12-3-2012

A Behavioral Analysis of Counselor Supervision: A Multiple Baseline Design

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A BEHAVIORAL ANALYSIS OF COUNSELOR SUPERVISION: A MULTIPLE BASELINE DESIGN

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DISSERTATION

Submitted in partial fulfillment of the requirements

for the degree of Doctor of Philosophy in Education in Counseling

in the Graduate School of the

University of Missouri-St. Louis, December 2012

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Abstract

This paper consists of a concurrent multiple baseline across participants study that measured the effects of behavior analytic techniques to teach three counselor trainees basic counseling skills. The literature surrounding the development of basic counseling skills is reviewed in addition to the use of single case designs in counseling and counselor supervision. The literature surrounding combining behavior analysis and counseling research methodologies is also examined. Results indicated that a behavior analytic approach to basic skills training was an effective means for increasing targeted basic counseling skills. The supervisory working alliance between the principal investigator and all participants was measured and was consistently rated very high throughout the course of the study, and implications for intensive skills training are discussed in light of a strong working alliance between the supervisor and supervisees. Behavior analytic learning techniques that may have impacted supervisee learning in this study are also discussed. One unexpected finding is that two participants in the study were noted to lose skills during baseline before beginning the intervention phase. In addition, the use of asking open questions and paraphrasing were the two easiest basic skills to acquire while the use of silence was the most difficult counseling skill for trainees to acquire.

CHAPTER I: INTRODUCTION

A Behavior Analysis of Counselor Supervision: A Multiple Baseline Approach

In the fields of counseling and counselor supervision, a behavior analytic approach to counselor skill acquisition and the remediation of problems in counseling sessions has not been found in the literature. Moreover, behavior analysis and counseling theory and technique rarely meet; the two fields remain almost completely separated, even though both fields are helping professions. One of the primary goals of this study is to demonstrate that behavior analytic techniques (particularly task analysis, prompting, prompt fading, fluency trials, and homework) can be used in a counseling supervision intervention that will result in an improvement of basic counseling skills. An important vehicle for this intervention is the working alliance between the counselor supervisor and the counselor-in-training (CIT). Although a task analysis provides information about skill breakdowns or counselor skill acquisition difficulties, little can be accomplished in the context of a damaged working alliance, whether the rupture exists between the counselor and client or between the supervisor and counselor (Bordin, 1983; Horvath, 2000). Therefore, building rapport and the working alliance are of primary importance in both relationships if difficulties are reported or observed.

Microskills in Counseling

Basic attending skills in counseling, also known as counseling microskills, are the foundation of all other counseling skills, yet there has been a meager concentration in recent years surrounding how CITs acquire these skills. In order to learn higher-level techniques, such as gently confronting a client who communicates with mixed messages, reflecting meaning in a client's life, and drawing connections to themes and patterns across sessions, counselors must first demonstrate skill basics, such as the intentional use of posture, asking open questions, paraphrasing, and bringing the client into the moment versus focusing on past events. For example, the use of open-ended questions is generally exploratory or clarifying in nature and

helps clients to continue disclosing rather than giving the brief responses typically evoked by close-ended questions. The use of nonverbal behaviors on behalf of counselors is also a crucial skill, as nonverbal behaviors can be used to demonstrate support as well as to encourage clients to continue disclosing (Brems, 2001; Ivey, Bradford Ivey, & Zalaquett, 2009).

Paraphrasing, or re-stating verbal content back to the client, is a focused response in the basic skill repertoire that can be simple or more complex, depending on the nature of the paraphrase. Paraphrasing content allows the counselor to highlight something the client has said or to check for understanding. Paraphrasing feelings, also known as reflection of feeling, occurs when the counselor paraphrases using language with the purpose of conveying how the client might feel, rather than just what the client has said. One significant nonverbal counselor skill is the intentional use of posture. The intentional use of posture can be demonstrated by leaning forward to demonstrate empathic regard for the client. This basic skill is a nonverbal encourager, and similar to nodding one's head, it can help the client to continue disclosing. Furthermore, silence is one of the most evocative skills in counseling; clients will often continue to talk and disclose when what they have said has not been followed by a verbal response. The use of silence can lead to decreased likelihood of interrupting the client than verbal encouragers (Brems, 2001; Ivey et al., 2009).

Counseling and Behavior Analysis: Similarities and Differences

Within the body of literature in counseling and counselor supervision, single case designs are few and far between. Single case designs, also known as single-subject or within-subject designs, consist of participants serving as their own controls across a series of observations as well as the use of visual analysis of graphed behavior for data analysis. Group designs often compare a participant group receiving intervention to some type of control group, and often include much larger numbers of participants as well as the use of inferential statistics for data analysis. Typically, research methodology in the field of counseling is equated with group

designs rather than single case designs. Traditional group designs are not necessarily the most relevant designs to counseling practice settings, and bridging the gap between research and practice continues to be of fundamental importance in the fields of counseling and psychotherapy. Single case designs are almost exclusively utilized in behavioral research, and sometimes cognitive-behavioral therapy (CBT) research, yet rarely in counseling or counselor supervision research. In addition, the scarcity of single case designs in counseling likely has a suppressive effect on the type and number of new research questions that could be developed in the field, and increasing methodological diversity in counseling by including single case designs could augment current applied research, the base of empirical literature in the field, and the practice of counseling in clinical settings (Ellis, 1999; Lundervold & Belwood, 2000).

In the fields of research and practice, behavior analysis and counseling are typically polarized rather than united, even though both are caring professions. Both fields have much to offer each other. For example, the focus on the therapeutic and supervisory relationship has had a much increased focus in behaviorally-based therapies, including one type of psychotherapy (functional analytic psychotherapy) where the relationship between the therapist and client is the vehicle for all therapeutic change and progress, although the therapy is extremely behaviorally-based (Kohlenberg & Tsai, 1991; Tsai et al., 2009). Almost all of the original work surrounding the working alliance with clients and in supervision has been a contribution from the fields of counseling and psychotherapy (i.e.,Bordin, 1983; Rogers 1957) and this focus has begun to increase in many behaviorally-oriented therapies within the past 20 years. However, the incorporation of behavior analytic theory, research design, and technique into counseling has been less consistent. For example, the concepts of modeling, rehearsal, role-play, and feedback are concepts found in counseling literature but not the analysis of verbal behavior, prompting hierarchies, prompt-fading, fluency trials, and task analysis. Such concepts are precise ways to delineate what is effective or ineffective in sessions, as well as to augment supervisee learning

and increase supervisee independence. Other than task analysis, however, these methods can be relatively complex. One reason such methods might be rarely used is that one likely needs a basic level of understanding of behavioral concepts before learning these intermediate concepts in more advanced coursework. The foundation, however, of incorporating principles of learning into counseling and counseling supervision is firm. For example, in 1964, Truax, Carkhuff, and Douds emphasized the importance of didactic and experiential processes in counselor supervision noting that "It is natural that learning principles, to the extent that they are currently known, be applied to the acquisition and performance of therapeutic behavior" (p. 240).

Multiple Baseline Designs

Within the realm of single case design research, a variety of designs exist, but multiple baseline (MBL) designs are among the most widely used. These designs, like other single case designs, allow for participants to serve as their own controls. Moreover, MBL designs are considered rigorous experimental designs that can demonstrate treatment effects in a small amount of time with few participants. Furthermore, these designs do not require the removal and/or re-application of the treatment or intervention, such as with reversal or withdrawal designs, which is problematic in most applied research involving participants who are in need of beneficial treatment (Carr, 2005).

Two major forms of MBL designs are most frequently used, concurrent and non-concurrent. Concurrent designs assess participants simultaneously, where each participant has a baseline phase followed by an intervention phase, and baselines are staggered in relation to the introduction of the treatment phases. In non-concurrent MBL designs, each participant continues to serve as his or her own control during baseline, but the participants are not assessed simultaneously. Therefore, the concurrent design has increased methodological strength due to assessing participants successively and simultaneously rather than just successively (Carr, 2005; Harvey, May, & Kennedy, 2004).

Single case designs and MBL approaches are a good match for investigating if treatment effects are found in research, as well as investigating which components of an intervention are successful. MBL designs, while rare in the fields of counseling or counselor supervision, have been conducted, and are explored in the review of the literature. The use of single case designs could be a significant way to reduce the gap between counseling research and counseling practice. Finally, with an increased publication of single case designs in counseling, counselors might be more likely to use this methodology to track client progress or lack of progress in counseling sessions, so that interventions can be better measured, changed, and tailored by practitioners (Bangert & Baumberger, 2005; Carr, 2005; Lundervold & Belwood, 2000).

The Working Alliance in Counseling and Supervision

The working alliance between the supervisor and supervisee has become a central concept surrounding the efficacy of counselor supervision. As the therapeutic alliance in counseling and psychotherapy has gained increased attention as a foundational factor of client experience and outcome, research surrounding the supervisory alliance has increased as well. Although there are many similarities and differences between the therapeutic alliance and the supervisory alliance, one of the primary differences is the role of evaluation. Successfully managing conflicts as they occur during supervision, just as in counseling, is a necessity. Moreover, supervisors must be clear and regularly address the expectations and evaluative processes throughout supervision. Such clarity and regular review help the supervisor to better prevent role conflict and role ambiguity on the behalf of the supervisee, which can lead to negative outcomes as a result of unsuccessful supervision. Therefore, the supervisory alliance can be seen as a vehicle through which supervision is managed (Nelson & Friedlander, 2001; Nelson, Gray, Friedlander, Ladany, & Walker, 2001; Olk & Friedlander, 1992).

Due to the limited amount of literature surrounding incorporating behavior analytic techniques into counseling and counselor supervision, as well as the limited number of single case

designs, an MBL supervision design has much to offer counselor supervision research. Moreover, as the supervisory working alliance is often considered the vehicle through which successful supervision occurs, the combination of behavior analysis and counseling approaches could further augment the existing literature base. Thus, it is proposed that within the context of a strong supervisory alliance, direct behavioral skills training with a particular emphasis on teaching techniques of task analysis, prompting, prompt fading, rehearsal, role-play, feedback, fluency training, and homework will result in improvements over baseline counselor skills. In other words, a behavioral skills training intervention on the behalf of the supervisor will result in overall basic counseling skill improvement for the CIT, as measured by visual analysis of data plots of the following basic counselor skills: nonverbal posture, silence, paraphrasing, reflection of feeling, here-and-now technique, and open questions.

Statement of the Problem and Research Questions

In conclusion, there is a wide gap between the fields of counseling and behavior analysis, although both fields have specialized techniques that could truly benefit the other. Although the significance of the therapeutic alliance is a common factor, philosophical bases, therapeutic technique, and research design remain largely separate. MBL designs are widely used in behavioral research and offer a rigorous experimental approach to studying and intervening with counselors and counselor supervisors in their natural environments. In line with the current research surrounding counselor supervision, the working alliance between the CIT and supervisor are the vehicle for this change, and ratings of the alliance are graphed.

Considering the large gap in the counseling literature surrounding the use of single case designs in counseling research, the use of behavior analytic skills to augment counselor supervision, and the significance of the supervisory working alliance, the following research question has been formed: Does a behavioral skills training intervention comprised of

individualized problem task analysis and specialized teaching techniques during counseling supervision result in an improvement in the basic counseling skills of the counselor-in-training?

CHAPTER II: REVIEW OF RELATED LIERATURE

Counseling and psychotherapy practices have been encouraged to use data-based decisions and practices from clinically valid and effective approaches, with an increasing trend of this emphasis over the past 20 years (Beutler, 2000; Sobell, 1996). Furthermore, pressure from managed healthcare companies has also been a factor, who in addition to wanting brief, less expensive interventions, may require the practitioner to use interventions that have demonstrated effectiveness, such as the use of CBT for depression or anxiety. One of the primary criticisms of research in general is that the way results are presented leads to the consumption of research by other researchers, rather than practitioners, and there is still little researcher-clinician collaboration in most studies. Practitioners need methods that can be easily integrated into therapy, and as previously mentioned, single case designs are an excellent model. Regardless of how well controlled a study is, if the study lacks clinical validity, or if the outcomes cannot be readily transferred to interventions of social significance, then the research has fallen short (Bangert & Baumberger, 2005; Goldfried & Wolfe, 1998; Goldfried & Wolfe, 1996; Lundervold & Belwood, 2000).

Little support exists regarding the use of "clinical judgment," in determining the efficacy, reliability, or validity of a given intervention, and single case designs are one way to better examine components leading to immediate gains in terms of knowledge about client progress. The use of single case designs in counseling is a scientific approach to treatment evaluation versus the use of untested hypotheses, non-empirical hunches or intuition, and unintentional clinician bias. Such an approach is more flexible than group designs in terms of feasibility and its translation to everyday practice methods. Group designs generally focus on large sample sizes, set research protocols, wait-listed participants for control groups, and random assignment to groups when feasible. These designs rely on the use of inferential statistics to interpret data and

use statistically significant differences as the standard regarding scientifically rigorous methodology and analysis (Lundervold & Belwood, 2000).

The use of group designs versus single case designs in counseling research likely exists for several reasons. For example, training in the empirical foundations and clinical applications of single case designs is not a focus of many counseling graduate programs; therefore, designs that are not taught to students in graduate programs are frequently not carried over to the next generation of researchers. In addition, the use of rigorous scientific methodology has somehow become equated with the use of group designs in counseling. Misconceptions may also exist, such as that single case designs are too difficult to implement or that they lack in external validity (Ellis, 1999; Lundervold & Belwood, 2000). The use of single case designs rarely occurs outside of a behavioral framework in psychotherapy and is practically absent in counseling research. For example, in a review of research designs in the *Journal of Counseling and Development* from 1990-2001, only two single case designs were found (Bangert & Baumberger, 2005).

Even within a behavioral framework, it is the more rigorously behavioral fields, such as applied behavior analysis, clinical behavior analysis, and sometimes CBT where single case designs are published. The fields of behavior analysis and counseling are, for most purposes, separate in terms of research design and theoretical orientation. For example, in addition to a dearth of single case studies in counseling, a behavior analysis of clients, counselors, and supervisors is essentially nonexistent. Only a handful of studies over the past 30 years have combined counseling and behavior analysis regarding any of these components (i.e., McCarthy, Shaw, & Schmeck, 1986). Contrary to the practice of counseling, however, most counselors see one client at a time, not groups of clients, and single case research is well-suited for making judgments about what is effective regarding interventions and treatment components for individual clients. Such designs allow for a precise examination of which components of treatment are successful (Lundervold & Belwood, 2000).

Although more rare, the use of single case designs does have a foundation in counseling. For example, in 1965, Truax and Carkhuff used a single case design to investigate if therapist behavior could be altered experimentally within the context of a naturally occurring single psychotherapy session to produce predictable consequences. They found that lesser or greater client depth and exploration could be predicted by lesser or greater therapist demonstrated empathy and positive regard for three female clients with features of or a diagnosis of a schizophrenic disorder. Audio segments of the sessions were coded by trained student coders.

Therefore, the use of an MBL design is ideal for counseling studies since psychotherapeutic and educational interventions result in learning that cannot be undone or withdrawn. This design is also ideal for accommodating the diversity of experience and training that counselor trainees have. As CITs start at different developmental levels, an MBL design is an appropriate design to demonstrate individual growth as a response to intervention. In other words, an MBL design is suitable for reflecting individual patterns of responding and changes as a result of additional training.

Counseling, Psychotherapy, and Educational Studies Using a Multiple-Baseline Approach

Callaghan (2001) contended that there is much clinical utility in tracking client reports over the course of sessions, and that easily gathered data can be used to inform the course of therapy. In his single-case design example, scores from the intake interview and scores throughout treatment can be plotted on a simple graph where the therapist can visually observe the increasing or decreasing trend of scores the client self-reports. In the author's example, scores of a client diagnosed with dysthymia and recurrent severe major depressive disorder with vegetative symptoms were recorded using the Beck Depression Inventory and Daily Mood Scale. From the client's first session to a four-week follow up, the client reported dramatic decreases in depressive behaviors and made clinically significant gains in regard to increases in daily functioning. The author also makes the case that idiographic strategies, such as operationalizing

and transforming client complaints into intervention targets using Likert-type scales could be easily incorporated into therapy. Therefore, self-report measures could be combined with idiographic measures. Tracking improvements in therapy is crucial, in addition to the identification of clients who are not making gains in therapy or have stagnated, so that the therapist can accordingly make changes. Such tracking would also prove useful as a way to document that a phase change on a graph represents a shift in therapy from a lack of therapeutic success to successful gains (Callaghan, 2001). One particular form of psychotherapy, functional analytic psychotherapy, readily lends itself to single case data tracking through its focus on the operationalization and tracking of client improvements and behavior targeted for change as well as the generalization of learned interpersonal communication skills (Kohlenberg & Tsai, 1991).

Although research studies using single case designs in psychotherapy, and particularly in counseling are few, peer reviewed and well-controlled studies have been conducted and are available for review. Many studies are multi-method, such as those that combine self-report methods with practitioner rating scales. Self-reports, interview results, and rating scales, however, do not include direct observation and/or the coding of live sessions, and therefore have the potential for less strength. Although concurrent MBL designs are stronger and preferred over non-concurrent MBL designs, a variety of studies using either methodology have been published for diverse client ages, presenting symptoms or disorders, treatment techniques, and settings. This paper examines several studies that are diverse in nature but a review of all MBL designs in educational and clinical settings is beyond the scope of this paper.

In one concurrent MBL design, adolescents with panic disorder with agoraphobia were successfully treated with CBT, where none of the adolescents at follow-up any longer met the criteria for panic disorder as assessed by two different measures. Participants in this study reported reduced agoraphobic avoidance and decreased negative mood states. Researchers also found that the participants demonstrated increased self-efficacy in regard to coping with future

panic attacks. Techniques of problem-solving training, praise and social reinforcement, self-instruction training, and cognitive restructuring, among other techniques, were utilized (Ollendick, 1995). Another MBL study also found overall successful results in applying emotionally-focused CBT for 4 children with an anxiety disorder. In this single case design, the majority of participants demonstrated improvements in anxiety symptoms, improvements in their overall functioning, and increased abilities in the understanding of and self-regulation of their emotions (Suveg, Kendall, Comer & Robin, 2006).

The amelioration of depression has also been evaluated using a non-concurrent MBL design, where four participants showed clinically significant improvements in depression symptoms after participating in metacognitive therapy for recurrent or persistent (moderate to severe) depression. Results were maintained over a three and six month follow-up period, which is a strength of this study, particularly considering the intensity of depression treated (Wells et al., 2007). In another non-concurrent MBL study, researchers implemented a goal chart and reinforcement intervention with inner city general education students to improve journal writing (Winn, Skinner, Allin, & Hawkins, 2004). In an MBL study utilizing self-reports in a high school setting, participants were trained in anxiety management, problem solving skills, and cognitive restructuring for a stress inoculation program to reduce symptoms of anxiety. Significant improvements were found in regard to pre- and post-assessments of anger and anxiety and five out of the 6 participants demonstrated improvement in anxiety scores after beginning the intervention. Results were maintained at follow-up for 3 of 5 participants with data available (Hains, 1992). Another MBL study of 3 pediatric medical residents found that patient interviewing behaviors were improved over baseline after feedback from patient-resident recordings was introduced. Three resident behaviors of asking open questions, asking parents to repeat back instructions given to them, and making positive comments to the parents were selected for their relation to increasing treatment adherence and improving patient satisfaction.

Gains made were maintained at a six-month follow-up. This study investigated the acquisition of one interviewing behavior at a time but suggested that other studies could investigate the use of teaching multiple interviewing behaviors (Bryson-Brockmann & Fischbein, 1995).

In summary, while there are many diverse studies using single case design and MBL design that are available for review, most of these studies are published in the educational literature or in the psychotherapy literature using a CBT focus, and very few are published in counseling. One strength of the available studies is the diversity of client problems that have been responsive to behavioral intervention, such as panic, depression, writing skills, anxiety, stress reduction, and interviewing skills. In addition, the diversity of clients and settings in which these studies took place is significant. For example, young children, adolescents, and adults have been studied and target behaviors have been carried out in outpatient settings, such as a clinician's office or in the classroom, which is a more naturalistic and realistic setting for intervening with higher-functioning participants. A strength of several of these studies is that gains were measured and maintained after a follow-up period. A drawback to many single case studies in psychotherapy is the over-reliance on self-report measures from clients rather than direct observation; self-report measures do not have the methodological strength of direct observation.

Review of Research on Basic Counseling Skills

Although the development of basic counseling skills is a fundamental part of counselor training programs, little has been published surrounding basic skill development in the past 20 years. Counseling microskills can be seen originally as a derivative of the work of Rogers (1957), whose core conditions of empathy, genuineness, and unconditional positive regard are generally considered essential basic counseling skills (i.e., Ivey et al., 2009). In counseling and psychotherapy these skills are one of the most significant additions to the fields along with Rogers' advocacy for conducting research in counseling. After Rogers paved the way for investigating the conditions responsible for producing therapeutic change in clients as well

increasing interest and research surrounding the therapeutic relationship, other researchers began to investigate basic counseling skills and how to teach these microskills to students (i.e., Baker, Daniels, & Greeley, 1990; Carkhuff & Truax, 1965; Hill 1990; Truax & Carkhuff, 1965; Truax, Carkhuff, & Douds 1964). Although there is a large historical basis for teaching microskills to counselor trainees, respectively little has been published in recent years.

Training courses and supervision account for the bulk of how most basic skills training studies have been carried out. In one study, researchers explored the efficacy of a training course in teaching basic counseling skills to professionals with diverse levels of counseling experience. This study focused on a didactic-experiential training model with a concentration on the skills of client respect, empathy, and genuineness using a combination of video analysis and reporting measures. The results suggest that the training course significantly improved counselor skills, theoretical knowledge, and self-perception of counselor abilities more than waitlisted participants; results were maintained for nine months following the intervention. Also of interest in this study was that although verbal basic skills increased during and following the training course, that nonverbal attending behavior was not a specific target and did not improve (Rushton & Davis, 1992). Thus, additional research should be directed toward the investigation of teaching nonverbal microskills in addition to verbal microskills.

In another study, researchers investigated the acquisition of counseling basic skills in master's-level students through a training course as compared to a control group of students enrolled in counseling graduate coursework but who had not yet taken a basic skills course. Student level of cognitive complexity, or the sophistication of conceptualization and information-processing, was measured. Results suggested that students who had taken the basic skills course scored significantly higher in terms of cognitive complexity, as well as that supervised experiential activities related to the acquisition of basic counseling skills enhanced this development, such as role play and rehearsal of basic skills. In particular, the authors of this

study recommended increased focus on supervised experiential-training activities for practicum CITs (Duys & Hedstrom, 2000). Basic counseling skills were not delineated or defined in this study, however, so future research could be augmented by listing and operationally defining which specific skills are the focus of such training activities.

Another recent study utilized an inventory to measure the changes that occur in the self-efficacy beliefs of first-year CITs learning basic skills and case conceptualization via instruction and supervision. This study also investigated how perceptions of skills change along the course of training for neophyte counselors regarding microskills, challenging client behaviors, process, self-awareness of values, and cultural competence. Overall efficacy was found to be significant although relationships among the efficacy factors were inconsistent. Out of these factors, efficacy in microskills was found to have a significant difference over the period; process and challenging client behavior showed a trend but not a significant difference, culture was insignificant, and self-awareness of values demonstrated a declining relationship between inventory administrations. One unanticipated finding in this study was that the global scores of five participants declined during the study; the authors posited that events such as personal stress or over-concern with effectiveness that were not addressed in training or supervision was the most plausible reason (Kozina, Grabovari, De Stefano, & Drapeau, 2010). Thus, using supervision as a way to process stress or other occurrences could possibly strengthen the working alliance as well as increase CIT efficacy.

Another study investigated the acquisition of specific basic microskills and advanced microskills as measured through a skill rating system. Basic microskills were listed as asking questions, paraphrasing content, minimal encouragers, summarizing, situation clarification, reflection of feeling, and concreteness; advanced microskills were confrontation, advanced accurate empathy, positive relabeling, self-disclosure, confrontation, and directness. Consistent with other research, the authors of this study found that students learning basic microskills and

advanced microskills scored better than students in a control group not learning these skills. This study, however, investigated the acquisition of basic and advanced microskills using a specific approach rooted in learning theory. New students to the program scored low on all basic microskills except for asking questions. Whether the questions were open questions or closed questions was not delineated in this study, so additional research could investigate if the rate of open questions increases with training or if the use of open questions increases as a function of decreasing closed questions. Specifically, this counseling training program focused on the use of information, modeling, rehearsal, role-play, and feedback as the basis for the training model (Kuntze, van der Molen, & Born, 2009). This study has the advantage of listing and describing the basic skills measured and within-group and between-group comparisons were performed. Furthermore, this study shares training components used in many behavioral training programs with an emphasis on using an information, modeling, rehearsal, role-play, and feedback model.

Review of Relevant Research on Counselor Supervision

Although supervisor and supervisee characteristics have been examined and are loosely associated with supervisee performance in counseling, research in counselor supervision is less clear about what behavior on behalf of the supervisor other than the supervisory alliance accounts for supervisee gains. Researchers have noted that there is more ambiguity surrounding what is occurring in supervision that relates to supervisee learning, and that supervisor personality characteristics are likely mediated by supervisor actions in supervision sessions. Furthermore, it has been suggested that that supervisor actions playing a strong role in supervisee development has been acknowledged but the measurement of these actions in the research is lacking (Carey & Lanning,1993).

Another focus in the counselor supervision literature is counselor effectiveness as a result of supervisory focus on didactic instruction, an experiential focus, or some combination in a short-term study. Goldfarb (1978) found that a didactic focus, experiential focus, or combination

of the two approaches in counselor supervision produced similar levels of effectiveness for neophyte counselors. More specifically, a focus high in didactic and low in experiential, a focus high in both, and a focus high in experiential and low in didactic produced relatively equivalent outcomes of counselor effectiveness in the use of basic skills. These focuses produced significantly better outcomes than the two control groups of low didactic and experiential focus as well as a group that received no supervision. The author found that outside of significance that the group with the high didactic-low experiential focus was ranked above the high didactic-high experiential group and suggested that in terms of training neophyte counselors that a didactic focus might be more imperative. Also noted, however, was that the slight yet insignificant counselor skill increase in the high didactic group might be an appropriate trade for a possibly higher supervisor-CIT working alliance. This author also suggested that studying didactic-experiential supervision and counselor skill acquisition in conditions that more accurately resemble actual supervision practices would be an asset to the existing literature (Goldfarb, 1978).

Interpersonal Process Recall

Interpersonal Process Recall (IPR; Kagan, Schauble, Resnikoff, Danish, & Krathwohl, 1969) is one of the most widely used formats for conducting supervision in counseling. This method is generally used in conjunction with video recordings, where the supervisor and CIT watch playback of the counseling session together. The supervisee then engages in stimulated recall, where she or he recalls thoughts, feelings, images, expectations, and the general patterns of interactions that occurred during the actual session. The purpose of the technique is generally used as a training activity to increase interpersonal and counseling skills for CITs through re-experiencing in supervision what was experienced during the counseling session. Either the CIT pauses playback to engage in IPR, or the supervisor encourages the CIT to pause playback for IPR as he or she may have noticed an opportunity or heightened emotions with either the CIT or

the client (Kagan et al., 1969; Kagan, Krathwohl, & Miller, 1963). Kagan et al. (1969) noted that appropriate times to stop playback and engage in IPR include:

> Some examples are abrupt shifts in theme during the interview; shifts in body posture; changes in voice level, tone, or pace; use of vocabulary which describes intense affect; changes in visual focus (especially glances at the counselor after the client has made a statement); instances in which either person clearly misinterpreted what the other said, or appeared not to hear the other; possible analogous communication ('my counselor at *school* gets me angry'); inappropriate affect, such as a laugh following a serious comment (p. 369).

Therefore, IPR is a very adaptable tool that can be used as a basic format to investigate and explore the underlying dynamics and interactions occurring during the sessions, as well as a teaching tool for counselor interpersonal change. Like many training techniques, it was originally used to facilitate client and counselor growth and has since been applied to supervision to facilitate supervisee growth. Similar to the use in counseling settings, the use of IPR in supervision allows for in-depth study of supervisee behavior. Some of the original research with IPR noted that changes and growth were demonstrated with the client admitting discomfort, differentiating stimuli intrapersonally and interpersonaly (versus over-generalizing), committing to change, and changing his or her behavior (Kagan et al., 1969; Kagan & Schauble, 1969).

One study of IPR versus audiotaped traditional supervision investigated effects via supervision with doctoral student supervisors, master's-level CITs, and undergraduate psychology counselees. Researchers discovered that IPR was not found to be more successful than traditional supervision for significantly increasing counselor empathic understanding, supervisor ratings of counselor performance, or client satisfaction via self-report and rating measures. This study was carried out before video-recording of everyday life and client and supervision sessions was mainstream, however, and sensitivity to being video-recorded may have been more prominent at

this time. The study did note that sensitivity to recoding in the form of client self-exploration inhibition dissipated over time (Kingdon, 1975).

Supervisory Role Models

Supervisors also vary according to the role model that they use to structure their supervision approach. One of the primary role models, if not the primary role model, is the discrimination model (Bernard, 1979). This model allows for the increased flexibility for the supervisor to alternate the major roles of teacher, counselor, and consultant in supervision sessions. In other words, counselor supervisors are able to vary the three primary roles of instructor, counselor, and consultant as a function of supervisee growth and needs. This model allows for supervisors to offer more structure and direct instruction for neophyte counselors and the flexibility for more of a consultant role for more experienced or advanced supervisees. Furthermore, within the course of supervision, the supervisor might find that a more direct or structured approach is used in the beginning of supervision and that in later sessions a more consultative approach is used (Bernard, 1979). Indeed, research has provided support for supervisor use of more directive teaching approaches in the early stages of counselor development and more consultative approaches with more advanced supervisees (Bear & Kivlighan, 1994; Heppner & Roehlke, 1984; Wiley & Ray, 1986). Regardless of the role model used to conceptualize and frame supervision, a primary focus of supervision must be the supervisory working alliance. This alliance has similarities as well as differences from the therapeutic working alliance. The supervisory working alliance is comprised of three major parts: agreement on tasks, agreement on goals, and the bond between the supervisor and supervisee (Bordin, 1983).

Supervisory Working Alliance: The Foundation

It has been well documented in the research literature that the alliance between the counselor and client, as well as between the counselor and supervisor, is one of the most significant factors, if not the most significant factor, in change (i.e., Beutler 2000; Horvath, Del

Re, Fluckiger, & Symonds, 2011; Kohlenberg and Tsai 1991; Tsai et al., 2009). Newer behavior therapies applied to counseling and psychotherapy, such as Functional Analytic Psychotherapy (Kohlenberg & Tsai, 1991), Acceptance and Commitment Therapy (Hayes, Strosahl, & Wilson, 1999), and Dialectical Behavior Therapy (Linehan, 1993) are therapies derived from radical behaviorism that focus on the therapeutic alliance, and have resulted in change and progress with extremely therapeutically resistant clients. For example, clients with personality disorders, which were thought to be untreatable 20 years ago, are making gains in treatment; not so long ago in the context of the history of counseling and psychotherapy. The role of emotion in behaviorally-based therapies, and in supervision in particular, has been more ambiguous in its history. Contemporary behavior therapies and CBTs, however, place more emphasis about attending to and/or focusing on emotion or emotion expressed within the context of the therapeutic alliance. In some behavioral psychotherapies, such as functional analytic psychotherapy, expressed emotion within the context of the therapeutic alliance is a crucial part of therapeutic success. Following the tradition of researching findings from psychotherapeutic literature to investigate applications to supervision, more emphasis lately has been placed on studying the role of emotion in behaviorally-based psychotherapy supervision (Follette, & Batten, 2000; Follette, Naugle, & Callaghan, 1996; Kohlenberg & Tsai, 1991).

In functional analytic psychotherapy supervision, the supervisor responds to in the moment clinical behaviors of the supervisee, just as the therapist responds to in the moment clinical behaviors of the client. Such behaviors are generally target behaviors, which could be maladaptive and responded to contingently, improvements that should be reinforced naturally and responded to contingently, or behaviors that account for or are descriptions of generalization from a therapeutic to a non-therapeutic setting (Kohlenberg & Tsai, 1991; Tsai et al., 2009; Vandenberghe, 2009). Researchers have suggested that because of previous ambiguity in behavioral supervision, because of the crucial role of emotion in many contemporary behavior

therapies, and since supervision is an appropriate setting to focus on emotional processing in the service of counselor development, that the role of emotion and the quality of the working alliance in behaviorally-based therapies are also crucial. Supervision then, is a vehicle where the supervisor can evoke therapist emotions as they relate to clinical material, to assist therapist development (Follette & Batten, 2000).

In order to have success in counselor supervision, with any variety of goals or tasks, the supervisor must first attend to the working alliance with the counselor. The notion of the therapeutic alliance was grown out of the work of Rogers, through the core conditions of empathy, genuineness, and unconditional positive regard that paved the way to bring focus to the relationship between the counselor and client (Rogers, 1957; Rogers, 2007). Such work developed in counseling research, assisted by Bordin (1983), who helped to transfer the relationship focus from counseling to supervision. The three major components of his research consisted of agreement on tasks, agreement on goals, and the bond between the counselor and client and supervisor and counselor. The literature surrounding the working alliance in supervision is beginning to become as prolific and as central of a concept in supervision as the therapeutic alliance is in therapy (Holloway & Neufeldt, 1995; Horvath et al., 2011; Horvath, 2000; Patton & Kivlighan, 1997).

Although a complete review of counselor supervision is beyond the scope of this dissertation, there are several primary factors that should be noted in regard to primary causes of problems with the supervisory working alliance. Building the working alliance early in supervision can form a basis upon which the supervisor is able to manage conflict successfully. Evaluation is a necessary part of supervision, and is a leading cause of problems if surrounding expectations are not addressed early and consistently throughout supervision (Nelson et al., 2001). Role induction is one of the primary ways to reduce negative experiences in supervision. This process involves having clear expectations for the supervisees regarding their role,

responsibilities, tasks, and the criteria against which they will be evaluated. Such explanations help avoid the problems of role ambiguity and role conflict. Role ambiguity occurs when the supervisee is unsure of roles or expectations, and role conflict occurs when the supervisee is asked to carry out a task or perform a role that is contradictory to their personal judgment. All of these problems likely result from anxiety or dissatisfaction with either the work required or from the supervision itself (Olk & Friedlander, 1992).

Research has delineated further support for these concepts, where difficulties with power and dual relationships, concepts closely related to role conflict and role ambiguity, were reported by supervisees. Supervisees have reported problems such as a lack of trust, a crucial part of a successful working alliance, and feeling a lack of warmth, attention, and understanding from their supervisor. Rather than being a negative experience for supervisees, supervision is a place where conflict and ruptures should be addressed on an ongoing basis and should be an atmosphere for a corrective emotional experience (Nelson & Friedlander, 2001).

Single Case Designs in the Study of Counselor Supervision

Although single case designs in counseling or supervision are rare, and are extremely rare in regard to counselor supervision, there is some support for such designs in the existing literature. In one single case developmental model study of counseling psychology students, supervisors met weekly for 12 weeks with their supervisees in 60 to 90 minute audiotaped sessions. In this study, supervision tapes were coded by two doctoral-level counseling students were trained to code and achieved a kappa inter-rater reliability rating of .88. Weaknesses include that no baseline data was obtained but interaction effects were observed. The data in this study was represented with a bar graph rather than a line graph, since there was no baseline and improvements over time were not measured. Therefore, additional visual analysis was precluded. The results of this study indicate that beginning supervisees were more dependent and advanced supervisees more autonomous. Supervisors were found to be more directive and structured

regarding their approach with beginning supervisees and more collaborative and collegial with more advanced supervisees (Bear & Kivlighan, 1994).

Another recent study in supervision described a non-concurrent MBL approach to study self-supervision among counselors (Dennin & Ellis, 2003). In this study, neophyte CITs were trained to set goals and measure their behavior to try to achieve improvements in the use of metaphor and in empathy skills. This study found mixed results, where increases were found for the use of metaphor, but not for empathy. Trained counseling psychology graduate student raters were used to rate transcripts of the audiotapes of the counselors' sessions; four out of the five raters were blind as to the purposes of the study. Raters achieved an initial Cohen's kappa level of .90 or greater, and raters met and/or consulted with one of the study authors to review and ask questions about the rating system and to decrease the likelihood of observer drift. In this study, treatment conditions of an empathy workshop, a placebo/control condition (case conceptualization workshop), and metaphor workshop were randomized among four participants in a non-successive manner.

Treatment effects were noted after the corresponding interventions were introduced, and not before or in other conditions. The authors categorized the metaphor self-supervision results as promising but less robust than expected, and the empathy self-supervision as unsuccessful. The authors noted that the trainees rated empathic responses as harder to understand, learn, and qualify than metaphoric responses. In addition, there was greater variability in regard to baseline use of empathy than metaphor and goals trainees set in regard to achieving empathic responses tended to be more vague. The authors concluded overall, that CITs need more structured approaches initially before self-supervision should begin, particularly in regard to defining skills, self-rating, and goal selection. Beginning CITs also need more extensive performance feedback. The authors also concluded that their assumption that CITs had had extensive training in empathy before their practicum/ internship hours may have been a faulty assumption, and that CIT basic

understanding of empathy may not have been as proficient as the authors expected (Dennin & Ellis, 2003). Therefore, in future studies, supervisors may need to highly consider how well CIT supervisees can define, self-rate, and select appropriate goals relating to empathy, and likely other basic skills.

Behavioral Concepts Relevant to Studying Supervision

This section reviews the behavioral concepts that inform this investigation and provides examples of each where necessary. These concepts include response classes, forms of learning, task analysis, and prompting.

Response Classes and Forms of Learning

An important consideration in supervision is whether one wants a broad response class or narrow response class in regard to supervisee and/or client behavior, and each of these results is obtained through one of these types of learning: rule-governed behavior and contingency-shaped behavior. Although both major forms of learning are crucial, they produce different results. Rule-governed learning results in a narrow response class, rather than broad and generalized response classes, but is generally easier to produce. Such learning is the result of instruction-based learning. Instructions can be: in the form of text, such as reading about counseling skills and then applying them during the session: learned through lecture, such as taking notes during a lecture or presentation and then applying them; or learning that occurs from doing what one is told or asked to do. Examples of the latter instruction include getting feedback from a supervisor or professor on what to do differently or which skills should be changed. Contingency-shaped learning, or experiential learning, occurs through coming into direct contact with consequences, such as reinforcement, without being told specifically what to do (Cooper, Heron, & Heward, 2007; Hayes, 1989). A basic example to describe the difference between the two types of learning is being given instructions to open a child-protected bottle: push down while turning the wrist and twisting the lid versus figuring it out through trial-and-error. Although graduate

programs tend to be heavily didactic, much of what one learns as a counselor is through trying out different techniques and approaches with clients and learning experientially what works with which clients and which presenting problems and what does not. Learning in the here-and-now is one way to balance a heavily didactic approach to learning that leads to broader, more natural and generalized behavior on behalf of the CIT. The purposeful use of contingency-shaped and rule-governed behavior approaches and teaching their distinctions to the supervisor was part of the intervention.

Task Analysis

Task analysis is another fundamental concept found in the behavior analytic literature that is not so commonly applied in counseling research. Task analysis is a technique that consists of breaking down behaviors or interactions into sub-steps or microcomponents. Basically, a behavior that one performs oneself, or that can be observed, can be broken down into smaller steps. Applying this technique to counseling offers a unique way to discover the source of problems in counseling and counseling supervision and to then design an intervention based upon the breakdown of the interactions. For example, students might be able to state a definition of empathy (learned as rule-governed behavior), but may be unable to use empathic skills at a crucial moment in therapy (typically learned as contingency-shaped behavior or a combination of the two forms of learning). A task analysis here would consist of the supervisor breaking down this skill and to teaching it in sub-steps, using prompting and prompt-fading, so that the supervisee is able to acquire and demonstrate the skill, maintain the use of it over time, and generalize it to other opportune moments in therapy.

Prompting

The use of prompting, or assisted learning, has many forms and takes many names in a cross-disciplinary framework. A radical behavior perspective, however, offers a sophisticated analysis of what prompts are most effective, and perhaps more importantly, a scientific analysis

of how to fade prompts so that the learner is independent in their use of technique. In order to help a trainee to become independent, learning situations can be structured so that the trainee generates solutions and ideas for how to self-manage their behavior rather than relying on the supervisor for instructions about what to do. Although in counseling supervision the supervisor may be more likely to use teaching or instructive approaches early on in the course of supervision and then later adopt a more consultative role, (i.e., Bernard, 1979) attention to prompting and prompt-fading early on could result in broader, more generalized response classes.

A little known difficulty outside of behavior analysis is that verbal prompting, or telling someone what to do or what the answer is, creates more prompt-dependency than the use of any other prompt. In other words, telling a CIT what to do or say generates reliance on the instructor rather than a broad class of behaviors that generalize readily to novel therapy situations. The use of role-play, rehearsal, visual cues, modeling behavior for the CIT, evoking the desired behavior from supervisees then explaining how you evoked the response, and the use of partial verbal prompts rather than full explanations are all prompting methods that can be used after a task analysis to help the CIT acquire necessary, generalizable skills. Furthermore, a functional analysis of language (Skinner, 1957) has led to advancements in understanding which basic verbal operants evoke what type of behavior from a speaker or listener. Further analyses have led to a more detailed study of the evocative properties of language, such as the use of open-ended versus close-ended questions. A well-known simple example is that close-ended questions typically evoke shorter responses and open-ended questions typically evoke longer responses (Ivey et al., 2009)

Design in Behavioral Research

This section addresses the behavioral research designs most relevant to the present study. Specifically, the MBL design is described in detail, as well as types of independent and dependent variables and data collection and analysis.

Dependent and Independent Variables

Counseling research often investigates whether the absence or presence of particular counselor actions affects clients in some way, regardless of theoretical orientation. In single case designs, dependent variables are the operationally defined behavior of the participants, and the independent variables are the actions of the counselor or supervisor. In other words, dependent variables are typically derived from the behavior of the participant, and independent variables are the experimental manipulations made on behalf of the experimenter. Client behavior therefore, in a successful design, will change as a function of counselor intervention. In a study of supervision, counselor behavior would change as a function of and supervisor-implemented procedures. Before any data can be collected, however, behaviors of interest regarding the client and counselor must first be operationally defined. Such precise definitions ideally should describe exactly what the behavior and intervention look like, as well as an example of what does not qualify within the definition. Therefore, the definitions should be mutually exclusive, so that one behavior cannot be classified in more than one way. This precision allows for scientific rigor, as well as ensuring that procedures can be replicated accurately. Construct validity in single case designs is established by constructing precisely defined behavioral targets for change (Lundervold & Belwood, 2000).

Data Collection and Analysis in Single Case Designs

In single case designs, data collection and analysis differs greatly from group designs. These designs focus more on observable behavioral change, but in psychotherapy studies, responses to questionnaires and self-report data are used in addition to direct observation as a form of measurement of participant behavior. After all behaviors of interest are operationally defined, data collection procedures must be precisely defined as well. How data will be collected, when it will be collected, how often it will be collected, who will collect the data, and who will analyze the data must be specified. In addition, measurement of the behaviors of interest must

occur repeatedly over time. For example, the behaviors of interest are measured repeatedly and consistently in the baseline phase as well as the intervention phase so that data can be analyzed to determine more precisely if client behavior is changing as a result of counselor actions (Carr 2005, Lundervold & Belwood, 2005).

There are further differences between single case and group designs in regard to controls in the research. In group designs having a control group is typically regarded as an ideal basis for comparison, but in psychotherapeutic or counseling research, where participants are in need of treatment or intervention, waitlists are often regarded as the more ethical means of forming control. In single case designs, however, participants serve as their own controls. In other words, treatment is applied in phases, rather than having one group that receives no treatment or some type of control treatment, such as access to self-help books rather than counseling. Here, the baseline phase serves as the control condition, where no treatment is administered, but where the participants' behaviors are still recorded. Furthermore, in an MBL design, similar to studies where participants have been waitlisted for treatment in group designs, the intervention phase is staggered where the second participant does not begin intervention until visual analysis of the first participant begins to show improvement, and the third participant doesn't begin treatment until the second participant shows improvement. Regarding the visual analysis of data, a minimum of three observations during the baseline phase are recommended before switching to the intervention phase as fewer than three observations lead to less accurate data-based interpretations and causal statements concerning if change has occurred (Barlow & Hersen, 1984; Lundervold & Belwood, 2000).

In regard to the visual analysis of data, single case designs focus on the following regarding plotted data points: latency of change, trend, level, slope, stability, and the lack of overlap in data points from baseline to intervention phases. Data are visually represented on graphs so that evidence-based decisions can be made based upon the visual and/or statistical

analysis of this data. Before further interpretation can be done, first it must be decided if the intervention had an effect. In other words, after a stable baseline period, change should be apparent only as the intervention is introduced to each participant; participants who have not yet entered the intervention phase should not show treatment effects while in baseline (Carr, 2005; Lundervold & Belwood, 2000).

Latency of change refers to how quickly data points change from baseline to intervention conditions. If plotted points show a quick versus a gradual change between conditions, there is a greater demonstration of the strength of the intervention. The trend of the data path refers to whether the data indicate an increasing or decreasing pattern, and a trend line may be entered on the graph to better represent that trend. Slope is the steepness of that trend, and steeper slopes are generally indicative of a more powerful change. Level refers to the magnitude of change overall in the data. The overall difference in level is an important indicator that the intervention has produced change, and an immediate change (latency) and sizeable change in the slope and level of the data is the greatest demonstration of strength, whereby claims regarding the clinical significance of the intervention can generally be made. Stability in data refers to whether the data appear stable rather than variable, where a visual representation will indicate small differences between data points, or larger, more spiked differences between data points. The lack of overlap of data points between phases is also significant. Data points in the intervention phase should not overlap with those in the baseline phase; fewer overlaps are also an indicator of methodological strength. When the baseline data already demonstrates some kind of trend, visual analysis can become more complicated. Although level change is more significant than trend, researchers have suggested that trend changes are less readily observed accurately. Entering a trend line is one way to augment visual interpretation of trend, whereby the overall directionality of the trend can be more clearly observed (Carr 2005; Christ 2007; Lundervold & Belwood, 2000).

Slope may be over-represented as representing a functional relationship as compared to other factors in visual analysis, and results sections should note the latency of change in studies when discussing functional relationships between the independent and dependent variables. In one study using an MBL across participants format, researchers found that, in general, experts rated graphs with steeper slopes more often as representative of functional relationships. In this study experts were asked to judge whether or not a functional relationship could be inferred for plotted data sets when the latency of change was consistent across participants and the slope in the data path present in the intervention phase was steep. In this particular study although the latency was consistent across participants the latency was also delayed and contextual information was present to indicate the expectancy that change would be delayed (Lieberman, Yoder, Reichow, & Wolery, 2010).

Establishing Reliability and Validity in Single Case Designs

Just as in group designs, in single case designs or single case research, there are two major types of errors that can occur, type I and type II errors. Type I errors occur when the researcher concludes the treatment had an effect when it did not. Type II errors occur when the researcher concludes the treatment did not have an effect when in fact it did. Type II errors can occur as a result of poor treatment integrity, and treatment integrity data is necessary to help prevent such errors (Winn et al., 2004). Because of the brief nature as well as that much MBL research is response-guided, or in other words, intervention is generally begun once a stable measurement of baseline has been made, the use of statistical tests to identify type I error rates is precluded. Moreover, the most parsimonious approach to data analysis should be used; since inferential statistics generally do not add to the validity of a study, or decrease error rates, their use is generally irrelevant, with the exception of single case designs that have been systemized in complicated designs or in regard to complex results (Baer, Wolf, & Risley, 1968; Ferron & Jones, 2006).

One of the primary reasons response-guided interventions are so widely used is that they allow for baseline phases to be extended if there is too much variability or a developing trend in the data. Moreover, such extensions likely lead to reduced type II errors. In cases where the visual analysis of data is impaired because of complex data patterns, statistical analyses can be used to augment data analysis, yet little has been published on how to accomplish such tasks across various designs in comparison to other topics in single case design. Statistical significance, however, is not synonymous with clinical significance, and change should be considerable and meaningful in addition to statistically significant (Ferron & Jones, 2006; Lundervold & Belwood, 2000).

In cases where the baseline reflects variability, as in many educational settings, a method proposed is that having a blind data analyst, (an analyst unaware of the nature or purpose of the study) could further reduce type I error rates. Moreover, the data analyst would plot the data, decide when baseline is stable enough for participants to begin intervention, randomly assign participants to intervention, and decide when adequate data has been collected. He or she would then decide which participant was treated at each intervention point, and determine if and when a treatment effect has been observed. This analyst would also have the ability to extend phases if treatment assignment cannot be determined, so that the likelihood of accurately identifying treatment assignment is increased. The p-value could then be determined by dividing one by the number of possible assignments per intervention phase, but can only lead to a $p > .05$ when there are either at least four participants or with three participants where a zero condition is factored in. In cases where having a blind data analyst is not supported by the nature of the study, the time frame needed to extend baseline, or lack of available trained data analysts, having two analysts agree on when to intervene on baseline conditions is another possible step to reduce experimenter error regarding type II error (Ferron & Jones, 2006).

Eight primary threats to internal validity have been identified in single case designs: Regression to the mean, mortality, maturation, testing, instrumentation, history, and interaction effects between these threats. Regression to the mean refers to the tendency for extreme data points to become less so over the course of measurement. Mortality, or the loss of participants before the completion of the study is particularly a threat when the researcher excludes participants due to undesirable baseline data. Maturation refers to growth in the participants independent of the independent variable, such as increased test scores through prolonged amount of time throughout the semester. This is a particular threat when there is a trend in the baseline data, however the brief nature of most single case designs is generally preventive of this threat. The threat of testing involves the effects or repeated measurement or observation on the dependent variable. Instrumentation refers to inaccuracies in measurement, such as observer drift or inter-rater or inter-observer inaccuracies, and breakdowns in equipment used to measure behaviors. History, or the occurrence of non-research related events that affect participant behavior, is not a large threat in well-designed MBL designs unless data is not collected concurrently; such events are more likely to affect participants within a phase than during the shift from baseline to intervention (Christ, 2007). The assessment of history effect is most robust when participants are likely to be exposed to similar extraneous variables, such as students in the same classroom or with the same teacher (Winn et al., 2004).

CHAPTER III: METHOD

Multiple Baseline Design

In the field of single case design, there are a variety of research designs that can be used, and each has a different, specialized purpose. For example, when comparing an intervention condition to no intervention or treatment, two commonly used designs are generally MBL and reversal or withdrawal designs. In regard to these designs, designs that return to baseline or alternate between baseline and/or treatment conditions result in a higher likelihood that any extraneous variables that could have affected the data have been ruled out, and therefore demonstrate experimental control. In terms of comparing two different treatments a variety of options are available beyond reversal designs, including alternating treatments, sequential alternating treatments, and multi-element designs.

Although there are several types of widely used research designs common in single case research, MBL designs are one of the most widely used designs. Baer et al. (1968) developed the first framework for the MBL approach to single case research. Although rarely used in counseling research, one of the reasons for the popularity of MBL designs in other fields is that this design does not require withdrawal of the treatment condition, unlike variations of reversal designs. Furthermore, removing beneficial treatment from a participant is not considered a best practice in counseling. MBL designs can be used to measure intervention effects across treatments, behaviors, or participants. An MBL across participants design allows for two or more participants to be assessed at the same time. Moreover, MBL designs share several common factors. Like other single case designs, participants serve as their own controls, rather than being compared to a control group. In other words, the baseline behavior of the participants is measured repeatedly before any type of intervention or treatment occurs. Once stability of baseline behavior is established, a phase change occurs where conditions change from baseline to intervention phases. This change is staggered and occurs with one participant at a time for studies

with more than one participant. Therefore, a switch is made from the baseline phase, where behaviors of interest are measured before intervention begins, to the intervention phase of the study, where the treatment or intervention is administered and behaviors of interest continue to be measured (Carr, 2005).

Before a phase change can occur, however, low variability of the plotted baseline data path must be present. Low variability in the data path means that data points are closely spaced together rather than widely separated which results in a data path that looks smooth without many large increases and/or decreases. Also significant before switching phases is ensuring that a data trend is not present which indicates the participant is already improving without any intervention, which would skew any interpretations that the intervention led to increases in participant behavior. The participant with the most stable baseline always begins intervention first, and the baseline condition is held constant for remaining participants. Once a low variability treatment effect is found for the first participant, the participant with the next most stable baseline begins intervention, and so forth (Carr, 2005; Harvey et al., 2004).

Most multiple baseline designs have two to four participants, as staggering a baseline for more than three or four participants results in a very long wait time for persons who need help or intervention. Within the across-participants design, there are three primary types of designs, concurrent, non-concurrent, and partially-concurrent. Non-concurrent MBL approaches, where participants are not assessed successively, are an option in settings where long wait times are not acceptable for any number of reasons but do not have the same degree of methodological strength of concurrent designs. (Carr, 2005; Harvey et al., 2004). The first design, concurrent MBL, is the most widely used and strongest of the designs, and is the design used in this study.

Experimental control is established in an MBL approach in several ways. First, the baseline is measured repeatedly, which allows for a prediction of the data path were no intervention to occur; this is then compared and contrasted to the data path in the intervention

phase. In addition, because the remaining participant baselines are held constant while intervention begins and occurs with the first participant, experimental control is demonstrated when the data path changes in regard to the first participant but not for the other participants. This change is verified as replication occurs across participants. If the target behaviors of the remaining participants show changes during their baseline while other participants are receiving intervention, then extraneous variables were not controlled and the results of the study could be invalidated. In other words, staggering the baseline across participants permits a recurring assessment of history effects. Thirdly, when baseline is stable among the remaining participants then changes only as the intervention is introduced and takes place, this replication across participants lends further validity to the study. These three factors must take place in order to rule out threats to internal validity, such as historical events, and participant events such as maturation or the dissemination of information about the study among participants (Baer et al.,1968; Carr, 2005; Christ, 2007; Hayes, 1981).

This study used a concurrent across-participants MBL design to assess a behavior analytic intervention in counselor supervision. This design was chosen due to the increased methodological strength of the concurrent approach and the fit for assessing baseline versus intervention phases for several participants simultaneously. In addition, the flexibility of this design allows for an in-depth examination of phase changes in counselor supervision.

Participants

Selection of Participants and Participation Requirements

Participating CITs were three master's-level students from three different practicum classes in a CACREP-accredited counseling program in an urban Midwestern university. In other words, participants were obtained from the structure of the master's-level counseling program already in place. The principal investigator served as the supervisor for each of three participants. CITs were invited to participate in the study based upon a verbal and written description of the

study. Participants were chosen on a first-come first-serve basis where the first three students who replied were chosen. Participants were three female master's-level counseling students of varying ages from early twenties to mid-forties. Each participant was from one of three different practicum classes. Two CITs were of Caucasian descent and one CIT was of African descent. The practice of a doctoral student supervising a master's-level practicum student was a routine already built into the structure of the program, as was meeting once per week for supervision with the student and recording of all supervision sessions. The master's-level practicum course instructors and the doctoral-level supervision course instructor were not part of the intervention.

Protection of Participants

The three CIT participants signed an informed consent that explained the nature of the study, how it might improve the practice of counseling and counseling supervision, as well as a disclosure of any risks that could be involved, such as performance anxiety or evaluation anxiety. Participants were informed that the primary investigator was conducting dissertation research, but not of the exact nature of the study. In other words, although participants were told that supervision was the focus of the dissertation and that supervision sessions and the CIT counseling sessions were part of the research, they were not informed of baseline and intervention methods, phase changes, or other information related to the design and implementation of the study. Participants were informed that the recordings of their counseling sessions and supervision sessions would be coded by external coders, and this information was included in the informed consent. No deceptive techniques were used and participants were informed of their right to participate or not, including the right to withdraw from the study at any time.

Supervisees received a supervision disclosure document from the principal investigator which described her areas of expertise, which is also a regular part of the supervision process for the counselor education program at the university where the study took place. Furthermore, to protect the confidentiality of CITs on graphs, these participants were lettered for visual

representation of data so that they could not be identified by name. CITs were asked to use initials rather than names on any written documents or case notes, to further protect the identity of their clients. The two research assistants coding the data were students from different universities than where the study took place. The research assistants also signed a confidentiality disclosure requiring them to keep the names, identities, and any identifying information about all participants in the study or anyone discussed in counseling or supervision sessions, confidential. The client's behavior was not included in any data collection or analysis procedures as the focus of this study was the CIT. In accordance with practices already in place in the counseling programs, both counseling and supervision videos and/or electronic files were destroyed at the end of the semester. Although client behavior was not a target for change, counseling clients were still considered participants and signed informed consents as their verbal and nonverbal behavior was recorded and indirectly observed. Institutional review board approval was obtained before the study began.

Measures

Supervisory Working Alliance Inventory

The supervisory working alliance was measured via data collected from the Supervisory Working Alliance Inventory: Trainee Form (SWAI; Efstation, Patton, & Kardash 1990). This rating of the working alliance was used as a quality control measure of supervision to ensure that the alliance was strong and that any ruptures in the working relationship were identified. This measure was given to supervisees approximately every other week throughout the course of the study for a total of 5 assessments. In order to reduce any influence on the supervisee on the behalf of the supervisor, the forms were filled out away from the sight and presence of the principal investigator. These forms were assigned a letter but filled out anonymously so that responses could be tracked for each participant over the course of the study. Supervisory alliance scores were summed, plotted, and graphed every other week by one of the research assistants, so

that any drops in alliance scores could be addressed in supervision and so that trends between SWAI scores and counseling skills demonstrated could later be compared.

The SWAI was established as a way to operationalize and measure the therapeutic alliance, largely due to the work of Holloway, whose body of research suggests that the primary consistent factor in supervisee growth is not is the supervisee's developmental stage, but rather, the working relationship between the supervisee and supervisor (Holloway & Neufeldt, 1995). This measure consists of 19 items for the supervisee scale. The format is a 7-point Likert-type response format and is filled out by hand by the supervisee. Scores can range from a lowest possible score of 19 to the highest possible score of 133. The SWAI was established based upon the sampling of 185 doctoral-level supervisors and 178 graduate student supervisees in psychology or counseling. Convergent and discriminant validity were assessed using inter-correlations between the Supervisory Styles Inventory (Friedlander & Ward, 1984) and Friedlander and Synder's (1983) Self-Efficacy Inventory.

Factor analysis of the SWAI resulted in a three-factor model (for the supervisor's form of client focus, rapport, and identification), and a two-factor model (an orthogonal model for the supervisee form of rapport and client focus). Scale reliability was also assessed to have overall moderate to moderately high inter-item correlations. Internal consistency was assessed using Cronbach's alpha with a result for the supervisor form of .71 for client focus, .73 for rapport, and .77 for identification. The supervisee form resulted in correlations of .90 for rapport and .77 for client focus (Efstation et al., 1990). Overall, the SWAI is a strong, established, and frequently used measure in counselor supervision.

Counselor Behaviors of Interest for Coding and Operational Definitions

The following 6 definitions were created by the principal investigator and are influenced by examples from the work of Ivey et al., (2009).

1. Intentional use of posture: Leaning in towards the client during moments the client is demonstrating an emotion or speaking. Shifts of CIT posture back and to the side were not coded as the intentional use of posture. Shift of CIT posture while the CIT was speaking during client silence also were not coded as the intentional use of posture.

2. Silence: Body posture and face oriented towards the client without any present verbal behavior, lasting a minimum of five seconds after the counselee has finished speaking, to ensure that a normal pause in conversation is not coded as silence. Minimal encouragers (such as "mm-hmm," and "ok") were not coded as silence. Playback of recordings included a timer so that coders could accurately assess to the second if the criteria for silence was met.

3. Paraphrase of client content: Stating back to the client the verbal content the client said, without repeating it back exactly, which is also not categorized as a reflection of feeling or an in-vivo technique. Paraphrases that were fragmented or attempts at a paraphrase that did not include a completed thought or phrase or were not coded as paraphrases.

4. Reflection of feeling: Applying a feeling word or emotion to the verbal content the client said, without repeating most of the content back, which does not include an in-vivo technique and is not classified as a paraphrase. If the client initiates the feeling word and the CIT paraphrases but uses the same feeling word the client did, it is not coded as a reflection. If the CIT paraphrases using a different feeling word than the client, it was coded as a reflection of feeling.

5. Use of in-vivo technique (bringing client verbal or nonverbal behavior into the here-and-now): Asking or stating something about the client or about a process or occurrence in the session that directs the client to discuss how he or she is feeling at that moment, what is happening at that moment, or about what has just happened or how the client has just felt, which is also not classified as a paraphrase, reflection of feeling, or open question.

6. Counselor frequency of open questions: Open questions were defined as questions that started with could, can, what, why, where, when, or how and closed questions were defined as questions that started with is, are, do, has, have, who, and which. Open questions that were preceded by, combined with, or immediately followed by or preceded by a closed question were not coded as an open question (double questioning or bombardment).

Counseling Session Coding Data Sheet

One counseling session per participant per week was coded and counselor target basic skills were recorded with a tally mark for each occurrence of the behavior on the data sheet under the appropriate column. If any of the basic skills were not observed via the video recording, then a 0 was entered into the corresponding column. In addition, each column had a space for questions for unclear responses, so that the principal investigator could give feedback regarding coder questions during weekly meetings. The counseling session coding data sheet is attached as Appendix A.

Supervision Session Coding Data Sheet

Each supervision session for each CIT during the baseline phase was coded and supervisor behavior was recorded with a tally mark for each occurrence of the behavior on the data sheet under the appropriate column. A 0 was entered for each column where behaviors were not observed for the entire recording. The coding of the supervision sessions consisted of a frequency recording of IPR techniques and behavioral skills training techniques. IPR techniques were defined as any point during supervision when the supervisee identifies a point in the video to observe and asks for feedback, or any point where playback is stopped or paused and the supervisee or supervisor initiates discussion of what is occurring in the recorded session. The supervisee or supervisor stopping playback and asking the supervisee, for example, to talk about or reflect on their experience at the time, what is experienced while or right after watching the

clip, or what the supervisee would like to do differently next time was coded as IPR. Any type of instruction, homework, or training activity was coded as behavioral skills training. Behavioral skills training includes one or more of the following: demonstrating or modeling desired counselor behavior, role-playing, assigning homework or tasks for CITs to carry out other than those they are already required to carry out for their practicum class such as case notes, and prompting and prompt fading to facilitate CIT learning of basic skills. The supervisor coding data sheet is attached as Appendix B.

Procedure

Intervention

Because radical behaviorism is ideographic in nature and technically eclectic, this intervention could be easily tailored to address individual problems acquiring basic counseling skills. The focus of the intervention was an analysis of identified problems and counselor basic skill level. The intervention was individualized to each CIT, based upon problem identification found in the task analysis of behavioral excesses and deficits. The task analysis was formed by the principal investigator watching the counseling sessions during supervision sessions, as well as additional viewing and reviewing the plotted scores, to determine which basic skills needed work. Each intervention with each participant was idiographic and was different for each participant since each CIT presented with a different skill level. Both instructional approaches as well as experiential approaches and activities were used throughout the intervention. A sample CIT task analysis is included as Appendix C.

Baseline phase. The baseline phase of this study utilized IPR (Interpersonal Process Recall; Kagan et al., 1969) as the baseline period for assessing CIT skill level. IPR is a technique and supervision strategy commonly used in counselor supervision to facilitate supervisee self-growth, awareness, and learning. Using this method, the CIT and supervisor watch the tape together, and the CIT or supervisor stops the tape at points where he or she would like to focus.

The supervisor's behavior during IPR is basic questioning about what is occurring at that time in the session and the supervisee's emotional and cognitive reactions to the content, rather than direct instruction. During the baseline phase for each participant, the coders recorded the frequency of IPR or any behavioral skills training. In addition, to protect against procedural drift on the behalf of the principal investigator, supervision tapes were coded to ensure the investigator was adhering to IPR and did not introduce behavioral skills training until the phase change had occurred for each participant.

Intervention phase. The intervention phase continued to use part of the IPR format in that CITs were still asked to identify parts of the recording during supervision that they would like to focus on. In addition to keeping this basic format, however, the behavioral skills training began, and the principal investigator taught CITs the targeted basic counseling skills using behavior analytic teaching techniques such as prompting, prompt-fading, homework, intermixing skills, and fluency drills. Prompting is providing assistance to the learner to assist in skill development and prompt-fading is removing the assistance so that the learner can exhibit the skill independently and without assistance. The use of homework refers to providing the learner with assignments to work on outside of supervision to assist in furthering skill development. CITs were given tasks such as watching their counseling sessions and recording certain skills, such as their use of open questions and closed questions or to record times when the client was exhibiting emotion. Fluency drills refer to training activities where the client must be able to use skills without prompting and quickly, or without indecision, pausing, or needing assistance. For example in order to demonstrate the use of paraphrase with fluency, the counselor trainee would need to be able to accurately paraphrase content during almost every training activity and during sessions independently and without hesitation (Binder 1996; Binder 1990). Intermixing skills refers to be able to use a variety of acquired skills at different times during the session. For

example, the use of an open question, then a paraphrase, then leaning in towards the client when the client is speaking is an example of demonstrating the intermixing of acquired skills.

A list and frequency count of behavioral excesses such as judgment, advice-giving, self-disclosure, and asking closed questions was analyzed for each CIT as well as for behavioral deficits, such as paraphrasing, reflection of feeling, etc. The supervisor used prompts to facilitate the learning of basic skills as well as homework regarding what to focus on for the next counseling session. The principal investigator attempted to fade prompts by transferring learning to the supervisee to make sure the CIT was able to demonstrate skills independently and without assistance, both during supervision sessions and in their counseling sessions. Skill instruction and assessment continued until the CIT was able to demonstrate each skill quickly and without hesitation. Some examples of attempts to fade prompts are:

1. While watching playback, can the CIT identify why the supervisor stopped playback, or in other words, what process was occurring or what counseling skill was just demonstrated?
2. When asked to demonstrate a technique, during role-play or another learning task, can the CIT demonstrate the technique without further prompting?
3. When asked to define and/or give multiple examples of a technique, can the CIT do so?
4. During role-play when the supervisor is evoking counseling skills from the CIT, can the CIT exhibit a combination of skills without prompting? (intermixing)

Data Collection

Baseline data were collected for each CIT participant based upon their recorded counseling sessions, as all CITs are required to video-record their counseling sessions with their clients as a part of regular course requirements. Each CIT received 3-4 clients and baseline data was collected from one of several counseling session recordings for each CIT. These clients

received an average of 10 weeks of counseling, either due to practicum course requirements or how many weekly sessions can be obtained before the end of the semester, at which point the counseling center was closed. Baseline phases were staggered in regard to the introduction of the intervention in that the baselines for the second and third participant were held constant until analysis of the data indicated improvement in basic counseling skills for the preceding participant as a result of the intervention. According to MBL methodology practices, the participant with the most stable baseline began intervention first, and this order followed for the second and third participants. No participants were excluded or withdrew at any time throughout the course of the study.

Coding of recorded sessions. CIT sessions and supervision sessions were coded by trained external coders for criteria counselor behaviors. The coders were two research assistant students gaining research experience for their graduate careers. The coders were trained by the principal investigator, who is trained as a counselor and a behavior analyst. Training occurred over a two-week period until the coders reached a level of .88 Cohen's kappa for inter-rater agreement. Coders were cross-trained, so that each could identify target basic counseling skills for the CIT recordings as well as IPR and the behavioral skills training. Each counseling session was coded by each coder as this was the primary data of interest for the study. Only one of the same supervision recordings was coded by both coders as an assessment of ongoing inter-rater reliability, although all supervision recordings while CITs were in baseline were coded.

Data from the counseling and supervision sessions was collected and recorded by the two coders on specific data sheets (see Appendices A & B) while watching the recorded sessions. The counseling skill data collected on the data sheets consisted of a simple frequency count of the six basic counseling skills that were the targets of interest in this study as well as the time that the skill was observed, so that results could be compared between coders. The frequency count for each supervision skill demonstrated (IPR or behavioral skills training) was recorded with tally

marks on the supervision coding data sheet. The frequency data count for each basic counseling and supervision skill was taken directly from the data sheets and plotted by the principal investigator on an Excel spreadsheet. The X-axis represented weekly counseling sessions for each participant. The Y-axis represented the frequency of demonstrated basic counseling skills per session. All counselor behaviors listed were targeted for increase.

Inter-rater reliability. Inter-rater reliability was assessed by comparing the results of the two coders. Both coders continued training with the principal investigator before the study until they reach a Cohen's kappa rating of .88 or greater. Training consisted of both coders watching segments of sample counseling and supervision videos and coding practice as well as in-vivo practice with the principal investigator, with specific examples of the targeted counselor basic skills. In addition, the coders practiced coding the skills on the data sheet during training. Following the training period, the coders met once per week together with the principal investigator to compare their results and to increase adherence to the coding protocol and to further reduce the likelihood of procedural drift. In addition, the principal investigator was available weekly for questions as a way to prevent procedural drift and to perform spot checks for accuracy. Similar to the other participants in the study, the coders were aware that the principal investigator was conducting research regarding counselor supervision, but were not given specifics about the exact nature of the research, the research design, or when phase changes occurred.

Data Analysis

Once baseline data were stable across two to three data points without high variability, a phase change line was entered on the graph and phases were marked baseline and intervention. Phase changes occurred based on consensus between three persons: the principal investigator, a dissertation committee member, both of whom have had specialized coursework in single case design, and the principal investigator's dissertation chair. When the data reflected the first

participant had a treatment effect during the intervention phase and the data path reflected stability, the second participant began the intervention phase, and so on for the third participant. Decisions regarding when a phase change occurred and the overall effectiveness of the intervention were based upon the following in regard to the data points and data path: Latency of change, level change, slope, trend, low variability, and low overlap between baseline and intervention data points. Trend lines were entered in baseline and intervention stages to assist in visual interpretation of level and slope.

CHAPTER IV: RESULTS

Interpretation of Multiple Baseline Graphs

Two MBL graphs are provided for the analysis of this study. Graph 1.1 is a frequency graph of demonstrated counseling skills for participants. Graph 1.5 is a proportions graph that represents counseling skills demonstrated while controlling for session length. The frequency graph was formed by plotting the overall frequency of demonstrated counseling skills per counseling session. This graph was the measure used to make decisions about phase changes during the semester from the baseline phase to the intervention phase for each participant. The proportions graph was formed by dividing the frequency of counseling skills demonstrated per session by the number of minutes of the counseling session. The proportions graph was created in order to account for the large variations in counseling session length that developed over the course of the semester and this graph is the primary focus of analysis. Analysis indicates that overall, behavioral skills training is an effective intervention for teaching the targeted basic counseling skills to master's-level practicum counselor trainees. However, the results for the last participant to enter the intervention phase are less robust, as only two data points are available for analysis, and should be interpreted with more caution.

Regarding phase changes, behavioral skills training was not introduced during the baseline phase as confirmed by coding results. The introduction to training was made after consensus among the principal investigator and two dissertation committee members was reached regarding when to introduce each participant into the intervention phase. The baseline phase consisted of IPR as the only supervisory technique, and the intervention phase consisted of behavioral skills training as the primary technique used in supervision as well as IPR. Baseline phases were staggered as CITs were introduced to the intervention phase. CIT A began the behavioral skills training in supervision following the fourth counseling session and before the fifth counseling session. CIT B switched to the intervention phase following the sixth counseling session and

before the seventh, having stayed in the baseline phase for two more weeks than CIT A. CIT C began intervention following the eighth counseling session and before the ninth, having switched to the intervention phase four weeks after CIT A and two weeks after CIT B.

Counseling Session Recordings

Due to the technological difficulties of having all counseling sessions downloaded on time and readily viewable for the coders, it was not possible to track CIT observed skills with a single client for each counselor. For example, occasionally throughout the course of the study a recording file was partially corrupt and did not play correctly with either audio or visual components or both. Therefore, such recordings were excluded from coding and one of the other counseling session recordings for that counselor for the same week was used instead. The decision of which counseling session was coded for the week was based upon which recording had full content, had clear audio and visual content, and was available at the time coding was occurring (had already been successfully downloaded). Sessions were also excluded from the study if portions of the counseling sessions were cut off, started late, or if portions were inaudible or unviewable. CIT A had one of three weekly counseling session recordings coded, CIT B had one of two weekly counseling session recordings coded, and CIT C had each weekly counseling session with one client recorded. CIT C was the only participant who did not have more than one counseling client recorded weekly since this participant's other clients were children and not recordable due to privacy restrictions.

It is possible that any extra variability in CIT A's data path is a result of or related to coding sessions with three different clients rather than with one or two. In addition, a few sessions during the intervention phase for a client of CIT A were partially excluded by the principal investigator from coding. In several sessions this client disclosed graphic and traumatic material that the principal investigator did not judge to be appropriate for third-party viewing. In addition, the investigator felt that client privacy would be better protected to exclude this material.

These four sessions for one client of this participant were the only sessions containing this degree of sensitive material and thus were the only sessions excluded from coding.

The length of session times was recorded by the CITs and verified by the principal investigator by recording start and stop times for each recorded session. Due to requirements to complete forms for confidentiality, informed consent, permission to record, and permission to participate in the study, the first counseling session was the shortest session for all but one CIT. Session lengths for CIT A varied from 39 minutes in the first session to a high of 57 minutes in the eighth session. CIT B varied from a low of 18 minutes in the first session to a high of 55 minutes in the eighth session. CIT C's overall session length varied from 24 minutes in the last session to a high of 48 minutes in the fifth session.

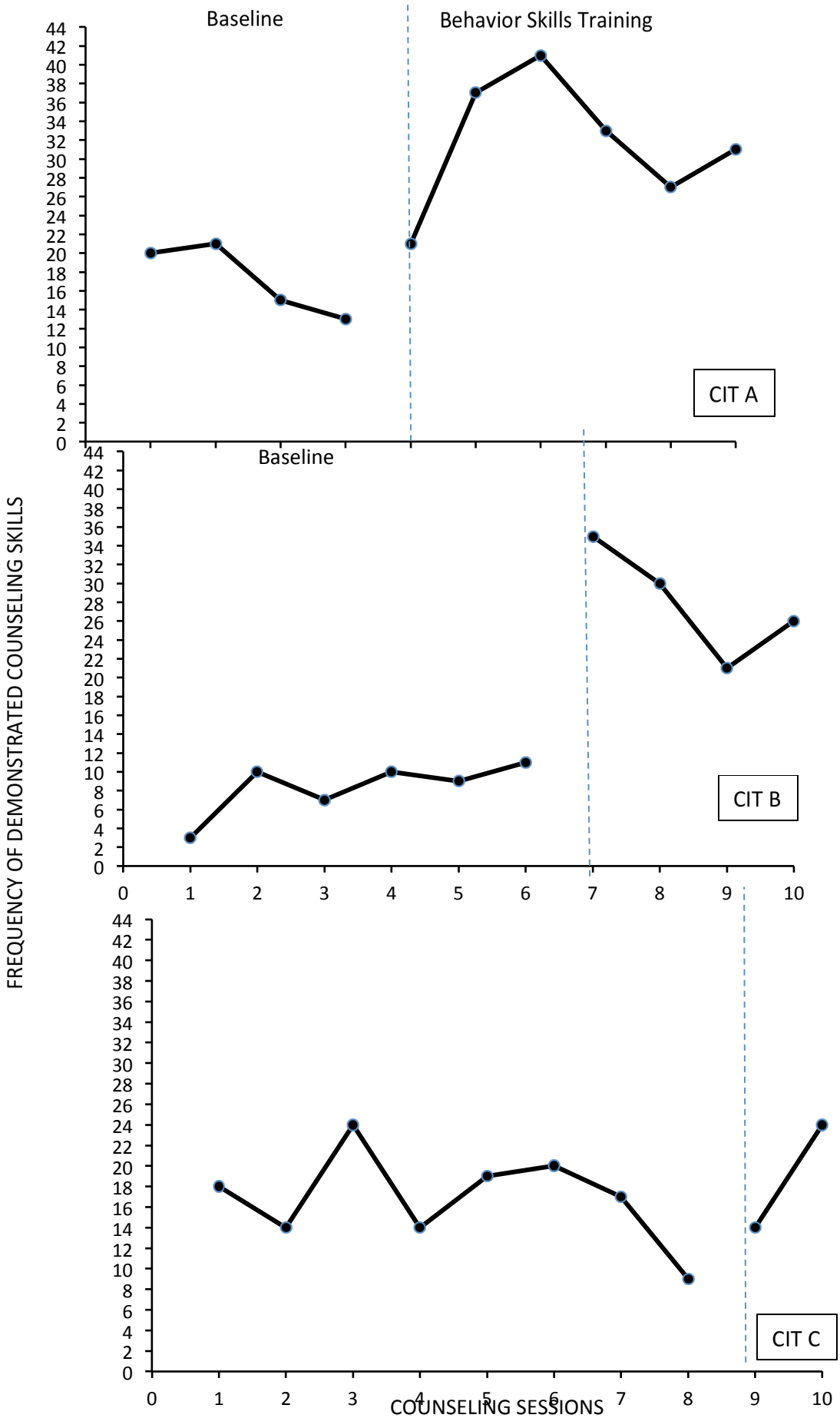
Analysis of Experimental Control

Baseline and Intervention Phases

The analysis of the baseline phases for participants has several strengths. Overall there is no missing data in the baseline, which can lead to more firm conclusions that can be drawn about experimental control in this study. Secondly, among participant scores and data paths, variability is low overall with no large gaps between scores. The data paths for all participants look smooth rather than having strong peak and valley connections. In addition to having low variability in the data paths for the participants, adequate baseline points were available for each participant in order to make accurate decisions about phase changes. In other words, four measurements of baseline data were available before switching to the intervention phase for the first participant. CIT B was introduced to the intervention phase after six baseline measurements and CIT C was introduced to the intervention phase after eight baseline measurements. Furthermore, any slope in the data paths is slight rather than pronounced. Therefore, the baseline phases in this study have low variability, little slope, and are relatively flat, thus meeting important criteria needed to determine if the intervention is effective (Parker, Cryer, & Bryns, 2006). The following

components are discussed here in a more detailed analysis of experimental control: prediction of the data path were no intervention to occur, verification of the effects of the independent variable, and replication of the effects of the independent variable (Carr, 2005).

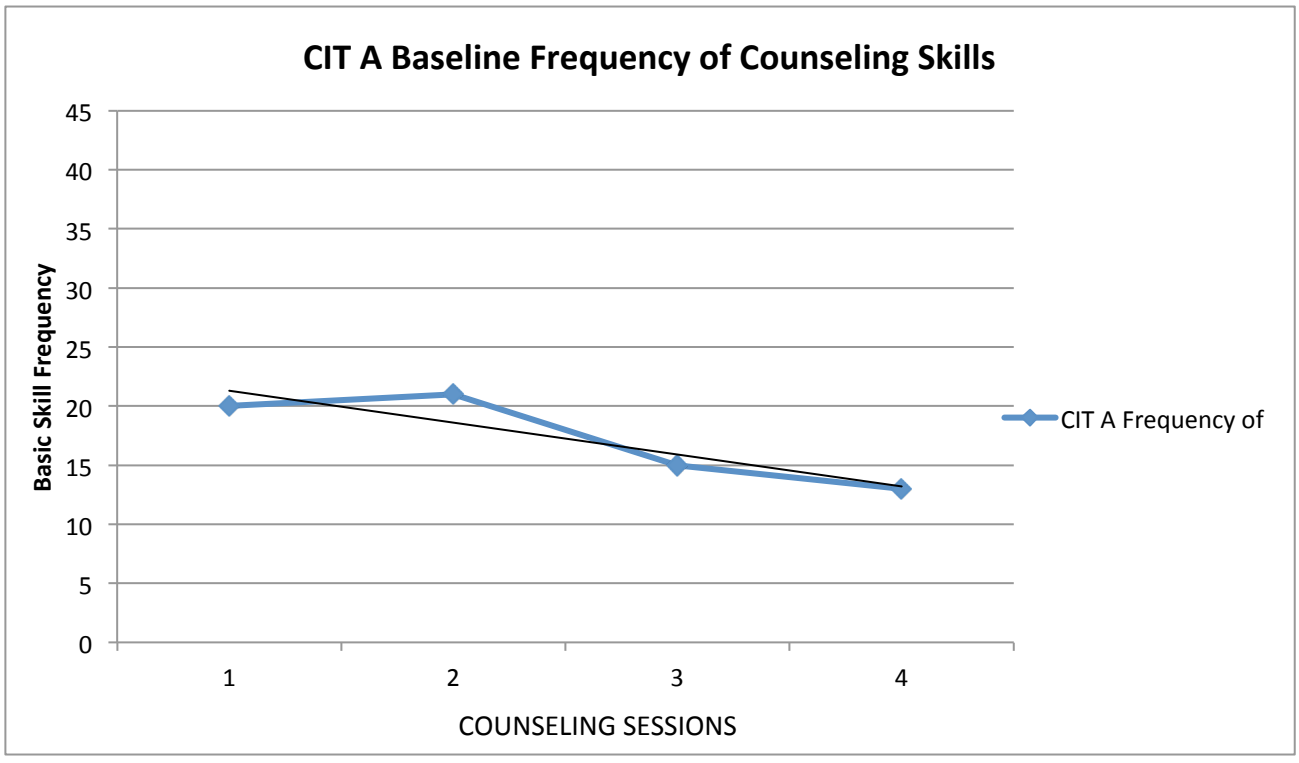
Graph 1.1 Frequency of Counseling Skills



Prediction of the Data Path Without Intervention

Graph 1.2 is one of the frequency graphs used to determine which participants would enter the intervention phase at which times. It represents the baseline data path of CIT A's basic counseling skills before entering the intervention phase. It is seen that if intervention had not been present that CIT A would likely have continued to lose or not be able to demonstrate basic counseling skills to the degree to which she was in the beginning of the study. Although it is ideal to present without any trend in baseline, a downward trend is a better trend with which to begin intervention than an upwards trend when research goals include skill improvement. Baseline trends that are pronounced, particularly when in the desired direction of results produced in the intervention phase, lead to inconclusive interpretation of intervention effectiveness (Parker e al., 2006).

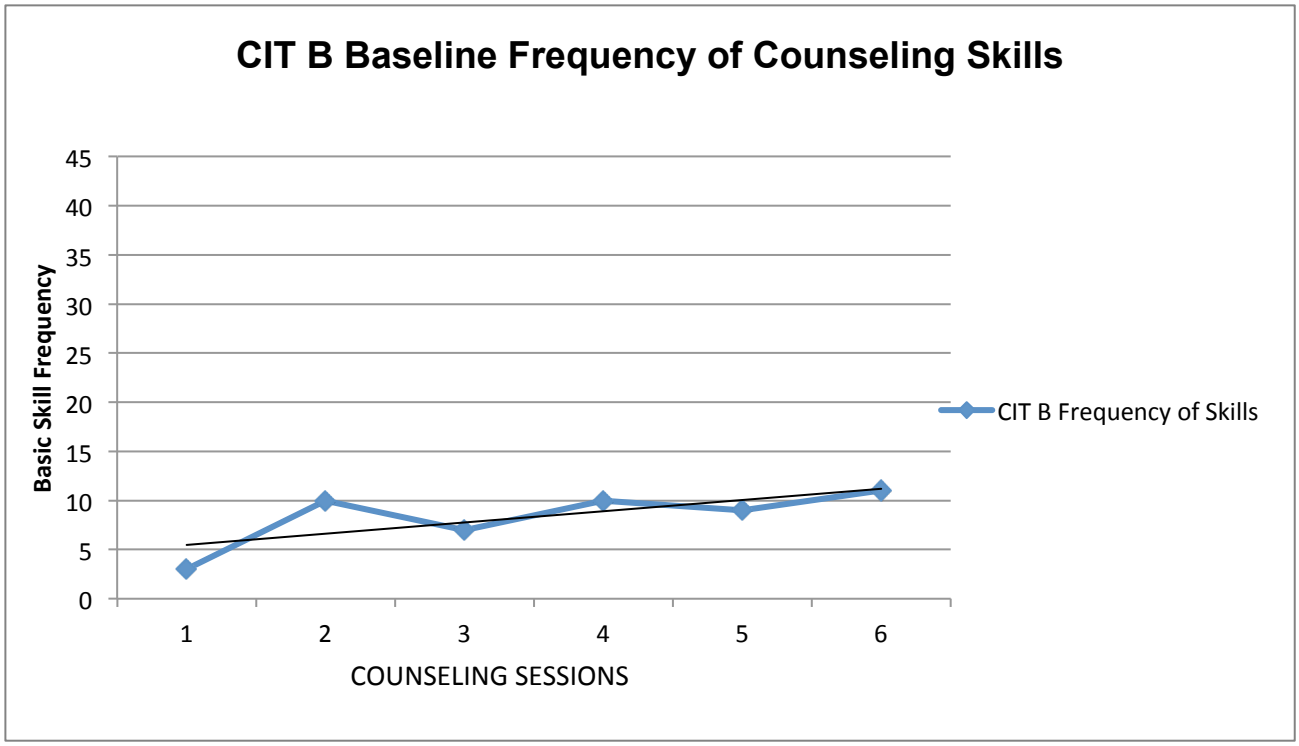
Graph 1.2



Graph 1.3 is the frequency graph of CIT B's baseline data path. This participant was demonstrating a very small trend upwards during baseline and overall low variability. It is preferable to have no trend in baseline phases, although this trend is very small and not pronounced. Because of this small trend upwards

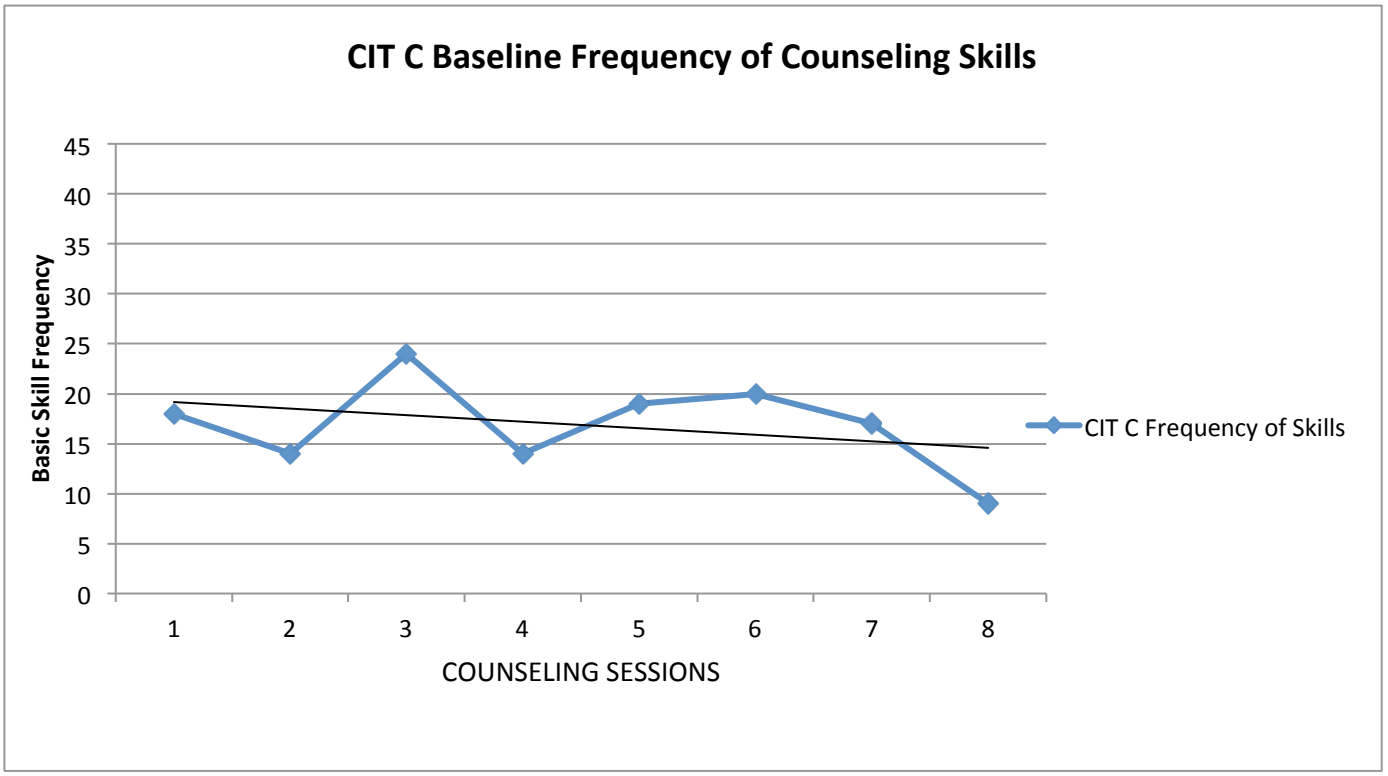
CIT B was not chosen as the first candidate to move to the intervention phase. This trend is likely influenced by CIT B only having 24 minutes for her first counseling session whereas CITs A and C had longer sessions. The rest of CIT B's sessions were full in length.

Graph 1.3



Graph 1.4 is a frequency graph of the baseline data path of the third participant. CIT C was chosen as the last participant to enter the intervention phase due to the decreased stability in baseline as represented by increased variability among her first four baseline points as well as a trend upward that was identified during her first three through six data points in baseline. At the seventh data point in baseline the trend moved from upward to downward. Therefore, although this graph of the complete baseline phase for this participant shows an overall downward trend, until the sixth data point the trend was upward. This increased variability or lower level of stability, along with the upwards trend identified within the first six data points in the baseline phase were the factors that lead to this participant being the last selected candidate for intervention.

Graph 1.4



Verification of the Effects of the Independent Variable

Verification of the effects of the independent variable occurs when treatment effects are observed for the participant entering the intervention phase but not for the remaining participants in the baseline phase (Carr, 2005). As can be seen from graph 1.5, CIT A immediately demonstrated a sharp upward slope in the overall frequency of counseling skills demonstrated for the first three behavioral skills, training sessions; whereas the other two participants remained at levels consistent with their baseline skill demonstration. This reflects a change in latency, level, trend, and slope. The same effect can be observed with CIT B, where behavioral skills training supervision sessions resulted in immediate change with a sharp upward trend and slope.

CIT C also demonstrated a quick change upward within the first and only two intervention phase points. The data for this participant must be considered more carefully however, due to increased overall variability in baseline as well an upward trend (within the first six data points) and a downward trend (the entire baseline) that are present in the overall baseline data path. In addition, CIT C's gains are not as

dramatic as those of CITs A and B. Although an effect from the independent variable can be observed in terms of latency and overall trend and slope, the first data point in the intervention phase is the same score as the session two score in this participant's baseline phase. Although the second intervention phase score is this participant's highest score, the lack of overlap between the ninth score and the second score is a concern This participant presented with a similar overall baseline pattern as CIT A in regard to an observable decline in skill frequency before intervention. Like CIT A, CIT C was able to immediately begin to recover lost skills and the data path displays latency, trend, and slope. In conclusion, although a slight treatment effect can be observed, this effect is not as strong as for the other two participants. This recovery of lost skills from baseline to intervention phases will be further addressed.

Replication of the Effects of the Independent Variable

Replication of the effects of the independent variable is demonstrated when each participant in the study shows an effect from the intervention. All three participants in this study show a treatment effect, although the results of CIT C should be interpreted more carefully than those of the other two participants. Therefore, all three components of experimental control are present in this study, strengthening its validity. Furthermore, when these three components are present, two of the primary threats to internal validity are controlled, history and maturation (Carr, 2005; Christ, 2007).

Visual Analysis of Plotted Data Points

Visual analysis is the preferred method for analysis in single case design. Statistical techniques are generally not able to provide an effective analysis for short data series. For example, identifying trend and the magnitude of trend as well as variability cannot yet be as accurately analyzed with statistical techniques. Visual analysis is even more significant when the data has been transformed (Parker et al., 2006). In this study, due to the short data series and proportion transformation to control for length of session time, visual analysis was the means of analysis. The following concepts are discussed regarding the visual analysis of the plotted data points for this study: Latency of change, trend, level, slope, stability, and the lack of overlap in data points from baseline to intervention phases.

Latency of change. Latency of change refers to the jump between the last baseline data point and the first intervention change data point. In single case research, latency is not a measure of time, but rather, part of the visual analysis between data point scores on the data path (Barlow & Hersen, 1984). Visual analysis of the graphs indicate that latency, or the immediacy of the change with which data points differ from baseline to intervention phases are present for each of the three participants in this study. CIT A demonstrates an overall downward trend and a decrease in counseling skills during baseline but immediately demonstrates increased scores which jump from the last two baseline scores of .31 and .25 to .39 and .79 in the intervention phase. CIT B scores also jump from data points of .26 and .21 in the last two baseline measurements to data points .88 and .56 as the first two intervention phase scores. CIT C, who was the last participant to begin intervention, also demonstrated an overall downward trend and a decrease in counseling skills during baseline. Following introduction to the intervention phase, the last two measurements jumped from .40 and .29 in baseline to .41 and 1.0 in the intervention phase.

Trend. The trend of the plotted data points refers to whether an increasing, decreasing, or no pattern is present in the data path. A trend line has been entered on graph 1.5 to aid in the visual analysis of trend, which shows a clear overall increase of skills for all participants in terms of overall skill acquisition. Like other effects observed in this study, although CIT C shows an overall increase in trend, the trend is not as strong for this participant as it is for the other two. CITs A and B show a clear and pronounced overall upwards trend.

Level. Level refers to the overall magnitude of change that can be observed during visual analysis. Because graph 1.5 is a proportions graph, averages do not have the same strength or meaning as with frequencies. However, level changes can be visualized in this graph even though an average has not been configured.

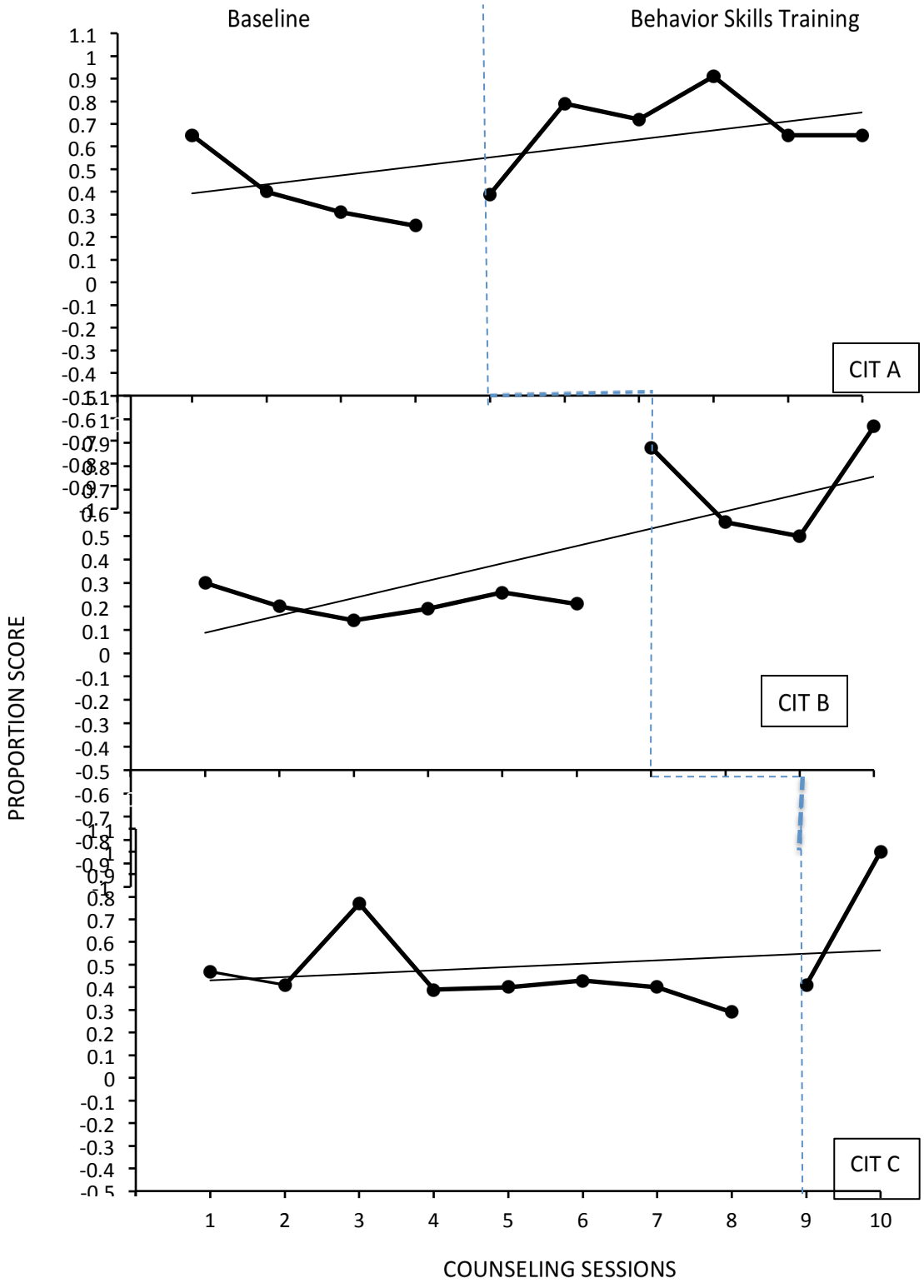
Slope. Slope refers to the steepness of the trend line in visual analysis. CITs A and B show increasing trends with a good slope, which is advantageous and gives strength to the study. Having more than two data points with which to analyze data and draw conclusions about CIT C would be ideal, but is not

available. The overall slope of CIT C's trend is not steep.

Stability. Data that is considered stable looks smooth rather than having peak and valley relationships. On the whole, the data for all participants is stable versus variable in nature, but particularly more so for CITs A and B. Data paths for CITs A and B during baseline and intervention phases are more stable than for CIT C. More variability can be observed in the data path of CIT B during the intervention phase than for the other two participants. Generally, variability in this study is low, thus lending strength to the interpretation of the results.

Overlap and separation of data points from baseline to intervention phases. Overall, there is little overlap for participants regarding data points in the baseline phase and intervention phase, which additionally strengthens the study. CIT A's data has one data point in the intervention phase that overlaps with a data point in the baseline phase. In other words, the second baseline score for CIT A of .40 is slightly higher than the first intervention phase score of .39. All other data points in the intervention phase are highe than any and all data points in the baseline phase, however. Worthy of consideration in regard to interpretation is that this participant was losing counseling skills in baseline and beginning to demonstrate counseling skills again with an increasing trend in the intervention phase. CIT B does not have any data points in the intervention phase that match or are identical to the baseline phase; all data points in the intervention phase are higher than those in the baseline phase. Finally, CIT C again presents with less clear results than the other two participants. One of the data points from the intervention phase in session 9 is identical to the second baseline score at .41 and is similar to the scores of the fourth counseling session at .39 and sessions 5 and 7 at .40. The second data point in the intervention phase is much larger than any and all baseline scores, and is by far the participant's highest score.

Graph 1.5 Proportions Graph of Counseling Skills



Analysis of CIT Skill Acquisition

Certain basic counseling skills were easier than others to acquire in this study. For example, CITs easily acquired basic counseling skills of asking open rather than closed questions and paraphrasing. All other counseling skills were more difficult for trainees to acquire, however. The intentional use of posture was the third most frequently acquired skill followed by bringing client behavior into the here-and-now, ther reflection of feeling. The use of silence was the least frequent skill demonstrated during the intervention phase, and never occurred for any trainee before the intervention began. The targeted counseling basic skills their definitions, and proportion scores are summed in Table 1 below.

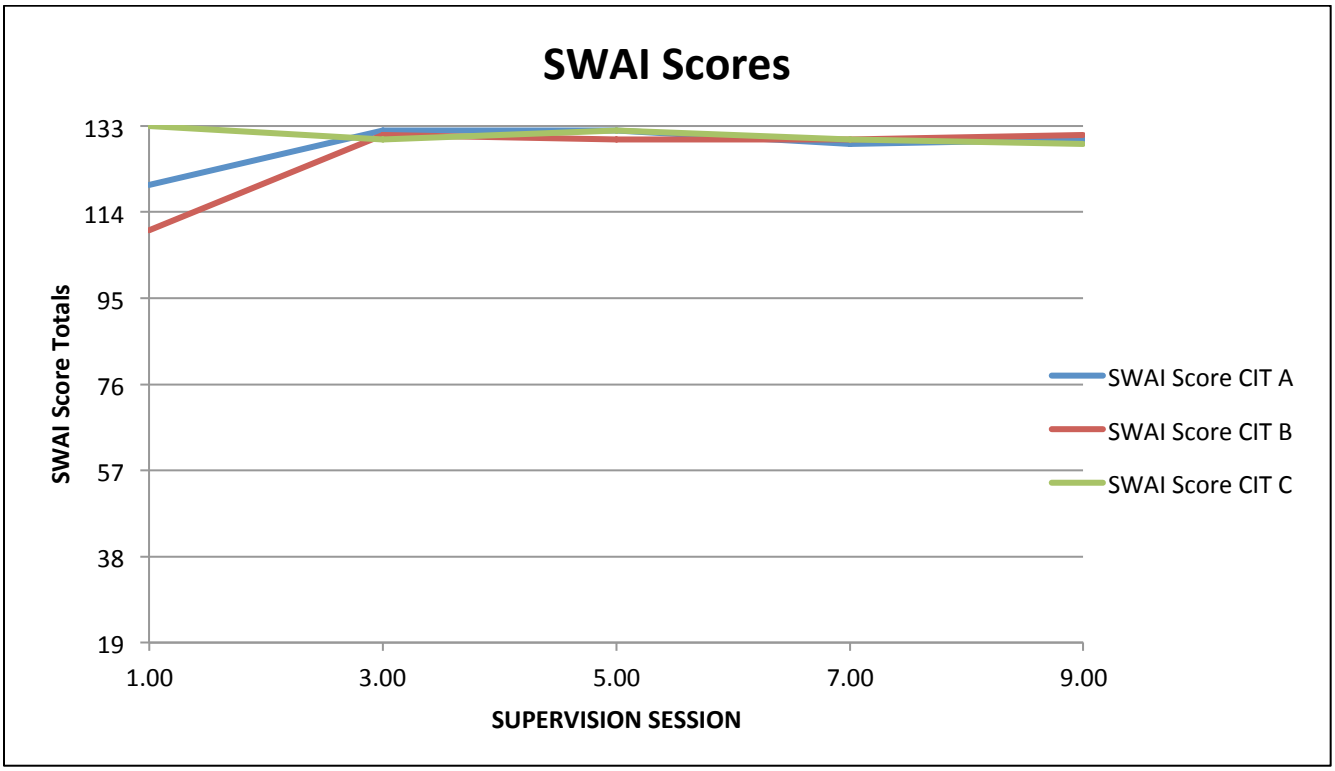
Table 1
List of Counseling Basic Skills, Brief Definitions, and Baseline and Intervention Scores for CITs

Counseling Skill	Definition	CIT A Baseline Proportion	CIT A Intervention Proportion	CIT B Baseline Proportion	CIT B Intervention Proportion	CIT C Baseline Proportion	CIT C Interventio Proportion
Posture	Leaning towards the client while the client is speaking or during client expressed emotion	0.105	0.143	0	0.061	0.029	0.103
Silence	Counselor has no verbal behavior after the client has finished speaking for a minimum of 5 seconds	0	0.007	0	0	0	0.017
Paraphrase	Re-stating back to the client what the client has said without repeating it back exactly	0.147	0.238	0.062	0.166	0.208	0.310
Reflection	Applying a feeling word in paraphrase to what the client has said	0.037	0.031	0	0.031	0.036	0.034
In-vivo	Bringing an aspect of the client's behavior or an occurrence in the session into the here-and-now	0	0.031	0.004	0.018	0.007	0.086
Open Questions	Asking a questions that began with could, can, what, why, where, when, or how	0.073	0.207	0.128	0.405	0.147	0.103
Total		0.361	0.656	0.194	0.681	0.427	0.655

SWAI Scores

Graph 1.6 demonstrates that overall, the principal investigator received very high supervision working alliance scores, indicating that there were no identified difficulties in the supervisory working alliance. Overall scoring of the SWAI trainee form ranges from a lowest possible score of 19 to a highest possible score of 133. The supervisor's overall scores throughout the semester ranged from a low score of 110 with supervisee B to a high score of 133 with supervisee C. Interestingly, both the lowest score and the highest score were both given after the initial supervision session, indicating that the first supervision session or two resulted in the greatest variability among scores. Scores stabilized throughout the course of the semester. These results are significant in that the alliance is the foundation upon which supervision is conducted, and the data demonstrate that any fluctuations in CIT scoring do not appear to be related to identified difficulties occurring within the course of supervision or with the supervisor.

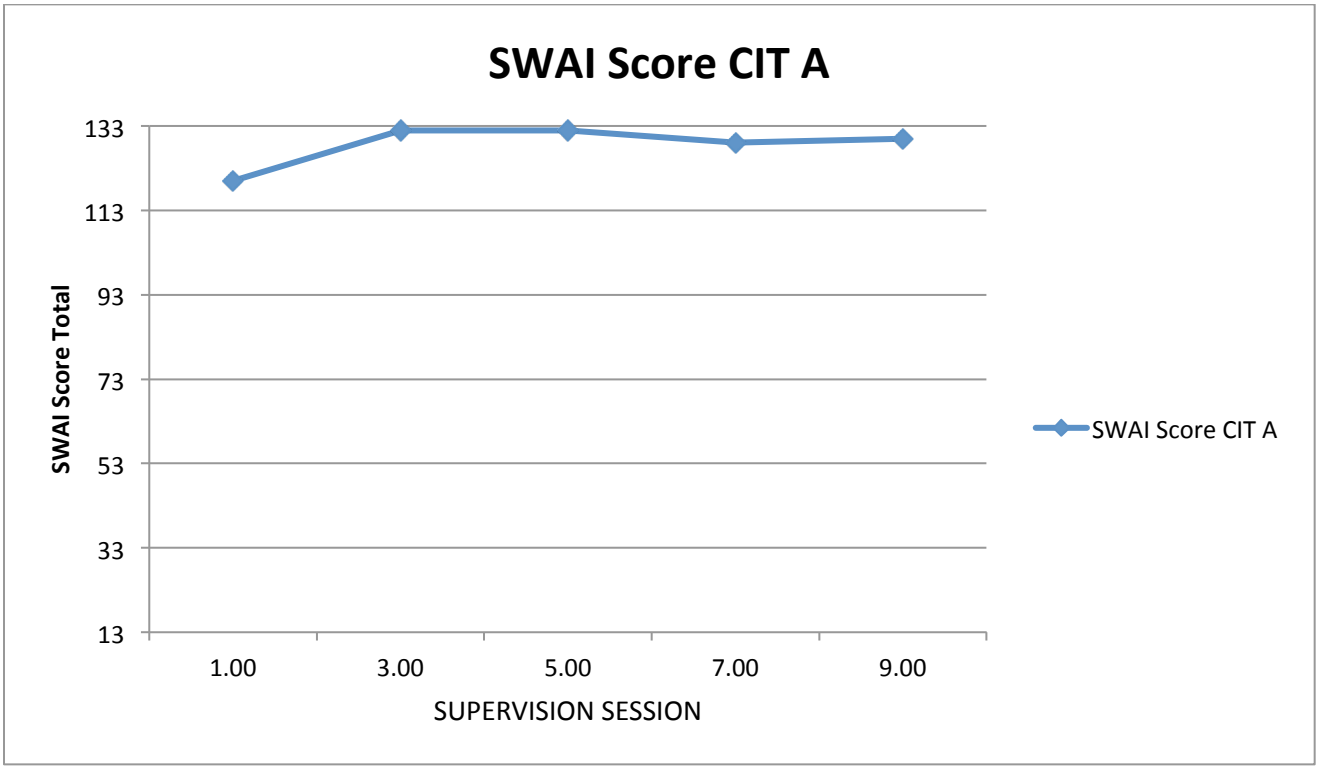
Graph 1.6



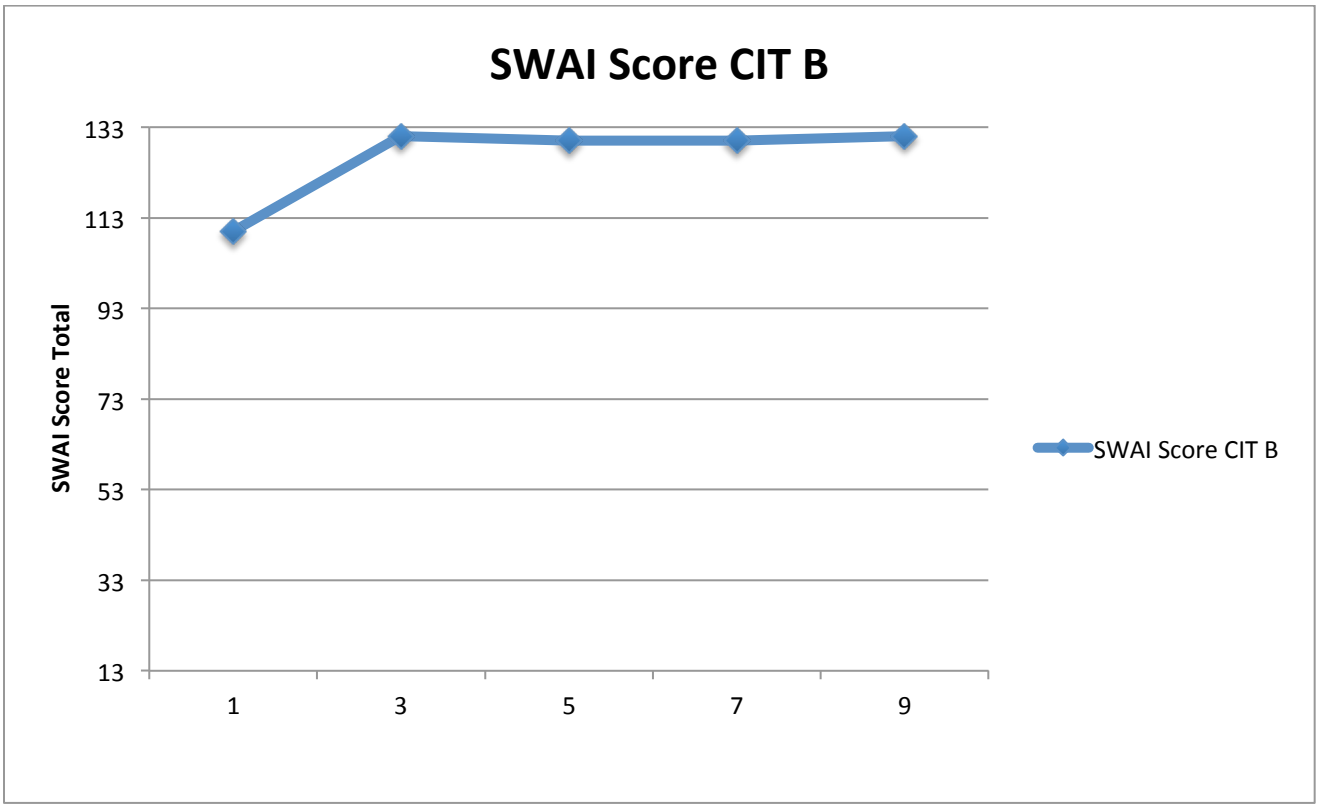
Regarding the individual scores and graphs, overall the scores started in the high range and increased as the semester continued. Small variations in the scores are present, both among

supervision sessions for each CIT and between supervisees. The slight fluctuation in scoring likely is a result of the rupture-repair process that is thought to exist in supervision, which is reflective of normal fluctuations in the process (Bordin, 1983).

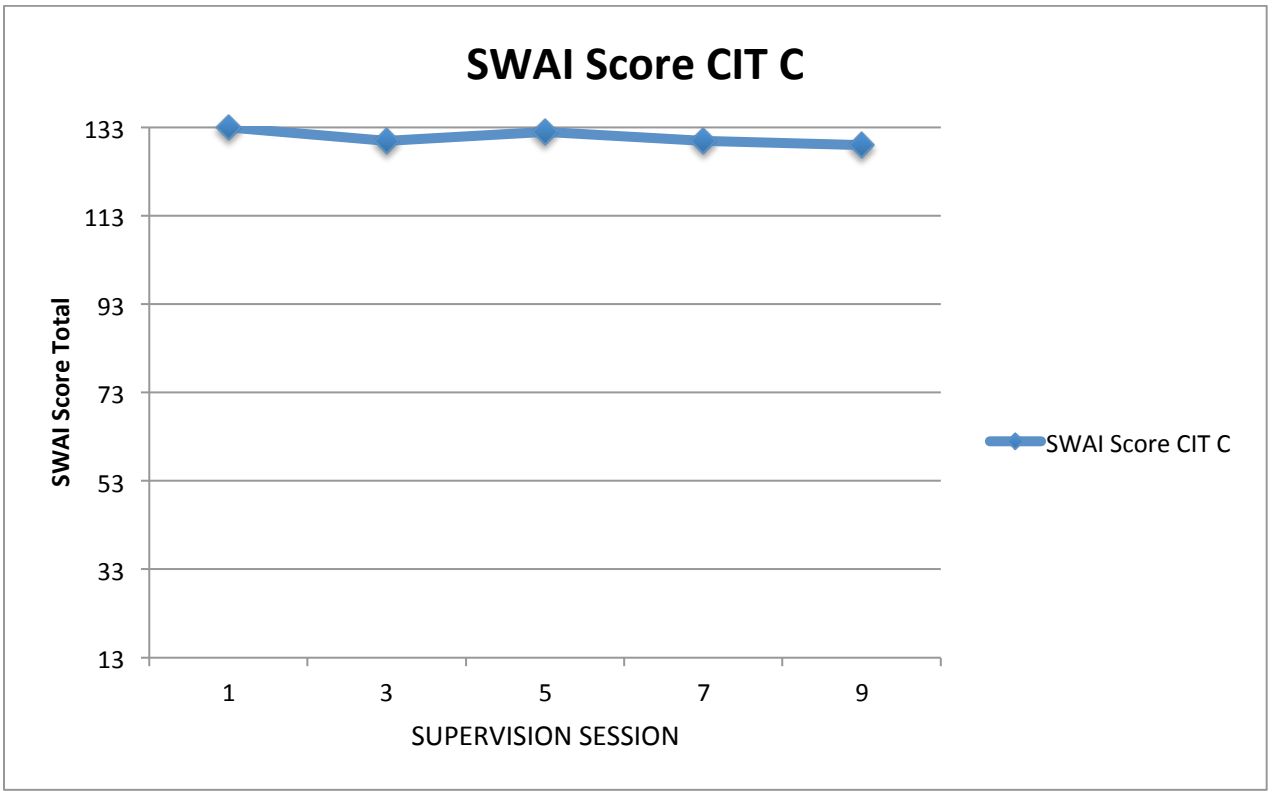
Graph 1.7



Graph 1.8



Graph 1.9



CHAPTER V: DISCUSSION

It is clear that direct, behavioral intervention that targets skill development enhanced skill utilization for the CIT's in this study. This study used a combination of behavior analytic techniques for the behavioral skills training portion of intervention phase, which is unique to most counseling designs. Although didactic-experiential models in counselor supervision are common, combining behavior analytic and counseling techniques in supervision is unusual, as is utilizing a single case design methodology. The foundation has long been laid for the integration of learning theory principles and behavioral skills training into counseling and counselor training (i.e., Truax et al., 1964). However, few recent studies have addressed either the learning of basic counseling skills or have used individualized task analyses of each trainee's acquisition of the basic skills. This combination may serve to enhance research development in several ways: By exploring how counseling supervisors are teaching skills to their counseling practicum students during experiential training activities, the acquisition and development of basic counseling skills in trainees, and the learning of silence for CITs. In this discussion, patterns of skill acquisition and loss are discussed, as well as the maintenance and fluency of newly acquired counseling skills for CITs. Limitations to the study, implications for counselor training, and directions for further research are also addressed.

The intervention in this study appears to be effective for all three participants. Responding in the intervention phase was noted for almost every participant for almost every factor in terms of latency, trend, slope, level, stability, and lack of overlap between phases. In addition, the principal investigator received very high scores of her supervision alliance throughout the course of the semester. Also, all three participants had a different practicum instructor. Therefore, although each CIT was exposed to different course instruction and different clients, gains were made across participants. One of the benefits of single case research is the naturalistic component of working with real students and clients during a real training program

rather than using confederates, standardized clients, or students who were trained to act as clients; thus increasing the generalizability of the results.

It is likely that several factors accounted for the effectiveness of the intervention: Experiential learning within the context of a strong supervisory alliance, an individualized task analysis for each CIT, and the use of behavior analytic teaching techniques of prompting, prompt-fading, intermixing, and fluency training. For this study, in addition to the more common techniques of IPR, modeling, rehearsal/role-play, and feedback, behavior analytic learning techniques were also utilized as a core part of the intervention phase. For example, an individualized task analysis of supervisee learning and verbal and nonverbal behaviors was utilized to guide instructional ideas and potential learning sequences. After developing a task analysis for the counseling skills for each participant, each skill was taught discretely, using prompting and prompt-fading instructional techniques. In other words, the number of prompts required to assist each CIT with each skill was tracked and recorded. For example, a trainee might have needed 17 prompting and prompt-fading opportunities in order to be able to turn a series of closed-ended questions into open-ended questions. Then skills were practiced until the CIT could exhibit the skill each time independently and with fluency. Finally, the principal investigator tried to evoke a variety of counseling skills from participants during training activities so that different counseling skills would be intermixed with each other.

Fluency can be described as responding that is both accurate and quick. In other words, when a skill is fluent, the learner can exhibit the skill or perform the task correctly and quickly during most opportunities without hesitation. Another significant characteristic of fluency is that once a skill can be demonstrated so quickly, accurately, and reliably that retention is demonstrated as well as maintenance of the skill, in real situations and even in the midst of distractions. Thus, an important distinction of skill fluency is that it is maintained in real situations and during naturalistic responding rather than just in a discrete trial teaching

environment (Binder, 1996; Binder, 1990; Johnson & Layng, 1996). Therefore, once a skill has achieved fluency, it can be said to endure (Binder & Watkins, 1990).

Therefore, each CIT learned basic skills until they were able to demonstrate them with independence and with fluency. It is possible that this teaching to independence and fluency is part of what accounted for the increase in counseling skills during the intervention phase. For example, during practicum class instruction, it is possible that CITs were learning and acquiring information about skills as well as having the opportunity to practice and receive feedback regarding these skills, but were not practicing the skills to independence or with fluency. Therefore, beyond instruction, rehearsal, and role-play, the measurement of skill acquisition to independence as well as fluency within and between counseling and supervision sessions may have accounted for part of the skill increase. Furthermore, for skills that are used in counseling that differ significantly than their use in regular social behavior, such as the use of silence and reflection of feeling, even more instructional opportunities are likely needed.

An important consideration is that the supervisory alliance in this study was consistently rated very high throughout the course of study. It is possible that counselor trainees are more likely to make progress with more intensive training when the alliance is strong. This theory is in line with other research in the field of counselor supervision. For example, if the working alliance between supervisor and trainee is the principal consistent factor in supervisee growth, (i.e., Holloway & Neufeldt, 1995) then it stands to reason that supervisees could better acquire skills during more intensive teaching when the foundation for trust and feedback is already successful. One recent qualitative study comprising a focus group of postgraduate counseling students found that the relationship between counseling students and their tutors was a significant factor in the effectiveness of learning. These authors postulated that a high degree of trust and security is needed before students are able to take the risks associated in a training program with a strong experiential learning focus (Smith, 2011).

In summary, this behavior analytic intervention successfully led to increased basic counseling skill development for each of the three participants. Building upon the history of incorporating learning theory principles in counseling, a combination of behavior analytic teaching techniques was combined with IPR (Kagan et al., 1969) during counseling supervision. The supervisory working alliance between the counselor trainees and principal investigator was tracked and rated very high throughout the course of the intervention. This strong supervisory alliance could also have accounted for the success of the intervention, particularly as it was strongly experiential in nature.

Limitations

As previously mentioned, the effects of the intervention are more clear for the first two participants than the third due to the limited amount of time the third participant was in the intervention phase. Another of the drawbacks to the study is that small trends were evident during the baseline phase for all CITs. Two participants demonstrated downward trends and one participant demonstrated a slight upwards trend. The first participant to enter the intervention phase, CIT A, had a downward trend rather than upwards trend regarding skill frequency. This decision ensured that intervention was not introduced to CITs who were demonstrating slightly increased skill frequency who were not yet in the intervention phase, and would have made the claim that the intervention was producing the increases in CIT skill frequency more difficult to make. At the time CIT A was introduced to the intervention phase, both of the other participants had slight upward trends. No large trends were forecasted or found in the baseline phase. Because all three CITs were in a practicum class and receiving instruction in counseling skills in that class, it would not be unusual to find small upward trends in baseline.

One limitation to this study is that no follow-up probe was included for the assessment of counselor trainee skills. In other words, due to time restrictions, a further probe of CIT skill level to assess if basic skills were retained was precluded. This is a population and skill set that is not

often studied, however, so the results of this study do lend itself to providing in-depth information about initial patterns of skill loss and acquisition.

Limitations to this study in the form of threats to internal validity are also presented. In particular, the threat of maturation is a threat that cannot be completely ruled out. Maturation occurs when increased scores are noted throughout the course of the semester that are the result of growth in the participant, such as growth over the course of the semester. The brief time frame of most single case designs prevents this threat. However, this threat is a particular threat when there is a trend present in baseline. In this study, two data paths demonstrated a slight downward trend during baseline and one a slight upward trend. Although these trends are not extreme, they are present and are noted as a weakness. Trends can also be interpreted in terms of their forecast into the intervention phase, and in this study, the forecast of baseline trends would not have been similar to the gains represented on the graphs. Furthermore, threats to maturation can be mitigated by the other components of experimental control, such as through robust changes in level, slope, and variability after the phase change, and these effects are present in the current study (Christ, 2007).

Another problem that should be discussed relates to a difference in the practicum instruction CIT C received. Each of the three participants was in a different practicum class each with a different practicum instructor. CIT C was the only participant who received specific instruction in terms of frequency tracking the occurrence of basic counseling skills. In other words, this participant was given a data sheet for the tracking of the basic counseling skills. This practicum class was instructed to watch their counseling recordings and tally the basic skills being demonstrated in columns representing each skill area of: Visual attending behavior, vocal attending behavior, verbal tracking, body language, open questions, closed questions, paraphrasing, summarizing, reflection of feeling, confrontation, focusing, reflection of meaning, interpretation/reframing, feedback and self-disclosure, logical consequences, and directives/

psychoeducation. Therefore, some of the basic skills this participant was instructed to attend to and record were the same as those the principal investigator was teaching in behavioral skills training. During the baseline phase, this participant showed the data sheet to the principal investigator, who then asked the participant to discontinue tracking these behaviors so as not to interfere with instruction in supervision. Although the exact date was not recorded when this occurred, it was either during the third or fourth supervision session in baseline for CIT C. Therefore, the variability present in the first few data points in CIT C's baseline as well as the fluctuating trends in this participant's overall data path from an upward trend then to a downward trend before entering the intervention phase could have been related to watching and frequency counting her own counseling sessions and then being asked to discontinue this practice.

Directions for Future Research

The results for this study provide some in-depth information on patterns of counselor trainee basic skill acquisition, maintenance, and loss that could be considered for follow-up and future studies. One unanticipated finding for this study was that two CITs showed a skill loss pattern in baseline. CIT A presented with an overall downward trend during baseline reflecting skill loss in the second, third, and fourth baseline points as compared to the first point. Although in the first six baseline points CIT C demonstrated an overall small but increasing trend reflecting skill gains during baseline, this participant also began to lose counseling skills and the overall baseline for this participant reflects a downward trend. Since there are so few single case designs published in counseling and counselor supervision, little is known about overall patterns of skill acquisition and loss in terms of basic skills on such an in-depth level.

Few recent studies have provided detailed information about which basic counseling skills are easier or more difficult to acquire. Therefore, the field of counselor supervision could be further enriched by exploring and measuring specific verbal and nonverbal behavioral goals for CITs. It is possible that a more precise hierarchy of counselor basic skills and the way these skills

develop or are learned could be developed. For example, the literature may be developing in light of a more precise spectrum of delineating which skills are easiest to acquire versus most difficult (i.e., Kuntze et al., 2009; Hill, Thompson, & Ladany, 2003, Robinson & Kinnier, 1988). The use of silence might actually be a more advanced skill than previously thought. The inclusion of more single case designs in the field of counseling and counselor supervision would be of benefit to the field in terms of methodological diversity, as well as in providing a level of precision in terms of analyzing which components of supervision are the most effective for basic skill development and which skills need the most practice and training.

Another finding in this study that corresponds to the finding of other studies and could be used to inform further research is that all CITs had difficulty using brief periods of silence in their counseling sessions. Silence was only coded during one session each for CITs A and C, even though much time was given during supervision sessions to the instruction, rehearsal, and role-play of this skill. CIT B did not demonstrate silence during any of the recordings coded and used in this study. The principal investigator also met with the most reluctance and resistance to using silence in supervision sessions versus the use of other counseling skills. Other research has indicated that CITs acquire basic skills better than more advanced skills, and that more training is needed in order for beginning counselors to learn more difficult skills, such as confrontation, reframing, and advanced accurate empathy (Kuntze et al., 2009). Another possibility is that nonverbal counseling skills and attending behaviors are more difficult for beginning counselors to use or could be considered moderate or advanced counseling skills that require extra training, practice, and experience (Hill et al., 2003).

Little recent information is available about the ease or difficulty associated with using nonverbal skills or attending behaviors rather than verbal attending behaviors. Most studies investigating the teaching of basic counseling skills in recent literature track verbal behaviors such as summarizing, paraphrasing, minimal encouragers, reflections, and confrontation (i.e.,

Kuntze et al., 2009; Sharpley & Guiddara, 1993). A study investigating skills training with a didactic-experiential focus for community health professionals found similar results (Rushton & Davis, 1992). In this study the participants made both global gains and discrete skill gains in counseling and verbal behaviors although not in the non-verbal skill area. On the subscale used to measure attending behaviors, verbal attending behaviors reflected improvement although not nonverbal attending behavior. Furthermore, these researchers suggested that the role of anxiety in role-playing nonverbal attending behaviors should be researched.

The suggestion that anxiety may be related to demonstrating nonverbal behaviors coincides with the difficulty and resistance by counselor trainees and the use of silence noted by the principal investigator in the present study. One recent study found that most group counseling trainees incorrectly thought of the use of silence as hostile (Kivlighan & Tibbits, 2012). These researchers concluded that trainees likely have a difficult time understanding the differences between how silence is used in everyday interactions versus how it is used therapeutically. Therefore, it is possible that counselor trainees not only have difficulty acquiring the skill of silence but also have misconceptions as well anxiety surrounding its use.

Researchers have pointed out that the best way to measure silence is not through investigating the frequency of it as related to treatment outcomes but that like other counseling skills, silence should be used when the clinician sees that the impact of silence is likely to be most valuable. Hill and colleagues (2003) surveyed how and why therapists use silence and found that as well as finding additional support for the above findings, therapists often utilize silence when actively problem-solving and attend to their client during its use. These clinicians also noted that they do not often use silence with clients who are experiencing many disturbances or with clients who might misunderstand or who have had negative family experiences with silence. This study also found that therapists learned much about the use of silence through supervision and clinical experience versus in their graduate training. Thus, a focus on the use of silence during

supervision may be one of the most important learning opportunities in terms of this skill development for counselor trainees.

One study found that in interviews rated by a standardized client as having higher rapport that silence was used more frequently and in larger overall amounts (Sharpley, 1997). In a qualitative study investigating why experienced therapists use silence, clinicians reported using it to aid in expressing emotion, to assist clients in taking responsibility, to enhance reflection, to show empathy, and to take time to formulate what to say to the client. These therapists also reported that they used silence more and with more confidence as they gained experience than at the beginning of their careers. In addition, these clinicians reported that a therapeutic alliance is a prerequisite for the use of this skill and that they often explained to clients why they used it. Another finding of interest is that these clinicians reported that silence is a skill that was learned during supervision or through their own experience as a client rather than in their graduate training (Ladany, Hill, Thompson, & O'Brien, 2004). Therefore, having an integrated didactic and experiential training component that addresses the differences in how silence is used socially versus therapeutically could be beneficial to counselor trainees. In addition to different methods of training, desensitization and repetition in supervision might be useful learning strategies, where silence is addressed and worked on in each supervision session.

Another benefit of this study is that it could be used to stimulate ideas for other researchers who might be interested in the use of a single case design research for conducting research. Because single case designs are so rarely used in counseling research, this study serves to further increase methodological diversity in the field. Additional types of research questions in counseling and counselor supervision that are best answered by single case designs would help to expand the fields. Doctoral programs in counseling might want to consider more in-depth training for students in single case research design in order to bring a greater balance to the type of research being conducted in counseling and counselor supervision (Ellis, 1999; Lundervold and

Belwood, 2000).

One difficulty in observational research is balancing naturalistic observation with the need to respond to the needs of the counseling client at the time while still keeping structure in place that strengthens a the study. For example, if CITs were required to maintain session length within a five-minute window, the length of session times would not be so limiting in terms of the analysis of results. Future studies might require that sessions last from 47-52 minutes for example. Thus, standardizing session times could be of benefit to future studies.

Tracking more than 10 counseling sessions would also be of benefit in terms of additional single case designs. For example, if CIT C had been able to counsel a few additional sessions in the intervention phase without semester term limits, the results for this participant would be much clearer. In addition, introducing CIT A into the intervention phase after the third supervision session instead of after the fourth might have provided for CIT C to be introduced to the intervention phase after the seventh supervision session rather than after the eighth and could have provided an additional data point for visual analysis for this participant in terms of assessing intervention effects.

Because skill loss that was demonstrated for two participants during baseline, withdrawal, reversal, and alternating treatment designs could be applied to see which, if any, basic counseling skills can be gained, lost, and regained. For example, rather than an MBL approach, participants could receive intervention where behavioral skills training is applied and removed. Furthermore, CITs could receive intervention that alternates between phases of behavioral skills training and IPR for basic counseling skills in supervision. Group MBL designs could also be conducted, where different practicum classes have staggered baselines with instructional or supervisory intervention for basic skills. A group design could also be formed with a control practicum class receiving only IPR in supervision and another practicum class receiving intensive behavioral skills training in supervision.

Implications for Counselor Training

In regard to the provision of supervision to CITs in academic settings, often persons providing supervision for practicum students are doctoral students who are taking or have recently finished supervision coursework. Although these students have received instruction in the provision of supervision, they may have received different degrees of coursework or instruction in learning theory. In other words, counselor supervisors may have received instruction in how to provide supervision but not necessarily in effective experiential teaching strategies and the measurement of the effectiveness of techniques used. In addition to the use of learning theory principles, the ease with which they are incorporated with measurement strategies is also significant. Hence, supervisors would benefit from a precise way to track or measure the progress their trainees are making outside of global rating systems. Moreover, CITs might benefit from very specific measurable goals and graphing their progress could serve as a source of feedback and motivation for further development.

Moreover, Meyer (1978) suggested over 30 years ago that counselor skill maintenance is a problem that should be addressed. Although this author was referring to skill loss after training is completed, strategies could be implemented to enhance skill maintenance during training as well as afterward. Also suggested was that traditional maintenance methods of supervision, observation, and feedback; behavioral self-control procedures, and self-supervision concepts could be utilized to create improved skill retention. In particular, this author suggested a self-supervision program with a focus on behavioral self-control for specific counseling behaviors to maintain counseling skills learned during training. For example, self-control procedures as applied to counseling could involve watching one's sessions and then adding goals or segments to improve upon as well as reinforcing oneself during an accomplishment in a session.

As noted by Binder (1996), most educational programs focus on skill acquisition and the establishment of skills but not enough time is devoted to fluency training. Because counseling

skills are quite different from regular conversation skills, attention to the acquisition of skills, skill maintenance, the fluency of skills, and the generalization of skills could be important instructional tools for counselor supervisors.

In summary, the fields of counseling and counselor supervision could be enhanced by further studying which beginning skills are more easily acquired and which skills take more training to acquire. For example, empathy may be a more difficult basic skill to acquire (Dennin & Ellis 2003) as well as silence (Hill et al., 2003; Kivlinghan & Tibbits, 2012; Ladany et al., 2004). Counselor trainees likely need additional experiential learning opportunities to develop more advanced skills as well as skills that differ in regard to their use therapeutically versus in general social interaction and conversation (Kivlighan & Tibbits, 2012).

Conclusion

In conclusion, applying an experiential behavioral skills training component to counseling supervision for counselor trainees is an effective means of increasing certain counseling basic skills. This study has provided important information regarding and could serve to stimulate more research surrounding the furthered use of single case design research; research in counseling microskills and how they develop; patterns of basic skill acquisition, loss, and maintenance for counselor trainees; the incorporation of increased focus on single case designs research in counseling graduate programs, implications for the training of counselor supervisors, and the significance of the supervisory working alliance in experiential training activities.

Regarding patterns of skill acquisition in this study, the basic skill of asking open questions was the easiest skill to acquire, followed by paraphrasing, the intentional use of posture, bringing client behavior into the here-and-now, reflection of feeling, and then the use of silence. Thus, research in counselor trainee skill development could be augmented by further investigating which counseling skills are more easily acquired versus those than require more intensive teaching. In addition, the integration of behavior analytic and learning theory techniques and

tracking methods could be beneficial for counselor trainees and counselor supervisors. The investigation of counselor trainee learning including the maintenance of learned basic counseling skills and patterns of skill acquisition and loss could further enrich the existing literature. Furthermore, it is possible that the addition of fluency training for basic skills once skills are acquired could be a beneficial learning technique for counselor trainees in counseling supervision. Another important component of this study is that the supervisory alliance was consistently rated very high throughout its duration. Therefore, counselor trainees might demonstrate improved responding when the working relationship between supervisor and trainee is consistently strong.

Single case designs offer a unique level of in-depth analysis of skill demonstration and are extremely under-utilized in the fields of counseling and counselor supervision. The inclusion of more single case designs would serve to increase methodological diversity in these fields. In addition, single case designs have much to offer in terms of the type of detail such designs can provide about individual learning while still maintaining experimental control. Furthermore, single case research designs easily lend themselves to skill tracking which could be beneficial to counselor trainees as well as counselor supervisors.

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APPENDIX A: DATA SHEET USED FOR THE CODING OF COUNSELOR BEHAVIOR

Date, Coder, Participant	Intentional Use of Posture	Intentional Use of Silence	Paraphrase Content	Reflect Feelings	Bring Into Here-And-Now	Frequency of Open Questions
	Occurrences: Notes/Questions:	Occurrences: Notes/Questions:	Occurrences: Notes/Questions:	Occurrences: Notes/Questions:	Occurrences: Notes/Questions:	Occurrences: Notes/Questions:
	Occurrences: Notes/Questions:	Occurrences: Notes/Questions:	Occurrences: Notes/Questions:	Occurrences: Notes/Questions:	Occurrences: Notes/Questions:	Occurrences: Notes/Questions:
	Occurrences: Notes/Questions:	Occurrences: Notes/Questions:	Occurrences: Notes/Questions:	Occurrences: Notes/Questions:	Occurrences: Notes/Questions:	Occurrences: Notes/Questions:
	Occurrences: Notes/Questions:	Occurrences: Notes/Questions:	Occurrences: Notes/Questions:	Occurrences: Notes/Questions:	Occurrences: Notes/Questions:	Occurrences: Notes/Questions:
	Occurrences: Notes/Questions:	Occurrences: Notes/Questions:	Occurrences: Notes/Questions:	Occurrences: Notes/Questions:	Occurrences: Notes/Questions:	Occurrences: Notes/Questions:
	Occurrences: Notes/Questions:	Occurrences: Notes/Questions:	Occurrences: Notes/Questions:	Occurrences: Notes/Questions:	Occurrences: Notes/Questions:	Occurrences: Notes/Questions:
	Occurrences: Notes/Questions:	Occurrences: Notes/Questions:	Occurrences: Notes/Questions:	Occurrences: Notes/Questions:	Occurrences: Notes/Questions:	Occurrences: Notes/Questions:
	Occurrences: Notes/Questions:	Occurrences: Notes/Questions:	Occurrences: Notes/Questions:	Occurrences: Notes/Questions:	Occurrences: Notes/Questions:	Occurrences: Notes/Questions:

APPENDIX B: DATA SHEET USED FOR THE CODING OF SUPERVISOR BEHAVIOR

Date, Coder, Participant	IPR	Behavioral Skills Training		Date, Coder Initials, Participant	IPR	Behavioral Skills Training
	Occurrences: Notes/Questions:	Occurrences: Notes/Questions:			Occurrences: Notes/Questions:	Occurrences: Notes/Questions:
	Occurrences: Notes/Questions:	Occurrences: Notes/Questions:			Occurrences: Notes/Questions:	Occurrences: Notes/Questions:
	Occurrences: Notes/Questions:	Occurrences: Notes/Questions:			Occurrences: Notes/Questions:	Occurrences: Notes/Questions:
	Occurrences: Notes/Questions:	Occurrences: Notes/Questions:			Occurrences: Notes/Questions:	Occurrences: Notes/Questions:
	Occurrences: Notes/Questions:	Occurrences: Notes/Questions:			Occurrences: Notes/Questions:	Occurrences: Notes/Questions:
	Occurrences: Notes/Questions:	Occurrences: Notes/Questions:			Occurrences: Notes/Questions:	Occurrences: Notes/Questions:
	Occurrences: Notes/Questions:	Occurrences: Notes/Questions:			Occurrences: Notes/Questions:	Occurrences: Notes/Questions:
	Occurrences: Notes/Questions:	Occurrences: Notes/Questions:			Occurrences: Notes/Questions:	Occurrences: Notes/Questions:

APPENDIX C: SAMPLE TASK ANALYSIS

Participant & Session:

Difficulties observed in session:

Strengths observed in session:

Frequency of Behavioral Excesses:

- Advice:
- Judgment:
- Self-disclosure:
- Minimal encouragers:
- Off-topic responses:
- Interruptions:
- Closed Questions:
- Incomplete thoughts/statements/questions:
- Other, List & Tally:

Frequency of Skills to Increase:

- Posture:
- Silence:
- Paraphrase:
- Reflection of Feeling:
- In-Vivo Technique:
- Open Questions:

Other Notes/Comments: