Flow, Creativity and Autism Spectrum Disorder: Creatively Supporting Development and Pro-Social Behavior in Children with ASD

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Abstract

This literature review is an analysis of the literature exploring the use of expressive arts modalities with children living with Autism Spectrum Disorder (ASD), with a focus on emotional regulation and behavior modification. Historically, Applied Behavior Analysis (ABA) has been the standard in terms of behavior modification for this population, but current research and qualitative inquiries suggested that members of this population need more support in emotional regulation and communication than ABA is able to provide. Using an intermodal arts-based method developmentally promotes social and communication abilities in children with ASD. Further, channeling stereotypic behaviors into creative flow can regulate, communicate, and increase self-worth. As evidenced by studies incorporating the healing and occupational benefits of each modality, this capstone thesis organized and chronicled the developmental aspects of each modality, as well as their own interrelatedness. This was done by framing the work under the Expressive Therapies Continuum and exploring the healing properties of creativity. By allowing individuals living with ASD to create their own form of communication using multiple artistic modalities, it is believed that maladaptive behaviors could decrease, due to a child's own realization that they are better understood. This could lead to better emotional regulation, efficacy in communication, and stronger socialization. The framework could also benefit clinicians in developing more concise and client-centered treatment plans, that meet both the client's needs as well as the freedom to incorporate the client's personal interests.

Introduction

According to the Center for Disease Control (2017), 1% of the world's population lives with Autism Spectrum Disorder (ASD). The prevalence of the disorder in the United States alone is an estimated 1 in 68 births, which is an increase of 119.4% since the year 2000. It is 4.5 times more common in boys (1 in 42) than girls (1 in 189) and has been reported to occur in all racial, ethnic, and socioeconomic groups. Drexel University's Autism Institute Life Course Outcomes National Autism Indicators Report (2017) reported that by the time individuals living with ASD reach transition age, access to services drops significantly and unemployment rates are as high as 58%. This longitudinal study estimated that 500,000 youths living with ASD will transition to adulthood, lose many of their mental health services, and struggle to find employment. According to the authors of that report, there was uncertainty as to the cause of this decline in employment, but it is clear that the lack of services as these individuals age is of growing concern. In recent years, studies have shown that early intervention is crucial to development and independence of children with ASD and leads to increased success later in life. The current popular intervention that most individuals have access to is Applied Behavior Analysis (ABA) which has been the preferred method of intervention with this population for over half a century. Although ABA is effective in treating behavior, it falls short of supporting the social, emotional, and motor needs of the population. Many alternative interventions have been created to support a more developmental approach to treatment and building skills related to ASD's core deficits. This review organized the current literature surrounding the use of arts as an early intervention tool to support both behavior goals as well as to encourage social/behavioral needs that are significant to future growth and development.

Literature Review

Autism Spectrum Disorder

According to the National Institute of Mental Health (2018), Autism Spectrum Disorder (ASD) described a cluster of developmental disorders that include a wide range of symptoms, skills, and levels of disability. ASD specifically falls under a much larger category of Neurodevelopmental Disorders (NDDs). Currently, the *Diagnostic Manual of Mental Disorders, Fifth Edition (*DSM-V) defined the diagnostic criteria as "persistent deficits in social communication and social interaction across multiple contexts," with "restricted, repetitive patterns of behavior, interests, or activities" (American Psychiatric Association, 2013, p. 50). Diagnoses of ASD can be made as early as prior to the age of three. Faras, Ateeqi, and Tidmarsh (2010) characterized these disabilities as being comprised of three core deficits, including impaired communication, impaired reciprocal social interaction, and repetitive, stereotypic movements, behaviors or interests. Leo Kanner first explored ASD in 1943, and since then, the definition and understanding of this NDD has continued to evolve. Recent studies have shown that early diagnosis and intervention has increased the success of individuals with ASD by directly treating sociocommunication deficits. Martin (2014) stated that "children diagnosed with ASDs who exhibit deficits in [social/communication development] require intervention as early and as effectively as possible" (p.548). Due to the impact ASD has on development, intervening as early as possible will increase individuals' adaptability and success. The most common ASD treatment is Applied Behavior Analysis (ABA), which will be reviewed in the next section.

Applied Behavior Analysis (ABA)

ABA is an applied science derived from over a century's worth of research based solely in Behaviorism. Cooper (2007) described ABA as "the science in which tactics derived from the principles of behavior are applied systematically to improve socially significant behavior and experimentation is used to identify the variables responsible for behavior change" (p. 20). ABA focuses on a client's environment and its impact on behavior by scientifically and systematically intervening with problem behavior and is based on decades of evidence-based reporting and single-subject methodology. Through behavior imitation and positive reinforcement, ABA attempts basic behavioral functionality without dealing with private behaviors, such as thoughts and emotions. This can be better understood by looking at ABA's philosophical base, Behaviorism.

Behaviorism defines behavior as anything a person does. This incorporates public behaviors (actions and words) as well as private behaviors (thoughts and cognitions). ABA is applied primarily to public behaviors, which are more easily observable and can be changed more effectively through positive reinforcement and imitation. However, evidence in Bremer et al (2016) insinuated that ABA neglects to address the link between public and private behaviors, and essentially undermines the relationship between cognition, thought, emotions, and behavior. Individuals living with ASD are more than the behaviors they present; they are people with complex internal experiences that should be considered and understood. Work in this population involves facilitating individuals with ASD in developing a deeper understanding (to whatever extent is possible) about their inner world, emotional states, and their connection to behaviors, as well as the outside world. Bremer et al (2016) stated that "…individuals with ASD are truly heterogeneous in their behavior and overall functioning, it is important that interventions are

implemented for individuals across the entire spectrum of functioning" (p.911). It is evident that a proactive approach is necessary to eradicate maladaptive adaptive behavior, interact with clients with ASD on a human, client-centered level, and recognize the relationship between covert and overt behaviors. Behavior is best implemented when there is an intrinsic motivation to behave prosocially—because people want to behave. Creativity and creative pursuits will be explored as a catalyst for internally changing behavior, which also embraces the developmental needs of clients within the ASD population. It is the intention of this article to analyze and present a developmental approach to addressing behavioral needs through supporting the core deficits of ASD. Utilizing multiple arts-based modalities, the healing aspects of creative theory hopes to achieve a natural modification of behavior.

Creative Theory

Creativity as a healing construct is a somewhat new frontier within the mental health field. Csikszentmihalyi's (2018) flow theory encapsulated the experience of creative pursuit as "a psychological state of complete absorption" (p.216). Flow, "an automatic, effortless, yet highly focused state of consciousness …" (p.216) is the state of mind that is experienced when individuals are fully immersed in the practice of creating. Musicians who perform regularly together experience flow simultaneously, feeling connected and affected by the music they are creating in the moment. According to Csikszentmihalyi (2018),when people can achieve the flow experience, they are provided with the intrinsic motivation to pursue creative goals. Flow promotes feelings of engagement with the outside world, and the experience itself is rewarding and healing (p. 227). Achieving flow provides instant gratification to the creator but can be difficult to attain. Flow requires the creator to merge action and awareness, to know exactly what needs to be done and how, total concentration in the present moment, a lack of self-

consciousness or fear of failure, and the desire to engage in the activity through merely the joy of the activity. According to Csikszentmihalyi (2018), achieving the flow state provides and promotes a number of health benefits. Within the flow state, creators are said to achieve a deep sense of enjoyment in the task itself, intrinsically motivated to "engage in and persevere with their craft for its own sake" (p. 221). Flow theory studied in K-12 school programs has resulted in enhanced academic achievement and improved quality of experience. Csikszentmihalyi (2018) reported that there is evidence that flow is linked to self-determination and increased motivation towards autonomy, competency, and relatedness. Flow is not only an enjoyable experience for participants, but according to Csikszentmihalyi (2018), it is "central to the development of goals and the self-regulation of behavior" (p. 222). Participating in creative endeavors and experiencing flow can provide the individual opportunities to create complex creative personalities. To achieve what Csikszentmihalyi (2018) called "elite performance," an individual must have the ability to "order consciousness by directing attention toward feedback from the environment and away from distractions... (p. 222)" It is through the understanding of flow and the healing qualities of creativity that these ideas can then be applied to individuals living with ASD.

Creativity and ASD

Integral as Csikszentmihalyi's (2018) findings were to the healthful benefits of creativity and flow, his study was limited due to the absence of participants with disability. It can be naïve to assume that these aspects of creativity are not achievable or applicable to individuals with disabilities. Individuals with ASD tend to display extremely creative personalities, and many of Csikszentmihalyi's descriptions of "complex personalities" could easily be attributed to some individuals with ASD. "…[C]omplex personalities may experience personal challenges, such as

being considered an outsider or 'odd' (because of their idiosyncrasies) or strained relationships" (p. 224). This idea mirrors one of the core deficits of ASD: impaired reciprocal social interaction. The experience of flow also incorporates other core deficits of ASD, such as repetitive, stereotypic behaviors. The American Psychological Association (2013) described stereotypic behaviors or interests as "Highly restricted, fixated interests that are abnormal in intensity or focus (e.g, strong attachment to or preoccupation with unusual objects, excessively circumscribed or perseverative interest" (American Psychiatric Association, 2013). Typically, people with ASD can perseverate for long periods of time with little to no awareness of the environment around them. These intense interests and fixations can allow individuals with ASD to find flow more easily when involved in a creative pursuit attached to their perseverative interests, as evidenced by the following study. Wright, Diener, Smith and Wright (2014) presented a study that assessed visual-spatial creativity in children with ASD using a 3D modeling computer program. Computers were used specifically due to noted computer skills among children with ASD, who used computers within their natural learning environment. Wright et al. (2014) posited that recent studies of individuals with ASD show no difference in creativity to their typically developing peers, though [they] "showed more unique designs (originality) than the typically developing group" (p. 329). Furthermore, they stated that the key characteristics of ASD including "intense focus on one topic, attention to detail, extraordinary persistence and observation, and high levels of energy and motivation [can potentially link] autism to creativity and innovative thinking" (p.330). The purpose was to develop an assessment that built upon the strengths and interests of children with ASD. (p. 330) By creating an atmosphere where clients with ASD can experience flow, clinicians support the instillation of intrinsic motivators that can be accessed as fuel to continue growth and overcome challenges.

According to Csikszentmihalyi (2018), knowledge accessibility is key. "…[T]he more accessible we make domain knowledge to the broadest segment of the population, the more likely it is that potentially creative individuals will learn enough to come up with viable innovations" (p.26). Making creative endeavors accessible to individuals with ASD provides an opportunity to acquire knowledge about themselves, express it to others in novel ways, and receive positive feedback to continue building skills. Wright (2014) stressed that when there is a lack of creative stimulation in the typical ASD learning environment ,"Children with ASD may have fewer opportunities to develop creativity in a traditional educational setting" (p. 330)". Further studies of children with ASD and creativity have uncovered intriguing evidence of novel metaphor creation, despite noted difficulties in comprehending figurative language.

Kisirer and Mashal (2016) developed a study measuring both the comprehension and generation of metaphors in children and adolescents with ASD. Despite difficulty understanding figurative language, children and adults with ASD have an ability to generate their own metaphors, displaying a level of creativity that helps them understand the world around them. "It is not yet known how children with ASD develop the ability to generate metaphors. The finding that children and adults with ASD understand novel metaphors quite well makes this question particularly intriguing" (p. 54).

Kisirer and Mashal (2016) followed an Italian study that measured metaphor creation in adults with ASD but applied the research specifically to children by focusing on the "contribution of executive function to metaphor processing" (p.54). Executive function is an umbrella term that describes neurologically-based skills that involve cognitive control and self-regulation. Additionally, it is elemental to both the creation and the comprehension of metaphors. Previous research has suggested that individuals with ASD present impairments in executive

functioning; specifically impairing planning, set shifting, flexibility, working memory, and inhibition. This can make comprehending metaphors and figurative language a challenge. It is generally agreed that comprehending others' metaphors would be difficult for children with ASD, but according to the results of Kasirer and Mashal's (2016) study, evidence supported the idea that individuals with ASD can develop novel metaphors. Novel metaphors are original comparisons that are specific to one's own life. This study took 73 native Hebrew speakers and divided them into two groups. The first group was comprised of 29 males and 5 females, who had been diagnosed with ASD and between the ages of 9 and 16. The control group consisted of 28 males and 11 females, between the ages of 10 and 15, who were typically developing. Individuals in the ASD group were diagnosed by a community psychiatrist under the DSM-IV-TR criteria. Within the sample size, 14.7% of the participants in the ASD group were diagnosed with Autistic Disorder, 20.6% were diagnosed with Asperger's syndrome, and 65% were diagnosed with Pervasive Developmental Disorder—Not Otherwise Specified. All participants were given a series of screening tests and scored within the age appropriate range. These tests included the Test of Nonverbal Intelligence (TONI-3), a Hebrew picture naming test, and the vocabulary subtest from the Hebrew version of the Wechsler Intelligence Scale for Children (WISC-IV). The researchers noted that no significant differences appeared in performance between the two groups, ASD or typically developing groups. In addition to the screening tests, participants were given a Social Communication Questionnaire covering reciprocal social interaction, language and communication, and repetitive and stereotyped behaviors to further verify their clinical diagnoses.

To test metaphor comprehension, two questionnaires were administered—one testing conventional metaphors (such as a *sharp tongue)* and another measuring novel metaphors (*pure*

hands for example). Each expression also provided four responses, a correct interpretation, a literal interpretation, an unrelated interpretation, and the phrase "this expression is meaningless". Participants were instructed to choose their best answer. To test metaphor generation, a questionnaire was devised that included five incomplete metaphors (*love is____)* and participants were asked to complete the metaphor. In addition, five incomplete similes were presented (*feeling worthless is like ___)*. Participants were then asked to come up with novel ways of expressing the idea they were presented with.

To eradicate any possible reading comprehension issues, participants were given the option to have the questionnaires read aloud by the experimenter. The answers were then judged by adults who were blind to the study hypotheses and did not know who had provided the responses they were rating. In addition to the metaphor questionnaires, participants were tested for executive functioning skills using the Ambiguous Word Meaning Generation Test (AMGT), and the Train Making Test (TMT), along with tests assessing both phonemic and semantic fluency. The testing was done individually, either at home or at school. Each participant was screened and then tested in two separate sessions. Half the group tested their executive functioning skills first and then took the metaphor assessments, while the other half was tested in reverse order. The results showed that although the typically-developing group performed better than the ASD group on conventional metaphor comprehension tests, no significant difference was found in the comprehension of novel metaphors. In terms of metaphor generation, the ASD group performed better on the novel metaphor assessment than the typically-developing group. Although it had been expected that typically-developing participants would perform higher on conventional metaphor comprehension and generation than those in the ASD group, the ASD group performed higher on creative metaphor generation.

Kasirer and Mashal (2016) stated that persistent difficulty in figurative language can be a result of an "inability to integrate necessary information from different modalities, judge the plausibility of events, and understand a co-locutor's intention in presenting a message" (p. 60). In relation to novel metaphor creation, Kasirer and Mashal (2016) believed that the multiple choice format may have made processing metaphors easier for the ASD group. Conventional metaphors require a level of previous knowledge to better understand the expression. Novel metaphors are not coded in what Kasirer and Mashal (2016) called a "mental lexicon" and therefore no prior knowledge is necessary. The researchers posited that "Individuals with ASD can explain novel metaphorical phrases in unique ways that rely on good associative abilities rather than lexicalized verbal knowledge" (p.60). Despite the difficulty with conventional metaphors, this study highlights an advantage that individuals with ASD display—the ability to create unique verbal associations because of the tendency to "think less conventionally and are not limited by lexicalized knowledge" (p.60).

This study was integral to understanding creativity within individuals with ASD because it highlighted an ability to develop novel metaphors to assist in processing the world around them. In addition, providing a platform for children with ASD to express their metaphors while their clinicians and caregivers take time to interpret their novel metaphors would help promote relationships, and assist in developing new communication tools that are more successful than maladaptive behaviors. To apply the use of flow to growth in behavior communication, organizing creative experiences in a developmental framework would help provide specific directives that can support cognitive domains and functioning. This article presents the idea of utilizing the Expressive Therapies continuum as a framework to support the development of

sensory regulation, socioemotional communication, and the management of stereotypic behaviors and interests.

The Expressive Therapies Continuum (ETC)

When counseling children with ASD, therapists can utilize the therapeutic relationship as a tool to building communication. Subsequently, the client works on building underdeveloped communication and socialization skills, and therefore the responsibility of creating and maintaining connection falls on the clinician. Meeting clients where they are developmentally may involve relating on a simpler level. Lusebrink's Expressive Therapies Continuum is a map that can provide a pathway to social participation and emotional regulation, in a way that is adaptable to the client (Hinz,2009).

The Expressive Therapies Continuum (ETC) is a developmental framework that highlights the healing dimensions of varying expressive experiences. According to Hinz (2009), "The [ETC] represents a means to classify interactions with art media or other experiential activities in order to process information and form images" (p.4). The ETC organizes experiences in "levels" that involve complementary left and right Hemisphere brain functions. The first level is the Sensory/Kinesthetic level, comprising of learning experiences through the senses and movement. From a developmental standpoint, this is the initial way an infant would interact and learn. The next level, the Perceptual/Affective level comprises of the development of an early awareness of multiple perspectives and experiences of others. This level helps children develop the understanding that the world is larger than one's inner world. Personal actions have consequence, and some people think and act differently than others. The final level, the Cognitive/ Symbolic level, comprises of thoughts and ideas like the adolescent level of formal operational thought. When people achieve access to this level, they are able to process

information outside of their own personal experience. They reach an awareness of a larger network of being; a community of others in which one can connect and interact. Hinz (2009) described the continuum as a "hierarchy"; however, it is crucial to recognize that the strength of each level is contingent on the strength of the previous level. If children struggle with maintaining sensory regulation, their ability to function at either the Perceptual/Affective or Cognitive/Symbolic levels is compromised. This paper reframes the ETC as a developmental framework rather than a hierarchical framework. Creativity plays a pivotal role in one's ability to move through the levels. Creativity, although viewed as a level, is infused in all levels. Lusebrink's (2009) perspective on creativity complemented Csikszentmihalyi's (2018) understanding of creativity and flow theory. Csikszentmihalyi (2018) affirmed that, "Creative involvement itself can be healing without cognitive overlay or symbolic interpretation" (p.12). Lusebrink (2009) seemed to agree that the act of creating can provide healing on its own. By organizing directives in this fashion, clinicians who work with individuals with ASD can create a guide that supports the healing aspects of creativity, while providing focused attention on components that directly address ASD's core deficits.

The Sensory/Kinesthetic level. In the early months of life, sensory and kinesthetic interactions govern how children relate with the world around them. Information processing at this developmental stage is primarily focused on the kinesthetic and sensory experiences one has in the world. Infants interact and begin building attachments through touch, sound, taste, vision, and smell. Hinz (2009) stated that "information gathered through these channels does not require words; it is rhythmic, tactile, and sensual"(p.6). These early moments in life are integral for developing social and communication abilities, and studies have shown that they are interrelated. Martin (2014) highlighted that "literature points towards a coupling of motor development and

social/communicative maturation (p. 546)" The Sensory and Kinesthetic levels of the ETC can support the social and communicative development that occurs during the first year of life. According to Hinz (2009), "Infants up to the age of 18 months take in information through their senses and receive feedback about their behavior predominantly though their own movement, but also through internal and external sensations" (p.6). The sensory and kinesthetic information gathered in this realm is considered preverbal in that our bodies experience and process external stimuli prior to the development of language. Infants begin to learn that specific movements and sensations can elicit a response from caregivers. Each level of the ETC involves both left and right brain components and interacts with both hemispheres simultaneously. Understanding the impact each level has on behavior will provide a more thorough look at how creating within this level is necessary.

Kinesthetic activities are considered the most basic level of expression and as mentioned above the first mode of expression for infants. Although most art mediums involve some level of incidental motor activity, when used therapeutically, motor action expresses or changes creative energy. According to Hinz (2009), "Kinesthetic information provides feedback about how the body moves in space and a sense of bodily rhythms" (p. 40). Kinesthetic information is integral to nonverbal communication as it governs moving through space and the management of bodily tension. The healing properties of kinesthetic activities are paramount, as they can help control an individual's level of arousal or tension. Kinesthetic art activities can have an isomorphic quality to them; the ability to express an internal state through an external experience. For example, releasing energy by punching or squishing clay when one may feel internally angry is an isomorphic activity. Therefore, kinesthetic components are directly connected to sensory components, which will now be explored.

Sensory activities involve processing information through inputs including taste, smell, vision, touch, and auditory reception. In general, sensory information does not involve any sort of cognition from the individual; it is purely managing the response of the body from internal and external stimulation. Traditionally, it is believed that sensation lays the foundation of emotion and cognition. Learning to manage sensory information is integral in terms of sociocommunication and emotion regulation. Sensory input is virtually ongoing, and people go through their lives inundated with sensory input.

Hinz (2009) stated that "sensations form the basis of mental activity, and achieving a meaningful sense of self depends in part on the ability to decipher this ambiguous and sometimes confusing flow of sensory input" (p.60). Sensory information, similarly to kinesthetic information, exists in most arts-based modalities. Art materials have tactile qualities and can either enhance or hinder the creative experience at the sensory level. For example, finger painting promotes an experience that involves both visual information and tactile information, as evidenced by the shapes the creator makes as well as the sensation of paint on the fingers. It can also have olfactory qualities, such as responses from the odor of the paint. Whether the sensory experience is harsh or pleasant, "early sensual experiences inform the infant's sense of security and provide the basis for emotional language" (p. 61). Sensations will continue to evoke emotions as individuals develop. Maintaining control of sensory information as early as possible is integral to their understanding and managing emotions and behavior. In terms of healing, sensory experiences facilitate regulation by dominating consciousness through the physical sensations. Positive sensory experiences assist in people's compartmentalizing external and internal sensorial experiences. Utilizing sensory focused artmaking, clinicians can

therapeutically support the recognition of emotions specifically in individuals who have difficulty accessing, understanding, and labeling feelings. (p. 52)

The Sensory/Kinesthetic level and ASD. Sensory regulation and motor support are significant facets in work with individuals with ASD. Issues with social communication, restricted and stereotypic movements and behaviors, as well as reciprocal social interactions are influenced by an inability to process sensory experiences. Studies showed that activities that support the sensory and kinesthetic needs of children with ASD have a positive impact on sensory regulation and emerging social interaction. Lu, Peterson, Lacroix and Rousseau (2010) presented a study involving interventions in sandplay that encouraged creative play and social interaction in children with ASD. Sandplay therapy in a group context has been studied and reported to help improve self-esteem, decrease isolation, and increase curiosity and self-reflection" (p. 57). This study explored the experiences of 25 elementary school aged participants who attended a sandplay class for ten sessions. The goal of these sessions was to stimulate communication, social interaction, and symbolic play using sand and rhythm and movement-based activities. By providing stimulating sensory and kinesthetic activities, Lu et al. expected participants "to create their own world while in the presence of others, with the possibility of sharing their experience with the group" (p. 57).

Each 60 minute session consisted of an opening and closing ritual, sandplay, and a storytelling exchange. The sessions were meant to provide a structured routine with the opportunity to participate in spontaneous and child-directed play. Each participant needed varying levels of support in terms of ASDs core deficits, and each individual observed a level of growth. Lu et al (2010) stated that "… an initial global analysis of the program was noted for the level of engagement of the children in the activity, the capacity to engage symbolically and the

complexification of stories over time" (p. 59). Exploring the sandplay and interactions at their own level, the participants demonstrated awareness of others in the group, typically through mirroring the play of others in the session. Each week, participants progressed at different rates, but each had moments where they were able to "move to a new level of development as the sandplayer integrates new experiences in their creative process"(p. 59). The significance of this study lay in the positive results that all participants experienced by the end of the 10 sessions. Each participant needed distinct levels of support. Some needed minimal support, while others needed substantial support. Some participants began with pre-symbolic play, interacting with the sand on a purely sensory level. Others were able to generate simple symbols, playing with metaphor, and yet still showed levels of growth beyond their skill set at the beginning of the study. Lu et al. (2010) stated that "over the course of the 10 weeks the increased engagement and investment in the activity supported their developmental skills in communication, socialization and symbolic elaboration" (p. 63). Participants who presented a pre-symbolic level of expression, showed that "the sensory tactile aspect of the sandplay encouraged motor skill development and early social play, while also encouraging emotional regulation" (p.63). Participants who expressed a higher level of play and engagement were able to further expand their play using figurines and toys. They were able to "sustain the development of their emotional thinking and [of] linking abstract ideas into coherent storylines" (p.63). The researchers maintained that further inquiry is necessary to replicate the work and to confirm findings. Studies such as this one highlighted that sensory based interventions promote emotional regulation and can support the development of shared attention and the building of metaphor. Due to the integrated relationship between sensory and kinesthetic experiences, studies focused on the use of kinesthetic activities will now be explored.

As previously mentioned, the kinesthetic component involves motor movement, rhythms, and actions. In work with individuals with ASD, numerous studies show that kinesthetic stimulation can assist in regulation and the release of tension. In Mary Martin's (2014) study, Dance/Movement Therapy (DMT) was explored as an early intervention tool for children with ASD to aid in both motor planning and communication. Motor planning, socialization and communication are linked, and develop early in life. Kinesthetic activities could strengthen these developmental milestones, especially when used as an early intervention tool. Typically, when working with children with ASD who present with motor and sociocommunication challenges, these challenges are addressed separately. Physical and occupational therapists work with motor challenges, and speech and language pathologists as well as behavior therapists support sociocommunication. Martin stated that "these two different areas of deficit have only been recently viewed as connected in autism research, and so, they have only been explored together to a limited extent in the context of early intervention" (p. 546).

Research shows that development of movement, communication, and social understanding are interconnected early in life. According to Martin (2014) "…[I]nfants acquire and refine a whole set of new motor skills within their first eighteen months 'that fundamentally transform their experiences with objects and people'…[and] this coupling has been shown to be challenged in children with and at high-risk for ASDs" (p.546). In addition, children with ASD are less likely to interact with social stimuli, naturally respond socially to others, or at least interact with others. Although verbal abilities vary along the spectrum, "non-verbal skills in social/communication and development are often difficult for children with ASDs and can have an impact on future development" (p.547). Dance Movement Therapy (DMT) can be well suited for this work because it focuses on "body awareness, dance, and relaxation techniques to

facilitate changes on all developmental levels" (p. 548). While few evidence-based, quantitative research studies exist showing the efficacy of DMT and ASD, DMT has the potential to integrate motor functions with social and communication needs. According to Martin, "current research supports the inclusion of the body and relational experiences for the development of a child's brain and that the embodied interventions utilized within DMT can help children with ASDs increase their capacity for social connectedness" (p.548). DMT interventions that meet clients on their terms and where they are in terms of level of non-verbal functioning encourage engagement and relating, support needs around body awareness and coordination, while also fostering rhythm, which can have dynamic effects in terms of functioning. Focusing on these tenets of DMT would help integrate the motor and social/communicative functioning of children with ASD. There are many DMT interventions that can be used to support socialization, communication, and motor planning. Mirroring is an activity to help build engagement and begin developing a connection between clinician and client. It can build imitation skills and nonverbal social interactions. Mirror neurons in the brain function to help people connect the actions and movements of others with emotion, intention, and other experiences. Children with ASD have the ability to mirror, though they are not spontaneous in terms of meaningful social interaction. According to Martin, "Through mirroring, the dance/movement therapist aims to achieve not only an increased ability in the child to imitate, but to actually share in and reflect the body state of the client" (p. 549). Martin further explained that studies have shown that mirroring as an intervention is linked to mirror neurons and can increase empathy, attunement, and social interactions with clients, especially those with ASD. In addition, in one clinical study, children with ASD who have experienced mirroring by adults "demonstrated increased socialized behavior and engaged in more reciprocal play than those who had not been mirrored" (p.549).

Another aspect of socialization and communication is the capacity of motor coordination and body awareness. It is integral to development that a child has the ability to establish a sense of self through movement and bodily awareness. Children must have an understanding of their bodies if they are expected to "cope with the external demands of the environment" (p. 550). Children with ASD who display an inability to understand the body will compromise further development; therefore interventions that focus on the body and coordination encourage their own sense of self and they are better able to relate to those around them. Examples of this include, focusing initially on the patterns and rhythms of breath, then moving through body movements rhythmically to explore how one's own body moves. Games involving pushing and pulling can increase the sense of self and encourage a sense of self-activation. From there, organizing the actions of the body or bringing awareness to specific body parts is particularly useful to children with ASD. Interventions that involve focusing and isolating different parts of the body allow children to explore how their bodies and body parts move. The aim is to "help a child better attain skills that are often seen as developmental challenges (and that are believed to lead to later deficits) in young children with ASDs, including motor coordination, joint attention, and gesturing"(p. 550). Finally, rhythm exists in all facets of life, and exploring rhythm can support attunement, facilitate interaction, encourage communication, and assist in organizing thoughts and feelings. Rhythm is a significant part of life for many children with ASD, whether it is literal--in terms of repetitive and stereotypic movements--or more figurative, as in the need to follow a routine. This can begin with mirroring movements that the client makes or having a nonverbal conversation by responding to the client's stereotypic movements with another movement. A non-verbal dialogue could help the child feel seen and interact on a more social level. Eventually, a call and response could develop, and building a rhythmic movement-based

interaction will allow for continued engagement and creative expansion. Incorporating music and encouraging movement and dance will both deepen the rhythmic experience as well as support regulation by introducing sensory feedback through the experience of listening and responding to music. Utilizing mirroring, body awareness, rhythm, and other kinesthetic experiences within DMT can help children with ASD relate with others and build communication skills, directly addressing the core deficits of the disorder.

The Sensory/Kinesthetic relationship, as with all ETC levels, is one that is curvilinear, or as functioning in one component increases, functioning in the other component decreases. Hinz (2009) described this feature stating that "opposite components of each level at first enhance the functioning of each other. When both components of an ETC level are contributing optimally to an experience, expressive functioning is most favorable" (p. 8). In the Sensory/Kinesthetic Level, optimum functioning would be identified as kinesthetic expression associated with simultaneous sensory feedback. When information processing increases in one component, the processing in the opposite component decreases and eventually blocks functioning in that component. An example of this might be a child who becomes so absorbed in a sensory activity such as sandplay, to the point where the overwhelming constant sensation causes extreme dysregulation. Therefore, it is integral for clinicians to assist clients in maintaining a balance between the left and right brain components of the level they are working in. In addition, success at this level is directly connected to the relationship between the clinician and the client. As trust develops, the more amenable the client will be to the introduction of new directives. Getting to know the client and adapting directives to match the client's interests and ability will help support the client's continued engagement and further the relationship. Martin (2014) aptly stated that "with the individuality of the child in mind, it is also important for the dance/movement therapist to

continue to encourage areas of strength and to always be mindful to incorporate the child's individual interests through sessions" (p. 549). As clients begin to incorporate the nonverbal skills that are supported in the Sensory/Kinesthetic realm, such as sensory regulation and body awareness, and the therapeutic relationship develops, they will naturally begin to form basic images and attempt to identify feelings and sensations. This is an indicator that the client might be ready to move to the next level. This is known as the emergent function. Hinz (2009) explained that the emergent function "potentiate[s] more complex processing of information or images, and often suggests or provokes movement to a higher level of the ETC" (p.9). Obviously, clinical sense will determine when would be appropriate to move to the next level. As a client is able to organize sensory information and regulate their body, their ability to create image and metaphor is increased.

The Perceptual/Affective level and ASD. Once a child can effectively organize and process the world around them, they begin to form basic concepts around imagery and schema. Around the age of two, children begin building the ability to recognize object permanence and develop theory of mind. Theory of mind asserts that people have different thoughts from others and are impacted by others' thoughts and actions. Therapeutic experiences within the Perceptual/Affective level involve information processing and image formation that may or may not involve verbal language. According to Hinz (2009), "Information processing at this level can be emotional and raw, expressed in image without regard to form. Alternatively, it can be characterized by attention to the formal elements of visual expression" (p.6). Concepts around this particular developmental stage involve representational diversity or the idea that each person perceives the world differently. Accepting the idea of theory of mind allows for flexibility and begins to support the growth of empathy in children. Hinz supported this concept by stating,

"Perceptually based experiences can be one method of promoting effective interpersonal communication and satisfying relationships" (p.10). Therapeutic experiences within this realm could broaden clients' awareness of the different viewpoints of others through the use of imagery and symbol formation. In addition to representational diversity and theory of mind, awareness of personal emotional states and emotional communication can develop. Associated with the understanding that others could have different perspectives and emotions, optimal functioning at this level also involves the ability to label and identify one's own personal feelings so others can better understand their perspective as well. The use of visual imagery at this level assists in communicating thoughts and ideas to others, further increasing one's social interactions and communication. To better recognize how expressive experiences can strengthen image formation and representational diversity, it is necessary to compare the two components of the Perceptual/Affective level.

The Perceptual component of this level involves translating internal experiences into external images. Therapy work within this realm assists in manifesting intangible ideas into a visual image in order to communicate or express ideas to others. Hinz (2009) stated that work within the Perceptual component "requires that clients use both visual language and their accustomed verbal language in a parallel fashion to differentiate and describe their inner worlds" (p.79). Perceptual experiences rely on foundational visual elements such as line, color, form, size, and direction. Utilizing these visual elements provide individuals with a container for affectual experiences and safe expression.

As with the Kinesthetic component, the Perceptual component provides enhanced opportunities for isomorphism by externalizing internal experiences through the use of media with high form potential. High form potential was defined by Hinz (2009) as "the ability to

evoke form when handled or used for expression" (p. 80). Materials such as metal, wood, and tile have high form potential. Working with materials that have high form allows individuals to internalize a sense of structure, which can be extremely calming for children. Utilizing basic shapes and images in visual creations assists children in communicating important information. As more of their internal experiences are understood by others using visual schemas, this biofeedback begins to build self-esteem and motivates children to continue communicating successfully to others. The healing element involves providing order to external stimuli to satisfy the internal state. It appropriately manages sensory and kinesthetic information to process and interact with the external stimuli. Activities such as coloring a pre-drawn picture provide a container that can have a calming effect and can reduce anxiety. As involvement in the Perceptual component increases, providing containers for affect, involvement in the Affective component will decrease and naturally become blocked. At times, this could be useful if the emotional experience is overwhelming. At other times, it could prevent access to and recognition of the emotions that are being experienced. A practical manifestation of the use of the Perceptual component is the use of routine and schedules. Schedules and routines provide a level of control to variable external stimuli. Some children with ASD heavily rely schedules and often have a stereotypic need for consistency. Emery's (2004) article stated that " if the [child with ASD]'s routines, patterns, or objects change in their external world, they may experience emotional intensity and distress" (p.143). Children with ASD can become easily overwhelmed and anxious if there is too much stimuli to process, interruptions or surprises within their known routine, and an inability to adapt to changes in their environment. Providing tools that will allow children with ASD to calm their inner state will allow them to access new information and better relate to others. Emery provided a case study tracking the effect of art-based interventions on a six-year

old boy with ASD in terms of his ability to relate to others. Emery stated that "children create art and draw because it is rooted in the need to relate to their world" (p.143). Children with ASD share the same need but show "profound deficits on a perceptual level to contribute to social and communication problems" (p.144). According to Emery, many children with ASD struggle to develop imagery schema, and show little to no interest in drawing. Because of this, "the world of autism has no apparent inner order for relating to objects or for developing such schema" (p.145).

In Emery's (2004) case study, the participant presented with weak object constancy and attended individual art therapy for seven months. Over the course of therapy, the child was exposed to a variety of art media from clay to basic drawing and experienced each through a developmental process, from kinesthetic work with clay to reproducing the McDonald's golden arches when asked to draw his favorite restaurant. By the end of the study, the participant showed marked improvement as he developed deeper emotional connections with the artwork he was creating. He began expressing feelings of pride and appreciation to others as evidenced by his completing a book of favorite restaurants for his clinician. According to Emery, this level of interpersonal relating was not accessible to the child prior to the study. This study provided compelling evidence that developmentally assisting children with ASD in image formation increases socialization and a sense of self. Emery posited that "art therapy for normal or autistic children may serve as a path toward increased awareness of the self. The sense of self remains a cornerstone for relating" (p.147). By providing experiences that support a perceptual component, therapists can support children with ASD in developing not only a vocabulary for relating to others, but a vocabulary to relate to themselves. This relates to the scope of the Affective component.

The Affective component incorporates the arousal of emotions within the interaction of art media. The goal of supporting the Affective component is to enhance the expression of emotion, which is inherently opposite to that of the Perceptual component. Participating in the art process itself can be enough to arouse emotion and combined with the containing aspect of the Perceptual component, can provide clients with emotionally charged symbols that assist in conveying meaning to others. According to Hinz (2009), "Therapists often create therapeutic goals and treatment plans that include helping clients work on the Affective component. Such goals include using art media and expressive experiences to access and identify emotions, to discriminate among them, and to express emotions appropriately" (p.101).

Work in the Affective component involves developing coping strategies to help clients manage their emotions appropriately. "Therapists must be prepared to help their clients understand the function and necessity of emotions in order to begin what probably will impress some clients as an impossible task: deciphering the complex, confusing, and chaotic information available as affective input, as well as determining and executing appropriate affective output" (p.102). Emotions are experienced in varying intensities, and without appropriate management of emotions, dysregulation occurs making it difficult for individuals to access higher levels of thinking. The expressive arts are a powerful tool in assisting clients in expressing, containing, and regulating emotion. Children with ASD struggle to verbalize or communicate their internal experience, so the arts are an avenue to releasing emotion and better communicating needs. When considering behavior as communication, arts-based interventions could be introduced as a prosocial alternative to communicate needs and manage emotions, in hopes of replacing maladaptive behavior. Studies that show arts-based interventions as effective in managing emotions and behavior will now be explored.

Kuo and Plavnik (2015) developed a study to examine the efficacy of an antecedent art intervention on children with ASD. They did so by administering the art intervention prior to a large group instructional session. Citing studies that link the effective use of art interventions to the expression of emotions, sensory regulation, and integration, as well as the expression of imagination and abstract thinking, Kuo and Plavnik (2015) hypothesized that supporting expressive communication strategies prior to a social experience will decrease off task behavior. The predominant cause of off-task behaviors is due typically to an inability to manage emotions. Using a single-subject experimental design, Kuo et al. (2015) explored an arts-based opportunity to practice affect management, and hypothesized that children in this study will show a decrease of problem behavior in the classroom. A group of 11 children between the ages of three and four, with varying abilities were placed in a classroom and provided a combination of large group, small group, and one-to-one instruction, 2.5 hours a day for five days a week. This study followed the progress of one child in the classroom with ASD. By providing beads and lace of an assortment of colors, pictures with animal shapes, and tape to the children in the antecedent arts-based intervention, the participant would create art prior to exposure to a large group setting. Over the course of 20 sessions, with the art intervention introduced after session five, the researchers recorded the frequency of off-task behavior every five sessions.

The participant showed marked reductions in off-task behavior when exposed to the art antecedent. Providing an intervention that included materials with high form potential, such as beads and lace, the participant experienced an environment they could contain anxiety for longer during the large group setting, leading to marked reductions in off-task behavior, such as breaking eye contact and calling out. During the baseline sessions, off-task behaviors that were

present during the first five sessions, such as playing with shoes or touching neighbors' hair, did not present after the art antecedent was introduced. Kuo et al. stated, "when compared to baseline conditions, Joseph *(pseudonym)* repeatedly demonstrated lower levels of off-task behavior through intervention conditions, during which an antecedent art activity was administered prior to large group instruction" (p.57).

Participating in an art intervention prior to large group instruction decreased stress and anxiety by helping children better manage emotions through an activity existing within the Perceptual/Affective component. Emergent function will arise as children begin to develop their own language through image formation and affect awareness, leading to the ability to process information at the next level of the continuum, the Cognitive/Symbolic level.

The Cognitive/Symbolic level and ASD. The Cognitive/Symbolic level involves the development of formal operational thought, meaning information can be processed outside of the individual experience. Optimal functioning in this level involves the ability to manage impulses long enough to plan, think, and execute responses. This is the ideal level in terms of behavior management. According to Hinz (2009), "With increased ability to delay impulses and delay gratification, behaviors that are more complex are available" (pp.11-12). Typically, skills within this level mirror those acquired around adolescence as adolescents "are able to think outside their own experience, and their thoughts have achieved a new level of complexity, [and] they are able to use symbols to represent feelings, thoughts, and events" (p. 12). Utilizing symbols establishes both a communication of intuitive function as well as an understanding that experiences are not fully understood or conscious. This tends to help ground individuals functioning appropriately at this level to accept the complexities of life and can examine how the self exists among the rest of the world. Hinz (2009) believed that "symbol use can allow clients to maintain a healthy sense of

mystery in their lives" (p.12). In addition to the Symbolic component, the Cognitive component essentially encapsulates analytical and sequential operations in order to have access to complex functioning. Cognitive input provides feedback grounded in reality in all areas of cognitive functioning. Learning becomes attainable and optimal when there is a balance in the Cognitive/Symbolic level.

The Symbolic level furthers the concept of image formation to a more advanced degree; it is concerned specifically with intuition, idiosyncrasies, and mythic thought. It allows for information processing through the use of metaphor and figurative language, as well as recognizing nuance in language, such as sarcasm or irony. Hinz (2009) explained that "symbols are multidimensional and often contain repressed kinesthetic, sensory, and affective aspects as well as obvious visual images" (p.145). Symbolic thought assists in expressing ideas and emotions that verbal language struggles to convey. Creative therapeutic experiences and exposure to literary works that focus on nuance and symbol can help support and strengthen symbolic thought. Understanding symbolic thought helps clients realize their own personal feelings through a larger, more universal context. Hinz (2009) believed that "…through work with the Symbolic component, someone who has had many experiences caring for others can begin to consider herself a healer. Integration of this new aspect could promote a new self-definition and guide future personal growth" (p. 147). Ultimately, symbolic ability could reveal to clients how they are impacted by the world around them, and furthers the exploration of the impact they could make in the world. It could help with identity construction, goal setting, and recognizing skills and strength. According to Hinz (2009), "Symbols function as tools for finding solutions to problems on a higher level of integration. (p.158)"

The Cognitive component of the ETC involves the use of complex thought processes, including "abstract concept formation, analytical and logical thought processes, reality-directed information processing, cognitive maps, and the use of verbal self-instructions in the performance of complex tasks" (Hinz, 2009, p.123). Two other cognitive processes that exist at this level are the ability to sequence time and events and the classification and organization of media. Most art experiences can be performed with minimal cognitive input, though opportunities can exist even within the simplest of art interventions. To support the use of cognitive input in children, the use of drawing, for example, can be used due to the amount of motor planning and decision making involved when creating an original image. Common decisions include where to start, how much space to use, and where to take the drawing, among others. Intention plays a significant factor within the Cognitive component. Hinz (2009) explained that "the Cognitive component includes thought processes that are intentional and deliberate, requiring a conscious effort at planning, decision making, sequencing and problem solving" (p. 124). Typically referred to as executive functioning, this level of functioning develops around adolescence. Clinicians exploring the cognitive dimension of the ETC can promote the development of formal operational thoughts. The Cognitive component can assist children with ASD in the building of problem-solving skills, cause-and-effect thinking, planning, and sequencing, as well as reflecting on actions in the past.

The combination of Cognitive and Symbolic components takes information from previous levels, such as image formation or sensory and affect management, and reflect them outward to better communicate the self to others. Once children with ASD are able to self-regulate and express feelings to others, the Cognitive/Symbolic level can facilitate their practical applications of strategies developed in previous levels. Drama and music are extremely

supportive modalities for children with ASD because these modalities create both abstract and concrete spaces that allows clients to practice being in the world. Both modalities incorporate interpersonal and intrapersonal interactions due to their collaborative qualities, both create opportunities to problem-solve reality-based issues through art, while also incorporating all experiences of previous levels. For example, theatre creates an arena in which the combination of kinesthetic and sensory experiences can be explored through blocking and embodying different emotions. Perceptual and Affective experiences are explored through the container of given circumstances, scenes, and themes, all to practice interactions that might actually occur in reality. Sensory, kinesthetic, perceptual and affective experience are all combined when playing music, either alone or with others. Sensory and Kinesthetic components are supported through the physical playing of instruments or dancing. Writing music incorporates affective experiences through the creation of instrumental music that evoke specific feelings, while perceptual elements might be included in writing lyrics to express experiences. The dynamic piece of the Cognitive/Symbolic component involves the interaction of the Self with the social world around it and it is through the application of creativity that growth occurs through each level. Music specifically can have a significant impact on both cognitive and symbolic abilities. Studies have shown that music can have a positive impact on children with ASD. According to a meta-analysis of research studies that measured the effects of music therapy on children with ASD, Zhi-Min Shi, Gui-Hong Lin, and Qing Xie (2016) cited numerous articles that explore the impact of music on children in this population. According to Shi et al. (2016), "…the majority of children with autism show great interest in music, and some even possess superb music perception and superior sound discrimination abilities" (p.137). This particular article studied 69 articles studying the effects of music therapy on a sample size of 228 boys and 72 girls between

the ages of two and seven. The studies themselves focused specifically on the impact music therapy had on mood, language, behavior, and social skills. Each study involved an experimental group using music therapy or music therapy in conjunction with other therapies. All involved a control group without exposure to music therapy. Using the Clancy Autism Behavior Scale, The Childhood Autism Rating Scale (CARS), and various other Autism assessments, researchers evaluated participants' mood, language, behavior, sensory perception, and social skills. The severity of symptoms was reflected by how high they scored on each assessment. Each study and group involved children who were comparable at baseline before the interventions. They discovered that when exposed to music therapy, participants experienced positive improvements in mood, language, behavior, and social skills. Children were exposed to music listening, singing, playing musical instruments, performance, and music storytelling within therapy sessions. Exposing the brain to music can promote cognitive development in children. According to Shi et al. (2016), "The acoustic waves of music act on the brain's limbic system and reticular formation of the brainstem and thereby, improve the excitability of nerve cells. Music forms complex auditory stimuli through the rhythm and melody…[and can cause] emotional resonance through exposure to different music information"(p.140). Further, it "can promote brain development in children while it facilitates the development of multiple abilities, including attention, memory, imagination, abstract thinking, and language" (p. 140). Through the use of music, children with ASD can enhance their sense of social activities and learning. Music, as with other modalities, ignites the creative component of the brain, allowing for a synchronicity between the left and right sides of the brain to build skills and increase self-worth. The Creative Level is integral to the attainment of each level.

The Creative level. The creative level of the ETC is integral to movement between the three other levels. According to Hinz (2009), creativity involves more than a cognitive process: "it refers to both the synthesizing and self-actualizing tendencies of the individual" (p.169). It synthesizes the inner experience and outer reality, the client and the use of media, and finally the union between experiences and expression. It helps individuals attain a level of self-actualization, or the "desire to become everything that [they are] capable of becoming—united and whole in a consistent self-perception" (p.170). Participation in the creative level helps individuals recognize their strengths and develop motivation to continue excelling. In terms of children with ASD, providing an environment in which they are able to achieve a level of self-actualization is a drastic shift from the social narrative that individuals with ASD and other disabilities are exposed to. As they move closer to a level of self-actualization, children and adults with ASD begin to exhibit and utilize theory of mind, empathy, and the strengthening of relationship skills that one hopes will lead to further success as they age. To support children's creativity, a strong therapeutic relationship is necessary as it plays a significant role in the development of children's sense of creativity and recognition of their sense of self. The impact of the relationship can be seen as early as the Sensory/Kinesthetic level. When working in the Sensory/Kinesthetic level, children with ASD learn to manage external information through co-regulation techniques. The clinician assists in helping the client with sensory regulation by introducing the client to sensory and kinesthetically-based activities that help manage external stimuli. As the client learns to regulate and cope, maladaptive behaviors associated with sensory and kinesthetic dysregulation can naturally be replaced. Experiences within the Perceptual/Affective level channel creativity to help identify feelings and emotions, as well as creating imagery and expressive language to not only better understand the self, but to help

others better understand the child. The relationship role is integral in assisting the child to practice communicating internal experiences to the clinician. In turn, it allows the clinician to learn any metaphors that the child has already developed, and provide opportunities to support emotional communication. Work within this component also includes developing strategies to help regulate the client, match strategies to the client's internal experiences, and work with the client to share those with others. The client will be not only be able to connect their emotions with effective regulation strategies, but also begin to understand that their actions and feelings differ from others, and that successful communication is key to getting their needs met. The therapeutic relationship develops into a shared co-regulation experience, while the child creatively builds skills for self-regulation. Once the child has reached the Cognitive/Symbolic level, the therapeutic relationship expands to creatively express their needs within a much larger system. Children begin to reflect on how their actions influence their reality. After practicing building a relationship with the clinician, this would be an appropriate opportunity to engage in more social activities or participate in group therapy. Social engagement including social creative experiences will not only continue to build on skills from previous levels, but include the interactions of a more diverse community outside of the therapeutic relationship. Self-actualization has the potential to grow exponentially and the creative experience at this level incorporates the clients' skills with that of the skills of others in the large group.

Limitations. A developmental approach to working with children with ASD does come with some possible limitations. One concern is the amount of time that is dedicated to each client. While time-consuming, working developmentally and getting to know clients intimately is integral to the success of the approach. How much time spent in each level is determined by both the abilities of the client and the therapeutic relationship, and therefore, dedication to each client

is paramount. Although one can never guarantee how long a client's participation within a program might be, it is necessary for clinicians to approach treatment as if it were long term. In addition, moving among the levels is not always a straightforward process, as clients may need to be supported in levels previously attained depending on their immediate needs. Regulation is difficult, and many factors can impede on a client's ability to maintain functioning in particular levels. Developmental milestones such as adolescence can also cause fluctuations between levels. This is natural, and helping clients recognize how to self-regulate and move themselves to the next level is the ultimate goal. During the sandplay study, Lu et al. (2010) described this movement as a "spiral." Lu et al. (2010) stated, "Children tended to work in a spiral rather than a linear fashion, staying with the same themes and building and expanding, with growing flexibility up their play capacities over the course of the program" (p.63). Finally, of the many studies involving the use of arts in therapy with children with ASD, most are qualitatively-based, and therefore, more quantitative studies are necessary to scientifically capture the therapeutic outcomes. Studies also need to be repeated in order to take into consideration possible variables that may influence outcome.

Discussion

Due to the core deficits that are associated with Autism Spectrum Disorder, children in this population struggle with socialization and communication. When forced to develop behaviors based on their own novel metaphors, these behaviors typically present as maladaptive. Maladaptive behaviors reinforce a lack of connection with others. If left unaddressed, developmental milestones will continue to be adversely affected, while children could become increasingly isolated. As presented in this thesis, treating solely maladaptive behavior is not enough. Engaging a child's ability to relate to themselves and others will lead to more prosocial

behaviors. Additionally, it strengthens a child's self-worth and a desire to connect with others around them. Utilizing creativity as a therapeutic tool with this population instills an appreciation for the self and an interest in connecting with others. Approaching stereotypic behaviors as flow can channel the behavior into an opportunity to relate interests to others and promote the use of creativity to self-regulate. Incorporating the expressive arts to support the development of sociocommunication skills, children with ASD will naturally choose more prosocial behaviors as those will lead to their needs being met more quickly. In order to test this theory, a quantitative analysis studying the efficacy of the Expressive Therapies Continuum to change maladaptive behaviors is necessary. Due to the time dedicated to building a strong therapeutic relationship, a six-month study is recommended in order to provide the adequate time needed in each level. Ideally, treatment would begin with individual therapy sessions as the client explores and gains control at a Sensory/Kinesthetic level. As the client begins to attach to the therapist and presents signs of relating and early image formation, time spent in the affective/perceptual level could be utilized by introducing the client to an appropriately-matched dyad. In addition to individual therapy, dyads can be created where the clinician can support the client in developing relationships with another peer. As the client begins to present a more independent level of relating without the need of the therapist, exploration in the Cognitive/Symbolic realm might be appropriate. Once a client has achieved relating in the Cognitive/Symbolic level, it may be therapeutically appropriate to introduce the client to group therapy. Here, the client can learn from their peers and practice skills in relating with a community. Each of the arts-based coping strategies developed in previous levels can be utilized in this realm to practice real world applications. For example, using drama activities to practice social interactions at school with an adolescent will provide a space where adolescents can practice coping strategies before being

forced to utilize them in reality. Over the course of the six-month study, metrics will be calculated determining both skills the clients are acquiring and the maladaptive behaviors that are decreasing. Reporting from clients' caregivers prior, during, and over six months after the study will establish a baseline and track progress over the course of therapy. It is through the repetition of studies that successful diagnosis, treatment, and accomplishment can be provided to children with Autism Spectrum Disorder which considers the whole of their abilities. Utilizing arts-based interventions early in development can provide additional strength-based support as children , in hopes that by transition age and beyond individuals with ASD can use their unique abilities to achieve independence over the course of the lifespan.

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THESIS APPROVAL FORM

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In the judgment of the following signatory this thesis meets the academic standards that have been established for the above degree.

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