Summer 2012

# Supporting a parent driven video self modeling intervention for a student with autism

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# Supporting a Parent Driven Video Self Modeling Intervention for a Student with Autism

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A thesis submitted to the Graduate Faculty of

JAMES MADISON UNIVERSITY

in

Partial Fulfillment of the Requirements

for the degree of

Education Specialist

School Psychology

August 2012

Acknowledgments

I am deeply grateful for Dr. Tammy Gilligan's support, guidance, and encouragement that enabled a rough idea to come to fruition. Additional thanks are necessary for Dr. Patti Warner and Dr. Trevor Stokes who shared their expertise and confidence. Of course, this research could not have been conducted without the unwavering commitment of the participating family. I owe the success of this project to you.

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Abstract

The purpose of this study was to evaluate the feasibility and effectiveness of a parent implemented video self modeling intervention for a middle school student with autism. The targeted behaviors included slowing the rate of the student's eating and reducing the number of times the student touched her food with her hands during a meal. A series of parent interviews and home visits were conducted in order to collect data about the parents' experience of involvement in the intervention and to help ensure intervention integrity. A parent training manual was provided as a resource. Qualitative data collected through parent interviews was used to assess the utility of the provided parent training manual and to create a best practice document for school practitioners. The intervention was successful in decreasing the number of times the student touched her food with her hands during meals. The length of mealtimes was highly variable; a positive trend was observed during the intervention phase and an increase in the mean amount of time spent eating was documented during the fading phase of the study.

# INTRODUCTION

The National Association of School Psychologists (2010) emphasizes the dynamic role school psychologists have in working to support students to succeed academically, socially, and behaviorally. This support extends beyond the boundaries of the school with a major system level of service being the promotion of home-school collaboration. Within this broad category, school psychologists consult and collaborate with families and encourage home interventions that promote competence and healthy development of children and adolescents. In order to engage in effective consultation, Zins and Erchul (2002) stress the need for a cooperative partnership between the consultant and consultee that focuses on each individual's responsibility to work toward a mutually desired goal. Therefore it is essential for school psychologists in consultative roles to demonstrate good interpersonal and communication skills in order to clarify the problem and support the consultee's efforts in implementing interventions. Lastly, effective school psychologists assess intervention acceptability, fidelity, and effectiveness as part of their role as a consultant with parents and families.

In line with the previous standards, school psychologists are likely to find themselves consulting with families in which a student has been diagnosed with an autism spectrum disorder. According to the *Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR)*, a widely used diagnostic system, children with autism and related pervasive developmental disorders exhibit impairments in three key areas of development: reciprocal social interactions, communication, and restrictive, repetitive behavior (American Psychiatric Association, 2000). With an increasing number of children being diagnosed with autism spectrum disorders (Newschaffer, Falb, & Gurney,

2005), and the diversity of needs exhibited by these children, there is a growing need for effective interventions both in the school and home settings.

One promising avenue for intervention is the use of observational learning, or learning a behavior by observing a model, specifically through the use of video modeling or video self-modeling rather than in vivo modeling. In vivo modeling utilizes a live model to demonstrate the target behavior which an individual watches and imitates (Charlop-Christy, Le, & Freeman, 2000) whereas video modeling involves the demonstration of a target behavior through video representation (Bellini, Akullian, & Hopf, 2007). The differentiation between video modeling and video self modeling is attributed to the individual serving as the model; in video modeling an adult or peer serves as a model, in video self modeling the individual serves as his/her own model (Bellini et al., 2007).

Corbett and Abdullah (2005) suggest that in vivo modeling is problematic and typically ineffective for individuals with autism spectrum disorders due to an increased demand for social attention and interaction in the modeling sessions. Those with autism spectrum disorders also tend to have an over-selective attention, a restrictive field of focus, an avoidance of face-to-face interactions, and a preference for visual stimuli. Video modeling capitalizes on these characteristics because the video medium is highly visual, controllable and predictable, filters extraneous variables (Wert & Neisworth, 2003), and reduces the anxiety of working with a live model (Charlop-Christy et al., 2000). In a comparison study of in vivo modeling and video modeling for teaching children with autism spectrum disorders communication and functional skills, video

modeling led to faster skill acquisition and more generalization of the behaviors across people and settings compared to in vivo modeling (Charlop-Christy et al., 2000).

According to Charlop-Christy et al. (2000) there are also more general advantages of using video modeling over in vivo modeling. Due to the taping and editing process, the model has more control over the modeling procedure as it can be demonstrated many times until the desired procedure is achieved. Video modeling also allows for a wider range of naturalistic settings to be captured beyond a clinic or school setting, for example, within the home environment. Compared to in vivo modeling, video modeling is generally more time and cost efficient given that it requires less time for the live model as the recorded procedure can be viewed multiple times by the student.

The comparison of video modeling and video self modeling has also been made. One assumed advantage of video self modeling over video modeling is that it allows for an individual to view him or herself succeeding in a particular task and as a result increases self-efficacy (Hitchcock, Dowrick, & Prater, 2003). A meta-analysis of both video modeling and video self modeling did not support a particular advantage of video self modeling but rather found both types of video modeling to be equally effective as interventions for children for autism spectrum disorders in terms of treatment, maintenance, and generalization effects. Additionally, video modeling and video self modeling were found to be time efficient with the median treatment length between 9 and 10 sessions and the median length of the video clip at a mere 3 minutes (Bellini & Akullian, 2007).

Another promising characteristic of the use of video modeling and video self modeling for children and adolescents with autism spectrum disorders is the broad scope

of behaviors that have been targeted and improved using this type of intervention. These targeted areas include social and communication skills, functional skills, and the reduction of problem behaviors (Bellini & Akullian, 2007).

**Social and Communication Skills**

The area of social and communication skills has been addressed in a number of different studies, largely with success (Bellini & Akullian, 2007). In one such study by Wert and Neisworth (2003), four preschool boys diagnosed with autism spectrum disorders each watched a video of himself engaging in spontaneous requesting after prompting by a teacher had been edited out. Spontaneous requesting increased for all four students during the intervention and was maintained over a two to six week period for three of the students. Bellini et al. (2007) found that social engagement increased in two preschool boys with autism spectrum disorders following a video self modeling intervention. Active participation with peers in activities and unprompted verbal interactions with peers increased in the intervention and maintenance phase but remained variable over time. Video modeling and video self modeling have also been used to teach children with autism spectrum disorders play behaviors (Nikopoulous & Keenan, 2004), conversational skills (Bellini & Akullian), and have been used to increase verbalization with siblings during play within the home environment (Taylor, Levin, & Jasper, 1999).

**Functional Skills**

Bellini and Akullian (2007) report studies of video modeling and video self modeling have been used to increase functional skills in children and adolescents with autism spectrum disorders. Functional skills such as setting the table, taking care of a pet, preparing food, and mailing letters were learned and maintained post-intervention

using video modeling with three young children diagnosed with autism (Shipley-Benamou, Lutzker, & Tauman, 2002). Video self modeling also increased functional skills such as personal hygiene, food preparation, laundry, and household chores in terms of accuracy and efficiency, and decreased the need for adult prompts in two adolescent boys diagnosed with either a pervasive developmental disorder or autism (Lasater & Brady, 1995). Purchasing behavior, which refers to the skills needed to make a purchase while shopping in a store, is another functional skill that has been targeted with a combination of video modeling and explicit training. Children and adolescents were able to transfer the skills they learned in a training setting to a naturalistic setting, indicating the potential for generalization. Additionally, video modeling without explicit training has been shown to be an effective intervention for purchasing behaviors of students with autism spectrum disorders when combined with in vivo prompting (Bellini and Akullian).

**Reduction of Problem Behaviors**

A third area targeted by video modeling and video self modeling is in the reduction of problem behaviors. Bellini and Akullian (2007) found mixed results for studies targeting problem behaviors such as off-task classroom behavior in students with autism spectrum disorders. In an effort to reduce the off-task behavior of three boys diagnosed with autism in the classroom, Coyle and Cole (2004) recorded on-task behavior and trained students in self-monitoring. On-task behaviors included staying seated, engaging in the designated task, and refraining from touching or playing with non work related objects. The result of the intervention was a decrease in off-task behavior that tended to be maintained during the follow-up phases of the study. A second study targeting off-task behavior in students with autism spectrum disorders had only a limited

impact (Hagiwara & Myles, 1999). In this instance video self modeling was used in conjunction with a social story targeting a specific task to be performed, such as hand washing. Minimal behavior change occurred using this intervention.

**Parental Involvement**

The use of video self modeling has been introduced in many settings including clinical, community, school, and home environments (Bellini & Akullian, 2007). However, parental involvement in video modeling and video self modeling has been rather limited. Reamer, Brady, and Hawkins (1998) used video self modeling as an intervention for parents, specifically to help two sets of parents learn new interaction patterns with their child who had been diagnosed with autism spectrum disorders. Rather than focusing the intervention on the child's behavior, the video footage captured the parent/child interaction and was used to demonstrate several instances of effective interactions and one instance that included extraneous behaviors not needed for an effective interaction. As a result parental assistance in self-help tasks decreased while child independence increased. Parents also increased their social prompting and as a result the child's social behavior with a sibling increased. In other video self modeling interventions for youth with autism spectrum disorders, parents have given permission for researchers to elicit desired behaviors and film in the home (Lasater & Brady, 1995; Maione & Mirenda, 2006), have nominated target behaviors for video modeling interventions (Lasater & Brady), and have implemented the intervention by playing the video at home for their child (Wert & Neisworth, 2003).

Based on this review of the literature, parents tend to have a limited role in video self modeling interventions designed to assist their child with autism. More specifically,

parents have relied on others to capture video footage of their child and create a final video product to be used as a part of a video self modeling intervention. Typically video recordings have been both collected and edited by a member of the research team, and Bellini et al. (2007) provide a detailed overview of video collection and editing conducted in this manner. A potential drawback to having a member of the research team, rather than a parent, collect the raw video footage is that it can be disruptive, particularly for children with autism spectrum disorders who are sensitive to changes in routines. Additionally, in the past, technology was more intrusive and the use of a tripod and VHS recorder was quite invasive in naturalistic settings such as the home. To try and address these drawbacks, Reamer, Brady, and Hawkins (1998) removed the video equipment from the direct line of vision of the child and videotaped for 5-7 days prior to collecting footage for use in the intervention in an attempt to remove the novelty of the equipment and allow for a period of adjustment. Thus acquainting a child with an outside researcher and novel equipment proves to be intrusive and time consuming.

These drawbacks could be avoided by enlisting parents to collect video footage using devices they and their children are already accustomed to. Many parents have smart phones with video capabilities or small flip camera devices that would allow them to capture video footage in a convenient and less intrusive way. The portability of the devices means that they are generally accessible at most times and could be used to capture targeted behaviors following prompting as well as those occurring spontaneously in a naturalistic setting. Parents could also be trained to use basic video and audio editing software which would enable them to put together video self modeling interventions for their child without having to rely on an outside researcher or consultant. The purpose of

this study is to determine the feasibility and effectiveness of a parent driven video self modeling intervention for a student with autism.

**Goals of the Study**

There were three major goals of the study; the first was to evaluate the usefulness of the provided parent training manual developed by the researcher. Information in the manual was meant to assist the parents in collecting data across the baseline, intervention, and follow-up phases of the study, to prompt the child to elicit the desired target behavior, and to collect quality video footage of the child displaying the target behavior. The purpose of evaluating the manual was to determine what information was useful, what information was not needed, and what information was needed but not provided, in order to improve the manual for future interventions. The second major goal of the study was to create a best practice document regarding parent driven video self modeling interventions. This was created from feedback obtained from parent interviews and through the researcher's personal experience in supporting the family. The final goal of the study was to determine the effectiveness of the video self modeling intervention. It was hypothesized that the video self modeling intervention would increase the desired positive behavior showcased in the video and decrease the non-desired behavior that is not showcased in the video.

# METHOD

## Participants

Participants in this study included a 15 year old eighth grade student (know by the pseudonym "Sarah") in a northern Virginia public middle school, and her family. Sarah has a diagnosis of autism and receives special education services for more than 50 percent of the school day, with the actual percentage varying depending on her schedule and electives. She is verbal and has a history of self-injurious behaviors that have decreased and are now infrequent. Family members involved in the study included Sarah's mother and father, Mrs. and Mr. Smith, as well as her older brother who currently attends an out of state university. Mrs. Smith is a parent member of the school district's Autism Committee. Sarah and her family were not compensated for their involvement in the study.

## Materials

A flip camera on loan from the Training and Technical Assistance Center (T/TAC) was provided to the family for the collection of the video footage. This type of camera was connected to the family's personal computer via an attached USB port in order to transfer the video footage for the purpose of editing. The software program used for video editing was iMovie. The edited intervention video was uploaded to the video sharing website, www.youtube.com. It was posted as a private video that only Sarah and her family were able to access and view by logging on with a username and password.

Additional materials contained in a parent training manual were provided to the family in paper form. The manual includes a brief overview of VSM, the steps for a VSM intervention, tips for eliciting the target behavior and obtaining high quality video

and audio footage, data recording instructions, data recording sheets to use during the baseline, intervention, and fading phases, and a fading schedule. The training manual can be found in its entirety in *Appendix A.* The data recording sheets were later modified to reflect the specific type of data being collected and were sent to the family via email as Microsoft Word documents at the start of each intervention phase.

Semi-structured interviews were utilized for several purposes. The first set of questions was used to establish the target behavior, the family's accessibility to the required materials, interest in video editing, and expectations related to the outcome of the intervention. A follow-up interview conducted after the completion of the intervention video included questions about eliciting the target behavior, the ease of use in collecting and editing the raw video footage, potential setbacks, and feedback about the usefulness of the parent training manual. The final interview questions evaluated the family's overall satisfaction with the process, treatment fidelity, and recommendations for other families interested is utilizing a family driven VSM intervention. See *Appendix B* for a list of interview questions.

**Procedure**

Several avenues were pursued in an attempt to connect with a potential family, including a referral from a school psychologist, contact with an autism coordinator, and contact with the Parent Resource Center, all of which were unsuccessful. Mrs. Smith was then contacted via email because of her involvement as a parent member of the Autism Committee. A brief overview of the study was included and a request was made for her to disseminate the information to other parents of students with autism. A reply email was received in which Mrs. Smith indicated a personal interest in participating. Brief

background information about her daughter Sarah was included, and Mrs. Smith offered to share the details of the study with other potential families if Sarah did not meet the criteria for involvement in the study. Shortly after, a phone call was made to Mrs. Smith in which additional information was obtained to determine the suitability for Sarah's inclusion in the study. Mrs. Smith talked about many adaptive and self-care behaviors she hopes Sarah to improve in as she matures. Examples included dressing independently and completing chores such as emptying the dishwasher. Mrs. Smith described Sarah's attention span for videos and was confident in her ability to watch a five minute video given her love for watching YouTube videos on the internet. At the conclusion of the conversation, arrangements were made for an initial face to face meeting.

The initial meeting between the researcher and the family occurred in the family's home. A detailed overview of the steps of the intervention was provided to the family. Mr. and Mrs. Smith asked questions along the way which were answered by the researcher to help clarify the process and their role in the intervention. Written consent to participate was obtained from Mrs. Smith and oral assent was obtained from Sarah. The first set of semi-structured interview questions were asked to Mr. and Mrs. Smith and can be found in *Appendix B.* From the conversation it was determined that the family did have access to the necessary equipment and skills and was willing to attempt video editing independently. The family was very comfortable with the researcher working closely with the family and visiting their home because they have been involved in many different interventions and studies over the years.

The behavior Sarah's parents agreed to target with the intervention was her eating behavior. Their goal was to slow Sarah's pace of eating and to reduce the number of times she touches her food with her hands. They described Sarah as an incredibly fast eater which has resulted in her often having gastrointestinal problems. Her parents also fear she will choke when eating and wish to improve her mealtime manners not only at home but in the lunchroom and in public. While she is a fast eater at every meal, it was agreed that the focus of the intervention would be lunchtime and dinnertime at which Sarah eats noodles or rice. In order to help capture slower eating on tape, Mr. and Mrs. Smith believed Sarah would require intense verbal encouragement and if that proved unsuccessful they talked about bribing Sarah with "password Saturday" in which she is allowed to go on iTunes and download new content for her iPod. Mr. Smith also suggested that they try and slow her down by encouraging her to drink water throughout the meal.

The researcher was then invited to stay and observe Sarah eating her dinner. Sarah ate her bowl of pasta incredibly fast and used her hands frequently to get the noodles on the spoon and to keep them from falling off the spoon. During the meal time Sarah had her iPod with her and occasionally paused to play on it. When she was finished, Sarah wiped the bottom of the bowl with her hand and licked her palm clean. At the conclusion of the meeting, the researcher provided the loaned flip camera to the family. No training in how to use the equipment was necessary as the family had previously owned the same type of camera.

Mr. and Mrs. Smith, with the assistance of Sarah's older brother, then made the intervention video. The actual filming occurred during a single mealtime. Mr. Smith sat

across from Sarah at the table, held the flip camera in his hand, and rested his elbow on the table to steady the camera. The result was high quality video and audio footage filmed at Sarah's eye level. During the filming, Mrs. Smith used verbal direction and encouragement to prompt Sarah not to touch her food with her hands and she was instructed to drink water during the meal which was also filmed. The editing of the raw footage was completed by Sarah's older brother and the film was edited into a sequence of Sarah eating three bites of food and then pausing to take a drink of water. The sequence repeats several times and the length of the intervention video is approximately 90 seconds long. Sarah does not touch her food with her hands during the video. While the actual active time of videotaping, transferring files, and editing was minimal and completed well within a couple hours, approximately one month elapsed before the video was completed due to the family's time demands and other priorities.

A second meeting between the researcher and the family occurred following the completion of the intervention video. The meeting took place at the family's home where the researcher viewed the intervention video on the family's home computer. The video was played through a private account on YouTube. Afterwards additional interview questions were asked to Mr. and Mrs. Smith regarding the process of making the video (see *Appendix B*). The family did not encounter any problems with the filming or editing process and reported that Sarah was so focused on her food when eating dinner she did not even seem aware that she was being filmed at the time. When asked about what advice they would give other parents, the Smiths recommended starting with an easy task to make everything manageable. Although Sarah was not difficult to film, her parents wondered if other students would be shy about being filmed and they suggested posing it

as something fun, like creating a new YouTube video. At that point Mr. Smith left to take Sarah to an activity and a discussion about baseline data occurred between the researcher and Mrs. Smith.

The data to be collected across the baseline, intervention, and fading phases of the study were the time in which Sarah ate her meal and the number of times she touched her food with her hands. Timing began when Sarah's utensil touched her food and ended when she was no longer touching her plate, food, or utensil, or alternatively when she stood up from the table holding her dishes. To tally the number of times Sarah touched her food during a meal, it was suggested that a tally be added every time she touched food with her fingers or hands. Her parents agreed to tally those instances when she touched food in the bowl or on the utensil but not when she pushed food into her mouth with her hand as they did not want to discourage her from wiping her mouth clean during mealtimes. A revised baseline data collection sheet was emailed to Mrs. Smith after the target behaviors were defined in measurable terms.

The family then began the process of collecting baseline data; because one variable was the amount of time it took Sarah to eat her meal, her parent's measured out two cups of pasta or rice and made a note of which type of food she ate. Data was collected at lunch and/or dinner when the family was at home and could control the amount of food Sarah was offered. After data was collected on five occasions, the family consulted with the researcher about allowing Sarah to have her iPod at the table. The family and researcher were concerned about the iPod serving as a confounding variable, particularly in measuring elapsed meal times. Mrs. Smith also admitted that it was a bad habit they had let Sarah get away with and one of the goals of the project was to improve

her table manners. For those reasons, it was agreed upon that Sarah not be allowed to have her iPod at the table during meals. Three more baseline data points were collected in which Sarah did not have her iPod at the table. These data points were relatively stable and the decision was made by the researcher to move to the intervention phase.

A new data sheet was emailed to Mrs. Smith for the intervention data collection which included a column for recording how many times Sarah viewed the video each day. The family was instructed to show the video to Sarah at least once a day but to allow her to watch it more than once if she expressed interest. Data collection continued in the same manner as the baseline phase. Mrs. Smith reported that Sarah had difficulty watching the video. When it was played she became so excited she ran out of the room. The family continued to attempt to show Sarah the video on a regular basis and she eventually was able to acclimate to the video and remain in the same room, peeking at the video every so often. A manipulation check was conducted during this time in which the researcher visited the family's home and made an independent recording of Sarah's behavior at dinner at the same time as Mrs. Smith. Mrs. Smith recorded Sarah using her hand 30 times within and elapsed time of 2:16. The researcher observed Sarah using her hand 27 times within an elapsed time of 2:15 so the observations were quite consistent. It should be noted that the researcher had to move to a different seat during the observation to get a better view of Sarah which may have contributed to the small difference in the observation of how many times Sarah touched her food with her hand.

Prior to the observation, the researcher was able to observe Sarah's reaction to the video. Her mother asked if she wanted to watch her movie and Sarah replied saying, "no" but while smiling, giggling, and engaging in some self stimulating behaviors. She

watched the video in another room and Mr. Smith had to block Sarah with his body so she would remain in the room during the first presentation of the video. She looked down at her iPod for the majority and plugged one ear with her finger but occasionally looked up and watched the video for a few seconds. The video was replayed with just the researcher and Sarah in the room. Sarah remained seated on her own accord and peeked up at the video occasionally, particularly when prompted to do so. However, the amount of time Sarah was able to view the intervention video was minimal. The researcher and Mrs. Smith looked over the data collected to date and noticed that Sarah appeared to be making more improvements when eating rice compared to eating pasta. Looking back at the baseline data it was discovered that all observations made without the iPod at the table were instances where Sarah ate rice and therefore the decision was made to record data only when Sarah ate rice.

The family continued to play the video for Sarah and collect intervention data which was sent to the researcher via email. On one of the data collection sheets Mrs. Smith noted two observations in which Sarah had not watched the intervention video so naturally the decision was made to include those data points as part of the fading phase. This decision was made in conjunction with the time constraints of the study. A modified fading schedule that incorporated the two observations that had already been made was emailed to Mrs. Smith. The family then followed the fading schedule but recorded data only when Sarah ate rice at home. Following the schedule of viewing once every three days at random resulted in Sarah's meal time decreasing so to help combat the loss of progress the schedule was modified so that Sarah watched the video every other day for four days.

A final meeting occurred in the family's home with Mr. and Mrs. Smith. The data sheets were collected by the researcher and included the final three observations that had not been previously shared via email. A printed fading schedule with the dates Sarah viewed/did not view the video was also shared. The set of final interview questions (see *Appendix B*) were asked to the Smith's as a way to reflect on the process, assess their satisfaction with the intervention, gain feedback about the parent training manual, and obtain ideas about how to best guide future family driven VSM interventions. Mrs. Smith insisted the researcher have a copy of the intervention video and emailed a link of the YouTube video to the researcher so the video could be shared with the researcher's thesis committee. At the conclusion of the meeting mutual thanks were expressed between the researcher and the family.

## RESULTS

The amount of time, in seconds, it took Sarah to eat her meals was recorded (see *Figure 1*). The mean amount of time increased across the baseline ($M$ = 219), intervention ($M$ =222), and fading ($M$ = 274) phases. During baseline, the trend line increased at a rate of 6.5 seconds per observation and the increasing trend line continued through the intervention phase at a rate of 7.0 seconds per observation. A negative trend line was observed during the fading of the video at a rate of -6.9 seconds per observation. With regards to the variability and stability of mealtimes, baseline mealtimes varied from 208 to 229 seconds resulting in a fairly stable range of 21 seconds. Intervention and fading phases were equally variable with ranges of 150 seconds in each phase. During the intervention phase mealtimes ranged from 130 to 280 seconds and during the fading phase mealtimes ranged from 183 to 333 seconds.

The overlap in data points from each phase of the intervention process was also assessed. Twenty-one percent of the intervention data overlapped the range of the baseline data, 43% of the intervention data points were below the baseline range, and 36% of the data points were above the baseline range. In comparing the data collected during the fading stage with that of the intervention phase, 56% of the data points overlapped and 44% of the fading data points were above the intervention range. A comparison of the data collected during fading with data collected during baseline revealed that 12.5% of the data points overlapped, 12.5% of the fading data points were below the baseline range, and 75% of the fading data points were above the baseline range.

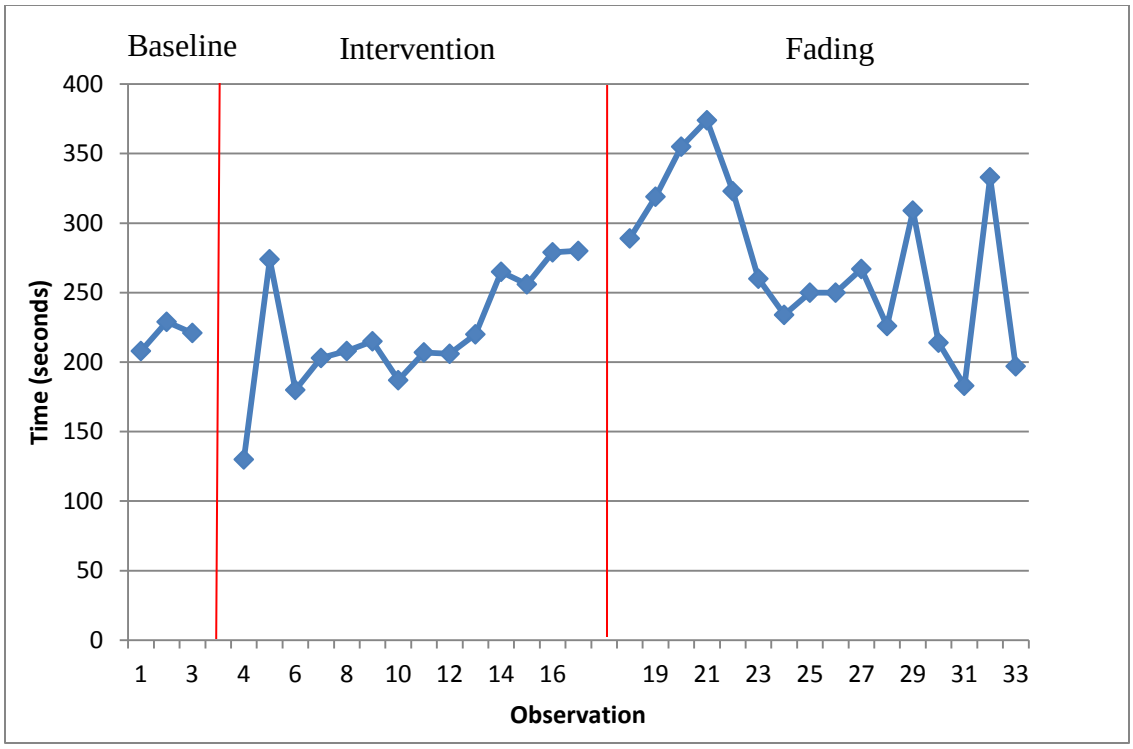



*Figure 1*. Time, in seconds, Sarah completed her meal across baseline, intervention, and fading phases.

The number of times Sarah touched her food with her hands was also measured (see *Figure 2*). As Sarah moved through the baseline ($M$ = 32), intervention ($M$ = 14), and fading ($M$ = 5.5) phases, she touched her food less frequently. During baseline, an increasing trend line was observed with a slope of 5 food touches per observation. The trend line then decreased across the intervention and fading phases with a slope of -1.5 and -6.9 respectively. Sarah touched her food anywhere from 24 to 41 times during baseline which resulted in a range of 17. More variability was recorded during the intervention phase where Sarah touched her food 4 to 32 times, resulting in a range of 28. The least amount of variability was recorded during the fading phase where Sarah touched her food zero to ten times, thus resulting in a range of ten.

The overlap in data points from each phase of the intervention process was assessed. Fourteen percent of the data points in the intervention phase overlapped with the baseline range whereas the other 86 percent of the data points in the intervention phase were below the baseline range. A comparison of the intervention and fading data revealed that 69% of the data points overlapped and 31% of the fading data fell below the intervention range. In comparing the fading data with the baseline data, 100% of the fading data was below the baseline range.

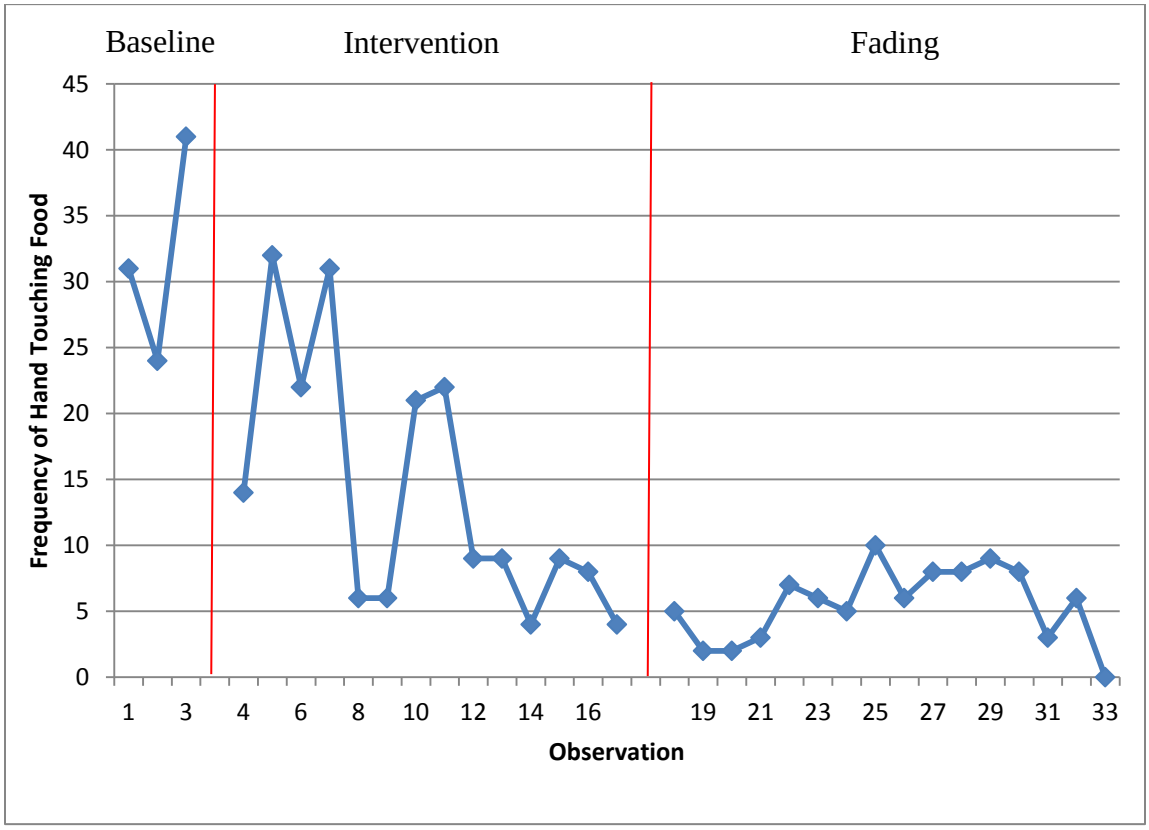



*Figure 2*. The frequency Sarah touched her food with her hand across baseline, intervention, and fading phases.

# DISCUSSION

## Parent Training Manual

The first goal of the study was to evaluate the usefulness of the parent training manual. Based on the feedback provided by Mrs. Smith, the manual was particularly useful at the start of the study. She read through it and referred back to it on several occasions during the initial phase of the study, but no longer needed to access the information as the study progressed into the intervention and fading phases. The provided data sheets were used throughout the three phases of data collection with modifications made based on the chosen target behaviors of total mealtime and frequency of Sarah touching her food with her hands. No major edits were suggested by Sarah's parents with the exception of merging the "Start Time" and "End Time" columns into one "Total Time" column. The rationale for this modification was two-fold; first, using a timer was easier to record the length of time, and for data entry purposes it eliminates the step of having to calculate the total time of each observation. Another modification would be providing additional pages of data recordings sheets as the family ran out of room and used the margins to continue the data recording.

Mrs. Smith identified a benefit of the parent training manual as helping to reduce the length of the initial meeting between the family and the researcher. While the steps of the process were explained during the initial meeting, the manual provided visual supports, as well as the reassurance that the information would be available to the family after the researcher departed. From the researcher's perspective, the manual provided a clear framework for explaining VSM to the family and helped to structure and guide both the initial and subsequent meetings with the family. One of the most beneficial aspects of

the manual for the researcher was having a place to operationally define the behavior(s) to be observed and recorded, a crucial element of the intervention. Therefore the parent training manual is best utilized as a supplemental guide for parents and as a framework for practitioners but it is not intended to be used as a replacement for face to face collaboration between families and school personnel.

**Best Practice Document and Parent Feedback**

The second goal of the study was to create a best practice document for school personnel supporting families in family driven VSM interventions. The best practice document can be found in its entirety in *Appendix C*. A brief description of the process of VSM interventions and the potential benefits are shared in the overview. Basic considerations such as the suitability of a VSM intervention and access to necessary technology are discussed followed by best practices that focus on collaborative consultation, anticipation of the student's reaction to the video, and preparing for a response burst. The document was created to provide guidance to school practitioners who are supporting families engaging in VSM interventions.

While some of the information the family shared with the researcher helped to shape the best practice document, not all of their feedback could be discussed within that framework. For example, when asked about their satisfaction with the intervention, Mrs. Smith said she was very satisfied but Mr. Smith expressed concerns with the long term outcome for Sarah. The researcher explained that while the study had come to a formal conclusion, the family could continue playing the video for Sarah if they believed it would be beneficial. The family did say that they may try another VSM intervention in the future, if their son or someone else could do the editing piece again. Behaviors they

considered targeting included chores such as unloading the dishwasher or putting clean clothes away, or encouraging fitness and participation in the Special Olympics by filming Sarah running a 100 meter dash.

Another idea posed by the Mr. and Mrs. Smith was the possibility of having members of the family serve as models on video which would change the VSM intervention into a video modeling intervention. This was an appealing alternative for Sarah who continued to have difficulties watching the video of herself. When asked about how Sarah reacted to the fading of the video, it was not surprising that Sarah preferred not watching the video as often and Mrs. Smith thought she seemed more receptive to watching the video when it was not required daily. Sarah even began negotiating with her family about watching the video less frequently. She would make statements such as "YouTube tomorrow?" to try and watch the video less often.

The advice the Smith's had for other families participating in a VSM intervention was to start with a behavior that is easy to film and easy for the student to change. Their rationale was that starting with an easier behavior to modify would allow the student to work towards modeling more sophisticated behaviors in the future. The other major piece of advice for families is to establish a clear and realistic goal prior to the intervention. Mr. and Mrs. Smith cautioned that some parents may see VSM as an unrealistic "cure" and this unrealistic view could be avoided by defining goals and discussing challenges and possible outcomes prior to the intervention.

**Intervention Effectiveness**

The final goal of the study was to evaluate the effectiveness of the VSM intervention. It was hypothesized the VSM intervention would increase Sarah's

mealtimes and decrease the number of times Sarah touched her food with her hands. With regards to the amount of time in which Sarah ate her meals, the means across the baseline and intervention phases were similar despite more variability in the recorded times during the intervention phase. It appears that there was a response burst at the start of the intervention phase where Sarah actually ate her meals more rapidly than she had during baseline. However the trend line increased during the intervention phase with approximately one third of the mealtimes being longer than those recorded during baseline. The variability in means continued during the fading phase where a negative trend line was observed even with modification to the fading schedule in which the number of days viewing the video was increased to once every two days for a period of time. Despite the negative trend, three quarters of Sarah's mealtimes during the fading of the video were longer than those observed during baseline, offering some support for the effectiveness of the intervention. In comparison with other video modeling studies, Bellini and Akullian (2007) reported that of the studies which included a maintenance phase, 11 studies documented that 100 percent of the maintenance phase data did not overlap with the baseline phase data. Another eight studies documented non overlapping maintenance phase data ranging from 35 to 80 percent when compared to the baseline data.

The family and researcher agreed that a number of variables had the potential to impact mealtimes and were likely responsible for the great degree of variability observed. Despite keeping the type and amount of food constant throughout the process, additional variables such as utensil size and hunger level probably impacted the speed at which Sarah ate. Mrs. Smith even pointed out that Sarah's appetite increases during her

menstrual cycle and may have contributed to a faster rate of eating during some of the fading observations. However, because the family was paying such close attention to Sarah's eating behavior, Mr. and Mrs. Smith report some positive changes the family has made. These include always making sure Sarah has a glass of water with her meal and sitting down as a family to try and engage Sarah in conversation as another means of slowing her down.

The effectiveness of the VSM intervention in decreasing the number of times Sarah touched her food with her hands is more straightforward and conclusive. The decreasing means across the baseline, intervention, and fading phases indicate the VSM intervention was very effective in reducing the number of times Sarah touched her food. The trend lines and slope indicate that the frequency of the non-desired behavior decreased during the intervention phase and remained relatively stable at a low level during the fading of the video. Moreover, all of the observations made during the fading phase were below the baseline range which provides solid evidence of behavioral change in the predicted direction.

**Implications for School Based Practitioners**

Based on these results, VSM interventions may be most effective in improving concrete, observable behaviors that are less likely to be impacted by extraneous variables. The consistent commitment to the intervention exhibited by the family indicates that parent driven VSM interventions are feasible and can be carried out with fidelity with support from a school-based practitioner. More comprehensive information for school based practitioners is available in the best practice document in *Appendix C*.

**Limitations of the Current Study**

The most obvious limitation of this study is that the results are gathered from a single family and their experience of VSM. Families differ greatly in their needs which limit the ability of generalizing the results of this study to other family driven VSM interventions. In order to identify additional perspectives, experiences, and outcomes, additional studies are necessary. Potential avenues for future parent driven VSM interventions include targeting other types of behaviors and trying VSM with other student populations. A second major limitation of the study was Sarah's difficulty watching the video. The actual amount of time Sarah viewed the intervention video was minimal despite the improvement she showed over time. A possible avenue for overcoming this difficulty is a video modeling intervention in which family members serve as models rather than creating an actual VSM intervention with the student serving as his/her own model. Regardless of the limitations of this particular study, family driven VSM and video modeling interventions provide a context in which to foster partnerships between families and school based practitioners.

*Appendix A*

**Parent Training Manual**

Dear Parent,

This manual has been designed as a source of information and support for you as you begin a video self modeling intervention. The goal of this manual is to provide some basic explanations, tips, and forms necessary for this type of intervention but you may not find this to be comprehensive enough to answer all of your questions. Please be in contact with the staff at your child's school should questions and concerns arise or simply to share exciting successes. Below is a space to write down the contact information of these staff members.

School Contacts:

Name:_____ Position: _____
Telephone:_____ Email: _____

Name:_____ Position:_____
Telephone:_____ Email: _____

Table of Contents:

# Video Self-Modeling: A Brief Overview

What is video self-modeling?

Video self-modeling (VSM) is a type of modeling in which the individual serves as their own model for positive behavior change[1]. In this case your child will model a positive behavior or skill that you wish to see an increase in. Once it is captured on video your child is then able to watch him or herself successfully engaging in the desired behavior over and over again which can increase his/her ability to perform the behavior more frequently. Here are the basic steps of video self modeling:

1. You support your child so he or she may demonstrate the positive (target) behavior
2. Film your child demonstrating the target behavior with your support
3. Edit out the supports so the intervention video contains only instances of your child successfully demonstrating the target behavior
4. Have your child watch the intervention video at least once a day
5. Fade the video out so your child views it less frequently and eventually not at all
6. Monitor your child's behavior before, during, and after the intervention to determine if there was a positive behavioral change

How do I get my child to first demonstrate a positive behavior for the video?

In order to film the target behavior your child will likely need prompting, support, or even a "script" to follow. For example, if you are trying to increase your child's spontaneous verbalizations you will likely have to ask questions or even have your child repeat something you say in order to get a good demonstration of the behavior you wish to see increase. Although the actual verbalizations you film are not spontaneous, with editing it will appear to your child as if they are.

Why is video self-modeling a desired intervention for students with autism spectrum disorder?

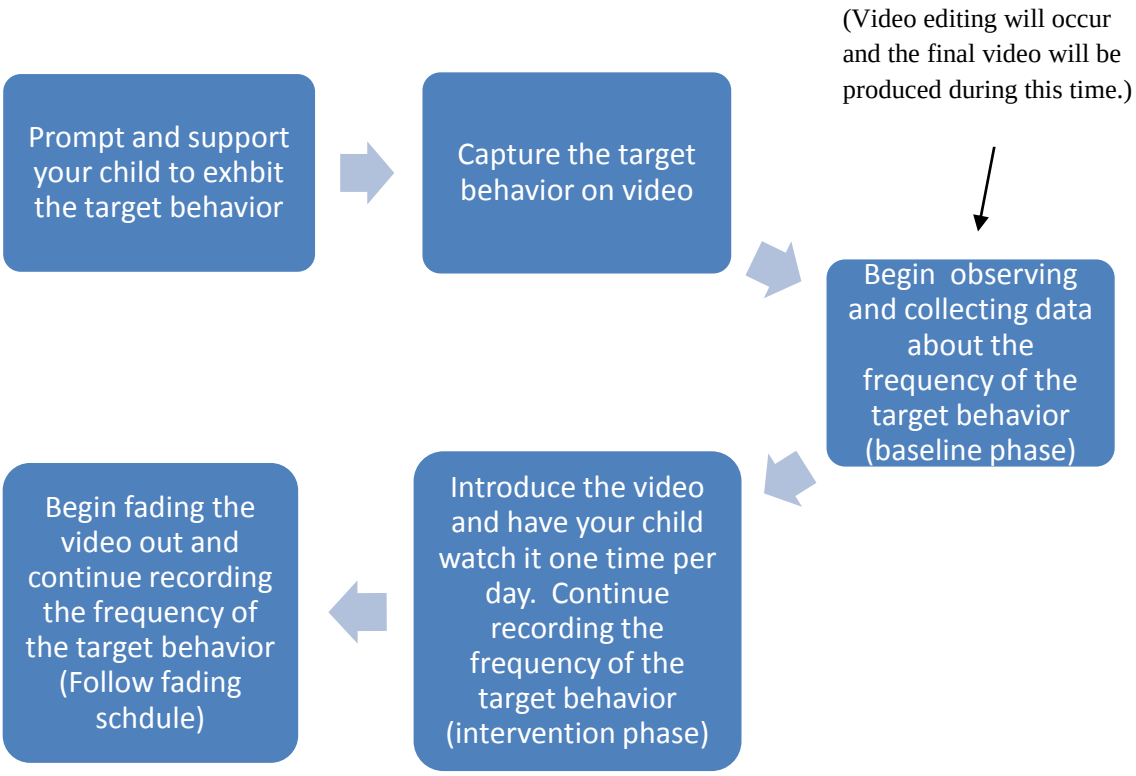
One advantage of video modeling as compared to in vivo modeling (watching another person demonstrated the behavior) for students with autism is that the social demands of the task are eliminated[2]. The student no longer has to worry about the social interaction and may be able to focus on the target behavior or skill more easily. The video medium is also highly predictable and controllable[3] so non relevant factors that are distracting can be edited out and the student knows what to expect.

What are the basic steps?

First you will record your child on video exhibiting the target behavior. You will then observe their behavior prior to the intervention. During this time video editing will occur

and the intervention video will be produced. Your child will then watch the video at least once a day during the intervention phase and you will continue to monitor their behavior. Finally you will fade the video away and continue to monitor behavior to maintain positive change that occurred during the intervention. A visual explaining the steps can be found below.

**The Steps for a VSM Intervention**

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[3] 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.

## Capturing Your Child's Target Behavior on Film

- The goal of filming is to capture your child demonstrating the target behavior. It is expected that your child either has difficulty exhibiting the behavior independently or does so very infrequently.

- You will likely need to prompt and support your child to get him/her to demonstrate the target behavior. It is expected that you will record the prompting and support. Remember that with video and audio editing these prompts will be edited out so that your child just views him or herself successfully completing the target behavior without the supports.

- You can even come up with a "script" of what you want your child to do and/or say and have them practice it several times while you record them. Although it may seem unnatural it will provide a visual of your child demonstrating the target behavior successfully.

- If your child is able to demonstrate the target behavior independently but does so infrequently, you can try and capture the behavior as it occurs naturally given the portability of the smart phone or flip camera you are using. If you are not able to capture the target behavior occurring naturally you can use prompting or scripts.

- The goal is to make a short two to three minute video for your child to watch that highlights him or her successfully demonstrating the target behavior. Try and aim for 30 minutes of actual video footage as much of this will be cut out during the editing process. If it turns out there isn't enough footage to make a short video, you can always go back and record some more.

- In order to get higher quality video footage you can try the following suggestions:

    - Keep the camera as steady as possible by either locking your elbows in close to your body or placing the camera on a still object.

    - Film as close to your child as possible. This will help to enhance the sound quality as well as the video quality if you don't have to use the zoom.

    - Try to film at eye level with your child so when they view the video it is at their level.

    - Film for an extra five seconds before and after the actual footage you are trying to collect whenever possible. This will come in handy during the editing process.

    - Whenever possible, film several takes. That way any subtle mistakes can be edited out of the final video.

- Once you have collected about 30 minutes of video footage, contact your school staff so they may begin editing the footage or may assist you with the editing process.

## Data Recording Instructions and Tips

- The purpose of recording your child's behavior is so behavior change can be monitored. With this data and help from school staff, you will be able to know if the intervention is successful at increasing the target behavior or if another approach is needed. Data will also allow decisions to be made about when to begin fading the intervention video out and if booster video viewings are needed to help maintain positive behavior change.

- Observations will occur during three stages:

    - Baseline phase: this is before your child begins to watch the video. Data from this phase will allow you to see how often the target behavior is occurring before you start the VSM intervention. This information is then compared to how often the target behavior occurs during and after the intervention. Typically a relatively stable pattern of behavior (3-5 data points) needs to be established before the intervention begins.

    - Intervention phase: your child is now viewing the video of him/herself at least one time per day, more if he or she requests. Data from this phase will show if the video is having an effect on your child's behavior. The goal of the intervention is to increase the target behavior from where it was at during the baseline phase. Again approximately 3-5 relatively stable data points showing positive behavioral change will indicate moving to the next phase.

    - Fading: the frequency of the video watching will begin to decrease and will follow a schedule that has been provided in this manual until your child is no longer viewing the video. Monitoring behavior change during fading is important so that positive behavioral changes that occurred in the intervention phase can be maintained.

- The key to observing your child's target behavior is to know what you are looking for. Talk with your school staff to determine exactly what the target behavior is. You can write down your definition below and refer back to it as you begin observing and recording data.

  Definition of the target behavior:

  _____
  _____
  _____
  _____

- When recording your child's behavior you will want to write down the date, the time you start and stop observing, the activities you observed your child doing, and the frequency of (how many times your child demonstrates) the target behavior.

- During the intervention phase when your child is viewing the video of him/herself you will also note how many times your child has viewed the video that day prior to your observation.

- Behavior observations should be made over the course of a specific identified activity or over the course of 20 minutes depending upon the selected target behavior.

- If observations are made over 20 minute periods, try and make the observations at approximately the same time of day or during the same type of activity. For example, collect data for the first 20 minutes your child is home from school or for 20 minutes during dinner.

- Speak with the school staff to determine when to stop collecting baseline, intervention, and follow-up data.

- Collect follow-up data for all of the days listed on the fading schedule in the same way baseline and intervention data were collected. You will be following a fading schedule in which some days your child watches the video and other days he or she does not. Please record the frequency of your child's target behavior on all days and note whether or not your child viewed the video that day in the appropriate column. Frequent contact with school staff is necessary to note changes in behavior and to potentially modify the fading schedule. The goal of the follow-up stage is to see if positive behavior changes can be maintained over time with less frequent viewing of the video.

- Note anything unusual about the observation on the back of the data collection sheet and include the date. Unusual circumstances include things like your child not feeling well or having a guest in the house. If you are unsure if something is unusual, make a note anyway. More information is better than less.

- If you have any questions or concerns please do not hesitate to contact your school staff.

- Next you will find forms where you can record your observations. There are three separate forms, one for each phase of the intervention process.

**Recording Sheet: Baseline Phase**

| Date | Start Time | End Time | Activities | Frequency of the Targeted Behavior |
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## Recording Sheet: Intervention Phase

| Date | Start Time | End Time | Activities | Frequency of the Targeted Behavior | Frequency of Video Viewing |
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**Recording Sheet: Fading Phase**

| Date | Start Time | End Time | Activities | Frequency of the Targeted Behavior | Video Viewed (Yes/No) |
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## Fading Schedule

- Below you will see a fading schedule in which some days your child watches the video, and other days he or she does not. The frequency of viewing the video decreases over time until your child no longer watches the video at all.

First 6 Days: Child views the video once every 2 days at random

| | | | | | |
|---|---|---|---|---|---|
| Not Viewing | Viewing | Viewing | Not Viewing | Viewing | Not Viewing |

Following 6 Days: Child views the video once every 3 days at random

| | | | | | |
|---|---|---|---|---|---|
| Not Viewing | Viewing | Not Viewing | Not Viewing | Not Viewing | Viewing |

Final 8 Days: Child views the video once every 4 days at random

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Not Viewing | Not Viewing | Viewing | Not Viewing | Viewing | Not Viewing | Not Viewing | Not Viewing |

** Please stay in close communication with school staff during this time. Modifications to this schedule may be needed to maximize your child's positive behavior change. You can use the space below to note any changes in the fading schedule for your child.*

*Appendix B*

## Interview Questions

Initial Interview Questions

- Which of the following do you have access to: a smart phone with video capabilities, a flip camera, or a camera with video capabilities, a computer, and basic computer skills?
- Tell me about your child's attention span. Does he or she watch short videos of approximately 5 minutes or less?
- Tell me about your interest in video editing. What (if any) was your previous experience with video editing like? There is an opportunity for you to learn some video editing skills with help from the researcher that would enable you to edit your child's video footage. Tell me about your interest and willingness to learn video editing.
- I will provide support to you in your home to elicit, record, and observe the desired behavior. Please discuss your comfort level with having me working with you in your home.
- Tell me about any behaviors or skills you would like your child to improve at home. Which of these behaviors or skills is a top priority for you? Please estimate how often the behavior is currently occurring at home.
- What kind of support(s) does your child need in order to demonstrate the desired behavior or skill? Can you discuss any instances that your child was able to demonstrate the target behavior independently?
- Please talk about what you hope to see from your child following the intervention. How often would you like to see your child exhibiting the desired behavior after the intervention?

In Progress Interview Questions

- Tell me about what it was like to get your child to exhibit the desired behavior. What went well? What problems or challenges came up? How did you overcome these problems?
- What advice would you have for other parents who are trying to elicit a behavior in their child?
- What kinds of things could the researcher have done or done differently to make the process better for you?
- Tell me about the process of video recording your child. How did your child react to being taped?
- Tell me about the kinds of recording techniques that you used (i.e. proximity to child, vantage point, how to steady the camera, etc.)

- What technology related problems did you face while recording the video footage? How were you able to overcome these problems?
- How did you use the parent training manual? What kind of information was useful to you? Talk about what information you would have liked to see in the manual and what information you did not use.

Final Interview Questions

- How did fading the video go? Did Sarah's reaction to the video change at all when she didn't view the video every day?
- Do you think you would try VSM to improve other behaviors? If so, what might you try it with? How much support would you need if you did another VSM intervention?
- Would you recommend this type of intervention to other parents? What advice would you give the parents? What advice would you give the school based personnel?
- One of the goals of the study was to evaluate the parent training manual. Looking back at this process did you use the manual? If not, why? What suggestions do you have in terms of changing, eliminating, or adding things? Do you think it would be more useful in the future if you had less support and wanted to make another video?
- How satisfied are you with the outcome of this intervention?
- Is there anything else you want to share?

*Appendix C*

**Best Practices for Supporting Family Driven Video Self Modeling Interventions**

Lindsey Visbaras, M.A.

## OVERVIEW

Video self modeling (VSM) provides one avenue to target positive behavioral change in students. While many school based practitioners are familiar with in vivo, or "live" modeling, VSM interventions are just now starting to be utilized more frequently within the school setting. In comparison with in vivo modeling where a student observes another individual demonstrating a behavior in person (Charlop-Christy, Le, & Freeman, 2000), VSM allows the student to serve as his or her own model for positive behavioral change. This is accomplished by having the student view him/herself demonstrating a positive behavior on video (Bellini, Akullian, & Hopf, 2007).

The basic process of creating a VSM intervention consists of four major steps. The first step involves supporting the student so that he/she is able to demonstrate the target behavior. This can be achieved by prompting or supporting the student, or even by creating a script for the student to follow. In some cases the student may only be able to approximate the target behavior even with support but through the video editing process, it may appear that the student is able to demonstrate the target behavior. The second step, which occurs simultaneously with the first, is to capture the student exhibiting the behavior on film. After the raw video footage has been obtained, the video is edited to eliminate prompts, supports, and mistakes so the final intervention video exhibits the student successfully engaging in the target behavior. The actual intervention occurs when the student views the video of him/herself on a regular basis, at least once daily. In order to engage in data-based decision making, the student's target behavior(s) need to be

observed and monitored before, during, and after the intervention video is viewed by the student.

*Benefits of VSM*

There are many benefits of VSM interventions according to Charlop-Christy et al. (2000). In comparison to in vivo modeling, the process of recording and editing allows for more control over the modeling procedure, and the fact that the video can be watched multiple times means VSM is generally more time efficient than in vivo modeling. Another potential benefit of VSM is an increase in a student's self-efficacy because the student is able to view him/herself being successful (Hitchcock, Dowrick, & Prater, 2003).

VSM may be particularly beneficial for students who have been diagnosed with an autism spectrum disorder. Those with autism spectrum disorders also tend to have an over-selective attention, a restrictive field of focus, an avoidance of face-to-face interactions, and a preference for visual stimuli. Video modeling capitalizes on these characteristics because the video medium is highly visual, controllable and predictable, filters extraneous variables (Wert & Neisworth, 2003), and reduces the anxiety of working with a live model (Charlop-Christy et al., 2000).

Another promising characteristic of the use of video modeling and video self modeling for children and adolescents with autism spectrum disorders is the broad scope of behaviors that have been targeted and improved using this type of intervention. These targeted areas include social and communication skills, functional skills, and the reduction of problem behaviors (Bellini & Akullian, 2007). Specific examples include increases in social engagement as measured by active participation and unprompted

verbalizations with peers (Bellini, Akullian, & Hopf, 2007), improvements in the accuracy and efficiency of functional skills related to hygiene, food preparation, and household chores (Lasater & Brady, 1995), and a reduction of off-task classroom behavior when used in conjunction with self-monitoring (Coyle & Cole, 2004).

*Benefits of Family Driven VSM Interventions*

Extending the use of VSM interventions beyond the school environment and into the home setting provides a host of potential benefits. It promotes home-school collaboration, addresses behavioral concerns affecting the student's functioning in the home environment, and supports the overall behavioral and/or social functioning of the student. Video technology has become more widely accessible and user friendly, eliminating previous barriers of involving families in VSM interventions. A final benefit of having families drive VSM interventions is that it causes less disruption to the student and family. In a previous study, a time intensive adjustment period was necessary when a non family member recorded the student (Reamer, Brady, & Hawkins, 1998).

## BASIC CONSIDERATIONS

The first consideration that must be addressed is the suitability of a VSM intervention for the behavioral concern expressed by the family. Family driven VSM interventions require a large time commitment from the family and a simpler, but equally effective, intervention may adequately address the concern. The child's level of functioning and the family's willingness to participate should be assessed prior to engaging in a family driven VSM intervention. Additionally, the family and school practitioner must discuss the student's ability to demonstrate the target behavior with support.

School practitioners also have a responsibility to be up front and realistic about the necessary time commitment required by the family for the intervention. The amount of support a family anticipates needing and the amount of support the school based practitioner is able and willing to provide should be discussed. A family's goals and anticipated outcome of the intervention should be established. It is recommended that the school practitioner be realistic about the potential outcomes of the intervention and recognize that VSM is another tool, but does not guarantee success.

The other major area of consideration is access to the necessary technology for the intervention to ensure that high quality video footage is obtained. For families that do not have access to their own video recording devices, it is essential they be provided with this equipment. The first logical avenue to pursue is the technology available within the practitioner's school(s) or system. Unfortunately the equipment that is offered may be older equipment that is outdated, less user friendly, and more challenging to transfer to a computer for editing purposes. An alternative is to identify outside resources. Technical assistance centers are often willing to loan equipment to families and the technology tends to be user friendly and up to date. It is recommended that school practitioners spend time with a family to review how to use the technology and allow the family an opportunity to practice using the equipment while the practitioner is available to answer questions and help troubleshoot problems. Most computers come with free video editing software or this may be available in the school's media center. If the file type of the raw video footage is incompatible with the video editing software, there is likely a free file converter that can be downloaded from the internet to convert the files.

When collecting video footage the sound and picture quality can be maximized by providing parents with several tips. For the best sound and picture quality, avoid using the zoom function whenever possible and instead film in close proximity to the child. Ask parents to eliminate as much background noise as possible by taking simple steps such as turning off the television. If the audio collected is particularly important and relevant for the targeted behavior, it is helpful to have parents pause for one or two seconds after their child has spoken. This provides a short gap between the speakers and can be extremely helpful in the editing process. For the best picture, film the video at the child's level, so that the video camera is approximately at eye level. The last tip is to hold the camera as steady as possible to prevent a shaky picture. It may be possible to rest the camera on a solid object or have the parent brace their arm on a table or counter. If neither of these options is possible and the parent must hold the camera without any support, locking the elbows at the sides is recommended to provide a more stable position.

**BEST PRACTICES**

It is best practice when working with families to engage in collaborative consultation throughout the process. In doing so the practitioner is open to listening and responding to a family's needs by maintaining open communication. Asking questions such as "What do you hope to see from your child following the intervention?", "What advice would you have for other parents trying to elicit a behavior in their child?", and "How satisfied are you with the intervention?" can open up the avenue for productive conversations to not only guide the current intervention, but to help better shape future practice. The practitioner should strive to find a balance of flexibility and accountability

so that the needs of the family can be balanced with treatment fidelity. Maintaining a degree of flexibility also allows for changes and modifications to be made as the intervention process unfolds. While the outcome of the intervention is important, the process is valuable as well. Throughout the process, the family will naturally become more attentive to the behavioral concern, which can heighten the family's awareness of their expectations and interactions and result in beneficial change.

Another best practice is assessing the student's reaction to viewing him/herself on video prior to engaging in a VSM intervention. A wide range of reactions are possible and have included pride, joy, embarrassment, and extreme excitement that triggered self-stimulating behaviors. It can be frustrating and disappointing for the family and school practitioner to have worked so hard to create a video only to see the student react by running out of the room or hiding under a table. Over time and with repeated exposure to the video, the student's tolerance of the video typically increases but may not reach an ideal level. In order to gauge the student's reaction to a video of him/herself prior to committing to a VSM intervention, it would be helpful to record a short video clip of the student and have him/her watch it. This would provide some insight into how the student may react to an intervention video and may help determine if other interventions would be more appropriate.

A third best practice is to prepare the family for the possibility of a response burst during the intervention phase. Like other behavioral interventions, there may be an increase in negative behavior immediately following the implementation of the video intervention. Preparing families for this difficult period ahead of time is highly recommended. Unprepared families may be inclined to stop the intervention immediately

whereas prepared families are more likely to understand why this type of response is occurring and to be patient enough to allow the response burst to end.

While family driven VSM interventions take time and effort on the part of the family and the school practitioner, they provide a wonderful avenue for collaboration and skill development. If the school practitioner and/or the family are new to VSM interventions, it may be best to start by focusing on a behavior that is easy to elicit, film, and monitor to increase the chances of success. After having participated in one successful home based VSM intervention it is entirely possible that a family will want to use this type of intervention to target another behavior. Having been through the process and gained the necessary knowledge, skills, and confidence, a family is empowered to use the technique again with minimal or no support.

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