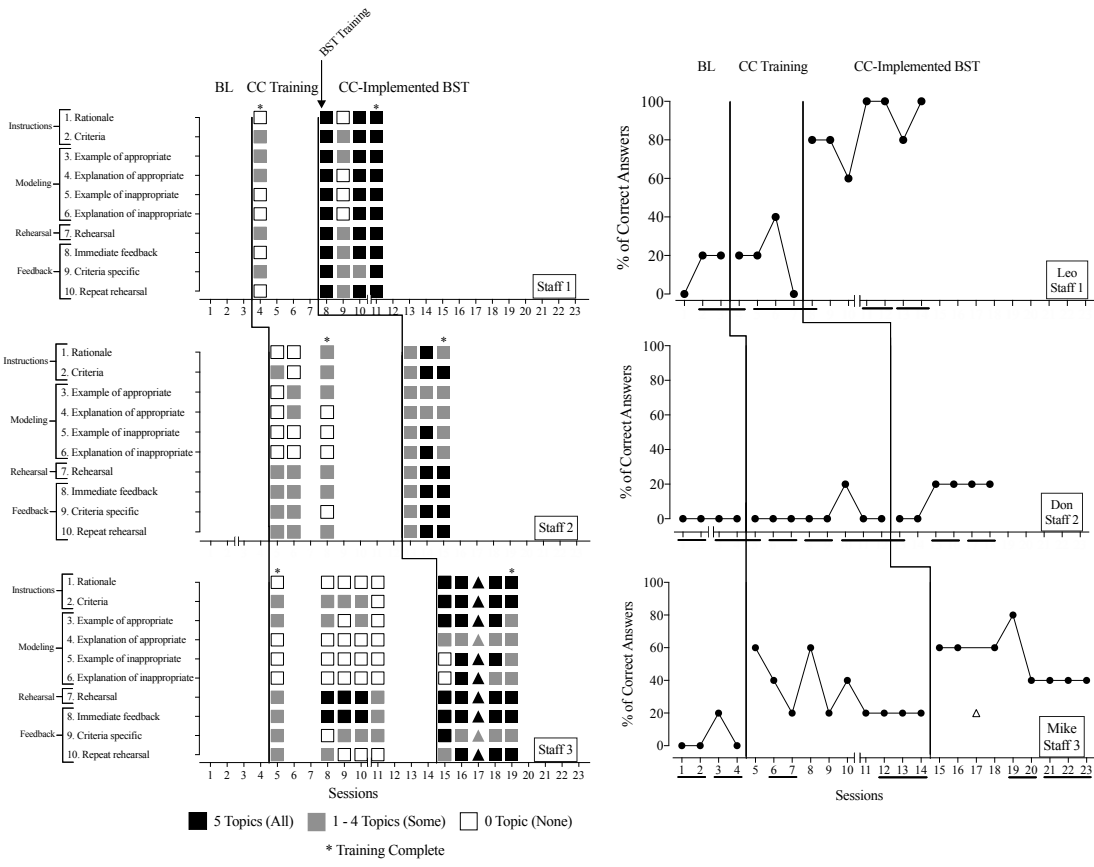
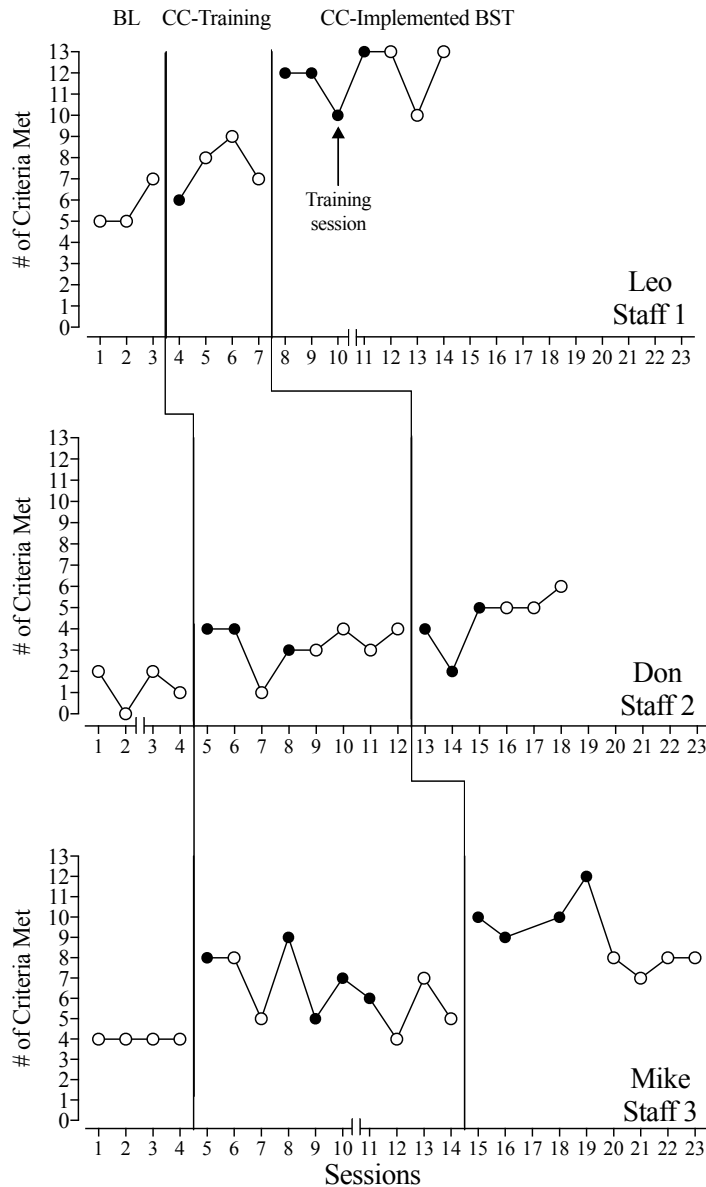


Figure 1. Staff performance (left) and students' performance during simulated interviews (right). Training performance was graphed as number of topics covered for each BST step. Student performance was measured as percent of correct answers. The horizontal black lines underneath session numbers on the right graph indicate simulated interviews that were conducted on the same day; each line represents one day.



*Figure 2.* Student performance data were broken down by number of answer criteria met in simulated interviews. The y-axis shows the number of criteria met per simulated interview session and the x-axis represents sessions. The closed circles represent interviews conducted after training. The open circles signify simulated interviews conducted on days without training.

## APPENDIX A: PROPOSAL LITERATURE REVIEW

Most college career centers (CC) offer a range of services to college students including resume writing, job listings, job-search assistance, and practice job interviews (National Association of Colleges and Employers [NACE], 2014). In a nationwide survey of college students ( $N = 10,210$ ) conducted by the NACE, 81% of new college graduates reported using services provided by the CC at least once and 47% reported making multiple visits per semester during their last year of school. Of the 81% college students who went to their CCs, most reported using resume review services and 51% reported utilizing practice job interviews. However, only 45% of the students who used the practice interview services, or one-quarter of those who made use of their CCs, reported these services were helpful (NACE, 2014). All services provided by CCs are likely important and contribute to college students' successful employment after graduation. However, employers most often identify job interview skills as essential to the successful procurement of employment and frequently report this skill is lacking in college graduates. In fact, in a survey of 699 employers, 67% reported college graduates should have better interviewing skills (The Chronicle of Higher Education and Marketplace, 2013). Additionally, even though it is an imperfect measure of skills, employers typically use job interviews to assess candidates' competency (Barrick, Shaffer, & DeGrassi, 2009; Macan, 2009). Based on a review of employers, the job interview continues to be the most common and preferred method of hiring assessment (see Macan, 2009 for a review).

## Scope of the Problem

Unemployment and underemployment data suggest college graduates struggle to obtain employment. Approximately 7% of college graduates between the ages of 21 to 24 years from the class of 2015 faced challenges obtaining employment, compared to 5.5% in 2007 (Davis, Kimball, & Gould, 2015). In addition, new graduates frequently compete for jobs with past college graduates also seeking employment.

Underemployment is another more recent concern for new college graduates ages 22 to 27 (Abel, Deitz, & Su, 2014). College graduates are considered underemployed when they are employed in jobs that do not require a college degree (Abel et al., 2014).

Although rates of unemployment and underemployment for new college graduates are expected to be elevated compared to college graduates in general, underemployment rates increased from 41% in the year 2000 to 56% between 2009 and 2011 (Abel et al., 2014). These data suggest college graduates are experiencing difficulty obtaining employment commensurate with their degrees.

Many factors contribute to unemployment and underemployment rates among college students, including fluctuation of the job market and changes in the economy; 52% of employers reported having difficulty finding qualified college graduates (The Chronicle of Higher Education and Marketplace, 2013). Understandably, the job interview is only one factor contributing to these outcomes, but for a subset of college graduates who have the requisite job skills, the job interview might be the key factor that hinders their ability to secure a position. Job interviewing often requires mastering a set of skills that are often quite different from the skills needed to perform the job. Although students utilize their CCs to improve their job interview skills, data highlight a



discrepancy between the percent of students making use of practice interviews (51%), the percent who found them helpful (i.e., about half of the 51%), and the percent of employers reporting college students lack job interview skills (67%). Clearly, we need to do a better job of identifying skills associated with successful job interviews and ensuring CCs use best practices to teach college students these skills.

### **Behaviors Associated with Successful Job Interviews**

During job interviews, employers assess potential candidates based on their vocal and nonvocal behaviors; clinicians and researchers have investigated the importance of these job interview behaviors on employers' hiring decisions (e.g., Charisiou, Jackson, Boyle, Burgess, Minas, & Joshua, 1989; Hollandsworth, Kazelskis, Stevens, & Dressel, 1979; Imada & Hakel, 1977). For example, Prazak (1969) identified appropriate answers as an important component of the job interview process. She described the definition of appropriate answers as interviewees having the ability to clearly and concisely identify specific skills in their repertoire and accurately described the relevance of these skills to the job for which they were applying. Appropriate answers also include interviewees' ability to provide positive responses to negative questions that might otherwise detract from their ability to perform the job adequately (e.g., lack of job experience, need for specific accommodations) (p. 417).

Hollandsworth et al. (1979) evaluated seven behaviors identified as influencing interviewers' hiring decisions: four nonvocal behaviors (eye contact, body posture, personal appearance, and composure) and three vocal behaviors (appropriateness of content, loudness of voice, and fluency of speech). Their study included 73 on-campus

recruiters (interviewers) who collectively conducted a total of 338 job interviews during a single academic year. Each recruiter rated each interviewee's behaviors immediately following the interview using operational definitions provided by the Hollandsworth et al. (1979) on a four-point scale; for example, the operational definition of eye contact was "generally maintained appropriate eye contact when speaking or listening to the interviewer" (p. 362). The recruiters also answered the question "would you hire this candidate?" with "not a chance," "probably not," "probably," or "definitely." Among the seven behaviors, appropriateness of content as defined by being able to respond fully and concisely to questions (p. 362), was most often correlated with recruiters stating they would "definitely hire" the interviewee. These results suggest content is a key factor in recruiters' hiring decisions. Collectively, these publications support the notion that interviewers are interested in interviewees who use appropriate vocal behaviors to articulate their skills during job interviews, and that this vocal skill directly impacts interviewees' likelihood of being offered employment. However, in two recent surveys, these same communication skills were rated highly by employers who also noted recent college graduates often lack these skills (Association of American Colleges and Universities, 2015; PayScale, 2016). Moreover, little is known about whether CCs successfully teach this skill as part of their service offerings to college students.

### **Current Career Center Practices**

Despite the clear importance of the job interview, and the significant proportion of college students who seek assistance with these skills from their CCs, little published research exists regarding procedures CC staff use to teach job interview skills to college students and whether these procedures markedly improve students' job interview skills.

Although CC staff might engage students in practice interviews and provide feedback on students' performance, it is also possible many provide only advice or online instructional guides. For example, based on their website information, three CCs located near each other in California each offer different job interview training services. California State University, Stanislaus provides instructional sheets outlining effective interviewing strategies and an invitation to practice mock interviews with a career advisor. The University of California, Berkeley offers an array of resources ranging from instructional sheets on how to have a successful interview and videos from employers that offer advice regarding interview questions, phone interviews, and general interview conduct. The University of the Pacific provides access to an interview handbook that outlines information related to preparing for the interview and video examples of good and bad interviews. These are useful resources, but a cursory review of CC websites provided no information about typical procedures career counselors use to teach students job interview skills. Different career counselors might utilize different training approaches and it is unclear whether their typical training approaches match what is considered to be best practice for skills training. Because no clear consistency exists between various CCs, or even possibly within each CC, Behavioral Skills Training (BST) might be a useful method to incorporate into these settings.

### **Behavioral Skill Training (BST)**

Behavioral Skills Training (BST) has been used to effectively teach individuals a broad range of new skills (Miltenberger, 2011). BST is a package that consists of instructions, modeling, rehearsal, and feedback and includes at minimum one learner and one teacher. First, the teacher provides the learner with instructions and a rationale for

engaging in the targeted behaviors. Second, the teacher models the behaviors, which serves as a discriminative stimulus (S<sup>D</sup>) for the learner to imitate the model's behaviors based on a learned history of imitation (Miltenberger, 2011). Third, the teacher provides the learner with an opportunity to rehearse the behavior and the teacher provides immediate feedback on the learner's performance. The learner rehearses the behavior as many times as needed to accurately learn the skills and receives feedback following each instance of rehearsal.

BST has been used to effectively teach children gun safety skills (Himle, Miltenberger, Flessner, & Gatheridge, 2004; Himle, Miltenberger, Gatheridge, & Flessner, 2004), abduction-prevention skills (Gunby, Carr, & LeBlanc, 2010), and pedestrian safety (Yeaton & Bailey, 1978). It has also been used to teach adolescents conversational skills (Minkin et al., 1976) and adults job interview skills (see Latham, 1987 for a review). Further use of BST has been extended to effectively train parents, caregivers, and staff to implement a functional analysis (Iwata et al., 2000) and a three-step compliance intervention (Miles & Wilder, 2009), conduct a preference assessment (Lavie & Sturmey, 2002), and teach social skills to a child (Stewart, Carr, & LeBlanc, 2007). As it relates to improving job interview skills, BST has been successful across a variety of populations (e.g., Speas, 1979; Venardos & Harris, 1973).

**Job Interview Skills.** To date, most published research on BST to teach job interview skills has focused on subpopulations such as vocational rehabilitation clients (Venardos & Harris, 1973), soon to be released inmates (Speas, 1979), adults and adolescents with intellectual and developmental disabilities (Hall, Sheldon-Wildgen, & Sherman, 1980; Kelly, Wildman, & Berler, 1980), and adults diagnosed with mental

illness (Furman, Geller, Simon, & Kelly, 1979; Kelly, Laughlin, Clairborne, & Patterson, 1979). However, college students often differ from these populations in important ways, including level of functioning, skills repertoire, and types of employment sought (Kelly et al., 1979; Kelly et al., 1980). For example, Schloss, Santoro, Wood, and Bedner (1988) taught two adults with intellectual disabilities to provide one-sentence answers to common interview questions. For typically developing college students seeking higher-level employment, one-sentence answers provided during job interviews are insufficient (Stocco, Thompson, Hart, & Soriano, 2017). Furthermore, some questions targeted towards individuals with disabilities are not as applicable to college students, such as “Do you have any personal problems that might interfere with your work here?” (Charisiou et al., 1989; Kelly et al., 1979). Although employers are now legally prohibited from asking this type of question during job interviews (The U.S. Equal Employment Opportunity Commission [EEOC], 2005), similar questions are asked (e.g., Can you explain this gap in your employment history?). Such questions might be relevant for individuals with disabilities or older applicants with specific life experiences (e.g., taking time off to raise children), but for most new college graduates, these questions likely do not apply. As of yet, three studies have focused specifically on evaluating BST to effectively teach college students job interview skills (Hollandsworth, Dressel, & Stevens, 1977; Hollandsworth, Glazeski, & Dressel, 1978; Stocco, Thompson, Hart, & Soriano, 2017).

**Job Interview Skills for College Students.** Hollandsworth et al. (1977)

compared the effectiveness of a group BST workshop and a lecture-discussion against a no-treatment control group (which later received the BST workshop) to teach college

seniors job interview skills. In the BST workshop, college students were taught the skills of eye contact, body expression, loudness of voice, fluency of speech, and use of appropriate content. These skill areas were modeled by the trainers and rehearsed by each person in the group, after which participants were divided into groups of three to participate in the rehearsal and feedback component; although the authors did not specify the exact method or timing, feedback was provided using a rating checklist of the five skill areas. Once all participants in each of the three subgroups completed at least one practice interview with each other, the entire group reconvened for a practice interview with the trainer. At the end of the workshop, participants discussed an informational packet related to the job search (e.g., materials on resume writing, job hunting). In the lecture-discussion group, participants watched a video, read and discussed an article, completed a worksheet to identify their strengths, weaknesses, and goals, and engaged in a group discussion.

To measure the effectiveness of both trainings, two confederates interviewed all participants before and after the training. Two independent judges coded videotaped interviews for duration (i.e., total length of response and eye contact), level of skill proficiency (i.e., affect, loudness of voice, explaining skills, openness and honesty), and frequency (i.e., number of positive self-statements and speech disturbances). Although the BST group showed more improvement in eye contact and the lecture-discussion group showed more improvement in length of speaking, ability to explain, and self-expression, three study limitations greatly compromise the meaningfulness of these results. First, the authors did not clearly operationally define the target behaviors coders used to rate the videotaped interviews. For example, no clear operational definitions

were provided for many of the target behaviors (e.g., duration of eye contact was unspecified). Second, the standard deviations were quite high relative to participants' mean scores, suggesting individual scores varied widely, making interpretation of the effect of the treatment on any one person difficult (Johnston & Pennypacker, 2009; Normand, 2016). A ceiling effect might have also complicated evaluation of the BST workshop, as participants' scores on some target behaviors (i.e., loudness of voice and affect) were already at high levels during the pre-training interview, particularly relative to the other two groups. Third, pre-training means were not equivalent between groups. For example, the average duration of speaking for the BST workshop group ( $M = 78.6$  s) differed greatly from the discussion group ( $M = 54.7$  s). These limitations highlight the importance of analyzing each individual's responses in addition to or in lieu of aggregate data. Assessing individual's skill levels prior to training also allows for identification of individualized target behaviors, removal of training components not required by an individual, and assessment of the effectiveness of training on each individual's target behaviors.

Hollandsworth et al. (1978) addressed some of these limitations in a later study in which they utilized BST procedures to teach job interview skills to one college graduate in a single-subject, multiple-baseline across behaviors design. Three target behaviors were defined and measured using a 3-point rating scale and frequency counts: focused responses (concise vocal statements that directly answered the interviewer's questions), overt coping statements (vocal response emitted to correct a vocal mistake or re-establish composure), and subject-generated questions (vocal requests for information, feedback, or clarification about the interviewer's questions) (p. 261- 262). Experimenters also

measured galvanic skin-response (GSR) and the frequency of speech disturbances and included these as indirect measures of anxiety.

During baseline, a trainer presented five training questions and three generalization questions to the participant; no feedback or comments were provided. Each training session lasted 20 to 40 minutes. During the instruction session, the trainer verbally explained the operational definition of each target behavior and described to the participant how to engage in the target behaviors (e.g., for focused responses, the participant was taught to pause, think, and then speak). Following this, the participant watched a video in which a model demonstrated appropriate responses to the five training questions. Lastly, the participant role-played with the trainer to practice his responses. The rehearsal sessions were recorded and played back to provide immediate and specific feedback to the participant about his performance. The participant also completed generalization and probe sessions. During the generalization sessions, the participant was asked to answer three questions introduced during baseline but not used during training. Probe sessions were conducted prior to training the second and third target behaviors and at the end of training. To assess interrater reliability, two judges were asked to independently code all sessions; videos were presented randomly to judges who were blind to the order of training.

Two target behaviors, focused responses and subject-generated questions, showed significant improvements after training compared to before. The third target behavior, overt coping statements, decreased which was the desired result; as the participant's skill in focused responses increased, his need to use coping statements decreased. The participant's GSR and speech disturbances also lowered substantially after training.



Results from generalization and probe sessions showed the participant maintained these skills beyond the training sessions and in his natural work setting. Anecdotal reports from the authors noted that following training, the participant went to three job interviews and received offers from all three jobs; prior to BST, he had been on over 60 interviews and had received zero job offers. Taken together, these two studies (Hollandsworth et al., 1977; 1978), suggest BST can be beneficial for college students seeking to improve their job interview skills.

In a more recent study, Stocco et al. (2017) used a single-subject, multiple-baseline across behaviors design to evaluate BST to teach five college students job interview skills. Individualized target behaviors included vocal responses (i.e., appropriate answers and appropriate questions) and nonvocal responses (i.e., smiling and appropriate posture). Vocal responses were measured as correct or incorrect using criteria specific to each question. Nonvocal responses were recorded using 10-s momentary time sampling. Baseline data were collected prior to training across 2 or 3 trials. During training, the experimenter provided instructions and modeled the target behaviors. Following this, participants practiced the skills and received immediate feedback on their performances. After each training session, a brief mock interview was conducted that focused on the specific skill targeted during the training session. Participants were also asked to write self-evaluations of their performance during both the training and the brief mock interview; although these data were not reported, they were used as self-feedback on the strengths and weaknesses of each participant's answers and provided participants with a permanent product to have after the conclusion of the study.

After completing the training, participants engaged in post-training mock interviews with the experimenter. Data showed all five participants improved on all three of their target behaviors; two participants maintained improvements on all target behaviors at the 9-week follow-up. Three participants showed decreasing trends in smiling, appropriate posture, and appropriate answers at the 9-week follow-up and received three to five booster training sessions. One of these three participants received an additional self-management intervention because her target behavior of smiling did not increase, even after the booster training. In addition to acquiring the target behaviors, participants rated themselves as being more confident in their interview skills and less anxious during interviews, suggesting BST had good social validity.

Results from all three studies demonstrate BST can be used to effectively teach job interview skills to college students (Hollandsworth et al., 1977; Hollandsworth, et al., 1978; Stocco, et al., 2017). Although promising, all three studies used a trained experimenter to implement BST. In the naturalistic setting, CCs might not have the luxury of having trained experimenters or experienced staff on hand to provide personalized job interview skills training. For example, in a medium sized college campus with a typical student population of 5,000 to 10,000, there are, on average, four full time staff at the CC; in a large college campus (10,000 to 20,000 students), there are typically six full time staff (Koc & Tsang, 2015).

To distribute tasks and reduce costs, many CCs employ college students as peer mentors or advisors who can provide additional services similar to full time staff (Lenz & Panke, 2001; Winston & Ender, 1988). Currently, several universities require extensive training to prepare college students to be successful peer mentors. For example, The

Florida State University's comprehensive training program for peer advisors consists of more than 100 hours, Auburn University requires a 50-hour training program, and Syracuse University lists a 56-hour training program that spans across one year (Lenz & Panke, 2001). However, none of these programs explicitly state the methods used to train peer advisors; BST might substantially reduce the time required to adequately train peer mentors. Because BST has been shown to successfully teach college students job interview skills, it might be especially beneficial to use BST to train peer mentors to use BST to teach students job interview skills. Although no research specific to this question has been conducted, not surprisingly, the most effective training method to properly train other paraprofessionals, such as caregivers and parents, to implement BST is BST.

#### **Train the Trainer: BST to Teach the Use of BST**

Presently, two studies describe the use of BST to train caregivers to use BST to teach social skills to children with disabilities. Stewart et al. (2007) used BST to teach a mother, along with her daughter, to use BST to teach her son specific social skills (e.g., asking whether the other person is still interested in the topic of conversation). The mother was legally blind, which necessitated her daughter to implement tasks that required visual acuity. Experimenters modeled the components, provided opportunities for the trainers (i.e., mother and daughter) to practice, and gave immediate feedback on trainers' performance. First, experimenters provided the trainers the following instructions: how to use BST, how to present instructions to the learner (the son), and how to arrange opportunities for the learner to engage in the target behavior. Second, a graduate student and undergraduate student modeled each of the three steps. Third, the

trainers rehearsed implementing BST while the graduate student provided immediate feedback on their performances.

Experimenters gauged trainers' performance using a checklist of each BST component and recorded data by marking "correct" when trainers engage in the specific step and "incorrect" when trainers did not. To measure trainers' competency of providing instructions, experimenters evaluated whether the trainers provided appropriate rationales, explained the rules, consulted with one another to review any missing information, gave the learner the chance to ask questions, and prompted the learner to recite the rules. To assess trainers' modeling skills, experimenters noted whether the trainers provided the learner with a brief introduction to the modeling phase and accurately modeled each of the following skills: use of a written list of rules, appropriate eye contact, and asking for feedback from a conversational partner. Experimenters also assessed whether the trainers reviewed important segments of the modeling scenario and gave the learner opportunities to ask questions. To assess delivery of rehearsal and feedback, experimenters recorded whether the trainers provided the learner with brief introductions to the rehearsal phase, continuously observed learner's behaviors throughout the scenario, delivered immediate feedback and praise, and provided more praise than corrective feedback.

After the trainers demonstrated skill acquisition, defined as scoring 80% or higher on at least two consecutive trials, treatment integrity data were taken during the social skills intervention with the learner; trainers scored 80% or higher on correct implementation of BST for approximately 57 out of 60 trials. Interobserver agreement (IOA) was high for both trainers' and learner's performances. Post-treatment measures

of the learner's behaviors showed he increased eye contact, number of appropriate prompts to change topics, and number of inquiries about the conversational partner's interest in the conversation. The authors completed a 3-month follow up to assess the utility of BST; they conducted a phone consultation with the mother and asked her to complete a written evaluation of the treatment outcome using a 4-point rating scale. Although the trainers' and learner's skill maintenance were not directly assessed or observed, the mother reported her satisfaction with the training and noted sustained improvement in her son's social skills. The authors concluded that training family members to implement BST is advantageous because family members might be able to use it to address future problem behaviors or skills deficits, reducing the need for the constant presence of a professional. These results suggest BST could be used to train CC staff and peer mentors to use BST to teach college students job interview skills and teach future staff and peer mentors to use BST. This could establish an on-going systematic training model for staff members and reduce the need for specially trained professionals.

More recently, Dogan, King, Fischetti, Lake, Matthews, and Warzak (2017) replicated and extended the study conducted by Stewart et al. (2007). Participants were four parents who were taught to use BST to teach their respective children social skills. During baseline, parents were provided with one vignette and an instruction sheet that listed the name of each skill and the steps (described below) and parents were asked to teach their children the specified social skill (also described below). The experimenters recorded the number of steps in which the child correctly engaged. To ensure that the child had sufficient opportunity to demonstrate social skills, when the parent did not

properly provide an opportunity for the child to engage in a step, the experimenter intervened using a pre-written script and created the opportunity.

Parent training began with the experimenter reviewing BST steps and instructing parents how to correctly implement each step. The authors created a BST handout for the study that outlined the steps for each BST component. For the instruction component, parents were asked to engage in four steps: state the rationale, state all steps in the skill, offer the child the chance to ask questions, and give a brief quiz. For the modeling component, parents were asked to complete five steps: introduce the phase, read the vignette, demonstrate the skill, review the modeled steps, and offer the child the chance to ask questions. For the rehearsal component, parents were asked to complete two steps: introduce the phase and provide opportunity to rehearse. For the feedback component, four criteria were outlined: provide immediate feedback, provide behavior specific feedback, offer more praise than corrective feedback, and repeat rehearsal as needed.

Next, the experimenters modeled the use of BST steps as the parent observed. In the second part of modeling, the parent took on the role of the child as the experimenter modeled the BST steps - first, in its entirety and second, step-by-step. In the rehearsal phase, the parent became the trainer and the experimenter took on the role of the child. After rehearsal, the experimenter provided feedback on the parent's performance. To complete the training, parents were required to correctly demonstrate all required steps when prompted, correctly complete 80% or more of the teaching steps across three consecutive trials using three different vignettes during the intervention and maintenance phases. If parents did not meet these criteria, they completed the training booster session, which consisted of the rehearsal and feedback components. Maintenance probes were

conducted if there was a time gap of more than one day between the training session and the post-training session. During this phase, the rehearsal component was repeated using novel vignettes. If parents failed to meet criteria after training booster sessions, parents had to repeat the training.

During the intervention phase and after completing parent training, parents were asked to use BST to teach their children social skills. Parents were required to correctly teach 80% or more of the teaching steps across three trials and their child had to correctly engage in at least 80% of steps across three trials to complete the post-training phase. If the parent failed to meet the criterion, three additional trials were conducted and parents were required to mark each step they completed; one parent had to do to this once and one parent did this twice. If the child failed to meet the criterion, two additional trials were conducted; three children had to do this once. Two social skills were targeted for the study: joining in a conversation (used during training) and asking for help (used during generalization probe). The primary dependent measure was the percentage of steps the parents correctly completed. The secondary dependent measure was the number of social skills steps in which the child correctly engaged. During generalization probe session, parents were given the BST handout, social skill steps, and a novel vignette and were asked to teach their children the “asking for help” skill. These sessions were conducted at the end of baseline data collection, training sessions, post-training sessions, and during follow up.

Results showed parents successfully used BST to teach their children social skills and the parents’ correct use of BST maintained and generalized to teaching other social skills. Parents also implemented BST with moderate to high accuracy in a short period of

time; the longest training phase consisted of three 2-hour sessions. The authors argued that the ease of BST training could allow non-professionals such as caregivers to implement social skills training in various settings.

### **Summary and Current Study**

Although an imprecise measure, job interviews continue to be the assessment method employers use most to evaluate potential applicants and make hiring decisions (Macan, 2009). Hollandsworth et al. (1979) suggested that the skills of providing appropriate content and answers during the job interview appear to be the most important variable. A significant proportion of college students are already seeking information and interview skills assistance from their CCs. However, with little published research and varying methods of training, we have no way of evaluating whether CCs' typical approach would be considered best practices for skills training. Indeed, the discrepancy between the number of college students seeking assistance with job interview skills and the number of employers dissatisfied with college graduate applicants' job interview skills suggests room for improvement. Hollandsworth et al. (1978) and Stocco et al. (2017) demonstrated that BST can be used to teach interview skills to college students and that the acquired skills maintain over time and generalize to real job interviews and job offers. Dogan et al. (2017) provided a step-by-step analysis of each BST component used to train parents to implement BST to teach their children social skills. To date, no one has evaluated the use of BST to teach CC staff and peer mentors to use BST to teach college students job interview skills. This study will adapt methodologies from Dogan et al. (2017) to create a step-by-step BST training guide for teaching job interview skills. The purpose of this study is to evaluate the use of BST to train CC staff and peer mentors



to effectively use BST to teach college students job interview skills, specifically appropriate content and answers.

## APPENDIX B: PROPOSAL LITERATURE REVIEW REFERENCES

Abel, J. R., Deitz, R., & Su, Y. (2014). Are recent college graduates finding good jobs? *Current Issues in Economics and Finance*, 20(1).

Association of American Colleges & Universities. (2015). *Falling short? College learning and career success*. Retrieved from <https://www.aacu.org/sites/default/files/files/LEAP/2015employerstudentsurvey.pdf>

Barrick, M. R., Shaffer, J. A., & DeGrassi, S. W. (2009). What you see may not be what you get: Relationships among self-presentation tactics and ratings of interview and job performance. *Journal of Applied Psychology*, 94, 1394-1411.  
doi:10.1037/a0016532

Charisiou, J., Jackson, H. J., Boyle, G. J., Burgess, P. M., Minas, I. H., & Joshua, S. D. (1989). Which employment interview skills best predict the employability of schizophrenic patients?. *Psychological Reports*, 64(3), 683-694.  
doi:10.2466/pr0.1989.64.3.683

Davis, A., Kimball, W., & Gould, E. (2015). The Class of 2015: Despite an Improving Economy, Young Grads Still Face an Uphill Climb. *Economic Policy Institute*. Retrieved from <http://www.epi.org/publication/the-class-of-2015>.

- Dogan, R., King, M., Fischetti, A., Lake, C.M., Mathews, T., & Warzak, W. (2017). Parent-implemented behavioral skills training of social skills. *Journal of Applied Behavior Analysis, 50*(4), 805-818. doi:<https://doi.org/10.1002/jaba.411>
- Furman, W., Geller, M., Simon, S. J., & Kelly, J. A. (1979). The use of a behavior rehearsal procedure for teaching job-interviewing skills to psychiatric patients. *Behavior Therapy, 10*(2), 157-167. doi: [http://dx.doi.org/10.1016/S0005-7894\(79\)80033-7](http://dx.doi.org/10.1016/S0005-7894(79)80033-7)
- Gunby, K. V., Carr, J. E., & LeBlanc, L.A. (2010). Teaching abduction-prevention skills to children with autism. *Journal of Applied Behavior Analysis, 43*(1), 107-112. doi:10.1901/jaba.2010.43-107
- Hall, C., Sheldon-Wildgen, J., & Sherman, J. A. (1980). Teaching job interview skills to retarded clients. *Journal of Applied Behavior Analysis, 13*(3), 433-442. doi:10.1901/jaba.1980.13-433
- Himle, M. B., Miltenberger, R. G., Flessner, C., & Gatheridge, B. (2004). Teaching safety skills to children to prevent gun play. *Journal of Applied Behavior Analysis, 37*(1), 1-9. doi: 10.1901/jaba.2004.37-1
- Himle, M. B., Miltenberger, R. G., Gatheridge, B. J., & Flessner, C. A. (2004). An evaluation of two procedures for training skills to prevent gun play in children. *Pediatrics, 113*(1), 70-77.

- Hollandsworth, J. G., Dressel, M. E., & Stevens, J. (1977). Use of behavioral versus traditional procedures for increasing job interview skills. *Journal of Counseling Psychology, 24*(6), 503-510. doi:<http://dx.doi.org/10.1037/0022-0167.24.6.503>
- Hollandsworth, J. G., Glazeski, R. C., & Dressel, M. E. (1978). Use of social-skills training in the treatment of extreme anxiety and deficient verbal skills in the job-interview setting. *Journal of Applied Behavior Analysis, 11*(2), 259-269. doi:10.1901/jaba.1978.11-259
- Hollandsworth, J. G., Kazelskis, R., Stevens, J., & Dressel, M. E. (1979). Relative contributions of verbal, articulative, and nonverbal communication to employment decisions in the job interview setting. *Personnel Psychology, 32*(2), 359-367. doi:10.1111/j.1744-6570.1979.tb02140.x
- Imada, A. S., & Hakel, M. D. (1977). Influence of nonverbal communication and rater proximity on impressions and decisions in simulated employment interviews. *Journal of Applied Psychology, 62*(3), 295-300. doi:<http://dx.doi.org/10.1037/0021-9010.62.3.295>
- Iwata, B. A., Wallace, M. D., Kahng, S., Lindberg, J. S., Roscoe, E. M., Connors, J., ... & Worsdell, A. S. (2000). Skill acquisition in the implementation of functional analysis methodology. *Journal of Applied Behavior Analysis, 33*(2), 181-194. doi:10.1901/jaba.2000.33-181
- Johnston, J. M., & Pennypacker, H. S. (2009). *Strategies and tactics of behavioral research*. New York, NY: Routledge.

- Kelly, J. A., Laughlin, C., Claiborne, M., & Patterson, J. (1979). A group procedure for teaching job interviewing skills to formerly hospitalized psychiatric patients. *Behavior Therapy, 10*(3), 299-310. doi: [http://dx.doi.org/10.1016/S0005-7894\(79\)80020-9](http://dx.doi.org/10.1016/S0005-7894(79)80020-9)
- Kelly, J. A., Wildman, B. G., & Berler, E. S. (1980). Small group behavioral training to improve the job interview skills repertoire of mildly retarded adolescents. *Journal of Applied Behavior Analysis, 13*(3), 461-471. doi:10.1901/jaba.1980.13-461
- Koc, E., & Tsang, K. (2015, February). The university commitment to career services. *NACE Journal, 16* – 22.
- Latham, V. M. (1987). Interviewee training: A review of some empirical literature. *Journal of Career Development, 14*, 96-107. doi:10.1177/089484538701400204
- Lavie, T., & Sturmey, P. (2002). Training staff to conduct a paired-stimulus preference assessment. *Journal of Applied Behavior Analysis, 35*(2), 209-211. doi:10.1901/jaba.2002.35-209
- Lenz, J. G., & Panke, J. (2001). *Paraprofessionals in Career Services*. Technical Report. Retrieved from [http://career.fsu.edu/content/download/223083/1906216/TechRept\\_32\\_200106.pdf](http://career.fsu.edu/content/download/223083/1906216/TechRept_32_200106.pdf)
- Macan, T. (2009). The employment interview: A review of current studies and directions for future research. *Human Resource Management Review, 19*, 203-218. doi:10.1016/j.hrmr.2009.03.006

- Miles, N. I., & Wilder, D. A. (2009). The effects of behavioral skills training on caregiver implementation of guided compliance. *Journal of Applied Behavior Analysis, 42*(2), 405-410. doi:10.1901/jaba.2009.42-405
- Miltenberger, R. G. (2011). *Behavior modification: Principles and procedures* (5<sup>th</sup> ed.). Belmont, CA: Cengage Learning.
- Minkin, N., Braukmann, C. J., Minkin, B. L., Timbers, G. D., Timbers, B. J., Fixsen, D. L., ... & Wolf, M. M. (1976). The social validation and training of conversational skills. *Journal of Applied Behavior Analysis, 9*(2), 127-139. doi:10.1901/jaba.1976.9-127
- National Association of Colleges and Employers. (2014). *The class of 2014 student survey report*. Retrieved from <http://www.naceweb.org/2012-student-survey.aspx>
- Normand, M. P. (2016). Less is more: Psychologists can learn more by studying fewer people. *Frontiers in Psychology, 7*. doi:10.3389/fpsyg.2016.00934
- PayScale. (2016). *2016 workforce-skills preparedness report*. Retrieved from <http://www.payscale.com/data-packages/job-skills>
- Prazak, J. A. (1969). Learning job-seeking interview skills. *Behavioral counseling: Cases and techniques*. New York: Holt, Rinehart & Winston, 414-428.
- Schloss, P. J., Santoro, C., Wood, C. E., & Bedner, M. J. (1988). A comparison of peer-directed and teacher-directed employment interview training for mentally retarded adults. *Journal of Applied Behavior Analysis, 21*(1), 97-102. doi:10.1901/jaba.1988.21-97

- Speas, C. M. (1979). Job-seeking interview skills training: A comparison of four instructional techniques. *Journal of Counseling Psychology, 26*(5), 405.  
doi:<http://dx.doi.org/10.1037/0022-0167.26.5.405>
- Stewart, K. K., Carr, J. E., & LeBlanc, L. A. (2007). Evaluation of family-implemented behavioral skills training for teaching social skills to a child with Asperger's disorder. *Clinical Case Studies, 6*(3), 252-262. doi:10.1177/1534650106286940
- Stocco, C. S., Thompson, R. H., Hart, J. M., & Soriano, H. L. (2017). Improving the interview skills of college students using behavioral skills training. *Journal of Applied Behavior Analysis, 50*(3), 495-510. doi:<https://doi.org/10.1002/jaba.385>
- The Chronicle of Higher Education and Marketplace (2013). *Survey of employers who hire recent college graduates with bachelor's degrees*. Retrieved from <http://chronicle.com/items/biz/pdf/Employers%20Survey%20Annotated%20Instrument.pdf>
- The U.S. Equal Employment Opportunity Commission. (2005). *Job applicants and the Americans with disabilities act*. Retrieved from <https://www.eeoc.gov/facts/jobapplicant.html>
- Venardos, M. G., & Harris, M. B. (1973). Job interview training with rehabilitation clients: A comparison of videotape and role-playing procedures. *Journal of Applied Psychology, 58*(3), 365. doi:<http://dx.doi.org/10.1037/h0036267>

Winston, R. B., & Ender, S. C. (1988). Use of student paraprofessionals in divisions of college student affairs. *Journal of Counseling & Development*, 66(10), 466-473.

doi:10.1002/j.1556-6676.1988.tb00790.x

Yeaton, W. H., & Bailey, J. S. (1978). Teaching pedestrian safety skills to young children: An analysis and one-year followup. *Journal of Applied Behavior*

*Analysis*, 11(3), 315-329. doi:10.1901/jaba.1978.11-315