

4-27-2008

# Teaching Functional Skills to Individuals with Developmental Disabilities Using Video Prompting

Julie A. Horn  
*University of South Florida*

Follow this and additional works at: <https://scholarcommons.usf.edu/etd>

 Part of the [American Studies Commons](#)

---

## Scholar Commons Citation

Horn, Julie A., "Teaching Functional Skills to Individuals with Developmental Disabilities Using Video Prompting" (2008). *Graduate Theses and Dissertations*.

<https://scholarcommons.usf.edu/etd/299>

This Thesis is brought to you for free and open access by the Graduate School at Scholar Commons. It has been accepted for inclusion in Graduate Theses and Dissertations by an authorized administrator of Scholar Commons. For more information, please contact [scholarcommons@usf.edu](mailto:scholarcommons@usf.edu).

Teaching Functional Skills to Individuals with Developmental Disabilities Using

Video Prompting

by

Julie A. Horn

A thesis submitted in partial fulfillment  
of the requirements for the degree of  
Master of Arts in Applied Behavior Analysis  
College of Graduate Studies  
University of South Florida

Co-Major Professor: Raymond Miltenberger, Ph.D.  
Co-Major Professor: Timothy Weil, Ph.D.  
Shelley Clarke, M.A.

Date of Approval:  
April 27, 2008

Keywords: mental retardation, group home setting, multiple opportunity method, video chunking, least-to-most prompting

© Copyright 2008, Julie A. Horn

## Table of Contents

List of Figures	ii
Abstract	iii
Chapter One	1
Introduction	1
Chapter Two	8
Method	8
Participants and Settings	8
Materials	9
Target Behaviors and Data Collection	9
Interobserver Agreement	11
Treatment Integrity	11
Experimental Design and Procedure	12
Baseline	12
Intervention 1	12
Intervention 2	13
Intervention 3	13
Intervention 4	13
Intervention 5	14
Follow-up	14
Chapter Three	15
Results	15
Chapter Four	
Discussion	17
References	21
Appendices	27
Appendix A: Task Analysis for Washing Clothes in Washing Machine	28
Appendix B: Data Collection/Treatment Integrity Form	29
Appendix C: Data Collection Form for Least-to-Most Prompting	30

## List of Figures

Figure 1.	Multiple Baseline Across Participants	16
-----------	---------------------------------------	----

# Teaching Functional Skills to Individuals with Developmental Disabilities Using Video Prompting

Julie Horn

## ABSTRACT

Because many individuals with developmental disabilities prefer to be as independent as possible, strategies need to be developed to teach them functional skills. Video prompting is a fairly new technology, in which a person learns to engage in a complex behavior by viewing steps of a task analysis on video. The steps are broken down so that the task is more manageable for the individual. The present study evaluated how many steps needed to be presented in the video model for the learner to acquire a functional skill. Three individuals between the ages of 17 and 29 and diagnosed with mental retardation were selected as participants. The target behaviors were to complete a 10 component laundry skill in a group home setting. Starting with viewing the entire task on video, the task was broken down into halves, then thirds, and so on until the individual performed all steps to criterion. A multiple baseline design was used to show the results of the video prompting procedure. The results showed that one individual learned the task with 5 steps in each video segment, another learned the task with the video broken into 4, 3, and 3 segments, and the final participant did not learn from video. For this participant, a least to most prompting procedure was effective.

## Chapter One

### Introduction

In society today many adults with developmental disabilities desire to live as independently as possible. They no longer want to depend on staff to provide services for them if they can learn to perform the skill on their own. For example, living more independently in an apartment may require the person to learn how to prepare meals, wash clothes, and maintain his or her hygiene. To be employed, the individual must learn skills such as answering the phone, washing dishes, bagging items, or mopping the floor. Unfortunately, some may have failed to acquire the skills needed to live more independently in the community due to inadequate training approaches that are not matched to the level of support they need. Attempts may have been made to teach daily living skills such as washing clothes, preparing a meal, or purchasing an item through the prompting hierarchy, in vivo modeling, or self-management procedures. The goal may have then been discontinued due to lack of progress even though the individual may have preferred to continue learning the skill.

Instead of terminating a skill program, one may choose a different strategy that may better fit the person's support needs. One learning style that has been proven effective through several studies is video modeling (Charlop-Christy & Daneshvar, 2005; Charlop & Milstein, 1989; D'Ateno, Mangiapanello, & Taylor, 2003; Haring, Kennedy, Adams, & Pitts-Conway, 1987; Hine and Wolery, 2006; MacDonald, Clark, Garrigan, & Vangala, 2005; Nikopoulos & Keenan, 2003; Nikopoulos & Keenan, 2004; Reagan, Higbee, & Endicott, 2006; Rehfeldt, Dahman, Young, Cherry, & Davis 2006; Taylor,

Levin, & Jasper, 1999). This procedure involves an individual viewing the target skill over video and then performing the skill to criterion immediately following the video. When the video has been created, the participant is then instructed to watch the video in segments or in its entirety. Once the individual is finished viewing the tape, he or she is then prompted to perform the same task in a similar setting. Sometimes other techniques are embedded into the procedure such as various prompting hierarchies, feedback, time delay, and/or reinforcement (Ayres & Langone, 2005; Bellini & Akullian, 2007; Delano, 2007). A number of studies have shown that video modeling techniques are an effective strategy for teaching skills such as perspective taking (Charlop-Christy et al., 2005), purchasing skills (Nikopoulos & Keenan, 2003; Nikopoulos & Keenan, 2004), play skills (D'Ateno et al., 2003; MacDonald et al., 2005; Reagan et al., 2006; Taylor et al., r, 1999), cooking skills (Rehfeldt et al., 2003) , self-help skills (Shipley-Benamou, Lutzker, & Taubman, 2002; Norman, Collins, & Schuster, 2001), and social skills (Charlop & Milstein, 1989) to individuals with developmental disabilities. Rehfeldt et al. (2003) demonstrated this procedure when teaching meal preparation skills. Three adults with moderate to severe mental retardation were chosen for the study. In this intervention, the participants watched a 2 ½ min video and then were cued to perform the task. Praise was delivered for correct responding after each step completed. Findings showed that the video modeling technique was effective for teaching preparation of a simple meal.

Sometimes watching the entire skill being performed at once is too difficult for individuals with more severe developmental disabilities. These individuals may require the task to be broken down into steps that are more manageable. When a video model of a complex task is broken down into smaller units and each unit is viewed individually as a

cue for the behavior, the process is called video prompting. Sigafos et al. (2005) demonstrated this strategy when teaching microwave skills to three adults with moderate mental retardation. A 10-step task analysis was created for preparing popcorn in a microwave oven. The participants were then instructed to view each step of the task analysis and complete the step immediately after watching the segment. Each subsequent step of the task analysis was presented to the participant identically each time. No reinforcement was delivered for correct responding. Results showed that video prompting was an effective strategy for teaching microwave skills to individuals with moderate mental retardation. One individual did not reach criterion. The author stated that popcorn may not have been reinforcing due to refusal to eat popcorn at later presentations. The remaining two individuals maintained an 80% to 100% mastery of the skill even at the 10-week follow-up.

Sigafos et al., (2007) then expanded on the previous study by demonstrating a procedure to fade the prompts that were required to obtain mastery of the skill. The participants were three adult men, ages between 27 and 33, all diagnosed with autism and mild to moderate mental retardation. The skill taught was dish washing which was made up of 10 steps in the task analysis. The participant viewed each step individually, and then the trainer prompted the individual to complete the step. To begin the fading procedure, the videos were combined into 3-step segments. The participant viewed a clip of three steps and then had the opportunity to complete the step. After the participant had met criterion in this phase the videos were combined into 5-step segments and then one whole segment. The trainer did not use any verbal praise contingent on the participant's performance, but did thank the participants for washing dishes at the end of each session.

The levels of correct responding remained at 80% to 100% throughout the video chunking procedure suggesting that the fading procedure was effective strategy to decrease prompt dependency.

Graves, Collins, and Shuster, (2005) also used video prompting to teach three individuals between ages 16 and 20 to prepare food. These individuals were diagnosed with a moderate mental disability and one individual also had Down Syndrome. The skills selected were preparing macaroni and cheese in the microwave, ramen noodles on the stove, and peanut butter and jelly on the kitchen counter. Just as in the Sigafos studies, the individuals watched the entire task of the skill on video first. The participant then viewed only the first step, and was given 20 seconds to complete the step to criterion. The difference between this study and the previous studies was the prompting strategies used if the participant engaged in any incorrect responses. The trainer said, “No, wait if you are not sure”, within the 20 seconds. After the prompt, incorrect responses resulted in rewinding the video so that the participant could again watch the correct performance of the step. Then the participant was given the opportunity to finish the step, even if the correct response took longer than 20 seconds. The trainer delivered verbal praise for correct responding during training sessions until the participants met 100% criterion for two consecutive days. Then verbal praise was thinned by the trainer delivering praise, on average, every 4 steps. Results showed that the video prompting plus a constant time delay procedure was an effective strategy when teaching individuals with developmental disabilities food preparation skills.

Another type of video modeling and/or video prompting procedure is instructional video modeling (Alcantara, 1994; Norman et al., 2001; Shipley-Benamou et al., 2002).

This procedure involves the trainer explaining to the participants what is expected before the intervention begins. One of the studies used this procedure to teach daily living skills to children with Down Syndrome and Autism (Norman et al., 2001). The skills taught were cleaning sunglasses, putting on a wrist watch, and zipping a jacket. Before presenting the video, the trainer described what would be viewed and what the participants were to do following the presentations of the video. The video started with reintroducing the instructions and then presenting the entire task. The instructions were again delivered on video and the participant viewed a model of only the first step. The tape froze and the participant was given the opportunity to perform the step. The results showed that video prompting was an effective tool when teaching daily living skills to children with developmental disabilities. Also these skills maintained anywhere from 1 to 13 weeks, and skills generalized with different trainers. However, it is not clear what role the added instructions played in the acquisition of the skills.

There are several advantages to using video modeling over other procedures when teaching skills to individuals with developmental disabilities. First, identical presentations of the skill will be guaranteed in each trial or session. If staff were required to physically model the behavior, the model may not be performed in the same way every time. Different staff may perform the task or different materials may be used. Second, depending on the individual, one perspective of viewing the demonstration of the skill may be more effective than the other. For example, the individual may prefer to watch only the hands of another individual, or the individual may benefit by watching a peer perform the skill instead of the staff or trainer. With video the person has already been taped to perform the skill each time. Also with video, one is able to zoom into the task at

hand which may help prevent distractions. This technique is especially important for individuals with autism who tend to focus on one detail rather than the whole picture. Third, using video modeling may also be cost-effective. Fewer staff are required to model the target behavior. This is especially true when the target behavior is social interaction with other peers or staff.

In order for individuals with developmental disabilities to learn functional skills that will lead to more independent living, strategies must be developed that are less effortful and more cost-efficient. Also skills need to be generalized so that the individual will not only perform the skill in the current living environment but also in other living environments as they become more independent. If these individuals learn to perform skills of daily living simply by viewing video, the skills of imitating video models may then generalize to shows involving cooking, crafts, landscaping, or home décor viewed on television.

Little research has been conducted to determine the effectiveness of different variations of video prompting. One limitation to the Sigafoos et al. (2007) study was not evaluating whether the participants could have learned the skill to criterion merely by viewing the video of the entire task analyses. Other limitations of the previous studies are that they involved primarily children with autism and used primarily school or vocational program settings rather than residential settings. The purpose of the present study was to expand on the Sigafoos et al. (2007) study and determine what levels of video chunking are required to teach individuals with developmental disabilities functional skills in a group home setting.

## Chapter 2

### Method

#### *Participants and Settings*

The participants were three adults, between the ages of 17 and 29. Four other participants started the study but their participation was terminated when they completed the laundry task without assistance during baseline. The participants were chosen using the following criteria: they had a support plan goal to increase skills of daily living; could attend to a video independently; were 17 years of age or older; had a developmental disability; were ambulatory; and had adequate motor coordination with their hands to accomplish all steps independently. Training and assessments were conducted in the laundry room in the group home where the individuals lived. Sessions lasted up to 15 minutes and no more than 2 sessions were conducted daily.

Brian was a 29-year-old man diagnosed with autism and mental retardation. He also has a history of hearing impairment. Interviews from staff showed that Mark could read and use some ASL signs. Medications he was taking at the time of the study were Paroxetine for depression, Depakote for mood stabilizer, Desmopressin for enuresis, Benztropine for tremors, and Trazedone for sleep disturbance. His support plan goal stated that Mark would like to be more independent in his home skills. During the day he attended an Adult Day Training program for six hours, five days a week. One functional skill that Brian was observed completing in the home was preparing coffee in a coffee machine.

Davey was a 17-year-old boy diagnosed with Attention Deficit Hyperactivity Disorder. He could use 1 to 2 word phrases to communicate. He had a history of Gastroesophageal Reflux Disease. Prescribed medications include Risperdal for problem behavior, Adderall for ADHD, Amphetamine salts for ADHD, Chlordiazepoxide for problem behavior, and Ranitidine for food allergy. Davey's support plan stated that he would like to do more things for himself. He attended an exceptional center during the day. Functional skills that Davey was observed completing while in the home included wiping the table, mopping and sweeping the floor, and making his bed.

Sarah was a 25-year-old women diagnosed with autism, mental retardation, hypothyroidism, anemia, and behavior disorder. She used some ASL signs and a Dynavox to communicate. A Dynavox is a computer device with pictures. When a person touches a picture on the screen an audible voice says what the picture represents. This device helps those who are nonverbal or difficult to understand communicate their wants and needs. At the time of the study, Sarah was taking Nexium for elevated H. Pylori, Synthroid for hypothyroidism, Zelnorm to relieve constipation, Valporic acid for a mood stabilizer, Depo-Provera for hormone balance, Risperdal for an anti-psychotic, and Lexapro for anxiety. Her support plan goal stated she would like to increase her self-care skills, learn job skills, and have a meaningful day activity. Sarah attended an Adult Day Training Program five day a weeks, six hours each day. Functional skills that Sarah was observed doing while in the group home were toileting and washing her hands.

### *Materials*

Materials used were a video camera to create the videos and to tape the sessions. A laptop was used for the participants to view the video of the target skill on a DVD.

The video included the entire task analysis, and then the task analysis divided into halves, thirds, quarters, and so on until each step was shown individually. The video displayed the skill from the perspective of the participant. In other words, only the hands of the model were seen when most of the steps of the skill was performed on the video. Other materials included laundry supplies such as the washing machine, detergent, fabric softener, and the clothes the participant was to wash.

### *Target Behaviors and Data Collection*

Laundry skills were the target behaviors investigated in this study. The steps completed correctly in the task analysis were the dependent measure. See Appendix A for the task analysis of the laundry skills. Data were collected on each step in the task analysis using the multiple opportunity method in which the participant was presented with the  $S^D$  for each step in the sequence regardless of whether the previous step was completed correctly. If the step was not completed or completed incorrectly by the participant, the trainer completed the step so that the next  $S^D$  was present. The participant was distracted so he or she did not see the trainer perform the step. In each phase, for a step to be counted as correct, it must be started within 5 seconds of the trainer delivering the cue to start the task. Data were collected at least 3 times per week. The time was decided because the participants typically had their clothes washes every two to three days weekly. First and second year students from the Applied Behavior Analysis Master's Program were chosen as research assistants. They assisted as trainer and data collector across sessions.

An assessment session began with the trainer directing the participant into the laundry room. A basket of clothes was present on the floor in front of the washing

machine. The trainer then delivered the cue, “(Name), wash the clothes.” The participant had the opportunity to perform each step correctly. For example, the first step was to open the door of the washer. If the step was completed correctly the trainer waited for the following step to be performed. After every third, sixth, and tenth step performed, the trainer stated “(Name), thanks for participating.” If the step was performed incorrectly the trainer, as unobtrusively as possible, opened the door which provided the S<sup>D</sup> for the next step to be performed. To get the participant’s attention back to the washer, the trainer prompted the participant by saying, “(Name), finish washing the clothes,” giving the participant the opportunity to perform the remaining steps in the task analysis. This way participant had the opportunity to perform all steps in the task analysis.

#### *Interobserver Agreement*

Videotaping of the assessment sessions occurred for all sessions. An independent observer viewed the videos for interobserver agreement. Agreements divided by agreements plus disagreement on the ten steps of the task analysis determined the percentage of agreements for the target behavior. Mean overall agreement across participants was 97%. Brian’s mean agreement score was 98% (range, 90% to 100%). Davey’s mean agreement score was 95%, (range, 80% to 100%) and Sarah’s mean agreement score was 97% (range, 90% to 100%).

#### *Experimental Design and Procedure*

A multiple baseline design was used to evaluate the video prompting procedure. After the participants or their guardians signed the consent forms, the participant was involved in baseline assessments of the laundry skills. Following baseline, the

participants participated in the video prompting training phases. Follow-up sessions were completed 2 weeks after the training sessions.

*Baseline.* The trainer instructed each participant to complete the task analysis of the skill and assessed the skill using the multiple opportunity method. At minimum the trainer conducted three sessions before beginning training. Because Brian was hearing impaired, a piece of paper which stated, 'Brian wash the clothes', was presented as a cue to start performing the skill, and a piece of paper was presented after every third, sixth, and tenth step which stated, 'Brian, thanks for participating.'

*Intervention 1.* The trainer instructed the participant to stand by the washing machine with a basket of clothes on the floor. The trainer then delivered the cue either verbally or on a piece of paper which stated "(Name), watch the video". The video was viewed on a laptop. Each participant was instructed to watch a short video no longer than 20 seconds. The video displayed the entire task analysis of the skill. At the end of the video segment, the cue, "(Name), wash the clothes", was delivered. The participant then had the opportunity to perform the skill to criterion. After every third, sixth, and tenth step, the trainer stated, "(Name), thanks for participating" which was generally contingent on participating but not on any particular step completed. This was used to rule out positive reinforcement as a variable which may also have led to skill acquisition. Praise was also written on paper for Brian. If any step was not completed or completed incorrectly, the trainer completed the step as unobtrusively as possible. To get the participant's attention back to the washer, the trainer prompted the participant by saying or showing on paper, "(Name), finish washing the clothes", and gave the participant the opportunity to perform the remaining steps in the task analysis. This way the participant

had the opportunity to complete the next step. The following steps were performed in the same manner until the entire task analysis was finished. If the participant did not perform all steps in the task for two consecutive sessions (the training criterion) the participant advanced to the next intervention.

*Intervention 2.* This phase was performed only if the participant did not meet criterion in the first phase. All procedures were the same except the steps were divided into 5-step segments. The participant viewed the task of only the first five steps on video. The cue was delivered and then the individual had the opportunity to complete the task. Then the following 5 steps were shown on video and the participant had the opportunity to complete the task.

*Intervention 3.* This phase was implemented only if the participant did not meet criterion in intervention 2. All procedures were the same except the steps were divided into 3 and 4 step segments. The first 4 steps were shown and then the following segments had 3 steps.

*Intervention 4.* This phase was implemented only if the participant did not meet criterion in Intervention 3. All procedures were identical except the segments were divided into 2 steps.

*Intervention 5.* This phase was implemented if the individual did not meet criterion in Intervention 4. All procedures were identical except each step was viewed individually or in 1-step segments.

*Intervention 6.* For Brian only, an additional intervention was added which was run identical to Intervention 5 with the addition of the written cue on the video. Each step on video showed the trainer showing the card with the written cue to the participant.

*Intervention 7 - Least-to-most prompting procedure.* Because Brian did not perform to criterion using the video prompting procedure, a procedure was added so that he could benefit from the study. At the start of each session a piece of paper was held up which stated, “Brian, wash the clothes”. If no responding occurred or incorrect responding occurred, the trainer pointed to the next step. If still no responding occurred, a light touch prompt was delivered. The trainer tapped Brian’s hand and then pointed to the next step to be performed. If still no response, the trainer used physical assistance (hand over hand assistance). The trainer took Brian’s hand and physically performed the step with him. For example, if the dial needed to be turned the trainer put her hand over Brian’s hand and turned the dial to the designated spot. Praise which stated, “Brian, thanks for participating” was delivered after all steps were completed to not interrupt the chain of steps.

*Follow-up.* Two weeks following the training sessions, follow-up occurred in the group home where the individual lived which was the same as the baseline and training setting. Assessments were identical to baseline.

## Chapter 3

### Results

The results of this study showed that 2 of the 3 participants learned how to wash clothes in a washing machine with the use of the video prompting procedure alone. Sarah acquired the skill by watching 5 steps at a time (Intervention 2). Davey acquired the skill by Intervention 3, watching 3 and 4 steps at a time. Brian required video prompting plus least-to-most prompting to complete the steps independently. Figure 1 shows the results.

Davey scored 40% or lower in baseline. The first intervention, watching the entire video, increased responding at first, but then responding dropped over three assessments to 20%. At Intervention 2, his performance increased to 100% but then leveled off to 80%. When the Intervention 3 was introduced, criterion was met in 4 sessions. At the two week follow-up, Davey scored 80%

Sarah also completed 40% or less of the steps in baseline. At Intervention 1, responding increased but eventually dropped to 20%. At Intervention 2, responding again increased immediately, and criterion was met at the sixth session in the Intervention. At the two week follow-up, Sarah scored 100%.

Brian did not respond during baseline or during any of the Interventions involving the video prompting procedure. Least-to-most prompting was added and responding increased to 80%. Two week follow-up has yet to be completed for Brian.

To evaluate treatment integrity, all training sessions were videotaped and the researcher recorded the percentage of training behaviors completed correctly by the trainer. The following training behaviors were recorded: the trainer had the participant

standing beside the washing machine before the video was viewed; the trainer delivered the cue before the segment of the step or steps was viewed by video; the trainer again cued for the participant to perform the step or steps that he or she had previously viewed; the trainer gave the participant 5 seconds to start performing the skill; the trainer praised the participant for correct responding; and the trainer completed the step as unobtrusively as possible if required. Scoring took place for each segment viewed on video. The mean score for treatment integrity during each participant's sessions were as follows: sessions for Brian, 99.9%; sessions for Davey, 98%; and sessions for Sarah 99%. Interobserver agreement was also collected which resulted in a mean of 100% for Brian, 98% (range, 95% to 100%) for Davey, and 99% (95% to 100%) for Sarah.

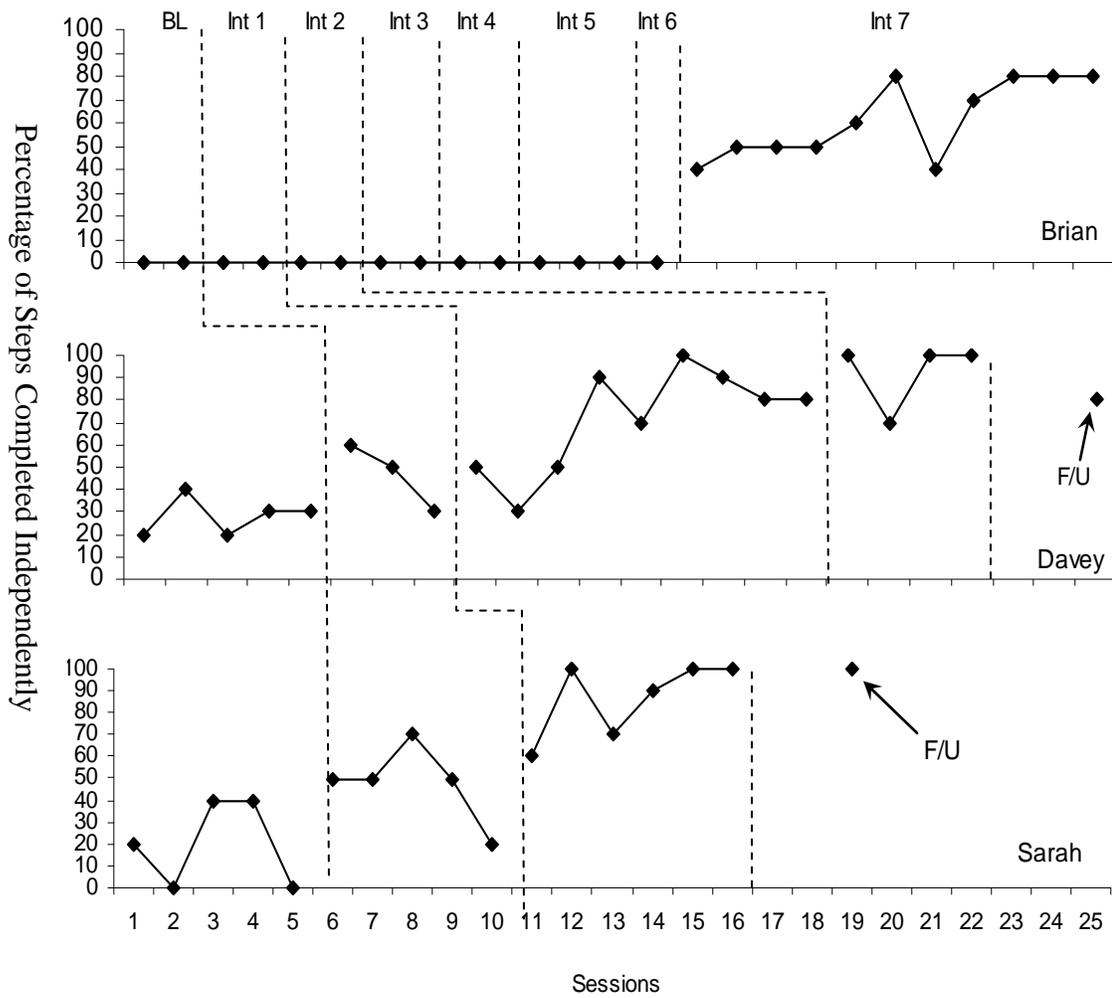


Figure 1. Multiple Baseline Design showing percentage of steps completed independently by each participant.

## Chapter 4

### Discussion

Overall, the results of the study showed that different levels of video chunking were needed for different individuals. Davey required the steps to be broken down into 3 and 4 steps before he could perform the skill 100% of the time for 2 consecutive sessions. Sarah only needed the steps to be broken down into 5-step segments. Brian needed the least-to-most prompting to start performing the skills.

The findings expand on the Sigafos et al. (2007) study by showing that each person does not need to view each step individually to perform the skill to criterion. Some may be able to view the whole video. Others may be able to perform the skills with seeing 5 steps at a time, and others may need the steps to be broken down even further. Unfortunately, it is not possible to know in advance which level of chunking will be needed with a particular individual. In this study, the most efficient method was tried first (whole video) followed by increasingly less efficient strategies (halves of the video, then thirds, and so forth). In this way, it could be determined which level was necessary for the particular individuals involved in the study. This approach is one way to determine the most efficient level of video chunking necessary for an individual to benefit from video modeling of complex skills.

Criterion was not met in follow-up for Davey for a couple reasons. First, the steps missed were putting the detergent into the washer and putting the cap on the detergent. Because Davey attempted to put more than one capful of detergent into the washer, the step of putting the detergent into the washer was scored as incorrect. After

distracting and presenting the S<sup>d</sup> for the next step, Davey continued to put more detergent into the cap. Only after distracting again and presenting the S<sup>d</sup>, which was the cap on the detergent, did Davey then continue with the following steps independently. The possible reason for the incorrect response may have been that the S<sup>d</sup> for putting detergent in the washer and putting the cap on the detergent were exactly the same. This may have led to some confusion. Also Davey did have a history of repetitive behaviors, and pouring more than one capful of detergent may have been an instance of repetitive behavior.

The present study used a laptop to display the steps of the skill. The use of a laptop to show the video may have been an advantage or a disadvantage, depending on the individual involved. It may have been an advantage because the participant was standing in front of the washer when the video was viewed. At times the participants looked at the materials viewed in the video and then looked at the same materials in the environment. For example, when Sarah saw the detergent being taken down from the shelf in the video, she then looked up at the detergent on the shelf in the laundry room. Sarah also may have responded better to the laptop because she has used a Dynavox communication device in the past. At times she touched materials on the screen of the laptop as she would touch the screen of her Dynavox. A disadvantage of using a laptop may have been that a participant had not viewed a video on laptop in the past and thus it may not have had stimulus control over the individual's behavior. Although one criterion for inclusion into the study was that the participants could attend to a video, it was not determined in advance whether they could attend to a video presented via laptop.. Davey had been observed playing video games on a computer and watching movies on TV but not on a laptop. Brian was observed only watching shows on the TV.

There were several limitations to the study. One was dealing effectively with Brian's hearing impairment. Because Brian was hearing impaired, another strategy besides a vocal delivery of the cue was needed to deliver the cue to begin washing clothes or to watch the video. Staff and managers stated that Brian could read. Therefore, the trainer used a card with the cue in writing. Although Brian used ASL signs to spell the letters on the card, he did not perform any of the steps in the washing task after being cued with the card. Even when using the least-to-most prompting strategy, responding did not occur until the trainer used a gestural prompt for the first step, suggesting that the verbal prompt (delivered in writing) did not exert stimulus control over his behavior. It is possible that Brian could not read the words on the cue card. Using ASL signs to deliver the cue may have been more effective in getting the correct response.

Using the multiple opportunity method assessment of the behaviors in the washing clothes task gave the participant an opportunity to perform each step even if the previous step was performed incorrectly or not at all. It is also possible that this method inadvertently assisted in teaching laundry skills because the learner saw the outcome of every step as the  $S^D$  for the following step. For example, when the participant did not open the cap of the detergent, the data collector distracted the participant and the trainer then took the detergent off the shelf, opened the cap and set the detergent on the edge of the washer. When the participant was cued to finish washing the clothes, the presence of the open bottle of detergent sitting on the washer may have signaled the next step. The presence of the open detergent over repeated sessions may have been enough to signal to the participant that something should be done with the detergent. Alternatively seeing the

open bottle of detergent may have made the participant more likely to open the lid to the detergent in the next assessment.

There are a number of areas for future research. One idea is to show the entire skill on video over a large number of sessions to determine if the repetition of watching the video leads to skill acquisition. When Sarah and Davey viewed the first chunk of skills in the video segment, the following segments were sometimes not needed because they performed the following steps independently without needing to watch the remainder of the steps on video. It would also be interesting to study if only the steps that were missed previously needed to be shown to acquire the skill. Another area for future research would be to add a preferred video segment for the participants to watch before viewing the skill. Watching a preferred video may have gotten the participant to view the video more closely, with the possibility that acquisition of the skill would occur quicker. Another area for future research would be to conduct a comparison of the efficiency of video modeling or video prompting to the use of most to least or least to most prompting strategies. It may be that the use of video is no more efficient than more standard prompting strategies. Future research should try to answer this question. In this study, follow-up was conducted 2 weeks after training. Sarah maintained the skill at 100%, but Davey decreased to 80%. Future research should look at measuring maintenance over longer periods of time to determine if the video prompting procedure was sufficient to teach a functional skill which maintains over months.

In conclusion, this study extends previous research evaluating video prompting to teach a functional skill to individuals with developmental disabilities. Some individuals may learn skills using video prompting better than others. All individuals may not need

to view each step individually to acquire the skill. Overall, it is important to view each person individually to determine what procedure will be most effective and efficient for that person. This procedure should be considered if the person can attend to and imitate the actions in a video. Furthermore, it should be considered when the focus is on skill acquisition rather than compliance training as video prompting or modeling does not seem particularly useful as an intervention for individuals who refuse to complete a task.

## References

- Alcantara, P. R. (1994). Effects of videotape instructional package on purchasing skills of children with autism. *Exceptional Children*, 61(1), 40-55.
- Apple, A. L., Billingsley, F., & Schwartz, I. S. (2005). Effects of video modeling alone and with self-management of compliment-giving behaviors of children with high-functioning ASD. *Journal of Positive Behavior Interventions*, 7(1), 33-46.
- Ayres, K. M., & Langone, J. (2005). Intervention and instruction with video for students with autism: A review of the literature. *Education and Training in Developmental Disabilities*, 40(2), 183-196.
- Bellini, S., & Akullian, J. (2007). A meta-analysis of video modeling and video self-modeling interventions for children and adolescents with autism spectrum disorders. *Exceptional Children*, 73(3), 264-287.
- Bidwell, M. A., & Rehfeldt, R. A. (2004). Using video modeling to teach a domestic skill with an embedded social skill to adults with severe mental retardation. *Behavioral Interventions*, 19, 263-274.
- Buggey, T. (2007). Video self-modeling applications at school and home. *Journal of Positive Behavior Interventions*, 9(3), 151-158.
- Buggey, T. (2005). Video self-modeling applications with students with autism spectrum disorder in a small private school setting. *Focus on Autism and Other Developmental Disabilities*, 20, 52-63.
- Charlop-Christy, M. H., & Daneshvar, S. (2005). Using video modeling to teach perspective taking to children with autism. *Journal of Positive Behavior*

*Interventions*, 5(1), 12-21.

Charlop-Christy, M. H., Le, L., & Freeman, K. A. (2000). A comparison of video modeling with in vivo modeling for teaching children with autism. *Journal of Autism and Developmental Disorders*, 30(6), 537-552.

Charlop, M. H., & Milstein, J. P. (1989). Teaching autistic children conversational speech using video modeling. *Journal of Applied Behavior Analysis*, 22, 275-285.

Cihak, D., Alberto, P. A., Taber-Doughty, T., & Gama, R. I. (2006). A comparison of static picture prompting and video prompting simulation strategies using group instructional procedures. *Focus on Autism and Other Developmental Disabilities*, 21(2), 89-99.

Cuvo, A. J., & Klatt, K. P. (1992). Effects of community-based, videotape, and flash card instruction of community-referenced sight words on students with mental retardation. *Journal of Applied Behavior Analysis*, 25, 499-512.

D'Ateno, P., Mangiapanello, K., & Taylor, B. A. (2003). Using video modeling to teach complex play sequences to a preschooler with autism. *Journal of Positive Behavior Interventions*, 5(1), 5-11,

Delano, M. E. (2007). Video modeling interventions for individuals with autism.

*Remedial and Special Education*, 28(1), 33-42.

Dowrick, P. W., Kim-Rupnow, W. S., & Power, T. J. (2006). Video feedforward for reading. *The Journal of Special Education*, 39(4), 194-207.

Gena, A., Couloura, S., & Kymissis, E. (2005). Modifying the affective behavior of preschoolers with autism in-vivo or video modeling and reinforcement contingencies. *Journal of Autism and Developmental Disorders*, 35(5), 545- 556.

- Graves, T. B., Collins, B. C., & Shuster, J. W. (2005). Using video prompting to teach cooking skills to students with moderate disabilities. *Education and Training in Developmental Disabilities, 40*(1), 34-46.
- Haring, T. G., Kennedy, C. H., Adams, M. J., & Pitts-Conway, V. (1987). Teaching generalization of purchasing skills across community settings to autistic youth using videotape modeling. *Journal of Applied Behavior Analysis, 20*, 89-96.
- Hine, J. F., & Wolery, M. (2006). Using point-of-view video modeling to teach play to preschoolers with autism. *Topics in Early Childhood Special Education, 26*(2), 83-93.
- Johnson, B. F., & Cuvo, A. J. (1981). Teaching Mentally Retarded Adults to Cook. *Behavior Modification, 5*(2), 187-202.
- Kern, L., Wacker, D. P., Mace, F. C., Falk, G. D., Dunlap, G., & Kromrey, J. D. (1995). Improving the peer interactions of students with emotional and behavioral disorders through self-evaluation procedures: A component analysis and group application. *Journal of Applied Behavior Analysis, 28*, 47-59.
- Kern-Dunlap, L., Dunlap, G., Clarke, S., Childs, K. E., White, R. L. & Stewart, M. P. (1992). Effects of a videotape feedback package on the peer interactions of children with serious behavior and emotional challenges. *Journal of Applied Behavior Analysis, 25*, 355-364.
- Lasater, M. W., & Brady, M. P. (1995). Effects of video self-modeling and feedback on task fluency: A home-based intervention. *Education and Treatment of Children, 18*(4), 19-29.
- LeBlanc, L. A., Coates, A. M., Daneshvar, S., Charlop-Christy, M. H., Morris, C., & Lancaster, B. M. (2003). Using video modeling and reinforcement to teach

- perspective-taking skills to children with autism. *Journal of Applied Behavior Analysis*, 36, 253-257.
- MacDonald, R., Clark, C., Garrigan, E., & Vangala, M. (2005). Using video modeling to teach pretend play to children with autism. *Behavioral Interventions*, 20, 225-238.
- Maione, L., & Mirenda, P. (2006). Effects of video modeling and video feedback on peer-directed social language skills of a child with autism. *Journal of Positive Behavioral Interventions*, 8(2), 106-118.
- Morgan, R. L., & Salzberg, C. L. (1992). Effects of video-assisted training on employment-related social skills of adults with severe mental retardation. *Journal of Applied Behavior Analysis*, 25, 365-383.
- Murzynski, N. T., & Bourret, J. C. (2007). Combining video modeling and least-to-most prompting for establishing response chains. *Behavioral Interventions*, 22, 147-152.
- Nikopoulos, C. K., & Keenan, M. (2004). Effects of video modeling on social initiations by children with autism. *Journal of Applied Behavior Analysis*, 37, 93-96.
- Nikopoulos, C. K., & Keenan, M. (2003). Promoting social initiation in children with autism using video modeling. *Behavioral Interventions*, 18, 87-108.
- Norman, J. M., Collins, B. C., & Schuster, J. W. (2001). Using an instructional package including video technology to teach self-help skills to elementary students with mental disabilities. *Journal of Special Education Technology*, 16(3), 5-18.
- Reagan, K. A., Higbee, T. S., Endicott, K. (2006). Teaching pretend play skills to a student with autism using video modeling with a sibling as model and play partner. *Education and Treatment of Children*, 29(3), 517-528.

- Rehfeldt, R. A., Dahman, D., Young, A., Cherry, H., & Davis, P. (2003). Teaching a simple meal preparation skill to adults with moderate and severe mental retardation using video modeling. *Behavioral Interventions*, 18, 209-218.
- Schreibman, L., Whalen, C., & Stahmer, A. C. (2000). The use of video priming to reduce disruptive transition behavior in children with autism. *Journal of Positive Behavior Interventions*, 2, 3-11.
- Sherer, M., Pierce, K. L., Paredes, L., Kisacky, K. L., Ingersoll, B., & Schreibman, L. (2001). Enhancing conversational skills in children with autism via video technology: Which is better, 'Self' or 'Other' as a model? *Behavior Modification*, 25, 140-158.
- Shibley-Benamou, R., Lutzker, J. R., & Taubman, M. (2002). Teaching daily living skills to children with autism through instructional video modeling. *Journal of Behavior Interventions*, 4(3), 165-175.
- Sigafoos, J., O'Reilly, M., Cannella, H., Edrisinha, C., de la Cruz, B., Upadhyaya, M., Lancioni, G. E., Hundley, A., Andrews, A., Garver, C., & Young, D. (2007). Evaluation of a video prompting and fading procedure for teaching dish washing skills to adults with developmental disabilities. *Journal of Behavioral Education*, 16(2), 93-109.
- Sigafoos, J., O'Reilly, M., Cannella, H., Upadhyaya, M., Edrisinha, C., Lancioni, G. E., Hundley, A., Andrews, A., Garver, C., & Young, D. (2005). Computer-presented video prompting for teaching microwave oven use to three adults with developmental disabilities. *Journal of Behavioral Education*, 14(3), 189-201.
- Taylor, B. A., Levin, L., & Jasper, S. (1999). Increasing play related statements in

children with autism toward their siblings: Effects of video-modeling. *Journal of Developmental and Physical Disabilities*, 11, 253-264.

Thiemann, K. S., & Goldstein, H. (2001). Social stories, written text cues, and video feedback: Effects on social communication of children with autism. *Journal of Applied Behavior Analysis*, 34, 425-446.

Wert, B. Y., & Neisworth, J. T. (2003). Effects of video self-modeling on spontaneous requesting in children with autism. *Journal of Positive Behavior Interventions*, 5(1), 30-34.

## Appendices

## Appendix A.: Task Analysis for Washing Clothes in a Washing Machine

---

### Steps in the Task Analysis

---

1. Turn dial to setting for regular wash.
2. Pull dial to start running water
3. Open the door
4. Take off cap of detergent
5. Pour detergent into cap
6. Pour detergent into washer
7. Put cap back on detergent
8. Put clothes in washer
9. Close door
10. Put detergent away

**Appendix B: Data Collection/Treatment Integrity Form**

**Video Prompting to Teach Laundry Skills: Data Collection/Treatment Integrity Form**

Name of Participant: \_\_\_\_\_

Staff recording data: \_\_\_\_\_

Date of Session: \_\_\_\_\_

Session #: \_\_\_\_\_

Instructions: Circle a "+" or "-" to record a step being performed correct or incorrect. Write a number in each box under order of steps to record what order the participant performed the steps. Circle "Y", "N", or "N/A" to record whether these procedures were performed correctly by the trainer

Participant is standing in front of the washing machine before the video is viewed Circle one:    Y    N    N/A	Performed Correctly or Incorrectly: Circle one	Order of Steps (Place # in each box)	Deliver praise (Name, Thanks for participating) Circle one in each box	Trainer delivers cue before part. views the video ("Name, watch the video") Circle one in each box	After viewing the video clip(s), the trainer cues for part. to perform step(s) Circle one in each box	Uses multiple opportunity method (distract, perform step, state, "Name finished washing clothes") Circle one in each box	Trainer gives part. 5 seconds to start performing each step Circle one in each box
Steps in Task Analysis							
1. Turn dial to normal load.	+   -		No praise	Y   N   N/A	Y   N   N/A	Y   N   N/A	Y   N   N/A
2. Pull dial to start	+   -		No praise	Y   N   N/A	Y   N   N/A	Y   N   N/A	Y   N   N/A
3. Open washer door	+   -		Y   N	Y   N   N/A	Y   N   N/A	Y   N   N/A	Y   N   N/A
4. Take cap off detergent	+   -		No praise	Y   N   N/A	Y   N   N/A	Y   N   N/A	Y   N   N/A
5. Pour detergent into cap	+   -		No praise	Y   N   N/A	Y   N   N/A	Y   N   N/A	Y   N   N/A
6. Pour detergent into washer	+   -		Y   N	Y   N   N/A	Y   N   N/A	Y   N   N/A	Y   N   N/A
7. Put cap on detergent	+   -		No praise	Y   N   N/A	Y   N   N/A	Y   N   N/A	Y   N   N/A
8. Put detergent on shelf	+   -		No praise	Y   N   N/A	Y   N   N/A	Y   N   N/A	Y   N   N/A
9. Put clothes in washer	+   -		No praise	Y   N   N/A	Y   N   N/A	Y   N   N/A	Y   N   N/A
10. Shut door of washer	+   -		Y   N	Y   N   N/A	Y   N   N/A	Y   N   N/A	Y   N   N/A

**Appendix C: Data Collection/Treatment Integrity Form for Least-to-Most Prompting Procedure  
Video Prompting to Teach Laundry Skills: Data Collection/Treatment Integrity Form**

Name of Participant:       Brian      

Staff recording data: \_\_\_\_\_

Date of Session: \_\_\_\_\_

Session #: \_\_\_\_\_

Instructions: Circle a "I", "G", "L" or "P" to record the level of prompting needed to perform the step correctly. Write a number in each box under order of steps to record what order the participant performed the steps. Circle "Y", "N", or "N/A" to record whether these procedures were performed correctly by the trainer. Deliver praise after each step. Remember to use least-to-most prompting as necessary

Steps in Task Analysis	Performed at what level of prompting: Circle one	Order of Steps (Place # in each box)	Deliver praise (Name, Thanks for participating) Circle one in each box	Trainer gives part. 5 seconds to start performing each step Circle one in each box
1. Turn dial to normal load.	I G L P		No praise	Y N N/A
2. Pull dial to start	I G L P		No praise	Y N N/A
3. Open washer door	I G L P		No praise	Y N N/A
4. Take cap off detergent	I G L P		No praise	Y N N/A
5. Pour detergent into cap	I G L P		No praise	Y N N/A
6. Pour detergent into washer	I G L P		No praise	Y N N/A
7. Put cap on detergent	I G L P		No praise	Y N N/A
8. Put detergent on shelf	I G L P		No praise	Y N N/A
9. Put clothes in washer	I G L P		No praise	Y N N/A
10. Shut door of washer	I G L P		Y N	Y N N/A

<p><b>Key:</b>  <b>I=Independent</b>  <b>G=Gesture prompts needed</b>  <b>L=Light Touch prompts</b>  <b>P=Physical prompts(hand over hand assistance)</b></p>
---