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An Analysis of the Occupational Enrichment of the Seattle Children's PlayGarden

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Abstract

This paper analyzes the opportunities for developmental enrichment, as provided by the Seattle Children's PlayGarden, from the perspective of occupational therapy. The PlayGarden, located in Seattle, Washington, is an inclusive playground, preschool, and summer camp that promotes inclusion of children with disabilities. The analysis highlights each area of occupation, as identified in *the Occupational Therapy Practice Framework*, and discusses the garden's contribution to facilitate growth in those specific skills (American Occupational Therapy Association [AOTA], 2014). The intentionality of the design and program structure advocates for children to maximize their independence in activities of daily living, despite the play-based approach. A case study is provided to further illustrate the opportunities presented by the garden to support independence among children of all abilities, and the potential benefits of coupling these services with occupational therapy. The thesis also explains the intentionality of the garden's design and how this concept could be replicated to implement a healthy lifestyle among the next generation.

Keywords: development, inclusivity, play, garden, nature, pediatrics, occupational therapy

Introduction

According to the Center for Disease Control, approximately 18.5% of children in the United States qualify as overweight or obese, affecting about 13.7 million American children and adolescents in total (Center for Disease Control and Prevention [CDC], 2018). An increased prevalence in unnecessary body fat, caused by a combination of sedentary behaviors, unhealthy eating, and genetics, contributes to a series of long-term health concerns that children will likely experience as they grow into adulthood. Children who are overweight or obese are more likely to develop high blood pressure, high cholesterol, cardiovascular disease, insulin resistant type 2 diabetes, circulatory problems, joint and musculoskeletal problems, fatty liver disease, and a meld of psychological concerns, including low self-esteem, anxiety, and depression (CDC, 2018). These multifaceted issues, which are comprised of emotional, physical, physiological, psychological, and social factors, may lead to a decreased quality of life for children that lingers through adolescence and into adulthood. In fact, children who are overweight or obese as children present with higher risks in adulthood regarding type 2 diabetes, cardiovascular disease, and cancer (CDC, 2018). Therefore, early implementation of active lifestyle behaviors and desire to follow a healthy and balanced diet may minimize children's likelihood of becoming a victim of these dangerous health trends.

In the midst of an era overwhelmed by technology and productivity demands, research findings from varying disciplines have documented the positive physiological and mental health effects of spending time in nature (Van Den Berg, Maas, Verheij, & Groenewegen, 2010). Nature is an undervalued aspect of society, despite its ability to lower stress, improve mood, physical health, and facilitate healing and prognosis for those who are sick. While the

production-driven motives of our society encourage people to stay indoors and work through their lunch hours, a walk through a local park might hold the potential to lessen stress and simultaneously increase productivity through attention to non-work environments and focused enhancements.

Review of the Literature

Research by Kaplan has found strong evidence to validate the positive relationship between exposure to nature and restoration from stress and attention fatigue. The Attention Restoration Theory (ART) is grounded in research and categorizes attention into two components: involuntary attention and voluntary, or directed, attention. While involuntary attention is “captured by inherently intriguing or important stimuli,” voluntary attention is “directed by cognitive-control processes” (Berman, Jonides, & Kaplan, 2008, p. 1207). Directed attention requires more energy and contributes to mental fatigue over time, but the ART identifies interactions with nature as a method of restoring this cognitive mechanism (Berman, Jonides, & Kaplan, 2008). Elements of nature subtly attract one’s attention, such as through a sunset, the waves of the ocean, or other visual or auditory stimulus, which discreetly invokes involuntary attention and allows directed-attention mechanisms to replenish (Berman, Jonides, & Kaplan, 2008). Conversely, urban environments often attract attention in a dramatic fashion, such as through loud noises of car horns or obnoxious visual stimuli of advertising and require additional directed attention to navigate spaces and overcome the stimulation. These situations reveal the contradictions in restorative balance among urban and nature environments, exposing the significant benefits of spending time in nature rather than less restorative urban spaces. According to the ART, an individual who interacts with a natural environment is then able to

“perform better on tasks that depend on directed-attention abilities” (Berman, Jonides, & Kaplan, 2008, p. 1207).

Contrary to the belief that a work day with no break is productive, research finds that people would experience greater productivity if they engage in self-care through spending time in nature (Van Den Berg, Maas, Verheij, & Groenewegen, 2010). Van Den Berg, Maas, Verheij, and Groenewegen (2010) collected individualized health data prior to their study, including the “number of health complaints in the last 14 days,” “perceived mental health” as measured through a standardized assessment, and “a single item measure of perceived general health ranging from ‘excellent’ to ‘poor’” to measure a change in health over time, after exposure to nature. Results of this study revealed the positive affective, cognitive, and physiological responses to natural settings rather than constructed settings, as well as more positive responses for those undergoing stressful life events. In fact, the simple presence of green space provides psychological protection to those who inherently experience nature-based coping strategies through their living spaces. For instance, a short walk through a green space provides an opportunity for the directed-attention mechanism to replenish and restore attention to the tasks required to complete the day. Further research reveals that “prolonged exposure to high-quality natural settings may also stimulate life reflection, such as one’s priorities, goals, and purpose” in the larger scheme of life (Van Den Berg, Maas, Verheij, & Groenewegen, 2010, p. 1204). It is difficult to find a definitive amount of time that is considered “prolonged exposure” within the literature, but the results of one study found that as little as ten minutes spent outdoors can improve creative fluency through standardized measures (Williams, Lee, Hartig, Sargent, Williams, & Johnson, 2018). Furthermore, while the study done by Van Den Berg, Maas, Verheij, and Groenewegen (2010) did not clarify the parameters of “high-quality natural

settings,” it can be inferred that these spaces are generally quiet, contain primarily green spaces, and minimal manmade attractions. These findings found that the amount of green space within a three-kilometer radius around the home significantly decreased the number of health complaints and increased perceived general health among stressful times (Van Den Berg, Maas, Verheij, & Goenewegen, 2010).

In an effort to further establish the association between time spent outdoors and activity levels for public health implications, Beyer, Szabo, Hoormann and Stolley (2018) analyzed the continuous data from the National Health and Nutrition Examination Survey from 2009 through 2012. They identified adult respondents between the ages of 20 and 59 and compared the amount of time they spent outside daily on work days and non-work days and their activity levels. This information was analyzed alongside demographic and chronic conditions data to identify health trends and potential relationships (Beyer, Szabo, Hoormann, & Stolley, 2018). The data revealed an inverse relationship between time spent outdoors and sedentary levels, meaning that sedentary time decreased as time spent outdoors increased. In fact, the average individual spent less than thirty minutes outdoors on any given day, but there was a clear trend that “an additional hour of time outdoors on non-work days was associated with a nine minute reduction in sedentary time and a two minute increase in [moderate to vigorous physical activity] time” (Beyer, Szabo, Hoormann, & Stolley, 2018, p. 499). On work days, an additional hour of outdoor time was associated with a “16 minute reduction in sedentary time and a 1 minute increase in [moderate to vigorous physical activity] time” (Beyer, Szabo, Hoormann, & Stolley, 2018, p. 499). Specifically, on non-work days, there was a relationship between having outdoor time to body mass index (BMI), “allostatic load, and diabetes, even after controlling for activity levels” (Beyer, Szabo, Hoormann, & Stolley, 2018, p. 500). Less time spent in sedentary activities lead

to more time engaged in moderate to vigorous physical activity, which has demonstrated countless health benefits regarding the risk of developing chronic conditions (Beyer, Szabo, Hoormann, & Stolley, 2018). These findings have potential public health implications. In fact, some physicians have begun prescribing time outdoors, particularly in nature, rather than suggesting an exercise regime because of lack of commitment to take on an active lifestyle and the evidence-based health benefits of nature (Beyer, Szabo, Hoormann, & Stolley, 2018). This new emphasis on spending time outdoors—as a public health movement—is intended to circumnavigate the barriers to maintaining an active lifestyle and has been expressed as more motivating and less intimidating to those who do not regularly exercise (Beyer, Szabo, Hoormann, & Stolley, 2018). The underlying goal of promoting interaction with outdoor environments is to provide enjoyable opportunities to be active in nature, without the perception of being prescribed a set of monotonous exercises. There appears to be increased benefits to physical activity outdoors than physical activity alone. Individuals who participate in outdoor physical activity report “greater feelings of positive engagement, revitalization, energy, mental well-being, enjoyment and satisfaction than those engaged in physical activity indoors and declare a greater intent to repeat the activity later” (Beyer, Szabo, Hoormann, & Stolley, 2018, p. 500). Furthermore, predictions based on this foundational research indicate that targeting outdoor physical activity may result in “greater impact on chronic disease outcomes,” “reduced fatigue and sleep disruptions,” and “improvements in mental health and cognitive function” (Beyer, Szabo, Hoormann, & Stolley, 2018, p. 500). Therefore, spending time outdoors can result in reduced sedentary time, increased time spent participating in physical activity, and decreased risk for several chronic health conditions—creating a trifecta of positive implications through a seemingly innocuous suggestion.

The effects of interaction with nature are all-encompassing with regard to holistic health. Specifically, there are physiological benefits associated with the relationship between nature exposure and general health. A study in England found that green space acts as an environmental influence for promoting exercise. A safe and inclusive outdoor space can become the place for walking, running, cycling, or playing games. This positive correlation of available green space and fulfilling the UK government-recommended amount of physical activity was observed via univariable analysis, finding that people are more likely to achieve the recommended amounts of activity when living in greener areas (Mytton, Townsend, Rutter, & Foster, 2011). According to the UK's Department of Health, Social Services, and Public Safety (2018), adults between the ages of 19 and 64 should be participating in at least 150 minutes of moderate intensity activity, or 75 minutes of vigorous intensity activity, in addition to two days of muscle strengthening and minimizing time spent being sedentary each week. Furthermore, the association between meeting physical activity requirements and amounts of green space was greater when restricted to urban areas. This finding contradicts the hypothesis that those who live in rural areas are a confounding factor, based on their physically active lifestyles (Mytton, Townsend, Rutter, & Foster, 2011). After adjusting for individual and environmental variables, the positive influence of accessible green space remains constant, and interactions with rural settings are found to generate more benefits than interactions with an urban environment.

To combat the generational trend towards an increased sedentary lifestyle and unhealthy diet, it is important to foster a connection to nature with children at a young age. Doing so will help to make an active lifestyle spent outdoors is the “norm” that will be followed for decades to come as they grow older, and as adults, raise future generations of children who benefit from consistent and plentiful engagement with nature. Seattle Children's PlayGarden, which will be

detailed in this thesis, implements these ideas within an educational curriculum, providing a well-rounded, developmentally enriching experience.

The Seattle Children's PlayGarden: An Overview

To promote wholesome habits and improve the quality of life for children, the Seattle Children's PlayGarden implements healthy, lasting practices into all areas of their lives. The Seattle Children's PlayGarden is founded on the principles of adventure play, garden to table eating, and full inclusion of individuals of all abilities (Seattle Children's PlayGarden, 2018). In addition to the foundational principles of the program, the program is immersed in a natural setting that provides countless physical and mental health benefits.

The Children's PlayGarden is the only public park in Seattle surrounded by a fence that completely rings the perimeter. This allows parents to relax as their children explore the engaging environment with only minimal safety risks. With this feature in place, parents bring their children to the park more frequently and typical "city children" are exposed to more of the garden's benefits as their nature exposure increases.

While children enjoy this natural setting, it is also possible that their capacity to focus and learn increases because of this nature exposure. For instance, the ART proposes that natural environments are more efficient at helping children's brains to recharge, as compared to structured indoor or urban environments (Shackell & Walter, 2012). Nature is considered a restorative environment, which promotes restoration—biologically, psychologically, or socially—required "for successful adaptation to current circumstances" (Bagot, Allen, & Toukhsati, 2015, p. 1). A natural setting allows children's brains to efficiently recharge and refocus their attention on a particular task, thus reconditioning the brain from fatigue (Shackell & Walter, 2012). These attributes lead to decreased instances of impulsive behavior, irritability, and

aggression simply through increased nature contact (Shackell & Walter, 2012). Furthermore, these opportunities can contribute to several positive changes in long-term health. According to Shackell and Walter (2012), a stable opportunity to interact with nature yields healthy results and reduces life's controlling factors, including reduced pain and stress, alleviated depression, reduced aggressive behavior, increased patient satisfaction, improved recovery rates, and improved staff performance and retention.

The research has primarily focused on nature's restorative implications for adults, rather than children. However, with recent efforts to expand the application of the ART across the lifespan, more research has been done to quantify the positive effects of nature on child development. Research among young students has shown that time dedicated to stress reduction, such as recess, has a positive relationship with subsequent attention benefits, which is consistent with the ART. Four studies were examined, revealing that "outdoor or more natural environments scored significantly higher than indoor or built environments" on a combined perceived restorativeness score. The scores of the children were generally consistent with adult research (Bagot, Allen, & Toukhsati, 2015, p. 2). The level of restoration among children is influenced by exposure to or interaction with physical characteristics of the school grounds, and the way children interpret the available space, engage in various activities, and interact with peers (Bagot, Allen, & Toukhsati, 2015). Regardless of age or gender differences, a "positive mood has been associated with time in natural environments" among children (Bagot, Allen, & Toukhsati, 2015). Therefore, the dual benefits of providing a school in a natural setting—for the staff and for the children—reveal the exceptional benefits of the Seattle Children's PlayGarden. The natural environment coupled with the inclusive values of the garden provide maximal benefits. The garden provides a sustainable approach to education, lifestyle, and future success.

Clearly, the PlayGarden provides benefits for all. However, its unique characteristics are rooted in the principles of inclusion. In addition to a preschool, the PlayGarden hosts a summer camp each year for children—for those with disabilities and those who are typically developing. This enrollment structure allows children to come with their siblings and further promotes an inclusive environment. Of those who enroll in the preschool, seventy-five percent of the available spaces are held for children who are not typically developing (Liz Bullard, personal communication, May 1, 2018). However, this is not necessarily apparent due to the inclusive environment and mutual learning experiences provided by the staff and inherent in the physical environment of the PlayGarden. For children who are not typically developing, they can play side-by-side with all peers and learn physical, social, and cognitive skills through imitation. This type of learning resembles the way a typically developing child begins to pick up on parent's behaviors without formal teaching methods. On the other hand, children who are typically developing learn priceless lessons of inclusion, acceptance, and nurturing for others, while in an educational setting. These children—regardless of their functional capabilities—are provided with a wholesome education that will positively guide the rest of their lives and be prepared to better the world they inhabit.

Design of the Seattle Children's PlayGarden

The Seattle Children's PlayGarden supports a preschool program, summer camp, and an open play period, thus contributing to the community in three ways. The open play period is a time when the PlayGarden is open to the public with no community programs or restrictions of accessibility. This time maximizes the use of the garden and expands its scope of outreach among children in the local area. Specifically, the preschool is open to children between ages three to five of all abilities. It is open Monday through Friday, from 9 AM until 1 PM. Children

can enroll for all five days, or a minimum of two days a week. Days at the PlayGarden are largely unstructured and student-led to promote exploratory learning and social engagement in play. There are a few times throughout the day when the children and teachers come together for circle time, where they read stories, share experiences, and promote inclusivity through supporting social engagement for those who are unable to do so independently. Additionally, there are a few students who help prepare lunch daily and everyone shares this meal together. Aside from these times, the students are free to explore the garden and play as desired, which is why the intentional design features are crucial to the developmental enrichment of the students.

Created collaboratively by landscape architect Daniel Winterbottom and Liz Bullard, the intentional design of the garden, through application of the principles of universal design, supports play of children of different abilities, enhancing development and furthering inclusion. Universal design is unique because it exceeds the standards of the Americans with Disabilities Act, focusing on the individual's interactions with the environment rather than its functionality. For instance, a path might be wide enough for someone with a wheelchair to pass through according to the requirements of the Americans with Disabilities Act, but a universally designed path would be wider so that someone could walk comfortably alongside the individual. These implications vary across the garden settings and their intended uses, but universal design continues to promote pleasant feelings as well as functionality. Regarding the play garden, it is clear that children play to explore their environments, socialize with peers, and move their bodies which furthers their development (Wagenfeld & Winterbottom, 2015). Therefore, each physical feature in the garden provides different supports for play and opportunities for developmental enrichment.

The Wild Zone, one of the most popular areas of the garden, includes large trees, a grassy hill, mud troughs, and trails to explore. There are usually several children gathered together around the troughs, where they have accumulated water, dirt, leaves, and other natural elements to concoct a “potion.” In addition to the sensory benefits of messy play and the imaginative stimulation of creating potions, the Wild Zone provides several opportunities for fundamental motor skill development. While self-directed play allows children to “engage in or to observe others in pretend play, and learn about the physical world beyond themselves,” it can also be a space where children “learn conflict resolution skills, find self-confidence, and practice physical skills such as agility and balance” (Winterbottom & Wagenfeld, p. 177-178). By climbing trees, playing tag in the open green spaces, and making concoctions, children are exploring their environments through their five senses and learning how to take healthy risks.

The Tree Fort overlooks the Wild Zone, as the “ultimate fort in the sky” (Seattle Children’s Play Garden, 2018). This space can be creatively used for songs and circle time, or imaginary play. It encourages exploratory learning and positive risky play, instilling safety parameters and building self-confidence in the children.

The Garden House is a building structure that includes the kitchen and is located adjacent to the planter boxes from the classroom garden. The kitchen, which is where students help teachers make daily lunch and snacks, includes inclusive safety features “such as cool to the touch stove and wheelchair friendly cooking stations” to encourage student participation (Seattle Children’s Play Garden, 2018). Students who have learned how to plant seeds and have watched them grow are often excited to eat healthy, as the “greatest reward comes when they harvest the fruits of their labor” (Winterbottom & Wagenfeld, p. 200). There is a visible change in the students when they have been given the responsibilities of tending to the seed, watching it grow over time, and

sharing that harvest with their peers and families. In this space, students learn life skills that will build and progress to improve functional performance in their instrumental activities of daily living.

The Garden House Plaza is directly outside the Garden House and is used as “gathering and play spaces” (Seattle Children’s Play Garden, 2018). Students often take turns presenting their artwork at the lower plaza, eat lunch around the picnic tables, or participate in various environmental lessons, such as deciphering what one should recycle, compost, or garbage. This area is structured with large picnic tables and side-by-side activities to foster social relationships between children.

The old red truck sits to the side of this space and is a “perfect place for pretend play” (Seattle Children’s Play Garden, 2018). The engine and truck bed have been transformed into planter beds filled with succulent strawberries during the summertime (Seattle Children’s Play Garden, 2018). Children are often found playing in this truck and expressing themselves through imaginary play.

The basketball court is a “favorite spot for circle time and bikes” (Seattle Children’s Play Garden, 2018). Its open, flat space makes it easily accessible for those who use wheelchairs and supports side-by-side play. It is centrally located in the garden, so there are no limitations in who can access the basketball court. The basketball court is a place to play group games, running games, and be active.

Mount Jordan is an “accessible “volcano” structure with rubber pavement that allow wheeled objects to ascend with ease” (Seattle Children’s Play Garden, 2018). The intentionality of using a medium appropriate for wheeled objects is a component of universal design. This structure also includes graded challenges, where certain areas are harder to ascend than others, so children can

make decisions on which area they would like to climb. There are several slides that are built into Mount Jordan for a fun, sensory experience to descend after the climb.

The Bongobenny Music Fence was designed and installed by world renowned artist, Trimpin, to “ensure that all children have access to music” (Seattle Children’s Play Garden, 2018). Sensory integration is a typical neurological process that continues throughout the lifespan and relies on the sensory information taken in from the environment (Winterbottom & Wagenfeld, 2015, p. 228). The use of auditory stimuli, through music, promotes integration of the sensory systems, allowing the child to become balanced and interact more with his environment.

Lastly, the inclusive playground is “equipped with play structures that make playing accessible to children of all abilities” (Seattle Children’s Play Garden, 2018). A ramp is incorporated into the PlayGarden for easy access, bucket swings are used for children with limited trunk control and other motor abilities, and wide benches are incorporated into the seesaw for side-by-side play. These are only a few of the features that maximize social participation and contribute to furthering the development of typically developing children and children who are not typically developing alike.

Occupational Analysis

Occupation refers to the purposeful, meaningful tasks of an individual’s life (American Occupational Therapy Association [AOTA], 2014). This concept permeates every aspect of an individual’s daily life, including their habits, roles, interests, and values. Therefore, the areas of occupation are activities of daily living, education, work, play, rest and sleep, play, leisure, and social participation (AOTA, 2014). The following analysis conceptualizes each area of

occupation for a child and the identifies the influence of the PlayGarden on a child's developmental enrichment.

Play

While play is typically regarded as a leisurely past time for children, it is the primary occupation of childhood (Lynch & Moore, 2016). Play is central to children's physical, cognitive, and socio-emotional development, and helps to nurture intrinsic motivation for self-directed engagement in meaningful occupations (Lynch & Moore, 2016). The act of play occurs between the child and the environment, but there are several subtypes of play that involve peer interaction and contribute to social development. Play is the "driver of learning" in early childhood, thus by their very nature, educational settings for young children need to be play-based and encourage creative thinking, play, and participation (Lynch & Moore, 2016, p. 519). In particular, because the period from birth to eight years is a key developmental window, child-centered play provides opportunities for reaching developmental outcomes, rather than simply a leisurely reward (Lynch & Moore, 2016). The foundational concept of client-centered therapy is central to occupational therapy practice, making play an ideal means of intervention for young children and youth.

A child participates in different types of play based on his or her abilities. Play is often divided into subtypes that are used to describe various behaviors involving the act of play. These subtypes can also be used to analyze the developmental outcomes of a child. Subtypes of play include solitary play, parallel play, associative play, and cooperative play (Suarez, 2018). Each of these types presents unique physical, cognitive, social, and emotional demands, thus allowing children to interact and engage differently based on their objectives and abilities. As the types of play become more complex, they require heightened interaction with peers and exploratory

experiences. Children develop enhanced communication and social skills through play, progressing from solitary play to fluid social interaction. For instance, children who participate in solitary play have no regard for those around them, but parallel play is side-by-side play lacking interaction. Building up to more complex play, cooperative play is interactive play with reciprocal actions. From this point, play becomes more advanced. Children begin to accept and assign roles, create rules to their games, animate inanimate objects, use objects to symbolize another object, and imitate adult roles or a delayed model (Suarez, 2018). Play becomes extremely complex, promoting further developmental enrichment of social enhancement, cognitive functioning, imitation of ADLs and IADLs, communication, and social-emotional concepts.

Beyond providing opportunities for social interaction, the structural design of the Seattle Children's PlayGarden provides ample opportunities for exploratory play between child and environment. At the PlayGarden, children learn how to take safe risks, which permeates into their everyday life choices. They are taught the positive attributes of trying new things and learning about "trial and error" within a safe environment. For example, the outdoor zone includes tire swings, trough-like containers for mixing and experimenting, plants, and ample green space for games. The entire space is intended for children to explore their environment in a supervised, yet free manner. As previously shared, children often make "potions" in the troughs, mixing grass, water, and various plant products to produce a natural concoction. This is fun for them, while it nurtures their imaginations, enriches their sensory systems, and encourages them to engage with contributing peers.

Social Development and Participation

The innate sense of community and inclusion at the Seattle Children's PlayGarden is best described by an anecdote shared by one of the staff during our 2018 LHC Study in the States class day long visit. It involves a little girl and a little boy.

“There was a little girl who looked eager to play with a boy, who happened to be in a wheelchair. The teacher saw the girl looking at the boy and asked if she had a question for him. The girl shyly shook her head and ran away to play. A couple of minutes later, she came back and asked the teacher, “Why is he in a wheelchair?” The teacher prompted her to ask the boy himself, although he is non-verbal. The boy smiled and expressed his answer through his own sounds, as the teacher explained that the boy's legs did not work like hers did, but that he was still able and happy to play with everyone else” (L. Bullard, personal communication, May 1, 2018).

This story reflects the organization's encouragement for inquiry, minimizing the resistance behind those who are not typically developing and suggesting that parents are generally those to shy away. Stereotypically, parents tend to be hesitant toward children with disabilities and are worried about offending the child or his parents, while children at the PlayGarden are encouraged to ask questions and acknowledge the individual for who he is. The result is typically similar to this story, as the boy was evidently thrilled to be acknowledged for himself.

The tendency to be hesitant and closed toward those with disabilities in order to spare the individual's feelings is not part of the culture at the PlayGarden, as this garden emphasizes inclusion. At the PlayGarden, there is no distinction between who is and who is not typically developing. It is often difficult for observers to identify any challenges that a child might have. For the children, there are dual benefits for interacting with children who are different than they

are. Children who are not typically developing learn from those who are by imitating their motor and verbal behaviors as they interact with peers. In a different sense, children who are typically developing learn acceptance and empathy by engaging in side-by-side play with their peers. This early emphasis on inclusion promotes unity among the group, which could help transform the ideation of the current and future generations.

Play settings can also provide opportunities for foundational skills of cooperation, compromise, and problem-solving skills. As demonstrated in the previous anecdote, staff at the Seattle Children's PlayGarden are not intrusive, rather, they provide the just-right level of support for children to successfully participate. In this case, the staff member explained the boy's condition after giving him the chance to do so, but other opportunities to provide support include academics, gardening, and other optional participatory activities at the garden. Furthermore, a day spent at the PlayGarden reveals a child's natural tendencies to include peers and care for those around him. With this level of support, children gain confidence and can thrive in personal and social settings, which permeates into increasing independence in ADL's and other areas of occupation.

Activities of Daily Living

According to the American Occupational Therapy Association, basic activities of daily living, also known as BADLs, are the fundamental skills needed to take care of one's own body (2014). BADL's include bathing, toileting and toilet hygiene, dressing, swallowing and eating, feeding, functional mobility, personal device care, personal hygiene, grooming, and sexual activity (AOTA, 2014). Serving as the foundational elements of independence these skills enable basic survival and encourage personal well-being, serving as the foundational elements of independence. Furthermore, instrumental activities of daily living, which are commonly referred

to as IADLs, are more complex activities that support daily life within the home and community. For instance, care of others, care of pets, child rearing, communication management, driving and community mobility, financial management, health management and maintenance, home management, meal preparation, spiritual activities, safety and emergency maintenance, and shopping are all considered to be IADLs (AOTA, 2014). While learning and carrying out these tasks are a natural part of development for some children, those who are not typically developing have physical, cognitive, and/or socio-emotional limitations which make these tasks more difficult to learn and perform. However, most children learn these skills—such as bathing, toileting, eating—through imitating their parents. This role of imitation is evident in the Seattle Children's PlayGarden. The educational structure is all-inclusive and encourages peers to help one another, promoting increased independence in BADLs and IADLs.

The Seattle Children's PlayGarden provides children with a holistic curriculum to facilitate learning BADLs and IADLs. Each day, the children are responsible for helping the staff prepare meals for themselves and their classmates. The meals are comprised of fruits and vegetables that the staff and children grow in the onsite garden. The children are responsible for planting, tending, and harvesting their garden. The staff encourage the children to eat healthy foods. For foods that cannot be grown, there are chickens onsite that are cared for by the children and their eggs are used to make lunches. There are also other animals; bunnies, roosters, swans, and ducks who are cared for by the students, who love them. Not only are the students subconsciously learning how to prepare meals and care for pets or others—an example of an IADL—they are enjoying a holistic learning style that advocates for a healthy, independent lifestyle. Furthermore, the curriculum focuses on being eco-friendly, such as deciding what can be placed in recycling or compost, rather than accumulating unnecessary garbage. The children

thrive on this hands-on, exploratory learning style. This style entails both successes and risk of failure, which leads to a positive learning experience.

Education

In alignment with general preschool curricula, the preschool day starts with “circle time” during which the teachers sing songs and read books to the children. Rather than separating the children based on their abilities, the staff provides the adequate level of support for all children to participate successfully. For instance, if it is a child’s turn to sing in the circle and he is non-verbal, the teacher sitting next to him will encourage him to use his voice and then sing, or use American Sign Language to sign, with him. Seeing as the children are naturally supportive of their peers they are free to learn sign language alongside that child to support inclusivity.

Throughout the day, children might participate in gardening, caring for the animals, or various art projects, but a majority of their learning experiences come from their interactions with peers and the PlayGarden itself. The purpose of preschool is to enhance social skills, encourage curiosity and imaginative thinking, improve problem-solving skills, and establish foundational learning concepts. Therefore, play and interactions with the environment—based on the responsibilities and guidance provided by the preschool staff—provides several opportunities to meet these objectives.

Leisure

By the end of the school day, there are tears shed by children who do not want to go home. They enjoy being at the PlayGarden and desire to continue doing so after school ends. Leisure, according to the AOTA, refers to non-obligatory activities that are “intrinsically motivated and engaged during discretionary time,” or time that is not committed to work, self-care, or sleep (2014, p. S21). These tasks are classified as leisure exploration and leisure

participation, which identify individual skills, interests, opportunities, and appropriate activities (AOTA, 2014). Children participate in various elements of the garden to identify these interests, which are translated to at-home tasks. For instance, a child who enjoys gardening activities at school might encourage his or her family to plant a garden for them to harvest and enjoy the healthy benefits at family dinners. This example clearly illustrates the generalization of learning from an educational environment to its application at home, thus enhancing independence in activities of daily living. The translational nature of these skills emphasizes the potential lifestyle changes that the program sparks. Children are participating in the process of self-discovery, as they learn more about the world that they live in and their abilities to impact it. As children become more independent and gain exposure to these interests, they become intrinsically motivated to implement the long-term habits of a healthy lifestyle.

Case Study: Navigating the Seattle Children's PlayGarden with Cerebral Palsy

After having the privilege of spending a full day at the Seattle Children's PlayGarden, I recognized the inclusive environment—both in relationships and structure. Here, I will discuss how I, as an occupational therapist, would evaluate and treat a child with cerebral palsy. For privacy purposes, I will refer to the child as Will.

Will, as previously mentioned in the anecdote, is a happy, fun-loving boy who is non-verbal and uses a wheelchair for mobility. He is always smiling and laughing and is a true joy to be around. Will is shy at first, but it does not take long for him to warm up to people. He is not limited by his diagnosis of cerebral palsy and desires to interact with his peers as any other child does.

Cerebral palsy is a non-progressive condition caused by damage to the central nervous system, typically at or before birth. The damage to the central nervous system causes motor incoordination, known as ataxia, spasticity, or involuntary movements (Reed, 2014, p. 39). There are several comorbidities associated with cerebral palsy, including “cognitive impairment; seizures; delayed growth and development; spinal deformities; impaired vision, hearing, or speech; drooling; incontinence; and abnormal physical sensations or perceptions” (Reed, 2014, p. 39). Each of these conditions creates challenges in Will’s performance of occupations of daily life.

Evaluation

The occupational therapy process is broken down into three components: evaluation, intervention, and treatment outcomes. The first step of an evaluation includes creating an occupational profile, which “provides an understanding of the client’s occupational history and experiences, patterns of daily living, interests, values, and needs” (AOTA, 2014, p. S10). This is often done through an interview with the client and close family members, such as a parent in a pediatric case. The informal interview lasts approximately five to ten minutes. During this time, the occupational therapist asks the client or caregiver questions relating to each domain within the occupational therapy scope of practice and a few additional questions regarding the context of the individual—including ADLs, IADLs, education, play, social participation, cognition, psychosocial elements, and environment (AOTA, 2014, p. S10). The purpose of the interview is to create a holistic idea of who the client is and what his intentions are in receiving therapy. With these goals in mind, the occupational therapist can assess his/her current level of functioning and create an intervention plan that addresses specific areas to provide beneficial outcomes. As a supplement to the interview portion of the evaluation, AOTA has created an occupational profile

template to organize the information given in the interview, which was used in Will's evaluation (see Appendix A).

To summarize Will's occupational profile, he is a five-year-old boy who is receiving occupational therapy services because of his diagnosis of congenital cerebral palsy. Will is dependent in all ADLs and IADLs and uses a wheelchair due to quadriplegia. He is also non-verbal. He lives with his parents and younger brother and is part of a supportive family who is willing to help him as much as possible. Both of Will's parents work, but he attends the Seattle Children's PlayGarden throughout the week. His parents express understanding that he will likely remain dependent in ADLs and IADLs due to motor incoordination and spasticity, but they would like him to improve his communication and social skills so that he can build relationships and gain confidence in social environments.

Following completion of the Occupational Profile, I will spend time playing with Will. This will allow me to analyze how he interacts with his environment, what he is interested in, and build rapport for future therapy sessions. If I can begin to build a relationship with Will, he will trust me more as a therapist, begin to enjoy therapy, and be more willing to participate in future sessions. In addition, play is the most important developmental area of his life at this time, so it is crucial that I clinically observe his current level of occupational performance. This portion of the evaluation is referred to as the analysis of occupational performance, as I identify Will's strengths and challenges and analyze how they will affect his targeted outcomes (AOTA, 2014, p. S41).

After I have engaged in play with Will, I will administer *the Pediatric Evaluation of Disability Inventory*, also known as PEDI. This is a comprehensive standardized assessment that is used to evaluate key functional capabilities in the areas of self-care, mobility, and social

function (Brew, Langan, Dudek, Walsh, & Jones, 2018). It can be given to a child in about thirty minutes, or as a structured parent interview in approximately 45 minutes. I would first try to communicate with Will and ask for parental support as needed but would facilitate a structured parent interview if necessary. The PEDI provides more in-depth insight into Will's capabilities, the level of support required by his parents to function daily and includes more specific questions about his current social function. The questions are scored on two scales: 0 to 1 for performance capability and 0 to 5 for assistance level required from caregiver (Brew, Langan, Dudek, Walsh, & Jones, 2018). The scoring format permits a measure of change over time, which is intended to identify any improvements. Because it takes approximately 45 minutes for a parent interview, I will try to involve Will as much as possible to maintain his attention. Upon completing the PEDI, I will thank Will and his parents for taking the time to meet me and share part of their family's story with me. The evaluation will be concluded by scheduling the next appointment.

The typical duration of an evaluation is 60 minutes. I will use the information that I have collected and observed to complete my initial evaluation documentation for the therapy session and begin to construct a treatment plan for following sessions.

Intervention

After completing the evaluation, I can begin to plan Will's intervention strategy. Will's goals will become the parameters of the session plan activities. The two long-term goals are relating to communication strategies and improving fine motor skills. His parents expressed the desire for improved communication strategies in the evaluation. These strategies will help Will gain independence in daily living and build relationships with peers, family, and community members. In addition, the improvements in fine motor skills will help him with his communication book, as well as participating in social settings and gaining independence in

ADLs and IADLs. Will's goals are listed below, with two corresponding short-term goals for each long-term goal. Long-term goals are written to achieve a level of occupational performance, while short-term goals serve as stepping stones in order to help Will achieve his long-term goals. The goals are written as follows:

Long-Term Goal 1: Will will communicate choices through a Picture Exchange Communications Systems (PECS) book with minimal assistance (minA) and verbal cues within 8 weeks.

Short-Term Goal: When given two choices, Will will identify what item he wants to communicate through verbal sounds and dynamic UE movements with minA within 2 weeks.

Short-Term Goal: Will will follow a visual picture schedule by removing each task from book as it is completed with set-up assistance and minA within 2 weeks.

Long-Term Goal 2: Will will demonstrate an improvement in the strength and endurance of fine motor skills necessary to allow participation in social and educational environments.

Short-Term Goal: Will will open each hand to grasp a variety of size objects 2 times with set-up assistance and less than 2 verbal cues for increased grasp and release accuracy.

Short-Term Goal: Will will demonstrate the ability to rotate his forearms in pronation and supination during fine motor tasks for 1 min. with 3-5 visual and verbal prompts within 2 weeks.

While there is some variation in Will's intervention plan from week to week, the therapeutic activities will always work towards the stated goals (see Appendix B). For instance, the time spent playing at the beginning of each session builds rapport, facilitates communication, encourages motor control, and allows clinical observation for how Will is interacting with the

environment. These align with his communication and fine motor goals, as well as the developmental frame of reference. During this time, Will directs play and gains confidence and experience initiating play in social settings. While play simultaneously provides opportunities to build fine motor skills, there are an abundance of activities that can promote fine motor strength and dexterity. Fine motor activities may include tasks such as sorting to observe visual scanning, grasp, bilateral and hand-eye coordination, crossing midline, and reach or molding play dough into various shapes to increase strength and endurance in the hands and fingers, assess attention to task, while keeping it fun and encouraging creativity.

The environment of the Seattle Children's PlayGarden environment promotes growth and supports these areas of occupation, allowing the garden to be used therapeutically. Will loves the swings and playground equipment at the PlayGarden, which can be used to encourage motor performance, communication skills, and provide sensory input. Activities such as gardening, harvesting vegetables from the school garden, or taking care of the animals encourages motor coordination, fine motor skills, and communication. The natural aspects, such as the trees, grass, leaves, and various items in the "Wild Zone" can be used as art mediums to incorporate Will's favorite aspects of the garden. Using the kitchen to make a snack for himself or his peers is another opportunity to improve Will's fine motor skills and communication for further independence in BADLs and IADLs but is also something that he enjoys doing. Because he enjoys it, Will is intrinsically motivated to participate, which will help him progress towards his goals. The possible treatment activities at the PlayGarden are countless, but these are a few examples of activities that could be done in an occupational therapy session. These therapeutic activities are designed to be fun and encourage creativity, while simultaneously improving the underlying function of Will's fine motor abilities and his communication skills. The Seattle

Children's PlayGarden provides ample resources to maximize his rehabilitation potential and outcomes for therapy.

To address the primary goal of communication, Will and his parents will begin using a Picture Exchange Communication System, or PECS book. This is a functional communication tool for children with developmental disabilities who experience limited speech. It is meant to "teach children to initiate communicative interactions within a social framework," as children exchange single pictures for items and eventually learn to create picture-based sentences to communicate (Bondy & Frost, 2001). The book is similar to a binder and is filled with squares of corresponding pictures and words, which can be removed via Velcro and placed on the front of the book as a sentence. It is helpful to implement this strategy now because Will is young and has a limited vocabulary. Also, because of his difficulties with fine motor skills, it is best to use an alternative communication system. He will use a large version of the PECS book, so the pictures are easier for him to grasp and place on the sentence line. As he gets older and his vocabulary increases, Will may be able to use a different alternative communication device. According to the operational processes of the occupational therapy process, intervention strategies adjust frequently according to the abilities and desires of the client (see Appendix C).

Due to the nonprogressive nature of cerebral palsy, in addition to the developmental frame of reference, the biomechanical and rehabilitation frames of reference are also used in Will's treatment. The biomechanical frame of reference refers to structural concerns, such as edema, range of motion, endurance, and strength. These are typically remedial concerns, which means it restores the underlying dysfunction. It is used in conjunction with the rehabilitation frame because Will has deficits that cannot be remediated. The rehabilitation frame of reference is used to adapt to a new way of living, which uses adaptive devices, orthotics, environmental

modifications, and safety education, to maximize independence in areas of occupation. The developmental frame of reference used suggests that development is sequential, and behaviors are integrated through previous stages. It is a pattern of growth that is experienced by children and continues throughout the lifespan. With his age, deficits, and need for adaptive support, these three frames of reference collaboratively support Will and help maximize his potential for independence.

In addition, the person-environment-occupational performance model, also referred to as the PEOP model, is a model of practice that can be applied in an effort to holistically assess the environmental implications on the individual and his ability to perform occupations within that environment. The four core components of the PEOP model include person, environment, occupation, and performance. The person is identified as a unique individual who assumes several dynamic roles simultaneously, holds a set of attributes and life experiences, and has various abilities—including “motor performance, sensory capabilities, cognitive aptitude, and general health”—that influence occupational performance (Law, Cooper, Strong, Stewart, & Rigby, 1996, p. 16). The environment surrounds the person—equally distributed through cultural, socio-economic, institutional, temporal, physical, and social factors. Within this environment, the individual participates in occupations, which is defined as “groups of self-directed, functional tasks and activities in which a person engages over the lifespan” (Law et al., 1996, p. 16). The individual’s life becomes purposeful through participating in these meaningful occupations, and his occupational performance refers to his ability to complete the activities within a given environment. Therefore, the PEOP model analyzes the dynamic context of the relationship between the individual, his environment, and the activities he performs. These components simultaneously intersect to maximize his occupational performance across settings.

In doing so, the therapist is able to provide client-centered care to promote maximal independence in daily living activities.

To translate occupational therapy services to home and treat him holistically, parent education is a crucial supplement of Will's treatment. He is young, so it is critical for his parents to involve him as much as possible in his activities of daily living and maximize his skills for future independence. Will is fortunate to have two involved parents and they are willing to provide hands-on support in his journey. They will be responsible for helping translate the suggestions from therapy into the home setting.

The intervention plan is written to align with Will's goals, appropriate frames of reference, and a backbone of evidence-based practice. The research portion that supports the intervention strategies used is essential to ensure efficacy, effectiveness, and beneficial targeted outcomes.

Targeted Outcomes

Will is likely going to be in therapy intermittently for an extended period of time, due to his cerebral palsy. However, his needs, abilities, interests, and values will change over time, and his treatment plan will need to be adjusted accordingly. For instance, if Will improves greatly in fine motor skills and hand-eye coordination, he could use a tablet as a form of communication, rather than the PECS book. This would be a more portable, easily adapted, and highly intelligible option. As his vocabulary increases, he would not need to create matching pictures, but could simply use type to talk dictation, or a larger vocabulary programmed in a communication application on the device. Similarly, he could improve in fine motor skills and become more independent in ADLs, such as dressing or bathing, which may become more important with age. These suggested outcomes are based on personal preference and will require further re-

evaluation in the future. At this point, Will and his family will continue to work on the stated goals, adjust as necessary, and continue to progress until his maximum potential in occupational performance is reached.

Conclusions and Recommendations: Next Step Investigations

As I left the Seattle Children's PlayGarden for the day, I was overwhelmed by the thought of the potential scope of influence if this model was developed and sustained throughout other communities. Instilling these values—inclusivity, curiosity, empathy, creativity, autonomy, environmentally friendly—in young minds would surely transform the education system and promote holistic educational curriculum to empower future generations.

The story of the PlayGarden is unique but provides opportunities for transplantation across the country in different settings. Liz Bullard, who is a speech-language pathologist, shared her inspiration for the garden on the day of my visit, as she explained the lack of inclusive accessible outdoor learning environments in the Seattle region (personal communication, May 1, 2018). Therefore, inspired by the Rusk Children's PlayGarden in Manhattan, The Spiral Garden in Toronto, Canada, and the Adventure playgrounds in Europe, Liz approached the Seattle Parks and Recreation Department, who offered their support to help her develop the program (Seattle Children's PlayGarden, 2018). The PlayGarden became a nonprofit organization in 2003, and the Seattle Parks Department offered a plot of land as part of a public-private development (Seattle Children's PlayGarden, 2018). The location is ideal, due to its central position to involve residents of the “surrounding economically and ethnically diverse neighborhoods” and its “easy access for families of children with disabilities” (Seattle Children's PlayGarden, 2018). The site was provided with a no-cost lease in return for community programs and designated times of free public use offered by the PlayGarden. With this space, both the physical and educational

curriculum design were intricately created to integrate children with special needs with typically developing children. Therefore, children with disabilities and their families can rest—taking a break from the endless trips between the doctor, therapy, school, and work—to find a space that welcomes them as they are and is eager to help them reach their highest potential.

Locally, in Kalamazoo, Michigan, the Kalamazoo Nature Center offers a more structured approach through their preschool program. This is one of the oldest environmental preschool programs in the country and has been running since 1982 (Kalamazoo Nature Center, 2019). The Nature's Way Preschool enhances developmental enrichment through "child-centered and teacher-directed" exploration and hands-on activities (Kalamazoo Nature Center, 2019). The beneficial implications through interacting with nature foster a positive learning experience for children, intended for children "to connect with nature while developing the needs of the whole child" (Kalamazoo Nature Center, 2019). Nature's Way Preschool does not hold the same child-directed or inclusive values as the Seattle Children's PlayGarden, but its emphasis on family collaboration and a positive educational environment in nature are beneficial, nonetheless.

While Kalamazoo and Seattle have been privileged to receive local or state government funding, this is not typical for most communities. Recently, professional football player, Drew Brees, and his wife, Brittany, generously built an all-inclusive playground for children and adults of all abilities in New Orleans, Louisiana. The welcoming, all-inclusive playground includes wheelchair-accessible equipment for those with mobility challenges, opportunities for sensory engagement, and features that promote the development of motor skills (Audubon Nature Institute, 2017). This playground was intended for recreational use, rather than providing an educational program. In particular, due to the Brees' commitment to family, he was eager to create an environment for cross-generational play, so parents and grandparents with mobility

challenges can participate with their children as well (Audubon Nature Institute, 2017). The Brees' family hopes that families will take advantage of this space to strengthen relationships, stay active, and spend time outdoors.

While these parks carryover various components of the Seattle Children's PlayGarden, none of them instill the all-encompassing aspects of adventurous play, garden to table eating, and exploratory learning in an inclusive outdoor environment. It is overwhelming to imagine the influence of creating a franchise of like-minded education systems and the idealistic change we could potentially see in society in generations to come. With this education style, future generations could be less divisive, more united, more accepting, more caring, and have a higher level of emotional intelligence.

As research continues to support the far-reaching benefits of spending time in nature, the Seattle Children's PlayGarden represents a beautiful tapestry of education, nature, and positive lifestyle habits to promote healthy living from a young age. The children who attend the PlayGarden encounter subtle influences through the intentional design of the play structures to promote creativity, exploratory play, and healthy risk taking. These behaviors will translate into positive self-image, higher self-confidence, and acceptance of individuals of all abilities, which are life lessons that, I suggest are much more influential than a child's developmental milestones. Rather than teaching specific behaviors, the Seattle Children's PlayGarden staff blends evidence-based education strategies with principles of humility that mold young hearts. Even a year after my day-long visit at the Seattle Children's PlayGarden, I continually think about the uniqueness of this setting and its potential implications to transform the next generation if its principles became mainstream.

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Appendix A

Occupational Profile (AOTA, 2017).

AOTA OCCUPATIONAL PROFILE TEMPLATE

"The occupational profile is a summary of a client's occupational history and experiences, patterns of daily living, interests, values, and needs" (AOTA, 2014, p. S13). The information is obtained from the client's perspective through both formal interview techniques and casual conversation and leads to an individualized, client-centered approach to intervention.

Each item below should be addressed to complete the occupational profile. Page numbers are provided to reference a description in the *Occupational Therapy Practice Framework: Domain and Process, 3rd Edition* (AOTA, 2014).

Client Report	Reason the client is seeking service and concerns related to engagement in occupations	Why is the client seeking service, and what are the client's current concerns relative to engaging in occupations and in daily life activities? (This may include the client's general health status.) Will is in good health, as reported by parents. He is non-verbal and restricted in mobility due to CP. However, he is able to communicate through eye contact, facial expressions, and verbal agitations. Will's parents would like him to develop relationships with peers as well as participate in an educational curriculum.	
	Occupations in which the client is successful (p. S5)	In what occupations does the client feel successful, and what barriers are affecting his or her success? Will is capable of building relationships through nonverbal communication. However, he is shy at first and must be approached in order to participate. Will could participate more if he had increased self-confidence.	
	Personal interests and values (p. S7)	What are the client's values and interests? Being outside, basketball, playing on swings, walking his dogs, listening to music, participating in crafts, playing with friends and younger brother	
	Occupational history (i.e., life experiences)	What is the client's occupational history (i.e., life experiences)? Will has congenital CP, so he has lived with his physical limitations for his entire life. He has been to other day care type settings, but prefers the outdoors and a more inclusive environment.	
	Performance patterns (routines, roles, habits, & rituals) (p. S8)	What are the client's patterns of engagement in occupations, and how have they changed over time? What are the client's daily life roles? (Patterns can support or hinder occupational performance.) Will is dependent in ADLs and IADLs. He is 5 years old, so his primary occupation is play. He has a younger brother who he likes to play with. He lives at home with his parents, who both work, and his brother attends a different daycare. Each morning, he gets up with his family and lets the dogs out and goes to school. Since he is still young and it is faster, his parents do most of his ADLs/IADLs for him.	
Environment	What aspects of the client's environments or contexts does he or she see as:		
		Supports to Occupational Engagement	Barriers to Occupational Engagement
	Physical (p. S28) (e.g., buildings, furniture, pets)	lives in a house with an open living room/kitchen, master bdrm on main floor w bathroom for w/c, parents tend to pets/etc.	difficult to ride public transportation with a w/c, step to get into house, bedroom on 2nd floor
Context	Social (p. S28) (e.g., spouse, friends, caregivers)	has friends, lives with parents who are involved in his life & active in community, has a younger brother, some family lives in the area	shy, cannot verbalize his thoughts
	Cultural (p. S28) (e.g., customs, beliefs)	family follows Christian beliefs, goes to church on Sunday, community support, church is w/c accessible	is not involved in Sunday school classes, stays in church with parents
	Personal (p. S28) (e.g., age, gender, SES, education)	Will is a 5 y/o male, family is upper middle-class SES, enrolled in program at Seattle Children's PlayGarden	no barriers reported at this time
	Temporal (p. S28) (e.g., stage of life, time, year)	Will has been attending the Seattle Children's PlayGarden for 2 years	His parents have varying work schedules, but are able to alternate who takes him in the morning depending on the day
	Virtual (p. S28) (e.g., chat, email, remote monitoring)	Will has an iPad that he enjoys watching shows on	difficult for him to press the buttons on the screen due to fine motor/UE spasticity
Client Goals	Client's priorities and desired targeted outcomes: (p. S34)	Consider: occupational performance—improvement and enhancement, prevention, participation, role competence, health and wellness, quality of life, well-being, and/or occupational justice. Will's family would like him to learn communication strategies so that he can have a method of communicating with those around him, build relationships, and be more independent in social settings. They believe this will improve his self-confidence and allow him to "come out of his shell" a little bit more. His parents are also looking for suggestions on increasing his independence in ADLs/IADLs, but that is not the focus at this time.	

Appendix B

Session Plan 1 (AOTA, 2014).

Client Name: Will S.
Clinician: Caitlin Koob

Date: 9/8/18
Session #: 1

Client's Goal/Objective:	Activity Description and Materials Used: Alternate activity to facilitate similar goal/skill	Frame of Reference:	Est. Time:
<p>LTG 1: Client will communicate choices through a PECS book with minA and verbal cues within 8 weeks.</p> <p>STG: When given two choices, client will identify which item he wants to communicate through verbal sounds and dynamic UE movements with minA within 2 weeks.</p> <p>STG: Client will follow a visual picture schedule by removing each task from book as it is completed with set-up assistance and minA within 2 weeks.</p> <p>LTG 2: Client will demonstrate an improvement in the strength and endurance of fine motor skills necessary to allow participation in social and educational environments.</p> <p>STG: Client will open each hand to grasp a variety of size objects 2 times with set-up assistance and less than 2 verbal cues for increased grasp and release accuracy.</p> <p>STG: Client will demonstrate the ability to rotate both wrists during fine motor tasks for 1 min. with 3-5 gestural and verbal prompts within 2 weeks.</p>	<p><u>Play:</u> Allow child to direct play, follow child's lead and provide the appropriate level of support for him to be successful; This activity helps create rapport and continues to establish the therapeutic relationship. It also facilitates communication and encourages motor control.</p> <p><u>Sorting Activity:</u> Therapist lays out a variety of fruits and vegetables from the school garden in front of the client, asks client to find "carrot" or other vegetable by name/color/etc. Observe client's ability to perform visual scanning, reach, cross midline, involve BUE. Adapt as needed, may need more assistance. To modify, the activity can be done in the kitchen to add a functional component. The client can also help pick and clean the vegetables, if desired, to evaluate bilateral coordination, crossing midline, grasp strength, reach, and crossing midline. In future sessions, this activity may progress to involve cooking, or other multi-step kitchen tasks.</p> <p><u>Nature craft:</u> Art promotes self-expression for nonverbal children, boosts self-esteem, supports academics, and builds social skills. Something as seemingly simple as drawing (with adaptive equipment-built up drawing materials, assisted grip, hand over hand assistance) can allow Will to show the occupational therapist what his interests are, while building strength and endurance in hands and improving fine</p>	<p>Developmental</p> <p>Biomechanical</p> <p>Rehabilitation, Developmental</p>	<p>15 minutes</p> <p>10 minutes</p> <p>10 minutes</p>

	<p>motor skills. Client can use leaves from nature found in the "Wild Zone" at the PlayGarden and place paper on top of them, rubbing crayon over the top, and leaving a colored outline of the leaf on the page.</p> <p><u>PECS Book Practice:</u> Orient child with book and explain the purpose of the book for his communication. Explain how words are organized and show him how to flip through book, remove pictures from book, write sentences, and replace. Practice writing a sentence.</p> <p><u>Parent Education:</u> Discuss purpose and proper use of PECS book with parents. Suggest parents take time to familiarize themselves with the book and utilize it as much as possible at home so Will becomes comfortable with it. This can be a time where the therapist and parents collaborate on goals and progress in therapy and at home. For instance, the occupational therapist can suggest compensatory methods for functional tasks at home or explain the intentions of therapeutic activities.</p>	Rehabilitation	<p>15 minutes</p> <p>10 minutes</p>
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Appendix C

“Operationalizing the occupational therapy process,” (OTA, 2014, p. S15).

Evaluation		Intervention			Targeting of Outcomes
Occupational Profile	Analysis of Occupational Performance	Intervention Plan	Intervention Implementation	Intervention Review	Outcomes
<p>Identify the following:</p> <ul style="list-style-type: none"> Why is the client seeking service, and what are the client's current concerns relative to engaging in activities and occupations? In what occupations does the client feel successful, and what barriers are affecting his or her success? What aspects of the contexts or environments does the client see as supporting and as inhibiting engagement in desired occupations? What is the client's occupational history? What are the client's values and interests? What are the client's daily life roles? What are the client's patterns of engagement in occupations, and how have they changed over time? What are the client's priorities and desired targeted outcomes related to occupational performance, prevention, participation, role competence, health and wellness, quality of life, well-being, and occupational justice? 	<ul style="list-style-type: none"> Synthesize information from the occupational profile to focus on specific occupations and contexts. Observe the client's performance during activities relevant to desired occupations. Select and use specific assessments to identify and measure contexts or environments, activity and occupational demands, client factors, and performance skills and patterns. Select outcome measures. Interpret assessment data to identify supports for and hindrances to performance. Develop and refine hypotheses about the client's occupational performance strengths and limitations. Create goals in collaboration with the client that address desired outcomes. Determine procedures to measure the outcomes of intervention. Delineate a potential intervention based on best practices and available evidence. 	<ol style="list-style-type: none"> Develop the plan, which involves selecting <ul style="list-style-type: none"> Objective and measurable occupation-focused goals and related time frames; Occupational therapy intervention approach or approaches, such as create or promote, establish or restore, maintain, modify, or prevent; and Methods for service delivery, including who will provide the intervention, types of intervention, and service delivery models. Consider potential discharge needs and plans. Recommend or refer to other professionals as needed. 	<ol style="list-style-type: none"> Determine and carry out occupational therapy intervention or interventions, which may include the following: <ul style="list-style-type: none"> Therapeutic use of occupations and activities Preparatory methods and tasks Education and training Advocacy Group interventions Monitor the client's response through ongoing evaluation and reevaluation. 	<ol style="list-style-type: none"> Reevaluate the plan and implementation relative to achieving outcomes. Modify the plan as needed. Determine the need for continuation or discontinuation of occupational therapy services and for referral. 	<ol style="list-style-type: none"> Early in the intervention process, select outcomes and measures that are <ul style="list-style-type: none"> Valid, reliable, sensitive to change, and consistent with outcomes Congruent with client goals Based on their actual or purported ability to predict future outcomes Apply outcomes to measure progress and adjust goals and interventions. <ul style="list-style-type: none"> Compare progress toward goal achievement to outcomes throughout the intervention process. Assess outcome use and results to make decisions about the future direction of intervention.
<p>← Continue to renegotiate intervention plans and targeted outcomes. →</p> <p>← Ongoing interaction among evaluation, intervention, and outcomes occurs throughout the process. →</p>					

Appendix D

Levels of Assistance, (Pendleton & Krohn, 2013, p. 123).

Independent (I)	Client is completely independent. No physical or verbal assistance is required to complete the task. Task is completed safely.
Modified independence (modI)	Client is completely independent with task but may require additional time or adaptive equipment.
Supervised	Client requires supervision to safely complete task. A verbal cue may be required for safety.
Contact guard/Standby assist (CGA/SBA)	Hands-on contact guard assistance is necessary for the client to safely complete the task, or the caregiver must be within arm's length for safety.
Minimum assistance (minA)	Client requires up to 25% physical or verbal assistance from one person to safely complete the task.
Moderate assistance (modA)	Client requires 26% to 50% physical or verbal assistance from one person to safely complete the task.

Maximal assistance (maxA)	Client requires 51% to 75% physical or verbal assistance from one person to safely complete the task.
Dependent	Client requires more than 75% assistance to complete the task. Note: It is important to state whether assistance provided is physical or verbal assistance.