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THE APPLICABILITY OF VIDEO SELF-MODELING FOR ADULTS WITH
DEVELOPMENTAL AND INTELLECTUAL DISABILITIES

A thesis presented in partial fulfillment of requirements
for the degree of Master of Arts
in the Department of Clinical Psychology
The University of Mississippi

by

LAUREN E. COX

December 2012

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ABSTRACT

Video Self-Modeling (VSM) has shown to be an effective intervention in modifying maladaptive behaviors in children, particularly those with Intellectual and/or Developmental Disabilities (ID/DD). Although the effectiveness of VSM with children with ID/DD has been well established in the extant literature, considerably fewer studies have addressed the applicability of VSM with adults of the same population. Thus, the goal of the current study was to examine the utility of VSM with three adults with ID/DD, specifically targeting table manners as the behavior of interest for the intervention. Two aspects of table manners were measured utilizing a multiple baseline design: food spillage on the person and appropriate napkin use. Data were graphed and analyzed on the basis of level, trend, and variability. Results indicated that the intervention was successful with Participant 2 on the appropriate napkin use variable, but not on food spillage on the person. Participants 1 and 3 did not evidence significant changes in behavior following the introduction of the VSM intervention. Possible reasons for the limited success of this intervention include the complexity of the target behaviors, age of participants at age of intervention, and lack of changes in environment to reinforce learning gained from videos. Future research should examine possible limits of the VSM technique as well as ways of utilizing the VSM procedure to function most effectively with older adults.

LIST OF ABBREVIATIONS AND SYMBOLS

VSM	Video Self-Modeling
ID/DD	Intellectual and/or Developmental Disabilities
MBD	Multiple Baseline Design
IOA	Interobserver Agreement

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The Applicability of Video Self-Modeling for Adults with Developmental and Intellectual Disabilities

Modeling

It is often said that imitation is the highest form of flattery. People frequently imitate behaviors that are modeled for them in a variety of situations, be it fashion trends, how to act during a religious ceremony, or even what to eat. Modeling, it seems, is both a potent and powerful tool. Attending to the behaviors of others provides us with the ability to observe what another individual is doing, how they are doing it, and how it works for them. This knowledge can then act as a guide for our own future behavior. Psychology, at least within the Behavioral tradition, has long been interested in modeling and observation and the effect that this has for the acquisition of new behavior.

Beginning in the early 1930s, psychologists began to emphasize the role of the environment in learning new behaviors. Individuals such as O.H. Mowrer, Neal Miller, John Dollard, Robert Sears, Leonard Doob, and John Whiting examined the intersection of personality and the environment (Miller, 2010). The writings of these individuals inspired Albert Bandura to write and publish *Social Learning Theory* in the late 1970s. This book formally explicated the relationship between the environment and an individual's propensity to learn new behaviors (Bandura, 1977). Specifically, Bandura emphasized the modeling and imitation components of social learning, and advanced the notion of "[...] observational learning as a more general process of acquiring information from other people, books, and electronic media" (Miller, 2010,

p. 235). He proposed that people learn many of their behaviors by observing others engaging in those very behaviors (i.e., modeling).

Self-Efficacy

More recently, Bandura has focused on the role that self-efficacy plays in shaping an individuals' behaviors. He defined self-efficacy as "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (Bandura, 1997, p. 31; as cited in Miller, 2010). Thus, individuals who believe that they have the ability to engage in a behavior successfully are more likely to engage in that behavior. Further, modeling is believed to be more effective if the model was perceived as being of high status, competent, and similar to the observer in some way (Bandura, 1986; as cited in Miller, 2010). It follows that seeing oneself engage successfully in the desired behaviors can easily shape an individual's belief that they can engage in the desired behavior.

Self-Modeling

One's self can be considered the ultimate model since it is most similar to the individual (Dowrick, 1999). This notion led proponents of modeling to focus on the individuals themselves as being the most effective models (i.e., self-modeling). Self-modeling is a procedure whereby an individual observes himself engaging in adaptive behavior (Dowrick, 1999). Since its introduction in the literature in the early 1970s, self-modeling has been considered a potent tool for behavior change. For example, Marcus and Wilder (2009) taught 3 children with Autism to respond appropriately to novel letters using both a peer-modeling and a self-modeling video paradigm. They found that only one of the three participants in the peer modeling condition demonstrated successful responding whereas all three participants in the self-modeling condition

were able to demonstrate success (Marcus and Wilder, 2009). These results add support to the notion that self-modeling results in more significant behavior change than modeling that utilizes peers.

Self-modeling can be accomplished through a variety of media including still photographs, audio recordings, or video recordings. Still photographs can be used as picture prompts (Steed & Lutzker, 1997), photo activity schedules (Krantz, MacDuff, & McClannahan, 1993), or pictorial self-management (Pierce & Schriebman, 1994) within a self-modeling paradigm (Dowrick, 1999). In these situations, individuals view a series of photographs of themselves engaging in a desired behavior. Another option for self-modeling is audio recording, which allows an individual to hear themselves engaging in the target behavior, provided that it is a behavior appropriate for hearing (e.g., talking, singing, playing a musical instrument). While more common than still photographs, there are obvious limitations to audio recordings that preclude their use with a variety of target behaviors. Perhaps the most ubiquitous method for self-modeling involves the use of video recordings and has come to be known as video self-modeling (VSM; Dowrick, 1999).

Video Self-Modeling

Video self-modeling is defined as “the manipulation of videos so that a person is able to watch himself performing a behavior correctly or at an advanced level” (Buggey, 2009, p. vii). These videos are typically edited into 2-4 minute segments displaying only positive instances of the target behavior (Buggey, 2009). Individuals then view their self-modeling video in an effort to modify their behavior.

Historical Origins of VSM

The historical origins of VSM date back to the late 1960s in the work of Thomas Creer and Donald Miklich at the Denver National Asthma Center and Ray Hosford at the University of California at Santa Barbara (Dowrick, 1999). Inspired by Bandura's writings on observational learning (Bandura, 1969), and lacking an appropriate modeling film, Creer and Miklich (1970) decided to have a client role-play desired social behaviors himself and then view the video. They discovered that the role-plays had little effect. However, the client watching himself on video seemed to be very effective. Their two-page article detailing the work they did with this particular client is credited as being the first occurrence of the term "video self-modeling" in scientific literature (as cited in Dowrick, 1999).

Unaware of the work of Creer and Miklich, Ray Hosford developed a strategy he termed the "self-as-model" for use as a tool in counseling adults. Hosford believed that the self, being the ultimate in similarity, was the best option for modeling-based interventions. He and his graduate students produced numerous writings on the use of the self-as-model and contributed significantly to the literature base on this topic (Dowrick, 1999). Dowrick (1976) and Hosford et al. (1976) both suggested that skill acquisition and motivation are responsible for the success demonstrated by VSM interventions. These two concepts fit nicely with the construct of self-efficacy as originally articulated by Bandura (1977).

Extant Uses of VSM

Extant literature demonstrates a wide range of uses appropriate for VSM intervention. Language skills seem to be particularly well suited to VSM (Bray & Kehle, 1996; Buggey, 1995, 2005; Haarman & Greelis, 1982; Hepting & Goldstein, 1992; and Wert and Neisworth, 2003). Kehle, Madaus, Baratta, & Bray (1998) demonstrated that VSM is effective for selective mutism

as well, with their results showing a complete cessation of mutism. Other uses cited in the literature include improving swimming skills in children with Spina Bifida (Dowrick & Dove, 1980), and increasing classroom participation in second-grade students (Hartley, Bray, & Kehle, 1998). This evidence suggests that VSM is a particularly well-suited for children.

The overwhelming majority of research supporting the use of VSM has been conducted with younger participants. Most investigations have used samples of toddlers and early elementary aged children, though some studies have included adolescents and college-based samples as well. However, there are few studies that evaluate the applicability of VSM with adult populations. In two notable exceptions: VSM has been shown to be effective in teaching assertiveness to one adult (Hosford & Brown, 1976) as well as in teaching appropriate sexual behavior to an adult with cognitive disabilities (Dowrick & Ward, 1997). While results generally tend to be positive, some studies demonstrate that VSM with adults of different populations may require more than just basic VSM procedures to demonstrate the same level of success. For instance, Morgan and Salzberg (1992) examined the use of video-modeling in teaching employment related skills to adults with severe intellectual disabilities. They examined the effectiveness of video modeling using both self-modeling and unknown individuals as models for the participants. Results indicated that video-modeling is effective but that individuals with severe Intellectual Disabilities may require more explicit verbal prompting (Morgan & Salzberg, 1992). From these studies, it seems that VSM is a promising intervention for adults. However, more empirical evaluations of VSM for adults need to be conducted.

While the current scientific literature provides very limited support for the use of VSM with adult populations, the few existing studies suggest that this technique should be as effective

with the adult population as it is for younger age groups. In particular, there is evidence that VSM is effective for young children with Intellectual and Developmental Disabilities (ID/DD), and this suggests that this technique also may be applicable for adults of the same population, though few studies have examined this explicitly. VSM utilizes a basic behavioral technique, modeling, that has demonstrated efficacy for a wide variety of individuals. Furthermore, the technique requires only that an individual be able to 1) attend to a short (approximately 2 minute) video, and 2) recognize themselves on-screen (Buggey, 2009). It seems that the majority of adults in the population of interest possess the ability to adequately meet both these requirements.

Social Stigma

Successful social interaction typically requires that individuals behave in ways commensurate with societal norms. When, for whatever reason, individuals fail to do so, they often face negative appraisal by others and are relegated to membership in the out-group. This is especially the case for those who have disabilities that might cause them to engage in behaviors that are outside the norm of typically developing individuals (e.g., stereotypic movements, requiring assistance with basic care needs, poor table manners, etc.). Such behaviors often result in a negative evaluation of individuals with disabilities, depending on the degree to which that individual's behavior differs from social norms (Jahoda & Markova, 2004). This negative evaluation, or stigmatization, in turn, can lead typically behaving individuals to marginalize, depersonalize, and generally avoid those who have disabilities (Dovidio, Major, & Crocker, 2000). Professionals often work to specifically target and reduce the negative effects of maladaptive social behaviors by replacing them with pro-social behaviors, which in turn,

improves the quality of life for the individual. This serves to deliberately increase the autonomy of individuals with disabilities and provide care in the least restrictive environment possible, so that they are able to enjoy more typical friendships and other social experiences. Thus, the goal is to equip these individuals with the ability to navigate their social world more effectively.

Goal of the Current Study

The aim of the current study was to evaluate the effectiveness of VSM as an intervention for use with adults with ID/DD. Specifically, we targeted table manners as the behavior of choice in examining the effectiveness of this technique among adults with ID/DD. It was hypothesized that the implementation of VSM would result in a decrease in the amount of food spilled on an individual's clothes as well as an increase in appropriate napkin use during mealtimes.

In utilizing VSM to address table manners, the current study aimed to equip participants with the skills needed to interact more fully in their social environment. Specifically, by decreasing the amount of food spilled on an individual's clothes, we were hoping to reduce or even eliminate the necessity of wearing a bib when eating thereby decreasing the likelihood of drawing unnecessary attention to the disability status of these individuals. In addressing food spillage and napkin usage, we hoped to remove some of the negative appraisal associated with poor table manners that these individuals may face when dining with others or in public situations.

METHODOLOGY

Participants

Five participants were recruited to take part in this study. All participants were residents of a single house at a residential facility for adults with ID/DD and all participants have a mild or moderate ID. Two of the participants had diagnoses of Down Syndrome as well. All participants were Caucasian males between the ages of 34 and 48. Researchers obtained consent from the legal guardians of each participant as well as assent from the participants themselves following guardian consent. Participants were made aware, using language they could comprehend, of the purpose, method, expected benefits, and possible complications that might have resulted from participation. All participants were informed that their participation was voluntary and that they had the right to discontinue participation at any time with absolutely no repercussions whatsoever.

Of the original five participants, two participants were dropped from the study. Three participants completed all three experimental phases (baseline, intervention, and maintenance). One participant was dropped due to the unexpected appearance of neurological problems, unrelated to the study, which removed him from the residential facility during the course of the study. The second participant was dropped near the end of the study when it became evident that the VSM intervention was not working as hypothesized, therefore negating the necessity of continuing with further participants.

Setting

The intervention was conducted at a 171-bed residential facility for adults with mild to moderate ID/DD in a small town in the Southeastern United States of America. Residents of this facility reside in a group home with approximately ten total residents and a full-time Direct Support Professional (DSP) who oversees the daily care of the house residents. Residents of this center are provided with the supports they need to live in the least-restrictive environment possible, and all residents engage in individual activities (music therapy, physical education, individual psychotherapy, etc.) as well as group and campus-wide activities (shopping trips, activities nights, talent shows, etc.). Meals are cooked by the DSP and are served family-style around a large kitchen table for all the members of the group home.

Materials

Video camera. A JVC digital video camera was used to capture all video footage needed to create the self-modeling films.

Video editing software. CyberLink, a video-editing software program for personal computers, was used to edit the video footage and create the self-modeling video for each participant to view during the intervention phase.

Videos. A short video of approximately 2 minutes in length was made for each participant in the study. The video contained clips of the resident modeling appropriate table manners during lunch and dinner mealtimes. Participants were coached through the filming process using hidden supports (e.g., physical or verbal prompts that were edited out of the final video) so that they were able to demonstrate the target skills at a level above their current ability (Dowrick, 1999). Once footage was captured, the videos were edited to show a seamless stream

of behaviors using CyberLink. Videos included footage of the participant taking small bites, using their napkin to remove food from their face, moving ancillary dishes in front of them while eating, and using their utensils.

Bibs. Each participant wore a bib during mealtimes. This bib was made of a material with a grid-like pattern. Each bib had approximately 900 cells on it that were counted to determine the percentage of food spilled on the participant during a meal.

Recording Forms

Data Log. Researchers observed the participants at meals and recorded the amount of food spilled on each participant's bib and whether or not the participant used their napkin appropriately. All data recording was done on a data log created by the principle investigator.

Research Design

The current study utilized a multiple baseline design (MBD), which allowed for repeated and ongoing demonstration of the effects of the independent variable on the dependent variable. All participants began baseline data collection simultaneously. Once each participant established stability in their baseline level of engagement in the target behaviors, the first participant was transitioned into the intervention phase while the remaining participants remained in baseline. The baseline data of the remaining participants functioned as a comparison for the changes in the first participant's data following the introduction of the VSM intervention. This design also allowed for the control of possible history effects (Baer, Wolf, & Risley, 1968). Once participants' evidenced stable gains during intervention, determined via visual inspection of graphed data, they were moved into the maintenance phase (Barlow & Hersen, 1984).

Evidence-Based Practice Guidelines for Single-Subject Research. In 2005, the Quality Indicator Task Force, sponsored by the Council for Exceptional Children Division for Research, outlined criteria for evaluating single-subject research and created standards for providing scientific evidence for interventions (Bellini & Arkullian, 2007). Horner, Carr, Halle, McGee, Odom, and Wolery (2005) defined a practice as evidence-based if it meets five criteria: 1) use of an operational definition to describe the practice, 2) the context appropriate for the practice is clearly defined, 3) implementation of the practice is done with fidelity, 4) results clearly demonstrate that the change is functionally related to the effect of the intervention on the dependent measure, 5) similar positive results are demonstrated across a number of studies conducted by different research groups with different participants.

In order to be considered evidence-based, single-subject studies should utilize multiple baseline, alternating or reversal treatments design (Horner et al., 2005). Furthermore, MBD can be made even more powerful when the independent measure is inserted and removed three or more times within the same person or across three or more participants (Horner et al., 2005). The current study was deliberately designed in accordance with these specifications.

Eating Behaviors

For the purposes of the current study, dependent measures consisted of participant's table manners. Specifically, the intervention targeted two aspects of table manners: food spillage on the person and appropriate napkin use. Each was operationally defined as follows:

1. Food spillage on person: amount of food spilled on the person's bib
2. Appropriate napkin use: use of napkin to wipe away food remnants from mouth when necessary

In order to measure food spillage on the person, each participant wore a bib during mealtimes; a practice they engaged in prior to this study, thus the introduction of bibs during mealtime was not new to these participants. The bibs were made out of a fabric with a grid-like design which enabled researchers to determine the percentage of the bib that has food spillage on it. This was calculated by dividing the number of dirty squares by the total number of squares.

To determine appropriate napkin use, a partial interval recording system was used, whereby researchers recorded appropriate napkin use for 10-second intervals throughout the meal, alternating between participants. Appropriate napkin use was defined as use of the napkin to remove food present on the face or, in the event that no food is present on the face, placement of the napkin in the lap or on the table beside the eating area. Inappropriate napkin use was defined as failure to use a napkin to remove food present on the face or placement of the napkin outside of the eating area or lap.

Researchers observed one participant at a time for 10 seconds, recorded their observation, and then moved on to the next participant for a 10-second observation. Researchers cycled through this process for the duration of the meal, thus allowing data collection on each participant at each observation session.

Interobserver agreement (IOA) was obtained for 26 of the 67 total data collection sessions, constituting 38.81% of sessions. This involved two researchers independently rating the target behaviors simultaneously. Total Count IOA was calculated by dividing the smaller count by the larger count and multiplying by 100 for double-rated sessions (Cooper, Heron, & Heward, 2007). This was then averaged for each participant on each variable. IOA for the Food Spillage variable was 99.16% (range = 89.4 – 100.0%) for Participant 1, 99.75% (range = 94.5 – 100.0%) for

Participant 2, and 99.72% (range = 94.1- 100.0%) for Participant 3. For the Napkin Use variable, IOA was 100.0% for Participant 1, 99.33% (range = 66.7 – 100.0%) for Participant 2, and 97.62% (range = 50.0 - 100.0% for Participant 3.

Procedure

Consent and Assent. Consent for each participant was obtained from the legal guardian or family correspondent. Once consent was obtained, we spoke with each participant individually, explained the study using words they were likely to understand, and asked for their assent. Only those who provided consent through their legal guardian or family correspondent and themselves assented were included in the study.

Video Filming. After obtaining consent and assent, each participant was filmed to obtain the needed footage for the VSM intervention. A research assistant captured film footage of each participant eating at the table during mealtimes. If needed, the participant was provided hidden supports (e.g., physical or emotional supports that were edited out of the final video; Dowrick, 1999) to provide positive instances of the target behavior. The videos were strategically designed so that each of the target behaviors (food spillage on person and correct napkin usage) was captured for each of the meal montages shown. During filming, research assistants captured successful instances of the participant eating typical lunch and dinner foods. Typical lunch foods included sandwiches, soup, chips, cookies, carbonated drinks, tea, and water. Dinner foods included chili, hamburgers, lasagna, corn bread, salad, carbonated drinks, tea, and water. Each video montage included both lunch and dinner meals.

Video Editing. When filming was complete, videos were edited into approximately 2-minute vignettes using Cyberlink. Only positive instances of the target behaviors were shown (Buggey, 2009).

Data Collection. A research assistant was present at lunch and dinner mealtimes to conduct observations of appropriate napkin usage and to measure food spillage on the bibs after each participant finished their meal. Two researchers were present for at least twenty percent of the data collection sessions so that IOA could be obtained. To facilitate IOA, all observers were trained to proficiency (90-100% agreement) with the principle investigator using the unedited self-modeling films. Periodic checks were conducted to ensure accuracy of measurement throughout the duration of the project.

Baseline. Baseline data collection for all participants was initiated simultaneously. During baseline, research assistants observed the participants mealtime behavior, both during lunch and dinner mealtimes. They recorded each participant's current level of functioning prior to the introduction of any experimental manipulations; particularly attending to how much food each participant spilled on their bib and appropriate napkin usage.

Intervention. Once all participants demonstrated a stable baseline, the first participant began the video-watching intervention, while the other participants remained in the baseline phase. During the intervention phase, the participant viewed their video immediately prior to mealtimes. Participants viewed their video on a small portable DVD player with headphones attached so that they could hear the sound. However, most participants chose not to use the earphones and instead opted to increase the volume on the DVD player. They sat in the living room of their house at a small table that was away from other distractions. Immediately after

they finished viewing their video, the participant went to the kitchen table, put on a bib, sat down, and ate their meal. When a participant's data demonstrated a stable change in behavior they were moved from intervention to maintenance phase, and the next participant was transitioned into the intervention phase.

Maintenance. During the maintenance phase, the video-watching intervention was dropped out. Instead of video-watching before meals, participants went straight to the table, put on a bib, and ate their meal. Research assistants attended to the same eating behaviors as they did during both the baseline and intervention phases (food spillage on person and appropriate napkin usage). Maintenance data was collected throughout the remainder of data collection sessions for each participant. Participant 1 had the longest maintenance data collection period, followed by participants 2 and 3. Participant 3 had maintenance data collected for approximately two weeks following intervention.

RESULTS

The results of this study are shown in Figures 1 and 2, Percentage of Food Spilled and Percentage of Appropriate Napkin Use, respectively. It appears that the introduction of the VSM intervention was minimally successful in improving the eating behaviors of one participant on one variable. Visual inspection of the graphs suggests a slight improvement on Napkin Use for Participant 2. The two variables remained relatively unchanged for the Participants 1 and 3.

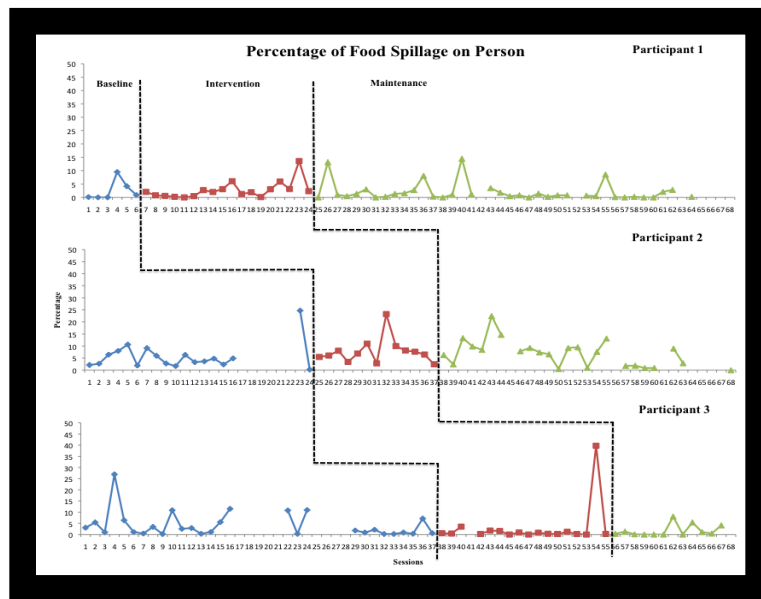


Figure 1. Percentage of Food Spillage on Person Across Participants

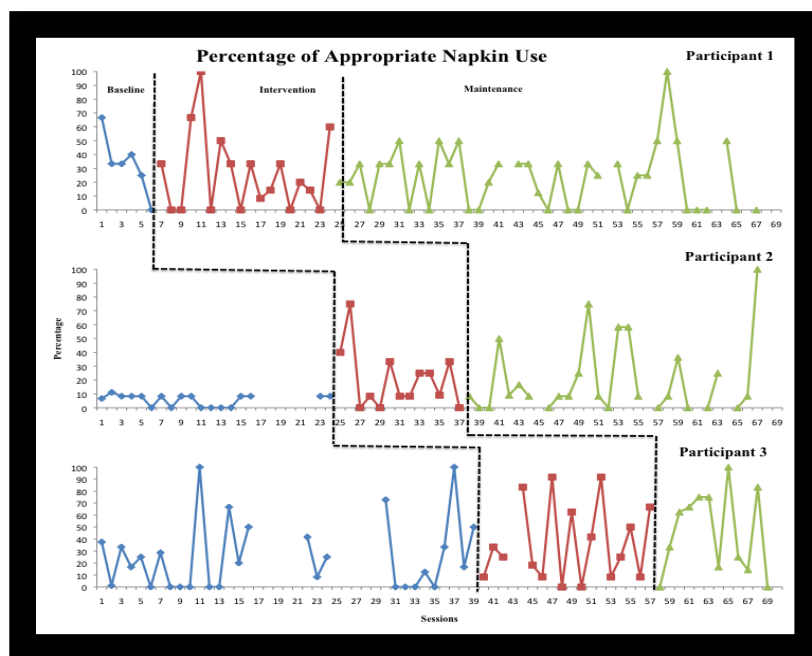


Figure 2. Percentage of Appropriate Napkin Use Across Participants.

Dirty Bib Variable

Level analysis for participants 1 and 2 demonstrates that their typical score increased from baseline to intervention, but then decreased from intervention to maintenance. Generally, it was hypothesized that there would be a decrease immediately during intervention and maintenance, which was not the case here. Participant 3 evidenced a slight decrease in level across all three phases indicating that the introduction of the VSM intervention was minimally successful in decreasing the amount of food that participant 3 spilled during mealtimes.

Trend analysis for participants 2 and 3 suggests a trend in the expected direction (i.e., a decrease in the amount of food spilled during mealtimes). This suggests that the VSM intervention was successful, to some extent. Participant 1 did not evidence a discernible trend in the expected direction. Variability analysis demonstrates that the VSM intervention was unsuccessful in decreasing the variability in participant performance across phases. That is to

say that no participant evidenced a decrease in the range of scores from baseline to intervention on the Dirty Bib Variable.

Napkin Use Variable

Level analysis for participants 2 and 3 suggests an increase in the amount of appropriate napkin use, as evidenced by a slight increase in the typical scores across all three phases. Participant 1 evidenced a decrease from baseline to intervention to maintenance, suggesting that he demonstrated a decrease in appropriate napkin usage. Trend analysis revealed slight movement in the expected direction (i.e., positive slope) for participants 2 and 3 whereas participant 1 did not. As with the Dirty Bib Variable, implementation of the VSM intervention failed to decrease the amount of variability (i.e., range) between scores for all three participants across phases.

Mean Comparisons

Mean comparisons were conducted to evaluate any significant differences between participant's phase means that could be attributed to the VSM intervention and not to chance. Independent T-tests were used to examine mean differences. For the Dirty Bib Variable, Participant 1 evidenced an increase in mean score from baseline to intervention, but a decrease from intervention to maintenance. No significant differences between phases were found for Participant 1. Participant 2 evidenced an increase from baseline to intervention and a slight decrease from intervention to maintenance. However, this decrease is still greater than his original mean score during baseline. Participant 2 did not demonstrate any significant differences between phases. Participant 3 demonstrated a decrease in mean score from baseline to intervention, but this decrease was not statistically significant.

For the Napkin Use variable, participant 2 evidenced a significant increase in appropriate napkin usage from baseline ($M = 5.62, SD = 4.16$) to intervention ($M = 15.82, SD = 13.42$), $t(8.78) = -2.23, p = .05, d = -0.91$. Participant 3 demonstrated an increase in appropriate napkin usage from baseline to maintenance, but this increase was not statistically significant. Participant 1 did not demonstrate any statistically significant differences in phase means.

DISCUSSION

The results of this study generally show that VSM, as conceptualized within this study, was successful in modifying the eating behavior of one of the three participants. It is important to note that these changes are not likely to be noticed by the untrained observer. The aim of this study was to focus more on clinical significance; therefore our original goal was not accomplished to the degree that we expected. We wanted the participants to demonstrate noticeably better table manners as evidenced by using their napkins appropriately during mealtimes and keeping food off their clothes.

These particular results are surprising in light of the body of literature suggesting the ease, utility, and appropriateness of the VSM intervention (Bray & Kehle, 1996; Buggey, 1995, 2005; Haarman & Greelis, 1982; Hepting & Goldstein, 1992; and Wert and Neisworth, 2003) for modifying the behavioral repertoires of individuals with developmental and intellectual disabilities. There are numerous possible explanations for the lack of success demonstrated by the current study. Participants in this study were considerably older than those in the overwhelming majority of studies examining the effectiveness of the VSM technique. It might possibly be the case that these individuals have a much more ingrained learning history that makes modifying their eating behaviors more difficult, thereby requiring the use of more intense behavior modification techniques. It is also possible that the target behaviors (i.e., appropriate napkin use and food spillage on person) were too complex to be appropriately modified using the VSM technique. For example, appropriate napkin usage requires that an individual notice the

feeling of food on his face, recognize the need for removing the food, locating the napkin, and appropriately applying the napkin to the face to remove the food. Perhaps the VSM intervention, as articulated in the current study, did not teach these steps in a manner that allowed for the participants to grasp what they were being asked to do. Furthermore, it is possible that, if the participants noticed the feeling of food on their face, they did not recognize that the necessary and socially appropriate behavior to engage in was to use the napkin to remove the food.

With many of the extant uses of VSM, the environment in which the behaviors are displayed serves to reinforce the more appropriate behavior. For instance, when using VSM to teach more appropriate social behaviors to a child, that child receives natural reinforcement from her environment when she plays appropriately with a peer on the playground. In the current study, the environment did not change when the participants modified their behavior. That is to say, if the participant was observed engaging in appropriate napkin use or their bib and clothes were clean following a meal, the social behavior of others present did not change. No one refused to interact with them if they were messy, nor did someone increase their level of engagement with the participant if they were clean and behaving appropriately.

It is possible too, that the videos themselves were too complex and taught too many behaviors at once. Each video contained footage of appropriate napkin use as well as several replacement behaviors designed to prevent food spillage on the person (i.e., take small bites, use utensils, move plates/bowls close to person, etc.). Instead, it might have been more useful to simplify the videos focusing on one target behavior at a time (i.e., appropriate napkin use or food spillage on person) instead of both simultaneously.

The literature base on VSM is strong in demonstrating the utility of VSM for children and adolescents with developmental and intellectual disabilities. Many of these interventions include the use of VSM alone or VSM in conjunction with other behavioral interventions. Future research should examine the use of VSM along with other techniques like Social Stories and more overt reinforcement to determine whether these would be useful additions to the VSM intervention, particularly for older adults.

Buggy (2009) noted that while the VSM literature base is strong, not much is known about the limits of the VSM technique. The current study demonstrates some possible instances where this technique might not be as useful- with complex social behaviors and older adult populations. Future studies should continue to empirically evaluate the limits of the VSM technique. Regardless, both significant and insignificant results are necessary to advance science (Aaronson, 1994).

List of References

- Aaronson, E. (2012). On baseball and failure. In J. Aaronson & A. Aaronson (Eds.). *The Social Animal* 10-12. NY: Worth Publishers.
- Baer, D. M., Wolf, M. W., & Risley, T. R. (1968). Some current dimensions of applied behavior analysis. *Journal of Applied Behavior Analysis, 1*(1), 91-97.
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavior change. *Psychological Review, 84*, 191-215.
- Bandura, A. (1986). *Social foundations of thought and action: A social-cognitive theory*. Englewood Cliffs, NJ: Prentice-Hall.
- Bandura, A. (1997). *Self-efficacy: The Exercise of Control*. New York: Freeman.
- Barlow, D.H. & Hersen, M. (1984). Single case experimental designs: Strategies for studying behavior change (2nd ed.). Massachusetts: Allyn & Bacon.
- Bellini, C. & 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.
- Bellini, C., Akullian, J., & Hopf, A. (2007). Increasing social engagement in young children with autism spectrum disorders using video self-modeling. *School Psychology Review, 16*(1), 80-90.
- Bray, M. A. & Kehle, T. J. (1996). Self-modeling as an intervention for stuttering. *School Psychology Review, 25*(3), 358-369.
- Buggey, T. J. (1995). An examination of the effectiveness of self- modeling in teaching specific linguistic structures to pre- schoolers. *Topics in Early Childhood Special Education, 15*, 434-458.

- Buggey, T. (2005). Applications of video self-modeling with children with autism in a small private school. *Focus on Autism and Other Developmental Disabilities, 20*, 180-204.
- Buggey, T. (2009). Seeing is believing: Video-self modeling for people with autism and other developmental disabilities. Maryland: Woodbine House, Inc.
- Cooper, J.O., Heron, T.E., & Heward, W.L. (Eds.). (2007). *Applied Behavior Analysis*. Upper Saddle River, NJ: Pearson Prentice Hall.
- Creer, T. L. & Miklich, D. R. (1970). The application of a self-modeling procedure to modify inappropriate behavior: A preliminary report. *Behaviour Research and Therapy, 8*, 91-92.
- Dowrick, P. W. (1976). Self-modeling: A videotape training technique for disturbed and disabled children. Unpublished doctoral dissertation. University of Auckland.
- Dowrick, P. W. (1999). A review of self-modeling and related interventions. *Applied and Preventive Psychology, 8*, 23-39.
- Dowrick, P. W. & Dove, C. (1980). The use of self-modeling to improve the swimming performance of spina bifida children. *Journal of Applied Behavior Analysis, 12*, 51-56.
- Dowrick, P. W. & Ward, K. M. (1997). Video feedforward in the support of a man with intellectual disability and inappropriate sexual behavior. *Journal of Intellectual and Developmental Disability, 22* (3), 147-160.
- Dovidio J. F., Major B. & Crocker J. (2000) Stigma: introduction and overview. In: *The Social Psychology of Stigma* (eds T. F. Heatherton, R. E. Kleck, M. R. Hebl & J. G. Hull), pp. 1-28. The Guilford Press.
- Haarmann, B. S. & Greelis, M. T. (1982). Video therapy case study: The therapeutic use of edited videotapes as a primary means of behavioral intervention in the shaping of

- appropriate grammatical and contextual use of language. *Journal of Special Education Technology*, 5, 52-56.
- Hartley, E. T., Bray, M. A., & Kehle, T. J. (1998). Self-modeling as an intervention to increase classroom participation. *Psychology in the Schools*, 35 (4), 363-372.
- Hepting, N. & Goldstein, H. (1996). Requesting by preschoolers with developmental disabilities: Videotaped self-modeling and learning of new linguistic structures. *Topics in Early Childhood Special Education*, 16 (3), 407-427.
- Horner, R. H., Carr, E. G., Halle, J., McGee, G., Odom, S., & Wolery, M. (2005). The use of single-subject research to identify evidence-based practice in special education. *Exceptional Children*, 71(2), 165-179.
- Hosford, R. E. & Brown, S. D. (1976). Using social modeling procedures to improve undergraduate instruction (Tech. Rep. Contract No. 8-407674-07427). Santa Barbara: University of California Innovative Teaching Project.
- Jahoda, A. & Markova, I. (2004). Coping with social stigma: people with intellectual disabilities moving from institutions and family home. *Journal of Intellectual Disability Research*, 48 (8), 719-729.
- Kehle, T. J., Madaus, M. R., Baratta, V. S., & Bray, M. A. (1998). Augmented self-modeling as a treatment for children with selective mutism. *Journal of School Psychology*, 36 (3), 247-260.
- Krantz, P. J. MacDuff, G. S., & McClannahan, L. E. (1993). Programming participation in family activities for children with autism: Parent's use of photographic activity schedules. *Journal of Applied Behavior Analysis*, 26, 137-138.

- Marcus, A. & Wilder, D. A. (2009). A comparison of peer video modeling and self video modeling to teach textual responses in children with autism. *Journal of Applied Behavior Analysis, 42*(2), 335-341.
- Miller, P.H. (2010). *Theories of developmental psychology* (5th ed.). New York: Worth Publishers. 1-4292-1634-4.
- 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* (2), 365-383.
- Pierce, K. I. & Schriebeman, L. (1994). Teaching daily living skills to children with autism in unsupervised settings through pictorial self-management. *Journal of Applied Behavior Analysis, 27*, 471-481.
- Nestor, P. G. & Schutt, R. K. (2012). *Research Methods in Psychology: Investigating Human Behavior*. Los Angeles, CA: Sage.
- Steed, S. E. & Lutzker, J. R. (1997). Using picture prompts to teach an adult with developmental disabilities to independently complete vocational tasks. *Journal of Developmental and Physical Disabilities, 9*, 117-133.
- Wert, B. & Neisworth, J. T. (2003). Effects of self-modeling on spontaneous requesting in children with autism. *Journal of Positive Behavior Interventions, 5*, 300-305.

VITA

EDUCATION:

University of Mississippi, Oxford, MS Expected 2012

Master of Arts in Clinical Psychology

Major Area of Research: Evidence based-practice for individuals with Developmental Disabilities

Academic Advisor: Karen A. Christoff, Ph.D.

Thesis Title: *The Applicability of Video Self-Modeling for Adults with Developmental and Intellectual Disabilities (December 2012)*

Committee: Karen A. Christoff, Ph.D., Chair

Karen K. Kellum, Ph.D.

John Young, Ph.D.

Harding University, Searcy, Arkansas

August 2005- May 2009

Bachelor of Arts, Cum Laude

Major Area of Study: Psychology

Undergraduate Thesis Title: *The Effects of High and Low Knowledge of Autism on the Perception of Disordered Boys with Autism and Non-Disordered Boys*

Advisor: Kenneth, J. Hobby, Ph.D.

RELATED EXPERIENCE:

Research Assistant, St Jude Children's Research Hospital

September 2012-present

Memphis, TN, supervised by Heather M. Conklin, Ph.D.

Conducted research-based neuropsychological assessments, data analysis, and assisted in the preparation of manuscripts for publication.

Intern, The Autism Center of Tupelo

January 2012- August 2012

Tupelo, MS, supervised by Scott Bethay, Ph.D.

Engaged in classroom observations to provide behavioral support as needed. Administered one-on-one early intervention for children with Autism using Verbal Behavior procedures.

Conducted parent and teacher trainings for local school districts.

Mental Health Consultant

September 2011- present

Head Start Program, supervised by Alan Gross, Ph.D.

Conducted observations of preschool classes at three Head Start centers in Mississippi.

Provided behavioral support, consultations, and assessment as needed.

Psychological Services Center, Graduate Therapist

August 2010-present

University of Mississippi Psychology Department

Provided evidence- based outpatient psychological services to adults and children and various diagnoses and needs. Utilized evidence based assessment procedures to monitor treatment effectiveness.

Therapist, Adult Services

August 2011-December 2011

Region IV Mental Health, Hernando, MS

Provided individual psychotherapy with a caseload of approximately 40 clients of a variety of diagnoses. Utilized evidence-based assessments and treatment protocols as necessary.

Intern, Education and Research

The Baddour Center, Senatobia, MS

June 2010-June 2011

Maintained a caseload of approximately 30 residents, conducted psychological evaluations, group therapy, functional assessments, and individual psychotherapy. Provided behavioral support and intervention as needed.

Teaching Assistant, Karen Christoff, Ph.D.

August 2009-May 2010

University of Mississippi, Psychology Department, Oxford, MS

Assisted with class procedures, administered and graded examinations, tutored students, supervised undergraduate teaching assistants

Teacher

May 2009-August 2009

Curtis Kindergarten and Preschool, Searcy, AR

Taught classroom of 3 and 4-year old children basic age appropriate lessons.

Teaching Assistant, Kenneth, Hobby, Ph.D.

August 2008-December 2008

Harding University Department of Behavioral Sciences, Searcy, AR

Conducted class during professor's absence, assisted in the preparation and grading of examinations, completed various other office-related tasks.

Behavioral Health Intern, Department of Psychology

July 2008-August 2008

Cook Children's Medical Center, Fort Worth, TX

Participated in summer camp for children with severe ADHD and/or mild PDD. Observed intake evaluations, diagnostic interviews, group psychotherapy sessions, and psychological assessment.

Teacher

April 2007-August 2007

Central Faith Child Development Center, Waco, TX

Taught a summer curriculum to approximately 20 children in classroom setting, including several children with special needs such as Autism, AD/HD, and ODD.

FUNDED GRANTS

Cox, L.E., Boudreaux, S., & Bethay, S. (2012). *PEERS Program*. Mississippi Council on Developmental Disabilities. 11/1/2012- 9/30/2012. \$41, 650.98.

PUBLICATIONS:

Cox, L.E. & Christoff, K.A. (2011). Beliefs about obesity. *Journal of the Mississippi Academy of Sciences*, 56(1), 116-117. (Published Abstract).

Karl, K.F., Flegle, L.B., Cox, L.E., & Christoff, K.A. (2011). Friendship presence on the playground and it's association to physical activity level: A preschool sample. *Journal of the Mississippi Academy*

of Sciences,56(1), 116. (Published Abstract).

Cox, L.E., Flegle, L.B., & Christoff, K.A. (2010). The effects of ethnicity on perception of body weight. *Journal of the Mississippi Academy of Sciences*, 55(1), 131. (Published Abstract).

ORAL PRESENTATIONS:

Christoff, K.A. & Bell, D. (2012, November). *Getting in and Succeeding in Graduate School in Clinical Psychology*. Panel discussion presented at the 2012 meeting of the Association for Behavioral and Cognitive Therapies, National Harbor, MD. Panelists: M. Antony, Ryerson University; **L.E. Cox, University of Mississippi**; D.J. Hansen, University of Nebraska;; M. Prinstein, University of North Carolina at Chapel Hill; and Jennifer Villeux, University of Arkansas.

Christoff, K.A. & Bell, D. (2011, November). *Getting in and Succeeding in Graduate School in Clinical Psychology*. Panel discussion presented at the 2011 meeting of the Association for Behavioral and Cognitive Therapies, Toronto, Ontario, Canada. Panelists: **L.E. Cox, University of Mississippi**; D.J. Hansen, University of Nebraska; R.G. Heimburg, Temple University; M. Prinstein, University of North Carolina at Chapel Hill; Jennifer Villeux, University of Arkansas; and S. Woody, University of British Columbia.

Boudreaux, S. D. & **Cox, L.E.** (2012, March, February). *The Power of Reinforcement*. Training presented to educators with the Tupelo Public School District, Tupelo, MS.

POSTER PRESENTATIONS:

Cox, L.E. & Christoff, K.A. (2012). The Applicability of video self-modeling for adults with Developmental and Intellectual Disabilities. Poster session presented at the annual meeting of the Association for Behavioral and Cognitive Therapies, National Harbor, MD.

Cox, L.E., & Christoff, K.A. (2012). Now You See It: Using Video Self-Modeling to Teach Appropriate Eating Behaviors. Poster session presented at the annual meeting of the Mississippi Psychological Society, Gulfport, MS.

Cox, L.E., & Christoff, K. A. (2011, February). Beliefs About Obesity. Poster session presented at the annual meeting of the Mississippi Academy of Sciences, Hattiesburg, MS.

Karl, K.F., Flegle, L.B., **Cox, L.E.**, & Christoff, K.A. (2011, February). Friendship presence on the playground and it's association to physical activity level: A preschool sample. Poster presented at the annual meeting of the Mississippi Academy of Sciences, Hattiesburg, MS.

Cox, L.E., & Christoff, K. A. (2010, September). Scores on EAT-26: Relationships of Usual and Ideal Body Sizes of Significant Others and Friends. Poster session presented at the annual meeting of the Mississippi Psychological Association, Biloxi, MS.

Cox, L.E., Flegle, L. B., & Christoff, K. A. (2010, February). The Effect of Ethnicity on Perception of Body Weight. Poster session presented at the annual meeting of the Mississippi Academy of Sciences, Hattiesburg, MS.

Karl, K.F., Flegle, L.B., **Cox, L.E.**, & Christoff, K.A. (2010, November). Social interaction to promote physical activity in preschool children: Can working with more active peers help? Poster session presented at the annual meeting of the Association for Behavioral and Cognitive Therapies, San Francisco, CA.