

Spring 5-18-2019

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Social and Emotional Effects of Language-Based Learning Disabilities on Adolescents

Approached Through Dance/Movement Therapy: A Literature Review

Capstone Thesis

Lesley University

05/05/19

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Abstract

Over the past few years there has been a growth in research about the social and emotional effects of having a language-based learning disability. However, most of the interventions and assessments used with this population still primarily focus on the academic effects and do not always recognize the connection between the two. This literature review connects how identity development during adolescence in a school setting is impacted by the social and emotional effects of having a language-based learning disability. Individuals who experience learning difficulties often also experience internal and external academic criticism causing a decrease in self-esteem and an increase in anxiety and depressive symptoms. Dance/movement therapy can be used to enhance interventions and assessments in order to address cognitive, emotional, somatic, and social aspects of this population by allowing individuals to express internal states nonverbally, allowing individuals to feel seen, and creating safety and structure. This review also identifies the areas of potential growth within the current approaches such as understanding differences within the population, giving agency to the clients, and understanding clinician power dynamics. Dance/movement therapy strategies such as nonverbal communication, mindfulness, and the use of imagery can help to address some of these areas of potential growth. Further collaborative research among clients, families, clinicians, and teachers will be necessary in order to create assessments that are inclusive and use the strengths of the individual.

Keywords: Language-based learning disability; dance/movement therapy; social and emotional effects; adolescent development; assessments

Social and Emotional Effects of Language-Based Learning Disabilities on Adolescents
Approached Through Dance/Movement Therapy: A Literature Review

Introduction

“Language is a system of human communication using words, written and spoken, and particular ways of combining them; any such system employed by a community, a nation, etc.” (Reinstein & Burau, 2014, p. 43). When language is affected by, for example, a Language-Based Learning Disability (LBLD) then one’s communication and expression within their communities and environments can be greatly affected. LBLD is a general term for any learning disability that affects spoken or written language (Grigorenko, 2012), such as dyslexia. Individuals with dyslexia and other LBLDs tend to process information more slowly and use a different method of processing and understanding written language that is primarily based in the right side of the brain (Reinstein & Burau, 2014). This is because individuals who have dyslexia have differences in the left hemisphere posterior neural networks compared to a “typically functioning brain” (Reinstein & Burau, 2014). Individuals with dyslexia have difficulty connecting sounds with letters, which translates into having a more difficult time processing written text (Lindeblad, Svensson, & Gustafson, 2016). Additionally, when processing speed is affected it makes it harder to easily perform automatic and unconscious tasks (Reinstein & Burau, 2014, p. 121). Prevalence for dyslexia is between 5% and 17.5% and there is evidence for a genetic component (Eissa, 2010). There tends to be a higher prevalence in girls, it exists in all languages, and there is a higher chance of being bullied or teased when an adolescent has a LBLD (Eissa, 2010). Students who have a LBLD have a higher dropout rate, are less likely to go to college, and have fewer future plans (Eissa, 2010).

There has been increasing research on the emotional and social effects of having a LBLD (Burden, 2008). Although the research continues to grow about these effects, treating and addressing LBLDs still continues to focus on academics such as achievement and academic accommodations. However, research has indicated that academic success of individuals with LBLDs is positively affected by attributes such as self-awareness of learning disability, ability to identify strengths, social engagement, a sense of purpose, self-determination, realistic goal setting, meaningful relationships, and reducing stress (Goldberg, Higgins, Raskind, & Herman, 2003). This research implies that social and emotional success deeply influences the academic success of an individual. However, these components are often not the primary focus while working with adolescents who have LBLDs in an academic setting.

With the social and emotional challenges and the added difficulty of language processing, expressing one's own experiences may be difficult (Burden, 2008). Where language processing can sometimes be difficult (Ceci, 1982), having a nonverbal way of expressing and communicating may help to deepen one's sense of connection and expression (Roberts, 2016). Research has also indicated that self-concept related to self-esteem and self-worth can be affected in this population causing a sense of isolation (Burden, 2008).

Expression is a significant part of forming one's self-concept and identity. Adolescence is a period of development crucial to identity formation (Roeser, Eccles, & Sameroff, 2000). Both the academic life and the non-academic life of an adolescent affect identity development (Roeser et al., 2000). Because LBLDs greatly influence both of these areas it will be important for this population to have both space and a modality to express themselves and communicate in ways that are accessible and attainable.

This writer comes from the perspective of having a LBLD. However, because of family support, resources, and privileges such as race, socioeconomic status (SES), and school districts, this writer had access to environments where she could become successful and leave environments that were harmful or not as accommodating. Even with these privileges, it took this writer a while to understand her potential, identity, and differences. Most students who have LBLDs do not have these privileges, potentially causing an even greater effect on their social and emotional development. It is this writer's goal to create accessible opportunities for these individuals to have the most successful learning environments.

Given the nonverbal community aspect of dance/movement therapy (DMT), specific techniques may allow these individuals to have a space to express themselves, feel belonging, and increase their well-being (Roberts, 2016). DMT is a form of psychotherapy that allows clients to actively embody their own experiences (Hagensen, 2015). The dance/movement therapist, Berrol (1984), observed that because movement is crucial for human development and children learn to navigate through the world using the five senses, movement interventions can provide the needed support for those who have learning differences by helping to integrate motor, cognitive, and psychological development. Movement has shown to help those who have concealed stigmas through grounding, connecting to one's own experience, and connecting with others who have similar experiences (Roberts, 2016). This paper will explore how movement can be a mode of expression that will allow those with LBLDs to communicate their experiences during adolescence. Additionally, this paper will also investigate how DMT can be a method for clinicians to assess the social and emotional needs of clients with LBLDs as well as identify ways in which these assessments can evolve and be further researched.

This investigation will be explored through four sections. The first focuses on the vulnerability experienced during adolescence. The second explores the social and emotional impact LBLDs can have during this developmental stage in order to have a greater understanding on how interventions and assessments can address the needs of this population. The third section explores how specific DMT concepts can be a therapeutic tool in addressing these impacts. Finally, the fourth section addresses how these concepts can be used to enrich the assessment process.

Literature Review

Adolescent Development

It is important to focus on adolescence because it is a transitional stage of development that causes stress and emotional vulnerability for people who have LBLDs (Eissa, 2010). Adolescence has historically been the stage known for self-exploration, understanding oneself, and navigating peer relationships. Erikson's Theory of Psychosocial Development stated that the adolescent stage was the identity crisis stage and was rich in self-exploration (Steinberg & Morris, 2001). More recently adolescence has also been viewed as a time that focuses on developing and organizing self-concepts (Steinberg & Morris, 2001). Self-concepts can include self-image and self-esteem (Lindeblad, Svensson, & Gustafson, 2016). However, in adolescence, feeling adequate and having a strong self-concept can be affected when individuals compare themselves to others causing those who have learning difficulties to be more at risk for feeling less competent and having lower self-esteem (Burden, 2008). Self-conceptions vary in different contexts causing individuals to judge themselves differently based on the setting (Steinberg & Morris, 2001). So, if individuals feel isolated and not competent enough due to their learning disabilities, they may judge themselves more harshly.

Some studies have indicated that adolescents change behavior and are not true to themselves when trying to fit in with peers (Steinberg & Morris, 2001). Although there are differences in adolescents' self-esteem depending on the identities associated with the individual, there is evidence that among most populations having support from peers and family and academic success strongly influences an adolescent's level of self-esteem (Steinberg & Morris, 2001). Self-esteem can be defined as one's own perception of their self-worth and value. It can be manifested through the mediation of one's own perception of their actual self versus an idealized self (Alesi, Rappo, & Peppi, 2012). Because individuals with LBLDs often struggle with school and may receive criticism from others, they can have a negative perception of self and struggle with their self-worth (Burden, 2008; Lindeblad et al., 2016; Reinstein & Burau, 2014). Receiving feedback that their work is inadequate or that they have failed can cause adolescents to feel more helpless and have a higher chance of experiencing depressive symptoms (Reinstein & Burau, 2014). This may also cause these students to feel more isolated from peers. Where processing speeds generally increase in adolescents and adults (Reinstein & Burau, 2014), slower processing speeds from a LBLD may become more evident for individuals during the adolescent stage of development.

During adolescence feeling victimized by peers can also hinder self-esteem and cause both internalizing and externalizing problems (Reinstein & Burau, 2014; Steinberg & Morris, 2001). Internalizing problems refers to emotional problems and externalizing problems refers to behavioral problems (Boyes, Claessen, Badcock, & Nayton, 2016; Reinstein & Burau, 2014). However, having close friends and deep relationships can help alleviate the negative effects of other less positive peer relationships and can increase self-esteem (Steinberg & Morris, 2001).

Studies have shown that services that provide social support can increase a sense of self-concept in adolescents (Steinberg & Morris, 2001).

Other research has shown that in order for identity development to be successful the individual has to take some initiative and responsibility. However, identity development is also affected by environment, opportunities, adult influences, and positive relationships (Roeser, Eccles, & Sameroff, 2000). When individuals do not have appropriate and supportive learning environments, initiative alone will not be sufficient enough for them to be successful. Adolescents are reliant on schools, families, and other professionals to provide environments and opportunities where they can succeed (Roeser et al., 2000). Integrating internal and external factors is crucial for success in this stage of development (Roeser et al., 2000). Adolescence is a stage where changes such as physical, academic, emotional, and social are heightened for any individual (Roeser et al., 2000) and even more emphasized when a LBLD is present. In order to have academic success, create positive friendships, and develop a positive self-concept it is important for adolescents to successfully integrate their physical, psychological, social, and cultural development (Roeser et al., 2000).

Both academic life and non-academic life of an adolescent affect development (Roeser et al., 2000). For instance, if students have higher self-perceptions of their academic ability then they are more likely to achieve higher grades (Roeser et al., 2000). There has also been research indicating that higher emotional stress in adolescents had a positive correlation with problematic behavior in school, affected learning in school, and decreased peer interaction (Roeser et al., 2000). The level of academic success of adolescents is reliant on their perceived ability to manage the classroom work and the degree to which they feel their environment is safe (Roeser

et al., 2000). Therefore, it is important to focus on both academics and social and emotional wellbeing when treating an individual with a LBLD.

Social and Emotional Effects on LBLD

While academic accommodations have been improving over the years (Scanlon & Baker, 2012) a more holistic treatment plan is necessary for adolescents with LBLDs to reach their full potential. There has been increasing evidence that having a LBLD can have a negative effect on the social and emotional aspects of an adolescent's life (Alesi et al., 2012; Alesi, Rappo, & Peppi, 2014; Boyes et al., 2016; Burden, 2008; Eissa, 2010; Lindeblad et al., 2016). One's value of oneself is interlinked with school achievement and vice versa (Alesi et al., 2014). One study demonstrated that children who had learning disabilities had a more negative self-view than their typically-learning peers (Burden, 2008). Another study indicated that dyslexic children have a lower academic self-concept than their peers and it either stays constant or worsens as they move on to higher grade levels (Burden, 2008). There are many studies indicating that self-esteem and academic achievement are interconnected (Alesi et al., 2012; Reinstein & Burau, 2014). Therefore, focusing on self-esteem when addressing LBLDs in adolescents is essential.

One way the negative effects on self-esteem are manifested is through a term coined by Alesi et al. (2012) as self-handicapping behaviors. Adolescents who believe they cannot change their academic capabilities will often engage in self-handicapping activities (Alesi et al., 2012). Self-handicapping is a term that describes the techniques people use that interfere with success in order to protect themselves and maintain their school self-concept. Some examples include procrastination, creating excuses, or not trying (Alesi et al., 2012). Students can hide from their perceived lack of abilities if they create other excuses for not achieving (Alesi et al., 2012). This is a form of self-protection. These strategies tend to emerge during adolescence (Alesi et al.,

2012). Having a learning disability may cause one to experience a loss of control in their academic settings resulting in more engagement in these self-protecting behaviors than their typically-learning peers. Additionally, students with reading difficulties more frequently report seeing themselves as failures (Alesi et al., 2012). This then can create a cycle, by using these handicapping techniques they make it harder to increase academic skills ultimately making it harder to move forward academically (Alesi et al., 2012). With these increased stressors, students with LBLDs can sometimes have lower self-esteem and higher anxiety (Burden, 2008). Anxiety can be defined as a reaction to stressors in the environment and having negative emotional responses to perceived threats (Alesi et al., 2014).

The high demands and the negative effects on self-esteem in adolescents with LBLDs, create higher rates of anxiety and depression within this population (Alesi et al., 2012; Alesi et al., 2014). This may be because there have been clear correlations with school outcomes and mood, resulting in more symptoms of depression when there is less academic achievement (Alesi et al., 2014). Research has also shown that individuals with lower achievement in school are more likely to have anxiety and depression symptoms. Other studies have indicated that about 70% of students with learning disabilities have anxiety symptoms and students with learning disabilities report higher anxiety and depression symptoms than their peers (Alesi et al., 2014). Adolescents with a LBLD are especially prone to experiencing anxiety because not only is anxiety experienced at higher rates when an individual has a LBLD, anxiety symptoms in general also tend to manifest more during adolescence (Alesi et al., 2014). The symptoms of lowered self-worth, depression, and anxiety can create a sense of isolation among peers and can weaken concentration (Alesi et al., 2014).

Some longitudinal studies have provided more evidence that having reading difficulties is correlated with emotional and behavioral difficulties that increase the risk of developing mental health problems in adolescents and adulthood (Boyes et al., 2016). Not only have reading difficulties been associated with anxiety and depression, but these difficulties also have been associated with somatic symptoms, changes in mood, and social and emotional problems (Boyes et al., 2016). Having a reduced understanding about one's disability can perpetuate these symptoms (Lindeblad et al., 2016). This can cause individuals to see themselves as unintelligent because they create self-perceptions based on the feedback from their environments (Lindeblad et al., 2016). Many students with dyslexia have reported that they have felt misunderstood, were perceived as lazy, were thought of as unintelligent, and lacked dedication. These are the types of experiences that may cause these individuals to feel like they are unable to advocate for themselves, feel inadequate, and believe their hard work is going to waste (Lindeblad et al., 2016). The attitudes of others can make it harder for this population to develop positive relationships (Eissa, 2010). The negative impacts of external and internal criticism are increased if the learning disability is diagnosed later because they may have struggled with academics for longer without understanding its origin (Lindeblad et al., 2016).

Even when aware of their diagnosis, adolescents who have LBLDs can still find school frustrating because reading and writing are a central part of academics (Eissa, 2010). These differences with their peers can cause them to feel isolated or embarrassed in writing-and reading-heavy environments (Eissa, 2010). Individuals can embody these academic stressors through somatic responses such as headaches and stomachaches (Eissa, 2010). Psychosocial difficulties are more prevalent with adolescents who have reading disorders, which could impact healthy social and emotional development as one gets older (Eissa, 2010).

Although there has been this plethora of research in the area of social and emotional effects of having a LBLD, there are also some areas of potential growth in this research. Some studies differ in their opinions of the correlation between mental health and learning disabilities suggesting that there might be other risk factors (Boyes et al., 2016; Lindeblad et al., 2016). Some of these factors may include the amount of resources available to an individual student (Boyes et al., 2016). Also, these studies have all been done in western societies and many of these studies do not take into account race, ethnicity, location, gender, or SES when addressing the population with which they worked (Alesi et al., 2012; Alesi et al., 2014; Lindeblad et al., 2016). For example, there has been evidence that both environment and genetics influence processing speed and that children who have varying disadvantages process slower (Reinstein & Burau, 2014). However, this has not been taken into account in these studies. Further research is necessary to identify the different risks within the varying populations and characteristics of individuals with LBLDs. Furthermore, articles continue to use negative language to describe individuals with LBLDs such as having more failures or less efficient ways of learning, thus perpetuating the perceived negative view these individuals have (Alesi et al., 2012; Reinstein et al., 2014). Focusing on changing and creating new interventions and assessments that work with the strengths of the individuals may help address these issues of accessibility, inclusion, and perceptions.

There are many aspects of the social and emotional development of adolescents with LBLDs that are important when considering interventions. First, motivation is often higher when there is perceived support and encouragement from someone close to them (Burden, 2008). Support from teachers and family can help improve self-worth (Lindeblad et al., 2016). Creating a sense of community and a team around support are both important when addressing this

population. Having interventions focusing on increasing self-esteem will be beneficial because increased self-esteem is correlated with having a higher view of self, personal abilities, and believing in self-growth (Alesi et al., 2012). Creating higher levels of self-esteem can also help individuals cope with academic stress and help them have more positive learning experiences (Alesi et al., 2014). One way to do this would be to create spaces for more authentic expression. Authentic expression refers to expression that is true to oneself without having barriers or filters that alter the way in which individuals express themselves. Reading and writing is a crucial part of expression in many communities, so having a LBLD may cause adolescents to feel limited in their communication and expression (Lindeblad et al., 2016). Other forms of expression have the potential to improve true expression within these individuals. Clinicians have to understand the psychological effects of LBLDs in order to address mental health in interventions (Boyes et al., 2016). Creating more appropriate interventions may help to improve the learning environments of adolescents with LBLDs and address symptoms of depression and anxiety (Lindeblad et al., 2016).

The Use of Dance/Movement Therapy

Interventions utilizing body movements with individuals who have language difficulties can encourage expression, a deeper understanding of self-concept, help organize thoughts, and allow individuals the necessary space for their own personal growth (Levy, 2005). Research has also shown that exploring subjects such as movement, self-image, mindfulness, and relationships through interventions such as DMT can be effective when integrated into curriculum during adolescence (Hagensen, 2015). It is mandated by law that academic programs that meet the needs of all individuals be provided in all education settings (Berrol, 1984). Yet, schools have been dropping these programs because there is not enough evidence or not enough funding

(Berrol, 1984). However, offering alternative ways of learning is effective for adolescents' unique experiences and DMT offers an alternative way of learning through the body (Hagensen, 2015). Movement can help meet the needs for academic and socio-behavioral problems. For example, Hagensen (2015) states, "Creative problem solving can significantly increase cognitive abilities and academic achievement, and creative movement can help children relate, be more receptive, and attune to self and others" (p.157). Where DMT helps the mind organize concepts in a visuo-spatial manner, creative problem solving is inherent in its interventions (Hagensen, 2015). Movement and rhythm have also been shown to enhance the development of language (Levy, 2005).

Movement is crucial for both physical and cognitive growth and development (Berrol, 1984) because the mind and body are interconnected, one directly influencing the other (Hagensen, 2015). Children learn through the five senses because it allows them to make sense of their world (Berrol, 1984). DMT can offer interventions for adolescents to explore these senses by creating space to touch, hear, smell, and move through their learning environments and self which will help them make sense of their experiences (Hagensen, 2015). Movement also allows the integration of the motor, cognitive, and psychological developmental processes (Berrol, 1984). Because movement integrates all of these components, movement can help meet the needs for both academic and socio-behavioral problems (Berrol, 1984). Also, learning happens through repetition, which is experienced through the ritual of DMT interventions (Levy, 2005) allowing the learning experience to integrate into the mind and body.

Berrol (1984) theorized that addressing sensory-perceptual-motor processing is crucial when working with learning disabilities. DMT can enhance these functions through group-social interactions, balance, posture, body image, visuo-spatial perception, problem solving, and

structure and organization through rituals (Berrol, 1984). The study looked at 68 elementary school children who struggled academically through tests of comprehension, basic skills and perceptual motor integration. Results showed that movement interventions, specifically DMT and sensory integration activities, seemed effective in increasing academic success but needed further investigation to be conclusive (Berrol, 1984).

Specific DMT techniques have also been shown to address the social and emotional effects of having a LBLD during adolescence addressed above (Hagensen, 2015; Levy, 2005; Roberts, 2016). For example, Roberts (2016) talks about the use of DMT for stigmatized traits that are concealable. A LBLD is a disability that can be hidden from others yet has connotations when revealed. Having what Roberts (2016) calls concealable stigmas can have negative impacts on the cognitive, social, and self-awareness aspects of self. Feeling stigmatized could include a lack of safety in one's own body, not accepting one's self, hiding the stigmatized part of one's identity, and feeling disconnected from the body (Roberts, 2016). DMT can help address the stigmas of having a learning disability because stigmas are rooted in the body and relate to how individuals are perceived, their functions, their experiences, and how they express themselves (Roberts, 2016). DMT can work somatically with the effects of these stigmas.

As mentioned previously, having a LBLD can cause a feeling of isolation. Creating a sense of belonging within a group is crucial when working with individuals who have a LBLD (Levy, 2005). DMT is often facilitated in a group setting, which creates community (Levy, 2005; Roberts, 2016). The community aspect of DMT can provide clients with a sense of belonging and allow them to feel connected to others with similar experiences (Roberts, 2016). DMT methods such as the usage of props, dancing, and play can allow the individual to have different means of communication and work on forming and processing relationships (Hagensen,

2015). Other interventions such as creating a group challenge (for instance, creating a group rhythm, group games, choreographing, and role playing) may allow individuals to connect and feel equal value, organize thoughts, and feel seen and validated through mirroring and attunement (Levy, 2005). DMT helps to reduce the feeling of isolation by allowing people to relate to one another, support each other, and communicate in nonverbal, less threatening ways (Roberts, 2016).

The nonverbal experience of DMT makes the interventions more accessible to adolescents who have a LBLD because the barrier of language processing is decreased. Because DMT is nonverbal it can allow individuals to express themselves more genuinely when verbal language can be limiting (Hagensen, 2015; Roberts, 2016). Specific body-based techniques can help individuals find different ways of coping and processing emotions, relationships, and experiences (Roberts, 2016). Movement from the body can provide insights into internal experiences and provide an outlet for expression (Roberts, 2016). These interventions can help individuals express externally what they might be feeling internally when they cannot express it in words (Roberts, 2016).

This insight into the internal processing of oneself can help individuals to become more self-aware creating more positive self-esteem and a deeper understanding of self (Hagensen, 2015) which is often affected by having a LBLD. DMT can help self-esteem through reclaiming the body (Roberts, 2016). When used appropriately and effectively DMT can free individuals from the limitations and expectations put on them and help them find ownership of themselves and their experiences (Roberts, 2016). Movement can allow individuals to formulate, understand, and express their identities and sense of self (Hagensen, 2015).

One way movement creates this self-exploration is through safety and structure. Having a sense of security can help create a positive self-image. This sense of structure and routine can create ritual for an individual. The ritualistic nature of DMT allows for consistency, structure, and boundaries that will create safety and security for individuals with LBLDs (Levy, 2005). Within structure an individual can gradually build on what is already comfortable and known while still creating a stronger sense of ownership and freedom through encouragement of choices. An example would be gradually moving from gestural movements, to full body movements, to moving through the space (Levy, 2005). Using props also helps to elicit movement and allow the expansion of movement while providing an experience that can create freedom and a sense of joy (Levy, 2005). Creating a sense of joy will allow individuals to have positive associations with themselves and their bodies (Levy, 2005). The goal of DMT is to create a space within the organized structure for the individual to learn about themselves and connect to others (Levy, 2005).

Examples of creating exploration and safety within the structure through DMT are having a structured warm up such as stretching that is consistent each time and creates a sense of grounding and having a ritual for closing the group that allows the individual to feel contained such as a visualization or meditation (Levy, 2005). The primary focus of the session can work on integrating learning materials such as moving through written work or relating classroom materials to movement, improvisation, or role-playing. The session can also work on exploring and strengthening self-image through expressing one's own experiences through movement and working on socialization through moving with a partner or group (Levy, 2005). Through this exploration and having a more concrete and positive sense of self, adolescents with LBLDs can engage more authentically with their environment, develop more motivation to learn, grow in

confidence, and build more modes of communicating and socializing (Levy, 2005). Because of each individual's unique movement they can be seen and recognized and have more agency over self through DMT interventions and techniques (Levy, 2005).

Creating this sense of security and safety with oneself and the environment through DMT can also help adolescents explore other psychological symptoms associated with LBLDs, such as anxiety and depression. Interventions using mindfulness techniques have been shown to reduce stress and symptoms of anxiety and depression (Hagensen, 2015). Mindfulness has also been shown to increase focus, self-esteem, and other psychological symptoms for adolescents (Hagensen, 2015). Mindfulness practices used in DMT such as breathing exercises, focusing, exploration of internal states, improvisation, and authentic movement can allow individuals to feel a stronger connection to their own body (Roberts, 2016) allowing them to more fully process their experiences. Through these techniques, DMT has been shown to be effective in addressing emotional regulation (Hagensen, 2015). Alternatively, using props such as percussive instruments, balloons, or beach balls can give a release to stress in their lives and can elicit movement that may help them release or process anger and frustration also associated with these psychological symptoms (Levy, 2005).

Through structure, trust, and embodied therapeutic presence DMT can help externalize the internalized feelings of an individual while creating space where there is safety to move through these experiences (Roberts, 2016). This creates the space and environment where individuals can address self-concepts, academic experiences, and psychological symptoms that may be present while having a LBLD. Because of this, the use of movement as not only an intervention but also an assessment may provide more insight into the experience of an

adolescent with a LBLD for both the clinician and client and allow the individual to address both the academic and psychological aspects of their lives.

Assessments

“We live in a world that prizes verbal communication, the only way to make sense of the environment or solve a problem” (Reinstein & Burau, 2014, p.28). This further perpetuates the idea that oral and written language are the only way to communicate and express oneself causing individuals that have a LBLD to feel more separate and inadequate and unable to fully express themselves. It also can cause practitioners to feel the need to assess these clients solely through verbal and written language consequently increasing the chances that clinicians see the faults of the individual with a LBLD more than the whole picture. Because writing requires a great amount of cognitive effort, individuals who have a LBLD may feel overloaded and overwhelmed when immersed in writing (Reinstein & Burau, 2014). When using writing in an assessment, individuals with a LBLD may feel so encumbered with the writing that it can become harder for them to process and for the clinicians to evaluate the other information being addressed in the assessment. Before people even develop language skills they are expressing themselves kinesthetically and by interacting with their environments (Reinstein & Burau, 2014). In fact, without fully developing perceptual and sensory systems one cannot adequately develop higher order processes such as language (Reinstein & Burau, 2014). In order to build on individuals’ strengths and see them as a whole it will be important to include movement when assessing individuals with LBLDs.

Environment is perceived through the visual, auditory, tactile, olfactory, gustatory, and proprioceptive sensory systems (Reinstein & Burau, 2014). Including movement in assessments will allow individuals to explore the visual, tactile, and proprioceptive parts of their world. There

are many current forms of movement assessments including, Laban Movement Analysis (LMA), Kestenberg Movement Profile (KMP) (Levy, 2005), and the Davis Nonverbal Communication Analysis System (Davis, 1983). LMA is a form of movement analysis commonly used by DMT practitioners that looks at different qualities and categories of movement and relations called body, effort, shape, and space (Levy, 2005). KMP is a movement assessment that evolved from LMA that focuses on movement from a developmental framework (Loman & Merman, 1996). This analysis system examines how developmental movement can describe and express needs and emotions as well as considers how individuals relate to people, objects, and space (Loman & Merman, 1996).

DMT assessment techniques such as the KMP can address nonverbal expression and communication (Burrill, 2011). KMP is a developmentally based movement assessment that can be used with individuals in all developmental stages (Dayanim, Goodill, & Lewis, 2006). This can help to pick up on the expression of those with LBLDs who have difficulty at first expressing themselves authentically in a verbal capacity. KMP has been used in assessment of children in school settings before (Burrill, 2011). KMP, as well as other movement assessments, have been correlated with children's psychosocial and school functioning (Dayanim et al., 2006). Because movement is an inherent part of developmental expression (Burrill, 2011) it will be necessary to include movement when assessing the social and emotional impact of LBLDs on adolescent development.

It is important to continue to use neuropsychological testing in order to understand the academic needs of an individual and inform part of the whole picture. However, other forms of assessment are crucial in order to complete the whole picture (Reinstein & Burau, 2014). Some problems with current psychological and neuropsychological testing that include language are

that the responses of the clients are all affected by what environments they are exposed to, their backgrounds, their education and access to education, home communication (Reinstein & Burau, 2014), and the languages they speak. Cultural norms are extremely important to take into account when both assessing verbal and written communication as well as movement.

Movement, especially from the perspective of the client, can start to assess how an individual relates without the barrier of language, when taking into account all of these components.

It is not a simple task to assess nonverbal communication and expression (Reinstein & Burau, 2014). Although assessments are important when working with clients who have a LBLD in order to know what further to explore and address, there are many assumptions that can come from the clinician especially when it relates to movement. DMT began a few decades ago to treat primarily white psychiatric patients (Chang, 2004). However, although demographics of clients are significantly different and varied now, many of the psychological and DMT concepts stay the same (Chang, 2004). When working with assessments and DMT it is crucial that clinicians take into account and address how the power and privilege differences between the client and clinician can affect both verbal and nonverbal assessment and interactions (Caldwell, 2013). Although everyone navigates the world by moving through it, the way an individual moves is impacted by gender, cultural identity, SES, ability, location, and interpersonal dynamics (Caldwell, 2013).

The observation of others is crucial to the current use of movement assessments. However, clinicians carry with them assumptions and unconscious biases that may influence their observations (Caldwell, 2013). When creating and utilizing assessments it is important for clinicians to critically examine and address these issues while working with clients who are different than they are including, but not limited to, differences of race, ethnicity, ability, gender

identity, or sexual orientation (Caldwell, 2013). Although the purpose of movement assessments is not to analyze the movement of others, clinicians can unknowingly categorize different movements in a way that is inaccurate due to their unconscious bias towards a specific trait or population (Caldwell, 2013). Not only can movement manifest differently within varying individuals, but movement can also be affected or adapted when clients feel there is a power dynamic within the observation (Caldwell, 2013). One way to address this power dynamic is to deeply consider the perspective of the client as a source of authority. Allowing the client to verbalize their experiences and reflect on their movement, when able, will provide crucial information to pair with the clinician's observations (Caldwell, 2013). The client should be an integral part in the whole assessment and intervention process so that the meaning making should come from the client and not the clinician (Caldwell, 2013).

Assessment approaches, such as the Davis Nonverbal Communication Analysis System, that examine both the client and the clinician can be beneficial in understanding the dynamics and differences within the relationship (Davis, 1983). This system examines through a third party observer the therapeutic relationship, the positions of each individual, each person's actions, and the dynamic between their speech and movements (Davis, 1983). However, because this system is not from the perspective of the client, biases can still come from the observer.

Unconscious biases can manifest in countertransference (Caldwell, 2013). When not addressed by the clinician, it can lead to negative effects on the therapeutic relationship and inaccurate assessment. Creating general assessments of meanings can be harmful because movement is contextualized and could cause misattunement (Caldwell, 2013). Trust needs to be built within a therapeutic relationship before any assessment or intervention can be successful (Caldwell, 2013). Clinicians must constantly be self-reflecting on their own biases and accept

feedback on them from peers and clients (Caldwell, 2013). When creating a movement assessment in order to address the social and emotional side of having a LBLD it will be important to keep in mind the varying backgrounds of each individual client, the backgrounds of the clinicians creating and utilizing the assessments, current assessments that are already validated, environments, the perspectives of the clients, and the brain processes.

The way an individual perceives the urgency of an emotional response is determined by how the brain processes the significance of the event (Reinstein & Burau, 2014). These events or experiences can include both perceived physical or mental threats. Emotional regulation refers to the ability to address and understand one's own emotional reactions as well as having coping strategies to address these reactions (Reinstein & Burau, 2014). Some ways of assessing emotional responses and regulation include self-report, observation, and questionnaires (Caldwell, 2013; Reinstein & Burau, 2014). Some assessments, including the Behavior Assessment System for Children 2nd Edition (BASC2), include feedback from teachers, caregivers, and the students themselves (Reinstein & Burau, 2014). This can give a fuller picture of an individual allowing them to be seen in multiple facets of their lives.

As mentioned above, emotion and achievement are interlinked (Reinstein & Burau, 2014). When either one is affected it can have a large impact on children and adolescents that follows them into adulthood (Reinstein & Burau, 2014). One example of this is how verbal fluency and positive affect impact each other. Being able to immediately respond to your environment is called fluency. Verbal fluency continues to develop into adolescence and it has been shown to increase when a person has a positive affect showing that emotions can affect language and vice versa (Reinstein & Burau, 2014).

Assessments that address both the academic and emotional side of adolescence may prevent negative effects into adulthood. Adjusting to school, academic success, and social and emotional functioning within school have been shown to be connected to visual motor skills (Reinstein & Burau, 2014). Motor planning and sequencing can affect how students process directions in a classroom and how they respond to and process nonverbal social skills (Reinstein & Burau, 2014). There is also a connection between emotion and homeostasis, meaning that if one's emotions are more regulated then their internal body states will also be more regulated, both affecting the other (Reinstein & Burau, 2014). Therefore, movement that helps increase body regulation through mindfulness, patterning, or sequencing may help elicit and regulate emotion and allow individuals to process emotions while being more successful in their academic environments.

In order to be most effective in learning it is important for an individual to have self-awareness when it comes to their educational experience (Reinstein & Burau, 2014). Utilizing an assessment that integrates the client's feedback can allow the individual to have more agency and more of an understanding of their own academic experience (Caldwell, 2013; Reinstein & Burau, 2014). Positive feedback from the clinician can also help to elicit awareness of the academic experience. Studies have shown that when individuals are given positive emotional feedback there can be shifts in behavioral patterning and cognitive processing (Reinstein & Burau, 2014).

Expressive therapies can create beneficial strategies for holding the space and creating a positive therapeutic relationship through the assessment process (Reinstein & Burau, 2014). Some ways that DMT and expressive therapies can create success when working with emotional processing and LBLDs through assessments and interventions include; providing emotional

attunement, creating boundaries, and creating more manageable interventions and expectations (Reinstein & Burau, 2014). Clinicians can provide and create emotional attunement by including the adolescent in developing strategies, anticipating the needs of the client, including client's interests, using play, having awareness of self as a clinician, and using positive encouragement (Reinstein & Burau, 2014). Creating boundaries in a clinical setting can be done in many ways including, creating a clutter free space, discussing appropriate ways of expressing, previewing material, and building in breaks (Reinstein & Burau, 2014). Finally, some ways of creating more manageable interventions and expectations include chunking tasks, meeting the developmental levels of the clients, using clear communication with succinct language and visual cues, moving through the assessment or intervention in a slower pace, presenting concrete information before abstract information, providing scripts, and using stories (Reinstein & Burau, 2014). These guidelines should be tailored to the specific needs of each client. The most successful interventions for language processing "allow interactive learning opportunities that engage multiple senses" (Reinstein & Burau, 2014, p. 225).

Movement assessments in the past have utilized imagery in order to deepen the therapeutic experience and see the different efforts used in LMA (Dayanim et al., 2006). Dayanim et al. (2006) used stories in order to assess the LMA efforts in school-aged children. The students were asked to act out the stories in groups (Dayanim et al., 2006). Although this test was not created for the clinicians to have assumptions (Dayanim et al., 2006), elements of LMA can inherently elicit unconscious biases (Caldwell, 2013) because it was created to be used with specific populations and is currently used mostly by middle and upper class white clinicians. When using images and stories in assessment it is important to remember that different images and stories can have varying associations depending on the client (Dayanim et al., 2006).

Therefore, images should be chosen with the specific client in mind including their cultural background. It will be important to adjust movement assessments to take into account the perspectives of the clients and to ensure they are used to further investigate rather than create assumptions (Dayanim et al., 2006).

As another form of assessment, projective testing, such as the use of imagery and stories, can give insight into children's emotional experiences (Reinstein & Burau, 2014). However, it is up to the clinician to then make the connections from the neuropsychological testing to determine how they are related (Reinstein & Burau, 2014). In order to make these connections, a basic understanding of communication processes is necessary. Both concrete and abstract concepts are needed for communication (Reinstein & Burau, 2014). Assessing through the use of metaphor and reasoning can help clinicians understand an individual's full breadth of communication (Reinstein & Burau, 2014). Working in this way with a student who has a LBLD may assist them in expressing through language the connections between the concrete and abstract. There are three stages when it comes to processing: generating and planning, translating, and reviewing (Reinstein & Burau, 2014). The use of choreographed movement or moving through a story arc can help elicit and develop these stages of processing. Individuals who have differences in the left-hemisphere part of their brains, such as those with a LBLD, are able to see more of the big picture but struggle in the details (Reinstein & Burau, 2014). The use of moving through a story or imagery may help allow the individual to process more of the details that they might otherwise miss. These stories and images can change depending on what the client is being assessed for. However, some examples may include creating a story about a social situation, a specific classroom dynamic, or imagery around overcoming obstacles. More specific research on what images will be effective for this population is needed.

Although the use of assessments is important to understand the needs of the client, there are many flaws in the current use of assessments. Most of the current assessments used for individuals with LBLDs focus on cognitive processes (Reinstein & Burau, 2014) and do not include the social and emotional processes of these individuals. In order to create a whole picture of an adolescent's experience with having a LBLD, movement assessments may be helpful. However, it is important to consider the unconscious biases that clinicians have while observing and the historic use of movement assessments used on very limited populations (Caldwell, 2013). In order to address this limitation, it is crucial to have the perspective of the client be a central part of the assessment. The use of metaphor, storytelling, and imagery through movement is a tool that may be helpful when creating an assessment that can address the social and emotional side of having a LBLD. Other possibilities to consider and research include assessing verbal and written fluency before, during, and after DMT interventions or assessing emotional regulation and processing from the individual's perspective by creating and utilizing self-rating scales within interventions (Reinstein & Burau, 2014). "Assessment of [both emotion and achievement] is a combination of science and art, with the latter being just as important as the former" (Reinstein & Burau, 2014, p.170). Therefore, it will be important to use a collaboration of resources and professionals, including quantitative research and DMT, when creating an assessment for adolescents with LBLDs.

Discussion

Adolescence is a stage crucial to identity development and therefore the experience of having a LBLD increases the social and emotional vulnerability of the individual. For individuals with learning difficulties, the decreased level of adequacy one may feel in comparison to others as well as the repeated criticism heard from others can impact identity

development (Burden, 2008). Academic achievement and emotional regulation are interlinked, both affecting the other. Historically, Reinstein and Burau (2014) believe that, mental health professionals have underestimated the importance of academic achievement or difficulties when it comes to individual's mental health because it is seen as an issue pertaining more to school professionals (Reinstein & Burau, 2014). However, both mental health and academic environments need to be addressed in order to understand fully and allow adolescents with a LBLD to have the most successful environments. Students with LBLDs have been shown to have a decreased self-esteem and increased depression and anxiety symptoms (Alesi et al., 2014). This may come from increased academic stress and the feeling of being misunderstood within the academic environment (Lindeblad et al., 2016). Having supports strongly influences self-esteem and academic success (Steinberg & Morris, 2001).

DMT can help create successful environments by allowing these adolescents to have community, express themselves nonverbally, and be seen. Movement can help express what is happening internally allowing individuals to have a deeper understanding of self (Levy, 2005). Movement interventions can also integrate motor, cognitive, and psychological processing, allowing these interventions to meet the needs of both academic and psychosocial aspects of having a LBLD (Berrol, 1984). For example, because motor planning and sequencing have been correlated with direction following and understanding nonverbal social cues (Reinstein & Burau, 2014), motor planning and sequencing may be important to also assess in order to provide insight into why these individuals are struggling to understand nonverbal cues or classroom directions. Individuals' movements express their whole identity including their health, gender expression, culture, SES, ability, relationship with the observer/therapist, and any other parts of their identity (Caldwell, 2013). Understanding individuals' movement expression from their own perspective

can provide insight into their worlds. Movement combined with metacognition can help provide this insight to an individual and clinician. Metacognition is thinking about and understanding one's own cognitive processes (Livingston, 2003). This strategy is commonly used in academic settings to encourage students to have an understanding of their own learning processes and to be actively thinking about it (Livingston, 2003). Movement can provide a mode of understanding in metacognition with individuals who have differences in language processing.

Movement can start to assess how the individual relates beyond the confines of language. Assessing a student solely through written and verbal language may cause the clinician to not see the whole picture and focus mostly on the challenges of the individual. Environment is perceived through all the senses including the proprioceptive sensory system (Reinstein & Burau, 2014). DMT can be a tool to create an assessment that allows for a more in-depth picture of an individual. For example, music helps with listening and responding within movement, which helps with communication (Levy, 2005). This may promote more authentic back and forth expression, which would allow for a different way of assessing communication. Another way of assessment could be using imagery such as pictures or stories to help elicit scenarios and communication through movement. However, both current DMT assessments and neuropsychological assessments are in need of improvement when it comes to taking into account the power dynamics within the therapeutic relationship and differences among individuals such as race, culture, location, resources, and other aspects of identity. For example, research that focuses on adolescents among minority populations tends to focus on the problems (Steinberg & Morris, 2001). There is a marked need for more research that perceives and understands the strengths of minority communities in order to paint a more complete picture (Steinberg & Morris, 2001).

Reinstein and Burau (2014) reflect on how much information and how many perspectives it takes to make a comprehensive assessment.

Psychological assessments focus on taking a variety of test-derived pieces of information obtained from multiple methods of assessment, and placing the data in the context of historical information, referred information, and behavioral observations in order to generate a cohesive understanding of the person being evaluated. These activities are far from simple; they require a high degree of skill and sophistication to be implemented properly. (Reinstein & Burau, 2014, p.171)

In order to create an assessment that truly captures the full picture of an individual it is crucial that there is a great deal of collaboration. Collaboration among professionals such as psychologists, DMTs, expressive therapists, teachers, and aides are equally as important as collaboration with the individuals who have LBLDs as well as their families. Research has shown that collaboration among providers allows for more effective accommodations (Scanlon & Baker, 2012). These collaborations should include diversity in community, location, culture, ethnicity, race, SES, and any other identifying features.

However, as Berrol (1984) indicated, most studies either have design flaws or are contradictory when it comes to specific interventions and assessments using DMT to address LBLDs. Also, there has been very little research stemming from Berrol's (1984) initial research in how movement interventions can address the academic and socio-behavioral needs of individuals with learning disabilities. There is a need for valid assessments of human behavior within a DMT lens (Berrol, 1984) and for research to have valid and reliable assessments for emotional regulation and expression (Reinstein & Burau, 2014). Tests of the emotions are less quantifiable, therefore harder to standardize (Reinstein & Burau, 2014). When they are left to

the interpretation of the clinician, they can either allow for the uniqueness of the individual to be seen or, on the other hand, increase biased analysis from the clinician. The use of a long term study that combines qualitative and quantitative data while utilizing collaboration may allow for more thorough assessments as well as less bias within the assessment (Boyes et al., 2016).

Boyes et al. (2016) also expressed the importance of having more thorough research in order to understand the different factors associated with the social and emotional side of having a LBLD. Some suggestions are to start with qualitative research that generates possible influencing factors by collaborating with the adolescents themselves, families, and professionals, then identify the main risks and what helps to negate these risks (Boyes et al., 2016). When trying to understand a population through qualitative research the input and view of the client is equally as important as that of the other researchers (Chang, 2004). The qualitative study can then turn into a longitudinal quantitative study to research the factors through a developmental lens (Boyes et al., 2016). Hagensen (2015) also used a youth quality of life questionnaire as well as parent questionnaires to collect data and inform transcripts from DMT sessions. Feedback from clients as well as videotaping can allow for more complete data collection (Dayanim et al., 2006). When more qualitative data are collected from the perspective of the individual and their families, it will create a clearer picture about what factors most directly impact different populations and inform which factors should be quantitatively studied.

Both environment and genetics can affect how fluently one processes (Reinstein & Burau, 2014). Environment will be extremely important to look at and consider when making an assessment because it differs greatly among individuals. For example, something as simple as the type and amount of vocabulary individuals hear in their environment affects how efficiently an individual is able to learn to read (Reinstein & Burau, 2014). Also, interventions and

assessments that are based in the school can be affordable and prevent future mental health problems to develop (Boyes et al., 2016). The continuation of research could create assessments that will allow individuals, parents, and professionals to understand and make adjustments to all environments in order for the individual to have the strategies needed for success, not feel cognitively overloaded, and have more confidence (Reinstein & Burau, 2014). The purpose of the assessment developed should be to understand individuals and allow them to have the environments they need for success and not to put labels or judgments on to them. If the therapeutic space is set up in a way that allows the clients to feel supported, have a sense of success, feel safe, and be able to be authentic (Levy, 2005) then creating an ongoing assessment may be more valid and offer more accurate insight into the individual.

DMT can be a therapeutic tool in order to create this form of an ongoing assessment. When used appropriately it creates support by providing clients a place to be seen, validated, and a sense belonging within a community. DMT also provides safety through its inherent structure and ritual and provides a modality for successful nonverbal communication and genuine self-expression. DMT has been successfully implemented in schools (Berrol, 1984; Burrill, 2011; Dayanim et. al., 2006; Hagensen, 2015) allowing for more affordable and accessible modes for interventions and assessments. With further investigation and collaboration DMT can be used to evolve ways of assessing and providing support for the social and emotional effects of having a LBLD.

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THESIS APPROVAL FORM

**Lesley University Graduate School of Arts & Social Sciences Expressive Therapies
Division Master of Arts in Clinical Mental Health Counseling: Dance/Movement Therapy,
MA**

Student's Name: Lindsey Van Houten Spratt

Type of Project: **Thesis**

Title: Social and Emotional Effects of Language-Based Learning Disabilities on Adolescents

Approached Through Dance/Movement Therapy: A Literature Review

Date of Graduation: May, 18, 2019

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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