

VALUE-DIRECTED ACTION IN THE WORKPLACE: EVALUATING THE EFFECT OF AN ACTRAINING SESSION ON LEVELS OF UNSUPERVISED STAFF TASK ENGAGEMENT

by

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(Under the Direction of Georgette Morgan)

ABSTRACT

Values-centered Acceptance and Commitment Training (ACTraining) interventions have enhanced the performance of direct care providers across a variety of settings; however, procedural limitations raise concerns regarding the generalization of these interventions' outcomes into more naturalistic contexts. The current study evaluated the effect of an ACTraining session upon levels of unsupervised task engagement among three master's students in an applied behavior analysis (ABA) demonstration classroom. The experimenter employed a multiple baseline across participants design to measure the prevalence of task engagement (i.e., active engagement, active treatment, data collection, and task-oriented discussion) when working with preschool age students with intellectual and developmental disability (IDD). All participants exhibited an increase in task engagement levels following intervention, illustrating a positive functional relation between ACTraining and unsupervised performance. The observed performance improvements demonstrate the generalization of values-centered ACTraining's positive outcomes into contexts reflective of more naturalistic, unsupervised workplace settings.

INDEX WORDS: Acceptance and Commitment Training, Developmental and Intellectual Disability, Direct care providers, Graduate students, Multiple baseline across participants design, Task engagement, Values

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TABLE OF CONTENTS

	Page
ACKNOWLEDGEMENTS	iv
LIST OF TABLES	vii
LIST OF FIGURES	viii
CHAPTER	
1 Introduction.....	1
A Behavior Analytic Introduction to Values	1
Pinpointing Values' Role in the Workplace	3
A Framework for Values-Centered Intervention in the Workplace.....	6
Opportunities for Further Advancement.....	10
Purpose.....	16
2 Brief Method.....	18
Participants.....	18
Setting	21
Materials	23
Dependent Variable	24
Research Design.....	30
Procedures	32

4	Results.....	45
	Task Engagement.....	45
	Outcome Validity.....	52
	ACTraining Acceptability.....	55
5	Discussion.....	58
	The Current Study.....	58
	Convergence and Divergence with Contemporary Literature	59
	Limitations	63
	Practical Implications and Future Directions.....	66
	Conclusion	67
	REFERENCES	69
	APPENDICES	
	A Pre-Study Examination of Task Engagement Graphs	83
	B Observation Materials.....	86
	C Intervention Materials.....	89
	D Social Validity Surveys.....	97
	E Graphical Comparison of Observer Performance Scores	101

LIST OF TABLES

	Page
Table 1: Reported Values and Committed Actions	74
Table 2: Outcome Validity Survey BAR Scale Results.....	75
Table 3: Outcome Validity Survey Likert Scale Results	77
Table 4: ACTraining Accessibility Survey Results	79

LIST OF FIGURES

	Page
Figure 1: Task Engagement across Participant Tiers.....	81
Figure A1: Pre-Study Task Engagement across Conditions (Angelica).....	83
Figure A2: Pre-Study Task Engagement across Conditions (Eliza).....	84
Figure A3: Pre-Study Task Engagement across Conditions (Peggy).....	85
Figure B1: PIR Data Sheet.....	86
Figure B2: Observation Reference Sheet.....	87
Figure B3: Observer Procedural Fidelity Checklist.....	88
Figure C1: ACTraining Materials Package.....	89
Figure C2: ACTraining Visual Aid.....	92
Figure C3: ACTraining Procedural Fidelity Checklist	96
Figure D1: Outcome Validity Survey	97
Figure D2: ACTraining Acceptability Survey	99
Figure E1: Unsupervised Task Engagement across Observers (Angelica)	102
Figure E2: Supervised Task Engagement across Observers (Angelica).....	103
Figure E3: Unsupervised Task Engagement across Observers (Eliza).....	104
Figure E4: Supervised Task Engagement across Observers (Eliza).....	105
Figure E5: Unsupervised Task Engagement across Observers (Peggy).....	106
Figure E6: Supervised Task Engagement across Observers (Peggy)	107

CHAPTER 1

Introduction

A Behavior Analytic Introduction to Values

In the contemporary literature, behavior analysts conceptualize values as “rules that function as verbal motivating operations that increase or decrease the effectiveness of stimuli as reinforcers or punishers, thereby supporting overt behaviors that produce those stimuli” (Tarbox et al., 2020, p. 13). With respect to the development of values, Dixon et al. (2023) characterizes these rules as (a) verbally constructed, (b) global, and (c) freely chosen.

The term *verbal construction* points towards the concept’s roots within relational frame theory (RFT). This interpretation of verbal behavior views values or, rather, valuing as the transformation of stimulus functions achieved through an individual’s relational responding (Dixon et al., 2023; Paliliunas, 2022). When applied more precisely to human behavior, this behavioral process entails the hierarchical relation of overt behavior (e.g., complimenting a peer) and salient stimuli (e.g., peer smiles) to a broader, value-specific category (e.g., being a friendly person) in an inclusive manner, thus strengthening the reinforcement for engagement in the overt behavior without altering its formal characteristics (Paliliunas, 2022; Tarbox et al., 2020). In effect, an individual valuing a behavior relates the direct contingencies associated with the specific behavior to indirect contingencies for more powerful, longer-term positive reinforcement (Paliliunas, 2022; Tarbox et al., 2020).

These indirect contingencies denote the interminable, *global* nature of values. Unlike discrete events or outcomes, values cannot be comprehensively achieved through the fulfillment

of contingencies but rather instantiated through repeated practice (Dixon et al., 2023). For example, an individual that compliments a peer does not become a friendly person through a single demonstration of valued behavior. However, through consistent engagement in valued behavior over time, the individual moves in the direction of being a friendly person (Tarbox et al., 2020).

Although this behavior analytic conceptualization of values describes all values as verbally constructed and global, the specific values selected, or *freely chosen*, by a person and the behavior contained within are informed by the cultural context in which the individual grows and lives. Viewed through Baum's (1995) account of behavior and culture, cultural context shapes an individual's behavior through its unique social and environmental contingencies. Consequently, the indirect contingencies that augment reinforcement or punishment for behaviors develop and manifest differently across ethnicities, families, and individuals. However, unlike rule-governed behavior maintained purely or primarily through coercive social contingencies, Dixon et al. (2023) distinguishes values from other culturally informed contingencies and practices in that they are freely chosen in the absence of aversive control and "exhibit reinforcing properties that are intrinsic to behavior" (p. 124). As such, the effect of values upon the reinforcement of truly valued behavior persists in the absence of social reinforcers and punishers (Dixon et al., 2023; Paliliunas, 2022).

As verbally constructed, global, and freely chosen motivating operation capable of altering reinforcer effectiveness, personal values bear pertinent implications for an individual's response allocation. Through the lens of matching law – an empirically supported model through which an individual's response allocation can be predicted and manipulated in proportion to the reinforcement contacted by each available response (Borrero & Vollmer, 2002) – individuals

may shift overt behavior towards responses hierarchically related to, or contained within, a chosen value. Empirical studies from both the group and single-subject research disciplines have exemplified value-directed behavior change through enhanced academic performance (Chase et al., 2013), increased staff-initiated interactions with patients (Castro et al., 2016), and a multitude of additional performance-related applications (Suarez et al., 2022). However, the challenge for those seeking adaptive, value-directed behavior change is not the efficacy of personal values as motivating operations. Instead, the challenge within applied contexts is the coherence, or rather, the lack of coherence, between individual's personal values and behavior (Tarbox et al., 2020).

Pinpointing Values' Role in the Workplace

Values and Burnout

Although personal values and, in turn, the direct consequences of a values-behavior mismatch manifest uniquely across individuals (Dixon et al., 2023; Gould et al., 2018), correlational studies point towards a potential role of values-behavior coherence in the workplace. For example, Bottini et al.'s (2020) survey of professionals and paraprofessionals serving individuals diagnosed with ASD found the degree to which a responder's values and perception of an organization's values match to be a statistically significant predictor of burnout. This burnout, plaguing an estimated 72% to 87% of behavioral service providers at moderate to severe levels, correlates with increased procedural errors, diminished client interactions, decreased attendance, and increased turnover intent among other detrimental service outcomes among affected staff (Bottini et al., 2025). Despite substantial efforts to address the symptoms of burnout at both the individual and organizational level, the lack of congruence across syndrome-based models and measures of burnout has stymied effective, proactive action against the environmental antecedents of the phenomenon (Bottini et al., 2025).

To guide the development of pragmatic, function-based strategies against burnout and its observable effects, Bottini et al. (2025) identified and categorically defined burnout consistent behavior as behavior that (a) enables an individual to escape or avoid aversive, work-related stressors and/or (b) provides access to stimuli or activities that offset the aversive stressor (Bottini et al., 2025, p. 83). Further, Bottini et al. (2025) synthesized a broad list of antecedents that may precede and later maintain burnout consistent behavior, including but not limited to insufficient task supports for employees, inequitable distribution of rewards and opportunities across employees, and, notably, the mismatch between personal and organizational values as described in Bottini et al. (2020). This alternative, function-based approach to understanding the contextual stimuli and behavioral contingencies related to burnout dovetails Daniel's (2016) behavior analytic illustration of the modern American workplace, illuminating a path towards pragmatic performance intervention nested in values.

A Case for Positive Reinforcement

Daniels (2016) characterizes the typical, modern workplace as an environment rife with inefficiency and employee discontent brought about by management practices rooted in negative reinforcement, and, in some cases, punishment. With respect to long-term outcomes, these common negative reinforcement contingencies (e.g., deadlines, quotas, increased oversight, etc.) only yield a level of performance among employees that is “just enough to escape or avoid some unpleasant consequence” (Daniels, 2016, p. 51). Alarming, the distinction between this prevalent behavioral pattern identified by Daniels (2016) and burnout consistent behavior may only be an employee's prolonged exposure to the workplace's aversive negative reinforcement contingencies (Bottini et al., 2025). In response to these deficient management practices, Daniels (2016) proposes an alternative approach to management that, despite not targeting burnout as a

psychosocial phenomenon, replaces the coercive practices (i.e., negative reinforcement contingencies) that often evoke and reinforce burnout consistent behavior while simultaneously maximizing employee productivity: positive reinforcement.

Across the behavior analytic literature, performance-contingent reward strategies produce more desirable and reliable performance outcomes than the coercive strategies that require a minimum level of performance to remove an aversive stimulus (e.g., the threat of losing work-related opportunities, privileges, etc.) (Daniels, 2016; Johnson et al., 2024; Pingo et al., 2022). For example, a typical employee required by a clinical quota to complete two Picture Exchange Communication System (PECS) sessions with a patient would most likely only complete two PECS sessions in the absence of reinforcement for additional completed sessions. One approach to increase this employee's performance would be to increase the clinical quota to three or four sessions; however, this approach introduces environmental antecedents to burnout consistent behavior (e.g., increased workload without additional support) without addressing the approach's initial performance-capping limitation (Bottini et al., 2025; Daniels, 2016). Alternatively, performance-contingent reward systems with positive, immediate, and certain reinforcement (i.e., graphed feedback and supervisor praise for an increase in completed PECS sessions) would likely match and surpass performance levels exhibited under the quota system (Carr et al., 2013; Daniels, 2016; Pingo et al., 2020). Unfortunately, certain restrictions common within the workplace may limit the feasibility or effectiveness of these strategies.

Some Obstacles to Adoption

Just as supervisors cannot always monitor employees and, in turn, ensure elevated performance in their absence (Brackett et al., 2007), supervisors cannot verify and reinforce every instance of desirable behavior exhibited by an employee. Applied within the context of

PECS delivery, a supervisor may not be able to verify that the employee implemented the protocol with fidelity through the examination of permanent products alone. Similarly, not all available rewards may sufficiently reinforce the desired behavior for the specific employee given the diversity of personal preferences across a workforce (Daniels, 2016). Although direct-contingency management strategies (e.g., increased supervisor presence or additional task support) may minimize or eliminate these limitations, not all service providers have access to the resources required to effectively employ these strategies (DOL, 2024). The high levels of burnout within the applied behavior analysis (ABA) service industry (Bottini et al., 2025), despite professionals' intimate knowledge and practice of positive reinforcement strategies, may serve as a critical indicator of this scarcity.

The synthesis of Bottini et al.'s (2025) model of workplace burnout and Daniel's (2016) broad review of workplace behavioral contingencies illustrate positive reinforcement's potential role in both enhancing employee performance and disrupting the behavioral contingencies consistent with burnout. However, the logistical barriers presented by some empirically demonstrated reinforcement systems emphasize the need for accessible, alternative approaches to positive reinforcement delivery in the workplace. Fortunately, contemporary behavior analysis is not constricted to the confines of direct-contingency manipulation. With the development of RFT and Acceptance & Commitment Therapy (ACT) comes an additional avenue through which employees may contact or augment positive reinforcement: values-behavior coherence.

A Framework for Values-Centered Intervention in the Workplace

Contingency Coordination

Alignment between an individual's personal values and an organization's stated values do not necessarily equate to the behavior analytic interpretation of values-behavior coherence.

Bottini et al. (2020) points towards this distinction in its recommendation that organizations, “create a shared vision for the organization that is reflected in the practices and policies rather than only in the mission statement” (p. 9). These organizational practices and policies shape the behavioral contingencies, and, consequently, the reinforcement available to employees in the workplace (Daniels, 2016). As such, personal-organizational values misalignment may be alternatively interpreted as the incoherence between the behavioral contingencies that an employee hierarchically relates to his or her values and the behavioral contingencies accessible within the immediate environment (Paliliunas, 2022; Tarbox et al., 2020). As Bottini et al. (2020) suggests, organization-level approaches to remediate this values-behavior incongruity through practices and policies may improve employees’ access to value-aligned behavioral contingencies. However, these strategies in isolation cannot guarantee that employees will relate their stated personal values to the behavioral contingencies afforded by organization-level intervention. By targeting behavioral processes through which employees hierarchically relate their chosen values to the actions available within the work context, an ACT approach to values-centered intervention may support organizations in enhancing values-behavior coherence (Paliliunas, 2022; Tarbox et al., 2020) and, in turn, performance outcomes (Bottini et al., 2025; Daniels, 2016; Pingo et al., 2020).

Values within the ACT Framework

Within the existing body of behavior analytic research, relatively few empirical studies currently explore the reinforcing role of values as an isolated component within a single-subject design context (Paliliunas, 2022). Instead, behavior analytic-oriented researchers and practitioners evaluate values as a single, integrated component alongside many components within a larger, more complex conceptual network, ACT (Hayes et al., 2020; Paliliunas, 2022;

Tarbox et al., 2020). This network conceptualizes values as one of six interactive, operationally defined behavioral processes or repertoires – acceptance, defusion, present moment attention, self-as-context, values, and committed action – that mediate an individual’s psychological flexibility and committed, values-directed action in service of a meaningful life (Tarbox et al., 2020). As such, insight into the reinforcing role of values lies embedded within numerous ACT interventions that target several behavioral repertoires simultaneously (Garcia et al. 2022; Suarez et al., 2022; Tarbox et al., 2020). Despite the diversity of ACT-based applications across psychotherapeutic (e.g., clinical depression treatment) and non-psychotherapeutic (e.g., workplace performance enhancement) contexts, values-centered intervention within the ACT framework adheres to a common, conceptually systematic approach.

Summarized broadly, effective values-centered ACT intervention aims to, “transform the stimulus function of events that are otherwise aversive and that evoke avoidant responses” (p.13) to promote engagement in value-driven behavior (Tarbox et al., 2020). In other words, this approach seeks to mediate the positive reinforcement contacted through a behavior by altering the way in which individuals connect behavior-related stimuli to their personal values. When functioning as establishing operations, relating one’s values to a specific behavior may simply augment the positive reinforcement mediated through existing direct behavioral contingencies (Little et al., 2020; Pingo et al., 2020). However, the truly transformational aspect of the ACT approach lies within an individual’s interaction with aversive contextual stimuli or events. Often with the support of exercises targeting other ACT behavioral processes (e.g., acceptance, defusion, etc.), attendance to and recontextualization of aversive stimuli through the lens of one’s values may transform contextual stimulus functions such that, “stimuli that participate in equivalence networks with the stated value acquire new, more appetitive stimulus functions”

(Tarbox et al., 2020, p. 13). Translated to employee performance, ACT's potential to transform the stimulus function of shorter-term, aversive – or less preferred – tasks and related stimuli to that of discriminative stimuli for more powerful, value-aligned positive reinforcement warrants further empirical exploration of values as “motivative, augmental rules” (p. 117) in the workplace (Paliliunas, 2022).

ACT in the Workplace

Numerous empirical studies conducted over the past decade have produced single-subject demonstrations of ACT's effectiveness in producing desirable behavior change in the workplace (Suarez et al., 2022). These non-psychotherapeutic applications of ACT within the scope of applied behavior analysts – distinguished as Acceptance and Commitment Training (ACTraining) – exhibit ACTraining's capacity to both (a) augment the effectiveness of direct contingency staff training interventions such as graphed performance feedback (Pingo et al., 2020) and (b) mediate operant behavior change without the addition of explicit direct contingency supports (Ragulan et al., 2023). Further, ACTraining intervention within the behavioral service sector has produced socially significant, therapeutic effects upon the behaviors and, in turn, treatment outcomes obstructed by burnout consistent behavior (Bottini et al., 2025; Garcia et al., 2022; Suarez et al., 2022).

With respect to the avoidance of client interactions correlated with burnout (Bottini et al., 2025), ACTraining increased the frequency of staff-initiated interactions between direct care staff and clients with developmental disabilities across different contexts, ages, and years of experience (Castro et al., 2016; Chancey et al., 2019). Regarding the prevalence of burnout-related work errors (Bottini et al., 2025), ACTraining introduced to behavioral service professionals increased accuracy of data collection (Issen et al., 2021) and the procedural

integrity of client treatment (Pingo et al., 2020; Ragulan et al., 2023). Exemplifying ACT's conceptual capacity to transform the stimulus function of aversive events that historically evoke avoidant behavior, Little et al. (2020) employed ACTraining to increase newly promoted clinic trainers' use of behavioral skills training (BST) when teaching skills to staff despite expressed aversion to and consequent avoidance of the task prior to ACTraining intervention. Further, Gould et al. (2018) displayed the apparent limitless number of behaviors sensitive to ACT-based intervention through its use of workshops to increase participant (i.e., mothers of one child diagnosed with ASD) engagement in unique, freely chosen, value-driven behaviors including but not limited to self-care in the absence of children, efficacious implementation of behavior plans at home, and letting one's partner take care of the child without the participant's supervision.

Currently, the ACTraining literature serves as an ample body of work from which performance-oriented behavior analysts may draw inspiration. However, alongside each new finding in the research comes new questions and additional limitations to consider. Through further empirical investigation into the generality, durability, and accessibility of ACTraining, practitioners can accelerate the integration of a new class of cost-effective, reinforcement-based strategies into the contemporary management paradigm (Moran & Ming, 2022; Suarez et al., 2022; Paliliunas, 2022; Tarbox et al., 2020).

Opportunities for Further Advancement

Some Logistical Limitations of the Comprehensive ACTraining Approach

Despite ACTraining research's contributions to the broader behavior analytic literature, the requirements and constraints presented by some ACTraining interventions may hinder the approach's adoption into the typical work setting, in turn, stymieing further empirical evaluation of ACTraining and its conceptual components (e.g., values and committed action). From the

perspective of prospective ACTraining practitioners, two initial investments present substantial barriers to entry: trainer expertise and intervention duration. Although ACT's model of interactive behavioral processes provides practitioners with a multitude of avenues through which they may address deleterious behavior, comprehensive ACTraining interventions targeting all six processes may prove to be inaccessible across contexts. For example, Pingo et al. (2020) and Ragulan et al. (2023) require that interventionists demonstrate both a high level of expertise in ACT through didactic instruction of all six ACT processes and an intimate familiarity with numerous ACT-based exercises delivered throughout intervention. For some behavior analytic practitioners, the coursework, literature mastery, and supervised practical fieldwork needed to conduct these interventions with proficiency (Broadhead et al., 2018) may be beyond reach. Furthermore, the two studies reported time investments of 8 hr and 3 hr respectively to implement the full ACTraining intervention packages, an investment that may initially appear daunting for supervisors operating comfortably within the contemporary performance management paradigm. Although the training and time invested in both studies produced observable improvements in active treatment engagement (Pingo et al., 2020) and treatment integrity (Pingo et al., 2020; Ragulan et al., 2023) among behavioral service staff, the demand for less resource-intensive ACTraining intervention have inspired a slew of studies investigating the necessary parameters of ACTraining required to attain similar outcomes (Suarez et al., 2022).

ACTraining Adaptations

To counteract these logistical barriers to entry, recent single-case research studies have systematically varied the delivery format, intensity or length, and content of ACTraining to reproduce similar levels of behavior change as observed following more resource-intensive intervention packages (Suarez et al., 2022). For example, Chancey et al. (2019) employed an

ACTraining-based workshop series targeting the repertoire of present moment attention to increase the frequency of staff-initiated interactions between staff and clients with development disabilities across three direct support staff members. Interventionists conducted ACTraining across five 15 min workshops delivered immediately prior to a participant's observation session, a less time-intensive endeavor compared to more comprehensive ACTraining interventions (i.e., interventions with didactic instruction and exercises explicitly targeting each ACT repertoire). Additionally, Chancey et al.'s (2019) choice to primarily target participant's present moment attention repertoire (i.e., mindfulness) through workshop exercises further increases the intervention's accessibility.

These findings cohere with present moment attention's role within the conceptual ACT framework. Specifically, these exercises aim to strengthen a participant's, "sensitivity to environmental contingencies and weaken unhelpful sources of verbal stimulus control" (Tarbox et al., 2020, p. 13). In the context of Chancey et al. (2019), this process may manifest as participants attending more closely to the behavioral contingencies present when engaging with clients. However, without intentional guidance, practitioners cannot fully account for the specific stimuli and, in turn, contingencies to which participants attend. For example, the intervention may have incidentally increased a participant's attention to positively reinforcing stimuli such as a client's smile or laughter following staff-initiated interaction, consequently increasing the participant's engagement in the behavior. Alternatively, the present moment attention exercises may have increased a participant's attention to negatively reinforcing stimuli such as an observer's presence (Brackett et al., 2007), likewise increasing the participant's engagement in behavior aligned with organizational expectations. Given the nature of these private behaviors, the observed behavior change exhibited by participants cannot be fully accounted for within the

study. Nevertheless, the therapeutic behavior change observed during and maintained after intervention provides a valuable foundation upon which cost-effective, accessible intervention can be built.

Issen et al. (2021) employed a similar approach to ACTraining to increase staff-initiated interactions and accuracy of data collection. However, the 10 min workshops targeting present moment attention produced weaker demonstrations of effect compared to Chancey et al. (2019) with one participant's level of staff-initiated engagement declining back to baseline levels after an initial upward performance spike (Issen et al., 2021). Although the intervention failed to produce a convincing demonstration of effect across all participants with respect to staff-initiated engagement, Issen et al.'s (2021) delivery of workshops corresponded with increased accuracy of data collection exhibited by the participant whose level of staff-initiated engagement declined. Given that some dimension of behavior (e.g., rate) increases following reinforcement, be it positive or negative, the findings of Issen et al. (2021) suggest that intervention indeed increased participants' attendance to the immediate environment's reinforcing stimuli like the intervention conducted in Chancey et al. (2019). However, its inconsistent results may indicate the exercises' lack of control over which stimuli and contingencies to which participants direct their attention. To more precisely direct observable behavioral change, ACTraining practitioners may benefit from the incorporation of a readily accessible, generalizable, and durable mediator of behavior-contingent reinforcement: personal values (Paliliunas, 2022; Tarbox et al., 2020).

A Return to the Values-Centered Approach

Building upon Chancey et al.'s (2019) approach, Little et al. (2020) takes significant strides towards an empirical ACT-based approach to values-mediated reinforcement in the workplace. Employing a multiple baseline across participants design, the experimenters

introduced participants to an empirically validated direct-contingency intervention (i.e., BST) and ACTraining workshop in a staggered fashion to increase clinical staff trainers' use of BST themselves when teaching staff new skills. Following direct-contingency intervention for each participant, the experimenter conducted a 1 hr ACTraining session containing two present moment attention exercises, one values activity, and one committed action activity delivered in a one-on-one format. Like Chancey et al. (2019) and Issen et al. (2021), the intervention in Little et al. (2020) required significantly less time to fully implement compared to more comprehensive ACTraining interventions. Further, given the use of premade exercises to facilitate exercises and activities adapted from Harris (2007) and Harris (2009), the intervention required arguably less training regarding the implementation present moment attention, values, and committed action exercises and activities as well (Little et al., 2020). Procedurally, Little et al.'s (2020) ACTraining session sought to increase participant's BST usage through three steps: (a) training participants to discriminate stimuli and contingencies in the present moment from potentially distracting private events; (b) prompting participants to identify and select their own personal values; and (c) guiding participants in the identification, selection, and dedication to context-specific, work-related behaviors hierarchically contained within their freely chosen, personal values.

With the introduction of ACTraining, clinic trainers' use of BST increased to levels above those produced by traditional, direct-contingency intervention. Further, elevated performance maintained for at least five observation sessions after the ACTraining session and across at least two different context changes (Little et al., 2020). These findings align with the interpretation of values-behavior coherence as a cost-effective, durable, and generalizable mediator for reinforcement, demonstrating an effective, desirable shift in behavior with minimal

changes to the formal characteristics of the work environment. However, as in Chancey et al. (2019) and Issen et al. (2021), the stimuli and contingencies to which participants attended and, consequently, hierarchically related their values during observation sessions remain unclear. In the ideal conceptual model for behavior change, ACTraining would transform the stimulus function of the work task from that of a discriminative stimulus for negative reinforcement via avoidance to that of a discriminative stimulus for positive reinforcement via engagement in value-aligned behavior (Tarbox et al., 2020). Alternatively, ACTraining may only transform the stimulus function of the work task from that of a discriminative stimulus for negative reinforcement via avoidance to that of a discriminative stimulus for conditional negative reinforcement via engagement in value-aligned behavior in the presence of an observer. In other words, the values hierarchically related to the work task may serve as motivating operations that augment the punishment contacted by inaction in the presence of the observer, thus producing an increase in performance exclusively in the presence of an observer. Although these two different interpretations of the controlling contingency may point towards an arbitrary distinction between positive and negative reinforcement, Bottini et al. (2025) and Daniels (2016) have both provided sufficient rationale for the pursuit of a positive reinforcement approach over a negative reinforcement approach.

Actionable Opportunities

Fortunately, the procedures of Little et al. (2020) provide three opportunities from which future research may strengthen the interpretation of values as a mediator of positive, rather than negative, reinforcement in the workplace. First, the discriminable presence of an observer (i.e., the experimenter) during observation sessions may serve as a powerful discriminative stimulus for negative reinforcement (Brackett et al., 2007). Covert observation of participants would

provide additional insight into the contingencies maintaining observed performance changes as well as the durability of intervention outcomes in the absence of an observer. Second, the experimenter's use of textual prompts immediately prior to the first two post-ACTraining observation sessions may have established or strengthened a negative reinforcer relation with the observer's presence. Withholding the delivery of these prompts would provide additional clarity regarding the components of intervention required to produce behavior change. Third, the combined role of Little et al.'s (2020) experimenter as the primary observer, direct-contingency (i.e., BST) interventionist, and ACTraining interventionist may have further illustrated a clear negative reinforcer relation between the experimenter's presence during observation and BST usage (i.e., the behavior trained by the experimenter prior to ACTraining). The disentanglement of the observer and ACTraining interventionist from any specific behavior prior to ACTraining may mitigate their influence upon participants' choice of committed action during the ACTraining session and, consequently, performance during observation. Although Little et al. (2020) already delivers compelling evidence for ACTraining's capacity to enhance performance through values-behavior coherence, a replication of its procedures with the proposed modifications would provide critical insight into the intervention's generality, durability, and efficacy.

Purpose

The current study aimed to systematically replicate the ACTraining procedures of Little et al. (2020) with three crucial alterations: (a) the experimenter employed a video camera to conduct participant observations covertly; (b) the experimenter only prompted participants to review their Willingness and Action Plan after exhibiting a decline in post-ACTraining performance; and (c) the experimenter did not train or supervise participants in any capacity,

serving only as the ACTraining interventionist and the covert, primary observer throughout the study. With these modifications, the purpose of the study was to evaluate the effect of an ACTraining session upon levels of unsupervised task engagement among three graduate students completing supervised fieldwork requirements in a university-affiliated applied behavior analysis (ABA) demonstration classroom. Further, the study sought to evaluate the durability of the intervention outcomes through an examination of performance levels up to and beyond a two-week, post-intervention threshold. Following intervention, the study also employed independent, university affiliated experts to rate participant performance across baseline and intervention conditions through a behaviorally anchored rating (BAR) scale and a Likert scale to measure the social validity of intervention outcomes. Additionally, the study surveyed participants to assess the intervention's acceptability with respect to accessibility, relevance to the participants' work, and perceived benefits to the participants' professional development.

CHAPTER 2

Brief Method

Participants

General Characteristics

The study included three master's students in a university-affiliated ABA demonstration classroom serving preschool-aged children with developmental disabilities who, in some cases, exhibit severe socially and educationally inhibitive behavior. To fulfill the fieldwork requirements of the university's ABA degree program, these first-year master's students – often referred to as staff – had completed at least one semester of concentrated supervised fieldwork experience in the demonstration classroom prior to the study. During this time, site leads and supporting supervisors provided formal instruction and supervision to the classroom's staff members, including but not limited to the implementation of evidence-based practices such as discrete trial teaching (DTT), intensive toilet training (ITT), and naturalistic developmental behavioral instruction (NDBI).

Pertaining to student-specific training and related task materials, board certified behavior analyst (BCBA) site leads who oversaw daily classroom operations provided each staff member with a written protocol for all the classroom's students, behavioral skills training (BST) to successfully implement general classroom and student-specific procedures, and regular feedback regarding classroom performance. To further support his or her professional development and comply with Behavior Analyst Certification Board (BACB) fieldwork requirements, each staff member signed a supervision contract with a university-affiliated BCBA or BCBA-D at the

beginning of each academic semester to be his or her responsible supervisor. In addition to the provision of supplemental training and direct supervision alongside the classroom's site leads, responsible supervisors engaged in activities with their respective supervisee aligned with the recommendations for an effective supervisory relationship outlined in Bailey & Burch (2016) including but not limited to meeting individually with a supervisee to plan and monitor goals for personal or professional development and progress related to those goals. Specific tasks of the responsible supervisor, relevant to the study, also included approving and signing of supervisee's fieldwork verification forms to be sent to the BACB.

Recruitment and Inclusion Criteria

The experimenter (race/ethnicity = Latino, White; gender = Male; age = 25), a fellow staff member, recruited participants from the university's ABA degree program. With respect to training, the experimenter completed 16 months of concentrated supervised fieldwork experience across the university's eligible practicum sites prior to the study. Additionally, the experimenter had completed all academic coursework needed to sit for the BCBA certification examination, excluding the degree program's final semester thesis and practicum requirement. To fulfill this thesis requirement, the experimenter contacted all first-year master's students via email to request their participation and informed consent for the current study. In this initial communication, the experimenter characterized the general purpose of the study as a non-specific staff training initiative, described potential observation methodologies (e.g., video recording), projected the time commitment required by participants, informed participants that they could opt out of the study at any point in time, and provided a university-approved informed consent form.

From this initial pool of potential participants, a staff member was excluded from the study if his or her responsible supervisor served as a site lead in the ABA demonstration classroom. Further, a staff member was excluded if his or her supervisor did not provide supervision of restricted behavior analytic fieldwork activities in this setting. Upon satisfying this preliminary inclusion criteria, a staff member was included in the study if he or she exhibited differentiation between levels of task engagement in the presence of his or her responsible supervisor and levels of task engagement in the absence of his or her responsible supervisor. Prior to the study, the experimenter observed consenting staff members' performance under these two conditions – the Supervisor Present Condition and Supervisor Absent Condition described in the study's procedures – in an alternating fashion to ascertain differentiated levels of responding through visual analysis. If a staff member exhibited differentiated responding (i.e., a non-overlap between the two conditions across at least three data points in each respective condition) and exhibited higher levels of performance in the Supervisor Present Condition, the staff member qualified for participation in the study. Each participant's respective results in this pre-study examination can be reviewed in Appendix A.

Selected Participants

Qualifying participants included Angelica, Eliza, and Peggy. Angelica was a 21-year-old Asian American woman. Prior to beginning fieldwork with the university's ABA master's degree program, Angelica had attained a bachelor's degree in psychology and had worked with pre-school aged youth with disabilities in an educational or caregiving context for 3 months. Eliza was a 22-year-old white woman. Prior to beginning fieldwork with the university's ABA master's degree program, Eliza had attained a bachelor's degree in psychology and had no experience working with pre-school aged youth with disabilities in an educational or caregiving

context. Peggy was a 23-year-old white woman. Prior to beginning fieldwork with the university's ABA master's degree program, Peggy had attained a bachelor's degree in psychology and also had no experience working with pre-school aged youth with disabilities in an educational or therapeutic context. The experimenter and demonstration classroom site leads regarded each participant as an invaluable asset to the classroom with unique strengths, values, and histories that enhanced the classroom experience for both its staff and students.

Setting

Classroom A

The experimenter conducted observation sessions within a university-affiliated applied behavior analysis (ABA) demonstration classroom serving children with intellectual or developmental disabilities of preschool age or younger. The classroom occupied a space of 32 ft by 30 ft and consisted of two play centers, three 2 ft by 4 ft tables for individual instruction, three connected 2.5 ft by 2.5 ft tables for group instruction and mealtime, and two additional 2 ft by 4 ft tables at which logistical classroom tasks such as instructional material crafting occurred. Each play space occupied an approximate 5 ft by 8 ft area containing a variety of toys for young children. From the ceiling above the play centers, a Garmin VIRB 360 camera hung against the wall amidst hanging decorations, providing a relatively inconspicuous view of play spaces.

Two BCBAs oversaw classroom operations during hours of operation, including but not limited to facilitating communications with caregivers as well as providing instructive feedback and supervision to graduate-level staff fulfilling the practicum requirement of the university's M.S. ABA program. Up to eight staff members occupied the classroom at any given time, providing instruction to students, implementing behavior plans, inputting student data, or

assisting in logistical classroom operations. Three additional BCBAs frequented the classroom daily to observe, instruct, and provide feedback to their respective supervisees.

Within the play centers, the section of the classroom in which behavior was observed for the study, site leads and supporting supervisors expect staff members to actively engage with students, provide naturalistic instruction, and collect data as outlined in the dependent variable section. These periods occurred in 15 min increments, separate from other forms of programmed classroom instruction (e.g., PECS, DTT, NET, etc.) or classroom activities (e.g., recess, whole group instruction, etc.). Staff members were assigned to engage with students in the play centers zero to eight times per day depending on their daily role assignment and student attendance.

Classroom B

Scheduled renovation for Classroom A required the ABA demonstration class to transition to a different classroom, Classroom B, after all participants had been introduced to the study's intervention. This new classroom resided within a neighboring university-affiliated severe behavior clinic. Classroom B, arranged in a similar manner to Classroom A with respect to furniture, materials, and procedures, bore four primary differences from the previous classroom: (a) classroom operations were continuously videotaped via two discriminable ceiling cameras and stored in a secure university-affiliated database per building policy; (b) this video footage was broadcasted directly into an observation space occupied by supervising BCBAs, BCBA-Ds, and additional staff members; (c) the new classroom occupied a smaller total area (i.e., 25.5 ft by 22.5 ft) than the previous classroom; and (d) fewer staff members occupied the classroom due to the reduced space. However, these changes did not affect the arrangement of play centers which occupied the same floor space, consisted of the same furniture, and contained the same toys and materials.

Training Space

Within the same facility as the university-affiliated demonstration classroom, the experimenter conducted ACTraining sessions in a one-on-one format with a participant in a separate, private office space – referred to as the training space – with one 2.5 ft by 4.5 ft desk and two chairs, arranged on adjacent sides of the table. A computer desktop, keyboard, and small storage containers resided on the corner of the table opposite the chairs. On the floor behind the chairs in one corner of the room resides a cushioned carpet and two rocking chairs.

Materials

Throughout each phase of the study, participants had access to all materials necessary to engage in the target behavior in accordance with the expectations set by the supervisors of the ABA demonstration classroom. These materials included a wide variety of toys appropriate for pre-school age children, the students' PECS books, clipboards with laminated data sheets containing NDBI goals, PECS guidelines, and student-specific behavioral targets, as well as pens attached to the clipboards to collect data. Participants could also request additional materials from fellow staff or site leaders at any time to assist in student-related tasks.

To observe participant performance, the experimenter used a Garmin VIRB 360 camera to record staff performance in the play space with the consent of all participants and permission of the classroom's supervisors. The primary observer and secondary observer later observed the recorded performance footage and collected data using the VIRB Edit software on a secure laptop. To measure the prevalence of task engagement during an observation session, the observers used paper copies of the PIR Data Sheet (see Appendix B). To support precise and accurate data collection, the observers additionally possessed laminated copies of the Observer Procedural Fidelity Checklist and the Observation Reference Sheet (see Appendix B). To notify

observers of interval elapse, the primary observer programed a 10 s interval timer into the Virtual MotivAider application on his phone that would vibrate every 10 s. Upon completion of observation sessions, the observers stored completed data sheets and reference materials in a 3-ringed binder.

During the ACTraining session, both the experimenter and participant had access to their own pens and printed paper copies of the ACTraining Materials Package, containing the two present moment awareness exercises, the values clarification exercise, and the goal setting exercise (see Appendix C). In addition to the ACTraining Materials Package, the experimenter employed the ACTraining Procedural Fidelity Checklist and ACTraining Visual Aid to enhance treatment integrity and engagement across all participants (see Appendix C). The experimenter also utilized the Garmin VIRB 360 camera to record workshops and evaluate procedural fidelity.

To evaluate the social validity of the intervention outcomes, the experimenter provided the Outcome Validity Survey alongside pre- and post-intervention video recordings of each participant's performance to university-affiliated experts unfamiliar with the study (see Appendix D). Additionally, to collect demographic information and evaluate intervention acceptability, the experimenter provided each participant with ACTraining Acceptability Survey via email (see Appendix D).

Dependent Variable

The study employed a pen-and-paper partial interval recording (PIR) system with 10 s intervals to capture the prevalence of task engagement of staff members in the demonstration classroom's instructional play spaces. Task engagement, the primary dependent measure, entailed four categories of behavior within its operational definition adapted from Pingo et al.

(2020) and an unpublished programmatic enhancement study at the experimenter's university:

(a) active engagement, (b) active treatment, (c) data collection, and (d) task-oriented discussion.

Observers exclusively coded participant behavior during assigned play periods, described in detail within the study's general procedures. During these periods eligible for observation, observers scored intervals with a "+" symbol if the target behavior occurred, a "-" symbol if the target behavior did not occur, or a "V" symbol if an extraneous event prevented the participant from engaging in the target behavior or prevented the observer from viewing the participant for a whole 10 s interval. Specific descriptions of the scored behaviors (i.e., active engagement, active treatment, data collection, and task-oriented discussion) as well as extraneous events are provided below under their respective subheadings.

Active Engagement

Active engagement included any instance in which the staff member interacts with one or more assigned students, oriented towards the student and at least partially within the student's view, in accordance with NDBI-based play strategies. These strategies include: (a) cooperative play based on expressed student interest; (b) modeling of appropriate play; (c) imitation of student gestures, facial expressions, body movement, vocalization, and toy manipulation; (d) teacher-initiated physical contact with the student that elicits student smiles, giggles, or laughs; and (e) use of vocal language related to play (e.g., singing, labelling actions, using game-based intraverbals). These strategies do not include student-initiated physical contact such as noncontingent holding or cuddling (i.e., not requested via target functional communication modality), nor do they include vocalizations unrelated to student play or the student's immediate environment.

Active Treatment

Active treatment included any instance in which the staff member implemented a formal instructional program (e.g., NDBI, PECS, or FCT), managed complex behavior – excluding elopement and climbing furniture – in accordance with the student’s behavior plan protocols, and/or applied operant teaching procedures to (e.g., prompting, reinforcing, etc.) to teach a specific skill or behavioral response with one or more assigned students. Specifically, this definition includes preparation for instruction within the play space (e.g., arranging the environment for a PECS trial), instruction implementation, and initial delivery of programmed reinforcement. This definition does not include reinforcement provided beyond the initial interval in which it was delivered unless the student’s protocol explicitly requires reinforcement to be provided for a specified interval.

Data Collection

Data collection included any instance of recording data directly related to the student’s behavior or performance within the play space. This does not include recording data for behavior in previous sessions unless they were explicitly asked to do so by a staff member, supervisor, or schedule (e.g., transition or toileting data).

Task-Oriented Discussion

Task-oriented discussion included any instance in which the staff member communicated with another staff member or supervisor about the assigned student’s protocols or procedures, including but not limited to task clarification regarding procedural fidelity, planning future objectives for the student, or asking about the student’s daily schedule. When receiving performance feedback or instruction, this behavior includes active listening, indicated by affirmative gestures or vocalizations, directive compliance, or orientation towards the relevant

speaker, student, or task material. This did not include conversation unrelated to assigned student protocols or procedures, even if conducted with a supervisor. This also did not include any conversation held outside of the play centers unless a supervisor explicitly asked the participant to engage in a discussion outside of centers.

Extraneous Events

On occasion, extraneous events occurred that disrupted a participant's performance during an observation session. For example, if a supervisor asked the participant to briefly switch positions with a floating staff member to discuss a specific topic or provide feedback away from the students or other staff members, observers considered this specific interaction to be an extraneous event. To account for these potential interruptions during observation sessions, observers marked any whole interval in which the participant left the play centers or engaged in alternative work-related behavior at the explicit request of a supervisor with a "V" symbol, indicating that the interval was to be voided and not be incorporated in the calculation of the participant's performance level. Additionally, intervals or sessions in which the participant requested to go to the bathroom or was asked to take a student to the bathroom were marked "V" as well until the participant returned to the play centers. However, if the participant left the play center or engaged in alternative behavior without the explicit request of a supervisor, observers marked the interval "—" if the participant did not exhibit the target behavior at any point within the 10 s interval. The period of observation (i.e., 5 min) was extended to accommodate for the exact number of voided intervals within an observation session.

Observers also encountered technical challenges that disrupted observation sessions. For example, if a participant turned her back away from the camera, obscuring the camera's view of both the participant and the student to which they had been assigned, observers considered the

technological limitation to be an extraneous event. As such, any whole interval in which the participant or student were fully obscured from the camera's view was marked with a "V" and not counted towards the participant's performance. To account for technical audio challenges that may induce imprecision across raters, observers refrained from marking that a vocalization (e.g., vocal imitation) occurred unless the vocalization could be heard by the observer from the camera's sensitive microphone.

Interobserver Agreement (IOA)

A primary and secondary observer employed partial interval recording to verify the reliability of data collection. The experimenter served as the primary observer. The experimenter's thesis advisor (race/ethnicity = Black; gender = female; age =33), a university faculty member credentialed as a BCBA-D, served as the secondary observer. To train both primary and secondary observers to reliably discriminate task engagement from other behaviors and collect data accordingly, the experimenter covertly recorded 5 min videos of a participant. Utilizing a behavioral skills training approach (i.e., description, model, rehearsal, and feedback) with the sample videos as observation material, the experimenter trained the secondary observer to collect the prevalence of task engagement data via partial interval recording with 80% interval-by-interval interobserver agreement (IOA).

The observers calculated IOA for observation sessions in accordance with the "interval-by-interval IOA" methodology. This methodology entailed counting the total number of intervals in which the observers' score (i.e., "+", "-", or "V") agreed, dividing it by the number of 10 s intervals within the observed 5 min period (i.e., 30), then multiplying the value by 100%. Observers calculated IOA for the pre-study examination of task engagement, the baseline phase, the Post-ACTraining phase, and maintenance phase by participant. Graphical comparisons

between the primary and secondary observers' scores across participants and conditions can be reviewed in Appendix E.

For Angelica, observers calculated 100% agreement across 33% of sessions within the Supervisor Absent Condition of the pre-study examination and 90% agreement across 33% of sessions within the Supervisor Present Condition of the pre-study examination. For Angelica's performance in the Baseline phase, observers calculated 92% agreement across 33% of sessions within the Supervisor Absent Condition and 87% agreement across 33% of sessions within the Supervisor Present Condition. For data collected in the Post-ACTraining phase, observers calculated 83% agreement across 33% of sessions within the Supervisor Absent Condition and 80% agreement across 100% of sessions within the Supervisor Present Condition. Finally, observers calculated 93% agreement across 50% of sessions within the Supervisor Absent Condition and 80% agreement across 100% of sessions within the Supervisor Present Condition during the maintenance phase. Across all phases (i.e., Baseline, Post-ACTraining, and Maintenance) and conditions of the study, observers calculated an average of 87% agreement for Angelica's task engagement across 41% of sessions.

For Eliza, observers calculated 90% agreement across 25% of sessions within the Supervisor Absent Condition of the pre-study examination and 80% agreement across 50% of sessions within the Supervisor Present Condition of the pre-study examination. For Eliza's performance in the Baseline phase, observers calculated 80% agreement across 33% of sessions within the Supervisor Absent Condition and 77% agreement across 100% of sessions within the Supervisor Present Condition. For data collected in the Post-ACTraining phase, observers calculated 98% agreement across 33% of sessions within the Supervisor Absent Condition and 87% agreement across 50% of sessions within the Supervisor Present Condition. Finally,

observers calculated 87% agreement across 50% of sessions within the Supervisor Absent Condition during the maintenance phase. Across all phases (i.e., Baseline, Post-ACTraining, and Maintenance) and conditions of the study, observers calculated an average of 83% agreement for Eliza's level of task engagement across 48% of sessions.

For Peggy, observers calculated 100% agreement across 33% of sessions within the Supervisor Absent Condition of the pre-study examination and 84% agreement across 100% of sessions within the Supervisor Present Condition of the pre-study examination. For Peggy's performance in the baseline phase, observers calculated 92% agreement across 33% of sessions within the Supervisor Absent Condition and 83% agreement across 33% of sessions within the Supervisor Present Condition. For data collected in the Post-ACTraining phase, observers calculated 85% agreement across 33% of sessions within the Supervisor Absent Condition and 80% agreement across 50% of sessions within the Supervisor Present Condition. Finally, observers calculated 93% agreement across 50% of sessions during the maintenance phase. Across all phases (i.e., Baseline, Post-ACTraining, and Maintenance) and conditions of the study, observers calculated an average of 89% agreement for Peggy's level of task engagement across 36% of sessions.

Research Design

The current study employed a concurrent multiple baseline across participants design featuring comparison and maintenance probes to evaluate the effect of an ACTraining session upon graduate-level staff member's task engagement within an ABA demonstration classroom in the absence of a discriminable, direct supervisor. The multiple baseline design consisted of three phases: (a) Baseline, (b) Post-ACTraining, and (c) Maintenance.

The first phase of the study captured the concurrent performance of all participants under unaltered, baseline conditions. The second phase, introduced to participants individually in a staggered fashion, began following the delivery of an AC Training session adapted from the procedures of Little et al. (2020). Finally, the third phase of the study, beginning after stable performance consistent across at least six data points in the second phase, consisted of maintenance probes collected every third session until the end of the study.

The multiple baseline across participants design demonstrates an intervention's effect on a target participant's behavior through the staggered introduction of the intervention across participants, concluding that the effect can be attributed to the intervention if and only if a target participant's behavior changes following intervention while the behavior of participants not yet introduced to intervention remains stable (Gast & Ledford, 2009; Lane & Gast, 2014). However, the staggered introduction of intervention over time introduces potential history and maturation threats to internal validity. The experimenter accounted for potential history threats by prolonging observation until responding stabilized across all participants in the baseline phase before introducing intervention to a participant. To better detect potential maturation over time, the experimenter coded a maximum of three observation sessions per day, two days per week per participant. Additionally, the observer randomized the selection of play periods used for observation sessions each day (i.e., documented eligible play periods, organized these periods into 5 min intervals, and randomly selected the three observation sessions) to limit observer bias for instances in which there were more than 15 min of footage eligible for observation. To further account for threats to internal validity, the experimenter randomized the assignment of the three participants to their respective tiers.

Performance Stability and Phase Change Criteria

With respect to data stability, the experimenter adapted the criterion rationalized by Lane & Gast (2014) to accommodate the anticipated variability of the study's dependent variable. Specifically, the experimenter deemed performance data to be stable within a given phase if the final three values within a given phase for a participant fell within $\pm 25\%$ of these three data points' mean value and did not exhibit a steep ascending or descending trend as interpreted through general visual analysis of performance graphs. If participants did not exhibit stability in baseline prior to intervention, the experimenter withheld intervention until performance data stabilized. Following the introduction of one participant to intervention, the experimenter only introduced the next participant in the tier sequence to intervention upon satisfaction of two criteria: (a) the next participant's baseline performance exhibited stability and (b) the participant's performance levels in the intervention phase exhibited no overlap with the previous baseline phase for three consecutive data points (Ledford & Lambert, 2024). Despite the introduction of the next participant to intervention, a participant in intervention did not move to the maintenance phase until performance exhibited even stricter stability (i.e., at least 80% of values fell within $\pm 25\%$ of the median value without a steep ascending or descending trend) in the intervention phase (Lane & Gast, 2014).

Procedures

General Procedures

Observation. Prior to the study, the experimenter acquired the informed consent of the demonstration classroom's supervising BCBAs, the participants' responsible BCBAs, and the participants themselves to observe staff performance in the classroom and introduce intervention. The experimenter conducted observation sessions remotely and asynchronously through video

footage recorded via a Garmin VIRB 360 camera that hung from the ceiling above the two play centers. This method of observation enabled the observers to measure task engagement in a relatively covert manner. Given that the camera recorded video throughout the duration of the workday, participants could not discriminate if or when they would be observed for the study. Data was not collected on student behavior as the purpose of the study was to observe and manipulate staff task engagement.

On the two days each week in which the participants served in the demonstration classroom, the observer arrived at approximately 8:00 AM without announcing his presence in the classroom to the participants or other staff members beyond polite greetings or small talk with nearby staff members or supervisors. Upon arrival, the experimenter or a classroom supervisor approached the play centers and manually activated the ceiling camera while the staff members prepared the classroom for the arrival of the students. At approximately 1:00 PM, the experimenter deactivated and removed the camera while the staff members engaged with the students during lunch in a separate part of the classroom. The experimenter then uploaded the recorded video to the VIRB Edit application for data collection on a secure laptop. If asked about observation materials or activities, the observer responded, “I’m just completing work for my thesis!” or provided a functionally equivalent response to mitigate the influence of his presence on staff performance.

Condition Criteria. The experimenter observed a participant if he or she met each of the following criteria: (a) the participant had been assigned to a student who was present in the demonstration classroom; (b) the participant had been scheduled to engage with the student in one of the two play centers; (c) the participant had not been assigned to serve as an active participant, confederate, or implementer for a different study at the time of observation; and (d)

the participant's responsible supervisor was absent from the classroom. Collectively, these observation parameters comprised the Supervisor Absent Condition, served as the parameters of the data points within the multiple baseline design, and guided formative analysis of performance data throughout the study.

In addition to observation sessions collected under the Supervisor Absent Condition, observers conducted comparison probes of staff performance under the parameters of the Supervisor Present Condition. The Supervisor Present Condition shared all parameters of the Supervisor Absent Condition with one exception; the participant's responsible supervisor must be present in the classroom either (a) actively providing the participant with supervision in the play centers or (b) working independently (e.g., reviewing student protocols or data) within proximity of the play centers (i.e., less than 12 ft away). Data from these probes did not guide formative analysis; however, these probes did provide an additional standard against which the data of the multiple baseline design could be compared. For each participant, observers limited the number of sessions conducted under the Supervisor Present Condition to two sessions per day.

Baseline

The experimenter conducted observation sessions in the first phase of the study under the conditions and procedures specified outlined in the general procedures. Following the guidelines for stability and phase change criterion outlined in the research design section, the experimenter transitioned participants individually into the next phase of the study in a staggered fashion.

Post-ACTraining

Session Introduction. To initiate the intervention phase of the study, the experimenter conducted a one-time, 75 min ACTraining session with a participant in an individual format. One

day prior to conducting the ACTraining intervention, the experimenter sent the participant an email that included a description of general purpose of the session, the time at which the session would take place, and a request that the participant not share the contents of the session until after the study had been completed. Before the participant arrived at the classroom on the day of intervention, the experimenter prepared all intervention materials within the training space in the arrangement outlined in the materials section. Upon arrival, the experimenter exchanged greetings and invited the participant to the training space. Following this transition, the experimenter introduced the ACTraining session with a brief yet detailed description of the session's goals, the itinerary, the materials, and the respective roles of the experimenter and participant within the session. Notably, the experimenter did not directly reference the study's dependent variable throughout the session. Instead, the experimenter stated that the ACTraining session aimed to (a) help make the time spent in play centers more rewarding for the participant and (b) help the participant become an even better therapist when working with the students in the play centers. Additionally, the experimenter emphasized that he would be completing each activity alongside the participant. After providing the overview of the ACTraining session, the experimenter facilitated exercises and activities targeting three ACT behavioral processes: present moment attention, values, and committed action.

Present moment attention. The experimenter first implemented the Notice Five Things and Drop Anchor exercises as outlined in Harris (2009), framing the exercises as a “warm-up” for the session's other activities. Given that both exercises require the participant to engage in behaviors unobservable to the experimenter, the experimenter and participant established a simple intraverbal system that enabled the participant to quickly communicate task completion with minimal distraction. For example, if the experimenter instructed, “Listen carefully and

notice five things that you can hear,” the participant would engage in a pre-established response (e.g., head nod, grunt, etc.) to indicate that five stimuli had been identified and that he or she was ready for the next instruction. After briefly practicing communication, the experimenter directed the participant to the relevant sections of the ACTraining Materials Package and read aloud the opening text for the Notice Five Things exercise. Specifically, this text prompted participants to practice the exercise when encumbered by thoughts and feelings. The experimenter then delivered the five instructions of the exercise, pausing to provide an example of stimulus class member (e.g., “I can feel my watch pressing against my wrist”) if necessary and to wait for the participant to confirm completion of the task. Upon completion of all steps, the experimenter prompted the participant to share a few of the stimuli that they had not noticed prior to engaging in the exercise but identified during the exercise. The experimenter then directed the participant to the Drop Anchor exercise and read aloud the opening text that also prompted the participant to practice the exercise when encumbered by thoughts and feelings. Next, the experimenter guided the participant through the Drop Anchor exercise in the same fashion as the Notice Five Things exercise. Upon completion of all steps, the experimenter prompted the participant to share how they felt after completing the two exercises before thanking the participant for her active participation and transitioning to the next activity.

Values. After the warm-up activity, the experimenter introduced participants to the concept of values, referencing the opening script of the Quick Look at Your Values exercise provided in Harris (2009) to describe values. The experimenter then directed the participant to the relevant section in the ACTraining Materials Package before reading aloud the initial instructions of the Quick Look at Your Values exercise. Specifically, the experimenter prompted the participant to read and rate each value presented within a list of 58 common values or to

write a different value in one of two free spaces if he or she felt that one of his or her personal values were not represented. The experimenter then completed the rating portion of the activity alongside the participant and waited for the participant to indicate task completion. After both the experimenter and the participant had rated all the listed values, the experimenter prompted the participant to select his or her top six values. Following task completion, the experimenter prompted the participant to reflect with the experimenter upon their chosen values. Specifically, the experimenter posed three questions: (a) why do our top chosen values matter to us; (b) do we always live by our values; and (c) what do we personally receive by living according to our chosen values? For each reflection question, the experimenter modeled a response based on his personal experience and values and prompted the participant to share aloud or write his or her response to the question. The experimenter responded to any written or spoken response provided by the participant with vocal affirmation, which he would continue to do throughout the remainder of the session. After the participant had responded to each question, the experimenter posed the rhetoric question, “can we embody our values in the workplace,” to serve as a transition into the next activity.

Committed Action. Following the values identification and reflection activity, the experimenter introduced The Willingness and Action Plan adapted from Harris (2009), providing an overview of the activity’s objectives and directing the participant to her physical copy of the plan. Following this introduction, the experimenter prompted the participant to write her name and the date on the plan then modeled the behavior himself, each claiming personal ownership over their respective documents.

The experimenter then guided the participant through the goal identification process within the ACTraining session’s context, modeling goal identification through a personal

example in the demonstration classroom context. Notably, the experimenter did not use any examples from a play context (e.g., play centers, recess, etc.) as to not bias the participant's goal selection. Next, the experimenter prompted the participant to imagine herself with a student in the play centers, assisting the participant in the process by vocally illustrating features such as the time of day, toys, and noise. When the participant indicated that she could picture the space, the experimenter prompted her to think of a personal goal that she can achieve or work towards in the play centers, write it in her plan, and share it aloud if she felt comfortable. After vocally affirming the participant's response, the experimenter requested that she reflect upon, write down, and share the values that underly this chosen goal.

Once the pair had each related their personal values to their respective chosen goals in discussion, the experimenter asked the participant to discern and list specific actions available to her in the play context that can bring her closer towards her goal and, in turn, her personal values. As the participant reflected, the experimenter referred to his goal's familiar context to identify and share examples of specific actions aligned with his objectives. When the participant indicated that she had finished writing her list, the experimenter prompted her to share items from her list, reinforcing any response provided by the participant and redirecting attention back to the play centers context as necessary.

The experimenter then introduced the notion of willingness to "make room for" discomfort as described in Harris (2009). In this effort, the experimenter described and shared examples of thoughts, memories, feelings, sensations, and urges that produced discomfort that he faces in pursuit of a goal. After sharing his own experience, the experimenter asked the participant to reflect upon her own experience with discomfort when working with students in the play centers. Specifically, the experimenter posed three questions: (a) what sort of discomfort

might we face when working with our students in play; (b) how might these private events affect our outward behavior while with our students; and (c) could you imagine any benefits we might experience by making room for these uncomfortable experiences? For each reflection question, the experimenter responded based on his personal experience and values before prompting the participant to share aloud or write his or her response to the question. Following this discussion, the experimenter directed the participant to write down the thoughts, memories, feelings, sensations, and urges for which she is willing to make room in service of her goal. To conclude this segment, the experimenter encouraged the participant to write down a simple, supportive statement that could be repeated during moments of discomfort, reminding her of the goal and values she approaches by making room for unpleasant private events.

The final portion of The Willingness and Action Plan centered around the participant's commitment to an action hierarchically contained within the participant's goal and, consequently, her values. This commitment process required the participant to: (a) break down the identified value-driven actions into a list even smaller actions as necessary; (b) select the smallest, easiest action from this list; (c) envision herself engaging in this action, despite discomfort, and enjoying its short and long-term benefits; and (d) selecting the time, day, and date in which she will take this first step towards her goal and values. After participating in and guiding the participant through this commitment process, the experimenter congratulated the participant for completing the ACTraining session, thanked her for actively engaging in all the activities, then permitted her to leave with the completed documents from the ACTraining Materials Package with the request that she not share the session's content or materials with her peers in the demonstration classroom. Additionally, the experimenter informed the participant

that he would send a survey via email approximately two weeks after the ACTraining session to collect her feedback regarding the session's content.

Post-Training Observation and Remediation. Observers collected footage of participant performance in the play centers following the ACTraining session in the same manner as described in the general procedures. The time span between the ACTraining session's conclusion and the first observation session varied depending on the participant's assigned schedule in the demonstration classroom; however, observers conducted at least three observation sessions on the same day in which intervention occurred. If the participant exhibited an initial increase in level in task engagement followed by a consistent, visible decline in performance (i.e., a 30% decrease from the average value of the first three data points collected in the Post-ACTraining phase of the study), the experimenter sent the participant a text message reminding her to review The Willingness and Action Plan developed in the workshop. After this conditional prompt and the collection of at least six data points in the Post-ACTraining phase, the experimenter waited for participant data to stabilize before graduating the participant to the maintenance phase of the study, even if performance levels did not recover. If the participant did not require this conditional prompt, the experimenter graduated the participant to the maintenance phase after the collection of at least six stable data points in the Post-ACTraining phase. With respect to probes of participant performance levels in the presence of her responsible supervisor, observers conducted probes in the same manner as described in the general procedures.

Maintenance

The experimenter conducted observation sessions in the third phase of the multiple baseline design under the same conditions and protocols detailed in the general procedures.

However, observers conducted at most one observation session per three session opportunities (i.e., one session per workday) for a given participant to observe the maintenance of performance levels following the conclusion of the Post-ACTraining phase. Observers continued this method of intermittent observation until the conclusion of the study, indicated by the collection of two maintenance probes for the third participant introduced to intervention. With respect to probes of participant performance levels in the presence of her responsible supervisor, observers conducted a maximum of one Supervisor Present Condition probe for every Supervisor Absent Condition maintenance probe.

Procedural Fidelity

The experimenter employed checklists to collect and evaluate procedural fidelity in the observation and intervention. The secondary observer completed the Observation Procedural Fidelity Checklist for the primary observer's performance through direct observation to verify that each parameter in which observers were to collect task engagement had been satisfied. The secondary observer completed the ACTraining Procedural Fidelity Checklist via retroactive video observation to ensure that intervention had been delivered with fidelity. Observers and the experimenter possessed these documents within their respective sessions to reference as needed.

The primary observer conducted observations with 100% procedural fidelity across 38% of observation sessions. Additionally, the experimenter conducted the ACTraining session with 100% procedural fidelity with Angelica, 100% procedural fidelity with Eliza, and 100% procedural fidelity with Peggy.

Social Validity

Outcome Validity. The experimenter recruited two naïve raters unaffiliated with the study to gauge the social validity of performance levels and changes generated by the study's

interventions. A BCBA doctoral candidate and site lead in the neighboring severe behavior clinic served as the first rater. A BCBA-D post-doctoral fellow and master's program supervisor served as the second rater. The experimenter temporarily provided the raters with six 5 min videos on a secure hard drive displaying the task engagement performance of each participant during the Baseline phase and the Post-ACTraining phase. Each video contained an observation session for which observers had collected reliability data and had scored performance to be within $\pm 10\%$ of the corresponding phase's median value for the respective participant. In addition to the videos, the experimenter provided the naive raters with the Outcome Validity Survey and the Observation Reference Sheet.

The survey consisted of a general overview of its contents and instructions for completion. For each video, the survey asked raters to score the participant's performance levels using a behaviorally anchored rating (BAR) scale with five options: (a) the individual exhibited task engagement for approximately 0% of the session; (b) the individual exhibited task engagement for approximately 25% of the session; (c) the individual exhibited task engagement for approximately 50% of the session; (d) the individual exhibited task engagement for approximately 75% of the session; and (e) the individual exhibited task engagement for approximately 100% of the session. Paired with each BAR scale item, the survey included a Likert scale that requested the raters score the performance in the same video as (a) unsatisfactory, (b) marginal, (c) meets expectations, (d) exceeds expectations, or (e) exceptional. The survey balanced the video sequence by randomizing the order of videos. Although the survey requested that raters respond to each item immediately after watching its corresponding video, the survey did not lock the raters' responses, allowing them to change their responses after viewing all videos.

Intervention Acceptability. After the experimenter had completed all observations for a participant, the experimenter sent the participant an email requesting that he or she complete the ACTraining Acceptability Survey. The survey adapted the intervention acceptability measures employed in Little et al. (2020) to gather participant feedback regarding the intervention's accessibility, relevance to the participant's work, and perceived benefit to the participant's professional development.

The survey consisted of nine items. The first four items requested participants to report their name and demographic information relevant to the study, specifically, the participant's racial or ethnic identity, gender identity, and age in accordance with American Psychological Association recommendations. The latter five items assessed intervention acceptability with Likert scale including the rating options (a) strongly disagree, (b) disagree, (c) neutral, (d) agree, and (e) strongly agree. The fifth item included three statements to which a participant could express her agreement. The first statement measured the participant's perceived change in her competency when working in the classroom's play centers following intervention. The second statement assessed the participant's perceived change in her performance when working in the same context following intervention. The experimenter included these entries as two distinct statements given that one's increased competency does not always translate into increased performance (Denne et al., 2015). The third statement assessed the participant's likelihood to use or request a similar ACTraining session to support different professional skills in the future. The sixth item also included three statements. The first two statements measured a participant's change in her valuation of time spent in the play spaces following intervention whereas the third question measured a participant's likelihood of using a similar ACTraining session to enhance one's experience in a different context. The seventh, eighth, and ninth items asked participants to

rate the accessibility, relevance, and likelihood of future implementation of the (a) Notice Five Things and Drop Anchor exercises, (b) Quick Look at Your Values activity, and (c) The Willingness and Action Plan activity respectively.

CHAPTER 3

Results

Task Engagement

In this study, researchers covertly observed the level of unsupervised task engagement exhibited by graduate student staff in an ABA demonstration classroom. In addition to unsupervised performance, researchers observed staff performance in the presence of their designated responsible supervisor. Figure 1 depicts three participants' level of task engagement across both conditions prior to and following a one-time 75 min ACTraining session. Table 1 depicts the values and committed actions selected by each participant during their respective ACTraining session. The concurrent observation of all participants' respective levels of task engagement prior to and following ACTraining enabled researchers to evaluate the presence of a functional relation between the introduction of an ACTraining session and increases in the level of unsupervised task engagement. Angelica, Eliza, and Peggy exhibited immediate, substantial increases in performance following the introduction of an ACTraining session that maintained or elevated across the Post-ACTraining and Maintenance phases of the study. Further, by virtue of the multiple baseline across participants design, researchers observed these demonstrations of effect at three different points in time. The relative stability of participants' performance in the Baseline phase as the experimenter introduced intervention in a staggered fashion suggests that substantive, positive behavior change occurred if and only if ACTraining had been introduced. The consolidation of these observations points towards the positive effect of the ACTraining

session upon unsupervised levels of task engagement as measured through a 10 s partial interval recording system.

Baseline

During the Baseline phase, Angelica exhibited task engagement in the play centers across a range of 0-23% of 10 s intervals within a 5 min session across nine sessions in the Supervisor Absent Condition. Her performance levels during baseline exhibited a moderate degree of variability without a clear ascending or descending trend before levels stabilized with a median of 10% and an interquartile range of 12%. As observers coded Angelica's baseline performance, they regularly observed extended periods of notable distance between the participant and students, a low prevalence of brief, play-related vocal interaction if it occurred at all, and minimal physical contact with students or toys. In contrast, Angelica exhibited task engagement across an elevated range of 57-100% of session intervals across three comparison probes in the Supervisor Present Condition. Anecdotally, observers noted Angelica's closer proximity to the student, increased vocalization towards the student, and increased task-oriented discussion in the presence of her responsible supervisor.

Eliza exhibited task engagement in the play centers across a range of 30-73% of observation intervals across 12 sessions in the Baseline phase's Supervisor Absent Condition. A single session (i.e., the third session with a value of 30%) contributed to an initially high degree of variability without an apparent ascending or descending trend before Baseline-phase performance levels stabilized with a median of 60% and an interquartile range of 8%. Anecdotally, Eliza's baseline performance typically consisted of play-related vocal and physical interaction with the student and occasional, extended break periods in which the participant would engage in off-task behavior. Across five comparison probes in the Supervisor Present

Condition, observers calculated levels of task engagement to range from 70% to 83% of session intervals during the Baseline phase. Unlike her performance in the pre-study examination of task engagement (see Appendix A), Eliza's performance across conditions exhibited a slight overlap during the Baseline phase. In the presence of her responsible supervisor, observers noted Eliza's higher levels of vocal and physical interaction with the student and toys.

During the 15 sessions that comprised of her Baseline phase, Peggy exhibited task engagement in the play centers across a range of 0-30% of session intervals in the Supervisor Absent Condition. Performance levels fluctuated significantly without a clear ascending or descending trend before stabilizing with a median of 10% and an interquartile range of 17%. Anecdotally, Peggy often requested an available coworker to monitor the student in the play space while she engaged in a classroom task unrelated to the student or the student's behavior in the play space (e.g., set up small group instruction, input class-wide behavior data, etc.). When she remained in the play center, the participant would typically sit at the entrance of the play center, at times approaching the student to deliver a greeting or complete an NDBI trial before returning to the entrance. In contrast, Peggy exhibited task engagement across an elevated range of 57-80% of session intervals across three comparison probes in the Supervisor Present Condition. Although Peggy continued to leave to play center to complete other classroom tasks in her responsible supervisor's presence, observers noted her relatively closer proximity to the student and increased play-related vocal interaction during observation sessions.

Post-ACTraining

Following the ACTraining session, Angelica exhibited task engagement in play centers across a range of 47-67% of session intervals across six sessions in the Supervisor Absent Condition. These elevated performance levels maintained and stabilized with a median of 58%

and an interquartile range of 13%. In comparison to Baseline-phase performance, Angelica's task engagement level in the first session following ACTraining demonstrated an immediate 34% increase from the maximum performance level observed in the prior phase. In succeeding sessions, performance levels exhibited a moderate degree of variability yet remained within approximately $\pm 10\%$ of the initial session task engagement level. Within the Post-ACTraining phase, Angelica exhibited a decline between the twelfth and thirteenth sessions, corresponding with a day change. Following the thirteenth session however, Angelica exhibited an increase in task engagement over the fourteenth and fifteenth session that suggested a slight ascending trend. Given that Angelica had met the technical definition of stability, had exhibited similar variability in the Baseline phase, and had not exhibited levels of task engagement that substantially exceeded levels observed in the first three Post-ACTraining observation sessions, the experimenter graduated Angelica to the Maintenance phase. Across these sessions, observers noted Angelica's occasional implementation of PECS generalization trials, narration of the student's play behaviors, and modeling of appropriate play behavior. With respect to performance in the Supervisor Present Condition, the level of task engagement observed within the single comparison probe collected in the Post-ACTraining phase (i.e., 73% of session intervals) fell within the range observed during Angelica's Baseline phase. Anecdotally, Angelica exhibited similar topographies of task engagement behavior (e.g., PECS implementation) across the Supervisor Absent Condition and Supervisor Present Condition.

Following ACTraining, Eliza exhibited task engagement in play centers across a range of 87-100% of session intervals across six sessions in the Supervisor Absent Condition. Elevated performance levels maintained across all six sessions and stabilized with a median of 97% and an interquartile range of 10%. Compared to Baseline-phase performance, Eliza's level of task

engagement in the first session following ACTraining demonstrated an immediate 27% increase from the maximum level of performance observed in the prior phase. Over the next five sessions, task engagement exhibited relatively little variability with only a slight descending trend between the sixteenth and seventeenth sessions. Given that Eliza's performance had met stability criteria and did not overlap with unsupervised performance levels observed in the Baseline phase, the experimenter graduated her to the Maintenance phase after the collection of six Post-ACTraining sessions. In addition to a high prevalence of play-related vocal and physical interaction, observers noted Eliza's use of narration, modeled play, and cooperative play to engage with the student during these sessions. Across the two comparison probes collected in the Post-ACTraining phase, Eliza exhibited task engagement for 93% of intervals in both Supervisor Present Condition sessions. Anecdotally, Eliza exhibited similar topographies of task engagement behavior (e.g., play-related narration) across the Supervisor Absent Condition and Supervisor Present Condition.

Upon completion of the ACTraining session, Peggy exhibited task engagement in play across a range of 40-63% of session intervals across six sessions in the Supervisor Absent Condition. Following the third observation session conducted in Peggy's Post-ACTraining phase, the preschool class transferred from Classroom A to Classroom B. Despite the context change, Peggy's level of unsupervised task engagement remained within the range observed for the three Post-ACTraining sessions conducted prior to the setting change. Elevated performance levels maintained across all six sessions and stabilized with a median of 48% and an interquartile range of 10%. Peggy's level of task engagement in the first session following ACTraining demonstrated an immediate 10% increase from the maximum performance level observed in the Baseline phase. However, this change in performance level also reflected a 30% increase from

the Baseline phase's median level of task engagement. Over the next five sessions, task engagement exhibited relatively little variability without an apparent ascending or descending trend. Following the collection of six sessions in the Post-ACTraining phase, the experimenter graduated Peggy into the Maintenance phase. Anecdotally, Peggy regularly conducted NDBI-based teaching trials and probes, prompted naturalistic PECS usage, and vocally interacted with the student. However, Peggy continued to step away from the play center to engage in alternative, class-wide tasks despite the presence of available coworkers. Observers collected two comparison probes in the Supervisor Present Condition during the Post-ACTraining. In the first comparison probe, Peggy exhibited task engagement for 10% of session intervals. During this session, Peggy prepared materials for the student's upcoming instructional session at a nearby rather than task engagement in the play centers for most intervals. In the second comparison probe, Peggy exhibited task engagement for 77% of session intervals. Unlike the first comparison probe, the participant practiced modeling play and embedding PECS trials within play at the explicit request of her responsible supervisor. Levels of task engagement in the Supervisor Absent Condition exceeded performance levels in the first comparison probe but did not surpass the level of task engagement observed in the second comparison probe during the Post-ACTraining phase.

Maintenance

Upon Angelica's graduation to the maintenance phase, observers conducted two maintenance probes, collected four and five assigned practicum days after the ACTraining session respectively. Temporally, this distance equated to 19 and 21 days after the ACTraining session. The transition from Classroom A to Classroom B and the participant's vacation days account for this extended gap between the last session within the ACTraining phase and the first

probe in the maintenance phase. In her first maintenance probe, Angelica exhibited task engagement for 90% of session intervals in the Supervisor Absent Condition, a 23% increase from the maximum performance level observed in the Post-ACTraining phase. In her second maintenance probe, Angelica exhibited task engagement for 70% of session intervals in the Supervisor Absent Condition. Although this observation session represented a steep decline from the previous maintenance probe, the level of task engagement remained above the maximum level observed in the Post-ACTraining phase by a margin of 3%. Observers also conducted a Supervisor Present Condition comparison probe 19 days after the ACTraining session in which Angelica exhibited task engagement for 70% of session intervals. Across all three probes, observers noted the relatively high prevalence of PECS implementation, modeled play, and vocal interaction exhibited by Angelica during observation sessions.

Upon Eliza's graduation to the maintenance phase, observers conducted two maintenance probes, collected four and six assigned practicum days after her ACTraining session. Temporally, this distance equated to 14 and 21 days after the ACTraining session. The transition from Classroom A to Classroom B and the participant's vacation days account for this extended gap between the last session within the ACTraining phase and the first probe in the maintenance phase. In her first and second maintenance probe, Eliza exhibited task engagement for 93% and 83% of session intervals in the Supervisor Absent Condition respectively. Anecdotally, the observed topographies of task engagement exhibited by Eliza (e.g., physical and vocal interaction, narration, etc.) remained consistent across the Post-ACTraining and Maintenance phases. No Supervisor Present Condition comparison probes were collected during the Maintenance phase in part due to technical limitations to observation in Classroom B and variable supervisor schedules.

Upon Peggy's graduation to the maintenance phase of the study, observers conducted two maintenance probes, collected three and five assigned practicum days after the ACTraining session respectively. Temporally, this distance equated to 8 and 15 days after the ACTraining session. Unlike the previous two participants, Peggy's graduation into the maintenance phase did not correspond with the transition from Classroom A into Classroom B. As such, the gap in scheduled data collection (i.e., the jump between the first and second maintenance session) is only attributed to technical obstructions to observation in Classroom B. In her first and second maintenance probe, Peggy exhibited task engagement for 77% and 67% of session intervals in the Supervisor Absent Condition respectively. Despite an observable decrease in the level of task engagement within the maintenance phase, Peggy exhibited higher levels of task engagement across both maintenance probes than the maximum level observed during the Post-ACTraining phase. Anecdotally, this level increase corresponded with a high prevalence of previously observed topographies of task engagement (e.g., PECS implementation and modeled play) and the emergence of cooperative play behaviors that had not been observed during any of Peggy's prior sessions. No Supervisor Present Condition comparison probes were collected during the Maintenance phase in part due to technical limitations to observation in Classroom B and variable supervisor schedules. Despite this therapeutic behavior change, Peggy continued to exit the play centers to complete other classroom tasks despite the availability of other staff.

Outcome Validity

To gauge the social validity of the ACTraining session's outcomes, the experimenter recruited two naïve experts affiliated with the university's ABA master's program to rate representative samples of each participant's performance using a BAR scale and Likert scale. Employing the selection process described in the study's method, the experimenter provided

experts with footage of Angelica's eighth session (scored session intervals = 13%) and tenth session (scored session intervals = 57%) to represent Baseline-phase and Post-ACTraining phase performance respectively. Likewise, the experimenter provided Eliza's sixth (scored session intervals = 53%) and thirteenth session (scored session intervals = 100%) to represent performance in the Baseline phase and Post-ACTraining phase. For Peggy, the experimenter provided her seventh (scored session intervals = 10%) and eighteenth session (scored session intervals = 63%) to represent Baseline-phase and Post-ACTraining-phase performance respectively. The experts' BAR scale scores and Likert scale scores are displayed in Table 2 and Table 3 respectively.

BAR Scale Scores

The first rater, an independent BCBA site lead, gave Angelica's performance in both phases a score of 2, indicating that Angelica exhibited task engagement for approximately 25% of both sessions. For Eliza, the site lead scored her performance in the Baseline phase as a 4 and performance in the Post-ACTraining phase as a 5, indicating exhibition of task engagement for approximately 75% and 100% of each respective session. When rating Peggy's sessions, the first rater gave her Baseline-phase performance a 2 and her Post-ACTraining-phase performance a 5, indicating exhibition of task engagement for approximately 25% and 100% of each respective session.

The second rater, an independent BCBA-D supervisor, scored Angelica's Baseline-phase performance as a 2 and Post-ACTraining-phase performance as a 3, indicating exhibition of task engagement for approximately 25% and 50% of each respective session. For Eliza, the doctoral-level supervisor scored performance in both phases as a 5, indicating that Eliza exhibited task engagement for approximately 100% of both sessions. For Peggy, the second rater gave Peggy's

performance in the Baseline phase a 2 and performance in the Post-ACTraining phase a 5, indicating exhibition of task engagement for approximately 25% and 100% of each respective session.

Averaging the responses, experts perceived an increase of 0.5 in Angelica's performance from the Baseline phase to the Post-ACTraining phase, an increase of 0.5 in Eliza's performance, and an increase of 3 in Peggy's performance. Although the degree of reported performance change varied between raters, these aggregated results indicate that naïve observers perceived an increase in the level of task engagement exhibited across all participants within the parameters of the Outcome Validity Survey.

Likert Scale Scores

The first rater, a BCBA site lead, gave Angelica's performance in both phases a score of 1, indicating unsatisfactory performance. The BCBA gave Eliza's performance in the Baseline phase a 3 and performance in the Post-ACTraining phase a 5, indicating performance that meets expectations and exceptional performance respectively. When rating Peggy's sessions, the first rater gave her Baseline-phase performance a 1 and her Post-ACTraining-phase performance a 4, indicating unsatisfactory performance and performance that exceeds expectations respectively.

The second rater, a doctoral-level site lead, scored Angelica's Baseline-phase performance as a 2 and Post-ACTraining-phase performance as a 3, indicating marginal performance and performance that meets expectations respectively. The BCBA-D gave Eliza's performance in both phases a score of 4, indicating that Eliza exhibited performance that exceeds expectations. For Peggy, the second rater gave Peggy's performance in the Baseline phase a 2 and performance in the Post-ACTraining phase a 4, indicating marginal performance and performance that exceeds expectations respectively.

Aggregated, these measures indicate a perceived increase of 0.5 in Angelica's performance from the Baseline phase to the Post-ACTraining phase, an increase of 1 in Eliza's performance, and an increase of 2.5 in Peggy's performance. Like the BAR scale results, these Likert Scale measures indicate that naïve observers detected positive performance change from the Baseline phase to the Post-ACTraining phase within the parameters of the Outcome Validity Survey. However, the incorporation of survey response options rooted solely in the experience of the raters (e.g., unsatisfactory, exceptional, etc.) indicates that observers on average detected a change in performance that is relevant through the lens of employee supervision as well (e.g., a change from unsatisfactory performance to performance that exceeds expectations).

ACTraining Acceptability

The experimenter surveyed participants to ascertain the ACTraining session's acceptability with respect to implementation accessibility, relevance to the practicum context, and benefit to participants' professional development. In Table 4, the participants' responses have been displayed and organized by survey item into four categories: (a) perceived accessibility, (b) perceived relevance, (c) perceived benefit, and (d) prospective use.

With respect to accessibility, the present moment attention exercises received an average score of 5, indicating that participants strongly agreed that the exercises were easy to follow. Likewise, the values clarification activity received a mean score of 5, indicating a similar level of perceived accessibility. Unlike the previous two activities, the goal setting activity received an average score of 4.7 with Angelica, the first participant, providing a score of 4. Overall, participants agreed that the exercises and activities employed during the ACTraining session were easy to follow from a trainee's perspective.

Regarding contextual relevance, the present moment attention exercises received an average score of 4.3, whereas both the values clarification activity and goal setting activity received average scores of 5. Angelica and Peggy both gave the present moment attention exercises scores of 4. Although on average the present moment attention exercises were regarded as less relevant than the values and committed action activities, participants expressed agreement that all exercises and activities bore some relevance to the practicum context.

Concerning benefit to professional development, participants moderately agreed that the ACTraining session improved their overall ability to work with students in the play centers, providing an average score of 4.3. Likewise, participants expressed moderate agreement with the statement that they are working more effectively with the students in the play centers following the ACTraining, giving an average score of 4.3 as well. On average, participants expressed less agreement with the statement that they find the time spent in the play centers to be more rewarding following the ACTraining session, with Angelica, Eliza, and Peggy providing scores of 3, 4, and 5 respectively for a mean score of 4. However, participants expressed higher agreement with the statement that they place greater value upon their work with students in the play centers, giving an average score of 4.3. Overall, participants reported to find the ACTraining session to be beneficial to their professional development related to the instructive play context; however, not all participants agreed that the intervention enhanced the personal reward yielded within the play centers.

Pertaining to prospective use, participants broadly expressed willingness to participate in or implement the ACTraining session as well as its components in the future. When surveyed about the ACTraining session as a package, participants expressed agreement that they would use the ACTraining session to support a different professional skill, indicated by a mean score of

4.7. Further, participants expressed agreement that they would use the ACTraining session to enhance a trainee's or their own experience in a different workplace context, giving an average score of 4.7. Angelica scored agreement with both items as a 4, whereas the other two participants provided scores of 5 for each item. When divided into individual components, the present moment attention exercises, values clarification activity, and goal setting activity received average scores of 4.3, 5, and 4.7 respectively, indicating that participants are least likely to use the present moment attention exercises again and most likely to use the values clarification activity in the future.

Overall, the ACTraining Acceptability Survey indicates that participants found the ACTraining session to be accessible, contextually relevant, and beneficial to their professional development. This conclusion is further supported by participants' expressed willingness to participate in or implement the ACTraining session and its individual components in the future. The implications of these survey results and any potential relation between participants' responses and performance will be expanded upon in the discussion section.

CHAPTER 4

Discussion

The Current Study

The current study sought to evaluate the effect of a one-time, 75 min ACTraining session upon graduate students' level of unsupervised task engagement (i.e., active engagement, active treatment, data collection, and task-oriented discussion) in an ABA demonstration preschool classroom. The use of covert yet direct observation methods reflected the study's aim to expand the generality of the previous ACTraining literature's findings into more common, naturalistic workplace settings. Three eligible participants were included in the study upon exhibiting differentiated levels of task engagement in the presence and in the absence of their responsible supervisor. The study's results suggest that an ACTraining session generated substantial, durable increases in the prevalence of unsupervised task engagement among staff in the classroom's play centers. Further, extended observation of participant performance through maintenance probes collected after the Post-ACTraining phase suggests that the observed increases in performance persist over a two-week period. Independent experts' BAR scale and Likert scale ratings of participant performance prior to and following the ACTraining session help substantiate a positive functional relation between the ACTraining session and levels of task engagement, indicating that performance increases are both perceptible to naïve observers and relevant to the employee supervision context. Finally, intervention acceptability measures collected via survey indicate that participants found the intervention to be accessible, relevant to the work setting, and beneficial to professional development. The following sections discuss the study's alignment and

departure from the relevant behavior analytic literature, limitations, and implications for practice and future research.

Convergence and Divergence with Contemporary Literature

The observed and socially validated increases in the level of task engagement align with the findings of previous research investigating the effect of ACTraining upon observable performance. Specifically, the current study's findings extend the external validity of comprehensive ACTraining interventions which aimed to enhance values-behavior coherence among its participants to increase value-directed actions (Gould et al., 2018), active treatment and procedural fidelity (Pingo et al., 2020), as well as treatment integrity across different behavior intervention plans (Ragulan et al., 2023). Additionally, the current study's results further validate the use of resource-effective, values-centered adaptations of the comprehensive ACTraining approach to increase staff-initiated interactions with clients (Castro et al., 2016) and staff trainer's BST usage (Little et al., 2020). With respect to durability over time, Angelica, Eliza, and Peggy's sustained elevated performance over a two-week post-intervention span aligns with trends observed across the previous studies in which participant performance either maintained or improved over extended periods following ACTraining (Pingo et al., 2020). Although Pingo et al. demonstrated the lack of a functional relation between self-reported psychometric measures and observable behavior, the intervention acceptability measures collected in the current study corroborate with those collected in Little et al. (2020), pointing towards values-behavior coherence's role as a mediator of positive, rather than negative, reinforcement.

The current study diverges from contemporary ACTraining literature through its mode of direct observation and other procedural measures intended to account for observer influence over

behavioral outcomes. The current study's use of a video camera to asynchronously observe participant performance presents the clearest departure from other ACTraining studies' use of a more traditional approach to direct observation (Chancey et al., 2019; Little et al., 2020; Pingo et al., 2020; Ragulan et al., 2023). To naturally integrate observation into the daily classroom schedule and account for variability in participant performance levels at different times of the day, the experimenter set the camera to record from approximately 8:00 AM to 1:00 PM on the participants' scheduled practicum days for two months. Although potential participants understood that the camera recorded their performance in the play centers through the participant consent form and direct word-of-mouth, they had no knowledge of the specific behavior observed (i.e., task engagement) at any phase of the study. Through these two procedural measures, the experimenter approximated the conditions under which participants typically operate within the play centers. To verify this assertion, observers conducted comparison probes of potential participants' performance in the presence of their responsible supervisor prior to and throughout the study. If a potential participant exhibited higher levels of task engagement in his or her supervisor's presence, the experimenter included the individual in the study and concluded that his or her performance recorded in the absence of the responsible supervisor better reflected naturalistic, unsupervised performance. Notably, qualifying participants' levels of task engagement did not exhibit any discernible sensitivity to the experimenter's discriminable presence inside or near the play centers during any phase of the study (i.e., Baseline, Post-ACTraining, or Maintenance). Participants' lack of sensitivity to the experimenter's irregular presence across different observation sessions compared to their sensitivity to the responsible supervisor's presence further affirms the experimenter's assumption that the employed procedural measures adequately mitigated the influence of the observer and camera upon

performance. Likewise, these precautionary protocols support the interpretation that the observed performance increases in the absence of the responsible supervisor represent the generalization of ACTraining outcomes into contexts more reflective of naturalistic, unsupervised work settings.

The study's utilization of comparison probes also serves to distinguish its findings from previous research with respect to the social validity of ACTraining outcomes. Although the degree to which independent observers detected a substantive change in performance before and after the ACTraining session varied between participants and observers, the aggregated expert ratings of performance indicated a contextually relevant increase in performance across each participant. The comparison probes, though lacking the experimental rigor of observation sessions conducted in the Supervisor Absent Condition, serve as an additional socially valid standard against which improvements in unsupervised participant performance can be validated. Notably, each participant's level of task engagement in the Supervisor Absent Condition following the ACTraining session overlapped or surpassed levels of task engagement exhibited in the Supervisor Present Condition across all phases of the study. These results support the interpretation that unsupervised performance approximated or, in some instances, surpassed the performance expectations established by the responsible supervisor during active supervision settings. Synthesizing the results of direct observation with the results of the Outcome Validity Survey, the procedures and consequent findings of the current study establish a preliminary foundation upon which ACTraining outcomes can be contextually validated.

In addition to the generalization and validation of the values-centered ACTraining session's outcomes, the current study sought to expand the procedures and measurements related to intervention acceptability. Inspired by the study of value-directed action as a dependent

variable tailored to individual participants in Gould et al. (2018), the current study significantly expanded upon the definition of active treatment in Pingo et al. (2020) to include a wider breadth of behaviors relevant to instructive play in clinical contexts (i.e., active engagement, data collection, task-oriented discussion). This interpretation of task engagement captures a broader set of job-related behavior and, in turn, detects a greater variety of behaviors to which participants may relate the personal values discussed during the ACTraining session (Gould et al., 2018; Paliliunas, 2022; Tarbox et al., 2020). Additionally, the experimenter carefully tailored the definition of task engagement to dovetail the direct contingency supports within the classroom that promote work-related behavior in the play centers. These evidence-based supports, described further in the Setting and Materials sections, included task-specific training, task clarification resources, task prompts, and regular supervisor feedback among other resources to enhance staff performance in the play centers (Carr et al., 2013). This adherence to existing classroom protocols and materials in the development of the dependent variable enabled observation of the ACTraining session's capacity to augment the effects of existing direct contingency interventions (e.g., BST) without the potentially coercive influence of the experimenter's dual role over participant behavior in Little et al. (2020). Specifically, by detaching the ACTraining interventionist (i.e., the experimenter) from any specific play-related behavior prior to the ACTraining session, the current study's procedures diminished the experimenter's influence over participants' selection of committed action(s) during the goal setting activity. In effect, the participants' increased exhibition of selected committed action(s) following ACTraining may more likely indicate the transformation of the selected behaviors' stimulus function into that of a discriminative stimulus for positive reinforcement via engagement in value-aligned behavior (Tarbox et al., 2020). The results of both direct

observation and the ACTraining Acceptability Survey support this interpretation. The persistence of elevated performance levels following ACTraining across all participants for an extended period better reflects performance maintained by positive reinforcement rather than negative reinforcement (Daniels, 2016; Pingo et al., 2022). To an even greater extent than the maintenance of enhanced performance exhibited by all participants across time and settings, the increased performance levels exhibited by Angelica and Peggy within their respective maintenance probes point towards the positive reinforcement of task engagement. The participants' self-reported satisfaction with the ACTraining session, specifically towards the domains of perceived benefit and prospective use, further support the interpretation of values-centered intervention as a mediator of positive reinforcement.

Limitations

Despite the current study's potential contributions to the ACTraining literature, the procedures and design of the study present a few limitations to the study's conclusions. First, technological limitations related to audio fidelity served as a systemic cause of disagreement between the primary and secondary observers due to their respective use and non-use of earbuds when coding observation sessions. Consequently, the primary observer occasionally scored intervals for the occurrence of vocalization-based task engagement (e.g., narration, task-oriented discussion, etc.) that the secondary observer did not score. This discrepancy, visually represented in Appendix E, notably impacts analysis of Peggy's unsupervised performance during the Post-ACTraining phase. Had the secondary observer's reported data for Peggy's 19th session (IOA = 80%) been used in formative analysis, the experimenter would have provided a textual prompt to review The Willingness and Action Plan following this session, potentially affecting participant performance and its interpretation. To mitigate source of error, the secondary observer would

mark intervals in which she suspected the occurrence of a vocalization but could not clearly hear then return to the interval in question to review further.

Second, notable incongruence between experts' BAR scale ratings reported in the Outcome Validity Survey results (see Table 2) and the primary dependent measures reported in the study (see Figure 1) implies that the PIR system does capture participant task engagement in a contextually relevant manner. For example, observation sessions for which observers scored 57%, 53%, and 63% of session intervals received average BAR scale scores of 2.5, 4.5, and 5 respectively. The stark contrast between direct observation measures and survey measures more strongly suggests a limitation of the dependent measurement system rather than an estimation error on the part of the experts. These findings align with the consensus that PIR systems may overestimate the prevalence of behavior occurring at low frequencies and may underestimate the prevalence of behavior occurring at high frequencies (Ledford et al., 2018). This potential flaw within the measurement system additionally permits a high degree of variability between a single participant's similarly scored sessions, clouding interpretation of primary dependent and outcome validity measures.

Third, the experimenter did not provide experts with videos depicting each participant's performance in the presence of a responsible supervisor in either the Baseline or Post-ACTraining phase. This omission prevents a more comprehensive comparison of supervised and unsupervised performance through the addition of social validity measures. Further, the omission of these measures clouds the experimenter's interpretation of the experts' Likert Scale results (see Table 3). Specifically, expert opinion of supervised performance would allow the experimenter to better discern acceptable levels of performance from the perspective of the first rater, the second rater, and the participants' responsible supervisors.

Fourth, the experimenter's relatively sporadic collection of comparison and maintenance probes lacked the experimental rigor of unsupervised performance data collected concurrently within the Baseline and Post-ACTraining phases of the study. In turn, the experimenter could not fully account for history threats to internal validity in the Supervisor Present Condition, nor could he account for history threats to unsupervised performance in the Maintenance phase of the study. These factors, though anticipated, further diminish the comparison probes' capacity to serve as a social validity standard and limit the strength of the current study's conclusions regarding outcome durability.

Fifth, the current study's design lacks the capacity to adequately ascertain the differential motivative effect of a stated value or set of values across its three participants. In other words, the experimenter cannot with full confidence attribute behavior change and outcome maintenance to a participant's relation of a freely chosen value to an available behavior within the play centers. Although the experimenter adjusted several parameters and procedures to better account for the intervention's active agent, potential competing factors (e.g., a participant's desire to avoid future ACTraining sessions) cannot be ruled out without more robust and rigorous comparison or component analysis. This limitation directly challenges the experimenter's conclusion that values-mediated positive reinforcement augmented performance.

Sixth, the study's design does not enable the comparison of different values as mediators of positive reinforcement for the contextually bound, target behavior. Although a participant's freely chosen values are informed by and, in turn, relevant to her cultural background and ontogeny, behavior directed by these same values may not be as accessible, relevant, or beneficial within the work context. In effect, some values may more effectively augment reinforcement for the targeted behavior than others. Without a more rigorous comparative design

or a substantially larger participant pool, the experimenter cannot adequately analyze or interpret the comparative effect of the participants' unique values upon performance.

Practical Implications and Future Directions

A values-centered ACTraining session increased the levels of unsupervised task engagement exhibited by three graduate students serving in an ABA demonstration classroom. Viewed purely through the lens of the study's dependent measurement system, the substantive increases in performance compel the adaptation of the intervention into other applied contexts. However, as the inconsistent results of the Outcome Validity Survey suggest, ACTraining's adoption into typical workplace contexts requires further investigation and validation of its effect oriented towards the perspective of practitioners in the field. To better reflect practitioner expectations of task engagement or related behaviors, future researchers may employ momentary time sampling with shorter intervals and clearly discernible onset and offset criteria. Alternatively, future research may utilize a whole interval recording system to achieve a similar effect. However, practitioners should consider the logistical difficulties that may arise concerning the onset and offset of more complex behaviors such as engagement before opting for a whole interval recording system. Accounting for their respective limitations, both momentary time sampling and whole interval recording systems may more closely mirror supervisor perception of performance.

The delivery of the ACTraining session in an individual format similarly hinders its adoption into other settings with fewer resources. However, given that some studies have already demonstrated the effectiveness of values-centered ACTraining delivered in a group format, investigators may allocate efforts towards integrating components of ACTraining into more broadly accepted, effective management practices. Just as Little et al. (2020) explored the utility

of ACTraining in enhancing the performance outcomes of BST, future research may explore the capacity of ACTraining components perceived to be accessible, relevant, and beneficial (e.g., Quick Look at Your Values) to enhance didactic instruction or other methods of staff training and support.

Future research may greatly expand upon the current study's design limitations. Single-subject replications or adaptations of this study's procedures could enhance a demonstration's experimental rigor through the systematic collection of comparison and maintenance probes. Additionally, future single-subject research studies may design a component analysis in which the effect of values in ACTraining may be isolated and evaluated. Using the current study's adaptation of ACTraining as a template, researchers may compare and counterbalance the effect of the original ACTraining session to an adaptation of the session without the Quick Look at Your Values activity and the values-oriented elements of The Willingness and Action Plan. For a more robust comparison, researchers with sufficient resources may even evaluate the values-centered ACTraining session's effect through randomized control trials.

Conclusion

The negative reinforcement contingencies pervasive within the modern workplace present a threat to the wellbeing of both individual employees and the organizations in which they work. The proactive replacement of coercive workplace management methods with positive reinforcement strategies rewards the employees and organizations alike. The emergence of values-centered ACTraining presents a cost-effective, empirically supported means through which practitioners may mediate positive reinforcement in the workplace without altering the formal characteristics of work itself. The current study extends the generality and durability of existing values-centered interventions by using an ACTraining session to increase the levels of

unsupervised task engagement exhibited by three graduate students serving in an ABA demonstration classroom. Social validity measures conducted within the study support both the outcomes and acceptability of the intervention while simultaneously compelling further research into values-centered intervention's comparative effectiveness and integration into traditional training practices.

REFERENCES

- Baum, W. M. (1995). Rules, culture, and fitness. *The Behavior Analyst, 18*, 1-21.
- Borrero, J. C., & Vollmer, T. R. (2002). An application of the matching law to severe problem behavior. *Journal of Applied Behavior Analysis, 35*(1), 13-27.
- Bottini, S., Wiseman, K., & Gillis, J. (2020). Burnout in providers serving individuals with ASD: The impact of the workplace. *Research in developmental disabilities, 100*, 103616.
- Bottini, S., Slowiak, J. M., & Kazee, A. (2025). Conceptualizing job burnout through a behavioral lens: Implications for organizational behavior management. *Journal of Organizational Behavior Management, 45*(1), 80-103.
- Brackett, L., Reid, D. H., & Green, C. W. (2007). Effects of reactivity to observations on staff performance. *Journal of applied behavior analysis, 40*(1), 191-195.
- Brodhead, M. T., Quigley, S. P., & Wilczynski, S. M. (2018). A call for discussion about scope of competence in behavior analysis. *Behavior analysis in practice, 11*, 424-435.
- Carr, J. E., Wilder, D. A., Majdalany, L., Mathisen, D., & Strain, L. A. (2013). An assessment-based solution to a human-service employee performance problem: An initial evaluation of the Performance Diagnostic Checklist—Human Services. *Behavior Analysis in Practice, 6*, 16-32.
- Castro, M., Rehfeldt, R. A., & Root, W. B. (2016). On the role of values clarification and committed actions in enhancing the engagement of direct care workers with clients with severe developmental disorders. *Journal of Contextual Behavioral Science, 5*(4), 201-207.

- Chancey, C., Weihl, C., Root, W. B., Rehfeldt, R. A., McCauley, D., Takeguchi, K., & Pritchard, J. (2019). The impact of mindfulness skills on interactions between direct care staff and adults with developmental disabilities. *Journal of Contextual Behavioral Science*, 12, 160-169.
- Chase, J. A., Housmanfar, R., Hayes, S. C., Ward, T. A., Vildardaga, J. P., & Follette, V. (2013). Values are not just goals: Online ACT-based values training adds to goal setting in improving undergraduate college student performance. *Journal of Contextual Behavioral Science*, 2(3-4), 79-84.
- Daniels, A. C. (2016). *Bringing out the best in people: how to apply the astonishing power of positive reinforcement*. New York McGraw Hill Professional.
- Denne, L. D., Thomas, E., Hastings, R. P., & Hughes, J. C. (2015). Assessing competencies in applied behavior analysis for tutors working with children with autism in a school-based setting. *Research in Autism Spectrum Disorders*, 20, 67-77.
- Dixon, M. R., Hayes, S. C., & Belisle, J. (2023). *Acceptance and commitment therapy for behavior analysts: A practice guide from theory to treatment*. Routledge.
- Garcia, Y., Keller-Collins, A., Andrews, M., Kurumiya, Y., Imlay, K., Umphrey, B., & Foster, E. (2022). Systematic review of acceptance and commitment therapy in individuals with neurodevelopmental disorders, caregivers, and staff. *Behavior modification*, 46(5), 1236-1274.
- Gast, D. L., & Ledford, J. (2009). Multiple baseline and multiple probe designs. In *Single subject research methodology in behavioral sciences* (pp. 276-328). Routledge.

- Gould, E. R., Tarbox, J., & Coyne, L. (2018). Evaluating the effects of acceptance and commitment training on the overt behavior of parents of children with autism. *Journal of contextual behavioral science*, 7, 81-88.
- Harris, R. (2007). Acceptance and commitment therapy (ACT) introductory workshop handout. *Psych Med*.
- Harris, R. (2009). The complete set of client handouts and worksheets from ACT books. *The Happiness Trap*. URL:
https://thehappinesstrap.com/upimages/Complete_Worksheets_2014.pdf [accessed 2022-12-01].
- Hayes, S. C., Hofmann, S. G., & Ciarrochi, J. (2020). A process-based approach to psychological diagnosis and treatment: The conceptual and treatment utility of an extended evolutionary meta model. *Clinical psychology review*, 82, 101908.
- Issen, T., Hinman, J. M., & Dixon, M. R. (2021). Utilizing the AIM curriculum to improve job performance in an educational setting for children with autism and related disabilities. *Behavior Analysis in Practice*, 1-7.
- Johnson, D. A., Johnson, C. M., Ximenez, T., & Li, A. (2024). Merging OBM with Discipline Systems: Making the Case for Performance Recovery. *Journal of Organizational Behavior Management*, 44(2), 113-127.
- Lane, J. D., & Gast, D. L. (2014). Visual analysis in single case experimental design studies: Brief review and guidelines. *Neuropsychological rehabilitation*, 24(3-4), 445-463.
- Ledford, J. R., & Lambert, J. M. (2024). Analyzing Data from Studies Using Time-Lagged Conditions. In *Single Case Research Methodology* (pp. 204-222). Routledge.

- Ledford, J. R., Lane, J. D., & Gast, D. L. (2018). Dependent variables, measurement, and reliability. In *Single case research methodology* (pp. 97-131). Routledge.
- Little, A., Tarbox, J., & Alzaabi, K. (2020). Using acceptance and commitment training to enhance the effectiveness of behavioral skills training. *Journal of Contextual Behavioral Science*, 16, 9-16.
- Moran, D. J., & Ming, S. (2022). The mindful action plan: Using the MAP to apply acceptance and commitment therapy to productivity and self-compassion for behavior analysts. *Behavior Analysis in Practice*, 15(1), 330-338.
- Paliliunas, D. (2022). Values: A core guiding principle for behavior-analytic intervention and research. *Behavior Analysis in Practice*, 15(1), 115-125.
- Pingo, J. C., Dixon, M. R., & Paliliunas, D. (2020). Intervention enhancing effects of acceptance and commitment training on performance feedback for direct support professional work performance, stress, and job satisfaction. *Behavior analysis in practice*, 13(1), 1-10.
- Pingo, J. C., Dixon, M. R., & Paliliunas, D. (2022). An examination of the intervention-enhancing effect of acceptance and commitment therapy-based training on direct service professionals' performance in the workplace. *Behavior Analysis in Practice*, 15(1), 192-202.
- Ragulan, S., Bertoli, E., Shinall, J. A., & Kahng, S. (2023). Effects of acceptance and commitment training on treatment integrity amongst behavioral technicians. *Behavior Modification*, 47(3), 719-751.
- Suarez, V. D., Moon, E. I., & Najdowski, A. C. (2022). Systematic review of acceptance and commitment training components in the behavioral intervention of individuals with autism and developmental disorders. *Behavior Analysis in Practice*, 15(1), 126-140.

Tarbox, J., Szabo, T. G., & Aclan, M. (2020). Acceptance and commitment training within the scope of practice of applied behavior analysis. *Behavior Analysis in Practice*, 1-22.

U.S. Department of Labor. (2024). *Department of Labor Report to the House and Senate Appropriations Committees on the Direct Care Workforce*.

https://www.dol.gov/sites/dolgov/files/ODEP/Direct-Care-Professionals/ETA_report_Appropriations_Committees_on_Direct_Care_Workforce.pdf

Table 1*Reported Values and Committed Actions*

Participant	Values	Committed Actions
Angelica	Freedom, Fun, Independence, Industry	Model and narrate appropriate play behavior to promote student independence; prepare and prompt PECS trials
Eliza	Compassion, Kindness, Patience, Persistence	Follow student's lead when narrating and modeling play to better reflect student specific interests
Peggy	Connection, Justice, Patience, Trust	Narrate and engage in cooperative play with the student; ask coworkers for help with class-wide tasks when with a student

Note. The table depicts the values and the committed actions reported by each participant during The Willingness and Action Plan activity of the ACTraining session.

Table 2*Outcome Validity Survey BAR Scale Results*

Rater	Baseline Score	Post-AC Training Score	Detected Change
Angelica			
First Rater	2	2	0
Second Rater	2	3	+1
Mean	2	2.5	+0.5
Eliza			
First Rater	4	5	+1
Second Rater	5	5	0
Mean	4.5	5	+0.5
Peggy			
First Rater	2	5	+3
Second Rater	2	5	+3
Mean	2	5	+3

Note. This table displays independent experts' BAR scale scores of participant performance from observation session samples within the Baseline and Post-AC Training phase. In the BAR scale, a score of "1" indicates that the observed participant exhibited task engagement for approximately 0% of the session, a score of "2" indicates task engagement for approximately 25% of the session, a score of "3" indicates task engagement for approximately 50% of the session, a score

of “4” indicates task engagement for approximately 75% of the session, and a score of “5” indicates task engagement for approximately 100% of the session.

Table 3*Outcome Validity Survey Likert Scale Results*

Rater	Baseline Score	Post-AC Training Score	Detected Change
Angelica			
First Rater	1	1	0
Second Rater	2	3	+1
Mean	1.5	2	+0.5
Eliza			
First Rater	3	5	+2
Second Rater	4	4	0
Mean	3.5	4.5	+1
Peggy			
First Rater	1	4	+3
Second Rater	2	4	+2
Mean	1.5	4	+2.5

Note. This table displays independent experts' Likert scale scores of participant performance from observation session samples within the Baseline and Post-AC Training phase. In the Likert scale, a score of "1" indicates that the participant exhibited unsatisfactory performance, a score of "2" indicates marginal performance, a score of "3" indicates performance that meets

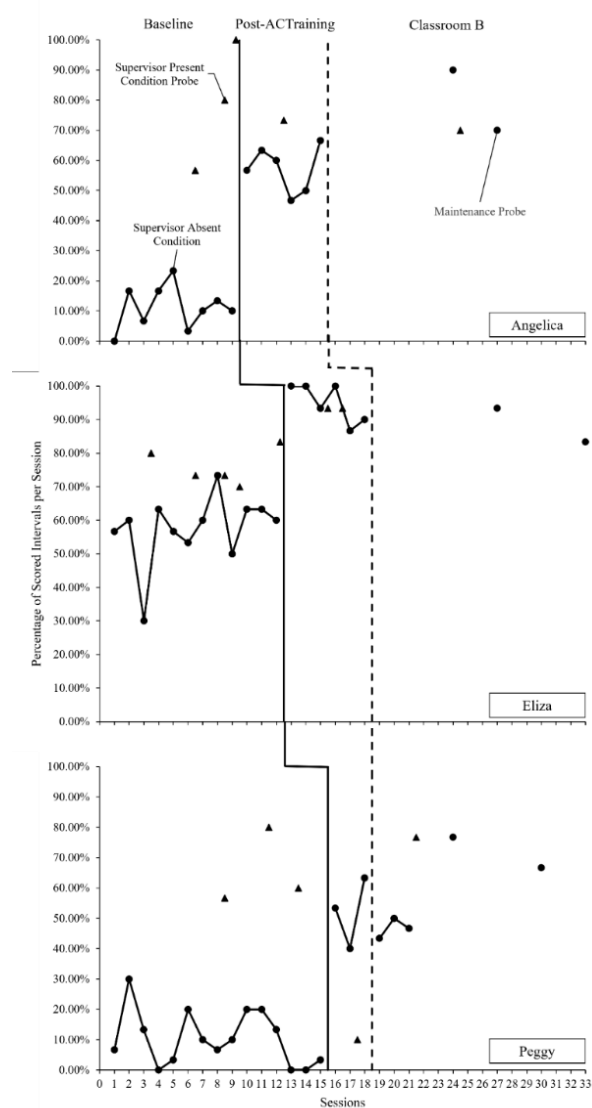
expectations, a score of “4” indicates that performance exceeds expectations, and a score of “5” indicates exceptional performance.

Table 4*ACTraining Acceptability Survey Results*

Survey Item	Angelica	Eliza	Peggy	Mean
Perceived Accessibility				
The mindfulness exercises were easy to follow.	5	5	5	5
The values clarification exercise was easy to follow.	5	5	5	5
The goal setting exercise was easy to follow.	4	5	5	4.7
Perceived Relevance				
The mindfulness exercises were appropriately related to my fieldwork/practicum context.	4	5	4	4.3
The values clarification exercise was appropriately related to my fieldwork/practicum context.	5	5	5	5
The goal setting exercise was appropriately related to my fieldwork/practicum context.	5	5	5	5
Perceived Benefit				
I believe that the ACTraining session has improved my overall ability to work with students in the play centers.	4	4	5	4.3
I believe that I am working with students more effectively in the play centers after the ACTraining session.	4	4	5	4.3
After ACTraining, I find the time that I spend in the play centers to be more personally rewarding.	3	4	5	4

Survey Item	Angelica	Eliza	Peggy	Mean
Perceived Benefit				
After ACTraining, I place greater value upon my work with students in the play centers.	4	4	5	4.3
Prospective Use				
In the future, I would use/request a similar ACTraining session to support a trainee or myself in a different professional skill.	4	5	5	4.7
In the future, I would use/request a similar ACTraining session to enhance a trainee's or my own experience in a different workplace context.	4	5	5	4.7
In the future, I would use the mindfulness exercises to support a trainee or myself.	4	5	4	4.3
In the future, I would use the values clarification exercise to support a trainee or myself.	5	5	5	5
In the future, I would use the goal setting exercise to support a trainee or myself.	4	5	5	4.7

Note. This table displays participants' Likert scale scores of ACTraining acceptability. In the Likert scale, a score of "1" indicates that participants strongly disagree with the survey statement, a score of "2" indicates that participants disagree with the statement, a score of "3" indicates that participants feels neutral towards the statement, a score of "4" indicates that participants agree with the statement, and a score of "5" indicates that the participants strongly agree with the statement.

Figure 1*Task Engagement across Participant Tiers*

Note. The graph depicts the levels of task engagement in the Supervisor Absent Condition exhibited by Angelica, Eliza, and Peggy across the Baseline, Post-AC Training, and Maintenance phases of the study expressed as the percentage of scored intervals per session. Supervisor

Present Condition comparison probes and maintenance probes are also depicted. A solid vertical line represents the implementation of the ACTraining session for a participant. A dotted vertical line represents the transition of the preschool class from Classroom A to Classroom B.

APPENDICES

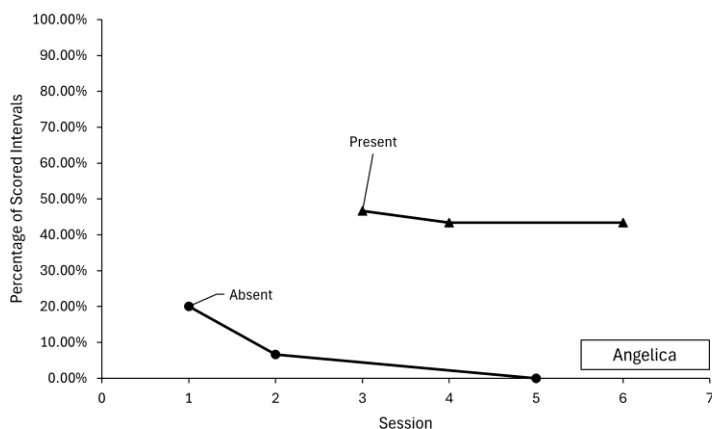
Appendix A

Pre-Study Examination of Task Engagement Graphs

The experimenter conducted a pre-study examination of staff members potentially eligible for inclusion in the study. Participants were included if they exhibited differentiated between levels task engagement in the presence of their supervisor and in the absence of their supervisor. Qualifying participants include Angelica (see Figure A1), Eliza (see Figure A2), and Peggy (see Figure A3).

Figure A1

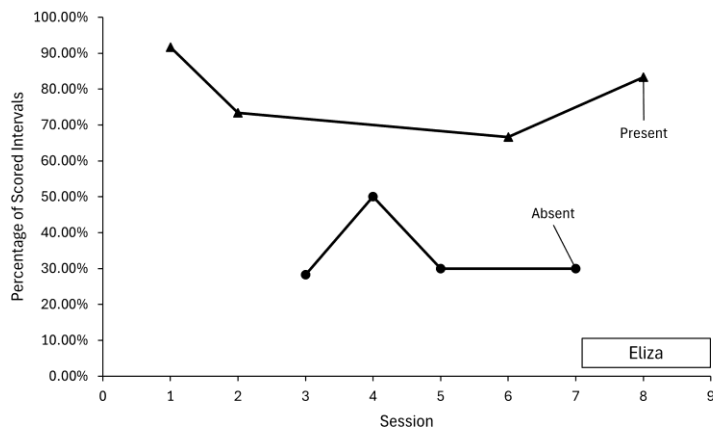
Pre-Study Task Engagement across Conditions (Angelica)



Note. The graph displays the pre-study levels of task engagement exhibited by Angelica across the Supervisor Present Condition and the Supervisor Absent Condition.

Figure A2

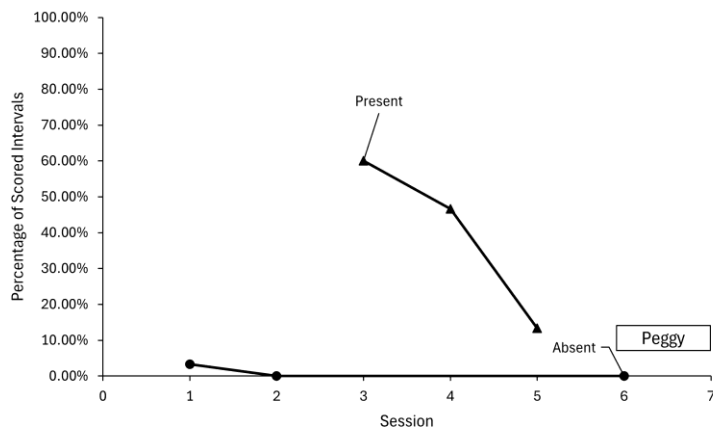
Pre-Study Task Engagement across Conditions (Eliza)



Note. The graph displays the pre-study levels of task engagement exhibited by Eliza across the Supervisor Present Condition and the Supervisor Absent Condition.

Figure A3

Pre-Study Task Engagement across Conditions (Peggy)



Note. The graph displays the pre-study levels of task engagement exhibited by Peggy across the Supervisor Present Condition and the Supervisor Absent Condition.

Appendix B

Observation Materials

The study's observers employed a variety of materials to ensure that participant's levels of task engagement were observed and collected efficiently and efficaciously. In this effort, observers recorded performance data on the PIR Data Sheet (see Figure B1), reviewed behavior definitions with the Observation Reference Sheet (see Figure B2), and verified correct observation protocol through the Observer Procedural Fidelity Checklist (see Figure B3).

Figure B1

PIR Data Sheet

Participant Code: _____					Primary / IOA				
Partial Interval Recording (PIR) Data Collection Sheet For each interval in which the participant exhibits Task Engagement with the client, mark the corresponding box with a (+). If the participant does not exhibit Task Engagement, mark the corresponding box with a (-).									
Date: _____		Session Number: _____		Phase: _____		Condition: _____			
Scored Intervals: ____ / 30 x 100% = ____									
Partial Interval Recording (PIR) Data Collection Sheet For each interval in which the participant exhibits Task Engagement with the client, mark the corresponding box with a (+). If the participant does not exhibit Task Engagement, mark the corresponding box with a (-).									
Date: _____		Session Number: _____		Phase: _____		Condition: _____			
Scored Intervals: ____ / 30 x 100% = ____									
Partial Interval Recording (PIR) Data Collection Sheet For each interval in which the participant exhibits Task Engagement with the client, mark the corresponding box with a (+). If the participant does not exhibit Task Engagement, mark the corresponding box with a (-).									
Date: _____		Session Number: _____		Phase: _____		Condition: _____			
Scored Intervals: ____ / 30 x 100% = ____									

Figure B2

Observation Reference Sheet

Observation Reference Sheet	
Task Engagement (+)	Active Engagement: any instance in which the staff member interacts with one or more assigned students, oriented towards the student and at least partially within the student's view, in accordance with NDBI-based play strategies. These strategies include: (a) cooperative play based on expressed student interest; (b) modeling of appropriate play; (c) imitation of student gestures, facial expressions, body movement, vocalization, and toy manipulation; (d) teacher-initiated physical contact with the student that elicits student smiles, giggles, or laughs; and (e) use of audible vocal language related to play (e.g., singing, tacting actions, using game-based intraverbals). These strategies do not include student-initiated physical contact such as noncontingent holding or cuddling (i.e., not requested via target functional communication modality), nor do they include vocalizations unrelated to student play or the student's immediate environment. Active Treatment: any instance in which the staff member implemented a formal instructional program (e.g., NDBI, PECS, or FCT), managed complex behavior – excluding elopement and climbing furniture – in accordance with the student's behavior plan protocols, and/or applied operant teaching procedures to (e.g., prompting, reinforcing, etc.) to teach a specific skill or behavioral response with one or more assigned students. Specifically, this definition includes preparation for instruction within the play space (e.g., arranging the environment for a PECS trial), instruction implementation, and initial delivery of programmed reinforcement. This definition does not include reinforcement provided beyond the initial interval in which it was delivered unless the student's protocol explicitly requires reinforcement to be provided for a specified interval. Data Collection: any instance of recording of data directly related to the student's behavior or performance within the play space. This does not include recording data for behavior in previous sessions unless they were explicitly asked to do so by a staff member or supervisor. Task-Oriented Discussion: any instance in which the staff member communicated with another staff member or supervisor about the assigned student's protocols or procedures, including but not limited to task clarification regarding procedural fidelity, planning future objectives for the student, or asking about the student's daily schedule. When receiving performance feedback or instruction, this behavior includes active listening, indicated by affirmative gestures or vocalizations, directive compliance, or orientation towards the relevant speaker, student, or task material. This did not include conversation unrelated to assigned student protocols or procedures, even if conducted with a supervisor. This also did not include any conversation held outside of the play centers unless a supervisor explicitly asked the participant to engage in a discussion outside of centers.
Extraneous Events (V)	Supervisor/Schedule Request: any whole interval in which a supervisor requests or the schedule dictates that the participant to engage in an alternative work-related behavior will be marked "Void" or "V" to indicate that the interval will not be counted towards the participant's performance score. For example, a supervisor may request that the participant exit the play space to discuss a sensitive topic or provide performance feedback. Non-examples include conversation with the supervisor unrelated to the student, participant performance, or the procedures of the classroom. Bathroom Request: any whole interval following a participant's request to go to the bathroom until they return to the classroom will be marked with "V." Technical Challenges: any whole interval in which the participant or student was fully obscured from the camera's view was marked with a "V" and not counted towards the participant's performance.

Figure B3*Observer Procedural Fidelity Checklist*

Observation Procedural Fidelity Checklist		
Step	Description	+/-
1	The observer opens the data collection binder and either creates OR navigates to the appropriate PIR data sheet, indicated by the participant code and observer role.	
2	The observer labels the PIR data sheet with the appropriate date, session number, phase, and condition in the correct spaces.	
3	The observer scans the classroom schedule to ensure that the participant: (a) had been assigned to a student who was present in the demonstration classroom; (b) had been scheduled to engage with the student in one of the two play centers; and (c) had not been assigned to serve as an active participant, confederate, or implementer for a different study at the time of observation.	
4a	The observer scans the classroom to ensure that the participant's responsible supervisor is not in the room if conducting a session in the Supervisor Absent Condition.	
4b	The observer scans the classroom to ensure that the participant's responsible supervisor is in the room with the participant if conducting a session in the Supervisor Absent Condition.	
5	When ready to conduct an observation session, the observer sets a 10 s interval timer on the MotivAider application without starting it.	
6	The observer situates the camera such that the participant is in their view, then starts the interval timer.	
7	With each "vibration" emitted by the MotivAider representing the elapse of an interval, the data collector documents the occurrence of the behavior - at any point and for any duration - with a "+" sign or the non-occurrence of the behavior - for the entire interval - with a "-" sign for the corresponding interval. For whole intervals ineligible for data collection, the data collector writes "V" in the interval. The data collector repeats this step until the observation period concludes.	

Completed Steps: ____ / 7 x 100% = _____

Appendix C

Intervention Materials

The experimenter employed a variety of materials to assist in the implementation of the ACTraining intervention. During each ACTraining session, the experimenter distributed two copies of the ACTraining Materials Package (see Figure C1), displayed and followed the ACTraining Visual Aid (see Figure C2), and reviewed the ACTraining Procedural Fidelity Checklist (see Figure C3).

Figure C1

ACTraining Materials Package

Name: _____ Date: _____ Notice Five Things This is a simple exercise to center yourself and connect with your environment. Practice it throughout the day, especially any time you find yourself getting caught up in your thoughts and feelings. 1. Pause for a moment 2. Look around and notice five things you can see. 3. Listen carefully and notice five things you can hear. 4. Notice five things you can feel in contact with your body (e.g., your watch against your wrist, your pants against your legs, the air upon your face, your feet upon the floor, your back against the chair, etc.). 5. Finally, do all the above simultaneously.	Name: _____ Date: _____ Drop Anchor This is another simple exercise to center yourself and connect with the world around you. Practice it throughout the day, especially any time you find yourself getting caught up in your thoughts and feelings. 1. Plant your feet into the floor. 2. Push them down—notice the floor beneath you, supporting you. 3. Notice the muscle tension in your legs as you push your feet down. 4. Notice your entire body—and the feeling of gravity flowing down through your head, spine, and legs into your feet. 5. Now look around and notice what you can see and hear around you. Notice where you are and what you're doing.
---	---

Name:

Date:

Quick Look at Your Values

Values are your heart's deepest desires for how you want to behave as a human being. Values are not about what you want to get or achieve; they are about how you want to behave or act on an ongoing basis.

There are literally hundreds of different values, but below you'll find a list of the most common ones. Probably, not all of them will be relevant to you. Keep in mind there are no such things as "right values" or "wrong values." It's a bit like our taste in pizzas. If you prefer ham and pineapple but I prefer salami and olives, that doesn't mean that my taste in pizzas is right and yours is wrong. It just means we have different tastes. And similarly, we may have different values.

So read through the list below and write a letter next to each value: V = Very important, Q = Quite important, and N = Not so important; and make sure to score at least ten of them as Very important.

1. Acceptance: to be open to and accepting of myself, others, life, etc.
2. Adventure: to be adventurous; to actively seek, create, or explore novel or stimulating experiences.
3. Assertiveness: to respectfully stand up for my rights and request what I want.
4. Authenticity: to be authentic, genuine, real; to be true to myself.
5. Beauty: to appreciate, create, nurture or cultivate beauty in myself, others, the environment, etc.
6. Caring: to be caring towards myself, others, the environment, etc.
7. Challenge: to keep challenging myself to grow, learn, improve.
8. Compassion: to act with kindness towards those who are suffering.
9. Connection: to engage fully in whatever I am doing and be fully present with others.
10. Contribution: to contribute, help, assist, or make a positive difference to myself or others.
11. Conformity: to be respectful and obedient to rules and obligations.
12. Cooperation: to be cooperative and collaborative with others.
13. Courage: to be courageous or brave; to persist in the face of fear, threat, or difficulty.
14. Creativity: to be creative or innovative.
15. Curiosity: to be curious, open-minded and interested; to explore and discover.
16. Encouragement: to encourage and reward behavior that I value in myself or others.
17. Equality: to treat others as equal to myself, and vice versa.
18. Excitement: to seek, create and engage in activities that are exciting, stimulating or thrilling.
19. Fairness: to be fair to myself or others.
20. Fitness: to maintain or improve my fitness; to look after my physical and mental health and wellbeing.

Name:

Date:

21. Flexibility: to adjust and adapt readily to changing circumstances.
22. Freedom: to live freely; to choose how I live and behave or help others do likewise.
23. Friendliness: to be friendly, companionable, or agreeable towards others.
24. Forgiveness: to be forgiving towards myself or others.
25. Fun: to be fun-loving; to seek, create, and engage in fun-filled activities.
26. Generosity: to be generous, sharing and giving, to myself or others.
27. Gratitude: to be grateful for and appreciative of the positive aspects of myself, others, and life.
28. Honesty: to be honest, truthful, and sincere with myself and others.
29. Humor: to see and appreciate the humorous side of life.
30. Humility: to be humble or modest; to let my achievements speak for themselves.
31. Industry: to be industrious, hard-working, dedicated.
32. Independence: to be self-supportive and choose my own way of doing things.
33. Intimacy: to open-up, reveal, and share myself, emotionally or physically, in my close personal relationships.
34. Justice: to uphold justice and fairness.
35. Kindness: to be kind, compassionate, considerate, nurturing or caring towards myself or others.
36. Love: to act lovingly or affectionately towards myself or others.
37. Mindfulness: to be conscious of, open to, and curious about my here-and-now experience.
38. Order: to be orderly and organized.
39. Open-mindedness: to think things through, see things from other's points of view, and weigh evidence fairly.
40. Patience: to wait calmly for what I want.
41. Persistence: to continue resolutely, despite problems or difficulties.
42. Pleasure: to create and give pleasure to myself or others.
43. Power: to strongly influence or wield authority over others (e.g., taking charge, leading, organizing).
44. Reciprocity: to build relationships in which there is a fair balance of giving and taking.
45. Respect: to be respectful towards myself or others; to be polite, considerate and show positive regard.
46. Responsibility: to be responsible and accountable for my actions.
47. Romance: to be romantic; to display and express love or strong affection.
48. Safety: to secure, protect, or ensure the safety of myself or others.
49. Self-awareness: to be aware of my own thoughts, feelings and actions.
50. Self-care: to look after my health and wellbeing, and get my needs met.
51. Self-development: to keep growing, advancing or improving in knowledge, skills, character, or life experience.
52. Self-control: to act in accordance with my own ideals.

Name:

Date:

53. Sensuality: to create, explore and enjoy experiences that stimulate the five senses.
54. Sexuality: to explore or express my sexuality.
55. Spirituality: to connect with things bigger than myself.
56. Skillfulness: to continually practice and improve my skills and apply myself fully when using them.
57. Supportiveness: to be supportive, helpful, encouraging, and available to myself or others.
58. Trust: to be trustworthy; to be loyal, faithful, sincere, and reliable.
59. Insert your own unlisted value here:
60. Insert your own unlisted value here:

Once you've marked each value as V, Q, N (Very, Quite, or Not so important), go through all the Vs, and select out the top six that are most important to you. Mark each one with a 6, to show it's in your top six. Finally, write those six values out below, to remind yourself this is what you want to stand for as a human being.

Name:

Date:

The Willingness and Action Plan

1. My goal is to (be specific):
2. The values underlying my goal are:
3. The actions I will take to achieve that goal are (be specific):
4. The thoughts/memories, feelings, sensations, urges I'm willing to make room for (in order to achieve this goal):
 - Thoughts/memories:
 - Feelings:
 - Sensations:
 - Urges:
5. It would be useful to remind myself that:
6. If necessary, I can break this goal down into smaller steps, such as:
7. The smallest, easiest step I can begin with is:
8. The time, day, and date that I will take that first step, is:

Name:	Date:
Personal Notes	

Figure C2*ACTraining Visual Aid*

Acceptance and Commitment Training

Value-Directed Action in Play!



Session Objectives

In-Session Goals:

- Consider and select our own personal values that guide us in life.
- Reflect upon and identify actions in the play centers that are guided by those values.

Out-Of-Session Goals:

- Make the time that we spend in play centers more rewarding for ourselves!
- Become even better therapists when working with our students in play!

Itinerary and Materials (1 hour)

- Warm-up with two brief mindfulness exercises.
 - Notice Five Things
 - Drop Anchor
- Review and select your "Top Personal Values" from a list of common values.
 - A Quick Look at Your Values
- Select a personal goal nested in your values, then create an action plan that brings you closer towards achieving your goal!
 - The Willingness and Action Plan

Overview of our Roles

Partner #1 (Me) - Facilitating the activities. - Reading exercise scripts, giving instructions, describing activities, etc. - Answering any questions you may have! - Participating in the activities too! - Completing the exercises with you. - Sharing my own examples!	Partner #2 (You) - Participating in the activity! - Think, write, and share as you're comfortable :) - Stop me or ask questions at any time!
--	---

Ready to Start?



Communication during Warm-Up



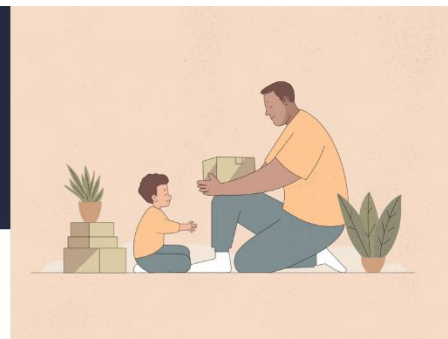
Notice Five Things



Check-In



Drop Anchor

We're Done
with the
Warm-Up!Quick Look
at Your
Values

What are Values?

"Values aren't about what you want to get or achieve; they're about how *you want* to behave or act on an *ongoing basis*" (Harris, 2009).

There's *no* such thing as "right values" or "wrong values" (Harris, 2009).

How to Rate
Values

V = Very Important
Q = Quite Important
N = Not So Important

*Score at Least Ten as "V"

Choosing
Your Top 6
ValuesReflecting on
our Values

1. Why do our top chosen values matter to us?
2. Do we always live by our values?
3. What do we personally receive by living according to our chosen values?



Can we embody our values in the workplace?

(The answer is up to you!)



Let's Find Out in our Final Activity!

Up next, we're going to:

1. Narrow our focus down to the time we spend with our students in the *Pre-K* play centers!
2. Choose an important, personal goal rooted in our values that we can work towards.
3. Identify specific actions that we can take in play to bring us closer towards our goal and values.
4. Acknowledge any *discomfort*, big or small, that we're willing to make room for to achieve our goal.
5. Make a *commitment* to work towards our value-driven goal!

Are you ready?

Willingness and Action Plan

Tying your Personal Values to the Work Experience!



STEP ONE: Claim Ownership over your Plan



STEP TWO: Reflect and Set a Personal Goal

Find your aim or your desired result!



Your Turn!



Take a moment to pause yourself in the play centers with one of our students.



Think for a bit of a personal goal, big or small. Broad is specific, that you can achieve or work towards when you're with your student in the play centers.



Write it down and share if you feel comfortable doing so!

STEP THREE: Reflect upon and Write the Values that Underly your Goal

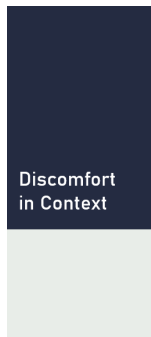
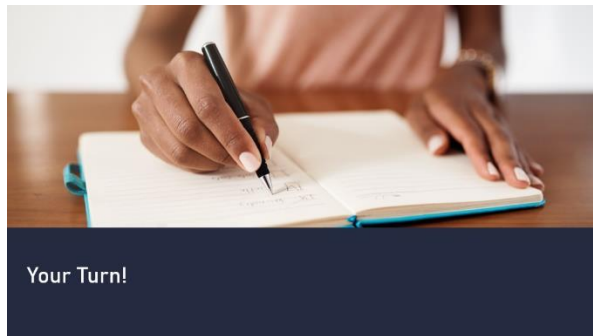
I'll Go First!



STEP FOUR: Identify Actions that Can Lead to Your Goal

I'll Go First!





- What sort of discomfort might we face when working with our students in play?
- How might these private events affect our outward behavior while with our students?
- Could you imagine any benefits we might experience by "making room" for these uncomfortable experiences?

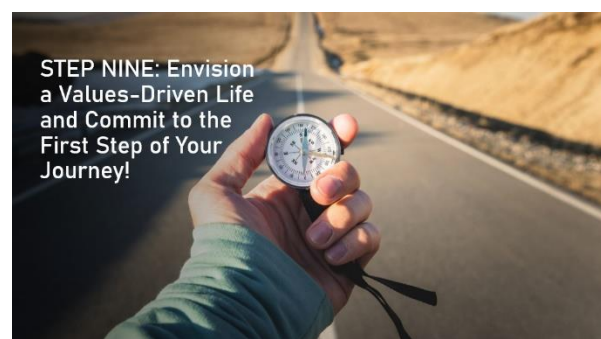


Figure C3

ACTraining Procedural Fidelity Checklist

ACTraining Procedural Fidelity Checklist		
Step	Description	+/-
1	Prior to inviting the participant to the session, the experimenter places two copies of the Materials Package upon the table, activates the video camera, and displays the ACTraining Visual Aid. Additionally, the experimenter possesses one copy of the ACTraining Procedural Fidelity Checklist.	
2	The experimenter introduces the participant to the ACTraining session, briefly summarizing the purpose, activities, materials, and duration of the workshop and describes each material.	
3	The experimenter describes the active roles he and the participant will play throughout the study.	
4	Prior to introducing the mindfulness exercises, the experimenter describes and rehearses simple communication without words (e.g., "mhmhm," head nods, etc.) to prepare the participant for the Notice Five Things exercise.	
5	The experimenter introduces the Notice Five Things activity, reciting the opening script.	
6	The experimenter delivers the exercise's instructions, providing examples of target stimuli (e.g., sights, sounds, etc. in the room) as necessary, and waiting for the participant to confirm completion of a step when applicable - before moving on to the next step.	
7	Upon completion of the activity, the experimenter "Checks In" by asking the participant if they notice anything different, then vocally affirms the participant's response.	
8	The experimenter then introduces the Drop Anchor exercise, reciting the opening script.	
9	The experimenter guides the participant through each step of the activity, waiting for the participant to confirm completion before moving on to the next step.	
10	The experimenter informs the participant that they have completed the warm-up, thanks them for their participation, and asks how they feel after completing the warm-up.	
11	The experimenter introduces the Quick Look at Your Values activity and loosely recites the opening script, highlighting what values are in the context of the activity.	
12	The experimenter explains that he and the participant will be completing the activity together, then delivers the activity's instructions.	
13	The experimenter prompts the participant to select their "Top Six" values from those rated as "Very Important."	
14	Once the participant selects six values, the experimenter asks, "Why do our top chosen values matter to us," then engages the participant in discussion.	
15	Next, the experimenter asks, "Do we always live by our values," then engages the participant in discussion.	
16	Then, the experimenter asks, "What do we personally receive by living according to our chosen values," then engages the participant in discussion.	
17	The experimenter then transitions to the next activity by rhetorically asking, "Can we embody our values in the workplace?"	
18	The experimenter outlines the context (i.e., play space) and objectives of the next activity.	
19	The experimenter introduces the Willingness and Action Plan and prompts the participant to write their name and the date to "Claim Ownership" of the document.	
20	The experimenter introduces the participant to goal identification, modeling what goal identification looks like through a personal context and example.	
21	The experimenter then illustrates the target context (i.e., play centers), prompts the participant to think of a personal goal that they can work towards in the target context, then instructs the participant to write down and share their goal.	
22	The experimenter vocally affirms the participant's response, then instructs the participant to reflect upon which values underlie their chosen goal.	
23	The experimenter writes his corresponding values, then prompts discussion about the values underlying his selected goal.	
24	The experimenter vocally affirms the participant's responses.	
25	The experimenter prompts the participant to reflect upon specific actions that they can take in the target context that may bring them closer to their goal.	
26	The experimenter models the task by writing and sharing more specific actions he could take in his example.	
27	The experimenter introduces the concept of "Making Room for Discomfort" by describing and modeling a generic example uncomfortable thought. The experimenter then repeats the process for memories, feelings, urges, and sensations.	
28	The experimenter then prompts the participant to reflect upon and discuss what sort of discomfort that they may face in the play centers with students, how this discomfort may affect their behavior, and if they could imagine any benefits of accepting this discomfort in service of their goal.	
29	The experimenter models his own response to these questions for the participant within a different context. After, the experimenter prompts the participant to reflect upon, write, and share the uncomfortable private events that they are willing to make room for in service of their goal.	
30	The experimenter then describes the purpose of a "Supportive Statement" when facing discomfort, shares his own example within his goal's context, and prompts the participant to write and share their own "Supportive Statement."	
31	The experimenter prompts the participant to break down their chosen specific action(s) into even smaller, easier steps to achieve, models the process from his own example, then encourages the participant to write and share their own ideas.	
32	The experimenter prompts the participant to choose the smallest, easiest task from their list to be the first step that they can take in the target context, while doing the same himself.	
33	The experimenter prompts the participant to envision themselves enacting the first step of their plan, bringing them closer towards their goal and values, then prompts the participant to write the time, day, and date that they will commit to taking that first step.	
34	Upon completion of the written plan, the experimenter thanks the participant for their engagement and allows the participant to return to work with their completed plan.	

Completed Steps: ____ / 34 x 100% = _____

Appendix D

Social Validity Surveys

The experimenter employed surveys to assess the social validity of the ACTraining intervention and its outcomes. The experimenter provided independent experts with the Outcome Validity Survey (see Figure D1) to collect performance measures through a BAR scale and to collect expert perception of these measures through a Likert Scale. Additionally, the experimenter provided participants with ACTraining Acceptability Survey (see Figure D2) to collect participant demographic information and measure perception of the intervention's accessibility, relevance to the participants' work, and perceived benefit to the participants' professional development using a Likert Scale.

Figure D1

Outcome Validity Survey

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Outcome Validity Survey

10. After viewing Video 5, rate the level of "task engagement" exhibited by the staff member using the Likert Scale."

Unsatisfactory

Marginal

Meets Expectations

Exceeds Expectations

Exceptional

Video 5

☐

☐

☐

☐

☐

11. After viewing Video 6, estimate the level of "task engagement" exhibited by the staff member using the Behaviorally Anchored Rating (BAR) Scale."

The individual exhibited task engagement for approximately 10% of the session.

The individual exhibited task engagement for approximately 20% of the session.

The individual exhibited task engagement for approximately 30% of the session.

The individual exhibited task engagement for approximately 70% of the session.

The individual exhibited task engagement for approximately 90% of the session.

Video 6

☐

☐

☐

☐

☐

12. After viewing Video 6, rate the level of "task engagement" exhibited by the staff member using the Likert Scale."

Unsatisfactory

Marginal

Meets Expectations

Exceeds Expectations

Exceptional

Video 6

☐

☐

☐

☐

☐

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3/3

Note. The experimenter randomized the order in which the videos were presented to raters.

Figure D2

ACTraining Acceptability Survey

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ACTraining Acceptability Survey

ACTraining Acceptability Survey

Thank you for your participation and engagement in the ACTraining version! I've created this survey to (a) collect relevant de-identified participant characteristic information and (b) collect your opinion of the ACTraining version's impact and utility.

For the purposes of organizing responses, the first question requests your initials. This specific identifiable information will not be reported in any capacity & it only helps me organize responses. Any other demographic survey questions (i.e., 2-6) will be de-identified in accordance with the university's ethical research standards. Additionally, just like your participation in the study and ACTraining generally, your responses to the survey will have no impact outside of the bounds of the study! The only objective of the survey is to evaluate and potentially improve the ACTraining version!

Your participation, feedback, and honest criticism are equally invaluable! Thank you again for engaging with the study and helping to push the science forward!

* Required

1. Please write your first and last initial (Not Reported): *

2. For the purpose of reporting participant demographics, how do you identify? (mark all that apply) *

☐ Arab American, Middle Eastern, or North African
☐ Asian or Asian American
☐ Black or African American
☐ Bi/Multi-racial
☐ Latinx/a or Spanish Origin
☐ Native American, Alaska Native, and/or Indigenous
☐ Southeast Asian
☐ White or European American
☐ Not listed
☐ Prefer not to answer

3. For the purpose of reporting participant demographics, how do you describe your current gender identity? *

☐ Female / Woman
☐ Male / Man
☐ Nonbinary
☐ Two-spirit
☐ Not listed
☐ Prefer not to answer

4. For the purpose of reporting participant demographics, what is your age? *

5. For the purpose of reporting participant demographics, what degree(s) did you earn prior to entering the ABA Master's Program? *

6. For the purpose of reporting participant demographics, approximately how much time had you served pre-school aged youth with disabilities in an educational or therapeutic context prior to entering the ABA Master's Program? *

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ACTraining Acceptability Survey

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☐ White or European American
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3/24/25, 3:30 PM		ACTraining Acceptability Survey					
7. Please rate your level of agreement with the following statements. *							
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree		
I believe that the ACTraining session has improved my overall ability to work with students in the play centers.	☐	☐	☐	☐	☐		
I believe that I am working with students more effectively in the play centers after the ACTraining session.	☐	☐	☐	☐	☐		
In the future, I would oversteer a single ACTraining session to support a trainee or myself in a different professional skill.	☐	☐	☐	☐	☐		
8. Please rate your level of agreement with the following statements. *							
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree		
After ACTraining, I find the time that I spend in the play centers to be more particularly meaningful.	☐	☐	☐	☐	☐		
After ACTraining, I place greater value on my work with students in the play centers.	☐	☐	☐	☐	☐		
In the future, I would oversteer a single ACTraining session to enhance a trainee or my own experience in a different professional context.	☐	☐	☐	☐	☐		
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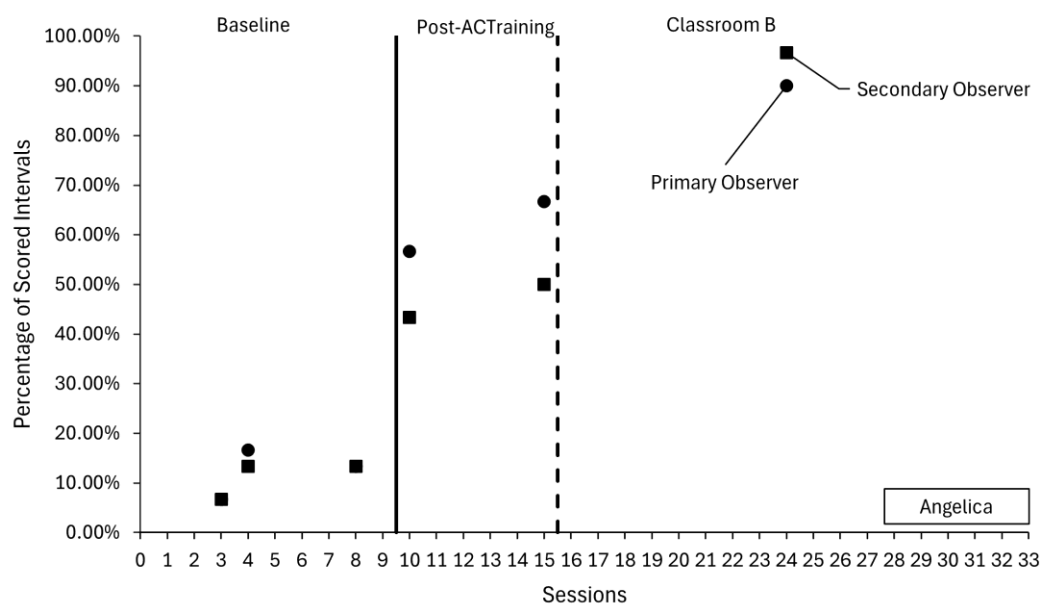
3/24/25, 3:30 PM		ACTraining Acceptability Survey					
9. Please rate your level of agreement with the following statements pertaining to the mindfulness exercises, Notice Five Things and Drop Anchor. *							
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree		
The mindfulness exercises were easy to follow.	☐	☐	☐	☐	☐		
The mindfulness exercises were appropriately related to my feedback/grade/cum content.	☐	☐	☐	☐	☐		
In the future, I would use the mindfulness exercises to support a trainee or myself.	☐	☐	☐	☐	☐		
10. Please rate your level of agreement with the following statements pertaining to the values clarification exercise, Quick Look at Your Values. *							
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree		
The values clarification exercise was easy to follow.	☐	☐	☐	☐	☐		
The values clarification exercise was appropriately related to my feedback/grade/cum content.	☐	☐	☐	☐	☐		
In the future, I would use the values clarification exercise to support a trainee or myself.	☐	☐	☐	☐	☐		
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3/24/25, 3:30 PM		ACTraining Acceptability Survey					
11. Please rate your level of agreement with the following statements pertaining to the goal setting exercise, The Willingness and Action Plan. *							
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree		
The goal setting exercise was easy to follow.	☐	☐	☐	☐	☐		
The goal setting exercise was appropriately related to my feedback/grade/cum content.	☐	☐	☐	☐	☐		
In the future, I would use the goal setting exercise to support a trainee or myself.	☐	☐	☐	☐	☐		
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Appendix E

Graphical Comparison of Observer Performance Scores

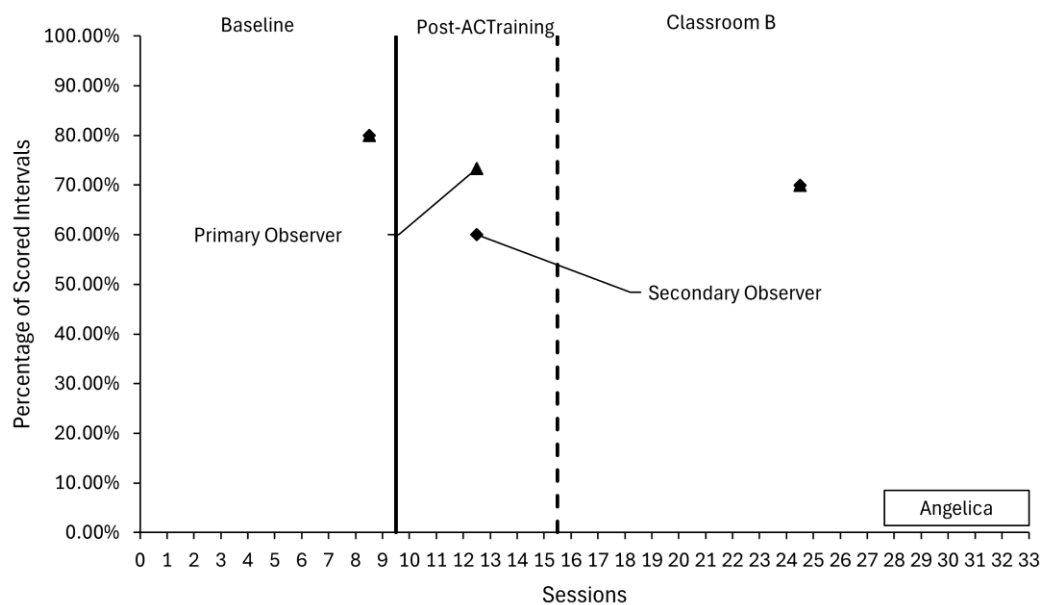
Observation sessions were coded by both a primary and secondary observer across all conditions and all participants within the study. To contextualize the reported interobserver agreement (IOA) measures, graphs depicting the primary and secondary observers' respective scores of task level engagement have been provided. These graphs include a visual comparison of Angelica's task engagement scores in the Supervisor Absent Condition (see Figure E1) and Supervisor Present Condition (see Figure E2), Eliza's task engagement scores in the Supervisor Absent Condition (see Figure E3) Supervisor Present Condition (see Figure E4), Peggy's task engagement scores in the Supervisor Absent Condition (see Figure E5) Supervisor Present Condition (see Figure E6), The graphs only include sessions scored by the secondary observer in addition to the primary observer.

Figure E1*Unsupervised Task Engagement across Observers (Angelica)*

Note. The graph depicts the level of task engagement exhibited by Angelica in the Supervisor Absent Condition as reported by the primary and secondary observers.

Figure E2

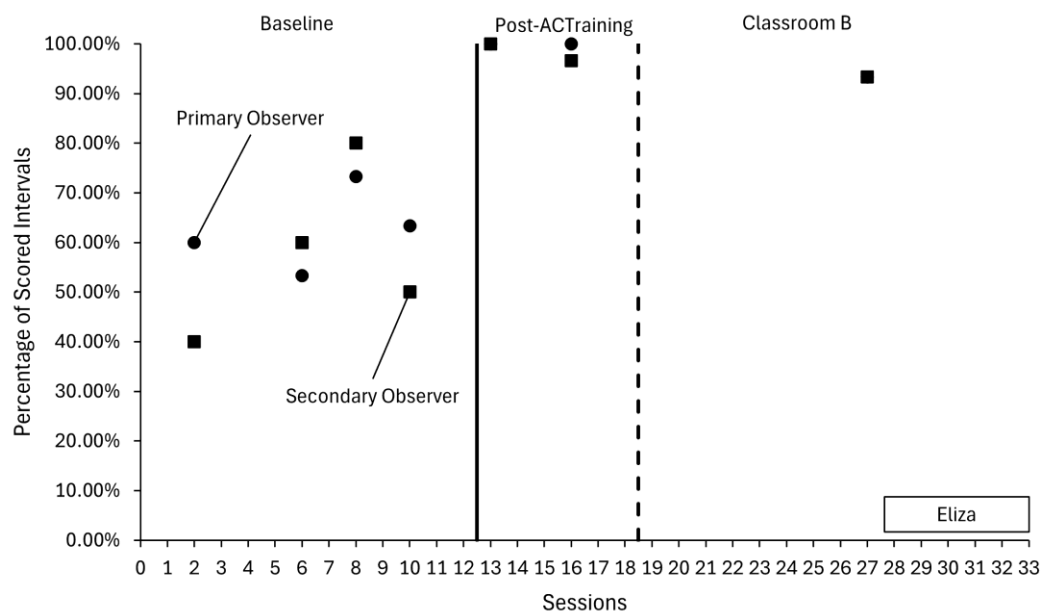
Supervised Task Engagement across Observers (Angelica)



Note. The graph depicts the level of task engagement exhibited by Angelica in the Supervisor Present Condition as reported by the primary and secondary observers.

Figure E3

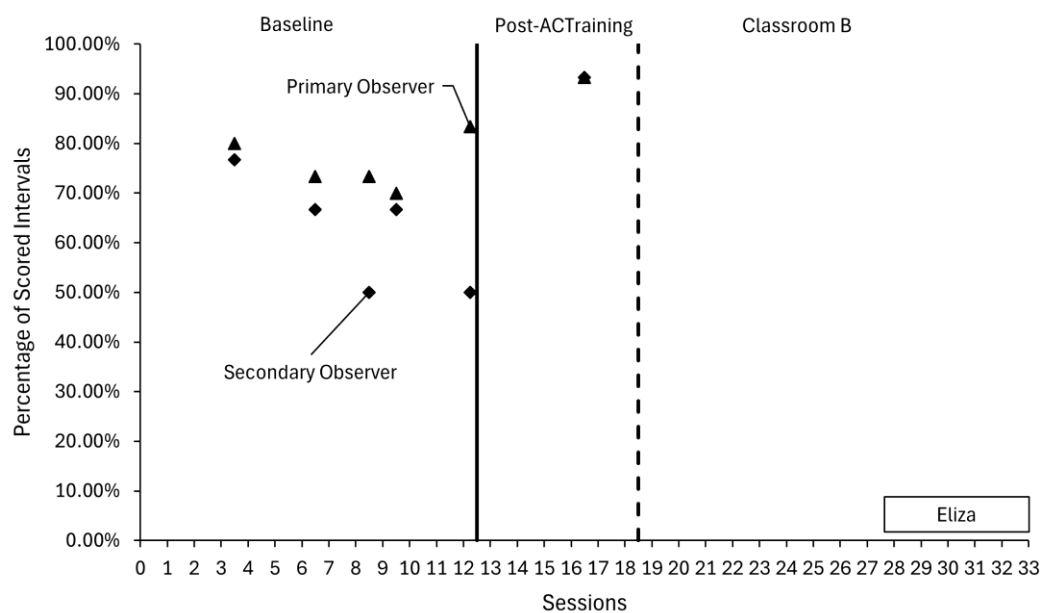
Unsupervised Task Engagement across Observers (Eliza)



Note. The graph depicts the level of task engagement exhibited by Eliza in the Supervisor Absent Condition as reported by the primary and secondary observers.

Figure E4

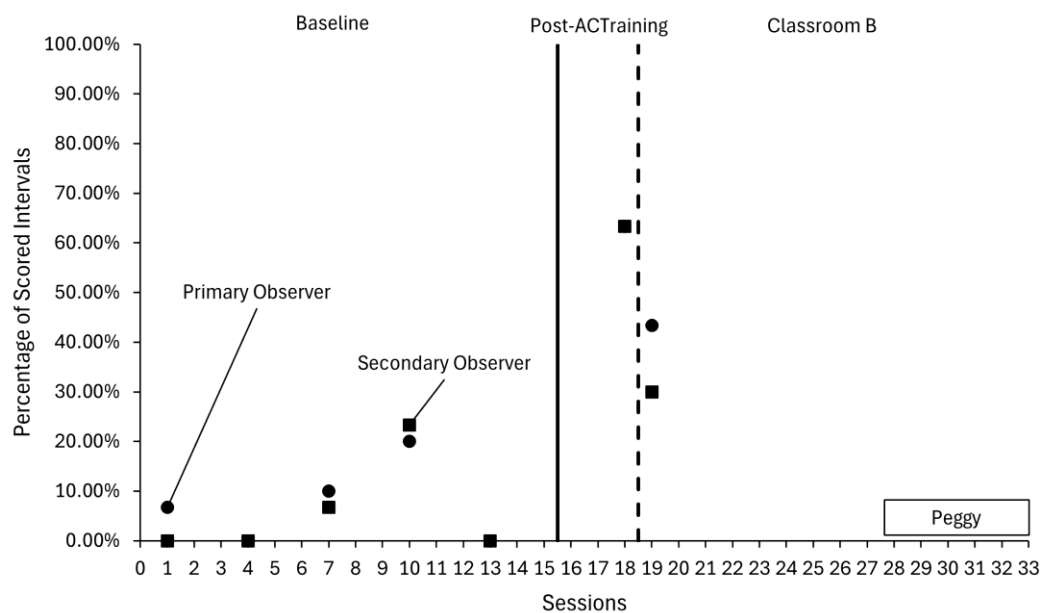
Supervised Task Engagement across Observers (Eliza)



Note. The graph depicts the level of task engagement exhibited by Eliza in the Supervisor Present Condition as reported by the primary and secondary observers.

Figure E5

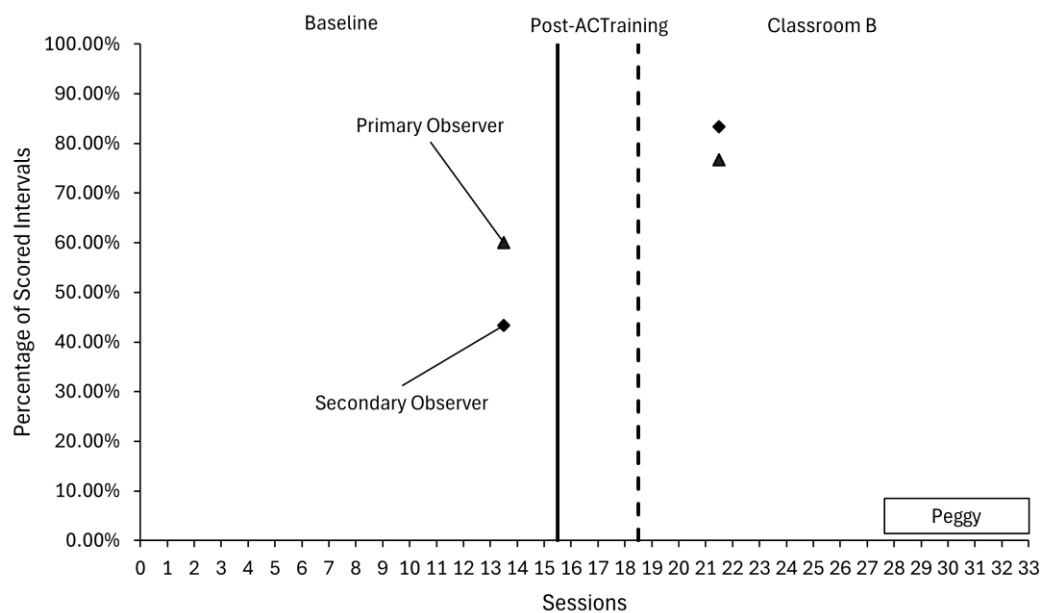
Unsupervised Task Engagement across Observers (Peggy)



Note. The graph depicts the level of task engagement exhibited by Peggy in the Supervisor Absent Condition as reported by the primary and secondary observers.

Figure E6

Supervised Task Engagement across Observers (Peggy)



Note. The graph depicts the level of task engagement exhibited by Peggy in the Supervisor Present Condition as reported by the primary and secondary observers.