Using a Forward Chaining Procedure with Visual Prompts to Teach Independent Dressing in a 64 Year Old Man with Dementia and an Intellectual Disability

by

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FORWARD CHAINING PROCEDURE WITH VISUAL PROMPTS

Dedication

I would like to dedicate this to all my family and friends who have supported and encouraged me for the last four years, I don't know what I would do without all of them.
Abstract

A forward chaining procedure using visual prompts was used to benefit a 64 year old male who has early onset dementia and an intellectual disability. The procedure was designed to teach the participant independent dressing. The intervention lasted 6 weeks and took place in the participant's group home residence. The intervention consisted of a five step task analysis using visual prompts of photographs of the participant's belongings which indicated to the participant what he needed to do to get dressed independently during his night time routine. The task analysis was developed in a way to benefit the participant in the present, and could be maintained to aid in his anticipated memory deterioration. The results of the study indicated that the intervention was successful at helping the participant get dressed independently. There was an increase from 64 percent of steps in the dressing routine completed independently at baseline to 93 percent of steps completed after intervention. Recommendations were made about how to adjust the procedure for different ages as well as another way for an individual to learn the skill quicker.
Acknowledgements

I would like to take this opportunity to thank a couple people who have supported me on the development of my thesis.

Laura Campbell, I would like to say thank you for all you guidance and all the time you spent editing and helping me make my thesis the best it can be. I appreciate your support and feedback and would not have been able to do write this without you.

I would also like to thank all the Community Living Kingston and District staff at the residence I worked at. Everyone was so welcoming to have me as part of their team and the support and feedback throughout the process means so much.
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Chapter 1: Introduction

Dementia is a common challenge that 36 million individuals face every single day, and it continues to spread throughout the population (Li, Suishu, Hattori, Liang, Gao, Feng, & Feng, 2013). Individuals with dementia often live in a world of incomprehension, which causes them to face many challenges and daily struggles (Graneheim & Jansson, 2006). These obstacles require the individual to make changes to their environment in order to achieve their daily tasks and routines (Alzheimer’s Society, 2014). The age at which an individual develops dementia plays an important role in the deterioration of the brain. Individuals who have early-onset dementia are considered to be those who develop dementia at age 65 or below and these individuals experience rapid brain deterioration, whereas those who develop dementia later than 65 years-old experience a slower decline (Miyoshi, 2009).

Some symptoms associated with dementia include: difficulty remembering conversations and names or events, impairments of communication, poor judgment, disorientation, and confusion (Alzheimer’s Society, 2014). Due to these symptoms, some individuals lose the ability to complete basic skills that would have once been considered first nature to them. Individuals with dementia tend to lose their independence because they lose their knowledge of how to complete daily tasks (cooking, cleaning, laundry, getting dressed etc.) which leaves them to rely on others to do these basic tasks for them (Van Vliet, De Vugt, Bakker, Koopmans & Verhey, 2010). When an individual starts to lose their independence they may start to complain about their persistent forgetfulness and may become depressed. So it is important for the individuals in the lives of people with dementia to know memory loss is a serious issue and can affect their quality of life and mental state (Mol, et al., 2007).

As well as living with dementia and its struggles, having an intellectual disability as well can enhance an individual’s difficulties. Individuals with dementia and developmental disabilities are more likely to move into specialized housing earlier compared to the elderly population (Johansson, Christensson, & Sidenvall, 2011). When an individual leaves their home and moves somewhere with everyday care, they will often live with other people (Van Zadelhoff et al., 2011). Living in a group home can be beneficial for the individual’s health as they get assistance when needed but they are still able to have a feeling of home and a sense of well-being (Van Zadelhoff, et al. 2011). Group home living can be beneficial at providing the care that is needed as well as giving room for independence.

The present study will focus on the skill of independent dressing. When knowledge of how to carry out this skill begins to fade, it is helpful to create clear instructions that will make the act of getting dressed seem easy, while also ensuring that their independence is still being maintained (Akriti, Angelika, & Dennis, 2013). Forward chaining is one technique that can be used to teach the skill of independent dressing (Akriti, et al. 2013). A forward chaining procedure is described as teaching a task by breaking it down into different steps and then teaching each step in order from first to last. (Akriti, et al. 2013). By doing this it creates clear instructions for the individual which helps them to re-learn the behaviour (Akriti, et al. 2013). It was hypothesised that using a forward chaining procedure would increase independence while getting dressed during the participant’s night time routine and keep the need for assistance minimal as the participant’s memory continues to decrease. The main chapters that will be covered in the current thesis are: a review of the literature of forward chaining procedure using a
pictorial task analysis, the methodology of the current study, the results and a discussion of the findings.

Chapter II: Literature Review

Dementia

Dementia is a disorder characterized by the loss of memory and other mental abilities that can affect and interfere with one’s daily life (Alzheimer’s Society, 2014). There are currently 36 million people in the world with dementia and it is determined that there will be 60 million people by 2032 and 115 million people by 2050 (Li et al. 2013). When an individual has dementia there is damage to their brain cells which causes the brain cells to have trouble communicating with one another (Alzheimer’s Society, 2014). When the brain has trouble communicating normally an individual’s thinking, behaviour and feelings can be affected (Alzheimer’s Society, 2014). Individuals who have dementia often start to have difficulty doing daily activities that were once second nature for them in the past (Alzheimer’s Society, 2014). The individuals in one’s life may also begin to acknowledge that their loved ones are experiencing the symptoms of memory loss and try to communicate with them about possibly solutions to benefit them and make their life remain independent and complete the tasks they are used to doing (Alzheimer’s Society, 2014).

One of the most common types of dementia that individuals can have is Alzheimer’s disease which tends to develop slowly but gets worse over time (Alzheimer’s Society, 2014). Early symptoms of Alzheimer’s disease are described as having a hard time remembering conversations that were had recently, not remembering names or events and having apathy or depression (Alzheimer’s Society, 2014). Later symptoms can include impairments of communication, poor judgment, disorientation, and confusion, behaviour changes, having a hard time speaking, swallowing or walking (Alzheimer’s Society, 2014).

Dementia also has some risk factors that predispose an individual’s age and genetics which cannot be changed, but researches have looked at other factors that can possibly help prevent dementia in some individuals (what is dementia, 2014). If someone has damage to their blood vessels it result in deprivation of nourishment to the brain which will start to deprive the body of oxygen and important food (what is dementia, 2014). Therefore these blood vessel changes can predispose an individual to vascular dementia individual will develop vascular dementia (what is dementia, 2014). Also physical exercise and a proper nourishing diet can help to prevent dementia and when an individual eats healthy food and exercises frequently they are impacting their brain health in a positive way (what is dementia, 2014).

Early onset dementia occurs in individuals before the age of 65 and who may have genetic abnormalities which can accelerate the illness (Miyoshi, 2009). It can take longer to recognize when someone has early onset dementia but when an individual has it, it can impact their active roles in society and quickly limit them to what activities they can continue to do (Van Vliet et al. 2010). Early onset dementia can occur fast and can cause depression, anxiety and aggression in some individuals. They may not understand what is going on with their mind (Ferran, Wilson, Doran, & Ghadiali, 1996); therefore, individuals who live with dementia often live in a world of incomprehension and their daily activities become disorderly which can result in them feeling lost in their own home (Graneheim & Jansson, 2006). Memory loss in people with dementia interferes with daily activities such as cooking, housekeeping, handling money
and shopping as well as social activities (Mok, Lai, Wong, & Wan, 2007). During early onset dementia memory loss is mild but as time goes on individuals lack the ability to carry on conversations with people and are not able to respond to their environment anymore (Alzheimer’s Society, 2014). Some individuals may start to repeat previous conversations that they already had and will not remember talking about the topic (Alzheimer’s Society, 2014). Some individuals may become upset if they do not get the reaction they want from other individuals when telling a story the second or third time and they do not understand why that person is not as interested as they normally would be (Alzheimer’s Society, 2014).

Developmental Disabilities

People with developmental disabilities often need more assistance when it comes to learning, understanding and using information and therefore their language and social skills are affected (Alzheimer’s Society, 2014). Individuals with dementia and developmental disabilities are more likely to move into specialized housing earlier compared to the elderly population (Johansson, Christensson, & Sidenvall, 2011). When an individual moves into a group home their living arrangements should meet a criterion to make sure they are getting the best care possible to further benefit their needs (Johansson, Christensson, & Sidenvall, 2011). The group home should provide: an environment that has the time, energy and ability to cope with stress that comes from taking care of multiple people at once, recreation, work and school services that are willing to accept individuals with a developmental disability. Group homes also provide caregivers with relief when needed to ensure individuals are not over worked and the clients get the best support (Johansson, Christensson, & Sidenvall, 2011). Mental health services should be provided if needed and special living arrangements for those individuals with high needs due to other health or mental problems should be arranged (Johansson, et al. 2011). Clients should have access to proper behavioural modification services, health and dental services that are available and willing to help and accommodate individuals with a developmental disability as well as have financial supports to help maintain this service for these individuals (Fotheringham, 1999).

As the memory loss slowly progresses it can become important to make necessary changes to client’s environment that will give assistance but also keep that person feeling independent even though they live in a group home (Alzheimer's Society, 2014). An example of modifications that could be used to help change a client’s environment to give them more assistance is provision of an environment which easily accommodates wheelchairs for individuals who require wheelchairs (Fotheringham, 1999). Also visual reminders in an individual’s bedroom or bathroom can help remind them to their needs (e.g. don’t forget to hang up coat, don’t forget to brush teeth) (Fotheringham, 1999).

Forward Chaining

When working with individuals with dementia and developmental disabilities it is important to teach them skills in a way that is easy to understand. Some individuals may have trouble processing information that may come naturally to others. In that case it is important to customize the intervention procedure to the individuals needs so they are able to have the best results possible (Akriti, et al. 2013). A forward chaining procedure is one intervention that is beneficial to use when teaching different skills. When working with an individual with dementia and a developmental disability it is important to teach them skills in a way that they are able to understand and grasp easily and follow when no other individual is around to assist them (Akriti, et al. 2013). A forward chaining procedure is described as teaching a task by breaking it down
into different steps using what is called a task analysis (Akriti, et al. 2013). The first step of the task analysis is taught and the client is prompted through the remaining steps of the task. Once the individual learns that step, the next step in the task analysis is taught and so on until all of the steps in the task analysis are completed. (Akriti, et al. 2013). The individual learns each step while maintaining previous steps learned until the full task is completed independently (Akriti et al. 2013).

In a study completed by Akriti et al. (2013) a forward chaining procedure was conducted with a 4 year old boy with autism to teach him to serve himself his own afternoon snack. The intervention was conducted using video clips which the boy was guided to watch when he was hungry (Akriti, et al. 2013). The video clips broke down the steps he would have to compete to have his afternoon snack (Akriti, et al. 2013). Verbal prompts were used if a step was forgotten and verbal praise was given when the task was completed (Akriti, et al. 2013). Results showed that combination of video clips with a forward chaining procedure were effective at teaching a 4 year old boy with autism how to get his own afternoon school snack (Akriti, et al. 2013). During the baseline phase of the intervention that participant displayed low but stable performance (Akriti, et al. 2013). After the intervention was implemented the results demonstrated that the participants learning of the skills increased rapidly after watching the video which displayed the steps in a clear and concise way (Akriti, et al. 2013). The participant was able to get an immediate and effective demonstration on how to complete the skill on his own (Akriti, et al. 2013). The participant learned new skills of how to effectively get his own snack without assistance and was able to complete the task during the follow up session without watching the video or getting assistance from anyone else (Akriti, et al. 2013). This method of teaching the skill was effective for the participant as he was able to understand a visual demonstration better compared to having a staff member verbally explain to him what he needed to do. As well as learning the new skill the participant was able to generalize the snack he would get on his own to other foods that he wanted. He knew if he was able to successfully get one food when he was hungry for that he could get something else he was craving and he would get the same results of fulfilling his hunger.

Another study conducted with individuals with developmental disabilities involved a forward chaining procedure to teach appropriate mealtime behaviours such as cutting food, pouring drinks and serving food (Jensen, Watson, DeWulf, Johnson, Davis, & Sottolano, 1992). The individuals were given verbal instruction on what was required when mealtime occurred (Jensen et al. 1992). Each individual in the study had a trained staff working with them to assist them with any questions that they had during the treatment. After the intervention procedure was complete it was identified that the participants had better results when they worked in small groups compared to when they just worked with the trained staff one on one (Jensen et al. 1992). These results show that the participants were able to learn from other clients going through the intervention (Jensen et al. 1992). If one of the clients was unsure on the next step they were able to watch another client to see what they were doing and could model that behaviour (Jensen et al. 1992). This technique was successful if the client that the person was modeling is completing the task appropriately and correct (Jensen et al. 1992). If the person was not completing the task appropriately and correct that is when the trained staff would have to verify how to complete the task to both of the clients (Jensen et al. 1992). The individuals responded well to the verbal instruction and over time were able to show appropriate mealtime behaviours without as many prompts (Jensen et al. 1992).
Losing memory can provoke anxiety in an individual as their sense of well-being starts to diminish (Ballard, 2010) so having routines put in place before the dementia gets worse can be beneficial by using a task analysis to help teach a specific skill (Johansson, Christensson, & Sidenvall, 2011). In a study done by Johansson, et al. (2011) individuals with dementia were tested to see if their dementia was starting to affect their mealtime routine. The results of the study show that individuals with dementia were having trouble during their mealtime routine as they were forgetting what comes first when cooking as well as how to cook the certain meals that they want (Johansson, et al. 2011). The task analysis would consist of a list of what to do and some tips when cooking and was used to see if it would help the individuals and increase their independence of cooking their own meal (Johansson, et al. 2011). Results showed that using lists when grocery shopping as well as putting the ingredients from recipes away in their refrigerator or cabinets right after use was beneficial at keeping the mealtime routine easy and simple (Johansson, et al. 2011). The individuals were able to go into the grocery store with a list of the ingredients that they want and were not wandering around the store looking for things and becoming frustrated. When they individuals got home from grocery shopping they were then instructed to put away the food that they bought right away before completing any other activity (Johansson, et al. 2011). This procedure was beneficial for the clients as they knew what to do in the correct order and did not have time to wonder what step comes next (Johansson, et al. 2011).

Therefore it is believed that this task analysis procedure will be beneficial to use with individuals with dementia and developmental disabilities as it is a simple and concise way to teach a skill. If the individual has trouble learning the first step they are able to work on it until completed successfully which allows for minimal frustration to occur. If an individual were taught an entire procedure and told to complete it, there is potential for them to become overwhelmed and cause them to give up. This procedure allows time for completion of steps as the individual with dementia and developmental disabilities will need that time to learn the skill being taught.

Visual Prompts

Teaching a skill can be a challenge depending on the individual and their specific needs. Verbal prompts may not always be enough when teaching a simple or even complex skill. Some individuals may respond to the verbal prompt in the present moment but then when they go to complete the skill they were told to do they may forget the exact steps and only remember some of them (Peterson, McLaughlin, Weber & Anderson, 2007). Some individuals learn better by visual stimulation (Peterson, McLaughlin, Weber & Anderson, 2007). Being able to see what the individual has to complete can allow the person to visualize the next step as they complete the one before (Peterson, McLaughlin, Weber & Anderson, 2007). If an individual is given a task pictures of objects that are familiar to them can allow better results as well as they are more likely to remember something if they feel comfortable with the object and seeing it before (Peterson, McLaughlin, Weber & Anderson, 2007).

The use of visual prompts has been shown to be effective in a study done by Peterson et.al (2007). The study included a 13 year old boy with Autism who was being taught how to appropriately answer “where are you?” when asked by the staff in his school. During baseline the individual went around to different areas in his school with a staff member and was asked the question “where are you?” and would answer with no prompting or help from a staff member (Peterson et al. 2007). Baseline results showed that the individual had an average number of
FORWARD CHAINING PROCEDURE WITH VISUAL PROMPTS

correct responses of 0 (Peterson et al. 2007). Which indicated that he was unaware of how to complete the task asked (Peterson et al. 2007). During the intervention the participant was taken back to the same areas in his school and was asked the same question again (Peterson, 2007). This time there was a board in front of the participant with a visual prompt on it to help the participant if needed and after each verbal response praise was given if the correct answer was provided (Peterson et al. 2007). Results showed that the participant’s answers improved when the visual prompts were present in front of him. The participant was also able to generalize the questions “where are you?” across multiple settings (Peterson et al. 2007).

In a study done by Colyer and Collins (1996) the use of visual prompts was used when teaching individuals with an intellectual disability how to use the dollar strategy when making purchases. The individuals were given a verbal and visual presentation of how to purchase items. They were shown cue cards with prices on them and the instructors would verbally say the price during one session and during another session the instructor would just hold up the cue cards. Results showed that the participants were able to replicate what they were taught and were successfully able to understand the dollar strategy when making purchases. The use of having both visual and verbal instructions benefited the clients better than if they were to just get instructed by one. Some clients were better able to understand when they were told verbally and some by seeing the verbal prompt benefitted the individual more. As an individual’s memory decreases he/she may start to forget their own personal belongings so having visual prompts of things that are familiar to them can benefit them when they are trying to complete a skill but can’t remember the next step. If they see a photograph of an object they know, their mind will be triggered and it can help make the process of completing the task easier.

As the research shows people with dementia have many struggles and limitations when it comes to living a normal life. Dementia impacts the individual’s ability to remember information that was once easy for them. Early onset dementia can progress quickly for individuals and can cause them to live in a world of incomprehension which leads them to have trouble taking care of themselves leaving independence minimal. Dementia cannot be cured, therefore we must attempt to make individuals lives meaningful and help them to keep as much independence as is possible for them. One way to do this is through the use of forward chaining and visual prompts. In the current study these procedures were used to teach a 64 year old man independent dressing during his night time routine.
Chapter III: Method

Participant

The client who is participating in the study was a 64 year old man with early onset dementia and an intellectual disability. The participant was referred by the staff at Community Living in the group home. It was reported that the participant had difficulty with memory loss but specifically at remembering where his clean and dirty clothes belong. During his morning and night routines of dressing the participant becomes confused and would spend a great deal of time in his bedroom trying to figure out if his clothing items were clean or dirty and where they belonged. The staff at the home noticed the participant’s bedroom was beginning to have a strong odour and found the reason to be that dirty/wet clothes were put back into the closet or dresser and were beginning to smell. A consent form including intervention procedures, data collection, benefits and risks to treatment was issued to the participant as well as the study was approved by the ethics board after St Lawrence College received the REC-P application (See Appendix A).

Design/Format

This study employed a single subject AB design with the intervention being a forward chaining procedure with visual prompts. Baseline was phase A and intervention was phase B. Independently dressing during the night routine was the dependent variable and was defined as 1. going to dresser picking out pajamas, 2. taking a bath, 3. once bath is complete put dirty clothes into laundry basket and 4. put shoes and belt away. Mastery criteria of each step was the step completed without verbal or physical assistance. The dependent variable in the study was the independent dressing completed by the client (Appendix B). Before intervention was implemented a baseline was taken to see how many steps the participant completed on his own (See Appendix C for results). Once the procedure was implemented, intervention data was taken to determine how many steps in the task analysis the participant acquired.

Settings and Materials

The intervention procedure took place at the participant’s residence five days a week during the night routine of getting dressed. Materials needed to complete the procedure were pictures of the dresser, laundry basket and closet so the participant knew where his clothes were in his room and if verification was needed he was able to see his own property (Appendix C for the visual prompts that were used). A written task analysis was also used along with the picture prompts so the participant could read the steps if he wanted to. A data collection sheet was used to check off which steps the participant completed on his own. As well reinforces of verbal praise, thumbs up and high fives were delivered immediately after completing all the steps.

Measures

A baseline and intervention count data sheet was used to see how many steps the participant is completed independently. The percentage of steps the participant could complete in his night routine independently were calculated. Baseline and intervention data was collected by totalling the number of steps the participant completed independently.

Procedure
The procedure was implemented at the participant’s home in his bedroom once per day every night between the times of 7 p.m. and 9 p.m. The procedure normally took anywhere from 30 to 45 minutes depending on how long the participant spent in the bathtub. Photographs used as visual prompts and written words of the procedure were placed on an open wall in the bedroom so it was easy for the participant to see. The participant was given verbal prompts to complete the task analysis. After a review of the task analysis the participant was required to follow the steps during his dressing routines. A time delay gestural prompt (pointing at the picture) and a verbal prompt (look….) was provided if the participant did not follow the routine for more than two minutes or if an error was made. Data was taken every day on the number of steps the participant completed independently until the mastery criteria was reached (Appendix B). Reinforcers for the completion of the task analysis each night was verbal praise and high fives that were delivered by staff and student at the end of the participant’s dressing routine. The participant enjoyed going out into the community for dessert (reinforcement survey) so once the participant reached criteria he was able to do so. There was no plan to fade the visual prompt as the participant’s memory is going to continue to decrease as his dementia progresses.
Chapter IV: Results

During the baseline phase the participant successfully completed an average of 64% of the required steps throughout a 15 day period. The participant was only able to complete the first three steps in the five step task analysis on his own. The standard deviation for the baseline results was 13.52 and was stable with 87% of the data points falling within 15% of the mean level.

After implementation of the treatment the results showed that the participant completed an average of 93% of the required steps over a 30 day period which was a 29% increase compared to the baseline results. He was able to follow the steps and complete his dressing routine independently and was able to meet his criteria of mastering the steps without assistance. The use of visual prompts in the form of words and pictures of the participant’s own belongings made the task analysis easier to follow and the participant was referring to the pictures for assistance by the end of the treatment. There were a couple days that did fall below baseline due to the participant dealing with personal issues which affected how he completed the task analysis for that day. There was variability with the intervention data due to the participant dealing with personal issues and therefore there was a range from 60% to 100% of completed steps. The standard deviation for the treatment results was 13.37 and was stable with 90% of the data points falling within 15% of the mean level.

The participant’s mood increased when verbal praise, high fives and a thumbs up were delivered to him when he completed the steps independently. Daily reinforcement was that participant requested going to Dairy Queen for a chocolate sundae during the a verbal preference assessment. So that was the participant’s reinforcement every time when he was able to meet the objective of completion of all steps for independent dressing without assistance.

Table 1. Percent of steps completed independently during baseline.

<table>
<thead>
<tr>
<th>% of Steps completed independently</th>
<th>Day 1</th>
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Table 2. Percent of steps completed independently during intervention.

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Table 3. Data for frequency of independently dressing.

<table>
<thead>
<tr>
<th></th>
<th>Baseline</th>
<th>Treatment</th>
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<tbody>
<tr>
<td>Mean</td>
<td>64</td>
<td>93</td>
</tr>
<tr>
<td>Medium</td>
<td>60</td>
<td>100</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>13.52</td>
<td>13.37</td>
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Figure 1. Number of steps completed independently.
Chapter V: Discussion

Overview

The purpose of the present study was to examine the effectiveness of a forward chaining procedure using visual prompts to teach a 64 year old male with dementia and an intellectual disability how to dress independently. The intervention was customized to the participant’s strengths and weaknesses and was concise and easy to understand. The participant’s own belongings were photographed to use in the task analysis along with a written description of the steps. This technique was successful for the client's independent dressing which increased from an average of 64% of steps completed independently to 93% of steps completed independently.

Strengths

The primary strength of the intervention was that the materials used were customized to the participant's own strengths and weaknesses. The participant had an intellectual disability which required that intervention be simple and easy to follow. After observation it was identified that the participant responded well to visual prompts. Since the participant had early onset dementia as well as an intellectual disability, the visual prompts were intended be useful in the present time and will potentially benefit the client in the future as his dementia progresses.

Another strength of the intervention includes the understanding and consistency of staff working in the residential environment. After observation of the client was completed and an appropriate intervention was determined, the staff members in the residence were taught the steps of the intervention. The staff members took the time to listen and ask questions about the intervention so they could assist the client if needed. The client was fairly new to the residence so the staff were interested in comparing the baseline and treatment results.

Limitations

The primary limitation of the intervention was that there was only one client completing the forward chaining task analysis therefore the treatment lacks reliability and validity. Having only one client means that there is no one else to compare the results to which limits the generalizability. Even though the intervention was successful at helping the client independently dress, it does not mean that it will work for everyone. The procedure was customized to this client’s strengths and weaknesses and not everyone learns the same way.

Another limitation of the intervention includes that the individual's intellectual disability sometimes determined how many steps he was able to independently complete without assistance. Some days the client would complete all steps on his own and no prompting was needed. Other days the client was distracted by other housemates, staff and objects and it would take him double the normal time to complete his task. The client's mood affected the intervention procedure as well, for example, if he had a bad day at his day program, another housemate upset him or if he was bothered by something he would need prompting to help him back on track of the task. Therefore, there were extraneous variables that may have impacted the participant’s success with the intervention.

Finally another limitation of the intervention includes that not all the staff will continue to follow the procedure as outlined in this study. The residence is very fast paced most days with all five clients completing their own specific routines and there is only ever two staff working at time. When the participant is completing his routine, there may not be a staff around to make
sure it is going as planned. While there is not consistency with all the staff in the residence using the visual prompts since there was no formal training session when all staff could be present since it is shift work.

**Contributions to the Psychology Field**

The current study contributes to the psychology field. The results of the study demonstrate that a personalized forward chaining procedure was successful at increasing a personal skill for an individual with dementia and an intellectual disability. The study also provides information about interventions that are effective with individuals with dementia. Other staff members who work in that residence are now more aware of ways to assist individuals with dementia and an intellectual disability.

**Multilevel Challenges**

Working in a group home setting, including individuals with developmental disabilities, dementia, borderline personality disorder and anxiety, can create many challenges. The challenges discussed in this report are most frequently seen in a group home at Community Living Kingston and District. The client, program, agency and societal levels will all be discussed in further detail below.

**Client Level:** When designing a program with an individual who has dementia and an intellectual disability. Working with an individual with an intellectual disability means knowing their strengths and weaknesses and working from that. If the individual is better able to understand visual prompts compared to verbal or lots of writing then modification is needed. Also working with an individual who has dementia means knowing that their memory is going to deteriorate as time goes on so the program should be able to still be beneficial and easy to understand as that progression occurs.

**Program Level:** Working in a group home setting can cause issues as there is a high client-to-staff ratio in the home. Sometimes a client may have to wait their turn to be assisted if a staff is helping another client. This can cause frustration on both the client and staffs part as the client has to wait for assistance if they cannot help themselves and it leaves the staff very busy and may not allow a lot of down time during their shift.

**Agency Level:** When working in an agency it is important that all staff members have the same mindset when working with clients in the residence. Having everyone with the same ideas on how to further benefit the clients will help routines and outings run more smoothly. Because there is normally only two staff working at a time it is important they are willing to work with each other so the clients are getting the best care possible. There are a few factors that can contribute to differences that may arise between staff members when trying to assist clients. The staff members educational backgrounds, the training that may have or do not have and experience can all affect how different individuals will complete the job. These factors can get in the way of the task at hand, helping the clients, when staff members are working together as they may not agree on certain situations. This challenge can be related back to when Johansson, Christensson, and Sidenvall, (2011) talked about how group home settings should provide: an environment that has the time, energy and ability to cope with stress that comes from taking care of multiple people at once.
Societal Level: It is important at the societal level that the agency’s mission statement is remembered. All staff members must follow through with giving individuals with an intellectual disability the opportunity to go out into the community and participate with dignity and independence. Just like other people in the community individuals at Community Living go to doctor’s appointments, movies, shopping, dinner etc. and it is important that clients in the homes get the chance to do so regularly. This can become a challenge depending on the routines of clients, finances and staffing but it is important to get the clients out into the community as much as possible. This can be related back to when Fotheringham, (1999) who stated that clients should have access to proper behavioural modification services, health and dental services that are available and willing to help and accommodate individuals with a developmental disability.

Recommendations for Future Research

It is recommended for a future forward chaining procedure using visual prompts that a more hands on visual board may be beneficial. Having a visual board with velcro pictures that allows the participant to take the steps on and off and arrange them before hand may increase knowledge of the skill before performing it physically as they are able to rehearse the steps prior to going through them during their activities of daily living. This may allow for the participants to understand the concept of the skill quicker and may allow for quicker progress through the intervention steps.
FORWARD CHAINING PROCEDURE WITH VISUAL PROMPTS

References


FORWARD CHAINING PROCEDURE WITH VISUAL PROMPTS


Title: Using a Forward Chaining Procedure with Visual Prompts to Teach Independent Dressing in a 64 Year Old Man with Dementia and Intellectual Disability

Student: Sarah Young

College Supervisor: Laura Campbell

Invitation:
I am a student in my 4th year in the Behavioural Psychology at St. Lawrence College and I am currently on placement at Community Living. As a part of this placement, I am completing a project called an applied thesis and I am asking for your help to complete this project. The information in this form is going to help you understand my project so that you can decide whether or not you want to participate. The information below will be read carefully to you and don’t be afraid to ask questions before deciding whether or not to participate.

What is the purpose of the study?
The purpose of the study is to help with making getting dressed an independent task as your memory begins to get worse. Having photographs of what you do when getting dressed will help you become more independent when doing it and you will not have to ask for help. You will know where to get your clean clothes and where to put your dirty clothes. This will help decrease any confusion of what is clean or dirty in your closet as well as making independent dressing quick and easy for you. It is believed that learning this skill will help you when getting dressed.

What will you need to do if you take part?
If you choose to take part in the study you will be asked to use the photographs that will be on the back of your door whenever you get dressed during your night time routine which is once per day, 5 days a week for 8 weeks. Photographs of your closet, dresser and laundry basket are used make the steps look familiar for you. The visual prompts that are used to help with independent dressing will be in your bedroom and easy to see during your night routine. Your role during this time is to follow steps in the photos given to you to help when getting dressed and to ask questions if you need help at any point.

What are the potential benefits to me of taking part?
The program contains photos of your dressing routine which will be beneficial for you during your night routine of independent dressing so that you will not have to ask for help. The skill taught will be easy to understand and you will be able to use this skill in the future. The overall benefits of the program will continue into the future to help make getting dressed an independent task as you will continue to forget things because of your dementia.

What are the possible disadvantages?
FORWARD CHAINING PROCEDURE WITH VISUAL PROMPTS

Risks from taking part in this research study are not large but may include feelings of frustration as a result of not remembering where certain clothing items belong in your room.

**What happens if something goes wrong?**
Everyone reacts differently to programs so if there are any strong reactions to using the pictures for your dressing routine, please feel free to contact myself, my supervisor or a staff member at your residence.

**Will my taking part in this project be kept private?**
All personal information in this study, including consents, will be kept in a locked cabinet at the Community Living agency main office for 7 years and kept confidential. All information from this study that will be gathered will not be shown publically without consent. Your real name will not be used in the study as you will be given a fake name.

**Do you have to take part?**
Taking part is completely up to you. It is up to you to decide whether or not to take part in this research project. If you do decide to take part you will be asked to sign this consent form. You are still free to ask me to stop working with you at any time, without giving any reason, and without incurring any penalty, or negative effects.

**Contact for further information.**
This project has been approved by the Research Ethics Board at St. Lawrence College. The project will be developed under the supervision of Laura Campbell, MA, BCBA, my supervisor from St. Lawrence College. I really appreciate your help and if you have any additional questions or concerns, feel free to ask me, Sarah Young (syoung15@sl.on.ca) or by telephone at (613) 214-1851. You can also contact my college supervisor Laura Campbell (lacampbell@sl.on.ca).

**Consent**
If you agree to take part in this research project, after we have read this together and you have had a chance to ask me any questions, please sign the next page saying you understood the discussion you had with the St. Lawrence College student about what you will be doing. A copy of this signed document will be given to you for your own records. An additional copy of your consent will be retained at the agency [and in a secure location at St. Lawrence College].

**CONSENT**
By signing this form, I agree that:

- The research project has been explained to me.
- All my questions were answered.
- Possible harm and discomforts and possible benefits (if any) of this project 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 about the research project.
- I have been told that my personal information will be kept confidential.
I understand that the results of this project may be published or presented in a professional forum.
I understand that no information that would identify me will be released or printed without asking me first.
I understand that I will receive a signed copy of this consent form.

I hereby consent to participate.

Printed Name: ____________________________

Signature: _______________________________ Date: ________

SLC Student Signature: ___________________ Date: ________

Printed Name: ____________________________

Witness: _________________________________ Date: ________

Printed Name: ____________________________
Appendix B:
Baseline Data Collection

Night Routine Steps to Independently Dressing

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Baseline Mean, Stability and Standard Deviation

Mean:

\[ 60 + 60 + 80 + 60 + 80 + 80 + 80 + 60 + 60 + 80 +60 + 40 + 60 + 40 = 960/15 = 64 \]

Stability:

\[ = (\text{Mean} [64] \times 0.075) \]

\[ = 4.8 \]

\[ = (64-4.8) \text{ to } (64+4.8) \]

\[ = 59.2 \text{ to } 68.8 \]

87% of the data points were within 15% of the mean level, which is 64.

Standard Deviation:

\[ = 13.52 \]
Appendix C:

Task Analysis
## Appendix D:
### Intervention Data Collection

#### Night Routine Steps to Independently Dressing

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FORWARD CHAINING PROCEDURE WITH VISUAL PROMPTS

Treatment Mean, Stability and Standard Deviation

Mean:

\[
100 + 100 + 100 + 100 + 100 + 100 + 80 + 80 + 100 + 100 + 100 + 80 + 100 + 80 + 80 + 100 + 100 + 80 + 80 + 100 + 100 + 80 + 100 + 80 + 100 + 80 + 100 + 100 + 80 + 100 + 80 = 2780 / 30 = 93
\]

Stability:

\[
= (\text{Mean} \times 0.075)
\]

\[
= 7
\]

\[
= (93-7) \text{ to } (93+7)
\]

\[
= 86 \text{ to } 100
\]

90% of the data points were within 15% of the mean level, which is 93.

Standard Deviation:

\[
= 13.37
\]
Appendix E:

Baseline and Treatment Graph

![Baseline and Treatment Graph](image-url)