Using Behavioural Skills Training (BST) and a Token Economy to Teach Cooking Skills to an Adult with Dual Diagnosis in an Assisted Living Residence

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Dedication
In Memory of my Nanny

Thank you for always believing in me, and pushing me to go further in life, and education.
Abstract

The current study used behavioural skills training (BST) and a token economy to teach cooking skills to an individual with dual diagnosis living in an assisted living residence. The participant was a 28-year-old woman who lacked independent cooking skills, and who was living in assisted living residence specifically for individuals with dual diagnosis and developmental disabilities. The researcher hypothesized that BST would be an effective method for teaching cooking skills in this case and this hypothesis was derived from previous research in the field of skills training. The results showed that the percentage of independent and prompted skills increased following treatment, and the percentage of incomplete skills decreased significantly. The current study addresses the impact that these results have on the field of behavioural psychology, specifically, how this study has shown the effectiveness of BST as an effective teaching method for individuals with dual diagnosis. In addition, the author describes how BST can be strengthened by adding other behavioural techniques to the intervention. Finally, it is suggested that further research on BST with this population include a larger sample size and longer baseline and treatment phases which include a maintenance or follow up phase. These additions would help strengthen this line of research.
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Chapter I: Introduction

Dual diagnosis, differs in definition depending on the research being conducted. In the United States of America, it is often used as a term to explain concurrent disorders, which is the presence of a mental health disorder and a substance use disorder, however in Canada, the term dual diagnosis is the occurrence of a mental health and a developmental disorder (Canadian Mental Health Association, 2016). Furthermore, according to the Canadian Mental Health Association of Ontario (2016) prevalence rates are difficult to calculate due to the varying criteria used in studies to define mental health issues, and developmental disabilities. What is known is that the risk of developing a mental health problem is greater for individuals with developmental disability than for other individuals (Lunsky & Weiss, 2012). Research has shown that individuals with developmental disabilities are three to six times more likely to develop mental health conditions such as psychotic disorders, mood disorders, anxiety disorders, or challenging behaviour (Cooper et al., 2007; Turner, 1989; Richards et al., 2001; Harris, 2006; Emerson & Emerson, 1987, as cited in Lunsky & Weiss). Due to the variation in disorders, many treatments have been outlined as useful, such as cognitive-behavioural therapy (CBT), behaviour therapy, social skills training, medication, and hospitalization (Lunsky & Weiss, 2012). These therapies have been proven very successful in the past in dealing with mental health related issues such as negative thinking, poor social skills or inappropriate behaviours but they may not address possible daily living skill deficits, or the deficits that are accompanied by developmental and intellectual disabilities. Behavioural Skills Training (BST) can be used to fill this gap in programming, and ultimately increase independence for individuals with a dual diagnosis in assisted living environments. BST is a well-researched intervention that involves the following four components: instructions, modelling, rehearsal, and feedback (Miltenberger, 2012), and has been demonstrated to be effective to teach a variety of new skills such as social skills, safety skills, and activities of daily living skills (Stewart, Carr, & LeBlanc, 2007; Harriage, Blair, & Miltenberger, 2016; Johnson et al., 2006; Miltenberger et al., 2013).

Furthermore, individuals with a dual diagnosis once made up a large portion of the homeless population (Drake, Osher, & Wallach, 1991). This is what initially led to a need for assisted living and group homes for individuals with dual diagnosis (Drake et al., 1991). More recently, studies have shown that reasons for using residential treatment for people with dual diagnosis include both homelessness and hospitalization (Brunette, Drake, Woods, & Hartnett, 2001). If individual in these circumstances had been taught daily living skills, it would increase the ability to live independently, and reduce the risk of homelessness or hospitalization in these circumstances.

The purpose of the current study is to evaluate the effectiveness of BST to teach cooking skills to an individual with dual diagnosis, who currently resides in an assisted living residential program. BST was used to teach a variety of cooking skills in the context of preparing a variety of meals, which will in turn, promote independence for this individual. In the case of the current study, baseline data showed that the participant involved had the largest deficits pertaining to cooking and kitchen skills which became the target for this research (Appendix A).

What follows is a review of the current research regarding treatment options for teaching life skills, the BST method, and other pertinent research which is presented in Chapter II. The methodology for the current research is described in chapter III, and the results that were obtained, are analysed and presented in Chapter IV. A thorough discussion on the findings of this research, the limitations of the study, and recommendations for future studies is presented in Chapter V. From an analysis of previous research, it is hypothesized that BST will be an
effective method to teach cooking skills to an individual with a dual diagnosis who lives in assisted living.

Chapter II: Literature Review

Behaviour Skills Training.

Behaviour skills training (BST) is an intervention characterized by its use of four common behavioural procedures: instructions, modelling, rehearsal, and feedback (Miltenberger, 2012). Each of these procedures alone has been shown to have positive impact on teaching new behaviours (Miltenberger, 2012). Furthermore, BST has been demonstrated to be effective to teach a variety of new skills such as social skills, safety skills, and activities of daily living skills (Stewart, Carr, & LeBlanc, 2007; Harriage, Blair, & Miltenberger, 2016; Johnson et al., 2006; Miltenberger et al., 2013).

One study by Fisher, Burke, and Griffin (2013) used BST to teach five young adults, ages 20-23 with intellectual disabilities how to respond to lures from strangers. The research used classroom BST as well as in situ training where they would accompany the individuals into the community, and had mostly positive results. Overall, BST was successful in teaching skills to individuals, and effectiveness was increased after in situ training for all but one participant (Fisher et al., 2013). The main limitation of this study was scheduling in situ training sessions (Fisher et al.). Other research into skills training using BST has had similar results. Miltenberger et al., (1999) researched the effects of BST on sexual abuse prevention skills with five unmarried women ages 33-57 with mild to moderate intellectual disabilities. The research included in situ training following BST similar to the research presented above (Miltenberger, 1999). The results of this research found that following a 10-week BST program, all of the individuals acquired the prevention skills (Miltenberger, 1999).

Finally, BST has also been shown as an effective intervention for other skills such as social skills. Nuernberger, Ringdahl, Vargo, and Gunnarsson (2012) used a 4-week BST program to teach vocal and non-vocal conversation skills to three young adults with ASD between the ages 19 and 23. As with other BST research, these authors used BST as well as in situ training, however, this study also included a follow up period (Nuernberger et al., 2012). Nuernberger et al. found that the training was immediately effective for all participants both with vocal and non-vocal communication skills, and was maintained for seven to ten weeks at follow up. Unlike the research presented previously, this study saw generalization partially because the skill was a type of skill that can be practiced in different contexts (Nuernberger et al.,).

In summary, BST is an effective technique to teach many different skills, and when used appropriately can have long lasting effects on behaviour. Limitations include generalization, which can be attended to in the current study, by teaching five target behaviour in the context of many different cooking recipes, therefore generalizing the target behaviours across recipes.

Skill Deficits in Individuals with Developmental Disabilities

As earlier defined, an individual with a dual diagnosis has the presence of both mental illness as well as a developmental disability (DD). In the case of the current study, a 28-year-old participant diagnosed with attention deficit hyperactivity disorder (ADHD), disruptive behaviour disorder, as well as a mild to moderate intellectual disability (ID) was identified as having skill deficits in several areas, including cooking and kitchen skills (Appendix A), which is not uncommon for individuals with intellectual or developmental disabilities. For instance, Neidert,
Dozier, and Iwata (2010) defined intellectual and developmental disabilities as disabilities that are characterized by deficits in functioning, which can include deficits in self-care, or language. Deficits in daily living skills such as personal skills like eating, washing, toileting; domestic skills like cooking or household chores; and/or community skills such as money management, computer use or job skills (Hong et al., 2015) are also seen in individuals with DD. Overall, daily living skills relate to an individual’s competence and autonomy in their environment (Hong et al., 2015). Furthermore, Schalock, Luckasson, and Shogren, (2007) presented an argument to move from the use of the term mental retardation, to the term intellectual disability. The main argument was that the descriptions fall under the same definition, which states that intellectual disabilities are defined as having deficits or limitations in both adaptive behaviour and intellectual functioning (Schalock et al., 2007). They continue to state that these can be expressed in a number of areas including social, conceptual, and practical adaptive skills (Schalock et al., 2007).

There are many different hypotheses as to how these deficits are caused, or worsened. One hypothesis states that engagement is a factor in the development of skill deficits (Qian, Ticha, Larson, Stancliffe, & Wuorio, 2015). Research has stated that levels of engagement with staff and the community have been associated with both skill development and depression, in that increased engagement resulted in greater skill development, and lowered depression symptoms (Jones et al., 1999; Stancliffe et al., 2010 as cited in Qian et al., 2015). Qian et al., assessed 78 participants with ID who ranged in age from 11 to 86 on the levels of engagement in social and non-social activities within group homes across the United States. They found that individuals were engaged in social activities 12% of the time and non-social activities 35% of the time on average. However, what was also found was that in the homes with higher engagement, clients tended to have higher social engagement (Qian et al., 2015), which shows that there is a positive correlation between client engagement in skills, and skill acquisition.

Furthermore, research on characteristics, and self-determination for clients with DD have found similar findings, in that skill engangement leads to skill development. Wehmeyer & Garner (2003) conducted research on the effect of personal characteristics and self-determination of individuals with DD and ID and their relationships with individual’s abilities to function or complete tasks. The study included 301 individuals who lived in various environments including independent living, residential homes, and living with family members (Wehmeyer & Garner, 2003). Overall, positive correlations were found in the research between skill development and engagement in tasks, and Wehmeyer & Garner stated that self-determination is more of a function of control over one’s life versus a function of ability. One could conclude then that low self-determination may result in low engagement, which as stated by Qian et al. (2015), may result in skill deficits.

Skill deficits may also have negative impact on other areas of functioning. Dekker & Koot, (2003) researched the effects of family and individual factors on the development of a DSM-IV diagnosis. Specifically, they were looking for correlations between the specific environmental factors, and the development of a diagnosis. The overall goal of this study was to identify predictors that may result in the development of a DSM diagnosis. Their research included two phases, in which 968 children attending a school for ID in 1997 were assessed. The first phase assessed all students, while the second phase assessed a random sample of 58% from the first sample. What they found overall was that one of the major predictors in a DSM-IV diagnosis was inadequate daily living skills (Dekker & Koot, 2003). However, some limitations were identified by the researchers. These limitations include small sample size, for this type of
research, the fact that no causal relationship can be determined, and that the study was conducted with a Dutch school versus a Canadian school or institution, which might introduce cultural factors (Dekker & Koot, 2003). This research directly relates to the current study as inadequate daily living skills were directly correlated with disruptive disorder as well as attention problems. More specifically, the current participant had a deficit in daily living skills, as well as a diagnosis of disruptive behaviour disorder and ADHD.

Overall, some key points have been developed through research into deficits for individuals with ID and DD. Deficits have been defined, and it has been determined that individuals with ID and DD often have common deficits, including daily living skills deficits (Hong et al., 2015; Schalock et al., 2007). Although research is varying, one theory is that self-determination, and in turn lack of engagement in activities for individuals with ID and DD may in fact have negative impact on the acquisition of skills (Qian et al., 2015; Wehmeyer & Garner, 2003). If the negative impact results in low or no daily activity skills, research has also shown that this is correlated with DSM-IV diagnoses, including but not limited to disruptive disorder (Dekker & Koot, 2003). In the current study, it is hypothesized that behaviour skills training (BST) will result in increased engagement, which according to the research will result in increased skill development.

**Current Practices used to Teach Daily Living Skills**

**Chaining.**

Daily living or life skills can encompass many different things including hygiene skills, cooking and cleaning skills, or community involvement skills (Hong et al., 2015). These skills often are not a singular behaviour, but instead are a behaviour chain, or a series of behaviours that make up a larger and more complex series of behaviours. For example, hand washing includes several behaviours such as turning on the faucet, getting hands wet, lathering hands with soap, lathering under water for a specific period of time, rinsing, drying hands, and turning off the faucet. Due to the complexity of some chained tasks, many methods have been developed to train them. One method, which has had extensive research is chaining. Chaining is a method that involves instruction, that is broken into steps, used to teach an entire skill, and can either be done starting the teaching process from the first behaviour and progressing to the last behaviour (forward chaining), teaching the last behaviour and progressing to the first behaviour (backward chaining), or all of the steps can be presented at once (total task presentation) (Hur, & Osborne, 1993). Hur and Osborne used a single subject design to assess the different effects of backward and forward chaining on teaching novel tasks. Hur and Osborne used 20 individuals who had moderate to mild ID who ranged from 19 – 47 years old. Their research compared forward and backward chaining procedures in teaching corsage making, which included 18 steps (Hur & Osborne, 1993). The authors concluded that both forward and backward chaining were equally effective, however forward chaining was preferred by the trainers due to simplicity (Hur & Osborne, 1993). Every participant at baseline was unable to complete the skill, and following treatment every participant was able to complete the skill with varying accuracy (60%-100%) at the generalization probe (Hur & Osborne, 1993). Some limitations were found in this study. One limitation is that there was no information on trainer competency, or inter-observer agreement (IOA). These are considered limitations because there is no standard by which treatment is being delivered, to improve reliability, and without other observers, the accuracy and reliability of data collection can be called into question. Furthermore, the study also used reinforcement and prompting procedures to help teach this skill, which is not uncommon, but has an effect on skill
learning, and was not considered in the discussion as a key factor in skills learned, and instead chaining alone was considered the reason for skill acquisition in this article.

Other studies using chaining have found similar results, although chaining is often combined with other methods of teaching for increased efficacy. Jimenez, Browder, and Courtade (2008) for example, conducted a study using a multiple baseline across subjects design that assessed the effects of chaining with prompting and errorless learning to teach algebra skills to three high school students with moderate developmental disabilities (Jimenez, Browder, & Courtade, 2008). The students ranged from 15 – 17 years old, and were already receiving instruction for math skills, reading number skills, and money skills (Jimenez et al., 2008). During baseline, the students were not able to complete any of the steps in the task analysis (Jimenez et al., 2008). Following intervention, every student was able to achieve a level of mastery of the skill (Jimenez et al., 2008). One major limitation of this study is the lack of prompt fading procedures. Although prompting was faded back, the skill was not completed independently (Jimenez et al., 2008). Another limitation is in the area of generalization, in that one may argue that instead of learning the skill of algebra process, they instead learned a set of steps to complete specific algebraic scenarios and this in fact limits the generalizability of the skill to novel scenarios (Jimenez et al., 2008).

Chaining can be facilitated in many ways. More specifically, research on chaining has also used technology to increase its efficacy. Mechling, Pridgen, and Cronin (2005) conducted research with individuals with intellectual disabilities on the efficacy of video instruction as a teaching method for skill acquisition (Mechling, Pridgen, & Cronin, 2005). Three students aged 17 – 20 years old with moderate to severe intellectual disabilities took part in this research. Mechling et al., used a computer-based video instruction (CBVI) method to teach these individuals how to make a purchase in fast food restaurants. The participants took part in one to two, 15-minute teaching sessions four to five times per week where the CBVI system would use a total task presentation for the students, and would instruct participants how to make an order at a restaurant (Mechling et al., 2005). Following CBVI, the participants would place orders at the real restaurants to ensure generalization of skills learned using the video to in-vivo experiences (Mechline et al., 2005). Following intervention, all of the participants were able to order at three different restaurants (Mechling et al., 2005). However, the CBVI resulted in very specific, restricted ordering process, for example, individuals were only able to order the same three items, and were not able to generalize skills to other items (Mechling et al., 2005). Furthermore, the individuals did not learn other important skills, such as rejecting items when suggested by cashier, naming specific items or cancelling an order (Mechline et al., 2005).

Overall, chaining has been proven to be an effective teaching technique for the acquisition of daily living skills. However, there are some limitations to chaining when it is used without other forms of intervention. The main limitation for chaining is that it often is not implemented alone and is accompanied by other techniques such as prompting in various forms (e.g., verbal, hand over hand, gestural, etc.).

Prompting.

Prompting is also an effective method for teaching daily living skills and is often used in conjunction with other procedures. Research has shown that prompting can be effective to teach a range of skills including box building and writing skills (Maciag, Schuster, Collins, & Cooper, 2000; Pennington, Delano, & Scott, 2014) and has also been proven useful in a wide range of different age groups including preschoolers, elementary school children, middle school students,
as well as high school students (Gibson & Schuster, 1992; Macfarland-Smith, Schuster, & Smith, 1993; Singleton, Schuster, & Ault, 1995; Fickel, Schuster, & Collins, 1998; Johnson, Schuster, & Bell, 1996; as cited in Maciag et al., 2000). In the research conducted by Maciag, Schuster, Collins, and Cooper (2000), 10 adults who ranged in age from 29-57 with varying degrees of intellectual disabilities, were taught to complete a chained task of constructing shipping boxes. The researchers used verbal prompting in the form of task requests to prompt box building and to prompt each step in the behaviour chain (Maciag et al., 2000). By the end of the training eight out of 10 participants could complete the chain at 100% accuracy, and at the maintenance probe, seven out of eight participants were still able to complete all the steps (Maciag et al., 2000). One limitation however is that the behaviours did not generalize to other boxes or other scenarios (Maciag et al.).

In another study, Pennington et al. (2014), used a prompting procedure combined with modelling self-monitoring and feedback to teach three men with intellectual disabilities how to write cover letters. The participants ranged in age from 19 – 20, and all were diagnosed with a developmental disability (Down syndrome, autism spectrum disorder). The results showed that all three individuals were able to include all six of the components the researchers required for a complete cover letters (Pennington et al.). In addition, the participants were able to quickly learn the skill, and used at least five or more components of cover letter writing following only two weeks of treatment (Pennington et al.). However, like much of the research already presented, this research does not use prompting on its own, it is difficult to conclude exactly which component of the intervention was resulted in the acquisition of the target skills (Pennington et al.).

Overall, prompting, whether it was used as the sole intervention or in conjunction with other treatment options, such as modelling and feedback, appeared to be a successful treatment option for individuals with developmental and intellectual disabilities. A limitation of prompting as an intervention for daily living skills that should be considered, although not indicated by the researchers mentioned above, is the potential for participants to form prompt dependence if prompts are not faded systematically.

**Technology.**

While research on prompting and chaining is growing, there is also promising research on different technologies to facilitate the existing procedures being used. In one review, it was found that over the past 20 years, CD’s, DVD’s and computer-based programs for prompting and modelling have become increasingly popular for teaching cooking skills (Mechling, 2008). Another review on the use of video prompting with individuals with developmental disabilities concluded that video prompting was a successful technique to teach skills, but again like other procedures, is often combined with other interventions such as controlled time delay (Banda, Dogoe, & Matuszny, 2011). Furthermore, the research found that video prompting was predominantly used to teach cooking skills (Banda et al., 2011). However, due to the fact that this procedure is often combined with other methods, researchers identified a need for research comparing video prompting and video modelling (Banda et al., 2011).

One study compared a video prompting procedure to a video modelling procedure to teach daily living skills to six adults between the ages of 27 – 41, living in community based housing (Cannella-Malone et al., 2006). The researchers used both methods to teach two skills: table setting, and putting away the groceries (Cannella-Malone et al., 2006). The results of this study showed that video prompting was superior to video modeling for all six participants, and for both behaviours being taught (Canella-Malone et al., 2006). One limitation to this study was
the manner in which clips were shown, in that participants had 10 chances to use the video prompting (e.g. one prompt per step); whereas, with video modelling, the participants had only one chance to watch a 2 minute video modeling clip (Cannella-Malone et al., 2006).

In contrast research conducted by Taber-Doughty et al. (2011) found different results, in that video modeling had better results on skill acquisition. Taber-Doughty et al. conducted research with three sixth grade students, all with mild intellectual disabilities. The research compared video modelling to video prompting in teaching cooking skills for 23 different recipes (Taber-Doughty et al.). Each participant improved from baseline with both video prompting and video modelling, however it was concluded that video modelling had a greater overall result on cooking skills than video prompting (Taber-Doughty et al.). Some limitations were included such small sample size, age of participants, as well as the fact that iPod Nanos were used for video viewing, and larger screens should be used in the future (Taber-Doughty et al.).

Overall, the results of the research on video modelling and video prompting appears to vary, but what remains constant is that both are useful techniques in their own respect.

**Token Economies.**

A token economy is a reinforcement system where individuals gain tokens for appropriate responses, or for engaging in a target behaviour (Miltenberger, 2012). The individual accumulates these tokens, and they are exchanged at a determined time for a preferred back-up reinforcer (Miltenberger, 2012). A token economy is an effective system for reinforcing behaviour, and can increase participation. Evidence shows that token economies can be useful in many different situations. Research conducted in 2002 found that token economies had had success with adults diagnosed with developmental disabilities (LeBlanc, Hagopian, & Maglieri, 2002). The research assessed the use of token economies in eliminating inappropriate social behaviour (LeBlanc et al., 2002). In this research, tokens in the form of laminated objects were given to the participant to reinforce positive behaviour, which resulted in the less inappropriate behaviour (LeBlanc et al., 2002). The results showed that a token economy resulted in a decrease of 99% for inappropriate social interactions, and a 97% decrease in verbal aggression and inappropriate sexual interactions (LeBlanc et al., 2002).

In an older research study conducted by Stocks, Thyer, and Kearsley (1987) a token economy was used to teach and maintain activities of daily living to 12 individuals with varying intellectual and developmental diagnoses. Stocks et al., used a point system, with a response cost that could be used to buy privileges. Their research concluded that clients with and without hearing loss were able to decrease points earned while maintaining the behaviour (Stocks, Thyer, & Kearsley, 1987).

Finally, a study conducted by Comaty, Stasio, & Advokat (2001) assessed the efficacy of a token economy on increasing the chance of discharge from hospital for individuals with intellectual disabilities and diagnosed behaviour disorders. Individuals enrolled in programing at the hospital earned tokens for completing living skills behaviours, and could use the tokens to gain access to preferred reinforces such as T.V. games, radio, etc. (Comaty et al., 2001). Interestingly, not only was the token economy a success, but it also was successfully applied when two different groups of individuals receiving treatment were combined into one treatment group, therefore concluding that token economies can be successful in teaching new skills.

Based on the research, token economies are an effective treatment for a variety of target behaviours, and when combined with BST, inshold increase the likelihood of developing meaningful, maintained behaviours for individuals with intellectual and developmental disabilities in the current study.
Summary.
Overall, the research presented shows that there are common skill deficits in individuals with intellectual disabilities, particularly regarding daily living skills (Neidert, Dozier, and Iwata, 2010; Schalock et al., 2007). Also, research shows that lower level of engagement can have negative impacts on these areas of functioning (Furthermore, these deficits have been correlated with DSM-IV diagnoses (Dekker & Koot, 2003). Based on this, treatments that work on skill building should be considered a priority (Qian et al., 2015) when working with this population.

Daily living skills can be taught using a variety of intervention procedures which have been proven to be effective including chaining, prompting, or through the use of technology in the form of video modeling and video prompting. However, the research presented demonstrated that these interventions are seldom implemented on their own, as oftentimes, multiple intervention procedures are being used at one time to teach daily living skills. Furthermore, these interventions may result in poor generalization.

Behaviour skills training (BST) is a treatment that can be used to teach a variety of skills, and can easily facilitate the use of each of these training methods previously discussed. In the current study, the skills being taught were daily living skills, and more specifically, cooking skills (e.g. using a can opener, using oven mitts, watching for overcooking, identifying leftovers, storing leftovers). It hypothesised that generalization will be increased teaching these five target skills across a variety of different recipes and contexts. A token economy can also be used outside of training in order to maximize participation, as well as maximize the chance of the skills being learned, generalized, and maintained.

Based on current research, it was hypothesized that BST, when combined with other effective methods such as prompting, chaining, and tokens will result in the acquisition of cooking and kitchen skills by an individual with dual diagnosis.

Chapter III: Method
Participants and Selection Procedure
The participant selected for this study was a 28-year-old female with a diagnosis of attention deficit hyperactivity disorder (ADHD), disruptive behaviour disorder, and a mild to moderate intellectual disability. The participant was selected based on a number of reasons. Firstly, the client was identified by the regular residential staff as a client that could benefit from skills training, and furthermore, was a client who appeared heavily motivated by attention, therefore increasing the likelihood of participation. Following staff identification, the participant identified interest in learning new cooking skills, to which the client agreed, and expressed excitement about learning new cooking skills. Finally, the AFLS was conducted to determine which skills needed more attention, and target skills were chosen based on the AFLS results (Appendix A). Due to the inability for the participant to provide their own consent, consent was gained from her mother, who is the substitute decision maker for the participant. Consent was brought to the substitute decision maker’s home, where the procedures of the study were explained to both the participant, and substitute decision maker. Consent as well as assent were obtained. The consent form outlined the risks, benefits, and overall procedure of the intervention, as well as the terms of confidentiality, and the participant’s right to participate, or drop out of the intervention (Appendix B). Furthermore, Assent was also completed by the client (Appendix C). This thesis was approved by the St. Lawrence College Research Ethics Board, and copies of the consent were given to St. Lawrence College, and the agency.
Design and Variables
This study used a single case, AB design. Baseline was conducted using probes and direct observation to gain information on the behaviours in the client’s repertoire. This data was collected over four weeks (October 2\textsuperscript{nd}, to October 29\textsuperscript{th}), and was done via direct observation in the individual’s residence. The intervention consisted of six training sessions over a six week period. Data was gathered on skill acquisition by probing, and directly observing behaviours outside of skills training periods in the individual’s home during the duration of the intervention (November 7\textsuperscript{th} – December 16\textsuperscript{th}). The dependent variables were five specific cooking and kitchen skills that could transfer between different recipes. The behaviours included using a can opener, using oven mitts, checking for overcooking, identifying leftovers, and storing leftovers.

Operational Definitions.

\textit{Using a Can Opener}

The participant will use a manual can opener to correctly open a can without prompting. Correct use included retrieving the can opener from the drawer, opening up the can opener, using two hands to place the can opener on the can, and twisting the knob until the can is completely open. The participant was then asked to remove the lid from the top of the can and take the lid out of the can opener.

\textit{Using Oven Mitts.}

The participant will identify when hot items need to be removed from the oven, stove, or microwave and use oven mitts to touch items. Correct use of oven mitts included getting the oven mitts, and wearing one mitt on each hand prior to retrieving the hot item from the oven, stove or microwave. The client will then move a hot item from the oven, stove, or microwave to another area in the kitchen (e.g. the counter).

\textit{Watch For Overheating.}

The participant will attend to the meal while it is cooking and watch for overheating. Overheating will include boiling over pots, burning food, and overheating things in the microwave resulting in splatter or boiling over of microwaved items. The client does not have to take appropriate steps to stop the problem or fix the overheating, and is allowed to ask for assistance in the event of burning or overheating food.

\textit{Identify Leftovers.}

The participant will identify the difference between what foods should be saved, and what food should be disposed of. This included the participant’s personal plate of food in addition to any food left in pots, pans, or other containers. The behaviour was considered correct if the participant identified the leftovers verbally, and independently, versus leaving food on the counter. Verbal identification could include asking staff if they would help store her food, or if the participant outright asked for Tupperware to store the leftovers. Correct identification also included any time the participant disposed of leftovers independently when appropriate.

\textit{Properly Store Leftovers.}

Depending on the meal, the participant will store food in appropriate containers. This included Tupperwear containers with lids, or dishware with plastic wrap (Plates or bowls). Appropriate food must have been put in appropriate containers (e.g. soup in bowls, steak on a plate).
Setting Apparatus and Materials

The intervention was implemented in the participant’s assisted living residence. The residence had seven occupants at the time of the study, and at each training session there were at least two other staff in the building, however these staff did not partake in most training sessions. Each training session was conducted in the residence kitchen, during the preparation of meals and snacks for all of the residents in the home.

The researcher provided several materials that functioned as visual prompts during training sessions which included laminated sheets of paper outlining steps of some of the behaviours including using a can opener (Appendix D), using oven mitts (Appendix E) and identifying leftovers (Appendix F). Reinforcement was also used during training sessions in the form of edibles, which were given on a variable ratio schedule (VR3) in order to promote participation and to increase focus on skills training. Tokens were also used outside of training sessions (i.e. during dinner, baking snacks, making lunch, that were not part of the formal training sessions) in order to reinforce the skills, when she practiced the target skills, and these tokens were exchanged for a prize from a “treasure box” (Appendix G). Tokens were exchanged outside of cooking sessions, any time the participant gained five tokens. Tokens were given to the participant, and the participant was asked to stick the tokens onto her “treasure map” (Appendix H) so the participant and the observers could track progress. Finally, different food items were used each week, depending on the recipe that was being followed.

Measures

Data was collected using direct observations, and frequency recording was used to record independent, prompted and incorrect responses for each target skill. Skills were considered completed independently if the target behaviour was continued in the context of a recipe, without more than one vague prompt from staff, which was prompt used to start the session (e.g. for can opener one might say “ok we need tuna”). Skills were considered prompted if the participant required any other prompt, including exact verbal prompts (e.g. open the can) or other prompts such as gestural, physical, or hand over hand. Finally, tasks were considered incomplete if the client did not complete the behaviour, following a prompt. Data was not collected during sessions due to the focus being on the teaching procedures. Data was collected outside of teaching sessions, during other meal preparation times. More specifically, the researcher and residence staff would contrive opportunities for the participant to practice her cooking skills throughout the day. For example, the researcher or staff would say to the participant “ok, now we need sauce” which was meant to signal to the participant that there was opportunity for her to use one of her target skills (e.g. using a can opener). If the participant completed the target skill independently and as per the operational definition, a checkmark was recorded on the data collection sheet under the completed independently column (Appendix I). If the participant did not complete the skill, verbal prompts were used such as “can you open this can please” or “can you get the can opener and open this”. In these cases, if the skill was completed a checkmark was recorded on the data sheet under the completed with prompts column. Only verbal prompts were used in data collection outside of training. If the participant did not complete the task, a checkmark was recorded under the not completed column on the data sheet. Finally, if the recipe did not call for the use of a particular skill, a checkmark was recorded under the not observed column.
**Data Analysis**

Data were summarized as percentage of correct responses, percentage of prompted responses, and percentage of incorrect responses and were graphed weekly due to the infrequent nature of the behaviors. Data on prompted responses was collected to ensure that the participant did not develop prompt dependence, and she was able to complete all skills independently. Data was analysed two ways. Firstly, a visual analysis of the graphed data was conducted including variability, and trend. A portion of the visual analysis also measured the immediate change in data from baseline to intervention, to track immediate effects the intervention had on skills. Secondly the percentage of points exceeding the median (PEM) procedure was used in order to assess the effectiveness of BST on cooking skills (Ma, 2006). This procedure involved finding the median in baseline, and drawing a line directly through the intervention phase. The data points exceeding the mean were then calculated to determine an overall effectiveness (Ma, 2006).

**Procedure**

BST sessions were conducted one day a week, every week for six weeks. Every session started at approximately 4:00 pm due to the fact that training sessions involved cooking a meal for the entire house (Table 1). This meal time was chosen because the participant was involved in programming outside of the house during the day, and this was the only meal time available. Every session lasted approximately one hour and followed a similar training format; more specifically, sessions always began with handwashing, due to hygiene concerns. Next, the researcher and the participant reviewed the task analysis for each meal being prepared (Appendix J). Following this, each step in the task analysis was first explained by the researcher, and then modelled by the researcher. Next, the participant practiced the each step, and feedback was provided. Feedback included verbally reinforcing a job well done, or prompting steps that could be improved on. Prompts were mainly verbal, but if necessary, physical prompting was used. Physical prompting was more likely to be used during difficult physical behaviors (i.e. can opener, heavy objects in oven). Each session included edible reinforcement on a VR3 schedule, and the first session paired tokens with edibles in order to teach the concept of the token economy. After the first session tokens were only given outside of training when the participant practiced her skills.

In order to promote acquisition of target skill, more focus was placed on teaching the target skills versus other skills in the task analysis of each meal. While teaching target skills, the trainer first explained the step using visual aids when necessary, and then modelled the skill in vivo. The participant would then have a chance to practice the skill while feedback is provided. Reinforcement was delivered on an FR1 schedule for target skills, rather than for other skills that were demonstrated during the teaching sessions in order to promote acquisition of target skills. These procedures were conducted due to the length of the task analyses for cooking, and the amount of steps involved. For instance, when cooking casserole, one of the steps is to stir the casserole. In the procedures above, less time, and less teaching would be used on this skill versus other skills that were targeted such as opening cans for the casserole. It was identified that as a possible limitation, the participant may focus too intensely on other steps in the task analysis and would not attend to the targeted skills being taught, therefore more rigorous training was used while teaching targets to promote acquisition.
<table>
<thead>
<tr>
<th>Session</th>
<th>Recipe</th>
<th>Skills Trained</th>
</tr>
</thead>
<tbody>
<tr>
<td>1: November 7th, 2016</td>
<td>Spaghetti and Sauce with Garlic Bread</td>
<td>- Using a can opener</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Using oven mitts</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Watching for overcooking</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Identifying leftovers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Storing leftovers</td>
</tr>
<tr>
<td>2: November 15th, 2016</td>
<td>Scallop Potatoes</td>
<td>- Using a can opener</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Using Oven Mitts</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Watching for overcooking</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Identifying leftovers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Storing leftovers</td>
</tr>
<tr>
<td>3: November 24th, 2016</td>
<td>Spaghetti and Sauce with Garlic Bread</td>
<td>- Using can opener</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Using oven mitts</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Watching for overcooking</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Identifying leftovers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Storing leftovers</td>
</tr>
<tr>
<td>4: November 28th, 2016</td>
<td>Tuna Casserole</td>
<td>- Using a can opener</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Using oven mitts</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Watching for overcooking</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Identifying leftovers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Storing leftovers</td>
</tr>
</tbody>
</table>
Chapter IV: Results

During baseline, results from the Assessment of Functional Living Skills Assessment (AFLS) for Home Skills (Appendix A) showed that of the seven categories that were assessed, the participant in this study had the largest skill deficits in the cooking and kitchen skills domains. Based on this assessment, five functional kitchen skills were chosen for skills training, and were tracked over four weeks for baseline (Appendix K), and four weeks for intervention (Appendix L). During the baseline condition, target skills were recorded 56 times. Skills were not prioritized, and an even number of practice was not made available for each skill. Instead, skills were practiced in a more natural environment, so some skills had more practice than others. Of the 56 instances of behaviour, five instances of the target skills were seen when the staff prompted the participant, and for 51 instances, the target skills were not complete when requested by staff (Table 2; Appendix K). Targets were recorded as independent completion, prompted completion, and incomplete. Target skills were recorded for a total of eight weeks, with four weeks for baseline, and four weeks for intervention. (Table 2; Appendix K; Appendix L).

Table 2
Weekly Skills Recorded During Baseline and Intervention Phases

<table>
<thead>
<tr>
<th>Weeks</th>
<th>Baseline</th>
<th></th>
<th></th>
<th></th>
<th>Intervention</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Independent (%)</td>
<td>Prompted (%)</td>
<td>Incomplete (%)</td>
<td>Independent (%)</td>
<td>Prompted (%)</td>
<td>Incomplete (%)</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>0</td>
<td>16.70</td>
<td>83.30</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>15.00</td>
<td>85.00</td>
<td>75.00</td>
<td>12.50</td>
<td>12.50</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td>40.00</td>
<td>43.80</td>
<td>12.50</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td>80.00</td>
<td>20.00</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Means</td>
<td>0</td>
<td>7.92</td>
<td>92.08</td>
<td>73.75</td>
<td>19.06</td>
<td>6.25</td>
<td></td>
</tr>
</tbody>
</table>

Overall, the data collected show an increase in both independent and prompted skills percentages from 0% and 7.92% at baseline to 73.75% and 19.06% at intervention respectively. The data also show a decrease in the incomplete skills from baseline levels of 92.08% to an intervention level of 6.25%.

A graph of the data visually displays the effects of the BST on target skills and can be found in figure 1 and appendix L. A visual analysis of the data found good immediate effects from the baseline phase to the intervention phase on percentage of skills completed independently (Figure 1). Smaller immediate effects were seen for prompted behaviours. Furthermore, the data set for both independent skill completion and prompted completion had some variability. The trends for each data set during each phase varied. During baseline, independent skills had a stable, flat trend, as all data collected was 0, while prompted skills had a decreasing trend (Appendix L). In contrast, the trend for independent skills was decreasing in intervention, while prompted skills had an increasing trend (Appendix L). In order to further evaluate the effectiveness of treatment the percentage exceeding the median (PEM) was calculated (Appendix L). Median levels for baseline of independent skill completion were at 0%, and median levels for prompted skill completion were calculated at 7.5%. Based on these medians, the PEM lines were drawn across the phase line and the points exceeding these lines were calculated to determine overall effectiveness. For the independent skill completion, all four
data points (100%) exceeded the median (Appendix L), which according to Scruggs and Mastropieri (1998), means that for independent skill completion, the intervention was considered highly effective. For prompted behaviours, three of four data points (75%) exceeded the mean (Appendix L), showing that the treatment was also considered effective when prompting behaviours (Scruggs & Mastropieri, 1998). Finally, stability was calculated for each data set, in each phase by calculating how many data points fell within 15% of the mean for each phase. Unfortunately, all data sets, with the exception of independent behaviours in baseline, were not stable. However, due to time constraints, intervention began, and ended as scheduled.
Figure 1

*Percent of Skills Completed During Each Week of Data Collection*
Chapter V: Discussion

Summary and Interpretation of Results

This study was an 8-week single-subject design research study, consisting of four weeks of baseline and four weeks of intervention. The study used behaviour skills training (BST), which included instruction, modelling, rehearsal, and feedback, as well as other behavioural techniques such as prompting, chaining, and a token economy to teach cooking skills to an adult with a dual diagnosis. The current study found that the use of BST with a token economy was an effective treatment to teach cooking skills. The data showed that the percentage of independent skill completion increased from a mean of 0% during baseline, to 73.75% during the intervention phase. Similarly, the percentage of prompted skill completion increased from 7.92% during baseline, to 19.06% during intervention. With this, the percentage of incomplete skills decreased significantly from a mean of 92.08% during baseline, to only 6.25% during the intervention phase. Visual analysis using the PEM also found that treatment was considered very effective for independent skills, and effective for prompted skills (Scrugg & Mastropieri, 1993). Finally, when conducting a visual analysis, immediate effects were found, and an increasing trend for prompted skills in the intervention phase, however, there was some variability in the data, and a decreasing trend in independent skills.

Strengths

One of the main strengths of this research study is that it used a well-researched, and validated teaching method as the intervention. This intervention was adapted for a residential environment for an individual with a dual diagnosis. In addition, the study also used other core, well-researched intervention methods often used in the behavioural sciences such as prompting, chaining of behaviours through task analyses, as well as a token economy to reinforce skill development. A further strength of the study was the data collection method. More specifically, data was collected using direct observation and objective measures. The method of data collection used in this study as objective measures can often be more valid and reliable than subjective measures. In addition, due to the relative ease of these methods of data collection, it is likely that the program would be continued by staff at the home, as they would have been able to easily continue programing with the number of staff that were in the home. Finally, a major strength of the study is the focus on adaptive, independent living skills, which the client can use for the rest of her life, and there is potential for her to transfer these skills to other environments, with more training.

Limitations

Several limitations exist in this research. One major limitation was the lack of aids to help with the physical abilities of the participant for some behaviours. No baseline data was conducted on physical abilities, and unfortunately, there were some fine motor, and strength limitations which would make can opening difficult, or using oven mitts when a heavy object such as a casserole was in the oven. Furthermore, the can opener in the residence was different than a standard can opener and would open from the top, which posed as a limitation, as the participant often attempted to open the can from the side, like the more common type of can opener.

The environment also proved to be a limitation to a certain extent because of the fact that it was home to more than one client. More specifically, clients would often come in and out of the kitchen, making training sessions more difficult, and causing some distraction for the
participant. This may have effected the overall learning for the client, as she would sometimes lose interest in, or stop paying attention to training.

The current study also only had one participant, which was considered as a limitation, as more participants would increase the evidence, by showing the intervention across participants and would strengthen the validity of the data. Furthermore, the intervention was only four weeks in duration due to participant illness, which also posed as limitations to the study as research had to end before data could become stable, and more data may have shown more significant progress. If treatment had been longer, the likelihood of the participant learning, and maintaining the behaviours may have been increased.

This study did not have a maintenance or follow up phase, which is a limitation as there is no data on whether or not the skills maintained following treatment. Furthermore, it is challenging to conclude that the intervention had experimental control, because an AB design was used. Finally due to the multiple elements of the treatment, it was difficult to definitively decide which elements of the treatment were responsible for the behaviour change.

Multilevel Challenges to Service Implementation

Working with individuals doing skills training can offer a rewarding experience for both the researcher and the participant, in that researchers can learn new teaching skills, and participants can learn new, skills in the future. However, when teaching skills in a residential environment, a number of challenges can arise on many different levels.

Client Level. On the client level it was difficult to ensure that the client got the focus she deserved when conducting training sessions. More specifically, training was taking place in the client’s home, which is filled with motivating distractions. Furthermore, often there were other people in the house who were present as a distraction, or in the case of cooking skills, other clients wanted to help with dinner as well.

Organisational Level. Similar to the program level, the organisational level similar problems when it comes to staff training from the organizations end. Some staff were not trained in behavioural interventions, or furthermore, were not trained in how to properly implement a BST program (instruction, modelling, rehearsal, feedback) which may have had differential effects on the treatment for individuals in residential treatment. Furthermore, the organisation used specific meal plans for the individuals in the house, with meals at set times. Sometimes, this would interfere as the client may be at programming outside of the residential setting during some meal prep.

Program Level. On a program level, one of the main issues with this type of treatment in this environment was the number of staff, and varying backgrounds from staff. In the context of this research, there were six full time staff, and a number of relief staff who rotated shifts in the residential environment, all with different backgrounds ranging from counselling to disability studies, to behaviour backgrounds. This posed issues, as it was difficult to keep all staff engaged in treatment, and similarly, those without behavioural backgrounds did not always agree with the treatment as much as others with behavioural backgrounds. This agreeance made it difficult sometimes for the team to work together.

Societal Level. On a societal level, it was sometimes difficult to encourage skills training in residential settings, or as society often deems them “group homes”. Sometimes this setting has negative connotation in society as a home for people who are unable to live on their own. As such, individuals with that mind set would not agree with a skills training program in the residential setting, as they would feel that clients are meant to live in residential care for long term, instead of believing that they can gain independence through skills training.
Contributions to Behavioural Psychology

This study provided contribution to the field of behavioural psychology by using a well developed and tested teaching method, and using it with a population which has little research in terms of behavioural psychology or applied behaviour analysis (ABA). It provides a basic outlook on how ABA can be used in the population of dual diagnosis, which is gaining more relevance in today’s society. It also contributed by showing how other techniques, such as prompting, chaining, and token economies can be combined with skills training to increase the efficacy of treatment. This research is built on years of BST research, and has shown that this method of skills training can be useful in residential services, specifically with people who have a dual diagnosis.

Future Research/Recommendations

Future research is recommended to further strengthen the results of this study, and further strengthen BST as a means of teaching skills to adults with dual diagnosis. Future research should use this method of teaching on a larger scale, for instance, research should consider using larger groups of individuals in skills training that consist of different ages, genders, and specific diagnoses. Future research should also be conducted across several different residences in order to strengthen these results, and test the effectiveness of this intervention in different environments. Furthermore, research in the future should focus on training different skills, in order to show effectiveness across several different behavioural targets. Finally, to measure the maintenance of skills after BST, future research should be conducted for longer periods of time and include a follow up phase.
References


Appendix A

Assessment of Functional Living Skills Assessment (Home Skills)

*Clients name on all documents have been fabricated
Appendix B
Consent Form

Project Title: Using Behaviour Skills Training (BST) to Teach Cooking Skills to an Adult with a Dual Diagnosis in an Assisted Living Residence

Principal Investigator: Alexander Glecoff
Name of Supervisor: Laura Campbell, MA. BCBA
Name of Institution: St. Lawrence College
Name of Institution/Agency: Addictions and Mental Health Services of Kingston Frontenac Lennox and Addington

Invitation
Your daughter has been invited to participate in a research project. My name is Alex Glecoff, and I am a student in my fourth year of the Honours Bachelor of Behavioural Psychology Program at St. Lawrence College. I am currently on placement at Addictions and Mental Health Services of Kingston Frontenac Lennox and Addington (AMHS-KFLA). As a part of my 4-month placement, I will be conducting a research study. I would like to ask for your daughter’s assistance in completing this task. This consent form will outline key aspects of the study, and help you to understand the study further so you can make an informed decision about your daughter’s participation.

Why is this research study being conducted?
My project will use the behaviour skills training (BST) to teach your daughter new cooking skills. BST uses instructions, modeling, rehearsal and feedback together to teach skills. More specifically, to start, I will tell your daughter how to correctly perform the cooking skills, then I will model the skill meaning I will act out the skill so she can see exactly what it looks like. Next I will get her to rehearse the skill, which means that she will practice the skill, and I will give some feedback on how the skill was performed and will correct any errors. This method of teaching is often used to teach a variety of skills, to a variety of people such as parents, children and adults with autism, and people with other disabilities. This study is being conducted in order to see if we can use BST to teach individuals with a dual diagnosis new skills.

What will you need to do if you take part?
Should you choose for your daughter to participate in the study she will be asked to attend twelve individual teaching sessions with me on Mondays and Wednesdays each week at AMHS-KFLA group home where she lives. The teaching sessions will take approximately 1-2 hours each, and will last for 6 weeks. During the time when we are not participating in the sessions, we will be cooking meals together at least once per day, and during this time, myself or a group home staff will be watching to see if your daughter can use her cooking skills without any help from myself or staff. This means that your daughter will have time to practice the new skills during the week. Any time she tries to practice a skill when we are cooking together, she will get a token which she can use to get a prize out of the prize box at the end of the week. There will be no consequence if the skill is not learned.

What are the potential benefits of taking part?
Taking part in this study could benefit your daughter. The teaching sessions will teach practical skills that one would require to be able to cook meals without assistance and as a result, may result in more independent living for your daughter. BST can teach skills that will help her do
more on her own, without help from the housing staff. It is possible that at least some skills will be learned if your daughter participates in these training sessions.

**What are the potential benefits of this research study to others?**
This research will build on years of research on BST. For example, it will provide more research on the applications of BST with different populations, such as people with dual diagnosis. Furthermore, if successful, this study may lead the way to future programs for AMHS-KFLA that may be used for other individuals who may benefit from behaviour skills training.

**What are the potential risks?**
Potential risks may include frustration. Your daughter may become frustrated when learning more difficult skills, in which case your daughter can stop participating if at any time she becomes frustrated with any of the requested tasks. Other risks could include injury such as cuts or burns depending on the cooking tasks that will be taught. Chances of your daughter getting harmed in any way are unlikely, as she will be given support during the teaching and cooking sessions, which includes prompting (which may include hand-over-hand assistance), and constant supervision during training. There is also a risk of fatigue during training, if skills are consistently not learned. If your daughter becomes fatigued, she will be allowed to take breaks, or she can ask that we stop training if the fatigue is causing discomfort.

**What happens if something goes wrong?**
In the event that something should go wrong, it is important to know that the staff, as well as myself, have had training in crisis intervention. Furthermore, staff have had much more training in crisis intervention as well as first aid, and these crisis management strategies will be utilized in the case of emergency. As a facilitator of the BST teaching sessions, I will also be on the lookout for emotional distress (frustration) and breaks will be given when necessary to avoid any serious escalation in distress which may lead to a crisis situations.

**Will the information you collect from me in this project be kept private?**
All personal information about your daughter that is collected during this study will be kept private and will not be shared without your permission. Information that must have your and your daughter’s name on it (such as the consent form) will be kept in a locked cabinet at St. Lawrence College. This consent form will be kept on file for 10 years. Beyond this, any names used in the report that I write for my study will be changed. However, the results of this study may be published in a journal, or presented at a conference, but again, any of this material will not include your names or any identifying information. Furthermore, any information about how well your daughter does in the study will be kept on a password protected computer in a locked file format. This data will also be kept at AMHS-KFLA for at least 7 years following the study.

**Do you have to take part?**
No. Your daughter’s participation in this study is entirely voluntary, and your daughter is in no way obligated to take part. If you do decide that your daughter is able to take part, you will be asked to sign this consent form on behalf of your daughter. Your daughter may also drop out of the study at any time, she is not obligated to remain in the study after starting. Furthermore, if you wish for your daughter to not take part in this study, it will not affect the services that she is already receiving from AMHS-KFLA. You may also ask that any information about how well
your daughter does in the training session not be used in the study if she drops out at any time during the study. Otherwise, information about how well she does in the study up to the drop out date may be used.

**Contact for further information**
This project has received ethical clearance from the Research Ethics Committee for Behavioural Psychology (REC-P) under the authority of the ST. Lawrence College Research Ethics Board (SLC-REB). The project was developed under the supervision of Laura Campbell, MA, BCBA, my supervisor from St. Lawrence College. I appreciate your cooperation and if you have any additional questions, feel free to ask me, aglecoff01@student.sl.on.ca. You can also contact my college supervisor lacampbell@sl.on.ca. If you have any concerns about the way this research is being conducted or about your rights as a participant you may contact the SLC-REB chair at reb@sl.on.ca.

**Informed Consent Discussion**
If you decide to participate, please sign this form. A copy of this signed document will be given to you for your own records, and another copy will be provided to the agency as confirmation of time spent working with your daughter, and St. Lawrence College for secure filing.

By signing I agree that:

- ✓ The study has been explained to me
- ✓ All my questions were answered
- ✓ Possible harm and discomfort and possible benefits of this study have been explained to me
- ✓ I understand that I have the right not to participate and the right to stop at any time
- ✓ I am free now, and in the future, to ask any questions I have about the study
- ✓ I understand that any information I provide the researcher will be kept confidential and that my daughter will not be identified in any reports, publications or presentations at professional conferences.
- ✓ I understand that I will receive a signed copy of this consent form

I hereby consent for my Daughter ____________________ participate

Decision Maker’s Name: ____________________

Decision Maker’s Signature: ________________

Date: ____________________

Student Name: ____________________

Student Signature: ____________________

Date: ____________________
Appendix C

Assent

Verbal assent will also be obtained from your daughter by discussing the study and the procedures with her and asking her if she would like to participate. The following will be the script that I will use to obtain assent from your daughter:

“You will be asked to attend twelve individual teaching sessions with me on Mondays and Wednesdays each week at your house. The teaching sessions will take around 1-2 hours, and will last for 6 weeks. For the teaching, we are going to learn how to cook different meals, like Kraft Dinner and spaghetti. During the time when you are not participating in the sessions, we will be cooking meals together at least once per day, and while we do that, myself or a group home staff will be watching to see if you can use your cooking skills without any help from myself or staff. This means that you will have time to practice your new skill during the week. Any time you try to practice a skill when we are cooking together, you will get a token which can be used to get a prize out of the prize box at the end of the week. The prize box will include lots of prizes like art supplies, or passes to have one on one time with staff. There will be no consequence if you do not learn as skill, and you can stop whenever you want. You can still help cook meals, and hangout with staff, you will not be in any trouble. You can also stop whenever you want, I won’t force you to keep cooking if you are uncomfortable. Is this something you would like to do?”

Informed Consent Discussion

If you decide to participate, please sign this form. A copy of this signed document will be given to you for your own records, and another copy will be provided to the agency as confirmation of time spent working with you, and St. Lawrence College for secure filing.

By signing I agree that:

- The study has been explained to me
- All my questions were answered
- Possible risks and benefits have been explained to me
- I understand that I have the right not to participate and the right to stop at any time
- I am free now, and later, to ask any questions I have about the study
- I understand that any information that I provide the researcher will be kept confidential and that I will not be identified in any reports, publications, or presentations at professional conferences.
- I understand that I will receive a signed copy of this form

Participants Name:_____________________
Participants Signature:__________________
Date:__________________________

Student Name:_____________________
Student Signature:_____________________
Date:__________________________
Appendix D
Using a Can Opener

FIND CAN OPENER
IN THE DRAWER

OPEN AND CLOSE ON CAN

TURN HANDEL UNTIL
LID COMES OFF

REMOVE LID
Appendix E
USING OVEN MITTS

FOR HOT ITEMS I NEED OVEN MITTS

GET MITTS FROM DRAWER

PUT BOTH ON

CAREFULLY MOVE HOT ITEM TO A SAFE PLACE
Appendix F
CHECKING FOR LEFTOVERS

LOOK AND SEE WHAT IS LEFT

IS EVERYONE DONE?

DECIDE IF YOU SHOULD KEEP IT
OR THROW IT AWAY
Appendix G

Tokens
Appendix H
Treasure Map
Appendix I
Data Sheets

Observer: ___________________________  Date: ___________________________
Participant: ________________________

<table>
<thead>
<tr>
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Appendix J
Task Analyses

Spaghetti and Red Sauce With Garlic Bread
- Wash hands
- Get staff to spaghetti out of the cupboard
- Get sauce out of the cupboard
- Get pot out of cupboard
- Fill pot with water
- Put pot on stove
- Turn on stove to HIGH
- Open spaghetti
- Open sauce with can opener - Target
- Wait for water to boil
- But spaghetti in boiling water
- Turn down water to MED
- Stir
- Watch for Overheating (Boiling Over) – Target
- Put Garlic Bread in Oven
- Watch for burning – Target
- Use Oven Mitts to Drain when cooked – Target
- Use Oven Mitts to remove garlic bread – Target
- Add sauce to pot
- Stir
- Serve
- Clean up
- Identify Leftovers – Target
- Store leftovers appropriately if necessary – Target

Scallop Potatoes
- Slice potatoes
- Open Cans of soup – Target
- Mix cans of soup in a bowl
- Grease baking tray
- Layer potatoes and soup mixture
- Put in oven
- Ensure Potatoes don’t overcook – Target
- Use Oven Mitts to remove tray – Target
- Let sit, and serve with dinner
- Identify Leftovers – Target
- Store Leftovers – Target
Tuna Casserole

- Open cans of tuna and cans of soup – Target
- Boil water
- Add pasta
- Stir until cooked – Target (watch for overcooking)
- Strain pasta
- Mix pasta with soup/tuna mixture
- Add frozen peas
- Empty into casserole dish
- Crumble potato chips and grated cheese over top of casserole
- Put in oven
- Make sure the top does not burn – Target
- Remove from oven – Target
- Serve
- Identify leftovers – Target
- Store Leftovers – target
Appendix K
Baseline Data of Skills

Observer: Alex Glecoff  Date: October 2-8th
Participant: Jessica Doe*

<table>
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Independent: 0/12 = 0%
Prompted: 2/12 = 16.67%
Incomplete: 10/12 = 83.33%
Observer: Alex Glecoff  Date: October 9-15th

Participant: Jessica Doe*  

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Independent: 0/20 = 0%

Prompted: 3/20 = 15.00%

Incomplete: 17/20 = 85.00%
Observer: Alex Glecoff  
Date: October 16-22nd  
Participant: Jessica Doe*

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Independent: 0/14 = 0%
Prompted: 0/14 = 0%
Incomplete: 14/14 = 100%
Observer: Alex Glecoff  Date: October 23-29th
Participant: Jessica Doe*

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Independent: 0/10 = 0%
Prompted: 0/10 = 0%
Incomplete: 10/10 = 100%
Appendix L
Intervention Data Sheets

Observer: Alex Glecoff  Date: November 6\textsuperscript{th} – 12\textsuperscript{th}

Participant: Jessica Doe*

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*short week due to extenuating circumstances, only one day of data (November 8\textsuperscript{th})

Independent: 2/2 = 100%
Prompted: 0/2 = 0%
Incomplete: 0/2 = 0%
Observer: Alex Glecoff  
Date: November 13th – 19th  
Participant: Jessica Doe*

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Independent: 12/16 = 75.00%  
Prompted: 2/16 = 12.50%  
Incomplete: 2/16 = 12.50%
Observer: Alex Glecoff  Date: November 20th – 26th

Participant: Jessica Doe*

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Independent: 6/15 = 40.00%
Prompted: 7/16 = 43.75%
Incomplete: 2/16 = 12.50%
Observer: Alex Glecoff  Date: November 27th – December 3rd

Participant: Jessica Doe*

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Independent: 8/10 = 80.00%
Prompted: 2/10 = 20.00%
Incomplete: 0/10 = 0%
Appendix M
Graph of Baseline and Intervention Data

Baseline

Intervention

- Independent
- Prompted

- Independent Trend
- Prompted Trend

Percentage of Skills Completed

Weeks