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**CONSTRUCTING A WELL-BEING: EXPLORING KNOWLEDGE CONSTRUCTION
IN DBT SKILLS TRAINING USING ART AND ACTIVITY THEORY**

by

ELIZABETH BAILEY

DISSERTATION

Submitted to the Graduate School

of Wayne State University,

Detroit, Michigan

in partial fulfillment of the requirements

for the degree of

DOCTOR OF PHILOSOPHY

2022

**MAJOR: LEARNING DESIGN AND
TECHNOLOGY**

Approved By:

Advisor

Date

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DEDICATION

This work is dedicated to every person whose brilliance has been pushed to the margins of knowledge because their perspective was dismissed as too Mad, too divergent, too different, and too much.

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CHAPTER 1: INTRODUCTION

Dialectical behavior therapy (DBT) is a skills-based therapy that is recommended for individuals who experience severe problems in living resulting from skill deficits in the domains of interpersonal interactions, self-regulation of emotions and behaviors, toleration of distress, and connecting with the present moment. DBT remediates these skills through a structured process of instruction, practice, coaching, homework, and feedback (Linehan, 1993b:2015).

While most literature conceptualizes DBT exclusively as a psychotherapeutic treatment, it is also a learning intervention. A core modality of DBT treatment is skills training, along with skills coaching and homework. Despite the role of skills training in DBT treatment, outcomes reporting in DBT prioritizes comparing aggregate patient psychometrics to treatment as usual (TAU) or to a baseline established at the beginning of treatment (Linehan, 2015).

This singular focus in DBT research and practice does not track or prioritize collaborative patient learning as relevant to improving DBT practice, manualization, and research. While randomized control trials (RCT) show improvements over baseline and TAU for risk factors including suicidality, hospitalizations, disordered eating, and substance use (Linehan, 2015) they show inconsistent impact on protective factors like hope and reasons for living (Quinn, 2011). Additionally, prevailing research frameworks for group therapies focus on individual psychometrics (Lorentzen, 2006), and DBT research often omits skill acquisition as a measurement of patient progress (Scheiderer et al., 2017). There is a need to establish a research framework to address these limitations.

DBT is rooted in the foundations of the cognitive/behaviorist paradigm (Linehan, 1993a) which examines the relationship between thoughts and actions (Rachman, 1997). The DBT Skills Training Manual (Linehan, 1993b/2015) describes behaviorist principles of learning including

behavior shaping and reinforcement. These descriptions are relevant to discussions surrounding the etiology of the disorders that DBT is used to treat. Also featured in the manual is biosocial theory, which describes a transactional relationship between individuals and their environment. The environment sends messages, communicates, and transacts with individuals, and shapes behaviors and cognitive processes. Learning in DBT skills training is described as an individuals' ability to recognize aspects of a situation, integrate skills together, generate appropriate responses, generalize these new abilities across a spectrum of situations, and shape the environment to reduce their exposure to distressing events.

DBT assumes that emotional, relational, behavioral, and identity dysregulation result in – and are reinforced by – skill deficits and an inability to navigate the acceptance/change dialectic (Linehan, 1993b/2015). As patients complete DBT, they learn skills to address these deficits. In learning acceptance, patients develop skills to facilitate distress tolerance and mindfulness. In learning to generate change, patients develop skills that support emotion regulation and interpersonal effectiveness.

From its roots in cognitivism and behaviorism, to the modalities it employs, to the treatment targets patients and therapists work towards, DBT can be conceptualized as a learning treatment. Individuals completing DBT are participants in constructing knowledge and creating the environment where learning occurs. Researching skills training groups as collective agents of active knowledge construction – rather than individual patients as passive recipients of treatment – is a new and necessary direction for DBT research.

Problem Statement

The lack of a learning-focused research framework represents an epistemological omission into the nature of collaborative knowledge construction in DBT skills training.

In its standard format, DBT includes a group skills training component. This skills training component is manualized, and skills trainers provide instruction according to designed learning activities. Skills training groups participate in a range of collaborative active learning activities including role play, discussions, and cooperative problem solving (Linehan, 1993b/2015). Despite the collective nature of DBT group skills training, research into DBT outcomes overwhelmingly focuses on individual psychoanalytic measurements. The second edition of the DBT skills training manual provides a summary of 15 RCTs, and seven non-RCTs, all which report patient outcomes at the individual level (Linehan, 2015, p. 20-21).

This emphasis on individual level measurements of psychological and psychiatric indicators comes at the expense of developing an epistemology of collaborative knowledge construction (Lorentzen, 2006). Karterud (1992) indicates that group therapies are a form of dialogue between group members that form understanding around shared ideas. In other words, public knowledge is constructed and negotiated in group therapy settings. There is a need to research group therapy through this discursive level as “the contemporary dialectics of our concepts between understanding and explaining as revealed in group-analytic practice” (Karterud, 1992, p. 359). The manualized group skills training structure in DBT provides a unique opportunity to explore these group constructive processes through the lens of learning.

Research Purpose and Questions

To address this need for group-level learning epistemology in DBT, this study pilots a case study research methodological framework that explores learning through social practices of DBT skills training group participants, organized around a shared objective of representing the impact of DBT skills use. The research questions driving this work are:

1. How are tools and symbols used by participants to mediate shared expression of knowledge constructed in DBT skills training?
2. How do participants negotiate shared expression of public knowledge constructed in DBT skills training?
3. How does a division of labor emerge to organize participant actions around creating a shared expression of knowledge construction in DBT skills training?
4. In what ways are the expectations provided by DBT manuals applied by participants in creating a shared expression of knowledge constructed in DBT skills training?

Because this research is concerned with how groups conceptualize, represent, and negotiate shared knowledge construction, a process that is multi-layered and often challenging to articulate in words, art-based research will be the framework for data collection and analysis. The processes of creating artifacts, and interpretations of the artifacts themselves “allow and even invite art-makers to explore and play with knowing and meaning in ways that are more visceral and interactive than the intellectual and verbal ways” (Greenwood, 2019, p. 4). Arts-based research is uniquely suited to construct knowledge around experiences that are not easily captured through the verbal requisites of participating in interviews, or through disorganized observations of external behaviors.

Conceptual Framework

Knowledge building is an active constructive process with each individual and group of individuals generating, negotiating, and responding to unique configurations of shared understanding (Duffy & Cunningham, 1996). The conceptual and philosophical framework underlying this work is one of social-constructivism and activity theory. The underlying theoretical assumptions of these frameworks relevant to this work are:

1. Knowledge is both individually held (private knowledge) and socially negotiated (public knowledge).
2. Knowledge is dynamic, changing in response to the subjects who maintain it, the environment it is contextualized within, and the results of its application.
3. Knowledge construction is an activity, aspects of which can be observed, and other aspects of which are invisible to the outside observer.

Cognitive constructivists conceptualize learning as an individual process of knowledge creation. Piaget describes learning as the construction of internal schemas that provide a framework through which the world is perceived and experienced (1923). Whitehead (1929) also describes this as an active process “the mind is never passive; it is a perpetual activity. You cannot postpone life until you have sharpened it” (p. 5-6). Duffy and Cunningham defined learning as a reciprocal process between learners and their environment, where learners test out a worldview and skills that they modify based on the responses received from the environment (1996).

A core concept of cognitive constructivism is reflective practice. According to Dewey (1933), reflection is an “active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and further conclusions to which it tends” (p. 9). Schön’s *Reflective Practitioner* (1983) clarifies reflective practice as the knowledge held by individual practitioners that results from a broad base of experiences that are intentionally brought together to project new solutions onto situations that diverge from past experience. In this perspective, knowledge is created through reflection before (reflection-for-action; Killian & Todnem, 1991), during (reflection-in-action), and after (reflection-on-action) an action is taken. Knowledge is the result of action and experience combined with intentional consideration of the ways in which practice may be improved.

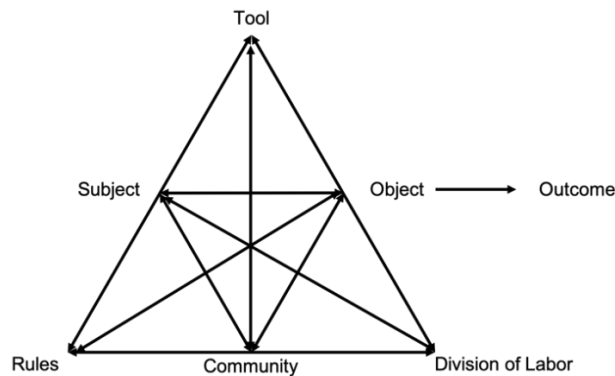
Social-constructivists describe learning as a shared experience of knowledge construction that is culturally situated. In his pedagogic creed, John Dewey stated that “education being a social process... therefore, is a process of living and not a preparation for future living” (1897, pp. 78-79). Learning and living are embodiments of one another, and learning cannot be separated from lived experiences.

Bandura’s social learning theory (SLT) (2000) and Vygotsky’s zone of proximal development (ZPD) (1978) describe the social context’s role in driving learning. The ZPD represents what learners are able to do with the support of their more competent peers. With practice and instructional support, learners integrate these skills into their repertoire of independent capabilities (Vygotsky, 1978b). SLT explains a process of learning which occurs through observing the actions and corresponding consequences of others (Bandura, 2000). In both theoretical frameworks, learning is a shared process that occurs as the result of interactions within a social context.

Activity theorists expand the role of context in learning to describe learning as a shared social endeavor, which is mediated by tools, and situated within a broader community of practice (Barab et al., 2004). Figure 1 is an illustration developed by Engeström (1987) of the relationship between the interactive components of an activity system.

Figure 1

Activity System Schematic, Developed by Engeström, 1987 p. 14



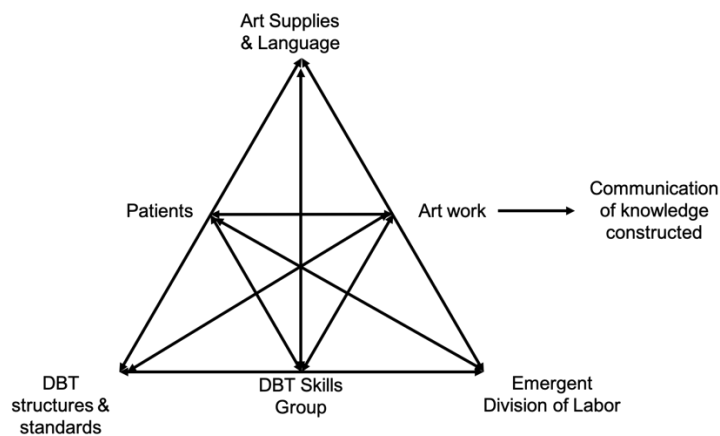
In developing activity theory, Vygotsky (1978b), Engeström (1987), and Leont'ev (1978) provide a framework to understand learning as a social process that is fully realized in practice and performance. In the original framework developed by Vygotsky (1978b), individuals (subjects) act upon an object as mediated by tools. Tools can be physical, linguistic, cultural, and technological. Leont'ev expanded this framework to clarify the definition of an activity as an endeavor shared by a group with a common goal (outcome). In Leont'ev's description, *activities* are social endeavors that are the combination of *actions* taken by individuals. Actions are described as a combination of underlying physiological *operations*. Engeström (1987) incorporated the role of the environment by situating activities within a community defined by rules and a division of labor.

The nodes of an activity system (subject, object, tools, rules, division of labor, and community) are organized around a shared outcome and are contextualized alongside the tools that mediate them within the external social environment. Nodes are connected through reciprocally influential relationships, where each node shapes the others in a perpetual dynamic exchange.

The research undertaken for this publication applies activity theory to explore learning through the social practices of DBT skills training participants, organized around a shared objective of representing the impact of DBT skill use in a collaborative art piece. Each participant is a subject, acting within the DBT skills training group and broader skills training community (community), organized around an objective of producing an art piece (object). This process is mediated by art supplies and the concepts shared through DBT skills training (tools and symbols). The DBT skills training manual provides the rules within the social environment (rules) that is further defined by an emergent division of labor (division of labor). Figure 2 shows Engeström's illustration of an activity system, adapted to incorporate descriptions of the nodes as defined in this work.

Figure 2

Arts-based Research for DBT Skills Training Activity System Schematic, Adapted from Engeström, 1987



Each research question of this work seeks to understand the reciprocal relationships between a triad of nodes in the activity system. While there are 18 potential combinations of triads within the activity system, this work emphasizes four: subject, object, tools; subject, object, rules; subject, object, division of labor; subject, object, community. Vygotsky (1994) specifies that understanding a learning environment begins with understanding the subject, and the purpose of

this work is to explore the actions of participants as organized around a shared objective of creating collaborative artwork. Triads which did not include both the “subject” and “object” nodes were excluded.

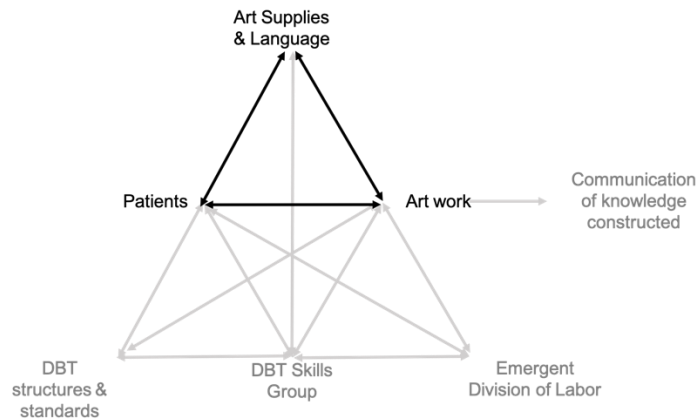
Research Question 1

How are tools and symbols used by participants to mediate shared expression of knowledge constructed in DBT skills training?

This research question explores Vygotsky’s original subject, object, tool triad (1978b). This triad illustrates how the presence of tools impacts subjects’ actions, and how subjects’ actions define which tools are used and in what ways. This question seeks to understand how the individuals within the DBT skills training group employ physical and symbolic tools to act upon and talk about the art piece.

Figure 3

Research Question 1 Triad: Patient, Artwork, Art Supplies & Language



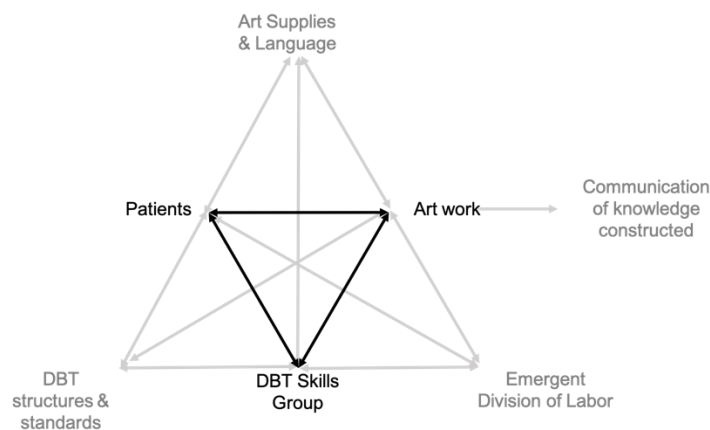
Research Question 2

How do participants negotiate shared expression of public (community) knowledge constructed in DBT skills training?

Community is both the immediate community formed by participants creating this project and the global community of DBT skills training participants. This research question explores the negotiation of publicly held knowledge within a group, using the construction of artwork as a mechanism for externalizing these negotiations and physicalizing their expression to be presented to the DBT skills training community. This triad explores how individuals create knowledge within a community, and how that community in turn defines the actions and knowledge of individuals.

Figure 4

Research Question 2 Triad: Patient, Artwork, DBT Skills Group



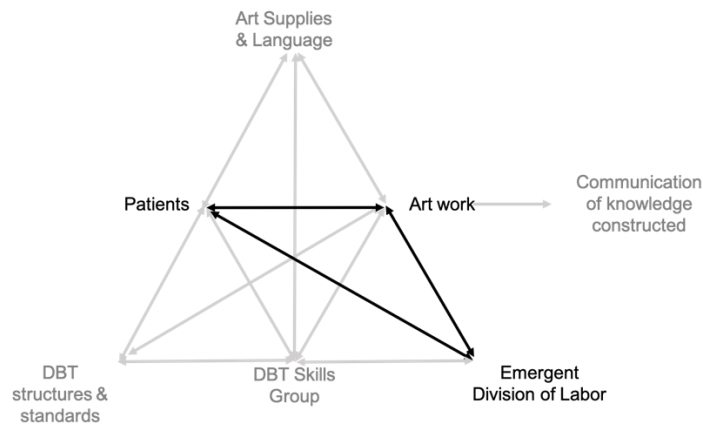
Research Question 3

How does a division of labor emerge to organize individual participant actions around creating a shared expression of knowledge construction in DBT skills training?

This research question explores how individuals organize themselves around a shared goal through an emergent division of labor. This triad explores how a division of labor impacts subjects' actions around the formation of an artwork, as well as how the actions engaged in by subjects around artwork creation in turn define the nature of the emergent division of labor.

Figure 5

Research Question 3 Triad: Patient, Artwork, Emergent Division of Labor

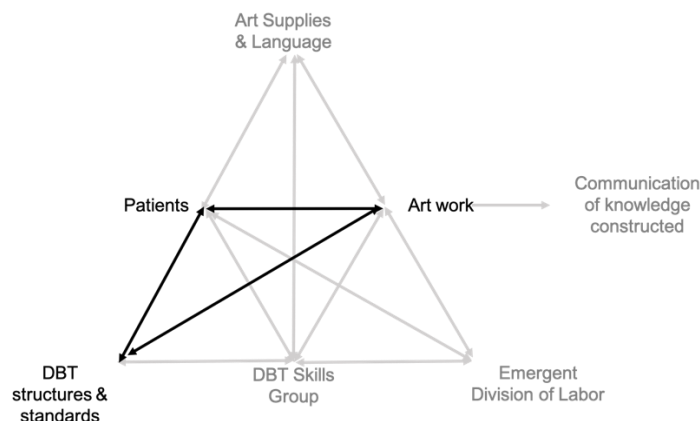
**Research Question 4**

In what ways are the expectations (rules) provided by DBT manuals applied by participants in creating a shared expression of knowledge constructed in DBT skills training?

This research question explores how goal-directed actions are impacted by pre-established rules. This triad explores the ways in which rules and standards established by the DBT manuals are interpreted by participants to inform participant actions, and how these rules as interpreted manifest in the final art piece.

Figure 6

Research Question 3 Triad: Participant, Artwork, DBT Structures & Standards



Definitions and Key Terms

Action. A single behavior of an individual within an activity system. Multiple actions across individuals come together to achieve an objective (Hasan & Kazlauskas, 2014).

Activity system. The collective efforts of a group of individuals, contextually situated in a social environment, mediated by tools, organized around a shared goal. The activity system explains individual behaviors (actions) based on a shared intention or purpose (Leont'ev, 1978).

Arts-based Research. An umbrella term for epistemological and methodological research practices that incorporate art forms and processes. Art-based research expands the mechanisms of knowledge expression and knowledge generation to incorporate non-verbal options to communicate concepts that are not easily verbalized (Greenwood, 2019).

Baseline. According to the American Psychological Association's dictionary, a behavioral baseline is "a steady state of behavior against which the effectiveness of introducing an independent variable may be compared" (APA., n.d.). The use of a baseline measurement allows a researcher or treatment team to compare a patient's behavioral indicators prior to treatment to those same indicators post-treatment. By establishing a baseline, practitioners can identify the effect an applied treatment has.

Behaviorism. Behaviorism is both a learning theory and a psychological theory. Behaviorists examine the impacts that different inputs have on the frequency, duration, and context of a behavior. When an organism's observable behavior changes along these metrics, learning has occurred. Behaviorism examines external expressions of behavior as the primary unit of investigation. Behavioral psychology seeks to modify behavior through the application of techniques that change the subject's responses to stimuli (Graham, 2019).

Behavior shaping. A gradual process of behavior modification through reinforcing successive approximations of desired behaviors (Nye, 1992).

Biosocial theory. Biosocial theory (Linehan, 1993a/2015) is a developmental theory that examines the interactive relationship between an individual and their environment. As a child develops, their interactions with their environment influence their internal experiences. According to biosocial theory, an environment which routinely invalidates a child's internal experiences can result in an increased emotional lability.

Borderline personality disorder: A psychological diagnosis typically associated with instability of personality, emotion regulation, and relationships with others (Diagnostic and Statistical Manual [DSM] 5; American Psychiatric Association [APA], 2013).

Case study research. An investigatory framework that provides a description of an instance of an object of inquiry. This framework that can employ a variety of data collection and reporting methods to provide a detailed reconstruction of the instance (Flick, 2018).

Constructivist epistemology. "A philosophical belief system about how research proceeds and what counts as knowledge" (Leavy, 2017, p. 12). The philosophical belief that underlies the epistemology of this work is the constructivist viewpoint, which focuses on the meanings and knowledge that individuals create as they move through their lives and interact with social and cultural structures. Research in this philosophical vein centers individuals' subjective interpretations of their lived experiences.

Constructivist learning theories. Closely related to constructivist epistemology, constructivist learning theories emphasize the constructed nature of knowledge. These theories hold true that a learner's reality and knowledge are shaped by their experiences (Elliott, et al., 1999). Constructivist learning theories inform instructional practices which provide realistic

experiences that are reflective of the social and cultural world that learners will be embedded within.

Dialectics in dialectical behavior therapy. Two apparently opposing forces that are mutually dependent upon one another to exist (Linehan, 2015). At the core of DBT is the acceptance/change dialectic. On one side of this dialectic is the need to initiate change in order to improve lived experiences. On the other side of the dialectic is the need to accept oneself as a fully valid individual. When this dialectic is not intentionally navigated, patients completing DBT may express suicidal ideation as a result of feeling they are too flawed (overemphasis on change) or may express discontent with therapy as they don't see recognizable progress (overemphasis on acceptance). In order for DBT to be effective, patients and practitioners must learn to balance this dialectic and hold the need for both acceptance and change simultaneously.

Etiology. Causes and causal factors in the development of a psychiatric disorder. The etiology of a disorder is often multi-faceted and the result of interactions between biology, psychology, behavior, experience, environment, and social context (Spear, n.d.).

Learning intervention. Learning interventions are targeted instructional practices that are administered based on an identified discrepancy between what skills and individual has acquired, and what skills they are expected to have acquired. Learning interventions are applied in educational setting to address gaps in student performance before the student has failed academically (Baglieri, 2017). DBT can be considered a learning treatment for individuals who are identified as not having developed skills related to self-regulating behaviors, emotions, relationships, and identity (Linehan, 2015).

Learning outcomes. Learning outcomes describe what a learner will gain from participating in an instructional or experiential learning activity. Learning outcomes can be

measured based on changes to how a learner perceives and interacts with the world (Fink, 2013). In activity theory, learning is considered to have occurred through a social process, and the outcomes of which are fully realized in situated practice and performance (Vygotsky, 1978a; Engestrom, 1987; Leont'ev, 1978).

Operation. Operations are constituent parts of *activities*, often engaged in outside of the actor's conscious awareness (Nye, 1992). Operations cannot be understood outside of the context of the actions they comprise, and the activities those actions are organized around.

Protective factors. Protective factors serve dual purpose to reduce the frequency and severity of risk factors, while also increasing the likelihood of positive outcomes for individuals. A protective factor can be an activity, such as gratitude practices or community engagement (Layous et al., 2014). Protective factors can also be relational, such as positive relationships with parental figures (Substance Abuse and Mental Health Services Administration, n.d.) and family networks (Pernice-Duca, 2010). Internal protective factors can be cognitive or affective, such as hope or resilience (Trezise et al., 2018). Researchers have identified a significant protective factor for BPD is a strong sense of meaning in life (Marco et al., 2017).

Psychometrics. Psychometrics are used to translate symptoms and severity of psychopathologies into numerical values that are used to quantify patient experiences and outcomes. Psychometrics are administered through standardized instruments such as tests and questionnaires. In research, psychometrics are used to quantify patient progress and outcomes against a baseline measurement or against a control group (APA, n.d.).

Publicly held knowledge. Knowledge that is constructed by a group through active negotiation of shared meaning (Cross, 2011). This knowledge is specific to the group in which it

is held and shifts to accommodate new experiences and changes to the environment (Duffy & Cunningham, 1996).

Psychotherapeutic treatment. Psychotherapeutic treatments (also known as psychotherapies) are a range of theories that guide the process of understanding and treating patients. These treatments can fall into the categories of psychoanalysis, behavior therapies, cognitive therapies, humanistic therapies, and integrative or holistic therapies (APA, 2000). DBT falls within the cognitive (focuses on what people think) and behavioral (focuses on what people do) therapeutic umbrellas (Linehan, 1993a).

Reflection-for-action. Reflection-for-action refers to plans made considerations taken prior to engaging in practice (Killian & Todnem, 1991).

Reflection-in-action. Reflection-in-action refers to considerations taken during the course of practice while the outcomes of practice are not yet fully resolved (Schön, 1983).

Reflection-on-action. Reflection-on-action refers to consideration taken after practice has concluded and outcomes are set (Schön, 1983).

Reinforcement. A consequence that occurs immediately after an event that attempts to increase the likelihood of that event occurring in the future. This can be the addition of a reward (positive reinforcement) or the removal of a punishment (negative reinforcement) (University of Iowa, n.d.).

Randomized control trial. Randomized control trials (RCT) are a form of experimental research where participants are randomly selected for a treatment group or a comparison group that receives no treatment. The differences measured between these two groups are believed to be the result of the treatment, and results are assumed to be generalizable (Fraenkel et al., 2015). In DBT research RCTs are used to test the validity of the treatment, with one randomly selected group

of participants assigned to complete DBT, and another randomly selected group of participants to receive *treatment as usual (TAU)* in the community. The differences measured between these two groups are attributed to the different treatments that the groups received (Linehan, 2015).

Risk factor. Risk factors are environmental, biological, psychological, and cultural influences that are associated with increased likelihood of negative outcomes (SAMHSA, n.d.). The presence of risk factors can increase the likelihood that an individual will develop a psychiatric disorder and can increase the severity of negative consequences that result from living with these disorders. Trauma is a significant risk factor for the development of multiple psychiatric disorders including mood disorders, substance use and addiction, and psychosis (Jowett et al., 2020).

Suicidality. Suicidality represents a spectrum of behaviors that increase the risk of an individual intentionally ending their own life. These can include parasuicidal self-harming behaviors, such as cutting or burning oneself with or without the intention of death; as well behaviors engaged in with the intended result being death (Williams, 1997). Patients are often recommended for DBT as a result of demonstrating parasuicidal behaviors including non-lethal self-harm (Linehan, 2015). Non-lethal self-harm is a *risk factor* for suicide (Hawton et al., 2012).

Treatment as usual (TAU). The TAU group serves as a comparison group for against the treatment group a *RCT*. In behavioral therapy research the nature of TAU varies, and is typically multidisciplinary including pharmacological, therapeutic, and group treatments. The heterogeneous nature of TAU, combined with inconsistent reporting practices as to the content of TAU make it difficult to compare the results of behavioral treatments (Witt et al., 2018).

Summary

DBT skills training is conducted in a group environment, with established skills training groups typically meeting once per week for 6-12 weeks. Groups engage in discussions and

negotiate the meaning and application of skills. Learning in this environment is an active and participatory process, with patient groups creating unique configurations of knowledge.

Despite these learning-centric approaches to treatment and the collaborative nature of group processes, DBT outcomes are typically measured via individual psychometrics. There exists a need to develop a framework to investigate shared knowledge construction in DBT skills training. The purpose of this research is to pilot the use of artwork to explore the constructive practices of DBT skills training group participants, organized around a shared objective of representing learning in DBT skills training through the framework of Activity Theory.

CHAPTER 2: LITERATURE REVIEW

The research conducted for this publication has been designed to explore learning through the social practices of DBT skills training group participants organized around a shared objective of representing the impact of DBT skill use. This literature review incorporates research from cognitive and behavioral therapies, as well as literature from the field of education to develop a critical synthesis between these apparently separate bodies of knowledge. Education and cognitive behavioral research share a common origin in the learning sciences and are uniquely situated to benefit from an exchange of epistemological practices.

Dialectical Behavior Therapy (DBT)

DBT was developed in 1993 by Marsha Linehan as a treatment for patients with high suicidality, and came to emphasize patients with borderline personality disorder (BPD). The intention of developing DBT was to create a treatment protocol that could address the complex and interconnected dysregulation of patients presenting with intense suicidality who experienced high rates of treatment failure in cognitive behavioral therapy (CBT), which was industry standard at the time (Ward-Ciesielski et al., 2020). Patients with BPD are frequently characterized as difficult to treat (Sulzer, 2015). A failed psychotherapeutic relationship can exacerbate symptoms of BPD and may even reinforce the conditions which caused the disorder to develop (Aviram et al., 2006).

CBT failed these patients for three identified reasons. First, patients in this group present with highly complex and urgent concerns. CBT manuals tended to focus on singular disorders and did not provide adequate guidance for therapists to navigate prioritizing these multivariate issues (Ward-Ciesielski et al., 2020). Second, patients' interactions with CBT resulted in attrition from treatment. When treatment was overly focused on changing their behaviors and thought patterns,

patients would experience feelings of rejection and worthlessness, often resulting in heightened suicidality or challenging behaviors. In response to these behaviors, therapists would reduce the emphasis on skill-building and focus more on helping patients accept themselves. Patients, observing no changes in their life circumstances would become frustrated with the lack of progress, and terminate therapy (Heard & Linehan, 1994). Third, therapist burnout was identified as impacting treatment efficacy. Patients with BPD are heavy users of mental health resources (Ellison et al., 2018). Treating highly dysregulated patients requires significant therapist time and energy. As therapists' internal resources become exhausted, patient responses would reinforce ineffective practitioner behaviors (Ward-Ciesielski et al., 2020).

Comprehensive DBT is intentionally structured to address the shortfalls associated with CBT (Linehan, 1993a; 2015; Koerner et al., 2021). First, DBT provides a structured approach to prioritizing patient concerns, with life-threatening behaviors taking highest priority, followed by treatment-interfering behaviors, and finally addressing quality of life interfering behaviors. This structure assumes that patients must be alive and engaged in treatment for therapy to effectively address quality of life concerns. Second, DBT provides a framework to intentionally navigate the acceptance/change dialectic, supporting patients and therapists to find a balance that maximizes treatment effectiveness. Third, DBT establishes a framework where treatment teams work as part of a community of practice. This community of practice meets regularly to balance treatment priorities, provide support, and identify potential problematic therapist behaviors that may develop during the course of treatment.

Since its inception, DBT has improved outcomes for patients with disorders characterized by emotional, behavioral, and relational dysregulations including disordered eating, bipolar disorder, post-traumatic stress disorder, substance use, and major depressive disorders (Linehan,

2015; Neacsiu et al., 2014). Similar to its predecessor CBT, DBT conceptualizes dysregulation as the result of a dynamic exchange between behavior and cognitions (Hofmann et al., 2011:2013). In developing DBT, Linehan (1993) hypothesized that an underlying cause of dysregulation was a biosocial interaction between an individual with high emotional lability and an invalidating environment. This relationship results in escalated emotional expression as the result of distress and suppresses the development of skills to regulate internal and external experiences. The dysregulation that results from formative experiences acts as both cause and effect of skill deficits that interfere with an individual's ability to build a life worth living (Linehan, 1993b; 2015).

To address these skill deficits, DBT treatment emphasizes skill building through three core modalities of treatment: group skills training, phone skills coaching, and individual psychotherapy (Linehan, 2015). In outpatient settings, individual psychotherapy sessions are typically held once per week, and address issues that emerge in the patient's life. Group skills training sessions also occur weekly and focus on group instruction and discussion of skills. Skills are selected and trained based on the DBT Skills Training Manual (Linehan, 2015). Patients also typically have 24/7 phone access to their skills trainer to receive coaching that supports the contextualized application of DBT skills.

Evidence suggests that skill learning may be a key mechanism that drives patient progress in DBT, with researchers emphasizing solutions to help patients embed skills training in their everyday lives (Chapman & Owens, 2020). Embedded learning practices like coaching and homework are designed to help patients default to more skillful behaviors in times of crisis (Scheiderer et al., 2017). Researchers have identified that patients who complete DBT skills training as a standalone treatment may also experience improved outcomes compared to no treatment or TAU (Valentine et al., 2015).

In randomized control trials, DBT consistently demonstrates improvements over baseline or TAU for risk factors including suicidality, hospitalization, disordered eating, and substance use (Linehan, 2015). However, DBT shows inconsistent impact on protective factors like reasons for living (Quinn, 2011). This suggests that while DBT is a beneficial treatment for patients, there are limitations to its effectiveness in supporting patients to accomplish its stated goal of “building a life worth living” (Linehan, 2020).

Research Practices in DBT

Randomized control trials (RCT) and case studies that investigated the effectiveness of DBT typically reported psychometrics and behavioral metrics as evidence of patient progress. These findings are often contextualized alongside the observations and notes of treating practitioners.

Key indicators of patient progress were identified through a meta-analysis of 48 peer-reviewed English-language case studies that incorporated DBT skills training. This included all indicators that were recorded as evidence of changes for the patient that resulted from participation in DBT. This excluded metrics and measurements that were solely taken for initial diagnostic or case conceptualization purposes. Items identified as relevant to this review were metrics that were taken at least twice during the course of treatment and follow-up for the purposes of comparing a pre-treatment and post-treatment baseline, narrative information collected based on patient experiences, and descriptions of practitioner experiences.

Across these case studies, practitioner perspectives were the most consistently reported metrics. 37 case studies incorporated practitioner notes on patient changes as they were experienced and perceived by the practitioner. In addition to prioritizing reporting on practitioner perceptions, formalized metrics were reported. 31 case studies included some form of

psychometrics as indicators of change, 18 included behavioral metrics, and 4 included physiometrics – such as changes to patient weight. Patient perspectives of training were rarely reported, with only 21 case studies including patient perspectives as an indicator of progress. Most of these took the form of informal follow-up reports from patients and semi-structured interviews, where therapists sought patient reports on therapist-identified indicators of progress and published the practitioners' interpretation of the patients' responses. This indicates a pattern of prioritizing and trusting treating-practitioners to set a frame for reporting patient outcomes and experiences.

A few notable exceptions to the pattern of privileging practitioner perspectives are Lustig and colleagues (2000) who referenced a piece of narrative fiction authored by the patient as providing insight into her progress; Heckwolf and colleagues (2014) who used visual patient artwork to illustrate patient progress; and McNair and colleagues (2016) who assessed patient-generated repertory grids to illustrate patient reconciliation of dialectics.

In every case study, measurements were taken at the individual level only and did not incorporate group-level measurements of progress or knowledge construction. While in many cases skills training group dynamics were discussed, they were explored through the lens of how they supported or inhibited individual processes. The development of group level learning dynamics remains apparently unexplored throughout the case study literature.

Knowledge Construction in Group Analytic Environments

DBT relies on learning and instructional practices to promote skill development through group skills training. In a typical DBT skills training group, participants actively participate in discussions, role plays to practice skills, and collaborative problem analysis and resolution. The group structure is designed to provide patients with multiple perspectives and a low-stakes environment to practice skills as they are acquired (Linehan, 1993b; 2015).

The types of knowledge constructed in DBT skills training are declarative, procedural, schematic, and strategic (Shavelson et al., 2005). Declarative knowledge or *knowing that* is the acquisition and recitation of facts and information. Procedural knowledge or *knowing how* is knowledge that is expressed through behavioral changes. Schematic knowledge or *knowing why* can be understood as comprehension of the reasons behind the need for cognitive and behavioral changes. Strategic knowledge is knowledge of *where, when, and how to apply* knowledge gained throughout learning experiences. DBT skills training provides declarative knowledge in the form of direct instruction, procedural knowledge in the form of hands-on practice and role play, schematic knowledge through discussion, and strategic knowledge is supported through a combination of skills coaching and group discussion.

DBT skills training is a collaborative learning environment with embedded learning practices. Patients who participate in DBT are also assigned homework to help extend skills to their environment and provided skills coaching to support this generalization process. Every aspect of DBT is designed around the understanding that learning is a collaborative and experiential process that is embedded within social and environmental contexts.

A DBT skills training group is a social structure that can be conceptualized in relation to Vygotsky's zone of proximal development (ZPD; 1978). As individuals learn new skills, they first learn to apply them with the support of others in their community. This is referred to as the ZPD. As skills develop, they move into the individual's zone of actual development (ZAD), where the learner becomes able to apply these skills without the support of others. In DBT skills training, skills are supported in the ZPD skills training group and are facilitated to move into the ZAD through phone skills coaching.

Despite the collaborative nature of DBT group skills training, research into DBT outcomes overwhelmingly focuses on individual psychoanalytic measurements at the expense of learning outcomes measurement and identification of group knowledge building. This focus on outcomes measurement is common across group psychoanalysis research (Karterud, 1992; Lorentzen, 2006). While group therapies are very popular, research into the outcomes of group therapies is almost exclusively conducted at the individual psychometric level. Karterud (1992) indicates that group therapies are a form of dialogue between group members that form understanding around shared ideas. In other words, knowledge is constructed and negotiated in group therapy settings. According to Karterud there is a need to research group therapy through this discursive level as “the contemporary dialectics of our concepts between understanding and explaining as revealed in group-analytic practice” (1992, p. 359).

Artwork as Embodied Expression and Inquiry

Arts-based research (ABR) is a constructive process in which knowledge is created and physicalized through the collaborative construction of work and the roles that participants embody (Greenwood, 2019). Underlying ABR is the belief that our social world and the knowledge within it are constructed and held collectively. The creation of artifacts is a way to understand a world that is largely artificial (Cross, 2011) and provides opportunities for reflection that constructs richer insights than responses provided instantly in an interview or observational setting (Greenwood, 2019). The products of art can serve an important role in the therapeutic relationship and provide a mechanism to help patients assess externally knowledge that was previously held internally (Ellingson, 1991; Wilson & Betensky, 2016). Assessment of an art product in therapeutic settings includes two elements: assessment of the individual components, and assessment of the relationships between the components (Wilson & Betensky, 2016). The

components that are included reveal what the patient experiences as most salient, and the components that are excluded provide insight into what the patient does not prioritize. The structural interactions between components reveal the patient's experience and perceptions of relationships between their internal constructions.

Expressing knowledge through art construction can provide options for expression for patients who experience verbalization as a barrier to communicating their internal experiences. Verbal thinking – also referred to as egocentric speech (Piaget, 1923), internal speech (Vygotsky, 1986), inner speech (Berk, 1992) acommunicative speech (Zivin, 1979), and private speech (Wertsch, 1979) – refers to the internal experiences of thought organized by language (Centeno-Cortés & Jimenez-Jimenez, 2004). Bion (1962) proposes that some patients never develop the capacity for these types of internal verbalizations. Individuals with BPD are more likely to experience difficulty forming abstract symbols (Silverman, 1991), a barrier that interferes with the ability to imagine the internal worlds of others and navigate social interactions (Havsteen-Franklin, 2016). The process of creating art can serve as a scaffolding that promotes the development of these skills (Havsteen-Franklin, 2016). BPD and other disorders of emotional dysregulation frequently co-occur with executive function disorders (McClure et al., 2016), and intellectual or learning disabilities (Crossland et al., 2017; Florez & Bethay, 2017; McNair et al., 2016; Thomson & Johnson, 2017; Sakaldan et al., 2010), all of which can interfere with verbal thinking. Patients completing DBT have demonstrated difficulty expressing themselves verbally during heightened emotional states (Lustig et al., 2000), when there is a co-occurring social anxiety disorder (Dimeff et al., 2000), when trust has not been adequately established (Thomson & Johnson, 2017), and when the patient's primary language is not the language in which the group is conducted (Cheng & Merrick, 2017).

ABR conducted using participatory visual research methods (PVRM) expands the types and quality of data that emerges from inquiry. According to Leavy (2017), “the major advantages of this approach are that the participatory nature of the design, with [participants] creating the data, may serve as an empowering experience for them, affording them the opportunity to express themselves without preconceived notions of what is expected or wanted”. Mitchell and colleagues (2011) provide a structure maximize participants’ impact on data collection, analysis and reporting, recommending a reassuring invitation to draw, a choice of drawing tools, a leisurely pace, shared analysis, and civic dissemination.

By providing a medium for participants to intentionally self-construct and self-edit (Greenwood, 2019), PVRM democratizes research participation and reporting (Bartlett, 2015; Boydell, 2011). PVRM expands opportunities for participants and audiences to engage with research by presenting findings in mediums beyond academic discourse (Bartlett, 2015; Boydell, 2011; Nilssen & Klemp, 2020). Bartlett (2015) used PVRM with dementia patients to gain insight into their experiences of activism, and uncovered findings through participants’ visual pieces that were not elicited during interviews. Boydell (2011) used dance to interpret participants’ experiences seeking treatment following a first experience of psychosis. These dance performances made research findings available in a way that was accessible to nonacademic audiences.

By expanding access beyond the traditional confines of academic publications, PVRM presents challenges. Bartlett (2015) identified that the process of translating participant experiences into professionally produced artworks elevated the artist’s perspective over that of the participants, facilitated aesthetic interpretations of the artwork over consideration of the content, and impeded the research team’s ability to control the reception of their work. Bartlett

recommended conversation analysis of the artwork creation or planning process as a mechanism that can mitigate the limitations presented by PVRM, while complementing the positive aspects of this type of inquiry.

Conversation Analysis

Conversation analysis is a mechanism for studying “language in use” in natural settings (Wooffitt, 2001, p. 50). The purpose of conversation analysis is to examine language as a tool to achieve social action and how those actions shape the shared social space. Creative endeavors undertaken by a group are “a social process of interaction and negotiation between the different participants” (Cross, 2011, p. 20). The process of negotiating privately held personal knowledge and organizing it around creating publicly held knowledge constructs shared meaning within the group (Cross, 2011). Conversation analysis is a mechanism through which external indicators of shared knowledge construction can be revealed by examining verbal and semiotic moves as mediated activities which reveal how individuals navigate and establish an identity within a group (Rachamim & Orland-Barak, 2016; Wooffitt, 2001).

Conversation Analysis and Reflective Practice

Reflective practitioners engage with three types of reflection, reflection-for-action (Killion & Todnem, 1991), reflection-in-action, and reflection-on-action (Schön, 1983). Retrospective reflection-on-action is commonly captured through participant interviews and journaling (Cowan, 2017; Rigney et al., 2019). Capturing participant reflection-in-action and reflection-for-action presents a unique challenge for researchers, as many reflective processes occur internally for participants.

Think-aloud protocols ask participants to narrate their thoughts while completing a task. These narrations are recorded and reviewed as objects of inquiry into participant reflective

processes. Because these utterances are captured while the participant is actively doing the task, they are considered reflection-in-action.

Despite their utility, there are limitations to think-aloud protocols. Think-aloud protocols are most effective when used to investigate individual processes. Group constructive processes utilize verbalizations to organize work and think-aloud protocols may interrupt these processes. Additionally, utterances that participants translate into verbalizations may reflect only a portion of their internal processes. While a participant may consent to a think-aloud protocol, the requirements for reporting are artificially imposed, and from the participant's perspective do not have a natural basis. As a result, participants must actively attend to producing utterances at all points during the research – attention that may lapse during tasks that apply mental load. Finally, when confronted with complex thought processes, participants may not be able to translate their internal experiences into words or may not feel comfortable honestly verbalizing internal processes (Fan et al., 2020).

Reflection-for-action has been recorded by asking participants to write a plan and list the skills they will draw on to complete a task (Cowan, 2020), to select tools that they anticipate will facilitate task completion (Prieto et al., 2018), or to select instructional content that they believe will support learners to master a lesson (Olteanu, 2017). These individual-level indicators of reflection-for-action can be supplemented by group-level conversation analysis. Conversation analysis illuminates reflection-for-action and reflection-in-action through examining collaborative group processes (Nanni et al., 2018). O'Reilly and colleagues (2020) used conversation analysis to examine reflection-for-action and reflection-in-action of mental health practitioners conducting patient assessments and identified the results of this analysis as provided valuable context to the

quantitative data collected in the study. Through conversation analysis, Braak and colleagues (2021) demonstrated that online environments facilitated collaborative reflection-in-action.

Conversation Analysis as a Mechanism of Inquiry in ABR

Hong (2019) applies conversation analysis to ABR to identify how discursive moves in poetry illuminate participants' worldview, identity, and interactions with others. In this work, verbalized utterances are transcribed and correlated to emotive expressions, tone, and speed of communication. Payne (2018) utilizes a combination of conversation analysis, participant interviews, and artwork to investigate the negotiation of publicly held knowledge as embodied through the roles that participants play in creating collaborative artwork.

Conversation Analysis and Activity Theory

Conversation analysis and activity theory conceptualize linguistic moves as tools that mediate actions between subjects. Becher and Orland-Barak (2016) use conversation analysis to provide a framework that explicitly explores the subject/object/tool triad of the mentoring activity system. Similarly, Nilssen and Klemp, (2020) explore this same triad through participants (subjects)/ artwork (object)/ linguistic moves (tools/symbols). Nilssen & Klemp (2020) employ conversation analysis to classified classroom events within the operation, action, activity framework of activity theory.

Frameworks of Conversation Analysis

Two frameworks from the literature centered shared knowledge construction, Cacciamani's conversational functions for knowledge building (2018), and Gunawardena and colleagues' interaction analysis model (1998). These models examine the types of discursive roles and moves engaged in by participants which promote shared knowledge construction. A comparison between these two models is found in table 1. Both models are non-sequential, with

the express understanding that the phases or functions are not necessarily engaged in successively. Cacciamani's model is provided in the order presented in the original text, while the order of Gunwardena's model has been modified to underscore the areas of concurrence between the two models.

Table 1

Comparison of Interaction Analysis Model and Conversational Functions for Knowledge Building

Gunawardena and Colleague's Interaction Analysis Model Phases (1998, p. 142)	Cacciamani's Global Conversational Functions for Knowledge Building (2018, p. 1537)
Sharing Sharing/comparing of information, observations, opinions, agreements, examples, question statements, definitions, descriptions.	Exploring Initiating the process of inquiry in the community.
Discovery Discovery and exploration of dissonance or inconsistency among ideas, concepts, or statements. Questioning positions, engaging with arguments, illustrating points of view.	Providing Information Sharing relevant information with the community.
Negotiation Negotiation of meaning/co-construction of knowledge. Weighing of arguments, identifying conceptual overlap, reaching compromise.	Re-elaborating Using and combining ideas already generated by other community members.
Testing Testing and modification of proposed synthesis or co-construction against schema, experience, data collected, and literature.	Evaluating Providing feedback on ideas or on the strategies of work used by the community members.
Agreement Agreement statement(s)/application of newly-constructed meaning. Summarize agreements, apply new knowledge, making metacognitive statements.	

Summary

DBT can be conceptualized as a collaborative instructional intervention that addresses learning deficits that result from stable instability in emotions, behaviors, relationships, and sense of self. As a treatment, DBT emphasizes socially situated patient learning. However, research into DBT centers therapist priorities and conceptualizations for reporting over patient perspectives and experiences.

This research seeks to leverage activity theory and art-based research to develop a framework for investigation that explores DBT in a way that does not reinforce patient instability. BPD and related disorders often develop in environments where the individual is regarded as an unreliable informant of their own experience (Linehan, 2015). Research which relies on therapists as informants of patient experiences continues this harmful pattern. By situating the patient as the primary source of knowledge, this research disrupts this pattern. Furthermore, disorders of dysregulation including BPD are characterized by an unstable sense of self (APA, 2013). Breaking down individuals into discrete components and studying those components as individual aspects perpetuates disjointed sense of self and disincorporated sense of identity. This research regards all participants as whole. Finally, dysfunctional relationships for individuals diagnosed with BPD are often characterized by manipulative behaviors (Sulzer, 2015). This study will involve no deception or behavioral manipulation. It is the goal of this research to not only produce a framework that will honor the experiences of patients completing DBT, but also one that interrupts cycles of harm that characterize the lives of patients completing this therapy.

CHAPTER 3: RESEARCH METHODS

This study used arts-based inquiry to provide a snapshot of social knowledge constructed in a DBT skills training group based on observational data collected during the process of planning the creation and presentation of a collaborative art piece, interview data collected afterwards, and the artwork itself. This project piloted a research design that applies the theoretical framework of activity theory (Leont'ev, 1978) while using best practices for arts-based inquiry (Mitchell et al., 2011). The research questions this study addressed are shaped by activity theory with focus on exploring the ways in which participants organized themselves around creating a collaborative art piece.

Q1: How are tools and symbols used by participants to mediate shared expression of knowledge constructed in DBT skills training?

Q2: How do participants negotiate shared expression of public knowledge constructed in DBT skills training?

Q3: How does a division of labor emerge to organize participant actions around creating a shared expression of knowledge construction in DBT skills training?

Q4: In what ways are the expectations provided by DBT manuals applied by participants in creating a shared expression of knowledge constructed in DBT skills training?

This section describes snapshot research as a methodology and arts-based research as a framework, then provides detail about the study's participants, data collection, data analysis, and researcher identity.

Snapshot Research

Snapshot research describes the present state of the object of research. Snapshot is a metaphorical reference to a still photograph taken during an active scene. The snapshot provides a

two-dimensional view of the way things are at a single moment in time, providing a static, cross-sectional representation of a perpetually dynamic system. Snapshot research is not interested in the past state of things but is instead focused on “giving a description of circumstances at the time of the research” (Flick, 2018, p. 113).

Snapshot research requires boundary definition to identify which material is appropriate to include within the research frame. In this research, the frame is defined temporally and compositionally. The object of interest in this study is knowledge constructed during DBT skills training. Temporally, the point of interest is the timeframe of a DBT skills training series. Data collection took place during a DBT skills training module to capture a series of snapshots of what knowledge was constructed during that module. Compositionally, data collection provided multiple perspectives on a single topic: social knowledge construction in DBT skills training.

Arts-Based Research

Arts-based research is an umbrella term for epistemologies that stem from the investigation of artwork and its creation process (Greenwood, 2019). Arts-based inquiry incorporates nonverbal knowledge construction and communication to democratize research participation and access (Boydell, 2011). Arts-based research is an opportunity to expand both the definition of what is considered knowledge, and who can be considered a knower (Greenwood, 2019).

Mitchell and colleagues (2011) provide a framework to guide participatory arts-based research. The authors recommend five characteristics of research design that support active participation and self-determination of research subjects. These guidelines include: a reassuring invitation to draw, a choice of drawing tools, a leisurely pace, a shared analysis, and a civic dissemination. A reassuring invitation to draw should include an explicit statement of the researcher’s focus on content over technique. A choice of tools allows participants to select

materials that are familiar and culturally appropriate to them. A leisurely pace is set to foster a level of comfort that is necessary for creativity. A collaborative analysis conducted with participants allows participant insights to co-construct the narrative generated from the results. Finally, civic dissemination empowers participants to impact their communities through the results of their participation in the research.

An important consideration in arts-based research is the loss of control of knowledge construction and interpretation (Bartlett, 2015). More traditional forms of research are published in academic journals, with significant verbal metadata accompanying data and results to guide interpretation of the work. Arts-based research may also produce this type of publication. However, these publications are typically shared in addition to public exhibition of the artwork. The art exhibition is a space where the audience interprets the meaning of the artwork, and a challenge encountered by arts-based researchers is providing sufficiently accessible context to support the communication of findings (Bartlett, 2015).

Participants and Context

The population for this study was outpatient DBT skills training groups completing comprehensive DBT treatment (Koerner et al., 2021) in a routine outpatient care setting. DBT skills training groups were ideal for this study because the object of inquiry is knowledge building in DBT skills training. Outpatient groups were selected because the group structure is more likely to be faithful to comprehensive DBT (Koerner et al., 2021). In comparison to inpatient, partial hospitalization, or intensive-outpatient settings, routine outpatient care settings are easier to access due to their less restrictive nature and are typically used by less vulnerable individuals (Cigna, 2011).

Participants selected for this study were completing DBT skills training offered through the Clinical Psychology department of a research university located in the midwestern region of the United States. This treatment program is offered at a sliding-scale cost to students and community members. In addition to their enrollment with DBT skills training, patients were required to receive individual therapy. Individual therapy was not administered through the skills treatment clinic. This group was selected for reasons of convenience and access.

Contact between the researcher and the clinical psychology program was initiated through the outside member of the dissertation committee. The skills group trainer was contacted, and a timetable and procedures of data collection were agreed upon based on the schedule for skills training and perceived patient needs.

The selected DBT skills training group met once weekly in a 6-week modular series during the Fall 2021 academic semester. Due to COVID-19 restrictions, the group's skills training meetings were held online and scheduled to last two hours. The group skills trainer identified that shifting sessions online did not have a negative impact on patient skill acquisition or group participation. These combined factors informed data collection approaches.

The researcher received permission to virtually attend the end of two skills training sessions to present the project and invite patients to participate in the research. In total, five individuals expressed an interest in participating. Two individuals completed the informed consent form and became research participants.

Research participants comprised of two of the university's community members. Aggregate participant demographics are as follows, provided in a randomized order to obfuscate participant identification. One participant reported their age as ranging between 35-44, and the other participant reported their age as falling within the range of 45-54. One participant identified

as woman and one participant identified as a man. One participant identified as “White” and one participant identified as “biracial Black and White”. Information on participant diagnoses and reasons for seeking treatment were not disclosed for reasons of confidentiality and privacy.

IRB Considerations

Expedited review was sought and administered through the institution’s Institutional Review Board (IRB). To gain IRB approval to conduct research, a letter of support was submitted from the DBT skills training group facilitator expressing that they agreed with the research study and that, in their opinion, it would not interfere with treatment or patient outcomes. All patient participation in the research study was fully voluntary and not a condition of treatment. This was especially important in light of the DBT group’s attendance policy that stipulated more than three absences from treatment would be considered treatment noncompliance, and result in termination of that individual’s participation. Furthermore, all recordings of the group’s activities were conducted without any indicators of the research participants’ status as mental health patients. Finally, all recordings and transcripts were stored in a secured local folder, to be destroyed after three years.

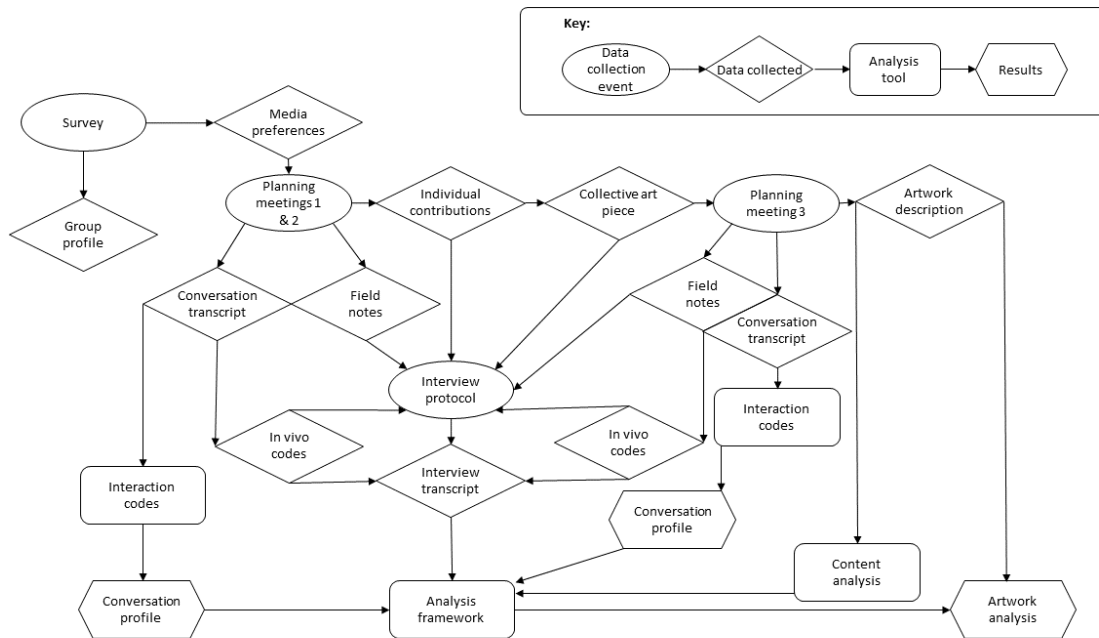
Data Collection and Analysis

In this research, data collection and data analysis were intentionally linked, where data collected in certain aspects of the research generated the framework to conduct the analysis of another data set. This recursive framework maximized the impact that participant-generated knowledge had on the final data analysis. This framework comprised of elements including: data collection events (participant survey, planning meetings, and participant interviews), data generated from each event (participant media preferences, group profile, conversation transcripts, field notes, individual art piece contributions, collective art piece, in vivo codes, and interview

transcripts), data analysis tools (interaction codes, content analysis, and analysis framework) and produced results (conversation profiles and artwork analysis). The data collection process is illustrated in Figure 7.

Figure 7

Data Collection and Analysis Map



Data Collection

Data collection was structured in accordance with Mitchell and colleagues' participatory visual research methodologies (PVRM, 2011). PVRM provides guidance to promote participant and community engagement in arts-based research. This framework encourages relationship-building between researcher and participants, and data collection and analysis techniques that support the active participation of all stakeholders.

Preliminary introductions occurred virtually during week three of the six-week skills training module, immediately following the regularly scheduled skills training session. The skills

training group was introduced to the researcher and the goals of the research. Participants were assured that the inquiry focused on artwork content and process, not artistic skill or quality.

Individuals who expressed an interest in participating with the research were provided a consent sheet (see Appendix A) that described the nature of the study as well as the potential risks and benefits to participants. The content of the consent sheet was explained to participants, and they were invited to review the form over the next week and contact the researcher with any questions. The sheet included an introduction to the purpose of the work, the goals of the data collection, and an outline of all potential risks to participants. Five participants expressed an interest in completing the Consent Sheet and requested it be sent to them via email. Two participants completed and returned the Consent Sheet.

This introduction served three purposes within the PVRM framework. First, Mitchell and colleagues recommend a leisurely pace of data collection that includes engaging with participants prior to conducting any data collection. Second, this introduction served as a “reassuring invitation” that “needs to reassure [participants] that the focus is on the content of their drawing, and not on the quality of it as a drawing” (Mitchell et al., 2011, p. 23). Third, this provided participants with ample opportunity to review the consent document, process its implications, ask questions, and provide genuinely informed consent.

After electronically signed consent sheets were received, participants completed a brief survey (Appendix B) of demographic information. The survey was administered through Qualtrics with all participant data collected and stored on a secured server administered through the researcher’s institution. The demographic information collected in this survey was used to generate a group profile. This survey also included an opportunity for participants to indicate the art supplies they were most comfortable using and which media they are interested in exploring. Mitchell and

colleagues (2011) recommend a “choice of drawing tools” (p. 23) which is aligned with participant preferences and experiences. The tools indicated by this survey—along with others as selected by the researcher – were included in the supplies made available to participants. Based on the results from this survey, an art supply kit was assembled to travel with the canvas. Participants were instructed that they could use any materials in the kit, and they were encouraged to incorporate other materials available to them beyond the contents of the kit. The art supplies provided to participants are described in Appendix C.

Following the completion of the survey and the purchase of art supplies, participants engaged in a 30-minute initial virtual planning meeting. Participants were shown the supplies made available to them, and photographs of examples of art pieces to clarify the intended outcomes of the process. Examples included both structural examples that demonstrated different types of visual collaborative art and content examples that showed different ways that artists have expressed DBT concepts visually. Structural example 1 was an image of a classroom collaborative project constructive of large puzzle pieces and hung on a wall (Kelly, n.d.). Structural example 2 contained multiple four-sided shapes, each containing the work of a different artist, containing a similar theme that were positioned as tiles (Staaque, 2021). Structural example 3 contained several square canvases, each containing the work of a different artist, that came together to form the image of a lion (Crestwood, 2015). Content example 1 contained two women’s faces which shared an eye, the first face was blue and labeled “rational”, the second face was red and labeled ‘emotional’, with the words “finding balance” underneath both faces (Morgan, 2014). Content example 2 was a multimedia project with colorful and diverse objects forming a wave shape, and words reading “triggers”, “the urge”, “urgent”, and “no” (Storey, n.d.). As recommended by PVRM, the DBT skills group was provided a specific prompt:

You will be working together to create an artwork that shows the impact that DBT skills training has had for you. This canvas will be divided into sections, and each of you will select a section to complete. The goal of your section is to connect to any surrounding completed section, as well as personal expression. Each participant will have the canvas for one week, and then it will be passed to the next participant along with the supplies. The art piece you create will give new and returning patients an impression of the knowledge they can build as part of a DBT skills training group. Today you will work together to create a plan for your project and decide how each individual will contribute to the final piece.

At the end of the first planning session, participants determined the need for a second planning session and scheduled a second virtual meeting to further discuss their plans for the piece. The second session was held two-weeks after the first meeting and lasted approximately 20 minutes. Before this meeting, the first participant had already received the art supplies. Participants discussed ideas that emerged between the meetings and identified reconciled differences in understanding.

The timing and structure of the sessions provided participants time to leisurely consider their artwork (Mitchell et al., 2011). The planning sessions were conducted virtually using the software used by the therapy clinic. Meetings were recorded using features native to the software and notes were taken on nonverbal cues and signals using a structured field notes journal, using time codes for the purposes of corresponding notes to transcripts produced from audio recordings (Appendix E) during data analysis. All recordings have been stored in a secured folder on a local computer to be destroyed after three years.

During the first meeting, participants determined that the first participant – who will be referred to as Participant 8444 based on a random number generation – would receive the canvas

first. The canvas and supplies were in possession of Participant 8444 for approximately 3 weeks, and then were transferred to the other participant – referred to as Participant 0734 – who had the piece in their possession for approximately twelve weeks. The time spent on the project for each participant was significantly expanded from the time originally allotted and agreed upon. In addition to being necessary to accommodate participant life circumstances, the duration and flexibility of these time frames provided participants time to leisurely visualize and create their artwork (Mitchell et al., 2011). After each participant completed their section of the canvas, the researcher met each participant at a neutral location of their choosing to gather the canvas and materials and met the next participant to deliver these items.

After both participants contributed to the canvas, they were sent high-resolution images of the final piece. In our final virtual meeting, participants worked together to create a written description that will accompany the artwork. This process supported Mitchell's recommendation of a shared analysis. This meeting was conducted via the same virtual meeting software and recorded using the recording feature native to the software. Throughout the meeting, notes on nonverbal cues and signals were recorded in a structured field notes journal using time codes for the purpose of corresponding notes to transcripts produced from recordings (Appendix E) during data analysis. All recordings have been stored in a secured folder on the researcher's local computer to be destroyed after three years.

The meetings provided participants a space to collaboratively negotiate the framing and representation of shared knowledge. To achieve the logistical goals of each meeting, the researcher acted as a participant-observer. The logistical goal of the first meeting was to establish a sequence to convey the canvas to participants. The logistical goal of session three was to complete a written description to be displayed alongside the artwork. All other communication and interaction during

the three sessions were participant-driven. The researcher's presence undoubtedly impacted the ways in which participants experienced themselves as a community and interacted with one another. By providing sufficient introduction to the purpose of the presence of the researcher, and by discretely observing, this impact was consciously minimized. Explicit statements which centered around the researcher's presence, as well as nonverbal cues which indicated awareness of the researcher's presence were noted and considered during data analysis.

The artwork created by the group produced an artifact that illuminates participant and group-directed insights into publicly negotiated knowledge (Cross, 2011). In creating artwork, participants were given an opportunity to self-edit and reflect. This more intentional process of knowledge construction produced insights that are different from those which are individually and spontaneously produced during interviews (Greenwood, 2019).

To contextualize the artwork alongside participants' individual perceptions of the piece and its creation process, participants completed semi-standardized interviews (Flick, 2018), scheduled based on participant availability. The duration of these interviews was 20 minutes and 40 minutes respectively. These interviews provided participants with individual opportunities to verbally construct and reflect on their experiences. These interviews were conducted via Zoom and recorded using the native Zoom recording feature. The interview protocol is included in Appendix F. Along with the recording, interviewer notes recorded nonverbal participant cues to be later paired with their corresponding verbal data. This included participant posture, gestures, and other forms of nonverbal information that indicated nuance of meaning. The format of these interviewer notes is included in Appendix G. The interviews were intended to illuminate participants' perceptions and served as a means for participants to describe the impact logistical constraints had on their actions, their decision-making in creating their individual pieces, and their

reactions to the final piece. The verbal data produced through the interviews was used alongside the final piece and conversation analyses to generate a framework through which to assess the artwork.

Data Preparation

Survey Aggregation

To protect participants' identities, survey responses were anonymized and reported in aggregate. These results provided an overall view of the group's composition including age range, gender identity, and connection to the university. This process generated a group profile without providing information at the individual level that could potentially be used to identify participants. Additionally, participant responses which indicated preferences for media were analyzed in aggregate. As many supply preferences as possible were accommodated, with top priority given to those media with multiple requests. A full list of supplies provided is described in Appendix C.

Meeting Transcript Preparation

Processing the artwork planning and description generation transcripts was the first step in data analysis. First, recordings were uploaded to a secure, password protected, local folder. A locally hosted transcription software automatically generated a rough transcription of the conversation. The autogenerated transcriptions were refined to ensure accuracy. Indicators of participant tone and significant pauses were added in the appropriate locations.

The transcript was exported from the software and imported to a word document for further refinement. Participant identities were anonymized to be represented as "Participant 8444" and "Participant 0734" based on randomly generated numbers. Participant utterances were organized by discrete segments of meaning with a timestamp and corresponding utterance number noted in the transcript. There were two types of units of meaning: individual statements that were

meaningful on their own, as well as adjacency pairs – utterances by two or more speakers that are reliant on the statements that proceed and/or follow them to be meaningful (Wooffitt, 2001). The first portion of an adjacency pair creates a dialogic expectation which the second part fulfills.

Fieldnotes and Transcript Correlation

Using the timestamps in the fieldnotes, noted actions were corresponded to their relevant portions in the transcript. From here, the audio recording was reviewed to identify additional layers of meaning provided by nonverbal actions indicated in the fieldnotes and to verify the correct notes have been connected to the correct timestamps.

Data Analysis

Emergent Lexicon

A lexicon was developed to establish consistent vocabulary and meaning for terms that are relevant to understanding the dynamic components of the research and the implications of their interrelationships. The terms defined below are used throughout the analysis and discussion of the collected data.

Program. The DBT skills training program.

Program outcomes. Participants' perceptions of the impact of DBT skills.

Program content. DBT skills and skill categories as described by the participants.

Program philosophy. The underlying theories of DBT as described by the participants.

Project. The process of creating an art piece that participants engage in through this research.

Project structure. The way participants plan to set up their art piece to support collaboration.

Project content. Specific elements participants discuss adding to their art piece.

Project media. The supplies participants discuss using in their art piece.

Project visual representation. Participant plans to connect structure, content, and media to produce an intended result.

Project logistics. Any planning details that were required to physically navigate the transfer of materials/supplies between participants and researcher.

Section. The half of the canvas each participant created on. The final piece contains two sections.

Segment. The subsections of each canvas half. Each participant created four segments and the final piece contains eight segments.

Planning Meetings

Approach to Coding

This analysis looks at findings from three data collection events. The meetings were held virtually and audio recorded. These recordings were used to produce transcripts that captured all participant dialogue. Following each data collection event, the transcript was processed to ensure it was true to the audio recording. Participant names were replaced by unique identification codes to protect their identity, and any identifying information was redacted.

Utterances which represented more than one unit of meaning were broken into multiple lines within the statement and corresponded to timestamps within the audio recording. Each unit of meaning was analyzed using two coding techniques: emergent coding as defined by Charmaz (2014), and *a priori* codes as designated by the activity system (Engeström, 1987). In addition to line-by-line analysis, utterances were analyzed in whole as adjacency pairs. Adjacency pairs were coded using *a priori* codes defined by the phases of Gunawardena and colleagues' interaction analysis model (1998).

Emergent Coding

Provisional codes were assigned to each line based on the action present in that expression (Charmaz, 2014; Wooffitt, 2001). These codes were considered for relevance across all meetings and adjusted to generalize across each data collection event. Additionally, participant conversations were reviewed for apparent *in vivo codes*. *In vivo* codes are terms used within groups and reflect shared understanding and experiences. According to Wooffitt (2001), *in vivo* codes can take three forms: terms that are commonly used to condense significant meanings, terms spontaneously generated to capture a meaning or experience, and short-hand terms that reflect the group's shared interpretation of events.

In vivo codes identified through this process are woven throughout the analysis, including participant-generated descriptions of project structure ("half/half" and "overlay"), and project aesthetics ("color spectrum"). Participants also demonstrated a shorthand that originated from their shared experience of DBT skills training ("dialectics", "regulation", and "interpersonal"). This coding strategy provided a responsive structure to consider the actions of participants as individuals and the ways in which they influenced one another.

Conversation Analysis

Units of meaning which indicated shared functions of knowledge construction were highlighted and notations were added to indicate their corresponding levels of the *a priori* codes provided by the Interaction Analysis Model (Gunawardena, 1998). Each unit code was aligned with its corresponding point in the timeline to produce a temporally-situated representation of the process of knowledge construction. This arrangement provides an illustration of the evolving relationship between the participants and their project, and the shared knowledge they were generating together.

Throughout all three meetings, participants engaged in active knowledge construction as they shared ideas; discovered points of contestation; negotiated points of disagreement; tested possible schematic solutions; and ultimately agreed upon a project approach, structure, and aesthetic. This process was not linear and agreements that were reached in previous meetings were revisited during subsequent meetings.

Activity System Codes

Each utterance was considered alongside the activity system to identify which component (if any) of the activity system was present. Each relevant utterance was related to a triad which was inclusive of the artist/participant (subject), the artwork (object) and one other node of the activity system – art supplies & language (tools), DBT skills group (community), DBT structures & standards (rules), emergent division of labor (division of labor), or communication of knowledge constructed (outcome). This coding structure provided insights into the fully contextualized process of shared knowledge construction that participants were actively engaged in.

Participant Interviews

Interview Protocol Development

The interview protocol was developed based on the *in vivo* codes identified through the conversation analysis and the final art piece. After the interview conversation analysis was completed, *in vivo* codes were identified. The interview protocol was developed to find explicit definitions of these *in vivo* codes to identify consistencies and inconsistencies of how individual participants experienced their definitions. Additionally, the interview protocol was designed to elicit direct explanations of the elements included in the artwork and their relationships, the elements excluded from the artwork, and media choices. Finally, the interview protocol is designed to elicit participant perceptions of their role in the artwork creation process. The full set of

interview questions is provided in Appendix F. Interviews were conducted via Zoom and recorded using the recording feature native to Zoom. All recordings were stored locally in a password protected file. The interview protocol was designed to avoid revealing the participants' status as mental health patients. Participants were asked to:

- Interpret the meaning of the piece.
- Define the meaning of *in vivo* codes “half/half” and “balance”.
- Describe representation and relationships within their section.
- Explain their media selections.
- Describe what was most important to them to include with and in the piece.
- Anticipate what would stand out to a viewer.
- Reflect on their experience creating the piece.

Interview Transcript Preparation

Processing the interview recordings to create transcripts was the first step of the secondary data collection process. The audio recordings were uploaded to a secure, local folder on the researcher's computer. From there, a locally hosted transcription software automatically generated a rough transcription of the interview. The autogenerated transcriptions were refined to ensure accuracy. Indicators of participant tone and significant pauses were added. The transcript was exported from each interview into a Word document for further refinement. Statements by the interviewer were given a “bold” text treatment to distinguish them from participant statements.

Approach to Coding

For the first step in emergent coding, initial codes were assigned to each line of interview data. According to Charmaz (2014) the process of coding is to label segments of the data concisely and descriptively. This process provided “an analytic handle to develop abstract ideas for

interpreting each segment of data” (Charmaz, 2014, p. 45). This process utilized line-by-line coding which prioritized constructing insights into participant perspectives while reducing the risk that researchers would miss important implications (Charmaz, 2014). By describing participant statements as types of actions, rather than as the topics they refer to, the potential pitfall of premature analytical and conceptual leaps was mitigated.

The initial coding stage gave way to focused coding processes. The purpose of focused coding is to generate descriptors from initial codes that can be adequately generalized across all data sets. This recursive process of generating prospective focused codes—and identifying how adequately they reflect the data – resulted in focused codes that produced insight into individual and shared perspectives of DBT skills training and use. These focused codes were used in the assessment of the artwork.

Finally, participant responses to each interview question were reviewed, in whole, to identify key units of meaning. Each unit of meaning was assigned a code summarizing its substance. Connections across codes were identified to produce a synthesis of the participants’ responses. Key quotations were pulled from the interview transcript to illustrate and highlight the participants’ perspectives on each point.

Parallel to the initial coding stage, a listing of the participants’ definitions of the *in vivo* codes was compiled and identified in the conversation analysis. Apparent conflicts and congruence between participant definitions were used to generate a narrative of group internal logic and tensions.

Artwork Description Content Analysis

The artwork analysis represents the synthesis of all data collected through meeting recordings, interview transcripts, the description text, and the final art piece. This analysis wove

together multiple sources of meaning, providing a framework for understanding the knowledge constructed and held within the final art piece. This framework examined media usage, segments and sections of the piece, and relationships between these elements. Each component of this framework was explored through every dataset to provide a comprehensive view of how it is expressed at each stage of knowledge generation. The artwork analysis framework is fully expressed in Appendix I. The artwork assessment focused on the objects represented, the relationships between objects (Wilson & Betensky, 2016), and participant use of media.

Media

Participants were given the opportunity to select and use media based on their curiosity, interests, and experiences. These media selections were provided to the participants at no cost and included materials for acrylic painting and collaging. Participants were invited to use the media as they saw fit to construct the piece.

Segments and Sections

This portion of the analysis explored participant meaning generated around the larger structural elements of the artwork, described as segments and sections. Sections refer to the halves of the piece completed by each participant, and segments refer to the subdivided structures within the sections.

Relationships

The elements comprising the artwork do not exist in isolation. The relationships between the elements are as relevant to their constructed meaning as the content of the individual pieces themselves. This portion explores and derives knowledge from the relational aspects of the elements of the artwork.

Researcher Identity

As a qualitative researcher, my identity is inseparable from the research that I conduct. In describing relevant aspects of my background, I intend to provide context to how these experiences have informed my research praxis and ethos. My interest in DBT originates from a family member's experiences of seeking treatment for severe mental illness. Over a period of four years, my family member experienced twelve emergency psychiatric hospitalizations, all while actively receiving treatment through outpatient psychotherapy and medication. I became intimately involved with researching care options for my family member and learned of DBT as a treatment option. When my family member entered DBT treatment they experienced a period of stability that previously seemed unimaginable.

While fully recognizing and celebrating its positive impacts on our lives, I came to learn that DBT is not infallible. Even having gone through years of dutifully administered DBT treatment, my family member still experiences suicidality and struggles to find hope for the future. Additionally, they conceptualize DBT skills in ways that were very different from the ways the skills are conceptualized in the DBT literature. Despite DBT's promise, my family member was hitting a wall, and I began to seek answers as to why this could be the case. As I sought these answers, the topic of this research project began to solidify. Problematizing learning in DBT skills training provides an additional lens through which to understand the mechanisms of change in DBT and the impacts of treatment.

As I developed this research project, I considered it from the perspective of whether it was sufficiently responsive to participant experiences without imposing limitations of existing frameworks in DBT treatment and research. Based on my experiences with my family member, it was important to develop a research approach that would allow participants' conceptualization of

DBT to drive as many aspects of data collection and analysis as possible. As someone with no diagnosed mental illness or neurodivergence, I am aware that my conceptualization of DBT will be dramatically different than that of my participants. My efforts to center participant perspectives are also an effort to decenter my own.

Summary

This was an arts-based research study that consisted of several data collection events for the purpose of investigating shared knowledge construction in DBT skills training groups. Chapter three provided an overview of the study's research methodology including specific information on the data collection points (survey, planning meetings, and interviews), the relationship between the data collected at each point and its impact on subsequent data collection tools, and an overview of the data analysis procedures. The next section will present a summary of the research study's results and findings.

CHAPTER 4: FINDINGS

Figure 8

Final Art Piece, Mindfulness in Motion



This piece is an artistic rendition of the modules of DBT (mindfulness, interpersonal effectiveness, emotional regulation, and distress tolerance). Just like in DBT, sometimes it's chaotic, and sometimes you can see the pictures more clearly. As you can see there are two vantage points trying to stay thematically together (using same color schemes); representing the balance between chaos and order. (Authored by Participants).

This chapter describes the results and findings that emerged from this investigation of how DBT skills training participants conceptualize learning in DBT skills training. This chapter is organized first to overview the results of three primary datasets – observational data collected at three virtual meetings, response data collected during two participant interviews, and physicalized data through an art piece and its description. These data sets are interpreted using conversation analysis, discourse analysis, and content analysis. Meaning is synthesized from these results to generate findings in accordance with the research questions guiding this inquiry.

Participant Meeting Results

Three participant meetings were hosted over the course of this inquiry. The first meeting provided an initial foundation for the participants to plan the project logistics and identify a project structure and approach. The second meeting occurred after Participant 8444 received the art supplies and canvas, and before any work had begun on the piece. The third meeting occurred after the piece was completed to give participants an opportunity to create a title and description to accompany the piece. Each meeting was recorded, and the recording was used to produce a transcript. The transcript was interpreted using emergent coding, conversation analysis, and *a priori* coding. Results from these analyses are reported as follows.

Emergent Coding

Each utterance within each meeting was reviewed and assigned an initial code that summarized the action of the utterance. These initial codes were then reviewed to produce descriptors that could be generalized across all meetings.

Meeting 1. This meeting primarily focused on the logistics of transporting the project and materials. Through verbal expression, participants engaged in verbal actions throughout the

meeting: providing information, proposing suggestions, connecting information and ideas, reinforcing approaches/proposals, and inviting collaboration.

Meeting 2. Having determined the project logistics, participants focused on developing a structure, and aesthetics to support this structure. Participants engaged in verbal actions throughout the meeting: narrating internal thought processes; describing expectations and intentions; reflecting on the DBT skills program; inviting input; connecting information and ideas; providing information; and navigating constraints.

Meeting 3. Images of the final art piece were shared with both participants prior to the meeting. Participants engaged in verbal actions throughout the meeting: describing their experiences in creating the piece; constructing meaning from the creation process; proposing and responding to ideas; and reaching consensus.

Conversation Analysis

Conversation analysis was conducted using *a priori* codes provided by Gunawardena's Interaction Analysis. These codes were assigned to adjacency pairs within the transcript, producing a conversation profile (Figure 9) that illustrates the progression of knowledge construction participants engaged with through that meeting. The stages of knowledge construction are sharing, discovery, negotiation, testing, and agreement.

Meeting 1. The first meeting began with a period of sharing that lasted approximately seven minutes. Participants used this time to become familiar with one another, and with the expectations of the project. After this sharing period, participants began to cycle through testing-agreement phases, where one participant would propose a project approach or structure, and the other participant would agree to the proposal. Points of discovery occurred as participants considered the ways their experiences offered different points of view on the project. Negotiation

occurred as participants navigated tensions between the constraints of the project and the different proposed structures.

Meeting 2. The second meeting began with a much shorter period of sharing, where participants caught up on what had occurred during the two weeks between the first and second meetings. During this process, participants discovered that they had left the first meeting with two different understandings of how the project would progress. Upon recognizing the disparities of understanding, participants began to test out different ideas of how to proceed. Ultimately, participants agreed upon a timeline and next steps for finalizing the project.

Meeting 3. The third meeting started with a very short period of sharing, and immediately shifted into a testing-agreement phase as Participant 0734 suggested a title that Participant 8444 agreed to immediately. The middle of the meeting included periods of sharing and discovery in which participants shared what they each considered the most relevant aspects of the project. These periods were followed by testing phases, where one participant would suggest description language, and the other participant would respond either by negotiating a new description or agreeing to the description as presented. The meeting ended with a final testing-negotiation-agreement phase as the final description was read out loud, and participants were given the opportunity to react and negotiate final content and meaning.

Figure 9 contains three conversation profiles – one for each meeting – illustrating the progression and duration of the stages of shared knowledge construction participants engaged in.

Figure 9

Temporal Conversation Profile, Planning Meetings 1, 2, and 3



Activity System Codes

The final stage of coding included assigning individual utterances *a priori* codes in accordance with a triad of nodes from the activity system. The triads assigned were: subject, object, tools; subject, object, rules; subject, object, division of labor; and subject, object, community.

Meeting 1. In total, 90 utterances represented references to an Activity System triad, 56 of which were uttered by participants with the remaining 34 uttered by the researcher in presenting the project and supplies. Of the 56 participant utterances, 33 evidenced an emergent division of labor, 12 referenced art supplies and language, 9 related to DBT structures and standards, and 2 indicated the DBT skills group.

Meeting 2. In total, 72 utterances represented references to an Activity System triad, all of which were uttered by participants. 30 referred to the emerging division of labor, 18 referenced art supplies and language, 15 referred to DBT structures and standards, and 9 referenced the

communication of knowledge constructed. No references to the DBT skills training group were made.

Meeting 3. In total, 27 utterances represented references to an Activity System triad, all of which were uttered by participants. 13 referred to the DBT standards and structures, 6 referred to the communication of knowledge constructed, 5 referred to the art supplies and language/symbolism, 2 referred to the DBT skills training group, and 1 referred to the emergent division of labor.

Interview Results

After the third meeting, participants were interviewed about the artwork and their experiences creating it. Interviews were held virtually and structured using the interview protocol in Appendix F. Participants were asked guided questions and given an opportunity to expand on their answers. Participant responses were analyzed through emergent coding and reported as a narrative synthesis. Illustrative quotes were pulled from interview transcripts to highlight participant perspectives on each question.

Question 1: Meaning of the Artwork

“I was like okay. I feel like I'm in an overall state of overwhelm. Like how can I use that? But also convey the utilization of [the DBT skills]. And I was like maybe I'll try to convey the struggle of [utilizing the DBT skills]. So that ended up being what occurred. But it wasn't an initial set plan” (Participant 8444, exit interview).

Participant 8444 completed their section of the piece first. In their interview, Participant 8444 revealed that the piece held two meanings – a first meaning that Participant 8444 constructed while completing their section, and a second meaning that was co-constructed with Participant 0734 after the final piece was completed. The initial meaning that Participant 8444 infused into their section was the progression of their mental and emotional state from overwhelm to resolution

as they worked on the piece. Through meeting with Participant 0734 to discuss the title and description, this meaning evolved to represent the struggle of trying to use DBT skills.

Participant 0734 began by constructing meaning from the artwork created by Participant 8444. Participant 0734 worked from Participant 8444's contribution to represent the modules in a very orderly form, using a color scheme that matched Participant 8444's. This choice led the pair to co-construct the meaning that these two segments together represented the modules in chaotic form as realized through attempts to apply them in day-to-day life and in a neat, orderly form as idealized through DBT skills training manuals and training.

“One side represents the modules in a chaotic form. Like when you're struggling with doing the modules, it's not neat. It's very bold, it's very chaotic. And then on my side tried to think of things that will represent mindfulness and interpersonal effectiveness in art form” (Participant 0734, exit interview).

Question 2: Meaning of the Half/Half Structure

“I think that being confined to working collaboratively but in essence separately as far as time goes definitely made it a little bit more of a constraint in terms of going in a cohesive direction. It was working more along the lines of in a shared space” (Participant 8444, exit interview).

During the planning meetings, participants settled on a half/half structure, with the piece divided into two sections that would be worked on sequentially. Participant 8444 viewed the half/half structure as being a logistical necessity that influenced their experience of the workflow but did not impact the meaning of the piece. Participant 8444 experienced the logistical realities of the project as a constraint that restricted cohesion in the piece.

Having received a partially completed piece from Participant 8444, Participant 0734 found significant meaning in the half/half structure, which ultimately defined the color scheme and structure that Participant 0734 employed. Participant 0734's perceptions of the logistical constraints were largely positive, indicating that the constraints provided a structure to work from, and that the project would have been more difficult to navigate with more participants. Likely

impacted by having gone second, Participant 0734 experienced construction of the piece as more collaborative than indicated by Participant 8444.

“It was nice to just have two of us doing it and be able to for me to play off what [Participant 8444] had already done. It helped me to have [Participant 8444] go first and then be able to play off of what [Participant 8444] did” (Participant 0734, exit interview).

Question 3: Meaning of Balance

“In what I was going for I was losing the sense of balance, but I did think I maintained it, even though it's overall -- in my space of the canvas, while it is certainly much more of a chaotic representation of things and how I experienced it -- I did try to maintain a balance in terms of utilization of broad range of colors and textures” (*Participant 8444*, exit interview).

Participant 8444 described balance as relating to three different ideas: personal sense of balance, balance of media usage, and overall balance of the piece. The chaotic nature of Participant 8444's section represents the loss of a personal and emotional sense of balance. Within that representation, Participant 8444 created balance of media usage across their section by evenly distributing imagery, color, texture, and pigment. Ultimately, Participant 8444 indicated that balance was achieved in the piece by Participant 0734's contribution.

Participant 0734 experienced balance as the driving force behind their work, seeking to create cohesiveness and commonality between the two sides of the piece. For Participant 0734, the finished piece is a manifestation of the balance between dialectics that DBT seeks to help people navigate.

“I was very wanting to do something that showed some kind of commonality or balance of color ... balance is kind of the crux of DBT. Dialectical. So, it's two opposing things. We had two opposing sides that have some similarities and some differences” (Participant 0734, exit interview).

Question 4: Representation in Parts and in Relation

“I do like looking at that in the context of where I was in module two from what we are working on, and how I relate to another way to interpret these. In Interpersonal Effectiveness – we were in this module where things are becoming more globally cohesive” (Participant 8444, exit interview).

Participant 8444 described their work as a record of a mental shift they experienced while completing DBT skills training. Participant 8444 completed their segment while the DBT skills training group was working through the interpersonal effectiveness module. For Participant 8444, who had completed a full round of skills training previously, this revisit to interpersonal effectiveness had a globalizing effect which allowed them to integrate knowledge learned from previous experiences with DBT skills training. This mental shift led to an inadvertent establishment of four color-defined quadrants.

Participant 0734 created four sections on their side of the piece, recognizing the quadrants established by Participant 8444. Each section represents a module as taught in DBT skills training and followed the same color scheme established by Participant 8444. Moving right to left, top to bottom around the piece, Participant 0734 represented mindfulness, interpersonal effectiveness, emotion regulation, and distress tolerance. The order selected is the order that modules are covered by the DBT skills training group. Each module is isolated in its own quadrant and represented by distinct iconography.

Mindfulness is a red quadrant with a gold triangle and three squares. According to Participant 0734, the shapes are not metaphors, they are an invitation to engage with mindfulness; to see the shapes simply as they are without applying meaning or intention to them. “When you look at it you see three squares a triangle. You're in the moment. You see it, that's it. To me it was just very basic. And mindfulness can be as basic as you make it” (Participant 0734, exit interview).

Interpersonal effectiveness is portrayed by an ear and a mouth with lines indicating speech traveling from the speaker to the listener. “The left side supposed to be ear and the right side is supposed to be a mouth, and the like the line speaking to the ear kind of abstract” (Participant 0734, exit interview).

Emotion regulation is visually described by multiple directions of lines, representing multiple directions of emotions that are regulated in waves. “The up and down kind of waves are just how you regulate your emotions. They kind of go up and down and then in different directions. Your emotions are in different directions” (Participant 0734, exit interview).

Finally, distress tolerance is shown in a quadrant dominated by black punctuated by dots of yellow. The darkness represents distress, interrupted by light that helps tolerate the darkness. “Sometimes distressing things can be seen as dark. And then just the little pieces of light around can just be the way you tolerate it.” (Participant 0734, exit interview).

Question 5: Media Choices

“I did a lot of the stuff with the construction paper and utilized that for different shape and texture and things. I felt comfortable using those because I knew I wanted to approach something that was multi-textured. And I’ve definitely been inspired by like some cool digital/collage art that I’ve seen” (Participant 8444, exit interview).

Finding inspiration from the work of other visual artists, Participant 8444 used torn magazine and construction paper to create bold and striking imagery. The work of these artists helped develop Participant 8444’s confidence in their ability to create artistically and provided a wider range of options for shapes and textures to express meaning.

In an intentional decision to build contrast with Participant 8444’s segment of the piece, Participant 0734 chose to use only paint to create visually crisp and precise sections for their side of the piece. This was intended to produce a stark difference while maintaining a connection through repetition of the color scheme and intensity.

“I wanted it to be something that was crisp and colorful and bold and just like different than [Participant 8444’s] side. Since [Participant 8444] used other mediums, I decided to make it all paint instead of using other mediums, so that there would be a stark difference between the two” (Participant 0734, exit interview).

Question 6: Impact for Viewer

“The whole thing is an interesting grab, especially if you have any like any of this content to go off of ... It is visually striking in both our separate spaces and in terms of being something altogether as a whole” (Participant 8444, exit interview).

Participant 8444 assessed that the piece would grab a viewer as it was strikingly different when viewed as a side to side piece, and when taken as a whole. For all viewers, Participant 8444 expected that the larger, darker sections of the piece would draw the most attention, and the smaller, lighter sections may capture less. They also anticipated that the piece would hold additional layers of meaning for individuals who had experiences with DBT than for those who had not been introduced to the materials.

Based on the piece and the description, Participant 0734 expected that viewers would recognize that the modules are represented and glimpse the experience of existing between the two sides of the painting at different points in their lives. Participant 0734 placed high importance on the comparison between the two sides, anticipating that viewers would recognize the similarities and differences as they experienced the piece. The piece was a conveyor of comfort, from Participant 0734’s perspective, that would reassure viewers that they were not isolated in their experience, and that even distress can bring vibrancy.

“It depends on your life, what's going on in your life, how each module may flow. In life you might be on one side of the painting which is more chaotic and then other times you'll be on the more clear-cut more precise side that's just painted ... it's not always smooth and clear-cut versus sometimes it's more chaotic and not as neat, but still vibrant and still colorful even though it's more distressing on the other side” (Participant 0734, exit interview).

Question 7: Experience Creating the Piece

“I did work from more heavy and dark to more light and airy and calm. And that's actually a representation of my emotions throughout completing it. And that ends up coming out the finished product because I was going from being more stressed and having anxiety and mixed feelings about my skill set and being able to convey something and then transitioning to actually feeling better step by step as I was able to complete each step of the piece” (Participant 8444, exit interview).

While both sides of the piece are divided into four parts, Participant 8444's quadranting was an inadvertent effect of the evolution of their internal state while they completed their segment of the piece. When Participant 8444 started their work, they felt strong apprehension regarding participation in the project. They described feeling anxiety regarding their artistic skills and they did not self-identify as an artist when they started the piece. Working within these emotions yielded the dark sections comprised of a harsh and treacherous topography on the far-right side of the piece. As Participant 8444 worked through these emotions, embraced an identity as an artist, experienced successes in skills training, and made headway with the piece, the imagery became lighter and airier, the textures became less harsh, and the colors brighter.

Participant 0734 experienced the artwork creation process as a successful exercise in solving multiple problems. The first problem was creating an artistic representation of the skill modules, which was solved by a unique iconography designed by the participant. The second problem was an internal experience of perfectionism that conspired with life events to restrain the participant from initiating work on the piece for two months. When a constraint of a deadline was introduced, Participant 0734 was able to resolve their hesitation and embrace the imperfections of the outcome.

“It was exciting once I finally got to do it and it gave me a chance to think of my experience with DBT and how can I depict it artistically. And thinking of the modules and how they've impacted me and how each module stands out in a certain way. ... But then also I'm glad I didn't have more time because I'm very perfectionistic, and it just would have turned into a nightmare because I would have been trying to make everything perfect” (Participant 0734, Exit interview).

Artwork Analysis and Discussion

The artwork analysis represents the synthesis of all data collected through meeting recordings, interview transcripts, the description text, and the final art piece. This analysis weaves together multiple sources of meaning, providing a framework for understanding the knowledge

constructed and held within the final art piece. This analysis considers the segments of the piece, relationships between elements of the piece, media usage, and reconciliation of *in vivo* codes prominent throughout data collection. Each component of this framework is explored through each dataset to provide a comprehensive view of how it is expressed at each stage of the research process.

The outcomes of analyses conducted of each data set were synthesized and related to each of the four research questions guiding this inquiry. These research questions examine relationships between the participants, the artwork, and the tools used; participants, artwork, and the DBT skills training community; participants, artwork, and the DBT skills training program; and participants, artwork, and the division of labor that emerges between them. Discussion of each research question weaves threads through all datasets and analyses to produce a cohesive understanding of how each question is expressed through this inquiry.

Research Question 1: How are tools and symbols used by participants to mediate shared expression of knowledge constructed in DBT skills training?

Media as Tools

“And that’s what I was thinking with like paint and collage and really any of it – was definitely that brightness and darkness. And its correlation to how we identify with those things especially with our own feelings and emotions” (Participant 8444, Meeting 1).

In the first two meetings, participants discussed their prospective media choices to represent knowledge constructed in DBT skills training. Notably, Participant 0734 expressed an intention to use collage as their primary medium of expression and Participant 8444 expressed an intention to primarily use paint. These intentions were reversed in the final piece, where Participant 0734 used paint exclusively, and Participant 8444 used collage as their primary medium, employing construction paper for texture, magazine cut-outs for imagery, and paint as accentuating coloration and pigmentation.

Collaging gave Participant 8444 a sense of structure while facilitating freedom of expression. Participant 8444 recognized that the medium of collage created a conduit for external sources of inspiration, drew from a familiar set of skills, and provided a way to manage uncertainty. Collage became Participant 8444's medium of choice based on inspiration from collage artwork produced by other visual artists. These artists' work served as a source of confidence for Participant 8444, who felt empowered to create impactful artwork using this technique. In creating a collage, individuals locate and reconfigure existing images. This allows individuals to create artwork that does not rely exclusively on their ability to render images. Additionally, materials used in collaging can become external sources of inspiration by expanding ideas and concepts beyond that which is produced by the individual's mind. For Participant 8444, the medium of collage allowed them to construct a bridge between their current role as a patient and their new role as an artist with the authority to convey knowledge.

Participant 8444 chose abstract symbolism, using rich textures and vibrant colors to construct metaphors that expressed complex concepts. Participant 8444 used paint to create a metaphor of using darker colors to represent distressing emotions they endured at the onset of the project, and lighter colors to represent calmer emotions they experienced as the project progressed. In addition to the visual metaphor, a textural metaphor emerged of representing changes to the intensity of emotions. While the segment portrays a shift towards positive emotions through color, the pronounced texture remains, portraying a consistently inconsistent topography of emotional intensity.

While media was a source of ease and inspiration for Participant 8444, working with paint challenged Participant 0734 to confront perfectionistic tendencies. To create visual contrast with the fluidity of Participant 8444's section, Participant 0734 endeavored to use paint to create crisp,

rigidly defined segments. Participant 0734 experienced paint as an unpredictable and unforgiving medium that required a great deal of effort to create this intended effect. As time progressed, Participant 0734 experienced resolution and was satisfied with the textural and stylistic contrast that paint created.

To create cohesiveness between the two sides, Participant 0734 used the same color scheme employed by Participant 8444. This media usage resolves the apparent tension between Participant 0734's rigid iconographic symbology and Participant 8444's fluid abstract imagery. The matching color scheme invites a connection to the socially-constructed meaning of a piece that portrays "two vantage points that are trying to stay thematically together" showing the balance between "chaos and order".

Words as Tools

Participants used language as a symbol in communicating in-group definitions, exploring media options to represent meanings, and discussing symbolic representations of the program. Symbolic language is present as participants demonstrate a partially developed short-hand vocabulary related to DBT skills training. Participants referenced without explanation "group" (refers to the DBT skills training group), "modules" (refers to the modular structure of DBT skills training), "regulation" (refers to the emotion regulation module), and "interpersonal" (refers to interpersonal effectiveness skills). In addition to shorthand offered by the DBT skills training modules, participants constructed meaning around the terms "balance" and "half/half".

Balance was a concept heavily explored throughout all three meetings and in the interviews, and four unique configurations of meaning emerged. These meanings referred to a personal sense of balance, balance of media usage within a section of the art piece, balance across the entire art piece, and balance as explored by the DBT skills training program. The participants

moved seamlessly between these meanings and did not find them in conflict with one another. This lack of tension between different conceptualizations represented by the same word may indicate that participants experienced the piece and its components as an embodiment of their internal experiences and the DBT skills training program.

Participants consistently used the term *half/half* to describe the structure of the final piece. While the definition of this term was not different between the two participants, their experiences of this structure differed significantly. Participant 8444 experienced the structure as a logistical necessity that resulted in less-than-ideal collaboration. Participant 0734 experienced the structure as providing the constraints necessary to empower creativity within a collaborative effort.

Research Question 2: How do participants negotiate shared expression of public knowledge constructed in DBT skills training?

Physicalized Knowledge Construction

The relationship featured most prominently in the piece is the contrast between the two sides. The dramatic order and control on the left side contrasts sharply and significantly with the disorder of the right side. While the left side is contained to the canvas, the right side seems to burst forward. While the left side uses crisp lines and purposeful iconography, the right side uses tangled shapes that defy order. While the left side is divided into four equal blocks, the allocation of space on the right side is inconsistent and uneven.

Participant 8444 worked on the piece in multiple sessions from right to left with the goal of capturing their internal state at the time of working on the piece. As the skills taught in DBT skills training became more “globally cohesive” for Participant 8444, the piece shifted from darker colors (symbolizing distress) to lighter colors (symbolizing calm). The integration and synthesis

of knowledge built in DBT skills training was brought from the emotional realm into the physical realm by Participant 8444's artwork.

Participant 0734's section of the piece provides a direct illustration of their understanding of each skill module. In their section, Participant 0734 included an iconographic representation of each module (from top to bottom, left to right): mindfulness, interpersonal effectiveness, emotion regulation, and distress tolerance. These icons serve as physical representations of the meaning Participant 0734 has constructed around the skills modules.

In the process of co-creating a description, the participants created an additional physical expression of the knowledge held within the piece. The description serves as a guidepost for viewers to navigate the complexities of the piece without providing too rigid of a structure for interpretation. Participants considered that viewers of the piece would be active interpreters of the meaning of the piece – particularly those who had some knowledge of DBT skills.

Constructing Meaning to Navigate Uncertainty

Logistical planning represented a tangible source of project constraints and produced a level of uncertainty that participants were compelled to resolve. This tension was in part informed by the realities of the COVID-19 pandemic as participants were not able to work in parallel in a shared physical space instead they were required to work in sequence in separate locations.

Significant points of knowledge construction occurred when the participants discussed possible structures for the project alongside logistical constraints. Participants considered two possibilities for structure. The initial possibility the participants explored was to have the first participant create a rough version of the piece over the entire canvas and have the second participant overlay their work onto the existing piece. The second possibility the participants explored was to split the canvas into a *half/half* structure with a side-to-side horizontal orientation

of the canvas, and each participant would create their portion of the piece on half of the canvas. The *half/half* structure was more clearly defined for the participants while the overlay structure was less defined, and participants recognized there would be more negotiation involved in defining this structure.

As participants engaged with their proposed structure, they explored the ways in which DBT engages with duality. This conversation included existing along dialectics and balance, and the ways in which both concepts are threaded throughout DBT skills training. Additionally, participants discussed the ways in which emotion regulation and distress tolerance allowed them to manage both light and dark emotions. The participants' consideration of the dualities explored by DBT supported their decision to engage with the *half/half* structure.

Participants were committed to making a cohesive piece and sought to discover aesthetic options to integrate the two halves of the canvas. In the first meeting, participants agreed that the first participant would make aesthetic choices which could be easily continued by the second participant, referring to a "color spectrum" (a type of gradient) that could be terminated in a single color at the center of the canvas. Also considered was a "line" that would "fade into a solid color" allowing the participants to "merge from color to color". The intention was to allow the second participant to begin their work from that single color, providing a unified look to the piece. Ultimately, participants decided that the second participant to receive the canvas (Participant 0734) would make aesthetic and structural choices that would relate the two sides to one another.

Throughout this process, participants navigated feelings of uncertainty and resolved the tensions created by logistical requirements. Participants constructed new meaning around the program content as they explored structures and corresponding aesthetic options for the artwork.

The completed piece of art resulted from resolution of these tensions, and represents the knowledge generated in the process.

Knowledge Construction as a Negotiation with the Community

“Because balance was something that definitely came to me really fast, just in terms of how we’re associating it to the skills and everything that we [the skills training group] talk about” (Participant 8444, Meeting 1).

Participants constructed connections between the content of their program, the ideas that underly the program, and the impact of DBT skills on their lives outside of the program; then considered the ways in which these different aspects can be expressed visually. During the first meeting, participants constructed associations between skills and experiences discussed in skill training groups, and to group identification of emotions.

As the structure, content, and aesthetic choices crystallized for the participants in the second meeting, they began to consider their intended audience’s perceptions of the piece. Participants began to view their piece as a negotiation of meaning between themselves and their audience as they worked to navigate the tension of representing the impact of a large program on a finite canvas in a way that would provide a meaningful experience to the audience. They described that they were seeking “how to visually translate” the experience of DBT in order to give people a “glimpse of artistically what it means.” In this process, the participants began to see themselves not only as patients receiving DBT treatment but as active interpreters of their personal experiences of DBT. In creating the description of the piece, participants discussed the importance of “looking at it as a whole thing and trying to drive what makes the most cohesive sense” to communicate to the audience.

As participants discussed the finished piece in the third meeting, they described the sharp contrast between the styles and textures of two sides as representing the dialectic of chaos and order, and the color schemes as the bridge between these two apparently contradictory, yet

mutually dependent, ideas. The final piece provides a comparison between the idealized experience of skills training group sessions the challenges realized outside of these settings. Participants discussed this comparison and how it was expressed in their piece as they negotiated metaphoric expressions.

Participant 0734 stated, “Just like in DBT sometimes it's chaotic, and sometimes you can see the pictures more clearly –”. Participant 8444 replied, “Sometimes the ideas are in working order and other times they're not.”

Notably, participants did not choose to represent the process of DBT skills training. The piece does not contain references to or representation of the DBT skills training group, the use of DBT workbooks, or phone coaching. While these aspects are undoubtedly part of their DBT experience, the participants did not engage artistically with these processes as readily as they did the content and ideas of DBT.

Research Question 3: How does a division of labor emerge to organize participant actions around creating a shared expression of knowledge construction in DBT skills training?

“Maybe if we just do half-half and maybe like agree on some kind of medium in between. Like maybe a certain color, so it blends together that way. But it would be two separate pieces other than that” (Participant 0734, Meeting 1).

As participants discussed and constructed their project, a division of labor emerged. A significant portion of these discussions centered around project logistics. This focus seems a natural outcropping of a project with complex logistics for distributing materials. As participants worked within the logistical constraints imposed by COVID-19 safety guidelines, they found resolution through a project structure that reflects the philosophy and content of DBT skills training. Ultimately, these structural, aesthetic, and content decisions result in a division of labor where participants worked individually with full creative reign and found a way to connect with the other participant’s side of the piece.

In creating the art piece, participants came to experience themselves as active agents of knowledge construction and experienced a shift in role from being a patient to a role as a reflective practitioner with the authority to convey knowledge. Reflection is the process of considering one's own beliefs, their origins, and their implied consequences (Dewey, 1933). For reflective practitioners, reflection takes place before (reflection-for-action), during (reflection-in-action), or after (reflection-on-action) an action has taken place (Schön, 1983; Killion & Todnem, 1991).

Reflection-for-Action

During the planning meetings, participants reflected-for-action (Killion & Todnem, 1991) as they made decisions that drove collaborative design and engagement. As they reflected on their shared goals for the piece, participants proposed and tested ideas for the project. These proposals represented attempts to reconcile project constraints with program content and participant priorities of what to represent. Upon reaching agreement on a *half/half* structure, participants considered aesthetic choices that would support – and be supported by – the selected structure.

Two weeks following the first meeting, participants logged into the second meeting with different understandings of what division of labor had been agreed upon in the first meeting. This meeting commenced with the participants reflecting on their understandings and discovering what the other person had understood. Together participants clarified expectations of how the project would be carried out and how the labor would be divided. This included a discussion on the use of color to connect the two sides of the canvas into one cohesive piece, and intentional navigation of uncertainty regarding the piece.

When discussing the content of the piece, participants included considerations of the project's audience as they negotiated its meaning. Participants negotiated and navigated the audience's perspectives as well as the project's constraints as they considered the most effective

ways to construct their project. The participants decided to focus their work on those aspects of the program which stood out as the most significant to them.

“And how to display that and actually express that so people understand, you know? People who might not even know what DBT is could at least get a glimpse of artistically what it means. ... So, I’m still trying to really come to it with a concept. And just over the time that I’ve had – what has stood out to me, and what parts of each module stick out to me” (Participant 0734, Meeting 2).

Reflection-in-Action

Between the second and third meeting, participants reflected-in-action (Schön, 1983) as they worked on their individual contributions to the piece. As participants created their artwork, they externalized knowledge that was previously held internally, and that externalized knowledge became an object of reflection. For Participant 8444, reflecting in their artwork had a globalizing effect on how they experienced the DBT skills. For Participant 0734, reflecting in their artistic process became a direct confrontation of their perfectionism.

The goal of the third meeting was for participants to co-author an artwork title and description. During this process, participants navigated a more collaborative division of labor and reflected in their roles as creators. Individually, participants presented language for the title and description of the piece. Collectively, participants engaged in cycles of proposing ideas, negotiating content, and agreeing on what language to present. These cycles continued until the participants created a description they felt adequately provided context to the piece.

A division of labor emerged as participants took turns proposing and interpreting language. Consensus was reached as both participants identified that their perspectives were reflected in the final description. This iterative process of reflection and knowledge construction provided new perspectives on how participants experience DBT skills training, and what type of community they are a part of building. Participants navigated roles as creators and interpreters as they developed

language to reflect their experiences and considered what meaning it would offer viewers of the piece.

Reflection-on-Action

“My end of assembling this was conveying the difficulty to have it cohesively together and usable. That's why my side looks kind of insane.” (Participant 8444, Meeting 3). During the third meeting, participants reflected on their shared experiences in constructing the piece and the knowledge it holds for them (Schön, 1983). This gave participants an opportunity to reflect on how the artwork represented and impacted their knowledge of DBT skills training. A significant point of reflection occurred as participants constructed a metaphor for the description that would connect the meaning of the piece to its content. In this excerpt, Participant 0734 proposes a metaphor of pictures to describe the concepts held within DBT skills training. While Participant 8444 does not disagree with the metaphor, they propose an alternative construction that shifts its subject.

Participant 0734: “Just like in DBT sometimes it's chaotic, and sometimes you can see the pictures more clearly –”

Participant 8444: “Yeah”

Participant 0734: “I don't know what it is – sometimes DBT –”

Participant 8444: “Sometimes the ideas are in working order and other times they're not. At least for me”

Participant 0734: “Yes. Yeah. Exactly” (Exchange, Participant 0734 and Participant 8444, Meeting 3).

The “you can see the pictures more clearly” metaphor describes the success of skill application as resulting from individual capability. In this first metaphor, it is the individual's ability to perceive the ideas of DBT that facilitates or inhibits the skills' application. The “ideas are in working order” metaphor reframes the process of skill application to focus on the functionality of the skills themselves within a given circumstance. As participants reflected on the piece, they recontextualized the experience of struggling with the application of DBT skills as resulting from the complexity of the skillset, not from their inadequacies as individuals.

Throughout the project, a division of labor emerged as participants collaborated as reflective practitioners. In reflecting-for-action, participants created a viable plan of action that balanced the constraints of the project with their knowledge of program materials. In reflecting-in-action, participants negotiated shared meaning between themselves and the viewers of the artwork. In reflecting-on-action, participants constructed new framing around their experiences of applying DBT skills.

Research Question 4: In what ways are the expectations provided by DBT manuals applied by participants in creating a shared expression of knowledge constructed in DBT skills training?

Program Scope and Standards

“I’ve just been kind of stumped because DBT covers so much. And it’s kind of a to put that in display” (Participant 0734, Meeting 2). The challenge of representing the full scope of the DBT skills training program on a finite canvas created tension for participants. This tension was resolved as participants constructed connections between the DBT skills, the philosophical orientation of DBT, and application, and considered how these connections would be represented artistically.

“Because something that’s been floating around my mind is particular skills and how they become a little bit more clear or prove themselves in how much they can help you over time. I was thinking about things going from in-focus to out-of-focus or vice versa. Something hazy. So maybe words are kind of smudgy and it’s becoming more bold or something like that” (Participant 8444, Meeting 2).

As the project evolved, the navigation of this tension required acceptance of constraints which ultimately propelled the artwork forward. Participant 0734 leveraged the aesthetic and structural constraints provided by Participant 8444’s section to extend an existing color scheme and structure. Participant 0734 engaged with these constraints alongside the content of the DBT skills training program to finalize the structure, aesthetic, and content of the piece.

“I went with your color scheme, and the different modules. Like the first one's supposed to be mindfulness, and interpersonal relationship effectiveness, the bottom one emotional regulation, and then distress tolerance ... I was going for the colors being the same” (Participant 0734, Meeting 3).

Program Outcomes

Participants used their artwork to express their experiences of learning in DBT skills training. In the following section, learning is described using Shavelson and colleagues' knowledge domains (2005). This four-part framework for organizing educational goals and outcomes provides a conceptual structure to examine participant statements.

The first domain of knowledge (declarative) refers to *knowing what* or *knowing that* and encompasses individuals' retention of facts, definitions, and descriptions. There were no statements in any transcript which referred to participants' ability to remember the skills or the processes used to promote skill retention.

The second domain of knowledge (procedural) refers to *knowing how* and encompasses an understanding of how the skills integrate to one another and into participants' lives. Participants discussed their ability to “associate” and “correlate” skills to emotional experiences, and whether the skills were something they could “see clearly.”

The third domain of knowledge (schematic) refers to *knowing why* and encompasses the construction of principles, schemata, and models. Participants discussed that the individual skills must be actively “examined” and “organized” after they are taught in order for the skills to “prove themselves in how much they can help over time.”

The fourth domain of knowledge (strategic) refers to *knowing when, where and how* to apply skills. Participants discussed successful skill application as a product of consistency of practice, and described challenges related to “utilizing” the materials and whether the content of the program was “usable.” In addition to discussing the utilization of skills, participants actively

used the skills taught in DBT during the planning meetings. During the second meeting, Participant 0734 expressed discomfort with not knowing how to navigate the project due to its very open nature. In response, Participant 8444 provided support in the form of encouraging Participant 0734 to embrace uncertainty and anticipate inspiration. Participant 8444's reassurances may represent a manifestation of the skills explicitly taught in the DBT skills training program and implicitly practiced in DBT skills training groups.

“I get that because it was weighing on my mind. And I was like oh my gosh like I don't even know how I'm gonna go about this quite but – I kind of also had in mind, when the things are in my hands and I'm ready to roll – just kind of go with it. And that's the way I've been mentally preparing myself thus far” (Participant 8444, Meeting 2).

This exchange demonstrates that participants have created a zone of proximal development (Vygotsky, 1978) to practice their acquired DBT skills. Initially, Participant 0734 experienced anticipation of the project as distressing. With the support of Participant 8444, Participant 0734 engaged with distress tolerance skills that allowed Participant 0734 to progress through the project.

In the DBT skills training program, skill sets are taught as separate modules. Participants used the art piece to express the realities of integrating these separate skill modules and constructing new behaviors from them in real life situations. As participants considered their experiences in the skills program as a whole, they generated meaning around integrating the skills. “My end of assembling this was conveying the difficulty to have it cohesively together and usable” (Participant 8444, Meeting 3).

Summary

This arts-based inquiry into social knowledge construction in DBT skills training involved several overlapping analyses of distinct datasets. These recursive analyses produced a synthesis that provided insight into participant knowledge construction surrounding DBT skills training. This includes insight into: (1) The use of tools and symbols to mediate shared expression (2)

community negotiation of shared expression of public knowledge (3) the division of labor that emerges to organize participant actions and (4) the application of the expectations and information included in the DBT skills training. This synthesis provides a foundation to use art-based research as a mechanism to explore social knowledge construction in an activity system, establishing a new form of inquiry into DBT skills training, as well as opening up new possibilities for research into learning in general.

CHAPTER 5: DISCUSSION

The purpose of this research study was to pilot the use of an activity system, formed around the creation of a shared art piece, to investigate social knowledge construction in DBT skills training. Recursive analyses of three participant meetings, a participant-generated artwork with title and description, and individual participant interviews, provided unique insight into an activity system that organized participant actions around the shared project. This chapter presents a discussion of the arts-based activity system as a mechanism to facilitate the externalization of practitioner reflections as socially held knowledge, constructs an argument for the use of arts-based activity theory as a research methodology to interrupt harmful patterns in DBT research, and recommends consideration of time and reflection as additional dimensions in participatory activity system research.

Externalized and Physicalized Knowledge

According to Cross (2011), creative endeavors undertaken by a group construct knowledge. This knowledge construction occurs as “a social process of interaction and negotiation between the different participants” (p. 20). The research undertaken for this study illuminated the ways in which negotiating, organizing, and externalizing privately held personal knowledge constructs shared meaning within the group. This public knowledge construction is conceptualized as an activity system which is organized around creating a shared art piece.

Building Knowledge in Negotiating Expression

The arts-based activity system provides a window for researchers to illuminate shared knowledge construction. The collaborative nature of the project pushed participants to discuss publicly knowledge that was previously held privately. As participants created shared understanding of the piece, they described their individually held knowledge of the piece’s content.

For Participant 0734, this involved describing iconographic representations of each skill set. For Participant 8444, this involved describing the abstract representations of emotions. Through their collaborative work, participants established a zone of proximal development (ZPD, Vygotsky, 1978) that supported the application of DBT skills to promote project completion. Subsequent negotiations resulted in a cohesive meaning of the piece that had been constructed by the group. The socially held meaning that participants constructed was the relationship between the emotional experience of integrating and applying skills, and the intellectual experience of learning the skills.

In developing plans for their artwork and discussing its meaning, participants vocalized and negotiated metaphors for experiences they had previously only held internally. Knowledge of participants' individual emotional experiences was externalized through metaphoric color usage – with lighter colors representing calm emotional states and darker colors representing distressing emotional states. In negotiating a shared metaphor around the skills, participants constructed understanding about the origins of difficulties in applying skills. As participants discussed the best metaphor to describe the challenges of applying skills training, they shifted from perceiving themselves as the cause of challenges towards perceiving the skills themselves as originating this difficulty.

Reflective Practice and the Activity System

According to Leont'ev (1978) “activities” in the Activity System are collections of individual “actions”, organized around a shared “objective.” In this research, participants' coordinated “actions” within the Arts-based Activity System created a shared artwork. As participants' “actions” became a collaborative art-creating “activity”, participants became reflective practitioners. Reflective practitioners do not merely do, they think about doing, and consider the best strategies to adapt their individual actions (Schön, 1983). The participants created

artwork and reflectively considered ways to accommodate logistical constraints, accommodate their audience, and represent their understanding of DBT skills training. Individual reflection occurred before an action was taken (reflection-for-action), during the action (reflection-in-action), and after the action took place (reflection-on-action).

Reflection-for-Action

Reflection-for-action includes the intentional thought processes participants engaged in as they prepared to work on their piece (Killion & Todnem, 1991). The collaborative and constructive nature of this research created opportunities for internal reflection-for-action to become an externalized object of study. As participants communicated intentions to coordinate their individual actions around creating a shared piece, they reflected-for-action. Reflection-for-action was most evident during planning meetings, where participants were prompted to create shared intentions and plans.

Reflection-for-action drove collaborative design decisions as participants built connections between the content, structure, and aesthetics of the piece. Participants selected the *half/half* structure of the piece based on reflection-for-action that predicted an inferior outcome from a less deliberate approach. The reflection-for-action prepared participants to take individual actions that supported the collective activity of creating a meaningful work of art.

Reflection-in-Action

Reflection-in-action includes the intentional thought processes that participants experienced while they acted on the piece (Schön, 1983). The research framework piloted in this study created multiple opportunities to externalize and record reflection-in-action. The artwork itself is a record of reflection-in-action, as participants' thought processes during creation infused it with individual meaning. The art produced by participants is a durable artifact that captured

complex and fleeting reflection-in-action without imposing the requirement of translating those reflections into verbal data.

When participants met to create a title and description to accompany the piece their conversation was reflection-in-action, captured through recording and transcription. Recording the description conversation provided a record of – and window into – reflection-in-action as participants engaged with the collaborative creation process. Planning and creation sessions were situated within a context of action that provided an authentic reason for participants to generate utterances. Conversation analysis provided an approach to collect and review data on reflection-in-action that was minimally disruptive of group processes.

Reflection-on-Action

Reflection-on-action occurred after the artwork was completed as participants considered the lessons-learned from the experience. When participants collectively reflected-on-action in the description meeting they negotiated individual meaning that became collectively held knowledge of the piece. During interviews, participants' understanding of the content of the skills shifted significantly as they reflected on the outcomes of the piece. Intentionally creating a space and structure to inquire into reflection-on-action provides unique insight into the application of DBT skills that has not been previously captured in literature.

Centering Participants' Experiences

The research framework piloted through this study prioritized participant voices by purposefully limiting the inclusion of researcher/practitioner input. The skills training practitioner's role did not extend into the research beyond facilitating initial introductions. Participants were further empowered to set the pace and tone of data collection, and conditions were established which allowed issues most salient to participants to surface. The approach to

research undertaken for this publication provides a new type of knowledge that expands current research of DBT skills training. While the findings revealed in this study are likely already present in practice for many DBT practitioners, they are left unexamined in literature, preventing these lessons from being broadcast and generalized across the wider community of DBT skills trainers and therapists.

The Impact of Time

John Dewey once said, “education being a social process... therefore, is a process of living and not a preparation for future living” (1897, pp. 78-79). Learning does not occur in a vacuum prior to the initiation of life, learning and living occur simultaneously and are intertwined with one another. Activity theory invites consideration of contextual factors including mediating tools and the social environment. The impact of time must be viewed as a relevant dimension of context in this system. The dynamic development of artwork, alongside the progressive construction of knowledge, can only be captured through research with considers the relevance of the passage of time.

Outpatient DBT skills training is contextually and temporally situated within participants’ lives. Participants experience several weeks of DBT skills training while they experience the passage of several weeks of their lives outside of therapeutic settings. During this time, learning occurs as participants change, and their environment changes in response. Traditional research methods capture static views at rigid intervals, missing the dynamic shifts that create new configurations of meaning. By situating the canvas within participants’ lives over an extended period, this research invited participants to create a living record of these changes as they occurred.

The extended timeline of the project increased the likelihood that participants would experience life events that would interrupt their engagement. After receiving the partially

completed piece, Participant 0734 experienced several such events that derailed piece completion for almost three months. When working alongside vulnerated communities to collaboratively create knowledge surrounding their experiences, that community's relationship to, and experience of, time must drive project timelines and pacing. Centering participant voices requires intentional effort to elevate the participants' experience with time over the researcher's preferences for expediency, or any sponsoring institution's time-bound requirements for results.

Implications for Research on DBT

Existing research into DBT skills training tends to privilege practitioner voices over participants. This structure implies that practitioners are more trustworthy informants and that the knowledge they generate is more valuable to the field. Coming to respect and recognize the value of participant perspectives in DBT skills training literature is a necessary direction for DBT skills training research. The success or failure of DBT therapy is decided based on whether the skills can be successfully deployed in the context of an individual's life. While practitioners have deep knowledge of the therapeutic and training processes, only participants can truly be considered an expert on the impact that skills have for them. Participant voices can – and should – provide insights which guide the future of DBT skills training research.

The research undertaken for this inquiry intentionally created an environment for DBT skills training group members to identify those aspects of DBT skills training that were most relevant to them. Participants were given full reign to determine their own expression priorities – a structure that stands in stark contrast to researcher/practitioner-driven case studies and trials. This work intentionally rejected the view of DBT skills training participants as passive objects of research whose experiences must be interpreted for them. This research created space for DBT skills training participants to serve as active agents of knowledge construction and experts in their

own experience. Within this space, participants demonstrated profound insight and creativity as they planned and executed their shared project.

Implications for Learning Design and Allied Fields

While this study focused on DBT skills training as a context for learning and knowledge construction, its implications are significant to socio-constructivist theories and research that underly current trajectories for the field of learning design. This research piloted a methodological framework that can be employed to inquire into activity systems of learning communities in nearly any context. In the case of this research, permission to attend and record DBT skills training sessions would have been significantly more difficult to achieve, or possibly denied in full. Other similarly vulnerated groups, and groups whose progress would be disrupted by the presence of a researcher, are often inaccessible to researchers. By creating an activity system outside of the community's regular setting, this framework allows researchers to access social learning processes that may otherwise be inaccessible for a variety of reasons.

Through applying multi-modal arts-based inquiry to study social-knowledge construction, this study demonstrates a methodology that allows participants to express themselves fully and to regard themselves – and be regarded by the field – as knowledgeable experts. The methodology employed in this inquiry expands opportunities for participation, and democratizes epistemology in learning research and theories. For the participants in this study, arts-based research removed the requirement to verbalize internal experiences and expanded their options for self-expression. Learning is a multifaceted process that includes social, emotional, intellectual, and spiritual components. Arts-based research as a methodology offered participants the opportunity to express their experiences without restricting them to verbal expression. The open nature of this research model maximized the impact of participant generated-knowledge on data collection, analysis, and

interpretation. By forgoing rigid data collection structures, creating a responsive analysis approach, and inviting participant interpretation, this methodology provides participants with the opportunity to define the knowledge created in this study.

Beyond its contribution to methodology and epistemology, this research contains significant theoretical implications. This research demonstrates a framework that can be used to jointly explore both activity theory and reflective practice. By conceptualizing individual actions and reflection as comprising the basis of the activity system, this research provides a unifying conceptualization of individual constructivism and socio-constructivism. Through this conceptualization, reflective practice is not regarded as an isolated individual endeavor, but rather as a collectively considered approach to planning, taking, and learning from, actions that are mediated by tools and contextually situated in a social environment. This bridge offers an opportunity to better understand how the individuals engaging in an action impact the whole activity system, and how the whole activity system impacts the individuals that comprise it.

Directions for Future Research

In addition to serving as proof-of-concept for the research methodology, this publication provides a foundation for practice to expand the theoretical basis of socio-constructivism. In addition to providing suggestions for future topics of inquiry, this section discusses communities whose knowledge may become accessible through this methodology and recommends options for expanding the methodology used.

Future topics of inquiry may investigate other triads of the activity system. This work investigated four triads – subject, object, community; subject, object, division of labor; subject, object, tools; and subject, object rules – however there are fourteen other unique triads formed by the activity system that may be investigated. Constructing inquiry around triads formed by the

activity system clarifies research questions, and guides data collection and analysis approaches.

Additionally, future inquiry may incorporate other types of projects to organize the activity system. The construction of a shared work of art was appropriate for the population and context being studied in this research because it allowed appropriate emotional expression and produced a meaningful outcome that would impact the DBT skills training community. This framework, informed by the participatory visual research method (PVRM), can be adapted to examine knowledge constructed through community-based participatory research (CBPR). CBPR engages community stakeholders in developing a research and action plan which will have tangible benefits for that community. Although CBPR originated within public health and environmental research (Viswanathan et al., 2004), it has expanded into other fields and been incorporated into mixed methods research (Dejonckheere et al., 2018). Future researchers following the structure provided by this publication may work with a community of inquiry to determine what type of outcome would provide the most benefit.

A necessary direction for research is inquiry into the social learning processes of group therapies, expanding the basis of knowledge that informs changes to treatment and practitioner training. This publication provides a framework for centering patient voices in this vital inquiry and reducing harm that may be caused by traditional research methods. Group therapies require participants to build trust through mutual openness and vulnerability. The researcher-as-observer does not become vulnerable in the same way, and as a result the presence of the observer tears the fabric of trust woven by the group, potentially reducing the effectiveness of a life-saving therapy. This research approach leaves the therapeutic space unobstructed, and creates a new space for group processes to be expressed.

Additionally, this research approach can be used to inquire into the social knowledge construction of groups with higher needs for discretion. Restricted groups, anti-establishment groups, and groups that are targeted by oppressive forces are hesitant to permit *in vivo* observation of closed group practices. Through creating a relevant-but-separated project, this research provides a framework to inquire into these groups' processes without exposing closed practices.

Finally, future researchers should expand the methodology to collect responses and reactions from individuals who impacted by CBPR. As the community interacts with the outcomes of research, they construct knowledge and meaning surrounding the work. Capturing and interpreting these perspectives would require long-term, dedicated data collection.

Limitations of this Study

While this study provides a foundation for future research and generated themes and trends to inform theory development, it cannot be considered comprehensive or objective. This study provides perspectives from only two participants. While these participants' perspectives provide profound insight into the nature of DBT skills training, they cannot be considered representative of the experiences of the entire population of DBT skills training participants. The results from this study cannot be generalized across the population and may not even apply to the study participants themselves after some amount of time has elapsed.

While the work was purposefully constructed to center participant perspectives, the outcomes are inextricably linked to the researcher's identity. While I attempted to be transparent about how my personal and professional identities impact my perspective on this work, a different researcher would have brought different insights and would have identified different themes, trends, and implications.

Finally, this research was time and resource intensive. Despite only engaging two participants, the work to coordinate data collection, transport supplies, and facilitate communication was substantial and would not be replicable by researchers working with tight timelines or limited access to resources.

Summary

This research leveraged arts-based inquiry to develop an activity system that provided a framework to investigate DBT skills training outcomes that does not reinforce participant pathology. The current DBT research paradigm relies on researcher/practitioner reports of patient progress to identify treatment outcomes. This dominant paradigm replicates patients' lifelong experience of being regarded as unreliable informants of their own experience – a pattern that is partially responsible for the development of the very disorders DBT is designed to treat. The arts-based activity system research framework provides an investigatory option that interrupts harmful patterns by centering patients as active agents of knowledge construction. In this framework, patients are regarded as empowered to construct their own wellness by leveraging the tools and settings of DBT, rather than as passive objects of research and recipients of care.

The potential impact of this research methodology extends beyond the population of DBT skills training participants to offer a framework which centers the needs and voices of a range of vulnerated groups. This methodology supports empowered research participation by addressing harmful research patterns, reducing researcher interference, and expanding the definition of data to incorporate non-verbal knowledge.

Theoretically this research contributes significantly to the field of learning design by forming a bridge between socio-constructivism and individual constructivism. By conceptualizing individual reflections as the components of meaning making in an activity system, this research

demonstrates a unified conceptualization of foundational theories, and further offers a framework to inquire into their nature.

APPENDIX A: PARTICIPANT CONSENT SHEET

Behavioral Research Informed Consent

Principal Investigator: Elizabeth Bailey
Learning Design & Technology, College of Education
313-244-4796
DBTSkillsResearch@gmail.com

Key Information about this Study

You are being asked to be in a research study of shared learning in DBT skills training because you are part of a DBT skills training group. This study is being conducted at Wayne State University. The estimated number of study participants to be enrolled at Wayne State University is about eight. Please read this form and ask any questions you may have before agreeing to be in this study.

The purpose of this research study is to understand how knowledge is developed and shared by a DBT skills training group. Participants will be observed working together to create a piece of art that represents the impact of DBT skill use, and then will be interviewed individually about the artwork itself and the process of its creation. The focus of this research study will be on the content of the artwork, not on your art skills or technique.

This is a voluntary, participatory research study. There is not requirement to participate, and the decision to participate or not to participate will not affect your access to treatment or care in any way.

Study Procedures

If you choose to participate you will be asked to complete a brief survey including some basic demographic information and your preferences for which art supplies to work with. The

group will then work together to create an art piece. The process of creating the artwork will be audio recorded and observed and will be scheduled for 90 minutes. After the artwork is created, you will be interviewed to provide your perspective on the artwork itself and the process of creating it. These interviews will last approximately 30-60 minutes each, and will be scheduled 1 week after the artwork is created. You will be asked to describe the elements in the artwork, their relationships to one another, and your choices in artistic media.

All audio recordings will be kept in a locked, secure location that only the researcher will be able to access. Participants will be assigned a sequential participant number that will appear in place of their name in all transcripts. Participant demographics will be reported in aggregate as a group profile, rather than as individual identifiable information. The artwork will be displayed publicly with the creators' identities anonymized.

Participant Benefits

The possible benefit to you for taking part in this research study is an opportunity to reflect further on DBT skills training and solidify knowledge gained through this therapeutic and training process.

Risks

By taking part in this study, you may experience the following risks:

- Emotional risks: feelings of sadness or anxiety
- Social risks: loss of confidentiality

Study Costs

Participation in this study will be of no cost to you.

Compensation

You will not be paid for taking part in this study.

Research Related Injuries

In the event that this research related activity results in an injury, treatment will be made available including first aid, emergency treatment, and follow-up care as needed. Care for such will be billed in ordinary manner to you or your insurance company. No reimbursement, compensation, or free medical care is offered by Wayne State University. If you think that you have suffered a research related injury contact the PI right away: (313) 244-4796.

Confidentiality

All information collected about you during the course of this study will be kept confidential to the extent permitted by law. You will be identified in the research records by a code name or number. Information that identifies you personally will not be released without your written permission. However, the study sponsor, the Institutional Review Board (IRB), or federal agencies with appropriate regulatory oversight [e.g., Food and Drug Administration (FDA), Office for Human Research Protections (OHRP), Office of Civil Rights (OCR), etc.] may review your records.

When the results of this research are published or discussed in conferences, no information will be included that would reveal your identity.

In all audiotape recordings of you, your identity will be protected or disguised.

Voluntary Participation/Withdrawal

Taking part in this study is voluntary. You have the right to choose not to take part in this study. If you decide to take part in the study you can later change your mind and withdraw from the study. You are free to only answer questions that you want to answer. You are free to withdraw from participation in this study at any time. Your decisions will not change any present or future

relationship with Wayne State University or its affiliates, or other services you are entitled to receive.

The PI may stop your participation in this study without your consent. The PI will make the decision and let you know if it is not possible for you to continue. The decision that is made is to protect your health and safety, or because you did not follow the instructions to take part in the study

The data that you provide may be collected and used by Qualtrics as per its privacy agreement. Additionally, participation in this research is for residents of the United States over the age of 18; if you are not a resident of the United States and/or under the age of 18, please do not complete this survey.

Questions

If you have any questions about this study now or in the future, you may contact Elizabeth Bailey at the following phone number (313)244-4796. If you have questions or concerns about your rights as a research participant, the Chair of the Institutional Review Board can be contacted at (313) 577-1628. If you are unable to contact the research staff, or if you want to talk to someone other than the research staff, you may also call the Wayne State Research Subject Advocate at (313) 577-1628 to discuss problems, obtain information, or offer input.

Consent to Participate in a Research Study

To voluntarily agree to take part in this study, you must sign on the line below. If you choose to take part in this study you may withdraw at any time. You are not giving up any of your legal rights by signing this form. Your signature below indicates that you have read, or had read to you, this entire consent form, including the risks and benefits, and have had all of your questions answered. You will be given a copy of this consent form.

Signature of participant / Legally authorized representative

Date

Printed name of participant / Legally authorized representative

Time

Signature of witness

Date

Printed of witness

Time

Signature of person obtaining consent

Date

Printed name of person obtaining consent

Time

Signature of translator

Date

Printed name of translator

Time

APPENDIX B: PARTICIPANT SURVEY (DISTRIBUTED VIA QUALTRICS)

My name is Beth Bailey, and I am a doctoral student with Wayne State University's Learning Design & Technology program through the college of education. The purpose of this research study is to understand how knowledge is developed and shared by a DBT skills training group by creating a collaborative piece of art. The goal of this survey is to create a participant group profile, and to help me select the art supplies that you will use in creating this work of art. The focus of this study is on the content represented by the artwork, not on participants' art skills or technique.

This survey will be hosted on a secured server hosted by Wayne State University, and the only person who will have access to the responses will be the researcher.

What is your age range? [drop down]

18-24

25-34

35-44

45-54

55-64

65-74

75+

What is your gender identity? [open answer]

What is your racial identity? [open answer]

What is your connection to Wayne State? [multiple answer]

- I am an undergraduate student
- I am a graduate student
- I am a faculty member
- I am a staff member
- I am a member of Wayne State's wider community

How do you like to express yourself creatively (visual arts)? [open answer]

What art supplies do you enjoy using? [open answer]

What art supplies would you like to try? [open answer]

APPENDIX C: PROVIDED SUPPLIES

Table 2

Provided Supplies

Item(s)	Description	Decision to provide
Acrylic paints	Eight tubes of acrylic paint of acrylic paint, of the following colors respectively: Red, Orange, Yellow, Green, Blue, Purple, Black, White. A set of 15 synthetic brushes of various sizes was provided. Brushes ranged in size from ¼” diameter to 1” diameter and were both flat and rounded. A set of two plastic painting pallets was provided for participants to use to mix paints prior to application.	Two participants requested paint.
Brushes		Paint is an expressive and versatile medium that is familiar to participants.
Pallets		Acrylic paint was selected as it can be applied to most surfaces and dries relatively quickly.
DBT skills training materials	One copy of the DBT skills training manual and one copy of the DBT skills Training Handouts book	Interacting with and manipulating a physical manifestation of the DBT skills training manual and handouts provide a mechanism for participants to express their experiences with these abstract concepts.
Magazines	76 magazines/catalogs of varying topics: <ul style="list-style-type: none"> • 9 news/current events • 19 fashion/lifestyle • 23 catalogs • 13 hobby/trade • 12 travel/nature 	Two participants requested collaging supplies, indicating that they would provide a source of inspiration and reduce reliance on individual rendering capabilities.
Catalogs		
Adhesive	8-ounce bottle of Mod Podge brand adhesive with sponge brushes for application.	Multimedia projects like collage require adhesive to be fully realized.
Canvas	One 48” x 60” stretched and primed canvas.	The canvas serves as a surface for expression to be applied.

APPENDIX D: FIELD NOTES AND STRUCTURE

<p>Meeting Field Notes</p> <p>Date: _____</p> <p>Location: _____</p> <p>Researcher: _____</p>
--

Line	Actor	Description of Activity	Time Stamp	Reflections/ questions
<i>1 (example)</i>	<i>Participant 1</i>	<i>Sits quietly and withdraws from camera</i>	<i>0:23:01</i>	<i>Participant 1 seems to be considering Participant 2;s proposal</i>

APPENDIX E: CONVERSATION TRANSCRIPT

Conversation Transcript	
Date:	_____
Location:	_____
Researcher:	_____

Line	Speaker	Statement	Time Stamp	Field Note
<i>1 (example)</i>	<i>Participant 1</i>	<i>“ That ’ s a good idea ”</i>	<i>0:23:01</i>	<i>FN-1</i>

APPENDIX F: INTERVIEW PROTOCOL

Date: _____

Location: _____

Researcher: _____

Participant: _____

Interview introduction script

I'd like to thank you once again for being willing to participate in this research study. As we discussed before, this research seeks to understand learning through social practices of a DBT skills training group. My goal with this interview is to gain a deeper understanding of how you experienced the artwork creation process, and how you interpret the artwork the group created. Our interview today will last approximately thirty-minutes to one hour during which I will be asking you about some of the topics that came up during the artwork creation process, the elements of the artwork, and the choices you made as the artwork came together. You are not required to answer any questions that you do not want to answer or do not feel comfortable answering.

Defining in vivo codes

What does _____ mean to you?

- [in vivo codes identified from conversation recording]

Defining elements portrayed in the artwork

What does _____ represent?

- [elements in the artwork]

What was important to you to include?

What did you want to include that wasn't included?

Relationships between elements in artwork

What is the significance of having _____ close to/far from _____?

What is the significance of the size difference between _____ and _____?

- [element 1][element 2]

Media Choices in the Artwork Creation Process

What caused you to choose _____ to represent _____?

- [media used] [elements in the artwork]

What part(s) of this piece do you think will be the most impactful for a new patient?

Experiences in creating artwork

How would you describe your experiences creating this artwork?

APPENDIX G: INTERVIEWER NOTES

<p>Interviewer Notes</p> <p>Date: _____</p> <p>Location: _____</p> <p>Researcher: _____</p>
--

Line	Description of Action	Time Stamp	Reflections/Questions
<i>1 (example)</i>	<i>Participant traced a triangular shape in the air</i>	<i>0:15:27</i>	<i>Participant is describing relationships between shapes</i>

APPENDIX H: INTERVIEW TRANSCRIPT

The interview transcripts were kept in an excel document with each interview represented in a different tab of the document. The format of each respective transcripts is represented below.

Interview Transcript
Date: _____
Location: _____
Researcher: _____

Line	Speaker	Statement	Time Stamp	Interviewer Note
<i>1 (example)</i>	<i>Participant 1</i>	<i>“ And it’ s a triangle, with three boxes nearby”</i>	<i>0:15:21</i>	<i>IN-1</i>

APPENDIX I: ARTWORK ANALYSIS FRAMEWORK

Elements

- Elements appearing most prominently in the artwork
- Elements described in the artwork description
- Elements appearing most prominently in interview transcripts
- Elements which sparked the most discussion during artwork creation

Relationships

- Relationships between elements most immediately apparent in the artwork
- Relationships described in the artwork description
- Relationships appearing most prominently in interview transcripts
- Relationships which sparked the most discussion during artwork creation

Media

- Media appearing most prominently in the artwork
- Media described in the artwork description
- Media appearing most prominently in the interview transcripts
- Media which sparked the most activity during artwork creation

In Vivo Codes

- Synthesis of in vivo codes that appeared in conversation transcripts, alongside the definitions/tensions between definitions produced during interviews, and corresponded to relevant representations in the artwork including media choices, elements of representation, and relationships to other elements

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ABSTRACT**CONSTRUCTING A WELL-BEING: EXPLORING KNOWLEDGE CONSTRUCTION
IN DBT SKILLS TRAINING USING ART AND ACTIVITY THEORY**

by

ELIZABETH BAILEY**August 2022****Advisor:** Dr. Monica W. Tracey**Major:** Learning Design & Technology**Degree:** Doctor of Philosophy

Through Arts-based Research, constructed within the theoretical basis of the Activity System, participants engaged with dialectical behavior therapy (DBT) program content to develop a cohesive and meaningful project. Participants are conceptualized as reliable experts in their own experience, and as active agents of knowledge construction. Participants generate profound and relevant insights into their experiences – insights that can enhance DBT practice, expand research methodology, and build conceptual connections across theories. The Arts-based Activity System offers a theoretically-backed methodology that can disrupt the harmful parallels between the development of the disorders DBT is intended to treat and the dominant research paradigm into DBT. In this paradigm shift, participants are regarded as empowered to construct their wellness by leveraging the tools and settings of DBT, rather than as passive objects of research and recipients of care. Additionally, this study constructs an argument for the use of Arts-Based Activity Theory as a research methodology to investigate social knowledge construction in communities whose knowledge construction may be otherwise be unavailable to researchers. Finally, this study builds a conceptual connection between the Reflective Practitioner Theory and Activity Theory by contextualizing participant reflections as parts of an Activity System.

AUTOBIOGRAPHICAL STATEMENT

Elizabeth Bailey is a gardener, an activist, and an artist. After completing a bachelor's degree in Business Administration through Wayne State University, Elizabeth entered the AmeriCorps program and discovered a passion for community service that led her to a career in nonprofit administration and program development. While working to build volunteer capacity in nonprofit organizations through training, Elizabeth fell into the role of being a learning designer, which brought her to the Learning Design & Technology program with Wayne State University. Simultaneously, Elizabeth built a practice of social justice activism, identifying challenges of civic engagement as community learning and research opportunities. Elizabeth's emphasis is to expand the definition of knowledge and who can be considered a knower; shifting paradigms of research and practice to recognize that those who are most impacted by an issue are the most knowledgeable about that issue's impact.