Entry-Level Occupational Therapy Doctorate Program

Doctoral Capstone Summary

The Effects of Woodworking and the Development of Job Performance Skills in Individuals with Intellectual and Developmental Disabilities

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Table of Contents

Chapter One: Introduction

An intellectual disability is defined as “a neurodevelopmental deficit characterized by limitations in intellectual functioning and adaptive behavior” (Lee et. al., 2021). According to Zablotsky et. al. (2017), 6.5 million people in the United States have an intellectual disability and 1-3 percent of individuals globally have an intellectual disability. Research has shown the prevalence of intellectual disabilities increased by 3.60 to 5.91 per 1000 people from 2013-2017 and evidence suggests that this trend will continue to increase over time (Lin, et.al., 2022). Males are more likely to be diagnosed with an intellectual disability than females. According to the CDC, the prevalence of males with an intellectual disability is 3.63% compared to 1.25% of females (Zablotsky, et.al., 2015). With opportunity and appropriate resources to improve job performance skills, this number could increase tremendously. When completing high school, individuals with an intellectual disability and their families may face challenges in planning their next step. After high school, these individuals tend to “fall through the cracks” as there are limited options and resources to assist them with pursuing post-secondary education and or employment (Lee & Taylor, 2022). As children get older, they may not enjoy traditional outpatient therapy services as much as they once have. Sawdust offers a unique therapeutic option for these individuals while providing functional benefit. Sawdust allows individuals within this population to engage in a meaningful occupation while providing benefit functionally. According to Lee & Taylor, only 37% of individuals with intellectual disabilities receive sustainable employment after high school. According to the U.S. Bureau of Labor Statistics, 21% of individuals with a disability were employed in 2022 (Gonzales, 2023). Statistics also show 50% of these workers were over the age of 65 and 30% of these individuals are only part time

employees (Gonzales, 2023). Although this is a 2% increase from 2021, this number is still extremely low compared to other working adults.

The Model of Human Occupation (MOHO) was the occupational conceptual model that aligned with this capstone project. MOHO is a conceptual model that explores an individual's motivation for choosing an occupation or activity. This allows therapists to understand how the individual views themselves and what they value which provides the therapist to support the individual in accomplishing their goals (Kielhofner, 2002). This conceptual model guided and proved that there was a direct relationship between the participant's volition and engaging within the intervention of woodworking. This capstone project centered around the occupational approach of identifying the participants volition and expressing this within meaningful occupations or activities within the intervention of woodworking. The capstone experience focused on using this unique intervention and promoting these individuals well-being and attempting to improve their overall job performance skills.

The interest around the population of Individuals with intellectual disabilities originated from this population having difficulty finding employment and or post-secondary education. This capstone experience was completed at Sawdust OT in Roswell, Georgia. Sawdust OT gives individuals with intellectual disabilities an opportunity to develop work skills and provides an avenue for these individuals to find sustainable employment. At Sawdust OT, the mission is to teach life skills and work habits to individuals with disabilities through construction and woodworking with assisting with future employment opportunities. The clientele at Sawdust consists of individuals aged from 7-32 years old. However, this capstone project specifically aimed for individuals aged 17-26 years old. The aim of this project is to explore the effect of woodworking based occupational therapy intervention provided at Sawdust OT on the

development of job performance skills among individuals with intellectual and developmental disabilities.

Currently, there are not adequate programs or evidence to support the use of applied woodworking, OT based activities in the development of job performance skills among individuals with intellectual or developmental disabilities. By using an objective measure to demonstrate positive increases in job performance and maintenance skills, this project will contribute to the literature supporting services provided by Sawdust OT and aim to demonstrate the need for similar programs. Obtaining and maintaining employment is one area significantly impacted among individuals with intellectual disabilities. The AOTA vision statement emphasizes maximizing health and well-being, inclusion, and facilitating participation in everyday living (American Occupational Therapy Association, 2019). This capstone project perfectly aligns with this vision statement as it promotes well-being, inclusion, and facilitates participation in everyday activities by improving functional work skills and creating avenues for employment for individuals with intellectual disabilities.

Chapter Two: Literature Review and Gap Analysis Statement

During this capstone project, the capstone student aims to investigate the effectiveness of woodworking as an intervention within the intellectual and or developmental disability population while using an objective measure in an attempt to improve the overall quality and effectiveness of services at Sawdust. Throughout the experience, the capstone student intended to gain further knowledge and experience in business administration and marketing purposes in running a small business.

A literature review was completed throughout the capstone process and further research was gathered throughout the experience. This literature review was completed through extensive and thorough research. Lib guides within the Brenau Trustee library were frequently used throughout the research process and were very helpful in searching for relevant literature. Some of the common databases used throughout this process were PubMed, CINAHL, Science Direct, Sage Journals and Google Scholar. Some common search terms used while researching for different articles were intellectual disability, job performance skills, vocational interventions, employment, and many more. Throughout the extensive research conducted, there is a clear gap between woodworking as an occupational intervention being effective within the population of individuals with an intellectual or developmental disability for a variety of reasons.

Lack of Employment Opportunities and Resources

Lack of resources and opportunities are a major hindrance to the success and promotion of job performance skills within individuals with intellectual disabilities. There are insufficient numbers of programs and services readily available for individuals with intellectual disabilities to enhance their job performance skills. “Findings of worse employment outcomes for young adults with an ASD suggest that this population is experiencing particular difficulty in

successfully transitioning into employment mainly because they do not have the proper training" (Roux, et al., 2014, p. 6). One study interviewed individuals with an intellectual disability who were in a supported employment program in an attempt to find out the benefits. Out of all eight individuals interviewed, five of them emphasized the lack of opportunities for them to choose from to promote employment (Dotson, et al., 2013).

Funding also plays a major contributing factor for these individuals on receiving services. There is often a lack of funding available for interventions supporting job skills training among individuals with intellectual disabilities. Reimbursement for services in the occupational performance area of work depend on the setting and are very limited to specific rehabilitation services (Larson & Ellexson, 2005). With the issues provided, this shows the benefits to having a vocational rehabilitation service that allows promotion of job performance skills in hopes of providing employment skills for individuals with intellectual disabilities.

Benefits of Employment

There are numerous benefits for employment for individuals with intellectual disabilities. Some of these benefits include independence, development of functional skills, and increased self-determination.

Independence

Most individuals with an intellectual disability experience impairments that limit their physical, social, and mental independence. With employment, this gives these individuals the opportunity to have a sense of inclusion and independence while making money. Having sustainable employment gives individuals with an intellectual disability a feeling of self-worth, self-confidence, independence, and autonomy (Holwerda, et al., 2012). "People with intellectual disabilities consider independence important and often get that feeling during employment"

(Sandjojo et al., 2018, p. 38). A study conducted by Hume et.al. (2009) looked into different ways to increase independence with individuals with an intellectual disability. The literature showed in this article states that employment increases independence as well as overall quality of life for these individuals (Hume, et al., 2009). Overall, the literature proved that employment increases the independence and quality of life for individuals with an intellectual disability.

Development of Functional Skills

Individuals with an intellectual disability suffer from different impairments impacting their ability to perform functional skills effectively. Functional skills, often referred to as performance skills, are defined as maintaining required work skills and work patterns while also initiating, sustaining, and completing work (Occupational Therapy Practice Framework, 2020). A research study conducted by Ortega-Camarero et al., (2021) looked at different types of intervention methods for employment for individuals with an intellectual disability. One of the intervention methods was to establish a training program for vocational skills whose goal was to improve functional skills and overall well-being. At the end of the training program, it was shown that individuals who participated in the employment training program improved their development of functional skills as well as their overall well-being and quality of life (Ortega-Camarero et al., 2021).

Self-Determination

Self-determination is defined as volitional actions taken by people based on their own will and self-determined behavior which comes from making their own decisions (Hui & Tsang, 2011). Self-determination allows individuals to make decisions on their own and ultimately determine the paths of their own lives; it has been identified as a critical outcome of the transition process for students with an intellectual disability (Wehmeyer & Schwartz, 1997). The

literature showed that individuals with an intellectual disability have far fewer opportunities to make choices and express preferences in their lives (Wehmeyer & Abery, 2013). However, promoting self-determination within this population can be beneficial and promote success in daily life activities for these individuals (Wehmeyer & Abery, 2013). Research showed that individuals who have the opportunity to develop self-determination have positive employment outcomes, living situations, and overall improved quality of life (Wehmeyer & Abery, 2013).

A randomized control trial conducted by Wehmeyer et al. (2012) investigated different interventions to promote self-determination with students who have an intellectual disability. In the study, one group received a variety of methods to promote self-determination while the other group received no treatment intervention. The results showed that individuals in the intervention group demonstrated increased patterns of self-determination than the students not exposed to the interventions. A follow up study was conducted by these researchers in an effort to compare the two groups years after leaving school. The researchers measured employment, independence, and life satisfaction outcomes with results stating that increased self-determination status at the end of high school led to higher rates in each (Wehmeyer et al., 2013). Overall, there is sufficient evidence proving the effectiveness of employment in promoting self-determination.

The Historical Role of Occupational Therapy in Therapeutic Media

Therapeutic media is defined as the use of a purposeful activity in occupational therapy intervention (Harris, 2008). Dr. William Dunton, the “father of occupational therapy” was the first individual who believed in the healing potential of patients participating in occupational activities (Knowles, 1995). Dunton used a variety of crafts such as quilting and woodworking to apply the use of creating objects by each individual’s hand as a therapeutic activity (Knowles, 1995). Woodworking allows individuals to create meaningful experiences that allow them to

develop a sense of accomplishment in their own abilities. The overall goal of woodworking as an intervention is to develop job skills that eventually lead to employment in the future. One study investigated the impact of woodworking for men in a community rehabilitation program. The study was an 8-week intervention where clients worked with an occupational therapist to set specific therapeutic goals (Bachelor, et al., 2015). The primary aim of the study was to engage individuals in meaningful occupations in the craft of woodworking while encouraging peer support and social interaction as well as improving quality of life (Bachelor, et al., 2015). More than 88% of the individuals who participated in the study attained their expected rehabilitation goals with positive feedback particularly in the areas of skill development and social engagement (Bachelor, et al., 2015). Sawdust OT's mission is to teach life skills and work habits to individuals with disabilities through construction and woodworking and to facilitate future employment opportunities.

Strategies for Improving Work Habits

When provided adequate accommodations and support, individuals with intellectual disabilities have the potential to make meaningful contributions to their workplace and benefit from the development of functional job skills and increased self-determination. Functional job skills can be developed through the use of occupation-based activities led by occupational therapists, who specialize in modifying tasks and environments to promote successful performance. Sawdust OT, an occupational therapy clinic serving individuals with intellectual disabilities, utilizes woodworking as a means to develop functional job skills which can be transferable to real life job experiences. Sawdust can serve two purposes which are creating an avenue for individuals within the intellectual and developmental population to find employment and increasing overall life skills. Each individual that attends Sawdust may not be successful in

finding employment, but they will have the necessary skills for employment. Previous research conducted by Petrovic el al. (2014) and Landin (2012) emphasized how strategies such as environmental modifications and increasing safety awareness are used to support individuals with intellectual disabilities at Sawdust OT are beneficial for development of job performance skills. Throughout the capstone project, further evidence will be collected via standardized evaluations and clinical experiences to support the use of woodworking based occupational therapy among this population.

Environmental Modifications

Modifying the environment plays an important role in improving problem solving skills. With increased problem-solving skills, this also promotes overall success for the individual. There are multiple strategies that can be used to modify the environment to promote increased problem-solving skills within each task. The strategy most often used at Sawdust to promote increased problem-solving skills while engaging in tasks is breaking down steps into smaller steps. Research showed breaking down steps helps make problem solving and directions more manageable and focuses on teaching independence (Petrovic et al., 2014). With increased problem-solving skills, this overall promotes independence which improves quality of life and well-being within each individual.

The physical environment can also be a major hindrance in occupational performance within the intellectual and developmental disability population. The physical environment includes the natural and built surroundings within the environment (American Occupational Therapy Association, 2020). Individuals within this population often have difficulty processing information and attending to tasks in loud, noisy environments (Pfeiffer et al., 2016). The research study conducted by Pfeiffer et al., 2016, investigated the impact of noise-attenuating

headphones in school and in the community on individuals with autism spectrum disorder. Evidence showed noise-attenuating headphones had a major benefit in attending to tasks and processing information in louder environments which overall increased occupational performance. At Sawdust, noise canceling headphones is a physical environmental modification to help increase occupational performance within each individual.

Sustaining Attention and Safety Awareness

Woodworking projects involve multiple steps and require safety awareness which can facilitate development of attention to detail, with verbal cueing when necessary. Verbal cues serve as a reminder to direct a client's attention to a relevant task or to assist them with the motor planning of the task. Verbal cueing is an effective method to assist with sequencing skills and to remind these individuals safety comes first. A study conducted by Landin (2012) investigated the role of verbal cueing in skill learning. Research proved that verbal cueing has a positive effect on improving sequencing, attention to detail, and sustaining attention to tasks (Landin, 2012). However, it is important to understand verbal cueing must be used for assistance when needed. Promoting independence within these individuals is the overarching goal so only providing verbal cues when necessary is important (Landin, 2012). Safety awareness is being able to determine whether or not there is potential risk for injury before doing a task, or activity. (Ziergert, 2014). Individuals with an intellectual disability often have decreased safety awareness compared to other adults (Ziegert, 2014). With verbal cueing, individuals have help identifying with knowing what is right from wrong and limiting them to make the wrong decision. Overall, providing proper verbal cueing can assist in sustaining attention to task and promoting safety awareness within the individual (Landin, 2012).

Developing Frustration Tolerance

Frustration tolerance is the ability to respond to challenging situations with patience and emotional stability. Individuals who experience poor frustration tolerance tend to quickly become distressed when encountering challenging tasks and may experience emotions such as anger, hostility, or depression (Nordman & Adcock, 2022). Evidence has shown that children with intellectual disabilities are often impacted by low frustration tolerance due to stressors caused by the inability to emotionally self-regulate (Nordman & Adcock, 2022). Low frustration tolerance may impact numerous aspects of job performance skills, including decreased safety awareness or attention to detail, ability to communicate effectively, and sustain throughout tasks. Although this is true, there are many different strategies to manage frustration. The two different strategies most effectively used at Sawdust for persisting through challenging tasks are clear communication and allowing time for a quiet break if necessary. Giving positive feedback and modeling positive self-talk increases the individual's confidence and ability in completing challenging tasks (Nordman & Adcock, 2022). Modifying the environment by eliminating distractions and providing a quiet space has also been shown to be effective in persisting through challenging tasks for individuals with an intellectual disability (Nordman & Adcock, 2022). Overall, these strategies are effective and beneficial for individuals to persist through challenging tasks and developing frustration tolerance.

Conclusion of Literature Review

Throughout the research process during this capstone process, there were major gaps identified. While conducting this literature review, there was limited research completed on the woodworking intervention within the intellectual and developmental disability population. With the limited research found during this literature review, a common theme was the lack of

resources provided for this population in promoting job performance skills and finding sustainable employment. During the research process within this literature review, there was an abundance of studies conducted involving the traditional model of occupational therapy services such as outpatient pediatric services, but limited research involving the non-traditional model of occupational therapy services such as interventions involving craft.

Although individuals with intellectual disabilities face many barriers to obtaining competitive employment and development of job performance skills, the review of literature proved that when given proper support, they have the potential and are motivated to be successful. This developing capstone project investigated the effect of woodworking and the development of job performance skills in individuals with an intellectual disability in order to add to the growing evidence supporting occupation-based interventions provided by facilities like Sawdust OT. This capstone project will aim to address these gaps by providing evidence woodworking as an occupational therapy intervention is equally as beneficial as the traditional model of occupational therapy services.

Chapter Three: Needs Assessment

The needs assessment questions followed by the stakeholders responses are located in Table 1 below. The stakeholders of this capstone experience include an occupational therapist on staff who also owns the clinic. The stakeholders are the site mentors of the capstone project and are also the owners of Sawdust. The capstone student conducted individual interviews to the stakeholders to complete the needs assessment. The interview took place on site at the Sawdust clinic and took about 45 minutes to complete. The capstone student was placed at Sawdust for a Level II rotation and had informal meetings with the stakeholders throughout the 12-week fieldwork leading to the capstone student gathering information that fed the needs assessment for this capstone project. Throughout the interview, the capstone student was interpreting information and writing it down based on the stakeholder's responses. The role of the stakeholders will be to continue with day-to-day operations as normal but allow the capstone student to assist and complete assessments as needed. The stakeholders will assist with the capstone student as needed and provide feedback when necessary. A mutual agreement was discussed between the capstone student and the stakeholders to sit down at the beginning and end of every week to discuss goals for the week and progress at the end of the week. Both parties agreed this would be beneficial for the development and growth of this capstone project and overall experience. The Needs Assessment questions and responses are included in Table 1.

Table 1. Needs Assessment Questions and Responses

Needs Assessment Questions	Stakeholder's Responses
What was your motivation for starting this business?	*The ID/DD population often goes unseen. Emphasized how this population often "falls through the cracks." There is not a lot of opportunity for this population in terms of services to promote employment and developing job performance skills.
Why did you select woodworking as the activity to base your therapy on?	*Woodworking is a unique way to develop skills. We went back to the original origins of occupational therapy with the idea of craft. It promotes numerous different skills such as sustaining attention, sequencing, fine/motor gross motor control, emotional regulation, and many more.
What barriers did you have when trying to get started?	Funding was one of the major barriers. After funding was found, finding a way to build clientele was challenging. Caregiver trust from the therapists as well as their own children with tools.
What is your overall goal for all the clients you see at Sawdust?	The overall goals for clients at Sawdust is to promote sustained employment, independent living, and increased autonomy.
What have been the most challenging aspects of running your own business as an OT?	As a business owner, it is challenging to juggle multiple roles dealing with administration as well as being a therapist. Making sure therapeutic care doesn't get impacted is the main goal.
How do clients pay for services? What are the funding options, is this difficult for most clients?	At the beginning, funding was difficult for clients. Now, we have numerous funding options through insurance/Medicaid as well as private which make it easier for clients to pay for services.

What have been the biggest challenges about using woodworking with this population? - Safety, their interest, too challenging, etc?	Safety is the number one priority at Sawdust. This tends to be a challenge dealing with clients. Materials and tools can also be challenging which also brings problems with woodworking.
What assessment do you currently primarily use and why did you select it?	We currently use the GOAL assessment at the clinic. We use the GOAL because it gives us a perspective of the level of fine/gross motor skill an individual has and what needs to be worked on from a therapy aspect.
What are the most important skills you want to see your clients have improvements in? - How does this impact your assessments/goals?	Increased initiation of tasks, increased impulse control, and higher general quality of life.
What skills or outcomes do you want to be able to measure progress? - Do you think the COTE is the best assessment to demonstrate that?	Satisfaction scale used to measure. Strengths and difficulties to promote the intervention of woodworking using the COTE. COTE and Likert scale are both beneficial to show further evidence that this intervention can improve quality of life and other skills.
What have you observed as the greatest barriers your clients face to developing their job skills or obtaining employment?	Social interaction skills within our clients are seen to be challenging. Emotional regulation, impulse control, and initiation of tasks is also seen to be barriers within our clients.
How do you work to address their barriers? - Are there any areas you feel like you aren't able to adequately address currently?	We tend to promote collaboration between clients to promote social engagement. With emotional regulation, we allow sensory breaks to allow our clients to get regulated if they are feeling unregulated. We address impulse control by promoting frustration tolerance and addressing those skills. Verbal cueing is also an important tactic to promote initiation of tasks and control impulsivity within our clients.

What strategies appear to be the most helpful when working with clients?	Meeting our clients at their age. Treating them like they are adults and assuming competence within the skill.
How many of your clients are able to obtain employment while receiving services at Sawdust? - Are they successful?	With the proper training, about 15% of our current clients could retain successful employment.
What opportunities do you provide your clients to apply the job performance skills learned in therapy?	We allow our clients opportunities to make products and sell them at festivals and other local businesses.
How do you advertise your services/recruit potential clients? - How do you determine if a client is appropriate for your services?	We use social media such as Facebook and Instagram to advertise our clinic and our services which also helps us recruit potential clients. We determine if a client is appropriate based on our evaluation process using the GOAL assessment.
What areas do you feel like Sawdust is most successful in?	Client retention, improving job performance skills such as fine/gross motor control, sustaining attention, emotional regulation, executive functioning skills, etc.
What areas do you feel like Sawdust could improve in?	Increasing scope of vocational offers/opportunities. Increase the amount of trades offered.
What outcome would you like to see from implementing the COTE at Sawdust?	Client satisfaction over time, effective efficacy of program. Increase in independence, IADL, occupational performance.

Data Analysis

After completing the needs assessment interview with the stakeholders, this capstone project aligns well with the facility and their overall need. The information gathered helped understand the stakeholders' reasoning as to why they chose woodworking as an intervention and what they are doing well and what could be improved. Throughout the interview, the

stakeholders' emphasized the lack of opportunities and resources individuals with intellectual disabilities must find sustainable employment. In addition, learning about the stakeholders' goals for clients such as improved quality of life demonstrates the need for addressing this using the satisfaction scale. The stakeholders stated they wanted to use an objective measure during this capstone project aiming to demonstrate the importance of job performance skills which were emphasized throughout the interview as well. The stakeholders repeatedly discussed how their overall goal was to promote independence and autonomy within their clients which is shown in the literature to be important for this population (Holwerda et al., 2012). As there is not much research on the topic of woodworking as a therapeutic intervention, this will provide the capstone student an opportunity to provide evidence there is a need and positive benefits in promoting employment opportunities by improving job performance skills within this intervention.

Capstone Goals and Objectives

The capstone goals and object give a brief overview of the expected outcomes after the completion of the capstone project. Within each outcome, there is one goal and numerous objectives to follow. At the completion of the 14-week capstone experience, the overall goal is for the capstone project to achieve these outcomes, goals, and objectives.

1: Capstone Outcome #1: Sawdust OT will gain knowledge of methods to measure the efficacy of program outcomes to use for decision-making and marketing.

1. Relevant Goal #1: In 14 weeks, Sawdust OT will have the results of a quality improvement analysis related to program outcomes.

1. Objective #1A: The capstone student will develop a process for administering, interpreting, and storing data collected from the COTE and a second measure related to satisfaction.
2. Objective #1B: Program apprentices will participate in completing the COTE assessment and a second measure related to satisfaction.
3. Objective #1C: The capstone student will modify and/or create a system for organizing and managing the products/merchandise/goods created by the apprentices to provide an improved system for tracking projects and billing.

2: Capstone Outcome #2: The capstone student will gain knowledge regarding administrative and management tasks involved in running a private OT practice.

1. Relevant Goal #2: In 14 weeks, the capstone student will learn the process of tasks related to promoting/advertising private OT practice.
    1. Objective #2A: The capstone student will complete a compilation of video testimonials of program apprentices and share them on social media for marketing purposes.
    1. Objective #2B: The capstone student will take the lead in planning and conducting at least one community event.

3: Capstone Outcome #3: The apprentices at Sawdust OT will experience a change in their quality of life and demonstrate increased engagement in both program activities and daily activities outside of Sawdust.

1. Relevant Goal #3A: In 14 weeks, program apprentices will demonstrate improved general behavior, interpersonal behavior, and task behavior as measured by the COTE.

1. Objective #3A: Program apprentices will be measured eight times during the capstone project (measurement window 8 weeks) using the COTE

2. Relevant Goal #3B In 14 weeks, program apprentices will demonstrate improved satisfaction as a result of Sawdust as measured by satisfaction scale.

    Objective 2A: Participants will participate in completing pre/post measures of the satisfaction scale.

    Objective 2B: Participants will demonstrate increased functional skills evidenced by pre/post scores of COTE assessment

    Objective 2C: Parents/caregivers will acknowledge and be satisfied with apprentices' improvements with functional skills in participation during sessions.

Learning Objectives for Doctoral Capstone Experience

The learning objectives for this capstone experience look more into what the capstone student intends to learn from this experience. While creating this capstone project, there were 3 main aspects the capstone student wanted to gain further knowledge upon the completion of this capstone experience. Throughout the capstone project, the Comprehensive Occupational Therapy Evaluation (COTE) would be administered weekly to each apprentice so gaining competence within this assessment was deemed to be important.

Sawdust is a privately owned and operated OT practice that requires business management and leadership skills. While completing this capstone experience at Sawdust, the capstone student would like to gain further knowledge on how to run a small, privately owned practice and more details that go into this. The final goal the capstone student would like to achieve is to become more competent and knowledgeable regarding woodworking as an occupational intervention.

OTS Goal #1: Within 14 weeks, the capstone student will demonstrate competence in administering and interpreting the COTE assessment.

1. OTS Objective #1: The capstone student will administer the COTE to at least 10 participants as assessed by Site Mentor.

OTS Goal #2: Within 14 weeks, the capstone student will gain business leadership and management skills related to running a private OT practice.

1. OTS Objective #2A: The capstone student will develop marketing and networking skills by creating online video testimonials of clients to promote the business aspect and for the community to hear the voice of clients.
2. OTS Objective #2B: The capstone student hopes to utilize various leadership strategies by collaborating with site mentors to improve clients participation in producing items for community events.

OTS Goal #3: Within 14 weeks, the capstone student will be proficient with woodworking as an intervention with individuals with ID.

1. OTS Objective #3: The capstone student will assist on 15 woodworking projects with participants throughout experience.

Chapter Four: Capstone Implementation

During phase one of the capstone process, finding out whether the project was considered quality improvement or needed to have approval from the Brenau University Institutional Review Board was the first step. To figure this out, a quality improvement checklist was completed. The quality improvement form consists of questions such as the purpose of the project, the rationale, the methods, the risk, the participants, and the funding required to complete the project. After completing the quality improvement checklist, an exempt self-determination form was completed as the final step in figuring out if the capstone project was quality improvement or needed IRB approval. The exempt self-determination form consists of the categories and allows you to determine which category the capstone project falls under. After completing both the checklist and the exempt form, this capstone project was deemed quality improvement.

This capstone project aligns with the ACOTE area of clinical practice. The ACOTE area of clinical practice is defined as finding a way to improve the quality of patient care or services (American Occupational Therapy Association, 2019). This capstone project aimed to improve and prove the services and programs at Sawdust are beneficial to the population of intellectual and developmental disabilities.

Recruitment Procedures

Within the Sawdust clinic, the term apprentices is frequently used as an alternative to using the word client. By calling clients apprentices, this promotes the unique aspect of Sawdust and allows the individuals to get a feeling of inclusion and allows these individuals to sense a feeling of importance. The recruitment process consisted of the capstone student meeting with

the two site mentors to create an Excel spreadsheet of all eligible apprentices that could participate in the project. Out of the 118 apprentices that attend Sawdust, 28 of them were eligible to participate in the project. Prior to the beginning of the capstone experience, the capstone student had a Level II Fieldwork rotation at Sawdust. During the rotation, the capstone student gained familiarity with the apprentices. Most of the apprentices are familiar with the services at Sawdust and have been receiving services for an extended period of time. After conversations with the apprentices themselves and their caregivers, nine apprentices were deemed to be a good fit for the capstone project. Out of the nine apprentices selected, seven of them have been receiving services from Sawdust for at least 6 months while the other two have been receiving services for less than six months. The inclusion criteria for the capstone project were as follows: (1) current apprentices at Sawdust; (2) apprentices were between the ages of 17-26; (3) had a diagnosis of intellectual and/or developmental disability(ies); and (4) apprentices expressed an interest in pursuing future employment. The exclusion criterion was the inability to consistently follow simple commands. The reasoning behind choosing this specific age group was to target individuals who were close to graduating high school and looking to transition to employment after high school or individuals who have graduated high school and have found it challenging to find sustainable employment. After selecting the nine apprentices to participate in the capstone project, the parents were provided a participation form (see Appendix A), which was created by the capstone student that required a signature from the apprentice and their caregiver. The participation form gave an overview of the project, what was expected of them, and reassuring that all information collected will remain confidential.

Description of the Participants

The following information provides a description of the nine apprentices that participated in the capstone project:

- Apprentice #1 is a 21 year old male with a diagnosis of autism who occasionally has difficulty verbalizing his wants and needs. However, this apprentice in particular has extreme attention to detail when completing projects.
- Apprentice #2 is a 21 year old male with a diagnosis of autism who has lots of energy and enjoys socializing with others and working on projects for his bedroom.
- Apprentice #3 is a 25 year old male with a diagnosis of autism who enjoys making projects for others such as his parents.
- Apprentice #4 is a 17 year old male with a diagnosis of autism and ADHD who enjoys selling his projects to make money for himself.
- Apprentice #5 is a 26 year old male with a diagnosis of autism who requires a communication board to communicate his wants and needs.
- Apprentice #6 is a 19 year old male with a diagnosis of autism who is very knowledgeable with tools throughout the clinic and has increased safety awareness when using tools.
- Apprentice #7 is a 17 year old male with a diagnosis of autism who is soon to be finishing high school and hopes to pursue post-secondary education in attempts to find sustainable employment later in life.
- Apprentice #8 is a 21 year old male with a diagnosis of autism who is currently enrolled in post-secondary education in attempts to find employment after completion of schooling.

- Apprentice #9 is a 20 year old male with a diagnosis of autism who is currently looking to become employed by Home Depot with assistance from Sawdust OT.

Cost of Materials and Funding Sources

Within this capstone project, there was no direct cost needed for completion of the project. However, the materials at Sawdust including tools and wood were necessary for this capstone project to be completed. At the beginning of each month, each apprentice and their caregivers are charged $25 for a material fee which covers all necessary items that may be needed for the apprentice to complete a specific task or project. Some of the frequently used tools by apprentices (see Appendix B) included an orbital sander, a bandsaw and a mitre saw. These tools were not an expense for the apprentices but considered a business expense through Sawdust.

The capstone student and site mentor had a thorough discussion regarding funding prior to the beginning of the capstone experience. The site mentors mentioned funding was difficult to obtain at the beginning of the business being open due to difficulty with insurance covering these services. However, there are now two ways for apprentices to pay for services which include through insurance or private pay. Insurance pay involves using the family's health insurance policy to cover medical costs such as occupational therapy services. This allows reduced out of pocket expenses. With private pay, individuals pay for therapy services out of pocket and avoid insurance providers.

Capstone Activities and Outcome Measures

Throughout the 14-week capstone experience, the capstone student gained knowledge on the marketing and business administration aspects of a small business. The capstone student

created a billing template to increase organizational efficiency for the stakeholders, created video testimonials for marketing purposes to use on social media platforms, and helped plan a community event with the stakeholders. The capstone student used an objective measure to measure apprentices over an eight-week period and administered pre and post satisfaction surveys to apprentices and caregivers.

Marketing and Business Administration

In the second phase of the capstone process, the capstone student implemented learning objectives for the doctoral capstone experience. Two of the objectives involved getting a better understanding of the business administration and marketing aspect of a small business. The capstone student collaborated with the site mentor to create an excel spreadsheet to increase organization for billing purposes. The billing spreadsheet (see Appendix C) for template, included each apprentices name, their payment method and insurance type, and the date of authorization. The purpose of this spreadsheet was to provide an organized method to allow the site mentor to stay on top of authorizations which is necessary for re-assessments for apprentices and it is deemed to be effective.

Marketing is another important aspect of running a small business. Marketing, specifically social media presence, is a major benefit for small businesses when recruiting clientele. Sawdust uses social media platforms such as Facebook and Instagram to promote their products and services including pictures and videos. The site mentor suggested creating a video testimonial of apprentices for future use for Sawdust if necessary to post to their social media platforms. In the video testimonials, apprentices discussed what Sawdust means to them and how it has impacted their lives. Another marketing deliverable used within this project was planning a community event. The capstone student collaborated with the site mentor on creating a Dungeon

and Dragons social group in hopes to increase social participation within the apprentices and others in the community who had interest in joining. The capstone student created a brochure (see Appendix D) with dates for these groups to occur and appropriate groups for apprentices based on interests and appropriate ages of the apprentices while also attending one of the sessions and leading it.

Business Development Opportunity. Over recent months, Sawdust has been in close contact with a company called Ken's Krew in an attempt to create employment opportunities for apprentices. Ken's Krew is a partner through Home Depot that provides job placement, training, and support for individuals with intellectual disabilities. After numerous meetings between both Sawdust and Ken's Krew, there is mutual interest in recruiting apprentices to become employed through Ken's Krew. The capstone student participated in one of the meetings and gave an overview of this capstone project to numerous employees of Ken's Krew in an attempt to advocate for the apprentices and their abilities to be successful within employment.

COTE Assessment

The Comprehensive Occupational Therapy Evaluation (COTE) (see Appendix E) was the objective measure used during this capstone project. The COTE was administered weekly to each apprentice over an eight-week measurement period.

Satisfaction Surveys

Satisfaction surveys were administered to all apprentices involved in the capstone project and their caregivers. The Satisfaction Survey (see Appendix F) gathered information related to independence, engagement, and ability to plan ideas. The satisfaction survey was completed by each apprentice and their caregiver before the eight-week measurement period and after the completion of the measurement period.

Weekly Timeline of the Doctoral Capstone Experience

An overview of the weekly timeline is located in Table 2 below. During the first week of the capstone experience, the capstone student got re-oriented to the site, began identifying potential participants to be involved in the capstone experience, and began the creation of the oral consent form to be administered to apprentices and their caregivers. During week two of the capstone experience, the capstone student narrowed down potential apprentices, finalized the oral consent forms, and received approval through the consent form from the apprentice and their caregiver. An extensive search to find an appropriate satisfaction scale was conducted throughout the second week. At the end of the second week, the capstone student and the site mentor collaborated on plans to improve business management and marketing for Sawdust. During week 3 of the capstone experience, the COTE assessment was administered as well as the pre-satisfaction scale to both the apprentices and their caregivers. The capstone student also began working on the billing excel spreadsheet as well as the video testimonials. During weeks 4 through 10, the COTE assessment was administered to each apprentice weekly. The capstone student continued updating the billing spreadsheet, working on the video testimonials, and planning a community event while collaborating with the site mentor. Week 10 was the last week the COTE assessment was administered and the post-satisfaction scale was administered to the apprentices and the caregivers. During weeks 11 through 14, the capstone student began putting COTE data and satisfaction scales into excel spreadsheets in order to analyze the results. Table 2 includes the weekly capstone plan.

Table 2. Weekly Capstone Project Plan

Week	**Plan**
1-5/1	Re-orientation to the site, site preparation, begin identifying potential participants and narrowing down demographics. Begin identifying potential participants and making a consent form for clients, caregivers, parents, etc. Discuss appropriate weekly meeting times with the stakeholders.
2-5/8	Finalize participants and the consent form for caregiver/parents. Get all consent forms signed by the end of this week. Complete a COTE test taker to address reliability. Look for satisfaction quality of life standardized assessment to include in the project. Finalize how to promote community outreach and begin planning ways to utilize leadership strategies to improve clients participation in producing items for community events such as festivals to make money. In weekly meetings with stakeholders, collaborate with stakeholders to identify ways to help improve the business.
3-5/15	Begin the pre/post measures for the quality of life . The satisfaction scale will be done once in the beginning and once at the end. Score the pre-test of the satisfaction scale for each participant. Begin the administering of the COTE assessment for each participant. The COTE will be done weekly. Weekly meeting with site mentor. Complete weekly video testimonial of clients to promote the business as well as allowing community outreach through social media and continue planning ways to utilize leadership strategies to improve clients participation in producing items for community events such as festivals to make money. Begin making an organization folder/excel spreadsheet for billing sheets/projects. Weekly meeting with capstone mentor.
4-5/22	Continue administering the COTE assessment to participants. Score the COTE for this week on each participant. Complete weekly video testimonial of clients to promote the business as well as allowing community outreach through social media. Continue collaborating with stakeholders and utilizing leadership strategies to improve clients participation in making products for community events such as festivals. Continue making the organization excel spreadsheet for billing sheets/projects Weekly meeting with site mentor and capstone mentor.
5-5/29	Continue administering the COTE assessment to participants. Score the COTE for this week on each participant. Complete weekly video testimonial of clients to promote the business as well as allowing community outreach through social media. Continue collaborating with stakeholders and utilizing leadership strategies to improve clients participation in making products for community events such as festivals. Continue working on the excel spreadsheet organization process. Weekly

	meeting with site mentor and capstone mentor. During weekly meeting with stakeholders, look to see if there is anything else needed for improvement with the business aspect.
6-6/5	Continue administering the COTE assessment to participants. Score the COTE for this week on each participant. Complete weekly video testimonial of clients to promote the business as well as allowing community outreach through social media. Continue collaborating with stakeholders and utilizing leadership strategies to improve clients participation in making products for community events such as festivals. Continue making the organization folder for billing sheets/projects Weekly meeting with site mentor and capstone mentor. Continue to find out/collaborate with stakeholders on other ways to improve business aspect during weekly meeting.
7-6/12	Continue administering the COTE assessment to participants. Score the COTE for this week on each participant. Complete weekly video testimonial of clients to promote the business as well as allowing community outreach through social media. Continue collaborating with stakeholders and utilizing leadership strategies to improve clients participation in making products for community events such as festivals. Continue working on excel organization task. Weekly meeting with site mentor and capstone mentor.
8-6/19	Continue administering the COTE assessment to participants. Score the COTE for this week on each participant. Complete weekly video testimonial of clients to promote the business as well as allowing community outreach through social media. Continue organizing excel spreadsheet for billing and project purposes. Weekly meeting with stakeholders and capstone mentor.
9-6/26	Continue administering the COTE assessment to participants. Score the COTE for this week on each participant. Complete weekly video testimonial of clients to promote the business as well as allowing community outreach through social media.. Continue working on organization folders. Continue to explore other ways to help improve Weekly meeting with stakeholders and capstone mentor.
10-7/3	Last week to administer the COTE assessment to participants. Score the COTE for the final week on each participant. Complete the post-test for the QoL scale and score for each participant. Complete weekly video testimonial of clients to promote the business as well as allowing community outreach through social media. Finish working on excel spreadsheet. Weekly meeting with site mentor and capstone mentor.

11-7/10	Start data analysis of each assessment. Complete weekly video testimonial of clients to promote the business as well as allowing community outreach through social media. Continue working on organizing folders/ other business improvements given by stakeholders throughout experience. Weekly meeting with stakeholders
12-7/17	Continue data analysis. Complete weekly video testimonial of clients to promote the business as well as allowing community outreach through social media. Continue working on organizing folders/ other business improvements given by site mentors throughout experience. Weekly meeting with site mentor.
13-7/24	Continue data analysis, Begin working on poster presentation Weekly meeting with site mentor.
14-7/31	Continue working on presentation, do presentation/plan for dissemination

Chapter Five: Project Evaluation and Results

The two measures used throughout this capstone experience were the COTE assessment and a pre and post satisfaction survey used to improve the quality of the services at Sawdust. The COTE assessment was a beneficial tool to use in this project because it allowed the capstone student to measure 25 different behaviors from the apprentices while also tracking their progress throughout the eight week measurement period. The pre and post satisfaction surveys were beneficial to use in this capstone project because it allowed the apprentices and their caregivers to give feedback about the services provided at Sawdust before and after the completion of the capstone project with an attempt to benefit the apprentices and their families. These measures were also intended to benefit the stakeholders due to there being evidence proving that their services are effective and provide benefit from both the apprentice's and caregiver point of views.

COTE Assessment Overview

The COTE assessment is an observational, standardized tool frequently used in occupational therapy practice. The validity and reliability was considered excellent within the assessment (>0.01) and the inter-rater reliability was excellent (ICC=0.91) (Ying & Deng, 2012). The COTE is a 25 item-scale that is broken down into three categories: general behavior (7 items); interpersonal behavior (6 items); and task behavior (12 items). The general behavior category includes items such as appearance, non-productive behaviors, and expression. The interpersonal behavior category includes items such as independence, cooperation, and sociability. The task behaviors category includes engagement, concentration, and coordination. Each item is scored on a scale of 0-4 (0= no problem, 1= minimal problem, 2= mild problem, 3= moderate problem, 4= severe problem) with there being subtotals in each category leading to a

total score (Ying & Deng, 2012). The COTE assessment was administered to all nine apprentices weekly throughout an eight week measurement period to be able to track the progress of each apprentice.

Overview of Satisfaction Surveys

Before and after the completion of administering the COTE assessment to each apprentice, each apprentice and their caregiver filled out a satisfaction survey. The survey was a non-standardized survey that addressed satisfaction, independence, and engagement. Two separate surveys were created, one being for the apprentice and the other for the caregiver. The Satisfaction Survey – Apprentice (see Appendix F) asked questions such as being satisfied with their independence before and after Sawdust, level of functional skills before and after Sawdust, and executive functioning skills (planning, attention). The Satisfaction Survey – Parent/Caregiver (see Appendix F) asked questions such as apprentices' independence level at home before and after Sawdust, child's engagement in tasks before and after Sawdust, and child's ability to plan ideas before and after Sawdust. Each question is scored on a scale of 1-5 (1= poor, 2= fair, 3= good, 4= very good, and 5= excellent).

In the beginning of the capstone experience, the capstone student extensively researched for a standardized satisfaction survey to be able to use during the capstone project. With Sawdust and having woodworking as an occupational intervention being so unique, there was a lack of standardized surveys found in research. Due to this being a hindrance, the capstone student and the stakeholders collaborated and created a satisfaction survey for both the apprentices and their caregivers to fit the need and to gain the necessary information for the capstone project to be beneficial.

Goals, Objectives & Outcomes for Capstone Experience

In Table 3 below is an outline of all the created outcomes, goals, and objectives that were used to measure the success and benefits of the capstone project. Each objective and goal was identified if it was met or not met throughout the 14 week experience with a description of why or why not it was met.

Table 3. Capstone Goal and Objectives

Outcome 1: Sawdust OT will gain knowledge of methods to measure the efficacy of program outcomes to use for decision-making and marketing.		
Goal 1: In 14 weeks, Sawdust OT will have the results of a quality improvement analysis related to program outcomes.		
Objectives:	The capstone student will develop a process for administering, interpreting, and storing data collected from the COTE and a satisfaction scale.	Met- The capstone student administered, interpreted, and stored COTE and satisfaction scale scores in an excel spreadsheet and gave it to Sawdust if necessary.
	Program apprentices will participate in completing the COTE assessment and the satisfaction scale.	Met- All apprentices involved in the capstone project participated and completed all 8 weeks of administering the COTE and completed the pre and post satisfaction scale questions.
	The capstone student will modify and/or create a system for organizing and managing the products/merchandise/goods created by the apprentices to provide an improved system for tracking projects and billing.	Met- The capstone student created an excel spreadsheet for Sawdust to track billing for each apprentice.

Outcome 2: The capstone student will gain knowledge regarding administrative and management tasks involved in running a private OT practice.		
Goal 2: In 14 weeks, the capstone student will learn the process of tasks related to promoting/advertising private OT practice.		
Objectives:	1- The capstone student will complete a compilation of video testimonials of program apprentices and share them on social media for marketing purposes.	Met- The capstone student completed a small video testimonial of some apprentices for Sawdust to use on social media if necessary
	2- The capstone student will take the lead in planning and conducting at least one community event.	Met- The capstone student planned and led a community event of Dungeon and Dragons at Sawdust.
Outcome 3: The apprentices at Sawdust OT will experience a change in their quality of life and demonstrate increased engagement in both program activities and daily activities outside of Sawdust.		
Goal 3A: In 14 weeks, program apprentices will demonstrate improved general behavior, interpersonal behavior, and task behavior as measured by the COTE. Goal 3B: In 14 weeks, program apprentices will demonstrate improved satisfaction as a result of Sawdust as measured by satisfaction scale.		
Objectives:	1- Program apprentices will be measured eight times during the capstone project (measurement window 8 weeks) using the COTE	Met- Each apprentice involved in the capstone study was measured eight times during the eight week measurement window.
	2- Participants will participate in completing pre/post measures of the satisfaction scale.	Met- Each apprentice completed the pre/post satisfaction scales.

	3- Participants will demonstrate increased functional skills evidenced by pre/post scores of COTE assessment	Met- Each apprentice showed improvement in all areas evidenced by the interpretation of the COTE assessment.
	4- Parents/caregivers will acknowledge and be satisfied with apprentices' improvements with functional skills in participation during sessions.	Met- After conversation with caregivers and based on the satisfaction scale, the caregivers of all apprentices are satisfied with apprentices' improvements in all areas after the services at Sawdust.

COTE Assessment Results

The COTE assessment scores of each apprentice during the 8 week measurement period is located below in Table 4 and the summary results for each apprentices COTE scores is in Appendix G. The table below is organized by the three domains of the COTE assessment, general behavior (GB), interpersonal behavior (IB), and task behavior (TB) and the apprentices (A1-A9) who participated in the capstone project. The scores of all domains and their totals throughout the eight-week measurement period are present in the chart with a grand total being at the end. The higher the total number of the score is, the worse function the apprentice had.

Apprentice #1 had a total score of 247 in all domains in all sessions. In the general behavior domain, it was noted that apprentice #1 had decreased in the general behavior domain across the eight-week measurement period. However, apprentice #1 improved in both the interpersonal and task behaviors domains. Apprentice #2 had a total score of 293 in all domains after the eight-week measurement period. There was improvement in all three domains, with the largest improvement coming in the task behavior domain as apprentice #2 scored a 27 after session number one and a 13 after session number eight. Apprentice #3 had a total score of 210

across the eight-week measurement period. Apprentice #3 had improved scores from session one to session eight in all three domains with its largest improvement coming in the task behavior

Table 4. Summary of Pretest and Posttest COTE Scores

Session	A1	A2	A3	A4	A5	A6	A7	A8	A9
GB #S1	6	9	8	14	14	11	13	12	11
GB #S2	6	9	8	12	14	11	11	10	11
GB #S3	9	9	7	11	14	8	10	9	12
GB #S4	8	9	7	11	13	9	10	9	10
GB #S5	8	9	5	11	11	9	10	9	9
GB #S6	8	8	4	9	12	9	9	9	9
GB #S7	7	9	4	6	9	7	8	8	8
GB #S8	7	6	4	6	8	8	8	7	8
Total	**59**	**68**	**47**	**80**	**95**	**72**	**79**	**73**	**78**
IB #S1	7	8	6	10	15	10	11	12	10
IB #S2	6	8	6	9	18	10	10	11	9
IB #S3	8	7	6	9	15	10	9	11	9
IB #S4	8	7	5	8	13	11	9	11	9
IB #S5	7	6	5	8	11	9	9	11	8
IB #S6	7	6	4	8	10	9	9	8	9
IB #S7	6	5	4	6	9	8	9	7	7
IB #S8	5	5	5	4	8	6	7	7	7
Total	**54**	**52**	**41**	**62**	**99**	**73**	**73**	**78**	**68**
TB #S1	17	27	21	28	25	22	29	24	25
TB #S2	18	27	17	24	24	21	27	23	26
TB #S3	20	26	19	22	24	20	24	24	23
TB #S4	18	18	15	21	23	19	23	24	21
TB #S5	18	24	14	21	21	19	22	23	21
TB #S6	16	23	12	17	18	21	22	17	21
TB #S7	14	15	12	14	17	21	21	14	16
TB #S8	13	13	12	11	12	15	15	15	16
Total	**134**	**173**	**122**	**158**	**164**	**158**	**183**	**164**	**169**
All Domains All Sessions	**247**	**293**	**210**	**300**	**358**	**303**	**335**	**315**	**315**

Note: Each item is based on a 5-point scale. 0= No Problem, 1= Minimal Problem, 2=Mild Problem, 3=Moderate Problem, 4= Severe Problem.

domain. Apprentice #4 had a total score of 300 at the end of the eight-week measurement period. Apprentice #4 improved his score each session in all domains with the most improvement coming in the task behavior domain with a session one score of 28 and a session eight score of 11. Apprentice #5 had a total score of 358, a score of 95 in the general behavior domain, a score of 99 in the interpersonal behavior domain, and a score of 164 from the task behavior domain. Apprentice #5 improved in each domain throughout the eight-week measurement period. Apprentice #6 had a total score of 303 across all domains after the eight-week measurement period. Apprentice #6 improved in all three domains from the beginning to the completion of the measurement period, notably improving in both the general behavior and task behavior domains. Apprentice #7 had a total score of 335 across the eight-week measurement period. It was noted apprentice #7 had improvements in all three domains with the most improvement coming in the task behavior domain with a session one score of 29 and a session eight score of 15. Apprentice #8 had a total score of 315 throughout all domains across the eight-week measurement period. Apprentice #8 had improvements in all three domains evidenced by ending with a higher score from session one to session eight. Apprentice #9 had a total score of 315, a score of 78 from the general behavior domain, 68 from the interpersonal behavior domain, and a score of 169 from the task behavior domain. Apprentice #9 saw the most improvement in the task behavior domain evidenced by a score of 25 after session one and a score of 16 after session eight. Overall, all nine apprentices improved in all domains throughout the eight-week measurement period.

After interpreting the results after the eight-week measurement period for the general behavior domain, the highest score was a 47 with the lowest being a 95. The average score of the general behavior domain was 72.3 with four of the nine apprentices scoring above the average. Eight of nine apprentices improved in the general behavior domain from session one to session

eight. However, it was noted that apprentices generally had lower scores in the general behavior domain compared to the interpersonal behavior domain. In the interpersonal domain, the highest score was a 41 with the lowest score being a 99. The average score in the interpersonal behaviors domain was a 68.8 with five of the nine participants scoring above the average. All nine apprentices had improved scores from session one to session eight. In the task behavior domain, this was noted to be the most improved domain throughout the nine apprentices. The highest score was 122 with the lowest being 183. The average score of the task behavior domain was 158.3 with four of the nine apprentices scoring below the average. Within the task behavior domain, there were vastly improved scores in comparison to session one to session eight from all nine apprentices.

Satisfaction Survey – Apprentices Pre/Post Results

The Satisfaction Survey – Apprentice pre/post results are located in Table 5 below. Each question on the survey was broken down with a keyword based and was listed 1-10. Each item was scored on a 1-5 scale based on the apprentices' responses. The first column for each apprentice is the pre-assessment survey score followed by the post-assessment survey score with the total of each being located at the bottom of each column. After interpreting the results, it was determined that all nine participants had an increased score from the pre-satisfaction survey scores in comparison to the post-satisfaction survey scores. However, it was noted that apprentice #1 had the same pre and post scores in four of the ten items, but improved their total score. Apprentice #9 had the largest increase in satisfaction evidenced by scoring a 24 in the pre-survey results and a 40 in the post-survey results. It was noted that all nine apprentices improved in the attention, happiness, and communicating needs categories evidenced by higher scores from the pre-satisfaction survey to the post-satisfaction survey.

Table 5. Satisfaction Survey – Apprentice Results

Items	P1 - Pre	P1 Post	P2 - Pre	P2 Post	P3- Pre	P3- Post	P4- Pre	P4- Post	P5- Pre	P5- Post	P6- Pre	P6- Post	P7- Pre	P7- Post	P8- Pre	P8- Post	P9- Pre	P9-Post
1. Happiness	3	4	3	4	3	4	2	4	3	4	3	4	3	4	3	4	2	4
2. Independence	3	4	3	4	3	4	3	4	3	3	3	4	3	4	3	4	3	4
3. Attention	3	4	2	3	2	3	2	3	1	3	2	3	2	3	2	4	3	4
4. Engagement	3	3	2	4	2	3	2	4	2	3	3	4	1	4	3	3	2	4
5. Planning	2	3	2	3	3	4	3	3	2	3	2	4	3	4	2	3	3	4
6. Describe Ideas	2	4	2	3	3	3	2	3	1	3	2	3	2	4	3	3	2	4
7. Communicating Needs	3	4	2	4	4	5	3	4	2	3	3	4	2	4	3	4	2	5
8. Satisfied with Life	3	3	3	4	3	5	2	4	3	3	3	4	3	3	3	5	2	4
9. Seen by Peers	3	3	3	3	3	5	2	3	3	3	3	4	3	4	3	4	2	3
10. Participation	3	3	3	4	3	5	3	4	3	5	3	5	3	4	3	4	3	4
Total	**28**	**35**	**25**	**36**	**29**	**41**	**24**	**36**	**23**	**33**	**27**	**39**	**25**	**38**	**28**	**38**	**24**	**40**

Note: Each item is based on a 5-point scale. 1= Poor; 2= Fair; 3= Good; 4= Very Good; 5= Excellent

Satisfaction Survey – Parents/Caregivers Pre/Post Results

The caregivers pre/post satisfaction survey results are located in Table 6 below. Each question was broken down into a keyword and was listed as item 1-6. Each item was scored on a scale of 1-5 based on the caregiver's response with a total score being located at the bottom of each column. The first row for each caregiver is the pre-satisfaction results followed by the post-satisfaction results in the next column. After interpretation of the results, it was determined that all nine caregivers' results increased from the pre-satisfaction surveys to the post-satisfaction surveys. However, caregiver #1 had the same pre and post results in functional skills and self-esteem items, but still saw an improvement in total score. Caregiver #3 had the same score in the decision-making item from the pre and post survey results. It was noted that all nine caregivers' results improved in the following items: planning, engagement, and flexibility. Caregiver #7 had the largest improved score evidenced by scoring 13 on the pre-satisfaction survey and a 26 on the post-satisfaction survey.

Table 6. Satisfaction Survey – Parent/Caregiver Results

Items	P1C - Pre	P1C- Post	P2C - Pre	P2C- Post	P3C- Pre	P3C- Post	P4C- Pre	P4C- Post	P5C- Pre	P5C- Post	P6C- Pre	P6C- Post	P7C- Pre	P7C- Post	P8C- Pre	P8C- Post	P9C- Pre	P9C- Post
1. Planning	2	4	2	4	3	4	1	2	2	3	2	3	2	5	3	4	4	5
2. Decision Making	2	4	2	3	4	4	2	3	1	3	2	4	2	4	1	3	4	5
3. Functional Skills	3	3	1	3	4	5	1	3	1	2	2	3	3	5	2	4	2	4
4. Self-Esteem	4	4	2	3	4	5	1	3	1	3	2	3	2	4	2	4	1	3
5. Engagement	3	4	2	3	4	5	2	3	1	3	2	4	2	4	1	4	2	3
6. Flexibility	3	4	2	3	3	4	2	3	1	3	2	3	2	4	1	3	1	3
Total	**17**	**23**	**11**	**19**	**22**	**27**	**9**	**17**	**7**	**17**	**12**	**20**	**13**	**26**	**10**	**22**	**14**	**23**

Note: Each item is based on a 5-point scale. 1= Poor; 2= Fair; 3= Good; 4= Very Good; 5= Excellent

Chapter Six: Discussion and Impact

The capstone experience provided a lot of relative results compared to the literature found throughout the capstone process. Throughout the eight-week measurement period, it was observed that the strategies to improve work habits were deemed effective. A research study conducted by Pfeiffer et al. (2016) investigated the effectiveness of noise canceling headphones used by individuals with autism at school and in the community. This physical modification showed improvement in attention and information processing in individuals that participated in the research study (Pfeiffer et al., 2016). Often at Sawdust, the environment within the workshop is typically noisy due to tools being used which can cause decreased attention within apprentices. The modification of using noise canceling headphones was used by apprentices during sessions and was deemed effective evidenced by the increase in scores during the eight-week measurement period of COTE assessment.

Another skill that is actively used within Sawdust is providing cues when necessary to apprentices. Verbal cues serve as a reminder to direct a client's attention to a relevant task or to assist them with the motor planning of the task (Landin, 2012). A study conducted by Landin, 2012, investigated the impact of verbal cueing in skill learning. The study showed that verbal cueing has a positive effect on improving sequencing, attention to detail, and sustaining attention to tasks (Landin, 2012). This was often used by the capstone student and the stakeholders to improve the sequencing of apprentices during woodworking tasks and sustaining attention throughout the project. The capstone student only used verbal cues when necessary to promote independence within the apprentices which was deemed beneficial evidenced by the increased independence scores of the COTE assessment during the eight-week measurement period.

During the measurement period of the COTE assessment, all nine apprentices improved from the beginning of the measurement to the completion of the measurement. Self-determination, volition, and repetition of tasks led to the improvement of all apprentices at the completion of the COTE assessment. Self-determination allows individuals to make decisions on their own and ultimately determine the paths of their own lives (Wehmeyer & Schwartz, 1997). With the apprentices demonstrating improved self-determination, research has shown that within the population of intellectual and developmental disability this can promote success in daily life activities (Wehmeyer & Abery, 2013). Volition was also a major component of success with the increased scores throughout the measurement period of the COTE assessment. With increased volition, this engaged apprentices in occupations that are meaningful to them which overall led to the increase in their COTE scores. Finally, task repetition is the final aspect that contributed to improved COTE assessment scores. A study conducted by Lancioni et al. (1998) investigated the effectiveness of task variation and task repetition in individuals with intellectual disabilities. The study provided evidence that task repetition can be beneficial in improving a certain skill (Lancioni et al., 1998). With the apprentices at Sawdust, when learning a new skill and continuously doing this skill the individuals gained familiarity with the skill and eventually kept improving evidenced by the COTE assessment scores.

Limitations

The main limitation throughout this capstone experience was the lack of research conducted on woodworking as an occupational intervention. This limitation was something to overcome during the developing phases of the capstone process, in particularly completing the literature review. Another limitation that should be mentioned is apprentices' availability throughout the eight-week measurement period. Throughout the eight-week measurement period,

some of the apprentices would miss a session due to other commitments which would impact the completion of the assessment. This would cause the capstone student and the stakeholders to reschedule sessions to fit into that eight-week measuring period which could often be challenging with busy schedules.

Feedback from Site

A capstone project has never been completed at Sawdust so feedback throughout the entire capstone experience was essential. Prior to administering the COTE assessment, the capstone student and the stakeholders both administered the assessment on an apprentice to promote inter-rater reliability. The apprentice that was being measured knew he was being assessed which may impact the validity of the scores. After this happened, the stakeholders provided feedback and suggested that the capstone student should be more discreet during the eight-week measurement period to promote validity of the results. This turned out to be beneficial for the capstone student, the apprentices, and the validity of the results from the COTE assessment. At the completion of the eight-week measurement period, the stakeholders provided feedback mentioning they could see improvements in a variety of areas that apprentices have made since the beginning of measurement period. At the completion of the capstone experience, the stakeholders mentioned that the addition of having a capstone student in their clinic was beneficial. With Sawdust being such a unique idea, the stakeholders stated they wanted this project to be completed to let evidence prove that woodworking as an occupational intervention is beneficial.

Sustainability

At the end of the capstone experience, the capstone student and stakeholders had a discussion regarding sustainability. In the literature review process, the capstone student found

ways to improve work habits through environmental modifications leading to increased attention, safety awareness, and developing frustration tolerance. The stakeholders emphasized they would like to continue to implement these strategies to improve work habits within each apprentice. Another part of the capstone experience the stakeholders would benefit from maintaining was the billing excel spreadsheet created by the capstone student. This allowed the stakeholders to remain organized with billing while not interfering with their services. Overall, the stakeholders plan to implement and sustain the strategies and the billing spreadsheet to overall improve the business administration and program services.

Chapter Seven: Conclusion

The doctoral capstone experience completed at Sawdust OT provided evidence that there is benefit of woodworking as an occupational therapy intervention within the population of intellectual disabilities and developmental disabilities. This capstone project intended to address the gaps within the intellectual and developmental disability population and employment by proving the intervention is beneficial evidenced by all nine apprentices involved in the capstone project improving over the eight week measurement period. Throughout the capstone experience, the capstone student gained knowledge and competence with the COTE assessment, woodworking as an intervention, business administration, and marketing aspects for a small business. With the research and materials completed by the capstone student, sustainability is achieved by implementing the strategies to improve work habits and business administration components.

Appendix A

Copy of the Participation Form

Sawdust OT
Participation Form and HIPAA Authorization Script/Information Sheet
For a Research Study

Study Title: The Effects of Woodworking and the Development of Job Performance Skills in Individuals with Intellectual and Developmental Disabilities

Principal Investigator: Benjamin Keeling, OTR/L. James Garwacki, OTR/L

Introduction and Study Overview

Thank you for agreeing for your child to be in this observational research study. We would like to tell you everything you need to think about before you decide whether or not to join the study. It is entirely your choice. If you decide to take part, you can change your mind later on and withdraw from the research study.

1) The purpose of this study is to investigate the effect of woodworking and the development of job performance skills in individuals with an intellectual disability in order to add to the growing evidence supporting occupational based interventions by facilities like Sawdust OT. We plan to enroll 12 individuals in this study.
2) The research study will prolong for 10 weeks using two different assessments: a Likert Scale and the Comprehensive Occupational Therapy Evaluation (COTE). The Satisfaction scale is a questionnaire that uses a 5 point scale that assesses satisfaction. The COTE is designed to measure strengths and difficulties in various behaviors.
3) If agreeing to join, the researcher will use the Satisfaction Scale 2 different times; one at the beginning of the study and one at the end. The researcher will observe during sessions and will use the COTE while your child participates in his weekly session.
4) You may be asked to assist with the Satisfaction scale if needed. This will take approximately 5-10 minutes.
5) There are minimal risks to participating in the study. Participation in this study will have no impact on the quality of care your child receives during their therapy sessions.
6) Your privacy is very important to us. We will not be revealing any confidential information throughout the collection of data or the data analysis.

Contact Information

If you have questions about this study, you or your child's part in it, or if you have questions, concerns or complaints about the research you may contact the following:
Travis Nadeau: Occupational Therapy Student

Consent for Participation

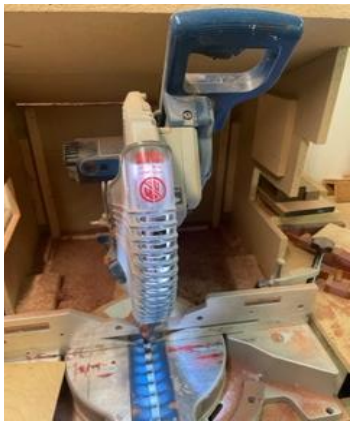
Do you have any questions about anything I just said? Were there any parts that seemed unclear?

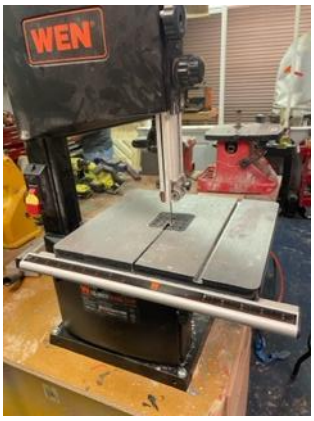
Do you provide consent for your child to take part in the study? If so, please sign below.

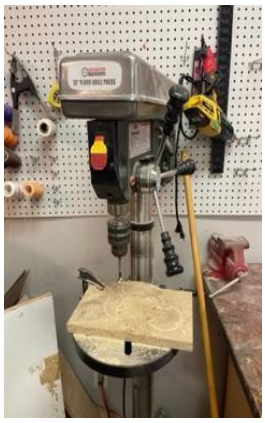
Signature:

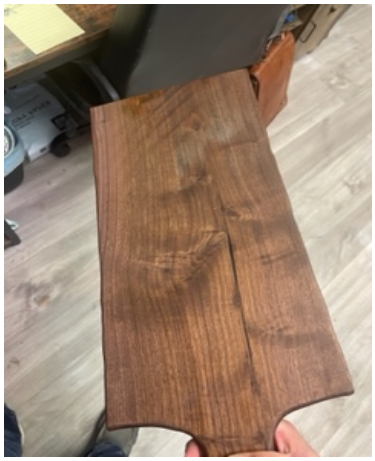
Appendix B

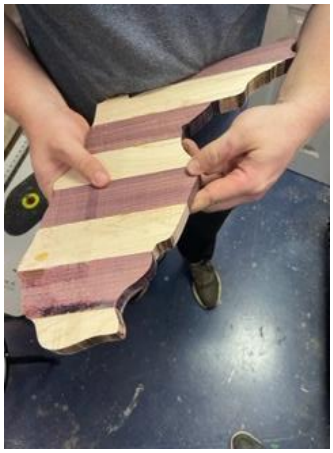
Photos of Tools and Completed Projects

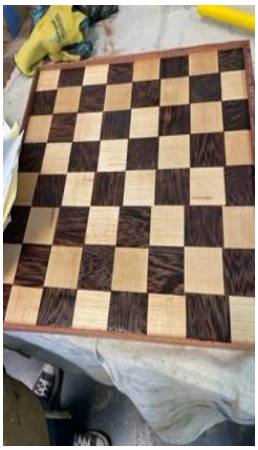


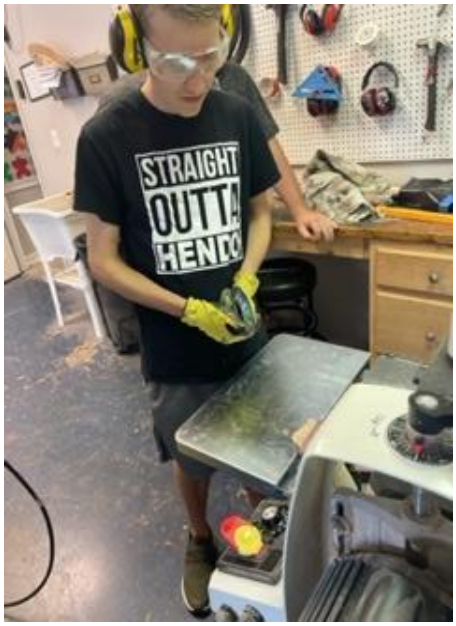








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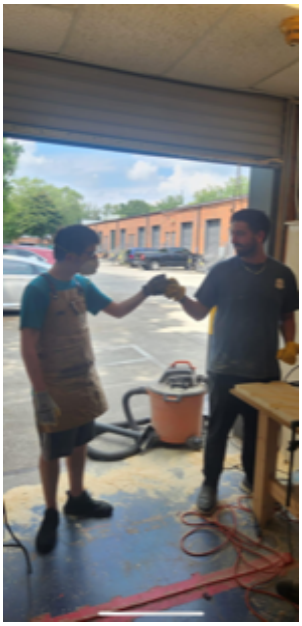
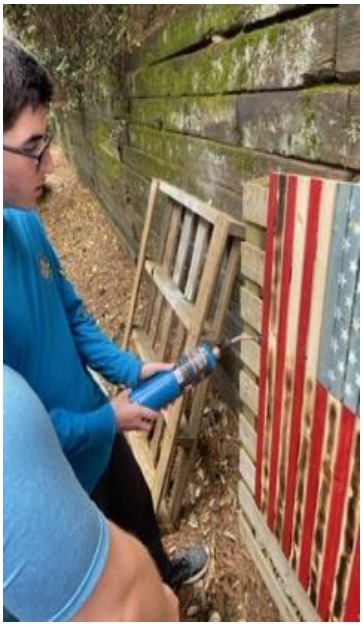
OUTTA





Appendix C

Template of Billing Spreadsheet

Client 1	BCBS		1/26/23	
Client 2	BCBS		3/24/23	
Client 3	Medicare		6/24/23	
Client 4	Cigna		3/13/23	
Client 5	TRS		11/16/22	
Client 6	Medicare		4/13/23	
Client 7	BCBS	X		XXXXXX
Client 8	BCBS		7/9/23	

Appendix D

Comprehensive Occupational Therapy Evaluation Scale (COTE)

Patient Name:

DATE							
I. GENERAL BEHAVIOR	1	2	3	4	5	6	7
A. APPEARANCE							
B. NON-PRODUCTIVE BEHAVIOR							
C. ACTIVITY LEVEL (a or b)							
D. EXPRESSION							
E. RESPONSIBILITY							
F. PUNCTUALITY							
G. REALITY ORIENTATION							
SUB-TOTAL							

II. INTERPERSONAL BEHAVIOR	1	2	3	4	5	6	7
A. INDEPENDENCE							
B. COOPERATION							
C. SELF-ASSERTION (a or b)							
D. SOCIABILITY							
E. ATTENTION-GETTING BEHAVIOR							
F. NEGATIVE RESPONSE FROM OTHERS							
SUB-TOTAL							

III. TASK BEHAVIOR	1	2	3	4	5	6	7
A. ENGAGEMENT							
B. CONCENTRATION							
C. COORDINATION							
D. FOLLOW DIRECTIONS							
E. ACTIVITY NEATNESS OR ATTENTION TO DETAIL							
F. PROBLEM SOLVING							
G. COMPLEXITY AND ORGANIZATION OF TASK							
H. INITIAL LEARNING							
I. INTEREST IN ACTIVITY							
J. INTEREST IN ACCOMPLISHMENT							
K. DECISION MAKING							
L. FRUSTRATION TOLERANCE							
SUB-TOTAL							
TOTAL							

SCALE 0-NORMAL 1-MINIMAL 2-MILD 3-MODERATE 4-SEVERE

_____

Therapist's Signature

Appendix E

Copy of Pre-Satisfaction Survey For Apprentices

Pre-Satisfaction Survey for Apprentices

Question 1: Perceived level of happiness prior to Sawdust

Poor **Fair** **Good** **Very Good** **Excellent**

Question 2: I feel happy with my current level of independence

Poor **Fair** **Good** **Very Good** **Excellent**

Question 3: My functional skills such as organization/attention prior to Sawdust

Poor **Fair** **Good** **Very Good** **Excellent**

Question 4: How was my engagement in tasks prior to Sawdust.

Poor **Fair** **Good** **Very Good** **Excellent**

Question 5: I can start an idea/plan by myself

Poor **Fair** **Good** **Very Good** **Excellent**

Question 6: I can describe my plans/desires

Poor **Fair** **Good** **Very Good** **Excellent**

Question 7: I can communicate my wants and needs

Poor **Fair** **Good** **Very Good** **Excellent**

Question 8: I am satisfied with my current life/career trajectory

Poor **Fair** **Good** **Very Good** **Excellent**

Question 9: I feel seen by my peers/community

Poor **Fair** **Good** **Very Good** **Excellent**

Question 10: I can participate in things/activities I enjoy

Poor **Fair** **Good** **Very Good** **Excellent**

Copy of Post-Satisfaction Survey for Apprentices

Post-Satisfaction Survey Participants

Question 1: Perceived level of happiness after Sawdust

Poor **Fair** **Good** **Very Good** **Excellent**

Question 2: I feel happy with my current level of independence

Poor **Fair** **Good** **Very Good** **Excellent**

Question 3: My functional skills such as organization/attention after Sawdust

Poor **Fair** **Good** **Very Good** **Excellent**

Question 4: How was my engagement in tasks after Sawdust.

Poor **Fair** **Good** **Very Good** **Excellent**

Question 5: I can start an idea/plan by myself after Sawdust

Poor **Fair** **Good** **Very Good** **Excellent**

Question 6: I can describe my plans/desires after Sawdust

Poor **Fair** **Good** **Very Good** **Excellent**

Question 6: I can communicate my wants and needs

Poor **Fair** **Good** **Very Good** **Excellent**

Question 7: I am satisfied with my current life/career trajectory

Poor **Fair** **Good** **Very Good** **Excellent**

Question 8: I feel seen by my peers/community

Poor **Fair** **Good** **Very Good** **Excellent**

Question 9: I can participate in things/activities I enjoy

Poor **Fair** **Good** **Very Good** **Excellent**

Pre-Satisfaction Survey for Caregivers

Pre-Satisfaction Survey for Caregivers

Question 1: My child's ability to start/plan ideas prior to Sawdust.

Poor **Fair** **Good** **Very Good** **Excellent**

Question 2: My child's ability to make decisions independently from me.

Poor **Fair** **Good** **Very Good** **Excellent**

Question 3: My child's functional skills (ex: organization, attention) seen at home prior to Sawdust.

Poor **Fair** **Good** **Very Good** **Excellent**

Question 4: My child's sense of self-esteem and perceived independence.

Poor **Fair** **Good** **Very Good** **Excellent**

Question 5: My child's ability to engage/participate in tasks in without assistance from me.

Poor Fair Good Very Good Excellent

Question 6: My child's ability to adjust expectations/flexibility with different or changed situations

Poor Fair Good Very Good Excellent

Post-Satisfaction Survey Caregivers

Question 1: My child's ability to start/plan ideas after Sawdust.

Poor Fair Good Very Good Excellent

Question 2: My child's ability to make decisions independently from me after Sawdust.

Poor Fair Good Very Good Excellent

Question 3: My child's functional skills (ex: organization, attention) seen at home after Sawdust.

Poor Fair Good Very Good Excellent

Question 4: My child's sense of self-esteem and perceived independence after Sawdust.

Poor **Fair** **Good** **Very Good** **Excellent**

Question 5: My child's ability to engage/participate in tasks in without assistance from me after Sawdust.

Poor **Fair** **Good** **Very Good** **Excellent**

Question 6: My child's ability to adjust expectations/flexibility with different or changed situations after Sawdust.

Poor **Fair** **Good** **Very Good** **Excellent**

Appendix F

Copy of COTE Results For Apprentice #1

COTE Data for Apprentice #1

COTE Category	COTE Items	S1	S2	S3	S4	S5	S6	S7	S8
General Behavior	Appearance	0	0	1	1	1	1	1	1
	Non-Productive Behavior	0	0	2	2	2	2	2	2
	Activity Level	1	1	1	1	1	1	1	1
	Expression	3	3	3	2	2	2	1	1
	Responsibility	1	1	1	1	1	1	1	1
	Punctuality	0	0	0	0	0	0	0	0
	Reality Orientation	1	1	1	1	1	1	1	1
	GB – Subtotal	6	6	9	8	8	8	7	7
Interpersonal Behavior	Independence	2	2	2	3	2	2	1	1
	Cooperation	0	0	1	1	1	1	1	1
	Self-Assertion	1	1	1	1	1	1	1	1
	Sociability	1	1	1	1	1	1	1	1
	Attention-Getting Behavior	3	2	3	2	2	2	2	1
	Negative Response from Others	0	0	0	0	0	0	0	0
	IB – Subtotal	7	6	8	8	7	7	6	5
Task Behavior	Engagement	2	2	2	2	2	2	1	1
	Concentration	2	2	2	2	2	2	2	2
	Coordination	2	2	2	2	2	1	1	1
	Follow Directions	0	0	1	1	1	1	1	1
	Activity Neatness/ Attention to Detail	0	1	2	1	1	1	1	1
	Problem Solving	2	2	2	2	2	2	1	1
	Complexity and Organization of Task	3	3	2	2	2	2	2	2
	Initial Learning	1	1	1	1	1	1	1	1
	Interest in Activity	1	1	1	1	1	1	1	1
	Interest in Accomplishment	0	0	1	1	1	1	1	1
	Decision Making	3	3	3	2	2	1	1	1
	Frustration Tolerance	1	1	1	1	1	1	1	0
	TB - Subtotal	17	18	20	18	18	16	14	13
	COTE TOTAL	30	30	37	34	33	31	27	26

Note: Each item is coded on a 5-point scale. 0= No Problem, 1= Minimal Problem, 2=Mild Problem, 3=Moderate Problem, 4= Severe Problem. Sessions 1-2 – apprentice worked on/completed a cutting board; Session 3- apprentice had a re-assessment, Session 4-6 apprentice worked on charcuterie board, Session 7-8 apprentice worked on flag project

Copy of COTE Results For Apprentice #2

COTE Data for Apprentice #2

COTE Category	COTE Items	S1	S2	S3	S4	S5	S6	S7	S8
General Behavior	Appearance	1	1	1	1	1	1	1	1
	Non-Productive Behavior	2		2	2	2	2	2	1
	Activity Level	2	2	2	2	2	2	2	1
	Expression	2	2	2	2	2	1	2	1
	Responsibility	2	1	1	1	1	1	1	1
	Punctuality	0	0	0	0	0	0	0	0
	Reality Orientation	1	1	1	1	1	1	1	1
	GB – Subtotal	9	9	9	9	9	8	9	62
Interpersonal Behavior	Independence	2	2	2	2	1	1	1	1
	Cooperation	1	1	1	1	1	1	1	1
	Self-Assertion	1	1	1	1	1	1	1	1
	Sociability	1	1	1	1	1	1	1	1
	Attention-Getting Behavior	3	3	2	2	2	2	1	1
	Negative Response from Others	0	0	0	0	0	0	0	0
	IB – Subtotal	8	8	7	7	6	6	5	5
Task Behavior	Engagement	1	1	1	2	1	1	1	1
	Concentration	3	3	3	2	2	2	1	2
	Coordination	3	3	3	2	2	2	1	1
	Follow Directions	2	2	2	1	2	2	2	1
	Activity Neatness/ Attention to Detail	3	3	2	1	2	2	2	1
	Problem Solving	3	3	3	2	3	2	2	1
	Complexity and Organization of Task	2	2	2	2	2	2	2	2
	Initial Learning	2	2	2	1	2	2	1	1
	Interest in Activity	2	2	2	1	2	2	1	1
	Interest in Accomplishment	2	2	2	1	2	2	1	1
	Decision Making	2	2	2	2	2	2	2	1
	Frustration Tolerance	2	2	2	1	2	2	1	0
	TB - Subtotal	27	27	26	18	24	23	15	13
	COTE TOTAL	44	44	42	34	39	37	31	24

Note: Each item is coded on a 5-point scale. 0= No Problem, 1= Minimal Problem, 2=Mild Problem, 3=Moderate Problem, 4= Severe Problem. Sessions 1-3 – apprentice worked on a bookshelf; Session 4- apprentice had a re-assessment, Session 5-6 apprentice worked on flag project, Session 7-8 apprentice worked on Jenga block project

Copy of COTE Results for Apprentice #3

COTE Data for Apprentice #3

COTE Category	COTE Items	S1	S2	S3	S4	S5	S6	S7	S8
General Behavior	Appearance	0	0	0	0	0	0	0	0
	Non-Productive Behavior	2	2	2	1	1	1	1	1
	Activity Level	2	2	2	2	1	1	1	1
	Expression	1	1	1	1	1	1	1	1
	Responsibility	2	2	1	2	2	1	1	1
	Punctuality	0	0	0	0	0	0	0	0
	Reality Orientation	1	1	1	1	0	0	0	0
	GB – Subtotal	8	8	7	7	5	4	4	4
Interpersonal Behavior	Independence	1	1	2	1	2	1	1	1
	Cooperation	0	0	0	0	0	0	0	1
	Self-Assertion	1	1	2	1	1	1	1	1
	Sociability	1	1	1	1	1	1	1	1
	Attention-Getting Behavior	3	3	2	1	1	1	1	1
	Negative Response from Others	0	0	0	0		0	0	0
	IB – Subtotal	6	6	6	5	5	4	4	5
Task Behavior	Engagement	1	2	1	1	1	1	1	1
	Concentration	3	2	2	2	1	1	1	2
	Coordination	2	2	2	2	2	2	1	1
	Follow Directions	1	1	1	1	1	1	1	1
	Activity Neatness/ Attention to Detail	2	2	2	2	1	1	1	1
	Problem Solving	2	1	2	1	1	1	1	1
	Complexity and Organization of Task	2	1	2	1	1	1	1	1
	Initial Learning	2	2	1	2	2	1	1	1
	Interest in Activity	1	1	1	1	1	1	1	1
	Interest in Accomplishment	2	1	1	1	1	1	1	1
	Decision Making	2	2	3	1	1	1	1	1
	Frustration Tolerance	1	0	1	0	1	0	1	0
	TB - Subtotal	21	17	19	14	14	12	12	12
	COTE TOTAL	35	31	32	24	24	20	20	20

Note: Each item is coded on a 5-point scale. 0= No Problem, 1= Minimal Problem, 2=Mild Problem, 3=Moderate Problem, 4= Severe Problem.; Sessions 1-2 – apprentice worked on tulips project; Session 3-6 apprentice worked on Yoda pixel art project; Session 7-8 apprentice worked on flag project.

Copy of COTE Results for Apprentice #4

COTE Data for Apprentice #4

COTE Category	COTE Items	S1	S2	S3	S4	S5	S6	S7	S8
General Behavior	Appearance	1	1	1	1	1	1	1	1
	Non-Productive Behavior	4	3	2	2	2	2	1	1
	Activity Level	2	2	2	2	2	1	1	1
	Expression	2	2	2	2	2	2	1	1
	Responsibility	3	2	2	2	2	1	1	1
	Punctuality	1	1	1	1	1	1	0	0
	Reality Orientation	1	1	1	1	1	1	1	1
	GB – Subtotal	14	12	11	11	11	9	6	6
Interpersonal Behavior	Independence	2	2	2	2	2	2	1	1
	Cooperation	1	1	1	1	1	1	0	0
	Self-Assertion	1	1	1	1	1	1	1	1
	Sociability	3	3	2	2	2	2	2	1
	Attention-Getting Behavior	3	2	3	2	2	2	2	1
	Negative Response from Others	0	0	0	0	0	0	0	0
	IB – Subtotal	10	9	9	8	8	8	6	4
Task Behavior	Engagement	2	2	2	2	2	2	1	1
	Concentration	2	2	2	2	2	1	1	1
	Coordination	2	2	2	2	2	1	1	1
	Follow Directions	3	2	2	2	2	2	2	1
	Activity Neatness/ Attention to Detail	3	2	2	2	2	1	1	1
	Problem Solving	3	2	2	2	2	2	1	1
	Complexity and Organization of Task	3	3	2	2	2	2	2	1
	Initial Learning	2	2	2	2	2	1	1	1
	Interest in Activity	1	1	1	1	2	1	1	1
	Interest in Accomplishment	2	1	1	0	1	1	0	1
	Decision Making	4	4	3	3	2	2	2	1
	Frustration Tolerance	1	1	1	1	1	1	1	0
	TB - Subtotal	28	24	22	21	21	17	14	11
	COTE TOTAL	52	45	42	41	41	34	26	21

Note: Each item is coded on a 5-point scale. 0= No Problem, 1= Minimal Problem, 2=Mild Problem, 3=Moderate Problem, 4= Severe Problem.; Sessions 1-2: apprentice worked on cutting board; Session 3-6 apprentice worked on resin table; Session 7-8 apprentice worked on charcuterie board

Copy of COTE Results for Apprentice #5

COTE Data for Apprentice #5

COTE Category	COTE Items	S1	S2	S3	S4	S5	S6	S7	S8
General Behavior	Appearance	1	2	1	2	1	1	1	1
	Non-Productive Behavior	4	4	4	3	3	3	2	2
	Activity Level	1	1	1	1	1	1	1	1
	Expression	3	3	3	2	2	2	2	2
	Responsibility	2	2	2	2	2	2	1	1
	Punctuality	2	1	2	2	1	2	1	0
	Reality Orientation	1	1	1	1	1	1	1	1
	GB – Subtotal	14	14	14	13	11	12	9	8
Interpersonal Behavior	Independence	4	4	3	3	2	2	1	1
	Cooperation	2	2	2	1	1	1	1	1
	Self-Assertion	2	3	2	2	2	1	1	1
	Sociability	3	3	3	3	3	2	2	2
	Attention-Getting Behavior	3	4	4	3	2	3	3	2
	Negative Response from Others	1	2	1	1	1	1	1	1
	IB – Subtotal	15	18	15	13	11	10	9	8
Task Behavior	Engagement	2	2	2	2	2	1	1	1
	Concentration	3	2	3	2	2	2	2	1
	Coordination	3	3	2	2	2	1	1	1
	Follow Directions	2	2	3	2	2	2	1	1
	Activity Neatness/ Attention to Detail	2	3	2	2	2	2	2	1
	Problem Solving	3	3	3	3	3	2	2	1
	Complexity and Organization of Task	3	3	2	2	2	2	2	2
	Initial Learning	1	1	1	1	1	1	1	1
	Interest in Activity	1	1	1	1	1	1	1	1
	Interest in Accomplishment	1	0	1	1	1	1	1	1
	Decision Making	3	3	3	3	2	2	2	1
	Frustration Tolerance	1	1	1	2	1	1	1	0
	TB - Subtotal	25	24	24	23	21	18	17	12
	COTE TOTAL	54	56	53	49	43	40	35	28

Note: Each item is coded on a 5-point scale. 0= No Problem, 1= Minimal Problem, 2=Mild Problem, 3=Moderate Problem, 4= Severe Problem.; Sessions 1- apprentice worked on re-assessment; Session 2-5 apprentice worked on resin table; Session 6-8 apprentice worked on desk

Copy of COTE Results for Apprentice #6

COTE Data for Apprentice #6

COTE Category	COTE Items	S1	S2	S3	S4	S5	S6	S7	S8
General Behavior	Appearance	1	1	1	1	1	1	1	1
	Non-Productive Behavior	3	3	2	2	2	2	1	1
	Activity Level	2	2	1	2	2	2	1	2
	Expression	1	1	1	1	1	1	1	1
	Responsibility	1	1	1	1	1	1	1	1
	Punctuality	1	1	1	1	1	1	1	1
	Reality Orientation	2	2	1	1	1	1	1	1
	GB – Subtotal	11	11	8	9	9	9	7	8
Interpersonal Behavior	Independence	2	2	2	2	1	2	2	1
	Cooperation	2	2	2	2	2	2	2	1
	Self-Assertion	1	1	1	2	1	2	1	1
	Sociability	2	2	2	2	2	1	1	1
	Attention-Getting Behavior	2	2	1	2	2	1	1	1
	Negative Response from Others	1	1	2	1	1	1	1	1
	IB – Subtotal	10	10	10	11	9	9	8	6
Task Behavior	Engagement	1	1	2	1	1	1	1	1
	Concentration	3	3	3	2	2	2	2	1
	Coordination	2	2	2	2	2	2	2	2
	Follow Directions	2	2	2	2	2	1	1	1
	Activity Neatness/ Attention to Detail	2	2	2	2	2	2	2	1
	Problem Solving	3	3	2	2	2	2	2	1
	Complexity and Organization of Task	2	2	2	2	2	2	2	2
	Initial Learning	2	2	2	2	2	2	2	2
	Interest in Activity	2	1	2	1	1	2	2	1
	Interest in Accomplishment	1	1	1	1	1	2	2	1
	Decision Making	1	1	0	1	1	2	2	1
	Frustration Tolerance	1	1	0	1	1	1	1	1
	TB - Subtotal	22	21	20	19	19	21	21	15
	COTE TOTAL	43	42	38	39	37	39	36	29

Note: Each item is coded on a 5-point scale. 0= No Problem, 1= Minimal Problem, 2=Mild Problem, 3=Moderate Problem, 4= Severe Problem.; Sessions 1-4 apprentice worked on resin tray; sessions 5-8 apprentice worked on Florida shaped cutting board

Copy of COTE Results for Apprentice #7

COTE Data for Apprentice #7

COTE Category	COTE Items	S1	S2	S3	S4	S5	S6	S7	S8
General Behavior	Appearance	1	1	1	1	1	1	1	1
	Non-Productive Behavior	3	2	2	2	2	2	1	1
	Activity Level	3	3	2	2	2	1	1	1
	Expression	3	2	2	2	2	2	2	2
	Responsibility	2	2	2	2	2	2	2	2
	Punctuality	0	0	0	0	0	0	0	0
	Reality Orientation	1	1	1	1	1	1	1	1
	GB – Subtotal	13	11	10	10	10	9	8	8
Interpersonal Behavior	Independence	2	2	2	2	2	2	2	1
	Cooperation	2	2	1	1	1	1	1	1
	Self-Assertion	2	2	2	2	2	2	2	1
	Sociability	3	2	2	2	2	2	2	2
	Attention-Getting Behavior	1	1	1	1	1	1	1	1
	Negative Response from Others	1	1	1	1	1	1	1	1
	IB – Subtotal	11	10	9	9	9	9	9	7
Task Behavior	Engagement	2	2	2	2	1	1	1	1
	Concentration	2	2	2	1	1	2	1	1
	Coordination	3	2	2	2	2	2	2	1
	Follow Directions	2	1	1	1	1	1	1	1
	Activity Neatness/ Attention to Detail	2	2	2	2	2	2	2	2
	Problem Solving	3	3	3	3	3	2	2	2
	Complexity and Organization of Task	2	2	2	2	2	2	2	2
	Initial Learning	4	4	3	3	3	3	2	1
	Interest in Activity	2	2	2	2	2	2	2	1
	Interest in Accomplishment	2	2	2	2	2	2	2	1
	Decision Making	3	3	2	2	2	2	2	1
	Frustration Tolerance	2	2	1	1	1	1	2	1
	TB - Subtotal	29	27	24	23	22	22	21	15
	COTE TOTAL	53	48	43	42	41	40	38	30

Note: Each item is coded on a 5-point scale. 0= No Problem, 1= Minimal Problem, 2=Mild Problem, 3=Moderate Problem, 4= Severe Problem. Sessions 1-4- apprentice made resin sign for his room, Sessions 5-7 apprentice made flag, Session 8 apprentice began cutting board.

Copy of COTE Results For Apprentice #8

COTE Data for Apprentice #8

COTE Category	COTE Items	S1	S2	S3	S4	S5	S6	S7	S8
General Behavior	Appearance	1	1	1	1	1	1	1	1
	Non-Productive Behavior	3	2	2	2	2	2	2	1
	Activity Level	2	2	1	1	1	1	1	1
	Expression	3	2	2	2	2	2	1	1
	Responsibility	1	1	1	1	1	1	1	1
	Punctuality	1	1	1	1	1	1	1	1
	Reality Orientation	1	1	1	1	1	1	1	1
	GB – Subtotal	12	10	9	9	9	9	8	7
Interpersonal Behavior	Independence	2	2	2	2	2	1	1	1
	Cooperation	2	2	2	2	2	1	1	1
	Self-Assertion	1	1	1	1	1	1	1	1
	Sociability	2	2	2	2	2	1	1	1
	Attention-Getting Behavior	3	3	2	2	2	2	2	2
	Negative Response from Others	2	1	2	2	2	2	1	1
	IB – Subtotal	12	11	11	11	11	8	7	7
Task Behavior	Engagement	2	2	2	2	2	2	1	1
	Concentration	2	2	3	2	2	2	1	2
	Coordination	2	2	2	2	2	2	1	1
	Follow Directions	2	2	2	2	2	1	1	1
	Activity Neatness/ Attention to Detail	2	2	2	2	2	1	1	1
	Problem Solving	2	2	2	2	2	1	1	1
	Complexity and Organization of Task	2	2	2	2	2	1	1	1
	Initial Learning	1	1	1	1	1	1	1	1
	Interest in Activity	2	2	2	2	2	1	1	1
	Interest in Accomplishment	2	2	2	2	2	1	1	1
	Decision Making	3	2	2	2	2	2	2	2
	Frustration Tolerance	2	2	2	3	2	2	2	2
	TB - Subtotal	24	23	24	24	23	17	14	15
	COTE TOTAL	48	44	44	44	43	34	29	29

Note: Each item is coded on a 5-point scale. 0= No Problem, 1= Minimal Problem, 2=Mild Problem, 3=Moderate Problem, 4= Severe Problem.; Sessions 1-5; apprentice worked on resin table; Sessions 6-8 apprentice worked on another resin table.

Copy of COTE Results For Apprentice #9

COTE Data for Apprentice #9

COTE Category	COTE Items	S1	S2	S3	S4	S5	S6	S7	S8
General Behavior	Appearance	2	2	2	1	1	1	1	1
	Non-Productive Behavior	2	2	2	1	1	1	1	1
	Activity Level	1	1	2	2	2	2	2	2
	Expression	1	1	1	1	1	1	1	1
	Responsibility	3	3	3	3	2	2	1	1
	Punctuality	1	1	1	1	1	1	1	1
	Reality Orientation	1	1	1	1	1	1	1	1
	GB – Subtotal	11	11	12	10	9	9	8	8
Interpersonal Behavior	Independence	3	2	2	2	1	2	1	1
	Cooperation	1	1	1	1	1	1	1	1
	Self-Assertion	1	1	1	1	1	1	1	1
	Sociability	2	2	2	2	2	2	2	2
	Attention-Getting Behavior	2	2	2	2	2	2	1	1
	Negative Response from Others	1	1	1	1	1	1	1	1
	IB – Subtotal	10	9	9	9	8	9	7	7
Task Behavior	Engagement	2	2	2	2	2	2	1	1
	Concentration	2	2	2	1	1	1	1	1
	Coordination	2	3	2	2	2	2	2	2
	Follow Directions	1	1	1	1	1	1	1	1
	Activity Neatness/ Attention to Detail	3	2	2	2	2	2	2	2
	Problem Solving	3	3	2	2	2	2	2	2
	Complexity and Organization of Task	3	3	3	2	2	2	2	2
	Initial Learning	2	3	2	2	2	2	1	1
	Interest in Activity	2	2	2	2	2	2	1	1
	Interest in Accomplishment	2	2	2	2	2	2	1	1
	Decision Making	2	2	2	2	2	2	1	1
	Frustration Tolerance	1	1	1	1	1	1	1	1
	TB - Subtotal	25	26	23	21	21	21	16	16
	COTE TOTAL	46	46	44	40	38	39	31	31

Note: Each item is coded on a 5-point scale. 0= No Problem, 1= Minimal Problem, 2=Mild Problem, 3=Moderate Problem, 4= Severe Problem. Sessions 1-3- apprentice worked on charcuterie board; Session 4-6 apprentice worked on resin table; session 7-8 apprentice worked on flag

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