Examing Video Self-Modeling in Promoting Food Acceptance in Children with Autism Spectrum Disorder in a School Setting

Gail M. Loughlin Rogers
University of Connecticut - Storrs, gail.loughlin@gmail.com

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Examining Video Self-Modeling in Promoting Food Acceptance in Children with Autism Spectrum Disorder in a School Setting

Gail Marie Loughlin Rogers, Ph.D.
University of Connecticut

2014

Children with autism spectrum disorder have a higher incident of feeding problems as compared with typical children and children with other developmental delays, with the feeding problems more often identified as learned or behavioral. Research into the effectiveness of antecedent- and consequence-based behavioral strategies continue to grow, with most research conducted within clinical settings. As educators we strive for less restrictive and empirically validated interventions within more naturalistic settings. Despite the growing body of research as to the effectiveness of video modeling to affect change across a number of areas, research using video modeling is sparse with respect to food acceptance in children with autism spectrum disorder. The current study investigated the effectiveness of video self-modeling in promoting food acceptance in children with autism spectrum disorder in a school setting. A multiple baseline design across 3 children was employed to determine treatment effects. While data did not show a discernable intervention effect, findings highlight the need for continued research into the potential influences of family eating preferences, the impact of the characteristics of autism on early feeding experiences, such as, deficits in communication, inflexibility and rigidity, and motivation, on the development of learning histories. Further recommendations are made for earlier intervention to include parent training and support using a multi-disciplinary team approach.
Examining Video Self-Modeling in Promoting Food Acceptance in Children with Autism Spectrum Disorder in a School Setting

by

Gail Marie Loughlin Rogers

MA, University of Connecticut, 1996
BA, University of Saint Joseph, 1994

Dissertation Submitted in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy

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Doctor of Philosophy Dissertation

Examining Video Self-Modeling in Promoting Food Acceptance in Children with Autism Spectrum Disorder in a School Setting

Presented by

Gail Marie Loughlin Rogers, B.A., M.Ed.

Major Advisor

______________________________
Thomas J. Kehle

Associate Advisor

______________________________
Stephen Greenspan

Associate Advisor

______________________________
Rachelle Pérusse

University of Connecticut

2014
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Chapter 1

Introduction

Feeding problems have been found to be more prevalent in children with autism spectrum disorder (ASD) with rates reported as high as 46 to 90% (Kodak & Piazza, 2008; Ledford & Gast, 2006) and, in some cases, can been traced back to infancy (Kanner, 1943). Comparatively, rates of feeding problems in typically developing children and children with development disabilities have been much lower, with rates ranging from 25 to 33% (Bandini et al., 2010; Patel & Piazza, 2001). Whereas the etiology of feeding disorders across the general population is categorized into two clinical groups that include motor dysfunction and behavioral food refusal (or sensory-based texture aversion); feeding problems with children with ASD are more likely to be identified as learned or behavioral (Schwarz, 2003). As a result, the effectiveness of behavioral strategies in reducing problematic feeding responses (e.g., food selectivity, refusal, etc.) has been extensively studied (Ledford & Gast, 2006; Volkert & Vaz, 2010; Williams & Seiverling, 2010).

Overall, behavioral strategies (e.g., differential reinforcement, Premack principle, behavioral momentum, and texture manipulation) have been empirically supported in effectively reducing feeding problems in children (Ledford & Gast, 2006). However, a number of behavioral-based strategies used to successfully treat feeding disorders in children with ASD have included the use of more restrictive or potentially aversive procedures (Ahearn, 2002; Allison et al., 2012). These have included, for example, the use of escape extinction procedures that included nonremoval of the spoon, physical guidance (physically applying pressure on the
mandibular joint until the mouth opens), and re-presenting food that is expelled until it is eaten (Ahearn, 2002; McDowell, Duffy & Kerr, 2007).

Although effective, many of the studies utilizing these more restrictive interventions were conducted within outpatient or in-patient hospital treatment centers (Ledford & Gast, 2006; Matson & Fodstad, 2009; Sharp, Jaquess, Morton, & Herzinger, 2010) where the nature or impact of the feeding problem or disorder as well as the availability of necessary supports provided better justification for their use. Alternatively, these types of restrictive or aversive procedures may not be similarly justified for some individuals, may be viewed negatively by parents and educators who wish to approach treatment through a least-to-most hierarchy of restrictiveness (or intrusiveness), and may not be as easily accepted or accommodated when used in schools or homes.

**Statement of the Problem**

Even though the use of video modeling has been used as an effective intervention for the acquisition of skills, and in the use of decreasing behavior problems in children with autism, there is little evidence as to the effectiveness of video modeling or video self-modeling to increase food acceptance in children with ASD. The present study sought to replicate and expand on the research of Allen (2009) by using video self-modeling to increase food acceptance in three children with ASD in a school setting. There were limitations to the Allen (2009) study including the possible confound of the researcher modeling the behavior of eating the food during the baseline condition, and providing home-based applied behavior analysis (ABA) services to the participant for approximately one year, with reported stimulus control over the participant’s behavior prior to the study. Also, no data on inappropriate behavior were collected during baseline or during the intervention. In this study, data were collected on inappropriate
mealtime behavior during baseline, intervention, and follow-up sessions, and the Brief Assessment of Mealtime Behavior in Children (BAMBIC) (Hendy, Seiverling, Lukens, & Williams, 2013) that includes measurements of Limited Variety, Food Refusal, and Disruptive Behavior were collected by caregiver report. The current study expanded the research base on antecedent-based interventions, specifically the use of video self-modeling techniques, by examining the effects of video self-modeling on increasing food acceptance in children with ASD in a school setting. This research indicated that video self-modeling did not have a significant effect on the three participants to promoting food acceptance, but highlighted the need for further research.

**Purpose of Study**

The purpose of this study was to examine the use of video self-modeling as a strategy to promote food acceptance in children with ASD. Video modeling is an antecedent-based strategy with theoretical underpinnings steeped in Bandura’s observational and social learning theories, and has been identified as an evidence-based practice for children with ASD.

**Research Question.** The research question for this study examined whether or not video self-modeling promoted food acceptance as measured by an increase in target foods consumed by three children with ASD. Based on the previous success of video self-modeling interventions to affect change and help with the acquisition of new skills with children with autism, it was hypothesized that video self-modeling would also increase food acceptance in children with ASD.

**Research Design.** This study took place at a public outplacement school in the Northeastern United States that specialized in the treatment of students with ASD. At the time of the study, the school served approximately 153 students. A multiple-baseline design, across
three participants who were nominated and identified as food selective, was used to demonstrate the effectiveness of video self-modeling as an intervention to address food selectivity in children with ASD. To examine the effectiveness of video self-modeling as an intervention to promote food acceptance several steps occurred. Parents filled out an inventory of foods currently consumed by participants and families, a list of food was chosen for consideration as target food, pre-baseline probes were used to choose target foods for each participant, and then the intervention video was created for each participant. Baseline data on foods consumed without video self-modeling continued until stability was reached. The intervention was introduced to one participant at a time, with a staggered baseline across participants. Visual analysis was used to analyze the data collected on food consumed according to What Works Clearinghouse (WWC) standards (Kratochwill et al., 2010). The data points were graphed and evaluated for change over time for level, trend, and variability within each phase. This is an appropriate methodology for this study, because the research question posed examined the effect of an intervention (video self-modeling) on food consumption of individual participants. It should be noted that multiple baseline designs, compared to other single subject designs, includes the indirect demonstration of experimental control. That is, due to the nature of the design, replication of treatment effects are indirectly evidenced across participants and, subsequently, is viewed as a less powerful demonstration of experimental control compared to withdrawal designs (Richards, Taylor & Ramasamy, 2014). However, the use of multiple participants, allows multiple opportunities to demonstrate generality of treatment effects.

**Ethics and Consents**

The Internal Review Board (IRB) reviewed and approved all consent forms, recruitment procedures, research plans, instrumentation, and procedures (including timelines for study) prior
to beginning the study. The researcher successfully completed required modules of Human Subject Research Curriculum prior to approval. Written permission to recruit students at the school was given by the school’s executive director (see Appendix A) as well as the director (principal) (see Appendix B), and parental permission was required prior to beginning the study. It was expressly indicated that their child’s participation was voluntary, any data gathered would not be part of their child’s education record, and all data would be kept confidential. Parents were also informed that they could withdraw their child from the study at any time and, if their child indicated that they did not want to participate, they could withdraw at any time. Child assent was also obtained from each student participant.
Chapter 2

Literature Review

This review of the research includes an overview of the prevalence of ASD and associated characteristics. An examination of feeding disorders in children in general, how typical developing children, children with developmental delays, and children with ASD compare and contrast, as well as how the underpinnings of ASD may lead to feeding problems are included in this review. Current methods of assessing feeding disorders, and behavioral based strategies are reviewed including antecedent- and consequence-based strategies. The theoretical underpinnings of observational learning and social theory are discussed, as well as the use of peer-mediated interventions. Also include is a brief history of the use of video modeling, and the success of video modeling with typical children and with children and adults with ASD and developmental delays. Lastly, a review of current research using video modeling to increase food acceptance, and a rationale for the importance of continued research into video modeling as an antecedent-based strategy.

Prevalence of Autism Spectrum Disorder

The most recent estimates indicated that ASD impacts 1 in 68 children across all racial, ethnic, and socioeconomic groups (Centers for Disease Control and Prevention, [CDC], 2014; Elsabbagh et al., 2012). As widely reported, prevalence statistics reflect a steady increase in the number of children diagnosed with ASD. That is, according to the CDC, in 2000, prevalence rates were estimated to be 1 in 150. Indeed, current estimates suggest a dramatic increase in the number of children diagnosed with ASD. ASD is characterized by deficits in social communication and social interactions with the severity of the disorder measured by both the level of support, and the restricted, repetitive behaviors (e.g., inflexibility, difficulty coping with
changes, repetitive or restrictive behaviors that impact or interfere with functioning and daily life), that may or may not be associated with intellectual or language impairment (American Psychiatric Association [APA], 2013).

**Feeding Disorders**

Feeding disorders in the general population were classified as either organic or functional in nature and in 1994 were estimated to affect up to 25% of infants and children (Babbitt et al., 1994). Organic/functional factors can include motor disorders that impair the function of eating include swallowing disorders (oropharyngeal dysphasia) and esophageal disorders (esophageal functioning), oral motor disorders which include abnormalities with sucking, chewing, moving food side to side, swallowing dysfunctions, and structural defects (Schwarz, Corredor, Fisher-Media, Cohen, & Rabinowitz, 2001). Also included in organic/functional factors of feeding disorders is gastroesophageal reflux (GER) where the contents of the stomach flow back into the esophagus. This condition (GER) was diagnosed in approximately one-third of the children referred for feeding problems (Rommel, DeMeyer, Feenstra, & Veereman-Wauters, 2003).

Behavioral feeding problems or aversive reactions to food reported or observed included gagging, choking, spitting up or vomiting, and food refusal that are unrelated to neurological dysfunction, and sensory-based (textural) feeding disorders (Schwarz, 2003). These behaviors may have been shaped by a history of medical treatment, or by consequence used by caregivers during meals (Volkert & Vaz, 2010). While these behaviors can occur in typical children when new foods are introduced, most resolve in time, without treatment. A feeding disorder or problem exists when the behavior does not resolve, and the severity of the behavior impacts the nutritional intake, whether or not the impact is reflected in weight gain or loss (Babbitt et al., 1994).
Feeding Problems in Children with ASD

Not only are feeding problems more prevalent in children with ASD when compared with children without ASD, feeding problems are also more often classified as behavioral than functional disorder (Schwarz et al., 2001; Schwarz, 2003). Kanner (1943) described feeding problems in more than 50% of his case studies diagnosed with ASD. He described “food as the earliest intrusion brought to the child from the outside” and commented “… anxious to keep the outside world away, indicated this by the refusal of food” (p. 244). But there is also evidence to suggest that children with ASD can have comorbid medical problems that could influence food refusal such as GER, constipation, vomiting, and undiagnosed food allergies (Bandini et al., 2010; Luiselli, Ricciardi & Gilligan, 2005; Matson & Kuhn, 2001; Schreck, Williams & Smith, 2004). The impact on families may also include added stress, the need for elaborate accommodations during mealtimes, and may lead to isolation of a child with ASD from the family during meals (Ausderau & Juarez, 2013; Schwarz, 2003).

The reason that children with ASD have a higher incidence of eating problems is unknown. Although suggested, the causal relationship between characteristic attributes of ASD, including perseveration, impulsivity, fear of unknown, sensory impairment, concentration on details, lack of social compliance (Cumine, Leach, & Stevenson, 2000), restricted interests and activities (Ahearn, Castine, Nault, & Green, 2001) and feeding disorders, have not been proven empirically (Schreck & Williams, 2006). While a causal relationship between specific attributes of ASD and feeding disorders may not have empirical support, children with ASD may exhibit more learned responses that are maintained by a number of variables (escape, avoidance, attention) due to the nature of ASD in general.
The most common feeding problem reported and researched in children with ASD is food selectivity or food refusal. Food selectivity can include eating a narrow range of foods (e.g., only certain colored foods, foods of a particular texture (crunchy), only one brand, or extremely hot foods, or can include food refusal (e.g., turning head when offered food or not opening up mouth to accept food). Additionally, parents report adverse reactions to new foods (e.g., refusal, aggression, and self-injury), limited feeding skills (fine motor movements), limited selection from food groups, or eating only one particular food for a period of time then changing which food they will eat (Schreck & Williams, 2006). Inappropriate behaviors during mealtime associated with selectivity or food refusal can include aggression, property destruction, or batting away and throwing food (Levin & Carr, 2001; Piazza et al., 2003). Children with ASD with liquid avoidance or a restrictive intake of fluids may, when presented with liquids or non-preferred liquids, exhibit similar inappropriate behavior observed with food selectivity. Other eating problems include packing or food retention (Buckley & Newchok, 2005; Patel, Piazza, Layer, Coleman, & Swartzwelder, 2005), and rapid eating (Anglesea, Hoch & Taylor, 2008; Lennox, Miltenberger & Donnelly, 1987; Wright & Vollmer, 2002). Findings from a longitudinal investigation (over a 20 month period) indicated that when children with ASD were identified with selective eating problems, it was more likely a chronic problem that did not resolve without treatment (Suarez, Nelson & Curtis, 2013).

Assessing Feeding Disorders

Cooper, Heron and Heward (1987) postulated that behavior is fluid over time, and is dependent on the interactions with the environment, past and present, but that the occurrence of events (behavior) is a function of the relationship to, or determined by, other events. Subsequently, in an effort to better understand the function of a behavior associated with a
feeding problem, a number of observations and measures from multiple sources must be gathered. Assessing feeding problems may include a number of direct and indirect means such as detailed interviews with caregivers across multiple settings, food inventories or logs, and tracking the frequency of behavior on ABC (antecedent/behavior/consequence) charts.

Parents/caregivers or direct care staff typically report behavior via indirect measures either in an interview format or by filling out rating instruments that may or may not include a Likert scale, frequency or severity measures. These measures are useful in defining problem behaviors, determining the severity of the problem, gaining an understanding on when the problems may occur, are useful in developing an overall picture of the child, and in the development of assessment-linked interventions.

There have also been a number of diagnostic instruments developed to assess eating disorders and associated eating behaviors in children referred to hospitals and clinics for feeding disorders. These have included, for example, the Children’s Eating Behavior Inventory (CEBI; Archer, Rosenbaum & Streiner, 1991), and the STEP-CHILD (Seiverling, Hendy, & Williams, 2011) designed to identify child feeding problems including, chewing problems, rapid eating, food refusal, food selectivity, vomiting, and stealing food. When assessing the impact of the feeding problem on the parent(s), researchers have utilized the About Your Child’s Eating (AYCE; Hobart Davies, Ackerman, Davies, Vannatta, & Noll, 2007) to specifically target the parent-child relationship during meals.

One of the only measures specifically designed for children with ASD is the Brief Autism Mealtime Behavior Inventory (BAMBI; Lukens & Linscheid, 2008). This 18-item parent/caregiver report of mealtime problem behaviors supports three factors including Limited Variety, Food Refusal, and Features of Autism. The Brief Assessment of Mealtime Behavior in
Children (BAMBIC; Hendy, et al., 2013) was recently revised from the original 18-item BAMBI to encompass a wider selection of children with feeding problems.

Other instruments that target problem behaviors in addition to food refusal or selectivity include the Atypical Behavior Patterns Questionnaire (ABPQ; Dominick, Ornstein Davis, Lainhart, Tager- Flusberg & Folstein, 2007) that focuses on problems related to sleep, eating, self-injury, temper tantrums, and aggression via parent report. The Questions about Behavioral Function (QABF; Paclawskyj, Matson, Rush, Smalls, & Vollmer, 2000), a 25-item questionnaire completed by caregivers or direct care workers, was designed to facilitate functional behavioral assessment of problem behaviors with persons with developmental disabilities.

As important as these indirect methods of collecting historical information are, caregivers’ reports are based on recollections of problem behaviors over time. Indirect methods often come with personal bias, and personal (and possibly preconceived) judgment as to what may be maintaining the behavior (Floyd, Phaneuf, & Wilczynski, 2005). Most importantly, indirect methods are not linked directly to observable behavior. For a more complete and accurate picture of the problem behavior, direct measures are preferably included.

Direct measures rely on direct observations of behavior. Direct measures include observations of the child during mealtimes, preferably over a number of days, and across multiple settings (home, school, daycare) and with multiple caregivers, if possible. Food logs can be kept (versus food inventories) that record actual foods consumed or offered over a three to five day period of time. Videotaping mealtimes over a number of days and across environments could also be used to gather frequency data on problem behaviors.

Piazza et al. (2003) attempted to use a naturalistic approach to assess feeding disorders in a hospital setting. Parent responses to behaviors exhibited during feeding their children at the
hospital (observed through a one-way mirror) as well as child behaviors were recorded. Results indicated that all of the parents in the study removed bites following inappropriate behavior, and three out of six parents gave their child a tangible item when they engaged in inappropriate behavior. Results support the difficulty of evaluating the consequences that affect behavior in a naturalistic setting without the use of systematic manipulation to test if a consequence functioned as a reinforcer for the behavior (Lerman & Iwata, 1993). However, conducting these types of systematic manipulations (e.g., functional analysis) can be problematic in naturalistic settings.

Assessing food problems in school settings for children with ASD and selective eating issues can present a number of challenges. For example, food selection may be limited to either what parents send in for lunches, or restricted by diet, or to options served at lunch (i.e., what is available). Children with ASD may also be reinforced throughout work sessions with preferred edibles, have opportunities for snacks, and are usually offered a variety of preferred foods (pretzels, popcorn, cookies, etc.). Consequently, limited progress when implementing an intervention within a school setting may not be a result of the intervention, but of variables that are not fully under the control of the experimenter.

Behavior analysts specifically trained in experimental manipulation can also systematically identify what is maintaining a behavior by setting up a number of conditions that include escape, attention, and tangible items. Completing a functional analysis within public schools requires trained behavior analysts, having an appropriate place to conduct the conditions, removing the child from the classroom for extended periods of time, and the risk of increasing self-injury or aggression with the presentation of food (Levin & Carr, 2001).
Current Intervention Strategies for Food Selectivity and Food Refusal

Sharp et al. (2010) conducted a comprehensive literature review of 48 studies on intervention strategies used on feeding selectivity and food refusal between 1984 and 2009. Results indicated that 89% of the studies included an extinction component (48% non-removal of the spoon; 21% physical guidance; and 25% used ignoring or non-removal of the plate/food); 77% included differential reinforcement; 10% included non-contingent reinforcement; 46% used antecedent manipulation or fading strategies, and 10% included punishment. Of those studies, 44% were conducted within an in-patient setting, and 27% took place in day treatment, residential or outpatient treatment programs. Only 29% of the studies reviewed were conducted within schools or homes.

Most interventions include either a consequence-based intervention that include a reinforcer or a punisher delivered after a behavior is observed or antecedent-based interventions that include strategies that can modify the environment prior to a response, so that response (behavior) is less likely to occur. Consequence-based interventions are often used when the function of the behavior is maintained by avoidance, attention, access, and escape or any combination (Sharp et al., 2010). Treatments for food selectivity or food refusal most commonly included positive reinforcement paired with escape extinction (Ahern, Kerwin, Eicher, Shantz, & Swearingin, 1996; Babbitt et al., 1994) by delivering praise or access to preferred items after consuming food. Escape extinction components involved physical guidance or non-removal of the spoon until the food is eaten.

Buckley, Strunck, and Newchok (2005) included a response cost (RC) condition (removal of preferred item for food refusal) returning the item when food was accepted, and the non-contingent (NCR) presentation of a reinforcer plus response cost condition. Results
indicated that combination of NCR plus RC condition produced the highest percentage of food consumption, and a more rapid decrease in problem behavior. The benefits of adding NCR may include minimizing or eliminating the negative side effects of extinction bursts that may include an increase in self-injury or aggression (Sharp et al., 2010; Wilder, Normand & Atwell, 2005).

Some of the antecedent-based interventions that have shown promising results in the treatment of feeding problems included high-probability instructional sequencing (Dawson et al., 2003; Patel et al., 2007), repeated taste exposure (Paul, Williams, Riegel, & Gibbons, 2007; Williams, Paul, Pizzo, & Riegel, 2008), simultaneous (Ahearn, 2003; Piazza et al., 2002) sequential food presentation (Pizzo, Coyle, Seiverling, & Williams, 2012), stimulus fading with texture fading (Shore, Babbitt, Williams, Coe, & Snyder, 1998) and blending (Mueller, Piazza, Patel, Kelley, & Pruett, 2004).

Laud, Girolami, Boscoe, and Gulotta (2009), used the largest sample size of children with ASD to date to conduct a multidisciplinary team and multi-component approach with 46 children admitted to an intensive day and inpatient feeding program. The feeding program involved extensive medical evaluations, three hours of behavior therapy including systematic meal sessions including antecedent- and consequence-based interventions, and an hour a day of oral motor and skills training. The average length of stay in the program was reported as 47 days, with an average of 149 sessions. Results indicated that an intensive interdisciplinary feeding program was effective for a large group of children with ASD in improving feeding behaviors. While this study was impressive, the reality of implementing intensive feeding programs within a school is not feasible, nor warranted. Other less intensive interventions such as peer modeling and video modeling have been used for skill acquisition and as a behavioral interventions across
typical children and in populations with special needs, but the use of these evidence-based practices on the influence of food preferences, and food acceptance is limited.

**Peer Mediated Procedures to Address Food Preferences and Problems**

Most research utilizing peer mediated or peer modeling techniques has been limited to use with typical peers to influence food preferences (Sira & Fryling, 2012). The effects of children watching television commercials on eating preferences, and the effects of children viewing cartoon ‘heroic peers’ eating vegetable and fruits indicates that children’s preferences can be readily influenced by what they see peers doing (Borzekowski & Robinson, 2001; Horne et al., 2004). Horne et al. (2011) increased nursery school children’s preferences for fruits and vegetables by pairing video modeling and rewards (e.g., stickers, badges, and toys).

Few studies have used peer-mediated procedures to increase food acceptance in children with feeding disorders. Greer, Dorow, Williams, McCorkle, and Asnes (1991) found that using peer models in combination with reinforcement was effective with increasing food intake. Sira and Fryling (2012) expanded on the prior study by investigating the use of a peer model and differential reinforcement to address food selectivity in a child with autism. The child observed her younger sister eating three identified target foods and then being rewarded. Both children were given the same instructions to “take a bite”, with the model going first. The participant watched her sister eat a bite, and get a highly preferred stimulus. Then the same food and instruction was presented to the participant. The treatment package that included peer modeling and differential reinforcement was effective in increasing food acceptance in the child with ASD.

While there have been some promising results with studies using observational learning, individuals with autism often lack the very skills necessary to benefit from observation learning including discrimination and the ability to attend to salient details within their environment
(Hume, Loftin, & Lantz, 2009; Shic, Bradshaw, Klin, Scassellati, & Chawarska, 2011) and they may learn best through visual means (Ganz, Earles-Vollrath, & Cook, 2011). Observational learning has been extended from live models over the past 44 years, to videotaping of modeling as a means to teach new skills, and make meaningful change in the lives of children and adults across a wide range of areas and therapeutic settings (Bellini & Akullian, 2007; Dowrick, 1999).

**Observational Learning and Social Theory**

Bandura (1986) broadly defined modeled behavior as a demonstration of behavior that can be imitated, whether presented live, videotaped, or imagined. Plavnick & Hume (2013) makes the distinction between imitative behavior that is strengthened by the direct contact with consequences, and observational learning, when a learner observes not only the action to be imitated, but also the consequence for engaging in the behavior. According to Bandura (1977; 1986), observational learning (one aspect of social learning theory) involves two types of learning (a) imitation (reproducing a modeled behavior), and (b) vicarious learning (when the observer’s behavior is influenced by the response consequence of the behavior observed). For observational learning to take place, Bandura (1986) describes four conditions the observer must possess including (a) attention to the model, and focus on the task or event, (b) ability to retain the information observed and retrieve the information to reproduced the behavior at a later time, (c) adequate motor skills in their repertoire to reproduce the action or skill, and (d) the motivation to reproduce the behavior.

Bandura’s model of social development (social learning theory) examines how experiences observed through either direct or indirect means influence behavior and development. Grusec (1992) addressed the component of ‘attention’ as being determined by the
“power and attractiveness of the model as well as the conditions under which behavior is viewed” (p. 781). He further described television as one way to capture and hold attention, and that observing the fluid motion of an action may be more easily converted into reproducing the action versus simple imitation.

**Video Modeling**

There are three types of video modeling: video modeling using others as models, video self-modeling (VSM), and ‘point of view’ video modeling viewed from the participant’s (learner’s) point of view. In video modeling a peer or adult performs the target behavior, the participant watches the video, and either immediately, or shortly afterwards, attempts to perform the target behavior viewed (Haring, Kennedy, Adams, & Pitts-Conway, 1987). In video self-modeling, the participant is the model. The video is edited to eradicate any errors or inappropriate behavior, including all prompting that may have been necessary to elicit the correct target behavior. What is left is an edited film that depicts the participant performing the target behavior unprompted, and without errors (Dowrick, 1999). The third type of video modeling is ‘point of view’ modeling. In this video, the camera is held behind the participant as the participant’s ‘eyes’, and records exactly what the participant will see and do. In the making of this video, there can either be an adult, peer, or the participant since the face is never shown in the video (Hine & Wolery, 2006).

Video prompting can be considered a separate strategy of video modeling and is generally videotaped from the perspective of the participant (point of view). Instead of one seamless video of the activity, a number of clips are created, and each clip depicts one step of the task. The participant has the chance to practice the step to mastery before viewing the next clip.
Cannella-Malone et al. (2006) found video prompting more effective than video modeling for teaching complex multi-step tasks.

The advantages of video modeling over the use of live models are that the videos can be used by multiple learners, instructions and procedures are consistent, videos allow the learner to replay the same clip over, or watch multiple exemplars of the behavior, and once the video is complete, does not require the time of the live model (Plavnick & Hume, 2013).

**Video Modeling Applications**

Creer and Miklich (1970), in one of the first published studies of video self-modeling, investigated the effects of participating as the ‘actor’ and viewing a videotape of appropriate and inappropriate behavior chains on changes in observable behavior. Results of the study indicated that viewing appropriate behavioral responses was more effective in changing behavior. Kehle, Clark, Jenson, and Wampold (1986) examined the use of video modeling in a classroom to decrease off-task behavior of four behavior-disordered boys in a self-contained classroom. Three of the boys watched edited versions of only exemplary classroom behavior, and one boy watched an unedited video. Despite the difficulties noted in the boys attending to the entire 11-minute self-videos, results were immediate, disruptive behavior of the three boys that viewed the edited videos decreased, and increased in the boy who watched in unedited version. Other applications using self-video modeling in classrooms have included increasing reading fluency (Bray, Kehle, Spackman, & Hintze, 1998), promoting achievement behaviors during cognitive skill learning (Schunk & Hanson, 1989), increasing on-task behavior and reducing disruptive behavior (Clare, Jenson, Kehle, & Bray, 2000; Lonnecker, Brady, McPherson, & Hawkins, 1994; Possell, Kehle, McLoughlin, & Bray, 1999; Walker & Clement, 1992; Woltersdorf 1992), and increasing student classroom participation (Hartley, Bray, & Kehle, 1998). Video-self-modeling
has been used as an intervention to decrease the frequency of stuttering (Bray & Kehle, 1996; 2001), increase reading fluency (Bray et al., 1998), and to teach linguistic structures to preschoolers (Buggey, 1995). Video self-modeling has also been used to remediate selective mutism in children (Holmbeck & Lavigne, 1992; Kehle, Madaus, Baratta, & Bray, 1998; Kehle, Owen & Cressy, 1990; Pigott & Gonzales, 1987).

Applications using VSM outside the classroom have also been successful. For example, researchers have used VSM to increase balance beam performance (Winfrey & Weeks, 1993) increased swimming performance in children with spina bifida (Dowrick & Dove, 1980), and perceptual-motor skills (i.e., ball play, dressing, and feeding) in children with cerebral palsy and spina bifida (Dorwick & Raeburn, 1995). Several studies have also used video modeling, video self-modeling, and video prompting with adults with developmental disabilities to enhance and teach functional skills. Dorwick and Hood (1981) compared the use of a reward system to the use of video self-modeling on productivity in a sheltered workshop environment. Results indicated that output and performance increased with the addition of video-self modeling. Bidwell and Rehfeldt (2004) used video modeling to teach three adults to make and serve coffee. Video prompting has been used with adults with developmental disabilities to teach clothes washing (Horn et al., 2008), and using a microwave and dish washing (Sigafoos et al., 2005; Sigafoos et al., 2007).

**Video Modeling with Children with ASD**

Video-modeling techniques offer the use of evidence based practices for children with ASD who have difficulties acquiring skills through traditional teaching methods and transferring skills to other environments (Bellini & Akullian, 2007). Corbett and Abdullaht (2005) hypothesized that the unique characteristics of autism that include over-selective attention, a
preference for, and strength in processing visual versus verbal stimuli, avoidance of eye contact and social contact, and restricted attention, may increase the effectiveness of video modeling. Video modeling offers an opportunity for repeated presentation and practice of the target skill, and the ability to restrict the field of focus by using a limited visual and auditory field. Two meta-analyses (Bellini & Akullian, 2007; Delano 2007) that included 22 single-subject design studies that used video modeling and video-self modeling with children and adolescents with ASD, indicated that both were effective interventions for the acquisition of daily living and play skills, increasing social communication and socially appropriate behaviors, and mediating challenging behavior. Research thus far has not indicated the benefit of using video modeling versus video self-modeling (Gelbar, Anderson, McCarthy, & Buggey, 2012).

Video modeling techniques have been effective in addressing deficits in children with ASD across a number of skill areas as in social skills during play activities including sharing, spontaneous requesting and social interactions, enhancing communication skills, joint attention, cognitive and academic skills, school readiness, motor skill acquisition, adaptive living skills, behavioral issues, and teaching vocational skills (Gelbar et al., 2012; Wong et al., 2013).

Language and social skills. Charlop and Milstein (1989) increased conversational speech in three children with ASD, after implementing a video modeling procedure using adults as models in the videos depicting appropriate social conversation. Spontaneous requesting in children was enhanced by the use of VSM by Yingling Wert and Neisworth (2003) with four children (4 through 6 years of age) with ASD. Adult prompters modeling the appropriate responses to create the 5-minute orchestrated request for materials during a play sequences that were edited to only show appropriate responses by the peer. They also noted that although one of the boys was not interested in seeing himself on video, he did increase the rate of spontaneous
responses (with increased trials as compared with the children that attended to the videos). D’Ateno, Mangiapenaello, and Taylor (2003), used video modeling to teach three multi-step play sequences that included verbal and motor responses to a 3 year, 8 month old girl with ASD. An adult was used as the model in the video that depicted a play sequence that included manipulation of objects and verbal statements. The scenarios included a tea party with a doll, baking with a toy baking set, and shopping (with toy shopping cart and plastic foods). After viewing the video, verbal responses and motor movements were recorded and results indicated that with the use of only video modeling (no other reinforcement), the number of scripted (imitated from the video) verbal statements, and modeled motor movements with the toys increased. But the were no reported unscripted verbal or novel motor movements recorded.

Several studies incorporate video modeling to increase social language and communication skills during play activities. Taylor, Levin, and Jasper (1999) used siblings as peer models in videos depicting a series of play sequences that were scripted in advance. The sibling either read from a script, or played with toys and made comments, while the experimenter sat next to the child with ASD. If an appropriate comment was made, the child was reinforced with an edible, if no comment or appropriate motor action was made, the experimenter would make appropriate comments and motor movements. Prior to the next play session with the sibling and adult, the video was viewed by the child, and responses recorded. Results of the study indicated that video modeling and reinforcement for appropriate responses was effective in increasing scripted motor and verbal responses between the child with autism and his sibling. Similar to findings of previous research (D’Ateno et al., 2003) no increase in novel responses were noted.

**Play skills.** Using video modeling has also been shown effective in teaching children with ASD socio-dramatic play skills. Ozen, Batu, and Birkan (2012) extended video modeling
to include a small group of three 9 year-old boys who were shown a video of a scenario in which each student was given a specific role to play from the scenario (14 to 21 steps each). There were three scenarios, a visit to the hospital, a lunchroom, and a classroom. Three senior students were used as models in the videos. The participants watched the videos, and were told to learn their parts. Then data were recorded on performance that included approximating the content and volume of the conversation, motor actions, and looking at who they were talking to. During viewing of the video, participants were given praise for paying attention, and for correct responses during practice of the scenarios. Extending this study for the first time in the literature using a small group arrangement, the researchers added an observational learning session when all of the participants met mastery criteria. Participants were given a different role (one they had observed the other participants modeling during practice) and asked to perform the same scenario. The participants were able to change roles and perform without additional training. The participants were also asked what the benefits of the study were and replies included, more independence in environments that they play roles, and that they would be able to take part in the school plays with peers (p. 89).

**Academic skills.** There is little research on the effects of video modeling on teaching academic skills to children with ASD. Early work by Haarmann and Greelis (1982) investigated the use of video self-modeling, rehearsal, and social reinforcement on increasing the mean length of responses, and appropriate grammatical and contextual use of language. Videotapes were edited to contain only grammatically correct responses. During the first phase of treatment, the participant viewed a segment of the video that included a scripted verbal response in a full sentence, and also the written response. In the next phase, the videotape included only the verbal responses so to better emulate generalization to natural settings. The use of videotapes as models
for contextual language were faded, and follow up results indicated the participant maintained
skills acquired during treatment. Marcus and Wilder (2009) compared peer modeling to video
self-modeling with three children with ASD (two boys ages 4 and 9; one girl, age 9). Two
separate videos, one that depicted a peer as a model and the other a ‘self’ videotape were created
to present five novel letters (each phase consisted of only one type of video, self or peer).
Results indicated that all three children learned all of the letters taught when presented in VSM
format, and only one out of three children mastered all of the letters in peer-model videos, with
the other children requiring additional sessions to achieve 80% mastery criteria. The results of
this study indicated that video self-modeling was more effective in teaching novel letters.

Functional math skills are essential skills for adolescents and adults with autism. Video self-
modeling was used to teach four adolescents with autism how to solve math problems to estimate
how much money they would need to buy items at a store, and how much change they will get
back from their purchase. The videos viewed on an iPad, were developed to show each student
successfully completing a math story problem. After viewing the video of themselves correctly
solving the problem, they were asked to solve the problem using paper and pencil. Results
indicated that improvement in solving math problems was only noted after implementing the
VSM intervention.

**Behavioral issues.** Video modeling has been used to decrease inappropriate behaviors in
children with autism in response to transitions within their day, and transitioning to unfamiliar
places by way of priming for upcoming transitions (Schreibman, Whalen, & Stahmer, 2000).
The video was taped using ‘point of view’ video modeling, as if the child was walking through
the transition (in the case of one participant, from one store to another). Videos included going
to a mall (including moving throughout the store and leaving preferred areas of the store to less
preferred areas and to other stores), and leaving the house (toileting, washing face and hands, putting on his shoes, and walking to the car in the garage). Disruptive behaviors included whining, crying, screaming, dropping to the ground, pulling or grabbing, and aggression. Prior to transitions, the children were shown the video and then immediately transitioned to the activity. All three children were able to successfully reduce disruptive behavior during transitions after viewing the video modeling, generalize to similar situations, and maintained during one-month follow-up.

**Daily living skills.** Peer models were used in videos to increase purchasing skills with adolescents with ASD across nearby community settings (Haring, et al., 1987). In a comparison study, Van Laarhoven, Kraus, Karpman, Nizzi, and Valentino (2010) used video prompts and picture prompts to teach daily living skills to two adolescents. Both participants were taught two different skills using each instructional method that included folding laundry and making pasta in the microwave. The same male adult was used as the model in each video clip that showed each step in the task (with voice over instructions embedded), and in the photographs that showed the steps of the task. Results indicated that although both methods were effective in teaching the skills, both students engaged in more independent correct responding with the video modeling. The researchers also indicated that the time invested in making the video using an adult model was less than with taking and editing the pictures. Shipley-Benamou, Lutzker, and Taubman (2002) used video modeling viewed from the perspective of the child to successfully teach a variety of daily activities that included making orange juice, preparing and mailing a letter, table setting, and caring for a fish.
**Video Modeling and Feeding Disorders**

Research in the use of video modeling to treat feeding disorder in children with ASD is sparse. In an unpublished thesis, Allen (2009) investigated the effect of video modeling as a strategy to increase food acceptance with a four-year old child with PDD and mild food selectivity in a home-based program. Prior interventions including the use of a visual countdown board, positive reinforcement, a first/then board, and exposure (touch, smell, kiss and licking food) had been unsuccessful in increasing food acceptance. The decision to use video modeling was made because the participant had successfully increased targeted daily living skills using video modeling. After viewing a videotape of the therapist (experimenter) consuming food, the child consumed the first targeted food after the first presentation of the video, and a new food was consumed in each of the next three sessions during the video modeling condition. Follow-up probes were conducted for each food at three, four, five, and six months without the use of video modeling, and the participant continued to eat the novel foods. Differential reinforcement and consequences were not in place during any of the procedures.

**Rationale for the Current Study**

As educators and parents look for less restrictive and empirically validated interventions, researchers have offered many alternatives. One such intervention that meets evidence-based criteria with children with autism in school settings for skill acquisition and affecting change in behavior is the use of video modeling (Gelbar et al., 2012). For example, video modeling techniques and been show to facilitate social initiations (Buggey, Hoomes, Sherberger, & Williams, 2011), decrease off task behavior (Greelis, & Kazaoka, 1979), and help with transitions (Cihak, Fahrenkrog, Ayers, & Smith, 2010). Unfortunately, there are no published studies that have specifically examined the effects of video modeling on feeding problems with
children with autism. As noted, the one unpublished master’s thesis by Allen (2009) may be the only empirical evaluation specifically examining the effects of video modeling on food acceptance.
Chapter 3

Research Methods and Procedures

This chapter describes the methodology used in the multiple baseline design across three participants that were food selective. The purpose of the study was to test the hypothesis that video self-modeling would increase food acceptance in children with ASD in a school setting.

This chapter has three main sections that include Participants and Setting, Instruments and Materials, and lastly study Procedures. The first section details recruitment of staff, parental involvement, and the student selection process. The next section, Instruments and Materials offers background on the three instruments used to collect data on feeding problems as reported by the parents, current food preferences of both the families and the participant, and an intervention acceptability measure. The last section is broken down further to allow for replication of the study, and includes details of the screening process, selections of target foods, the making of the intervention self-modeling videos, measurement and collection of data, baseline collection, intervention, and follow-up data procedures.

Participants and Setting

Researcher

The researcher and primary data collector for this study was a licensed school psychologist and a Board Certified Behavior Analyst. At the time of the study, the researcher had been employed at the school for fifteen years and had extensive experience working with students with ASD. The participants used in this study were not on the researcher’s caseload, and had not previously been evaluated by this researcher.
Teacher and Support Staff Recruitment

Teachers and support staff were orally given general research study information with instructions to contact the researcher if they would like to participate in the study. Teachers and support staff expressing an interest in participating in the study were contacted to discuss the details of the research study, including the risks and benefits (see Appendices C and D). At the end of the meeting, an outline of the procedures and consent form (see Appendices E and F), including details of the material reviewed in the meeting, were given out. Teachers and support staff willing to participate in the study were asked to complete the consent form.

Support Staff

Three Board Certified Behavior Analysts volunteered to take part in the study and were utilized to (a) videotape sessions, (b) collect data during baseline, intervention, and follow-up sessions, (c) collect IOA data and treatment integrity data, and (d) present food and prompting during the making of the self-modeling video.

Student Selection

Teachers and clinical staff that serviced students aged 5-years to 12-years on their caseload or in their classrooms, were asked to nominate students with ASD that demonstrated food selective feeding problems. A total of 41 students were enrolled during the nomination period, of those students, two students were disqualified due to child service guidelines, five students had diagnoses other than ASD, two students had extended vacations planned during the study, additionally, four students had medical conditions precluding them from the study. Five of the remaining 30 students diagnosed with ASD were nominated for the study.
**Parent Permission and Student Assents**

Once a student had been nominated, parents were contacted by telephone to describe the research study in detail, including the risks and benefits (see Appendix G). Parental Permission Forms (see Appendix H) and Photo/Video Release Forms (Appendix I) were reviewed with the parent(s) and sent to parents that expressed an interest in having their child participate in the study. Once parental permission was returned, a review of their diagnosis was made (via educational records) to ensure that they meet the criteria for ASD. The parents completed the Participant Intake Questionnaire (see Appendix J), which was designed by the researcher, to ascertain if their child had any allergies or sensitivities to foods, or any other medical issues regarding feeding (e.g., swallowing issues, gagging), and if any outside interventions or therapy had taken place (i.e., speech, occupational therapy, physical therapy, or behavioral services). Parents also completed the Brief Assessment of Mealtime Behavior Inventory in Children (BAMBIC) as a screening tool for feeding problems, and the Food Preference Inventory to gather information on what foods their child was currently consuming, and what foods were normally eaten by the participant’s family. Student assents were signed by two of the participants, and verbally agreed to by the third participant (see Appendix K).

**Student Selection Criteria**

The first five students nominated, and had parental permission, were further screened. Student participants were selected based on the following criteria (a) diagnosis of ASD and currently receiving special education services under either Autism or Multiple Handicapped, (b) nominated by teacher, or clinical staff as exhibiting selective eating, (c) ability to attend to a video of oneself for at least two minutes, (d) demonstrated the ability of self-recognition, and (e) demonstrated safe feeding/swallowing.
Student Participants

Five students (four males, one female; age range 9 to 11 years old) from a public special education school in Northeastern United States were nominated for this study. The school serviced approximately 153 special education students (130 males; 23 females at the time of census of May, 2014) from two states (approximately 48 school districts), and specializing in the treatment of students with ASD. Of the five student participants nominated, and meeting the criteria for screening, two participants were excluded from the study during the making of the intervention video process due to an escalation in inappropriate and unsafe behavior. Three participants (two males, one female) completed the research study. Pseudo names were assigned to the participants for confidentiality. Brief histories of each participant were gathered from teacher and support staff interview, educational record review, parent interview, review of Participant Intake Questionnaire responses, responses from Food Preference Inventory, as well as from direct observations of participants.

Frank was a 10-year 7 month-old boy with a diagnosis of ASD, and a previous diagnosis of GER that required medication until 18 months of age. Frank’s cognitive ability was assessed in 2011 using the Wechsler Intelligence Scale for Children – Fourth Edition (WISC-IV). On that testing occasion, Frank earned a Full Scale IQ score of 52, with behaviors noted in the psychological report including echolalia and scripting, throwing materials, and inattention to materials. It was also noted that testing was completed over one month in mini sessions due to his behavior. Frank received occupational therapy to address fine motor weaknesses. Frank’s adaptive functional skills included the ability to write all lower case letters (although reportedly in an unconventional manner), transferring objects from his palm to his fingertips (e.g., peg
boards, eating small pieces of finger foods, manipulating small game pieces), and the ability to use utensils to eat.

Frank was nominated due to restricted food choices. Frank consumed the following foods prior to the study: Fruits; apples and apple juice, bananas, strawberries and strawberry jelly, watermelon; Dairy: American cheese, ice cream, pudding, yogurt, 1% milk; Vegetables: none; Carbohydrates: crackers, cake, cheese puffs, cookies, donuts/pastry, muffins/rolls, pancakes, waffle, wheat sandwich bread, Meat: hot dog; Other: gelatin cup with fruit. At school, Frank’s lunch consisted of a strawberry jelly sandwich, yogurt, cheese puff or chip, and gelatin with fruit. During observations at lunch, it was noted that Frank ate his food in sets of two, and in a specific order. Frank was included in a previous food acceptance program at school (Plate A/Plate B) when yogurt was successfully added to his food list at home and school. Although cucumbers and pieces of ham and cheese sandwiches were consumed during the study, they did not generalize to home or beyond the study. When presented with non-preferred foods, Frank reportedly would indicate that he did not want it by saying, “No thank you”. Interfering behaviors tracked at school included aggression and tantrums.

Isaac was a 10-year 9-month old boy with a diagnosis of ASD, and a previous diagnosis of GER that required medication prior to introducing solid food. Isaac’s cognitive abilities were evaluated in 2013 using the WISC-IV, and his performance on that testing occasion earned a Full Scale score of 44. The evaluator indicated that Isaac had a very difficult time when he was taken out of his daily routine and environment, so much so, that testing was rescheduled to take place within his classroom (with the other students removed). Despite the location, Isaac reportedly, still had great difficulty with focusing on the tasks, with the need for redirection from scripting. Isaac’s adaptive skills were also assessed using the Scales of Independent Behavior-Revised
(SIB-R), with ratings indicating that Isaac demonstrated skills between two and four standard deviations below what would be expected when compared to same age, typically developing children. It is important to note that no fine motor issues were indicated that prevented Isaac from picking up small pieces of food, or using utensils to eat. Isaac received occupational therapy weekly to address fine motor and sensory issues.

Isaac was nominated due to restricted food choices. Isaac was on a gluten free diet due to a strong family history of celiac disease, and he had a history of gagging when foods or liquids were presented that he did not like. He also had a history of becoming upset and disruptive when non-preferred food was eaten in close proximity to him. Isaac consumed the following foods prior to the study: Fruit: cranberry juice, fruit roll-up, fruit snacks; Dairy: 2% milk, yogurt (from a tube), soy milk, Vegetables: none; Carbohydrates: gluten-free crackers, cookies, potato chips, cold cereal, corn chips, pop-tart, gluten free bread, rice cakes, and Meat/protein; peanut butter and almond butter. Isaac was included in a previous food acceptance program at school, but it was discontinued due to gagging and food refusal. When presented with food that was non-preferred, Isaac refused food, spit the food out, and often emitted a high pitch scream. Isaac was also described as brand specific, in that he would only eat certain brands of foods, and reject all others. Interfering behaviors tracked at school included bolting, non-compliance, vocal disruption, and aggression.

Sally was an 11-year 8-month old girl with a diagnosis of ASD. Sally was reportedly lactose intolerant, and had a history of constipation that was treated with probiotics. Sally had a history of gagging when trying new foods, or while watching others eat. Sally’s cognitive abilities were assessed in 2014 using the WISC-IV, and scores earned on that testing occasion indicated a Full Scale score of 50. Adaptive behavior skills were assessed using the Vineland
(Teacher Rating Form), with rating falling between one and two standard deviations below what would be expected of typical children her age. Sally received occupational therapy weekly to address weaknesses in fine motor skills.

Sally’s teacher nominated her for this study due to her restricted food choices, and reactions to other people eating foods (e.g., loud and disruptive comments). Foods consumed prior to the study included: Fruits: green apples, cranberry juice, lemonade, orange juice, fruit roll-ups; Dairy: American cheese, cream cheese, milk (Lactaid), mozzarella string cheese; Vegetables: pickles; Carbohydrates: crackers, cookies, potato chips, pretzels, popcorn, bagels, cookies, French fries, muffins/rolls, pancakes, pop-tart, white bread; Meat: bacon, chicken, hot dogs, pork, rare steak (meat primarily consumed with her father except for hot dogs which were reportedly eaten at school picnics, and bacon which was consumed across all settings). Sally was also described as brand specific. Sally had not been included in a food acceptance program prior to this study. When presented with non-preferred foods, Sally reportedly would ‘script’ inappropriate language, or say loudly, “that’s disgusting”, and leave the area. Interfering behaviors tracked at school included non-compliance and inappropriate physical contact (grabbing other’s arms, attempting to sit in other’s laps, and touching other’s faces).

**Intervention Classroom Setting**

The study was conducted in the participant’s school during their regular school day, with each session taking approximately 10 minutes (less for baseline data collection). Due to the participant’s classroom locations, two separate rooms were used for the study including videotaping of the self-modeling videos, baseline data collection, and the intervention phase. The room used for the study for Frank was a familiar work area within a 12 x 16 classroom. The area is separated by room dividers and set up with two individual workstations. The workstation
consisted of a 3’x 4’ oblong tables, two chairs, and a rolling drawer with work materials. All work materials were removed for the study to have the area free from distractions. Sally and Isaac’s classrooms were in another building, and for ease of transition and familiarity, a workroom that was used for individual and small group instruction in their classroom wing was used for the study. The 20’ x 20’ room consisted of two 7’ kidney shaped tables and chairs, two sinks, with counters along 2 walls, a white board and two bulletin boards affix to the walls, and an access door to the outside play area. For the study, all distracting materials were removed from the counter, and no instruction for any other students were scheduled during any of the research study sessions. Follow up data were collected during snack and lunch in the participant’s respective cafeteria with their peers.

**Instruments and Materials**

**Instruments**

**Brief Assessment of Mealtime Behavior Inventory in Children (BAMBIC).** Parents were asked to fill out the BAMBIC (see Appendix L), as a screening tool and a descriptive measure for feeding problems in the home. The BAMBIC, developed by Hendy, et al. (2013) is a 10-item parent/caregiver report of mealtime problem behaviors that supports three subscales of feeding problems including Limited Variety, Food Refusal, and Disruptive Behavior. The Brief Assessment of Mealtime Behavior in Children was revised from the original 18-item Brief Autism Mealtime Behavior Inventory (BAMBI). The new BAMBIC, was found to be more relevant across a wider selection of children with feeding problems, and has internal reliability values for all dimensions above 0.70 with Cronbach’s alphas of 0.79 for Limited Variety, 0.70 for Food Refusal, and 0.79 for Disruptive Behavior. The BAMBIC was chosen over the BAMBI, due to the greater reliability with the reduction of items. Due to the revision date, no
published studies are noted. Permission for use of the instrument was granted via personal correspondence with an author.

**Food Preference Inventory (FPI).** This is an inventory of 154 food items (see Appendix M) from five food groups that include fruits, vegetables, dairy, proteins, carbohydrates, and mixed food items. Caregivers were asked to indicate how often a food was eaten by their child (never, at least once per week, once per day, more than once per day) and also if a food was typically eaten by the family. The FPI was created as part of an intake packet for an intensive behavioral feeding program for pediatric feeding problems (Schreck & Williams, 2006). This form was used to gather history about how often specific foods are eaten by the participant and by the family. It was also used to identify foods currently eaten, non-preferred foods, and identify possible target foods used in the intervention phase.

**Behavior Intervention Rating Scale (BIRS).** Prior to, and after the intervention phase, support staff were asked to complete this rating scale by Elliott and Von Brock Treuting (1991). This instrument (see Appendix N) asked raters about the use of interventions within natural environments (such as classrooms) in regards to treatment acceptability and effectiveness from the perspective of teachers and clinicians. Support staff were asked to rate the use of video self-modeling as an intervention to address food selectivity in children with ASD. The items were rated on a six-point Likert scale, ranging from one (strongly disagree) to six (strongly agree), with higher scores reflecting greater acceptability. Coefficient alphas were used to determine the reliability of the factors and total BIRS. The three factors Acceptability (15 items), Effectiveness (seven items), and Time (two items), and total BIRS yielded alphas of .97, .92, .87, and .97 respectively. Elliott and Von Brock Treuting (1991) also indicated that using the instrument pre
and post-intervention may lead to a better understanding of perceptions of the treatment, which in turn may influence the outcome of the intervention.

Materials

Video equipment. A Canon VIXIA HF R300 mounted on a tri-pod was used for recording baseline and intervention sessions and video self-modeling intervention videos. Edits to the videos for the self-modeling videos for the intervention phase were done with iMovie9. An Apple-iPad2 with a 9.7-inch (diagonal) LED-backlit glossy widescreen Multi-Touch display with IPS technology, and 1024-by-768-pixel resolution at 132 pixels per inch (ppi) was used for participant screening to determine if the participants could attend to a two minute video of themselves, and if they could self recognize. Viewing of video self-modeling vignettes had originally been planned on the iPad2, but due to the size of the video files, concerns for confidentiality, and participants behavior with the iPad2 during the screening procedure (stopping and starting of the video, unwillingness to give it up), the decision was made to transfer the videos to a DVD and view them on a MacBook Pro.

Procedures

Screening Process

Once all consents were obtained, the researcher completed the screening process for each nominated student to ascertain if the student met all of the criteria to be included in the study. Educational records were reviewed to confirm a diagnosis of ASD, and all five students nominated met the diagnostic criteria for ASD.

Next data were gathered on the nominated participant’s ability to attend to a 90 second video of themself. To do this, a video recording was made of each of the nominated students engaging in an activity, at a time and place chosen by the classroom teacher, to minimize
disruptions to the classroom, the student’s routine, and to ensure that other students were not included in the video recording. All five students were recorded using an iPad2 and the record feature during an activity in their classroom by the researcher. The screen was facing the student during the recording so that the students could see themselves on the screen as the recording was made. While the clip was recording, the student’s reaction to the video was observed. Buggey (2012) described the reaction of recognition of oneself as a change in affect (i.e., smiling), looking intently at the screen, or trying to manipulate the screen. The recording was played back, and the students were asked who was on the video. Three of the students had difficulty disengaging from the iPad2 during the playback of the video. Two of the three students also had difficulty sustaining attention to the video for the 90 seconds, but the decision was made to continue with the screening process and re-try viewing the video. Both students successfully sustained attention to the video for 90 seconds on the second attempt. Two student participants were dropped after completion of the self-video modeling videotapes due to an escalation of inappropriate and unsafe behavior throughout their day. It was decided that the change in routines, unfamiliar and non-preferred task demands would escalate the participant’s behavior further.

In addition, a qualified evaluator (occupational therapist) completed a Feeding/Swallowing Safety Screening Form (see Appendix O) on each student nominated to ensure that the student demonstrated safe swallowing. The evaluator observed the nominated students eating and drinking in a naturalistic setting (snack or lunch time), and made a recommendation on whether or not the student demonstrated safe feeding and swallowing. All nominated students demonstrated safe feeding and swallowing.
**Target Food Selection**

Parents were asked to complete Participant Intake Questionnaire, the BAMBIC, and the Food Preference Inventory, either in person, over the phone, or by sending home the form to be returned, based on parent preference. All parents choose to fill out the forms and return them to the researcher; a follow up phone call was made to clarify any questions or concerns on the returned forms. Once the Food Preference Inventory and Participant Intake Questionnaires were returned and reviewed, a list of possible foods to be used as target foods was chosen that included fresh and dried fruit, vegetables, cheese, and for one student participant, turkey. Foods were selected based on availability throughout the research study, texture, and variety.

Once a list of possible target foods was generated, the possible target foods were included as part of each participant’s lunch or snack. Direct observations were made in the naturalistic setting with their peers, and data collected for consumption or rejection of proposed target foods over at least two observations (with or without prompting). No proposed target foods were consumed by any of the participants during probe sessions. If a proposed target food had been consumed during the direct observations, it would have been excluded from the study. Observations continued until at least 5 target foods were identified. The target foods identified for each participant were used in the making of the self-modeling video used in the intervention.

**Making of the Intervention Self-Modeling Video**

The intervention required the creation a self-modeling video for each participant that depicted successfully eating target foods presented. The videos were recorded in the room where the intervention was to take place, using similar dishes and target foods. The participants were told they were going to help make a movie about trying new foods, and they were asked to pretend to eat the food. A plate that included several pieces of each of the target foods was
placed in front of the participant, and the participant was asked to name each food, and then pretend to eat each of the foods on the plate.

Sally was seated alone at the table and complied with the request to make a movie about trying new foods, requiring minimal prompting to name each of the foods. She also added adjectives about some of the foods without prompting such as “delicious”. Frank and Isaac required a support staff to sit at the table with them and prompt through the making of the video. Frank complied with the request to pretend to eat several of the foods, and after initial prompt to say the names of the food, he also verbalized the names of the foods presented. Isaac did not comply with the request to pretend to eat, but did allowed gummy fruit to be placed on his plate near the target food; he was recorded while eating the gummy fruit. The participants were offered a reinforcer (i.e., tokens for computer time, access to free time) for participating in making the video. The three videos were edited to depict the participants consuming only the targeted foods. Any prompts that were provided by the researcher or support staff to elicit the behavior were edited out the video. The videos were edited using iMovie9, a voice over prompt was added at the beginning “It’s time to eat”, as well as a background music score. The final video consisted of a video book depicting the participants eating several bites of each of the target foods on the plate. The target foods were also identified in print on the screen displayed in the first person, for example, “I am eating carrots”, or “I like plums”. The length of the videos ranged from 1.5 minutes to 2.5 minutes and showed the participants eating each of the target food items several times. The completed videos allowed participants to view themselves successfully eating foods reportedly not consumed. When the videos were complete, they were downloaded to a DVD format and viewed on a laptop during the intervention phase of the study.
Measurement of Data

Data collectors used ABC Data Pro (Romanczyk & Gillis, 2010), an iPad application, to collect frequency of food consumed (by food type), and interfering behavior. The application also recorded the start and end time of each session, and event recording of each instance of target response. Each session was recorded, printed, and saved to a file for review. All responses were collected during in vivo sessions. It should be noted that the maximum number of bites consumed for any food item could not exceed five, and only consuming the entire piece of food was counted (i.e., biting off a small piece or tasting and then putting back down the piece, for example, was not counted as consumed). The overall occurrence of each target response (consumption) was calculated by food type, for each participant, as well as the total number of new food items consumed.

Baseline Phase

Baseline data collection occurred prior to introducing the video self-modeling intervention. The sessions took place in the agreed upon location for each participant prior to the participant having their scheduled morning snack and lunch. Teachers were asked not to offer edible reinforcers between arrival and morning snack (if offered as a regular part of their schedule) and between morning snack and lunch. All other non-edible reinforcers were to continue to be delivered in accordance with the participant’s individual program. If the classroom participated in a cooking activity during lunchtime, the session was completed prior to the cooking activity.

During baseline data collection, each participant was seated alone at the table, except for Isaac who required a staff to sit next to him. Five bite-size pieces of each of the food identified as target food was placed on a plate in front of the participant. The participant was prompted,
“It’s time to eat”; no additional prompts were given. There were no programmed consequences for either rejection or consuming the food. Data were collected via ABC Data Pro on food consumed, and any inappropriate behavior observed. Baseline probes continued until all targeted foods had been presented a minimum of five times, and stability of the data achieved across all participants. One participant began the intervention while baseline probes continued with the other two participants. Staggered implementation of the intervention across all participants occurred with at least 3 data points occurring between intervention and baseline of the next participant beginning the intervention phase. After stabilization of baseline data, probes were used to reduce collection of data, and reduce practice effects. Both participants maintained stability of the data during baseline probe data collection. IOA data were collected for greater than 30% of all baseline sessions.

**Intervention Phase**

The intervention phase consisted of the viewing of the edited self-modeling video and then presenting the targeted foods with the prompt “It’s time to eat”. The participants were escorted into the designated intervention area (the same area used during baseline), seated at the table, with the laptop set up to play the self-modeling video (DVD). The researcher started the DVD on the laptop. A clipboard was placed over the keyboard to prevent the participants from access to the keys for two of the participants. The participants all watched the video without redirection until the video ended. If necessary, the participants would have been redirected back to watching the video. Social praise for attending to the video was delivered by the researcher. After the video ended, the laptop was removed from the table, and the participant was presented with a plate of five bite-sized pieces of each target food and prompted, “It’s time to eat”. As in baseline, no additional prompts were given during the intervention. Data were collected via
ABC Data Pro on food consumed and any inappropriate behavior observed. Sessions were recorded for treatment integrity, but IOA data were collected during in vivo sessions. IOA data were collected for an average of 74% of the sessions (range 62-84%) and Treatment Integrity data forms completed for at least 30% of intervention phases for each participant. There were no programmed consequences for either rejection or consuming the food.

**Follow up Phase**

Follow up data were collected thirty days after the last intervention session ended on five occasions for each participant during naturalistic conditions. Food items used during the study were placed in the participant’s lunch box (in similar containers when possible). Participants were offered the food as a choice, along with their food sent in from home, during their snack and lunch with their peers. Teachers and support staff collected data on whether or not items were consumed, along with any comments made.
Chapter 4

Results

This chapter has four sections including data on a) IOA and treatment integrity, b) parent ratings, c) participant responding, and d) treatment acceptability. The first section includes the results of the IOA, and the results of the treatment integrity data. The next section describes the two rating instruments completed by the parents that included the FPI, and the BAMBIC, as well as a description of the breakfast logs reported during the study. A detailed analysis of the participant study data is included in the next section further delineated by probe, baseline, intervention, and follow-up data. The final section reports the results of the pre and post treatment acceptability as measured by the BIRS.

Interobserver Agreement and Treatment Integrity

Interobserver Agreement

Interobserver agreement (IOA) was examined throughout the course of the study. More specifically, IOA was conducted during baseline and treatment phases. Prior to baseline sessions, training was conducted to ensure adequate competency of observers in collecting IOA. Three sessions were utilized to discuss target behaviors and operational definitions, study protocols, and practice IOA procedures. During the training sessions, it was decided that the IOA data would be collected in vivo rather than while viewing video recorded sessions due to the difficulty of observing enough detail on the video to determine which food was picked up, and if the food was actually consumed. Data collectors achieved 100% agreement for three consecutive sessions using a live model roleplaying eating foods prior to beginning the baseline phase.
Interobserver agreement (IOA) was calculated during 89-100% of baseline sessions, and during 50-80% of the intervention sessions across each of the three participants. The author and an additional support staff present during the session, independently recorded target responses (i.e., consumption of food items and inappropriate behavior). Responses recorded during the sessions were compared trial by trial. IOA was calculated by dividing the frequency of the response (food consumed) obtained by the first observer, by the frequency of the target response obtained by the second observer, then multiplying that number by 100. Interobserver agreement was calculated by food item and total items consumed. Total agreement was calculated at 100% across type of food items for all responses across raters and participants; total agreement for number of food items consumed was 99.57% (range 80-100%) across all raters and participants. IOA was also calculated for inappropriate mealtime behaviors by dividing the frequency of the combined inappropriate mealtime behaviors obtained by the first observer, by the frequency of the combined inappropriate mealtime behaviors obtained by the second observer, and then multiplying that number by 100. Total agreement for inappropriate behaviors was at 100% across all raters and participants.

**Treatment Integrity**

Treatment integrity was measured by recording the researcher and participant’s behavior during 37-64% of sessions for each of the three participants. The Treatment Integrity Checklist (Diorio, 2014) used was modified with permission and subsequently utilized to examine whether or not the intervention was implemented as designed (see Appendix P). That is, the checklist was used to verify that the intervention was carried out consistently across all participants. An independent rater completed the checklist during sessions in vivo. For example, during the video viewing session, the rater noted whether or not the participant was brought down to the
intervention area and seated at the table, if the video was played through to the end, if the presenter socially reinforced attending to the video, and if the target food was presented immediately after the video ended. Results indicated that the intervention was implemented as prescribed (i.e., all steps were completed) during 100% of the sessions rated. Upon closer inspection, the mean attentiveness rating across participants was 8.9 (range 8 to 9) indicating that the participants appeared to focus their attention on the video ‘most’, or ‘all of the time’. In addition, prompt delivery was also recorded to ensure that no additional prompts or consequences were delivered (for consumption for rejection of food) across 100% of sessions for all participants. Overall treatment integrity scores for both video viewing and prompt delivery were at 100% across all raters for all participants. In addition to scoring the items on the treatment integrity checklist, any environmental circumstances that could impact behavior (e.g., changes in services, routines, major life events, behavioral episodes witnessed, medication changes, sickness, etc.) were noted on the form in an effort to monitor for potential threats to internal validity.

**Parent Ratings**

**Preferred food items**

Data were gathered by parent report on the Food Preference Inventory. A visual analysis of the reported food items eaten by the three participants and their families indicated that the participants ate less of a variety of food items then did their families, with the highest percentage of caloric intake coming from carbohydrates. The breakdown of the food items reportedly eaten by category for each participant and family is detailed in Table 4.1.
Table 4.1

Food Preference Inventory Items Reported Consumed by Participants and Families

<table>
<thead>
<tr>
<th>Categories</th>
<th>FPI Items</th>
<th>Foods Consumed</th>
<th>Foods Consumed</th>
<th>Foods Consumed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Family</td>
<td>Frank</td>
<td>Family</td>
</tr>
<tr>
<td>Fruit</td>
<td>26</td>
<td>12</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>Fruit Juice</td>
<td>7</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Dairy</td>
<td>15</td>
<td>4</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Protein</td>
<td>32</td>
<td>11</td>
<td>1</td>
<td>15</td>
</tr>
<tr>
<td>Carbohydrates</td>
<td>43</td>
<td>20</td>
<td>9</td>
<td>25</td>
</tr>
<tr>
<td>Vegetables</td>
<td>26</td>
<td>14</td>
<td>0</td>
<td>19</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>5</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Total Items</td>
<td>154</td>
<td>65</td>
<td>19</td>
<td>78</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Foods Consumed</th>
<th>Foods Consumed</th>
<th>Foods Consumed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Family</td>
<td>Isaac</td>
<td>Family</td>
</tr>
<tr>
<td>Fruit</td>
<td></td>
<td>9</td>
<td>0</td>
<td>22</td>
</tr>
<tr>
<td>Fruit Juice</td>
<td></td>
<td>2</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Dairy</td>
<td></td>
<td>5</td>
<td>2</td>
<td>11</td>
</tr>
<tr>
<td>Protein</td>
<td></td>
<td>14</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>Carbohydrates</td>
<td></td>
<td>27</td>
<td>14</td>
<td>27</td>
</tr>
<tr>
<td>Vegetables</td>
<td></td>
<td>14</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td></td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Total Items</td>
<td></td>
<td>96</td>
<td>28</td>
<td>96</td>
</tr>
</tbody>
</table>


Mealtime Behavior

Table 4.2 Dimensions and Items of the Brief Assessment of Mealtime Behavior in Children

<table>
<thead>
<tr>
<th>Dimension and Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limited Variety</td>
</tr>
<tr>
<td>My child accepts or prefers a variety of foods.</td>
</tr>
<tr>
<td>My child is willing to try new foods.</td>
</tr>
<tr>
<td>My child dislikes certain foods and won’t eat them.</td>
</tr>
<tr>
<td>My child prefers the same foods at each meal.</td>
</tr>
<tr>
<td>Food Refusal</td>
</tr>
<tr>
<td>My child turns his/her face or body away from food.</td>
</tr>
<tr>
<td>My child closes his/her mouth tightly when food is presented.</td>
</tr>
<tr>
<td>My child cries or screams during mealtimes.</td>
</tr>
<tr>
<td>Disruptive Behavior</td>
</tr>
<tr>
<td>My child is aggressive during mealtimes (e.g., hitting, kicking, scratching others).</td>
</tr>
<tr>
<td>My child displays self-injurious behavior during mealtimes (e.g., hitting self, biting self).</td>
</tr>
<tr>
<td>My child is disruptive during mealtimes (e.g., pushing/throwing utensils, food).</td>
</tr>
</tbody>
</table>

Parents were asked to rate their child’s eating behavior during the last six months using the Brief Assessment of Mealtime Behavior in Children. Table 4.2 defines the items included in each of the three dimensions, including limited variety, food refusal, and disruptive behavior.

**Limited Variety.** In examining scores related to the dimension that measures limited variety, parents reported that their children rarely or seldom were willing to try new foods, that they disliked certain foods, and would not eat them, either often, or at almost every meal. Parents also reported that their children preferred the same food at every meal and rarely or never accepted (or preferred) a variety of foods. Parents considered their children’s preference for the same food, and unwillingness to try new foods, as more of a problem then reported in the other two dimensions measured (food refusal and disruptive behavior). Mean scores on the limited variety dimension as reported by the three families were calculated and found to range between 4.50 and 5.00.

**Food Refusal.** Two out of the three parents reported that their children often turned their face or body away from food (one child reportedly cried on occasion), and often or always closed their mouths tightly if presented with any new food. Turning away and refusing food was considered a problem for those parents. Mean scores on the food refusal dimension as reported by the three families were calculated and found to range between 1.00 and 3.33. It is important to note that due to one parent reporting that their child did not turn their face or body away from food, cry or close their mouth tightly when presently with food, but rather that he would appropriately indicate “No thank you”, the mean score of 1.00 appeared to under represent food refusal.

**Disruptive Behavior.** Mean scores reported by all three participants on the dimension of disruptive behavior of 1.00, indicated that items that included aggression, self injury, or
disruptive behavior by their children were endorsed by parents as rarely or never occurred during the previous six months.

*Table 4.3*

A Comparison of Mean Scores on BAMBIC

<table>
<thead>
<tr>
<th></th>
<th>Hendy et al. 2013 M (SD) n=60</th>
<th>Frank</th>
<th>Isaac</th>
<th>Sally</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limited Variety</td>
<td>4.30 (1.00)</td>
<td>4.50</td>
<td>5.00</td>
<td>4.75</td>
</tr>
<tr>
<td>Food Refusal</td>
<td>3.00 (1.00)</td>
<td>1.00*</td>
<td>3.33</td>
<td>3.33</td>
</tr>
<tr>
<td>Disruptive Behavior</td>
<td>2.00 (1.10)</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
</tbody>
</table>

*Note.* *Parent indicated that her child does refuse food, he will push away the dish or hand it back and say, “No thank you”. Because he does not turn away, cry, or close his mouth, she did not endorse the items. Adapted from “Brief Assessment of Mealtime Behavior in Children: Psychometrics and Association with Child Characteristics and Parent Responses,” by H. M. Hendy, L. Seiverling, C. T. Lukens, and K. E. Williams, 2013, *Children’s Health Care, 42.*

Table 4.3 displays mean and standard deviation scores from the Hendy et al. (2013) study and the corresponding mean scores of the parent responses of the three participants in the current study on the BAMBIC across the three dimensions. Results indicate that the means from this study were within one standard deviation across all three dimensions when compared with the mean scores from the Hendy et al. (2013) study (n=60) and taking into account the response from Frank’s parent that he does refuse food, but he will push away the dish or hand it back appropriately.

**Breakfast Logs**

Parents were asked to keep a log of what their child ate for breakfast, indicate if any unusual event occurred, and indicate if their child was sick. The log was kept in their child’s daily communication book and collected at the end of the intervention phase.
Frank’s parents indicated no breakfast eaten during the entire study, and no unusual events or illnesses were noted. Isaac’s mother indicated that he either ate dry cereal or a toaster pastry, with a glass of 2% milk each day. The one exception for Isaac was a day that he reportedly had postnasal drip and a cough; he did not eat breakfast (he was absent from school for two consecutive days). Sally’s mother indicated that she had not eaten breakfast since the beginning of school in September (prior to the beginning of baseline and continued through the intervention phase). Sally also went through one menstrual cycle during the intervention phase (noted on the graph). No other unusual events or illness were indicated on the log, but Mom did indicate that she had observed an increase in her pulling out strands of her hair at home. She began sending in a variety of hats for her to wear throughout her day to limit access to her hair.

**Participant Responding**

Prior to baseline sessions, probe data were taken on possible target foods during snack and lunch on two separate occasions for each of the participants. Foods selected as possible target foods consisted of a protein source (cheddar cheese was chosen for lactose free content), fresh fruits (pears, blueberries), vegetables (cucumbers, carrots), and dried fruits (plums and raisins). Foods were selected to include foods that could be found most times of the year, and included foods reportedly eaten by other members of the families. Only one parent requested meat (turkey) added as a target food. No foods offered during any probe data sessions were consumed by any of the participants with or without prompting.

**Baseline Phase**

Frank’s target foods were cucumbers, carrots, pears, cheese, blueberries, and dried plums. Raisins were eliminated from his list of target foods due to the fact that he consumed the raisins during the making of the video for his self-modeling intervention, although he did not consume
the raisins during probe data sessions. Baseline data were collected for five sessions. During baseline session 1, Frank consumed five pieces of pear, and four blueberries, first eating the skin off of the each pear, and then peeling the skin off of each blueberry before eating. Frank consumed five pieces of pear and three blueberries in the same manner in session 2. Frank consumed only the five pieces of pear (eating the skin off before consuming the pear) during sessions 3, 4, and 5. When he was done eating, he handed the plate back and said, “I’m finished”. The session ended when the plate was handed back. The overall mean level of responding during baseline was 6.40 bites consumed (range 5 to 9 bites). Frank consumed two new additional foods (pears and blueberries) during the baseline condition. The data indicated a downward trend, followed by a stabilization of data prior to implementation of the intervention phase.

Sally’s target foods were cucumbers, carrots, pears, cheddar cheese, blueberries, turkey, raisins, and dried plums. Data were collected across a total of eight baseline sessions, with probe data being taken after stabilization of data. During baseline sessions 1 through 8, Sally consumed five pieces of cheddar cheese presented; no other foods were consumed. Sally pushed the plate away after consuming the cheese, and began scripting (defined as verbally retelling a portion of a scene from a movie or television show) or making up a scenario (reoccurring theme was preparing food). The session ended after five minutes elapsed after presenting the food with the prompt “It’s time to eat”. Sally consumed one new food (cheddar cheese) during baseline. The overall mean number of bites consumed during baseline was five. The data remained stable prior to the implementation of the intervention phase.

Isaac’s target foods were cucumbers, carrots, pears, cheese, blueberries, raisins, and dried plums. Baseline data were taken during a total of nine sessions, with probe data collected after
stabilization of data. Behaviors noted during baseline sessions 1 and 2, included non-compliance when asked to sit at the table, bolting (attempting to leave the building via the door in the classroom), and attempting to turn on the faucets in the sinks and pulling on the cords to the window blinds. Due to safety concerns and procedural fidelity (need for the use of prompting to sit safely), support staff escorted Isaac to the table and sat next to him (without interacting with him) during the remainder of the baseline sessions. Non-compliance and bolting did not occur during the remainder of the baseline sessions. Other behaviors noted during baseline included scripting, and vocal and motor stimulation. Isaac was out of school due to illness for two days of sessions prior to beginning the intervention phase. He also indicated that he did not want to participate for one other session (which was honored) by taking a break on a mat as he entered the room where the session took place. Isaac’s rate of responding was zero during baseline sessions. Baseline data indicated a level and stable trend line for food consumption across the baseline condition with no food consumed.

**Intervention Phase**

Frank watched his self-modeling vignettes during each intervention session without the need for redirection, but a clipboard was placed over the keyboard to restrict access. He made comments while watching the vignettes, such as, “that’s me”, and “can I jump into it” (reference to the video and movie score). During session 6 (first intervention session) Frank continued to eat only the five pieces of pear (skin first). Session 7, Frank ate the five pieces of pear, and five blueberries (skin first from pears and blueberries), but during the next five sessions (sessions 8-12) he ate only the pears. During session 13, Frank again, ate the five pieces of pear and five blueberries. For the remaining sessions (14-21), Frank only consumed blueberries, but instead of peeling off the skin, he squeezed the filling out and then ate the entire berry. The overall mean
number of bites consumed during the intervention condition was 5.56 (range 4 to 10). The trend lines by food type (blueberries and pears) indicated an inverse relationship. As the number of blueberries consumed increased, the number of bites of pears decreased. Compared to baseline, no new foods were consumed with the introduction of the video self-modeling intervention, with the same two foods consumed during baseline (pears and blueberries) continuing to be consumed. A visual analysis of the data from baseline to intervention revealed no demonstration of intervention effect due to the relative high percentage of overlap, no change in mean, no real change in trend, and overall, no clear differentiation in responding between phases. A total of 16 sessions took place in the intervention stage.

Sally also watched the self-modeling vignettes without the need for redirection. She read along with the words depicting what she was ‘eating’, and pretended to eat each food in the order that the self-modeling vignettes had shown, at times, moving around the food to match the order of the food on the video. Sally continued to eat five pieces of cheddar cheese through the first six sessions of the intervention (sessions 6–14). When she was done eating the cheese, she would push away the plate of food and engage in scripting (often included a food preparation theme), she did not ask for the session to be over; sessions ended at the elapse of five minutes. During sessions 15 – 18, Sally came to the table with her hood over her head, watched the movie, but did not show the same enthusiasm as in previous sessions. She consumed only one piece of cheese per session for 3 out of 4 of the sessions, and no food consumed during one of the sessions. Other behavior noted included pulling out strands of hair and eating them. It was also noted that Sally had her menstrual cycle during that time. During sessions 19 and 20, Sally ate five pieces of cheddar cheese, session 21, only one piece of cheese, and session 22, four pieces of cheese. Behaviors noted included pushing away the plate after consuming the cheese, pulling out strands
of hair, and scripting. The overall mean of responding during the intervention phase was 3.42 (range of 0 to 5). The rate of responding for the first six sessions of the interventions was stable (at five pieces of cheese), then a dramatic decrease in the data was noted during the next four sessions (1 piece during 3 out of 4 sessions; 0 at one session), with a rebound to previous rate of responding during the next two sessions, before a decrease in responding occurred again. Sally completed 14 intervention sessions. A visual analysis of the data indicated an overall decreasing trend line for the rate of responding during the intervention phase as compared with the flat trend noted during the baseline phase. This decreasing trend during the intervention was unexpected given the hypothesized effect of the intervention. A slight increase in variability (range of responding) was observed during the intervention phase. Overall, given that the change in mean and trend across phases were not in the predicted direction, results did not appear to reflect a therapeutic intervention effect. That is, only one food item (cheddar cheese) was consumed during both the baseline and intervention phase, although the number of bites consumed were less and somewhat more variable during the intervention phase.

Isaac watched his self-modeling vignettes without the need for redirection. A clipboard was used to restrict access to the keyboard. Once the intervention was introduced, it was unnecessary for support staff to escort Isaac to the table, or to sit next to him (for compliance to stay seated) when food was presented. Isaac read along with the words on his video and he also commented about eating the food items (e.g., “That’s me eating”). When the video was over, the laptop was removed, and his behavior (watching the video) was socially reinforced. Isaac was immediately presented with the plate of food and the prompt to eat. Isaac sat at the table until five minutes elapsed. Behaviors noted included shifting his eye gaze away from the plate, verbal and motor self-stimulatory behavior, and scripting from movies or television shows. He also
attempted to engage support staff or the researcher by asking reoccurring questions (i.e., “Is it time for snack” and “What is a wind chime”). No incidents of non-compliance or bolting were noted during the intervention phase, and Isaac not only came willingly, he would end a preferred activity in the classroom to participate in the intervention sessions. The rate of responding during the intervention phase was stable at zero. Ten intervention sessions were completed; no food was consumed during any of the sessions. A visual comparison of the data indicated no responding within baseline or intervention phases and consequently, no differential responding across conditions which evidenced no effect of the video self-modeling intervention. The inappropriate behavior that was noted during sessions 1 and 2 of the baseline condition did not occur during the remaining baseline sessions, or during any of the intervention sessions.

**Follow-up data**

Follow-up data were collected thirty days after the last intervention session on five separate occasions. Food items were placed in participant’s lunch boxes (in similar containers when possible) and data were collected on whether or not food items were consumed.

When Frank opened up his lunch box and saw the blueberries and pears during follow-up session 1, he handed them back to staff and said “No thank you, momma bear”. During the next session, he ate one blueberry and said, “This food is for the movies”; he handed back the pears. At the third, fourth, and fifth follow-up sessions; he ate all five blueberries without comment. No pears were consumed during follow-up. Frank’s rate of responding was similar in follow-up to both baseline and the intervention phase, more specifically, he continued to consume one type of food and maintained a stable level of responding (mean of 3.2; range of 1 to 5), after the second follow-up session.
Sally’s mozzarella string cheese was replaced in her lunch box with a similar looking wrapped cheddar cheese stick. At the first session, she initially took a bite of the cheddar cheese stick, but then got up from the table loudly said “yuck”, and threw it away. At subsequent sessions, when other foods were presented, she took them out of her lunch box and threw them away. Comments made included, “What’s this?” “Who put these here?”, and “Oh, no you don’t!”. Only one bite of the cheddar cheese stick was consumed during follow up (mean of .20). As compared with the intervention phase, the mean number of bites during the follow up phase was substantially less than the intervention phase.

Isaac pushed the food items away when presented and commented, “What’s this?” and emitted a high-pitched scream. Isaac was prompted to say, “I don’t want them”, and to put the food back into his lunch box. Isaac did not eat any food during the next four presentations, and handed back the food to staff. Isaac’s mean number of bites consumed was zero, which was consistent with both baseline and the intervention phase, with no food consumed.

Overall, Frank consumed two new foods during baseline (pears and blueberries) and continued to consume them during the intervention phase. During follow-up he consumed only the blueberries. Sally consumed one new food during baseline (cheddar cheese) that continued through the intervention phase, but she only consumed 1 bite of cheddar cheese during follow-up. Isaac consumed no new foods during baseline, intervention, or during the follow-up phase.
Figure 4.1. Number of Bites of New Foods Consumed Across Three Phases.
Figure 4.2. Number and Type of New Foods Consumed Across Participants and Phases.
Treatment Acceptability

Behavior Intervention Rating Scale (BIRS)

Support staff were asked to rate the acceptability and effectiveness of video self-modeling as an intervention to help increase food acceptance using the BIRS. Three support staff completed the BIRS both pre- and post-intervention. Ratings for each of the staff across the three dimensions (acceptability, effectiveness, and time commitment) of the BIRS are summarized in Table 4.4.

Table 4.4

Pre/Post Comparison of Ratings on Behavior Intervention Rating Scale (BIRS)

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Support Staff #1</th>
<th>Support Staff #2</th>
<th>Support Staff #3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acceptability</td>
<td>4.93</td>
<td>5.13</td>
<td>0.20</td>
</tr>
<tr>
<td>Effectiveness</td>
<td>3.71</td>
<td>4.57</td>
<td>0.86</td>
</tr>
<tr>
<td>Time</td>
<td>4.00</td>
<td>4.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>


Mean scores in each of the dimensions were calculated by summation of scores divided by the number of items in each dimension. The Likert rating scale ranged from 1 (strongly disagree) to 6 (strongly agree), with higher scores indicating greater treatment acceptability.

Results in the acceptability dimension on the pre-intervention administration ranged from a mean of 4.93 to 5.93 with a range of raw scores of 4 (slightly agree) to 6 (strongly agree). On the post-intervention administration, ratings ranged from a mean of 4.40 to 5.13, with raw scores range of 3 (slightly disagree) to 6. On the effectiveness dimension, pre-intervention scores ranged from a mean of 3.71 to 4.85 (raw score range 3 to 6). The post-intervention mean scores ranged from...
3.29 to 4.57 (raw score range 3 to 5). In the third dimension, time (to realize improvement), pre-
intervention mean scores ranged from 4.00 to 5.50 (raw score range 3 to 6), with post-
intervention mean scores from 3.50 to 4.00 (raw score range 3 to 4). Support staff endorsed
items that indicated that the participants exhibited interfering behavior severe enough to warrant
the use of video modeling, and that the intervention was unlikely to result in negative side effects
for the participants.

Overall, comparison of pre- and post-intervention scores indicated that two of the three
support staff rated video modeling slightly less acceptable (e.g., the appropriateness of self-
modeling for feeding problems, willingness to suggest the use in other classrooms or for other
behavior problems), and less effective in producing change in behavior that would be long
lasting, generalized across settings, and impact other problem behavior post intervention. In
addition, in the area of time (how quickly improvement would be realized), two support staff
indicated it would take more time to see improvement than they previous thought (prior to
implementing the intervention).
Chapter 5

Discussion

The current study sought to replicate the findings reported by Allen (2009) that supported the effectiveness of video modeling in increasing the food acceptance of a four year-old child with pervasive developmental delays. The current findings were not consistent with those previously reported by Allen. Potential explanations for the lack of similar finding may include, for example, the ages of the participants, familiarity of the researcher to participants, the magnitude or intensity of comorbid behaviors (i.e., ritualistic, repetitive, and sensory) and differences in procedures. More specifically, the learning histories and patterns of responding of the older participants (10 to 11 years of age) in the current study were likely more established (i.e., longer history of reinforcement and, thus, perhaps less likely to change in response to the intervention) than the much younger participant (4 years of age) in the Allen study. In addition, the researcher in the Allen study had previously worked with the participant (as an in-home ABA therapist) for over a year. The resulting relationship may have had more influence (e.g., stimulus control) in changing behavior as compared to a researcher without this prior history of reinforcement as found in the current study. In addition, the intensity of ritualistic and repetitive behavior of the participants in the current study may have influenced the effectiveness of the intervention. That is, the current participants were observed frequently demonstrating rituals such as eating foods in a particular order or disassembling food before eating, self-stimulatory behaviors (e.g., verbal and physical), as well as sensory sensitivities including not touching certain foods, preference for specific textures, and sensitivity to smells. The co-occurrence of these interfering behaviors has been previously noted to increase the likelihood of a feeding problem (Johnson et al., 2014). Ritualistic patterns of behavior were observed during mealtimes.
at school, as well as reported from home, and also observed during baseline and intervention phases for all three participants. During observations at school, one participant ate his food in ‘twos’, deconstructed his sandwiches before consuming, and ate his food in a particular order each day. Another participant ate all of the food (only crunchy foods) in one container before moving to the next container. The parent of this participant also reported that their child would not touch any food other than dry foods (chips, crackers, breads), would not use metal utensils, or eat off of glass plates. One of the children developed specific rules as to what foods were consumed in particular settings and with particular people. All three parents and teachers noted scripting during meals in the presence of non-preferred foods (even if not on their plates), and negative comments (i.e., “that’s disgusting”, and “that’s gross”). Overall, it was possible that the self-stimulatory and interfering behavior may have limited the effectiveness of the intervention in some way.

Procedural differences were also noted when comparing the current research to the Allen study. More specifically, the researcher in the Allen study modeled eating responses more frequently during baseline and intervention phases across several foods while employing a multiple baseline design. In the current research, no live modeling took place during baseline and only self-modeling via video presentation of eating behavior occurred during the intervention phase. Consequently, participants were exposed to less frequent opportunities to view a model of expected responding in the current study. It appeared likely to the current author that repeated exposure to observing someone eating throughout the baseline sessions and while introducing foods during the intervention phase (via video model and by a person) might have a more robust treatment effect. It was also unclear in the Allen study when and how the video was presented, and when the baseline foods were presented (i.e., in the same session or in
close proximity to the intervention sessions). In the Allen study, only one target food was presented at a time versus the current study in which five pieces of each target food was available on the plate at each session as well as viewed on the video during each session. Ahearn (2002) found that targeting multiple food items produced better response generalization, although presenting one food item at a time produced more rapid acquisition. Consequently, in the current study, presenting several stimuli at once may have impaired the initial acquisition rate, requiring a longer time period to realize an intervention effect. The use of the researcher in the Allen study as the model in the video (as well as modeling eating behavior) versus the use of the participants as models may also have influenced the results. The researcher exerted stimulus control over the participant in the Allen study prior to the intervention, and viewing the researcher on the video (or modeling eating behavior) may have increased the likelihood of imitating an eating response. In the current study, the researcher had no prior stimulus control over the participants, and there was no modeling of eating behavior (other than by the participants on the video). It is also possible that the participants in the current study were over focused on themselves as actors in the video, or on other details unrelated to their eating behavior. As noted in the current study, each participant was asked to help to make a movie about trying new foods. During the intervention phase (during the presentation of the self-modeling video), participants commented that they were “making a movie” and “pretending to eat”. The participants recited the same (or similar) words, often in the same order as in the video, when they were presented with the plate of food. They often arranged the plate to match how the food was oriented on the video, focusing on the details of the plate. In the end, it appeared possible that the participants were not able to discriminate between their role in making the video (pretending to eat) and their role when presented with food during the study. That is,
when the video ended, the participants would have had to shift roles from actor to participant, with the expectation of now eating the food presented. The current participants may not have been able to shift roles and take a different perspective.

Additionally, while data from the study did not show a discernable intervention effect for any of the three participants, findings highlight the need for continued research using a combination of interventions due to the resistance to treatment of food selectivity. Research should continue to examine, for example, the potential influence of family eating preferences and feeding practices, the impact of child symptomology of ASD on early feeding experiences, rigidity, motivation, and learning history, and the effectiveness of parent training and support. These issues as related to the current findings are discussed below.

Findings in the current study were consistent with previous research examining the type and amount of food eaten by students with ASD (e.g., Schreck & Williams, 2006). More specifically, similar foods were reportedly eaten by the families and participants in the current study as those reported by Schreck and Williams (2006) in their study examining 138 children with ASD and their families. Using the same instrument (Food Preference Inventory), participants in both studies ate substantially less foods than their families. The most limited food preferences were found when family food preferences were further restricted by diet (i.e., gluten free, vegetarian) or food allergies (or sensitivities). Protein sources reported by Schreck and Williams (2006) and within the current study were from peanut butter, hot dogs, and chicken; no vegetables (other than pickles by a single participant in the current study) were reportedly consumed by any of the participants. Similarly, the majority of the foods eaten by the participants consisted of starches (carbohydrates), which were characterized as mostly sweet
(e.g., cake, cookies, muffins, donuts, pastry, cold cereal, and pop-tarts) and salty (e.g., popcorn, pretzels, crackers, corn chips, cheese puffs, and potato chips).

Parent report from the current study corroborated previous evidence noted by Williams, Hendy, and Knecht (2008) when comparing parental feeding practices of 240 children referred to a feeding clinic. That is, parents of children with ASD were more permissive and offered more snacks between meals to prevent behavioral problems than parents of typically developing children or children with other special needs. This permissive approach may further decrease the motivation to eat at mealtime. Also, consistent with findings of Williams et al. (2008) and Hendy et al. (2013), parents in the current study indicated that they rarely offered food at mealtimes that were not preferred foods, that they allowed their children with ASD (but not their typically developing children) to ‘graze’ throughout the day, and consistently prepared special meals for their children with ASD. They also indicated that they honored appropriate requests to be finished with a meal (even if they had not eaten), allowing their child with ASD to leave the table to eliminate behavioral problems. Allowing their child to escape from non-preferred foods, or avoid meals, may have set up a learning history difficult to overcome without the use of an extinction component. In that 89% of the effective research reviewed by Sharp et al. (2010) included an extinction component when the function of the behavior was escape, avoidance, attention, or any combination, the addition of an extinction component to overcome long established patterns of responding may be necessary.

Whereas Schreck and Williams (2006) found no significant relationship between food selectivity and the severity of behavioral symptoms and features of autism, the severity of symptoms and features have been suggested to contribute to the development of the early patterns of responding (Keen, 2008), and may have been a contributing factor in results of this
study. Keen (2008) noted differences between typical children and children with ASD in the early development of feeding patterns. More specifically, the child with ASD may be less cuddly and unwilling to suckle, unable to soothe themselves, unable to regulate themselves (give signals when they are full or hungry), and they may exhibit abnormal responses to sound, visual stimuli, touch, pain, or smell. Deficits in language, including impairments in social communication and social interactions, rigidity and inflexibility to changing routines, may also be exasperated by the idiosyncratic selectivity of their food choices such as specific textures, plates, utensils, and particular look of food (Whiteley, Rodgers, & Shatock, 2000), as well as abnormal responses to tastes or smells (Wiggins, Robins, Bakeman, & Adamson, 2009). Additionally, children with ASD may not share the reciprocal social responsiveness that typical children do during mealtimes making it less likely they will try new foods by imitating siblings or parents. Preference for solitary activities and interests may make transitions from a preferred activity to meals difficult. Parents may coax their child with ASD to the table with more appealing foods, and their child with ASD may learn that if they do not eat a food presented, it will be replaced with a more appealing food. A child may continue to be difficult to transition to the table or refuse a food item until they get the food choice that most appeals to them. A parent may continue to replace foods with more appealing foods such as salty or sweet foods (usually taking away vegetables, fruits, and proteins) to get their child to eat. When a parent later attempts to replace that food with a more nutritious food option, the previous pattern of responding has been established, and the likelihood of a behavioral problem is greater. As previously mentioned, for a typical child, food selectivity may be associated with a developmental stage, and behaviors exhibited during mealtime often include crying, or pushing away the plate. For a child with ASD, mealtime behavior may quickly escalate to aggression
(towards parents or siblings), property destruction, or to self-injurious behavior and, at these times, feeding problems are unlikely to resolve without intervention (Piazza et al., 2003; Suarez et al., 2013). Due to inherent communication limitations, this behavior would most likely be more severe in children with ASD as compared to typical children. As a result, mealtimes may quickly become an aversive activity for a child with ASD and their parent. The parent may learn that giving their child food that they prefer decreases the likelihood of behavioral problems at mealtimes, and increases the amount of food they will eat (but not the types of food). Several studies suggest that negative reinforcement (escape from eating) has a significant role in maintaining inappropriate mealtime behavior (Najdowski et al., 2008; Piazza et al., 2003). For example, a child with ASD learns that they can escape from the table by engaging in a behavioral outburst, or that refusing a non-preferred food will eventually get them a more preferred food, increasing the likelihood that the child will repeat that same behavior in the future. As noted by Piazza et al. (2003), when parents were observed (through one-way mirror) during feeding, all of the parents removed the food following inappropriate behavior, and 50% of the parents also offered a tangible item when the inappropriate behavior occurred.

Parents in the current study indicated a past history of significant behavioral issues during mealtimes including tantrums, property destruction, aggression, and self-injury, and reported having tried a number of interventions (e.g., making them sit until finished, first vegetables then dessert, eating separately from the family) without success. Current accommodations reportedly evolved over several years to include allowing them to eat snacks throughout the day, preparing special meals with only foods they are likely to eat, maintaining familiar routines (with the same utensils, dishes), allowing them to sit at the table without eating, and allowing them to leave the table prior to finishing their food to avoid behavioral difficulties. Parents also reported
behavioral issue (e.g., scripting, increase in self-stimulatory behavior, eloping from the table, comments about the food) still occurring when attempts are made to add new foods into their diet.

The pattern of responding to new foods observed during the study was also consistent with behavior reported by parents and teachers of the participants. For example, Frank and Sally complied with the request to sit at the table during baseline sessions, but exhibited scripting and self-stimulatory behavior following the presentation of the food and the verbal prompt to eat. Isaac required verbal and physical redirection to keep him from eloping from the room (to the outside), and to sit at the table in the presence of new foods during the first two baseline sessions. During several baseline sessions, Isaac also protested taking a break for an extended period of time before coming to the table for the session. Once the intervention phase began, all three participants appeared to enjoy watching themselves in the videos, and comments made during the videos were positive in nature (e.g., “Hey, that’s me”, “I’m in the movie”, “I’m eating carrots”, “Delicious”) with no scripting noted during viewing the video. When the video ended, and the food was presented, all three participants increased the amount of scripting (unrelated to the videos), vocal and physical self-stimulatory behavior increased, and an increase in avoidant/escape behavior (gaze away from plate, asking questions about unrelated topics) was noted. The pattern of responding by the participants (i.e., opting out by verbalizing “all done”, sitting with eyes averted away from the plate, or scripting until the time elapsed or meal removed) was reportedly consistent with previous responding to the presentation of new foods during cooking activities at school.
Implications for Future Research

While results from this study did not support video self-modeling alone as an effective intervention in promoting the acceptance of novel foods, support staff viewed the intervention positively, endorsed that they liked the procedures, and believed that the intervention was a reasonable and fair way to address feeding problems. This study also offers a number of suggestions for further research. In addition to video modeling, limiting access to preferred food items prior to (and immediately after) intervention sessions (Tapper, 2005), using a hierarchical approach to exposure (shaping), and individualized reinforcement strategies may prove more effective. In this study, access to preferred foods was uncontrolled by the researcher (although it was requested that no edible reinforcers be offered during the study). No consequences (reinforcement) were given for participants consuming nonpreferred food items during sessions, but participants did transition from sessions to snack or lunch where access to preferred foods was unlimited. Levin and Carr (2001) suggested that establishing operations were more likely in effect when access to preferred items was limited, and positive reinforcement contingencies delivered immediately upon the consumption of nonpreferred food items. Koegel et al. (2012) used a hierarchical approach to exposure (e.g., reinforced for touching food with finger, touching food to lips, biting food, biting and putting food in mouth, chewing (spitting out), chewing and swallowing, and accepting food without disruptive behavior) with three children with ASD to increase the number of foods accepted. The sensitivity of the hierarchical model allowed for more opportunities to reinforce approximations towards consumption of nonpreferred food without disruptive behavior. Charlop-Christy et al. (2002) also supported the use of a hierarchical approach (or shaping) to help overcome rigidity and inflexibility related to food issues. Reinforcement is an important part of most behavior programs, and is most effective
when immediately presented after the occurrence of the behavior (Cooper, Heron, & Heward, 2007). In the current study, one participant touched foods (i.e., raisins, plums) that had a different texture than any foods on her food list, and bit off a piece of carrot and raisin (but did not swallow it). Another participant asked for his ‘Cheetos’ after taking a bite of target food (reinforced during a prior food study after each bite), and asked again for an edible reinforcer after his sessions ended. Participants in the current study were not reinforced or acknowledged for trying new foods, or approximating eating behavior. The question remains if the participants would have consumed the food items (or made progress towards eating new foods) if reinforcers for approximations and for trying new food items were available.

Interestingly, it does appear that the process of making the video itself may have had impact on increasing the acceptance of food, or at least increased the motivation to sit at a table in the presence of food. Frank added one novel food (raisins) during the making of the self-modeling video, and two additional novel foods (blueberries and pears) during baseline condition and consumption continued through intervention phase (with blueberries consumed during follow-up). Sally also added one novel food (cheddar cheese) during baseline and continued consumption through intervention phase. Sally also tasted two additional foods (carrots and raisins during several of the intervention sessions), but did not consume the entire piece of food. Isaac’s behavior also improved in that he required support staff to sit next to him during baseline sessions to prevent elopement from the room and other unsafe behaviors, but once the video was presented during the intervention sessions, he willingly sat without staff support. The use of a peer or adult as the model, (possibly from the perspective of the participant point of view perspective) may also help reduce distractions, focus attention on salient details, and eliminate the need to shift roles from actor to participant.
The impact of a child with ASD and feeding problems on family life can be profound and challenging. Ausderau and Juarez (2013) interviewed six mothers of children with ASD who experienced feeding challenges. Several themes emerged including, the need to shift their beliefs about what was important to them (i.e., eating together as a family), and the need to construct a separate mealtime for their child with ASD. This separate mealtime may have evolved over several months or years. Mothers reported that their child’s behavior affected the rest of the family at mealtimes and, for the preservation of the rest of the family, they often ate alone with their child with ASD, as well as prepared special meals and employed special mealtime routines. The mothers also described a lack of understanding and support by others (e.g., partners, extended families, and friends), which further isolated them. In the current study, parents of all three participants reported that they consulted their child’s pediatricians regarding concerns surrounding feeding problems without resolution, and continued to seek help from a variety of sources. Two of the three participants had been involved with programs or studies to address feeding issues at school, one with limited success, and the other participant was dropped from the study due to his refusal to participate. The third participant’s family welcomed any help in addressing feeding problems with their daughter, but her daughter had not been included in a formal feeding program in or outside of school prior to this study. Parents also indicated that they were not aware of any early intervention programs available to them that may have offered the means to support and an effective intervention. A number of studies have examined the effectiveness of teaching caregivers of children with ASD the behavioral skills necessary to implement feeding programs in their homes (Najdowski et al., 2010; Penrod, Wallace, Reagon, Betz, & Higbee, 2010; Seiverling, Williams, Sturmey, & Hart, 2012). Results indicated that parents of children with ASD (mean age 4.2; range 2 to 8 years) were successful in increasing
the number of foods accepted by implementing a behaviorally-based feeding program in the home after receiving parent training that included supervision and feedback. Sharp, Burrell, and Jaquess (2013) developed a self-directed parent-training curriculum (The Autism MEAL Plan) to address eating aversions and atypical patterns of food intake. Results of the pilot program, that included ten families, indicated high social validity, and parent perception of the effectiveness of the program, despite the fact that mealtime behaviors and the variety of foods eaten did not significantly change. Parents also reported a significant reduction in overall stress after the intervention. Of note, the Sharp et al. (2013) research used the BAMBI as a measure of behavior change. This instrument was revised to the BAMBIC that was used in this study. Parents in the current study noted that they were not able to endorse items due to the wording of the items, but also they indicated that the instrument did not address the history prior to six months, and for older participants, accommodations and routines had long ago been established that eliminated many of the behaviors that were measured. These studies highlighted the need for continued research to include a parent-training component, and the results of the three previous studies lend support for early intervention being most successful.

In summary, abnormal eating behaviors in children with ASD are higher than typical children, with patterns of selective eating and behavioral issues during mealtimes that can begin during infancy and continue through adulthood (Fodstad, 2008). The growing literature base has offered evidence-based practices that include antecedent and consequence strategies, but most of the research has taken place within clinical settings. Parents of the participants in this study report early feeding problems, however, they also report not receiving the support and strategies they needed to use at home to help develop healthier eating routines at home. Parent training has shown to be effective with increasing the number of foods accepted when implemented with
young children, and when paired with outside support and feedback. In this study, the use of video modeling alone was not effective in increasing the number of foods accepted with the three children ages 10 to 11, but the question remains, if it would have been more effective with younger children, and paired with reinforcement and a shaping component.


Allen, S. (2009). The use of video modeling to increase food acceptance. IRSA.


Interventions, 20, 139-146.


Creer, T. L., & Miklich, D. R. (1970). The application of a self-modeling procedure to


Exceptional Children, 43, 8-19.


Interventions, 27, 175-184.


Appendices
Executive Director Consent Form for Participation in a Research Study

University of Connecticut

Principal Investigator: Thomas Kehle, Ph.D., Professor of School Psychology
Student Researcher: Gail Loughlin Rogers, School Psychologist, BCBA, Doctoral Candidate in School Psychology
Study Title: Examining Video Self-Modeling in Promoting Food Acceptance in Children with Autism Spectrum Disorder in a School Setting
Sponsor: University of Connecticut

Introduction

Thank you for taking the time to read this consent form. This letter is requesting your permission to allow this research study to be conducted at River Street School. This research is conducted by the student researcher, Ms. Gail Loughlin Rogers for her dissertation under the direction of Prof. Thomas Kehle, Ph.D. from the Department of School Psychology in the Neag School of Education.

Why is this research study being done?

The purpose of this research study is to see if video self-modeling can promote food acceptance in children with autism spectrum disorder (ASD). Typically a variety of antecedent and consequent strategies are used to increase food consumption in children with food selectivity. While some of these strategies have successfully increased food consumption in children with ASD, they can be time consuming and may require more invasive treatment components including physical guidance, and holding the spoon with food to the mouth until the food is accepted, or representing food that is expelled. Video self-modeling may serve as an effective, more resource efficient alternative to the multi-component based treatments. During video self-modeling, a video is created that depicts the student exhibiting the desired behavior. Once the video has been created, video self-modeling only requires that the support staff show the student a video of him/herself exhibiting the target behavior. Therefore, video self-modeling interventions are attractive because they place very few demands on teachers or support staff.

What are the research procedures? What will the teachers, support staff, and children be asked to do?

If you agree to have this study take place at River Street School, consent forms will be completed by teachers, support staff, and the parents/guardians of students with ASD. After the consent forms have been completed and obtained, screening procedures will be used to determine if the
student with ASD meets inclusion criteria for participation in the study. Specifically, it will be recorded whether the student (1) meets diagnostic criteria for ASD according to the DSM-5, (2) exhibits food selectivity or feeding problems according to support staff, teacher or parent report, (3) can attend to a video of oneself for at least 3-minutes, (4) has self-recognition, and (5) demonstrate safe eating/swallowing. Diagnosis will be confirmed by conducting a record review. Two screening tests will be conducted with the students. The first screening test will evaluate the student’s ability to attend to a video of him/herself. Therefore, the researcher will film the student (no other students will be filmed) for 3-minutes during an activity and will show the student the resulting video. While the student is watching the video, the researcher will be observing the student to determine whether he/she is able to attend to the video for 3-minutes. Another screening test will evaluate the student’s self-recognition ability. To do so, the researcher will use the record feature on the iPad to record the student and view themselves on the screen. If the student reacts in any way that indicates a change in affect to what is depicted (i.e., sticking out tongue, big smiles, moving in and out of the screen), they can self-recognize. These screening tests will be given before the start of the intervention. The first five consenting student participants who meet inclusion criteria will be included in the study.

Another screening process will be used to select five targeted foods for each participant. Specifically, parents will be asked to complete a Food Preference Inventory, and from that list, a number of foods will be chosen specific to each participant as possible target foods. The foods will be offered to the participant a minimum of 5 times, and a determination will be made as to which foods will be targeted during intervention. Foods not consumed during this initial probe will be considered for intervention.

Next, a 3-5 minute long video will be created for each participant that will contain a number of vignettes approximately 30-seconds to 1-minute in length. To maintain privacy, filming will take place in a room without other students present. Filming should take no longer than 30-minutes for each participant, but may be done over several sessions. The video will be comprised of five vignettes. Each vignette will depict the participant complying with the request to eat and the presentation of target food. To create each vignette, the researcher or a support staff will be videotaped while making the request. Gestural prompts, modeling, and partial physical assistance will be used to prompt the participant to comply with the request. Prompts will be edited out of the video to make it appear as though the participant immediately complied with the request. Therefore, the final vignette will show the request being made and the participant complying with the request. The final video will consist of five vignettes so that the participant is able to watch examples of themselves complying with the request to eat multiple times.

Baseline data collection will occur prior introducing the video self-modeling intervention. The session will take place in an agreed upon location within the school prior to the participant having their scheduled lunch or dinner. Teachers will be instructed not to offer edible reinforcers between morning snack (if offered as a regular part of their schedule) and lunch or dinner. All other non-edible reinforcers will continue to be delivered in accordance with the individual program. If the classroom will be participating in a cooking activity during lunchtime, the participant will not be involved in the baseline or intervention that day, unless their participation will not interfere with time away from the classroom activity. During baseline data collection probes, the participant will be seated at the table, with the researcher or support staff sitting
Appendix A: Executive Director Consent Form for Participation in a Research Study

Across from them at the same table. Five bite-size pieces of a food identified a possible target food will be placed on a plate in front of the participant. The researcher or support staff will say, “It is time to eat”. There are no programmed consequences for either rejection or consuming the food. Baseline will continue until all targeted foods have been presented a minimum of five times.

After baseline, the intervention will begin. The intervention phase will consist of the viewing of the edited video self-modeling vignettes and then presenting the targeted food. The participant will be escorted into the designated intervention area, seated at the table, with the iPad set up to play the video self-modeling vignettes. The researcher or support staff will be seated next to the participant and turn on the video. The participant will be redirected to the video if needed, and social praise given for attending to the video. After the video has ended, the participant will be presented with a plate of five pieces of a target food and told, “It’s time to eat”. There are no programmed consequences for either rejection or consuming the food. The participant will join their class for the remainder of the lunch/dinner period. If additional time is needed to finish eating their meal, they will be accommodated.

Data will be collected via iPad using ABC Data Pro during all sessions on food consumed and any inappropriate mealtime behaviors. All sessions will be recorded for treatment integrity and inter-observer agreement.

The proposed study will last approximately 20 to 30 sessions, which should allow for enough observations for each participant. The number of foods consumed and any inappropriate behaviors during baseline will be compared with intervention data. Follow up data will be collected for target and novel food presented without video self-modeling for generalization and maintenance. At the end of the study, the teacher and support staff will complete the Behavior Intervention Rating Scale, which will evaluate his/her opinion of the intervention’s acceptability and effectiveness for increasing food consumption.

Space and Equipment Requirements

A room will be needed to complete this study that will include at a minimum a table and two chairs. It can be a room designated for other purposes throughout the remainder of the day. Use of a Canon Vixia Video recorder and tri-pod will be needed to do this research.

What are the risks or inconveniences of the study?

A potential risk to the student involves missing class activities. When creating the videos, the student will be unable to participate in 30-minutes of a classroom free time. The researcher will verify with the classroom teacher that the student is not missing a preferred activity. In addition, the student will be unable to participate in normal lunch with their classroom for a period of 10 to 15 minutes each time that the student participates. As with making any request, there is the possibility that a student could display behavior that could include aggression or self-injury. If at anytime a behavior becomes a danger to oneself or to others, the session will be terminated.
Appendix A: Executive Director Consent Form for Participation in a Research Study

Potential risks for teachers and support staff are inconveniences. These risks include spending about 15-minutes to complete the Behavior Intervention Rating Scale for each student. The researcher will also interview the teacher for approximately 20-minutes about each student. Support staff will also be recruited to help with various aspects of the study such as participation in a video, videotaping or collecting data.

**What are the benefits of the research?**

Students may not directly benefit from this research; however, we hope that participation in the study may help us find out if this intervention is effective for increasing food consumption in children with ASD. There are some potential benefits of student’s participation in this research study. The video may help to improve the student’s compliance to try novel foods, which may be a potential benefit for the student and parents since increasing food choices may provide a more nutritional balanced diet.

**Will there be payments for participation? Are there costs to participate?**

There are no additional costs and you will not be paid to be in this study.

**How will the information of my staff and students be protected?**

The following procedures will be used to protect the confidentiality of the data collected from you. The researchers will keep all study records (including any codes to your data) locked in a secure location. Research records will be labeled with a code. The code will be derived from the first and last initial of each participant followed by a sequential 3-digit code. A master key that links names and codes will be maintained in a separate and secure location. The master key and videos will be destroyed after 3 years. All electronic files (e.g., database, spreadsheet, etc.) containing identifiable information will be password protected. Any computer hosting such files will also have password protection to prevent access by unauthorized users. Only the primary investigator and student researcher will have access to the passwords. Data that will be shared with others will be coded as described above to help protect your identity. At the conclusion of this study, the researchers may publish their findings. Information will be presented in summary format and you will not be identified in any publications or presentations.

We will do our best to protect the confidentiality of the information we gather from you but we cannot guarantee 100% confidentiality. In certain situations, such as when child abuse or neglect is suspected, the student researcher will have to break confidentiality.

You should also know that the UConn Institutional Review Board (IRB) and the Office of Research Compliance may inspect study records as part of its auditing program, but these reviews will only focus on the researchers and not on your responses or involvement. The IRB is a group of people who review research studies to protect the rights and welfare of research participants.

**Can my staff, students, and I rescind permission and what are our rights?**
Appendix A: Executive Director Consent Form for Participation in a Research Study

The staff and students do not have to be in this research if they do not want to participate. If they agree to be in the study, but later change their mind, they may withdraw at any time. There are no penalties or consequences of any kind if they decide that they do not want to participate.

In addition, you do not have to allow that this research be conducted at River Street School. If you agree to allow the research to occur and later change your mind, you may withdraw it at any time. There are no penalties or consequences of any kind if you decide not to allow this research at River Street School.

**Whom do I contact if I have questions about the research?**

We will be happy to answer any question you have about this study. If you have further questions about this study or if you have a research-related problem, you may contact the principal investigator, Thomas Kehle at (860) 486-0166 or the student researcher Gail Loughlin Rogers at (860) 298-9079. If you have any questions concerning your rights as a research participant, you may contact the University of Connecticut Institutional Review Board (IRB) at 860-486-8802.

**How do I submit the consent form?**

If you decide to allow the research to be conducted at River Street School, you will have one week to complete the consent form. Once you have completed the form, contact Gail Loughlin Rogers either in person, or by email (gloughlin@crec.org) and she will pick up the form.
Executive Director Consent Form for Participation in a Research Study

University of Connecticut

Return Slip

Principal Investigator: Thomas Kehle, Ph.D., Professor of School Psychology
Student Researcher: Gail Loughlin Rogers, Doctoral Candidate in School Psychology
Study Title: Examining Video Self-Modeling in Promoting Food Acceptance in Children with Autism Spectrum Disorder in a School Setting

Sponsor: University of Connecticut

Documentation of Consent:

I have read this form and decided that I will allow the project described above to be conducted at River Street School. Its general purposes, the particulars of involvement and possible risks and inconveniences have been explained to my satisfaction. I understand that I can withdraw at any time. My signature also indicates that I have received a copy of this consent form.

Executive Director Signature: ___________________________ Print Name: ___________________________ Date: ___________________________

___________________________
Signature of Person
Obtaining Consent

___________________________
Print Name: ___________________________ Date: ___________________________
Appendix B: Principal Consent Form for Participation in a Research Study

Principal Consent Form for Participation in a Research Study

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Principal Investigator: Thomas Kehle, Ph.D., Professor of School Psychology
Student Researcher: Gail Loughlin Rogers, School Psychologist, BCBA, Doctoral Candidate in School Psychology
Study Title: Examining Video Self-Modeling in Promoting Food Acceptance in Children with Autism Spectrum Disorder in a School Setting
Sponsor: University of Connecticut

Introduction

Thank you for taking the time to read this consent form. This letter is requesting your permission to allow this research study to be conducted in your school. This research is conducted by the student researcher, Ms. Gail Loughlin Rogers for her dissertation under the direction of Prof. Thomas Kehle, Ph.D. from the Department of School Psychology in the Neag School of Education. Bruce Douglas, Executive Director, Capital Region Education Council have given approval for this research to be conducted in River Street School.

Why is this research study being done?

The purpose of this research study is to see if video self-modeling can promote food acceptance in children with autism spectrum disorder (ASD). Typically a variety of antecedent and consequent strategies are used to increase food consumption in children with food selectivity. While some of these strategies have successfully increased food consumption in children with ASD, they can be time consuming and may require more invasive treatment components including physical guidance, and holding the spoon with food to the mouth until the food is accepted, or representing food that is expelled. Video self-modeling may serve as an effective, more resource efficient alternative to the multi-component based treatments. During video self-modeling, a video is created that depicts the student exhibiting the desired behavior. Once the video has been created, video self-modeling only requires that the support staff show the student a video of him/herself exhibiting the target behavior. Therefore, video self-modeling interventions are attractive because they place very few demands on teachers or support staff.
What are the research procedures? What will the teachers, support staff, and children be asked to do?

If you agree to have this study take place at your school, teachers, support staff, and the parents/guardians of students with ASD will complete consent forms. After the consent forms have been completed and obtained, screening procedures will be used to determine if the student with ASD meets inclusion criteria for participation in the study. Specifically, it will be recorded whether the student (1) meets diagnostic criteria for ASD according to the DSM-5, (2) exhibits food selectivity or feeding problems according to support staff, teacher or parent report, (3) can attend to a video of oneself for at least 2-minutes, (4) has self-recognition, and (5) demonstrates safe swallowing. Diagnosis will be confirmed by conducting a record review, and qualified evaluator will conduct a safe swallowing evaluation to be sure the student demonstrates safe swallowing. Two additional screening tests will be conducted with the students. The first screening test will evaluate the student’s ability to attend to a video of him/herself. Therefore, the researcher will film the student (no other students will be filmed) for 2-3 minutes during an activity and will show the student the resulting video. While the student is watching the video, the researcher will be observing the student to determine whether he/she is able to attend to the video for approximately 2 minutes. Another screening test will evaluate the student’s self-recognition ability. To do so, the researcher will use the record feature on the iPad to record the student and they will view themselves on the screen while recording. If the student reacts in any way that indicates a change in affect to what is depicted (i.e., sticking out tongue, big smiles, moving in and out of the screen), they can self-recognize. These screening tests will be given before the start of the intervention. The first five consenting student participants who meet inclusion criteria will be included in the study.

Another screening process will be used to select five targeted foods for each participant. Specifically, parents will be asked to complete a Food Preference Inventory, and from that list, a number of foods will be chosen specific to each participant as possible target foods. The foods will be offered to the participant a minimum of 2 times, during lunch, snack, cooking activities, or at dinner, and a determination will be made as to which foods will be targeted during intervention. Foods not consumed during this initial probe will be considered for intervention.

Next, video approximately 2-3 minutes long will be created for each participant that will contain a number of vignettes approximately 30-seconds in length. To maintain privacy, filming will take place in a room without other students present. Filming should take no longer than 15-minutes for each participant, but may be done over several sessions. The video will be comprised of five vignettes. Each vignette will depict the participant complying with the request to eat and the presentation of target food. To create each vignette, the participant will be videotaped eating preferred foods, and researcher or a support staff will be videotaped while making the request to eat. Gestural prompts, modeling, and partial physical assistance may be used to prompt the participant to comply with the request. Prompts will be edited out of the video to make it appear as though the participant immediately complied with the request, and target foods will be edited into the
video. Therefore, the final vignette will show the request being made and the participant complying with the request to eat the target food. The final video will consist of five vignettes so that the participant is able to watch examples of eating the target food multiple times.

Baseline data collection will occur prior introducing the video self-modeling intervention. The session will take place in an agreed upon location within the school prior to the participant having their scheduled lunch or dinner. Teachers will be instructed not to offer edible reinforcers between morning snack (if offered as a regular part of their schedule) and after lunch. All other non-edible reinforcers will continue to be delivered in accordance with the individual program. If the classroom will be participating in a cooking activity during lunchtime, the participant will not be involved in the baseline or intervention that day, unless their participation will not interfere with time away from the classroom activity. During baseline data collection, the participant will be seated at the table, with the researcher or support staff sitting across from them at the same table. Five bite-size pieces of food identified as target food will be placed on a plate in front of the participant. The researcher or support staff will say, “It is time to eat”. No other prompts will be given. There are no programmed consequences for either rejection or consuming the food. Baseline will continue until all targeted foods have been presented a minimum of five times.

After baseline, the intervention will begin. The intervention phase will consist of the viewing of the edited video self-modeling vignettes and then presenting the targeted food. The participant will be escorted into the designated intervention area, seated at the table, with the iPad set up to play the video self-modeling vignettes. The researcher or support staff will be seated next to the participant and turn on the video. The participant will be redirected to the video if needed, and social praise given for attending to the video. After the video has ended, the participant will be presented with a plate of five pieces of target food and verbally prompted, “It’s time to eat”. No other prompts will be given. There are no programmed consequences for either rejection or consuming the food. The participant will join their class for the remainder of the lunch/dinner period. If additional time is needed to finish eating their meal, they will be accommodated.

Data will be collected via iPad using ABC Data Pro during all sessions on food consumed and any inappropriate mealtime behaviors observed. All sessions will be recorded for treatment integrity and inter-observer agreement.

The proposed study will last approximately 20 to 30 sessions, which should allow for enough observations for each participant. The number of foods consumed and inappropriate behaviors (if applicable) during baseline will be compared with intervention data. Follow up data will be collected for target food presented without video self-modeling for generalization and maintenance. At the end of the study, the teacher and support staff will complete the Behavior Intervention Rating Scale, which will evaluate his/her opinion of the intervention’s acceptability and effectiveness for increasing food consumption.
Space and Equipment Requirements

A room will be needed to complete this study that will include at a minimum a table and two chairs. It can be a room designated for other purposes throughout the remainder of the day. Use of a Canon Vixia Video recorder and tri-pod will be needed to do this research.

What are the risks or inconveniences of the study?

Risks and inconveniences for student participants:

While we believe that there are no known risks to the student participants because of his/her participation in this study, there is always the potential risk of non-compliance, aggression, or self-injury associated with any demand. Every effort to minimize these risks have been included in the treatment design, which includes limited demands, of only one prompt “It’s time to eat”, and no additional prompting. There are also no consequences associated with not attempting to eat, or ending the session by getting up from the table. A behavior analyst will be in attendance as an independent observer during the study, and will assist if any behavior should occur. Parents will be notified of any behavior that occurs during the study.

Student participants may also be inconvenienced at times, and may miss a portion of a scheduled activity. When creating the videos, the student participant will be unable to participate in approximately 15-minutes of free time, but it may over several sessions. The researcher will verify with the teacher that the participant is not missing a preferred activity or direct instruction time. In addition, the student participant may be unable to participate with their classroom at lunch for approximately 10 minutes during the intervention and baseline phase, but will be returned to the classroom lunch period to eat with their classroom. If the student participant needs more time to finish their lunch, we will accommodate them. We will make every effort to make sure that minimal disruptions to the student participant’s schedule are made. No student participant will miss any services (i.e., occupational therapy, physical therapy, or speech).

Risks and inconveniences for teacher participants:

Potential risks for teacher participants are inconveniences. This includes spending about 15-minutes to complete the Behavior Intervention Rating Scale for each student selected to participate. The researcher will also interview teacher participants for approximately 20-minutes about each student. Every effort will be made by the researcher to work around classroom schedules so that removing the student participant will be the least disruptive to both the classroom and the student.

Risks and inconveniences for support staff participants:
While we believe that there are no known risks to support staff because of participation in this study, there is always the potential risk of non-compliance, aggression, or self-injury associated when any demand is placed on our students. Every effort to minimize these risks have been included in the treatment design, which includes limited demands, of only one prompt "It’s time to eat", and no additional prompting. There are also no consequences associated with the participant not attempting to eat, or ending the session by getting up from the table. There will be a minimum of two adults in the room during each session. If at anytime a behavior becomes a danger to oneself or to others, the session will be terminated.

Potential risks for support staff also are inconveniences. These risks include taking support staff time, and depending on what parts of the study the support staff decides to participate in, will determine the amount of time. Support staff will be asked to fill out the Behavior Intervention Rating Scale at the beginning and at the end of the study; it should take approximately 20 minutes to complete.

**What are the benefits of the research?**

It is possible that the participants will not benefit directly from this research study. The anticipated benefits are described below:

**Student participants:**

Due to the fact that feeding problems are more prevalent in children with ASD, it would be helpful to have a strategy that is not only effective, but also less restrictive than consequence base strategies that are currently being used in research. Video self-modeling could help the student participant try new foods, and with repeated attempts at trying new foods, may include these foods into their diet. In addition, student participants may increase the selection of foods consumed, which may increase the nutritional value of their diet. Parents may find it easier at mealtime when attempting to introduce new foods.

**Teacher participants:**

The video may help to improve the participant’s compliance to try new foods, which may be a potential benefit for the student and parents since increasing food choices, and may provide a more nutritional balanced diet. Teachers may have an easier time with participation during cooking activities and their student’s willingness to try new foods. If the results do not indicate that VSM is effective as an intervention to increase food acceptance, then the support staff have been included in a study that investigated the effect and important knowledge was still gained.

**Support staff participants:**
Due to the fact that feeding problems are more prevalent in children with ASD, it would be helpful to have a strategy that is not only effective, but also less restrictive than consequence base strategies that are currently being used in research. Video self-modeling could help students try new foods, and with repeated attempts at trying new foods, may include these foods into their diet. VSM may help to improve the student’s compliance to try new foods, which may be a potential benefit for the student and parents since increasing food choices may provide a more nutritional balanced diet. If the results do not indicate that VSM is effective as an intervention to increase food acceptance, then the support staff have been included in a study that investigated the effect and important knowledge was still gained.

**Will there be payments for participation? Are there costs to participate?**

There are no additional costs and you will not be paid to be in this study.

**How will the information of my staff and students be protected?**

The following procedures will be used to protect the confidentiality of the data collected from you. The researchers will keep all study records (including any codes to your data) locked in a secure location. Research records will be labeled with a code. The code will be derived from the first and last initial of each participant followed by a sequential 3-digit code and a number that reflects how many participants are enrolled in the study. A master key that links names and codes will be maintained in a separate and secure location. The master key and videos will be destroyed after 3 years. All electronic files (e.g., database, spreadsheet, etc) containing identifiable information will be password protected. Any computer hosting such files will also have password protection to prevent access by unauthorized users. Only the primary investigator and student researcher will have access to the passwords. Data that will be shared with others will be coded as described above to help protect your identity. At the conclusion of this study, the researchers may publish their findings. Information will be presented in summary format and participants will not be identified in any publications or presentations.

We will do our best to protect the confidentiality of the information we gather but we cannot guarantee 100% confidentiality. In certain situations, such as when child abuse or neglect is suspected, the student researcher will have to break confidentiality.

You should also know that the UConn Institutional Review Board (IRB) and the Office of Research Compliance may inspect study records as part of its auditing program, but these reviews will only focus on the researchers and not on responses or involvement. The IRB is a group of people who review research studies to protect the rights and welfare of research participants.

**Can my staff, students, and I rescind permission and what are our rights?**
Appendix B: Principal Consent Form for Participation in a Research Study

The staff and students do not have to be in this research if they do not want to participate. If they agree to be in the study, but later change their mind, they may withdraw at any time. There are no penalties or consequences of any kind if they decide that they do not want to participate.

In addition, you do not have to allow that this research be conducted in your school. If you agree to allow the research to occur in your school building and later change your mind, you may withdraw it at any time. There are no penalties or consequences of any kind if you decide not to allow this research in your school.

**Whom do I contact if I have questions about the research?**

We will be happy to answer any question you have about this study. If you have further questions about this study or if you have a research-related problem, you may contact the principal investigator, Thomas Kehle at (860) 486-0166 or the student researcher Gail Loughlin Rogers at (860) 298-9079. If you have any questions concerning your rights as a research participant, you may contact the University of Connecticut Institutional Review Board (IRB) at 860-486-8802.

**How do I submit the consent form?**

If you decide to participate, you will have one week to complete the consent form. Once you have completed the form, contact Gail Loughlin Rogers either in person, or by email (gloughlin@crec.org) and she will pick up the form.
Principal Consent Form for Participation in a Research Study

Principal Investigator: Thomas Kehle, Ph.D., Professor of School Psychology
Student Researcher: Gail Loughlin Rogers, Doctoral Candidate in School Psychology
Study Title: Examining Video Self-Modeling in Promoting Food Acceptance in Children with Autism Spectrum Disorder in a School Setting

Sponsor: University of Connecticut

Documentation of Consent:

I have read this form and decided that I will participate in the project described above. Its general purposes, the particulars of involvement and possible risks and inconveniences have been explained to my satisfaction. I understand that I can withdraw at any time. My signature also indicates that I have received a copy of this consent form.

Participant Signature: ___________________________ Print Name: ___________________________ Date: ___________________________

Signature of Person Obtaining Consent: ___________________________ Print Name: ___________________________ Date: ___________________________
Hello. Thank you for taking the time to speak with me. I am Gail Loughlin Rogers and I am a PhD student working under the supervision of Dr. Thomas Kehle from the School Psychology Program at the University of Connecticut. My professor and I want to find ways to promote food acceptance, which is another way of saying increasing food consumption, in children with autism spectrum disorder (ASD). This research study is for children with ASD ages 5-12 who may have difficulty when offered new foods, have only a few foods that they eat, or that may exhibit inappropriate mealtime behaviors. Our overall research goal is to see if our intervention, video self-modeling, can promote food acceptance in children with ASD.

I would like to give you an overview of the procedures involved in the study as well as describe the risks and benefits of the study.

**Step 2: Describe Procedures**

You will be asked to think of students in your classroom that may have food selectivity, or a limited amount of foods that they eat. Those students would be considered for participation in this study. If selected to participate, throughout the course of the study, you will have to send home and collect several forms including parental consent forms and a participant intake questionnaire.

There are steps to be sure that the student selected meets the inclusion criteria for the study. Specifically, it will be recorded whether the student (1) meets diagnostic criteria for ASD according to the DSM-5, (2) exhibits food selectivity or feeding problems according to support staff, teacher or parent report, (3) can attend to a video of oneself for at least 3-minutes, (4) has self-recognition, and (5) demonstrates safe swallowing/eating.

The first screening test will evaluate the student’s ability to attend to a video of him/herself. Therefore, the researcher will film the student for approximately 2 to 3-minutes during an activity and will show the student the resulting video. While the student is watching the video, the researcher will be observing the student to determine whether he/she is able to attend to the video for approximately 2 to 3-minutes. Another screening test will evaluate the student’s self-recognition ability. To do so, the researcher will use the record feature on the iPad to record the student and they will view themselves on the screen while recording. If the student reacts in any way that indicates a change in affect to what is depicted (i.e., sticking out tongue, big smiles, moving in and out of the screen), they can self-recognize. These screening tests will be given before the start of the intervention. A qualified evaluator will also evaluate the student during mealtime to be sure that they demonstrate safe swallowing/eating.
Your participation in the screening process will involve agreeing on convenient times for video taping that will be least disruptive to your classroom and the student, you will not have to have direct involvement in the making of the video, or in the screening process.

Once your student has been accepted and prior to implementing the video self-modeling intervention, the researcher will interview you for approximately 20-minutes about the student’s mealtime behavior and any other interventions that have been implemented to address food issues. You will also be asked to fill out the Behavior Intervention Rating Scale.

Prior to the intervention, a number of baseline and probe sessions may be necessary. You will not be asked to participate in this process, other than to make the student available at agreed upon times.

A screening process will be used to select the five target foods for each student. Specifically, parents will be asked to complete a Food Preference Inventory, and from that list, a number of foods will be chosen as possible target foods. The foods will be offered to the students a minimum of two times, and a determination will be made as to which foods will be targeted during intervention. Foods not consumed during this initial probe will be considered for intervention. You may be asked for your input for the selection of target foods, and direct observations will be made during snack, lunch, cooking activities or dinner.

Next, video, approximately 2-3 minutes long video will be created for each participant that will contain a number of vignettes approximately 30-seconds in length. To maintain privacy, filming will take place in a room without other students present. Filming should take no longer than 15-minutes for each student, but may be done over several sessions. You will not be required to participate, only to make your student available at agreed upon times.

Baseline data collection will occur prior introducing the video self-modeling intervention. The session will take place in an agreed upon location within the school prior to the participant having their scheduled lunch or dinner. You will be instructed not to offer edible reinforcers between morning snack (if offered as a regular part of their schedule) and lunch, or after lunch. All other non-edible reinforcers will continue to be delivered in accordance with the individual program. If the classroom will be participating in a cooking activity during lunchtime, the participant will not be involved in the baseline or intervention that day, unless their participation will not interfere with time away from the classroom activity. You will not be required to participate, only to make your student available at agreed upon times.

After baseline, the intervention will begin. The intervention phase will consist of the student viewing of the edited video self-modeling vignettes and then being presented with the target food. You will not be required to participate, only to make your student available at agreed upon times.

The proposed study will last approximately 20 to 30 sessions, which should allow for enough observations for each participant. The number of foods consumed and any inappropriate
behaviors observed during baseline will be compared with intervention data. Follow up data will be collected for target foods presented without video self-modeling for generalization and maintenance.

At the end of the study, you will be asked to complete the Behavior Intervention Rating Scale a second time, which will evaluate opinions of the intervention’s acceptability and usefulness for increasing food consumption.

Do you have any questions about the procedures?

**Step 3: Describe Risks and Benefits**

Risk/Benefits for teacher participants:
The only potential risks for teacher participants are being inconvenienced, as they will not have direct participation with the student participants. Participation will include spending about 15-minutes to complete the Behavior Intervention Rating Scale (both pre and post-intervention) for each student selected to participate, and approximately 20-minutes to go over behaviors currently observed around mealtime for each student participant. As mentioned, every effort will be made by the researcher to work around classroom schedules so that removing the student participant will be the least disruptive to both the classroom and the student. The potential benefits may include increasing food acceptance in the student participant, which in turn, may increase the number of foods that they may be willing to try during cooking activities, may be able to include in their lunches, and may increase the nutritional value of their meals. If the student does not increase the amount of foods that they eat (if the diet is restricted to 4 or 5 food choices) they may also suffer from side effects such as weight gain or loss, constipation, and in severe cases, time away from school due to doctor’s appointments or outside evaluations or treatments for food selectivity. The inconveniences outweigh the potential long-term risks to the student participant.

**Step 4: Ending the Meeting**

I have given you a lot of information today. Do you have any questions that would help you decide whether or not you would like to participate?

If you are still interested in participating in the study, I would like to give you a consent form. You do not have to complete if you are not interested in this study. If you decide to participate, please place your consent form in the sealed envelope provided and drop it off in person or in my mailbox. You have one week to complete the consent form.


If you have any questions or concerns, please feel free to call me at (860) 298-9079 ext. 2036. Thanks for your time today.

**End meeting.**
Appendix D: Support Staff Recruitment Script

Support Staff Recruitment Script

Step 1: Initial Contact

Hello. Thank you for taking the time to speak with me. I am Gail Loughlin Rogers and I am a PhD student working under the supervision of Dr. Thomas Kehle from the School Psychology Program at the University of Connecticut. My professor and I want to find ways to increase food acceptance, which is another way of saying increasing the number and types of foods that children with autism spectrum disorder (ASD) will eat. This research study is for children with ASD ages 5-12 who have difficulty during snack or mealtimes when new foods are presented. Our overall research goal is to see if our intervention, video self-modeling (VSM), can promote the acceptance of new foods in children with ASD.

I would like to give you an overview of the procedures involved in the study as well as describe the risks and benefits of the study.

Step 2: Describe Procedures

If you agree to participate in this study, you will be asked to help identify students that may have food selectivity, and participate in a number of ways during the study. You may be asked to help choose target foods, participate in probe, baseline or intervention sessions, take data either during live sessions or by viewing video recordings of sessions, or help in making the videos for the intervention. You may choose to participate in only a few aspects of the study, or only one part of the study. You will be asked to complete the Behavior Intervention Rating Scale prior to the start of the study, and at the end of the study as a measure of the interventions acceptability.

After the consent forms have been completed, screening procedures will be used to determine if the student with ASD meets inclusion criteria for participation in the study. Specifically, it will be recorded whether the student (1) meets diagnostic criteria for ASD according to the DSM-5, (2) exhibits a restrictive or selective diet by teacher and/or parent report, (3) can attend to a video of oneself for at least 2 minutes, (4) has self-recognition, and (5) demonstrates safe swallowing.

After conducting a brief observation, and interview of the parent and teacher, we will select a number of foods that will be targeted for use during the intervention. We will be collecting data on the acceptance or rejection of those food items, by offering the food to the selected students during probe sessions during their regularly scheduled snacks, lunch, cooking activities, or dinner.

Next, a 2-3 minute long video will be created for each participant that will contain a number of vignettes approximately 30-seconds in length. To maintain privacy, filming will take place in a room without other students present. Filming should take no longer than 15-minutes for each
participant, but may be done over several sessions if needed. The video will be comprised of five vignettes. Each vignette will depict the participant complying with the request to eat and the presentation of a target food. To create each vignette, participant will be videotaped eating preferred foods, and then the video will be edited to depict target foods. Also, the researcher or support staff will be videotaped while making the request to eat. Gestural prompts, modeling, and partial physical assistance may be used to prompt the participant to comply with the request. Prompts will be edited out of the video to make it appear as though the participant immediately complied with the request. Therefore, the final vignette will show only the request and the participant complying with the request to eat the target food. The final video will consist of five vignettes so that the participant is able to watch examples of eating target food multiple times.

Baseline data collection will occur prior to introducing the video self-modeling intervention. The session will take place in an agreed upon location within the school prior to the participant having their scheduled lunch, snack, or dinner. Teachers will be instructed not to offer edible reinforcers between morning snack (if offered as a regular part of their schedule) and lunch or after lunch. All other non-edible reinforcers will continue to be delivered in accordance with the individual program. If the classroom will be participating in a cooking activity during lunchtime, their participant will not be involved in the baseline or intervention that day, unless the participation will not interfere with time away from the classroom activity.

During baseline data collection probes, the participant will be seated at the table, with the researcher or support staff sitting across from them at the same table. Five bite-size pieces of food identified as target food will be placed on a plate in front of the participant. The researcher/support staff will say, “It is time to eat”. No other prompts will be given. There are no programmed consequences for either rejection or consuming the food. Baseline will continue until all targeted foods have been presented a minimum of five times. Data will be collected via iPad using ABC Data Pro on food consumed and any inappropriate behaviors observed. All sessions will be recorded for treatment integrity and inter-observer agreement data.

The intervention phase will consist of the viewing of the edited video self-modeling vignettes and then presenting the targeted food. The participant will be escorted into the designated intervention area, seated at the table, with the iPad set up to play the video self-modeling vignettes. The researcher or support staff will be seated next to the participant and turn on the video. The participant will be redirected to the video if needed, and social praise given for attending to the video. After the video has ended, the participant will be presented with a plate of five pieces of target food and told, “It’s time to eat”. No further prompts will be given. There are no programmed consequences for either rejection or consuming the food. Data will be collected via iPad using ABC Data Pro on food consumed, and any inappropriate behaviors observed. All sessions will be recorded for treatment integrity and inter-observer agreement data.

The proposed study will last approximately 20 to 30 sessions, which should allow for enough observations for each participant. The number of foods consumed and any inappropriate behaviors observed during baseline will be compared with intervention data. Follow up data will be collected for target foods presented without video self-modeling for generalization and maintenance. At the end of the study, the teacher and support staff will be asked to complete the
Behavior Intervention Rating Scale a second time, which will evaluate his/her opinion of the intervention’s acceptability and effectiveness in increasing food consumption.

Do you have any questions about the procedures or what you might be asked to participate with at this time?

**Step 3: Describe Risks and Benefits**

While we believe that there are no known risks to support staff because of participation in this study, there is always the potential risk of non-compliance, aggression, or self-injury associated when any demand is placed on our students. Every effort to minimize these risks have been included in the treatment design, which includes limited demands, of only one prompt “It’s time to eat”, and no additional prompting. There are also no consequences associated with the participant not attempting to eat, or ending the session by getting up from the table. There will be a minimum of two adults in the room during each session. If at anytime a behavior becomes a danger to oneself or to others, the session will be terminated.

Potential risks for you also are inconveniences. These risks include taking support staff time, and depending on what parts of the study the support staff decides to participate in, will determine the amount of time. Support staff will be asked to fill out the Behavior Intervention Rating Scale at the beginning and at the end of the study; it should take approximately 20 minutes to complete.

You may not directly benefit from this research; however, we hope that our student’s participation in the study may help us find out if this intervention is effective in promoting food consumption in children with ASD. Due to the fact that feeding problems are more prevalent in children with ASD, it would be helpful to have a strategy that is not only effective, but also less restrictive than consequence base strategies that are currently being used in research. Video self-modeling could help students try new foods, and with repeated attempts at trying new foods, may include these foods into their diet. VSM may help to improve the student’s compliance to try new foods, which may be a potential benefit for the student and parents since increasing food choices may provide a more nutritional balanced diet. If the results do not indicate that VSM is effective as an intervention to increase food acceptance, then the support staff have been included in a study that investigated the effect and important knowledge was still gained.

**Step 4: Ending the Meeting**

I have given you a lot of information today. Do you have any questions that would help you decide whether or not you would like to participate?

If you are still interested in participating in the study, I would like to give you a consent form. You do not have to complete if you are not interested in this study. If you decide to participate, please place your consent form in the sealed envelope provided and either deliver via inter-office mail, or drop it off in the researcher’s school mailbox. You have 1-week to complete the consent form.
Thanks again for your interest in *Examining Video Self-Modeling in Promoting Food Acceptance in Children with Autism Spectrum Disorder in a School Setting*. If you have any questions or concerns, please feel free to call me at (860) 298-9079 extension 2036. Thanks for your time today. **End meeting**
Appendix E: Teacher Consent Form for Participation in a Research Study

Principal Investigator: Thomas Kehle, Ph.D., Professor of School Psychology
Student Researcher: Gail Loughlin Rogers, Doctoral Candidate in School Psychology
Study Title: Examining Video Self-Modeling in Promoting Food Acceptance in Children with Autism Spectrum Disorder in a School Setting

Sponsor: University of Connecticut

Introduction

You are invited to participate in a research study to evaluate the effectiveness of a video self-modeling (VSM) intervention in promoting food acceptance, which is another way of saying increasing food consumption, in children with autism spectrum disorder (ASD). You are being asked to participate because you have a student with ASD in your classroom.

Why is this study being done?

The purpose of this research study is to see if video self-modeling can promote food acceptance in children with autism spectrum disorder (ASD). Typically a variety of antecedent and consequent strategies are used to increase food consumption in children with food selectivity. While some of these strategies have successfully increased food consumption in children with ASD, they can be time consuming and may require more invasive treatment components including physical guidance, and holding the spoon with food to the mouth until the food is accepted, or representing food that is expelled. Video self-modeling may serve as an effective, more resource efficient alternative to the multi-component based treatments. During video self-modeling, a video is created that depicts the student exhibiting the desired behavior. Once the video has been created, video self-modeling only requires that the support staff show the student a video of him/herself exhibiting the target behavior. Therefore, video self-modeling interventions are attractive because they place very few demands on teachers or support staff.

What are the study procedures? What will I be asked to do?
Appendix E: Teacher Consent Form for Participation in a Research Study

If you agree to take part in this study, you will be asked to think of students in your classroom that may have food selectivity, or a limited amount of foods that they eat. Those students would be considered for participation in this study. If selected to participate, throughout the course of the study, you will have to send home and collect several forms including parental consent forms and a participant intake questionnaire.

There are steps to be sure that the student selected meets the inclusion criteria for the study. Specifically, it will be recorded whether the student (1) meets diagnostic criteria for ASD according to the DSM-5, (2) exhibits food selectivity or feeding problems according to support staff, teacher or parent report, (3) can attend to a video of oneself for at least 2-minutes, (4) has self-recognition, and (5) demonstrates safe swallowing/eating.

Your participation in the screening process will involve agreeing on convenient times for video taping that will be least disruptive to your classroom and the student, you will not have to have direct involvement in the making of the video, or in the screening process.

Once your student has been accepted and prior to implementing the video self-modeling intervention, the researcher will interview you for approximately 20-minutes about the student’s mealtime behavior and any other interventions that have been implemented to address food issues. You will also be asked to fill out the Behavior Intervention Rating Scale that will take approximately 20 minutes to complete.

Prior to the intervention, a number of baseline and probe sessions may be necessary. You will not be asked to participate in this process, other than to make the student available at agreed upon times.

A screening process will be used to select the five target foods for each student. Specifically, parents will be asked to complete a Food Preference Inventory, and from that list, a number of foods will be chosen as possible target foods. The foods will be offered to the students a minimum of two times, and a determination will be made as to which foods will be targeted during intervention. You may be asked for your input for the selection of target foods, and direct observations will be made during snack, lunch, cooking activities or dinner.

Next, video, approximately 2-3 minutes long video will be created for each participant that will contain a number of vignettes approximately 30-seconds in length. To maintain privacy, filming will take place in a room without other students present. Filming should take no longer than 15-minutes for each student, but may be done over several sessions. You will not be required to participate, only to make your student available at agreed upon times.

Baseline data collection will occur prior introducing the video self-modeling intervention. The session will take place in an agreed upon location within the school prior to the participant having their scheduled lunch or dinner. You will be instructed not to offer edible reinforcers between morning snack (if offered as a regular part of their schedule) and lunch, or after lunch. All other non-edible reinforcers will continue to be delivered in
Appendix E: Teacher Consent Form for Participation in a Research Study

According with the individual program. If the classroom will be participating in a cooking activity during lunchtime, the participant will not be involved in the baseline or intervention that day, unless their participation will not interfere with time away from the classroom activity. You will not be required to participate, only to make your student available at agreed upon times.

After baseline, the intervention will begin. The intervention phase will consist of the student viewing of the edited video self-modeling vignettes and then being presented with the target food. You will not be required to participate, only to make your student available at agreed upon times.

The proposed study will last approximately 20 to 30 sessions, which should allow for enough observations for each participant. Follow up data will be collected for target foods presented without video self-modeling for generalization and maintenance approximately one month after the conclusion of the intervention. It will consist of presenting the target foods during snack, lunch, or dinner. You will be asked to include the food in their meal, and tell them, “It’s time to eat”. The researcher will collect the data on whether or not they eat the food presented.

At the end of the study, you will be asked to complete the Behavior Intervention Rating Scale a second time, which will evaluate opinions of the intervention’s acceptability and usefulness for increasing food consumption.

What are the risks or inconveniences of the study?

Potential risks for teacher participants are inconveniences. This includes spending about 15-20 minutes to complete the Behavior Intervention Rating Scale for each student selected to participate. The researcher will also interview teacher participants for approximately 20-minutes about each student. Every effort will be made by the researcher to work around classroom schedules so that removing the student participant will be the least disruptive to both the classroom and the student.

What are the benefits of the study?

It is possible that the participants will not benefit directly from this research study. The anticipated benefits are described below:

The video may help to improve the participant’s compliance to try new foods, which may be a potential benefit for the student and parents since increasing food choices, and may provide a more nutritional balanced diet. Teachers may have an easier time with participation during cooking activities and their student’s willingness to try new foods. If the results do not indicate that VSM is effective as an intervention to increase food acceptance, then the support staff have been included in a study that investigated the effect and important knowledge was still gained.

Will I receive payment for participation? Are there costs to participate?
Appendix E: Teacher Consent Form for Participation in a Research Study

There are no costs for you to participate in this research study. No payment will be made for participation in this study.

How will my personal information be protected?

The following procedures will be used to protect the confidentiality of the data collected from you. The researchers will keep all study records (including any codes to your data) locked in a secure location. Research records will be labeled with a code. The code will be derived from your first and last initial followed by a sequential 3-digit code and a number that reflects how many participants are enrolled in the study. A master key that links names and codes will be maintained in a separate and secure location. The master key and videos will be destroyed after 3 years. All electronic files (e.g., database, spreadsheet, etc.) containing identifiable information will be password protected. Any computer hosting such files will also have password protection to prevent access by unauthorized users. Only the primary investigator and student researcher will have access to the passwords. Data that will be shared with others will be coded as described above to help protect your identity. At the conclusion of this study, the researchers may publish their findings. Information will be presented in summary format and you will not be identified in any publications or presentations.

We will do our best to protect the confidentiality of the information we gather from you but we cannot guarantee 100% confidentiality. In certain situations, such as when child abuse or neglect is suspected, the student researcher will have to break confidentiality.

You should also know that the UConn Institutional Review Board (IRB) and the Office of Research Compliance may inspect study records as part of its auditing program, but these reviews will only focus on the researchers and not on your responses or involvement. The IRB is a group of people who review research studies to protect the rights and welfare of research participants.

Can I stop being in the study and what are my rights?

You do not have to be in this study if you do not want to. If you agree to be in the study, but later change your mind, you may drop out at any time. There are no penalties or consequences of any kind if you decide that you do not want to participate.

Student participants may be withdrawn from the study at any time by parent or student request. If at any point, the intervention seems to be increasing inappropriate mealtime behavior, the student will be withdrawn. In addition, if you no longer have a student in the study, or are unable to adhere to study procedures, you may be withdrawn from the study.

Whom do I contact if I have questions about the study?

We will be happy to answer any question you have about this study. If you have further questions about this study or if you have a research-related problem, you may contact the
principal investigator, Thomas Kehle at (860) 486-0166 or the student researcher Gail Loughlin Rogers at (860) 298-9079 extension 2036. If you have any questions concerning your rights as a research participant, you may contact the University of Connecticut Institutional Review Board (IRB) at 860-486-8802.

How do I submit the consent form?

If you decide to participate, place the consent in the sealed envelope provided and give the form to Gail Loughlin Rogers in person, or place them in the researchers school mailbox. You have one week to complete the consent form.
Appendix E: Teacher Consent Form for Participation in a Research Study

Teacher Consent Form for Participation in a Research Study

Return Slip

Principal Investigator: Thomas Kehle, Ph.D., Professor of School Psychology
Student Researcher: Gail Loughlin Rogers, Doctoral Candidate in School Psychology
Study Title: Examining Video Self-Modeling in Promoting Food Acceptance in Children with Autism Spectrum Disorder in a School Setting
Sponsor: University of Connecticut

Documentation of Consent:

I have read this form and decided that I will participate in the project described above. Its general purposes, the particulars of involvement and possible risks and inconveniences have been explained to my satisfaction. I understand that I can withdraw at any time. My signature also indicates that I have received a copy of this consent form.

Participant Signature: ____________________________  Print Name: ____________________________  Date: ____________________________

Signature of Person Obtaining Consent  Print Name: ____________________________  Date: ____________________________
Principal Investigator: Thomas Kehle, Ph.D., Professor of School Psychology
Student Researcher: Gail Loughlin Rogers, Doctoral Candidate in School Psychology
Study Title: Examining Video Self-Modeling in Promoting Food Acceptance in Children with Autism Spectrum Disorder in a School Setting

Sponsor: University of Connecticut

Introduction

You are invited to participate in a research study to evaluate the effectiveness of a video self-modeling (VSM) intervention in promoting food acceptance in children with autism spectrum disorder (ASD). You are being asked to participate because you have extensive experience working with students with ASD.

Why is this study being done?

The purpose of this research study is to see if video self-modeling can help to increase the number of foods that students will try, and possibly add to their diet. Typically a variety of antecedent and consequent strategies are used to increase food consumption in children with food selectivity. While some of these strategies have successfully increased food consumption in children with ASD, they can be time consuming and may require more invasive treatment components including physical guidance, and holding the spoon with food to the mouth until the food is accepted, or representing food that is expelled. Video self-modeling may serve as an effective, more resource efficient alternative to the multi-component based treatments. During video self-modeling, a video is created that depicts the student exhibiting the desired behavior. Once the video has been created, video self-modeling only requires that the support staff show the student a video of him/herself exhibiting the target behavior. Therefore, video self-modeling interventions are attractive because they place very few demands on teachers or support staff.

What are the study procedures? What will I be asked to do?

If you agree participate in this study, you will be asked to help identify students that may have food selectivity, and participate in a number of ways during the study. You may be asked to help choose target foods, participate in probe, baseline or intervention sessions, take data either during
live sessions or by viewing video recordings of sessions, or help in making the videos for the intervention. You may choose to participate in only a few aspects of the study, or only one part of the study. The time commitment will be dependent on the number of students you agree to be involved with, and the type of involvement you would like to participate in. There are approximate times for each section described below.

You will be asked to complete the Behavior Intervention Rating Scale at the beginning and at the end of the study that should take approximately 20 minutes to complete for each rating.

You will be asked to participate in collection of data or review of videotapes for treatment integrity and inter-observer agreement. You will be required to attend a minimum of 3 training sessions to go over the protocol and practice taking data using the ABC Data Pro system while viewing demo videotapes. Training sessions will continue until 80% accuracy is achieved on three consecutive sessions. Each session should last approximately 30 minutes.

We will be collecting data on the acceptance or rejection of those food items, by offering the food to the selected students during probe sessions during their regularly scheduled snacks, lunch, cooking activities, or dinner. If you choose to participate in probe sessions, you may be asked to collect data on food consumed. Time required for probe data is approximately 5 minutes per student/per session.

Next, a 2-3 minute long video will be created for each participant that will contain a number of vignettes approximately 30-seconds in length. Filming should take no longer than 15-minutes for each participant, but may be done over several sessions if needed. To create each video the participant will be videotaped eating preferred foods, and then the video will be edited to depict the participant eating target foods. If you choose to participate in making the videotapes, time required will be approximately 15 minutes per student participant.

Baseline data collection will occur prior to introducing the video self-modeling intervention. During baseline data collection probes, the participant will be seated at the table, with the researcher or support staff sitting across from them at the same table. Five bite-size pieces of food identified as target food will be placed on a plate in front of the participant. The researcher/support staff will say, “It is time to eat”. No additional prompts will be given. There are no programmed consequences for either rejection or consuming the food. Baseline will continue until all targeted foods have been presented a minimum of five times. Data will be collected via iPad using ABC Data Pro on food consumed and any inappropriate behaviors observed. All sessions will be recorded for treatment integrity and inter-observer agreement data. If you choose to participate in baseline data collection, time required will be approximately 10-15 minutes per session, per student. The number of sessions may be between 5 and 15 depending on the student.

The intervention phase will consist of the participant viewing of the edited video self-modeling vignettes and then being presented with the targeted food. The researcher or support staff will be seated next to the participant and turn on the video. The participant will be redirected to the video if needed, and social praise given for attending to the video. After the video has ended, the participant will be presented with a plate of five pieces of target food and told, “It’s time to eat”.

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Appendix F: Support Staff Consent Form for Participation in a Research Study

No additional prompts will be given. Data will be collected via iPad using ABC Data Pro on food consumed and any inappropriate behaviors observed. All sessions will be recorded for treatment integrity and inter-observer agreement data. If you choose to participate in the intervention phase, the time required will be approximately 10-15 minutes per session, per student. The number of sessions may be between 5 and 15 sessions, depending on the student.

Follow up data will be collected for target foods presented without video self-modeling for generalization and maintenance. If you choose to participate in the follow up data collection, your time required will be approximately 5 minutes per session/per student (up to a total of 5 sessions per student).

What other options are there?

The other options for students to accept new foods are limited at school. We can offer new foods as part of specific objectives through the services that may be recommended by a Planning and Placement Team (PPT), or are in his/her individualized educational plan (IEP). These services will depend on student’s individual educational needs, but may include conducting a functional behavioral assessment (FBA) and designing a behavior intervention plan (BIP). The services that are in the student’s IEP will not be changed whether or not he/she participates in this study.

What are the risks or inconveniences of the study?

While we believe that there are no known risks to support staff because of participation in this study, there is always the potential risk of non-compliance, aggression, or self-injury associated when any demand is placed on our students. Every effort to minimize these risks have been included in the treatment design, which includes limited demands, of only one prompt “It’s time to eat”, and no additional prompting. There are also no consequences associated with the participant not attempting to eat, or ending the session by getting up from the table. There will be a minimum of two adults in the room during each session. If at anytime a behavior becomes a danger to oneself or to others, the session will be terminated.

Potential risks for you also are inconveniences that include taking your time. The parts of the study you decide to participate in will determine the amount of time required. You will be asked to fill out the Behavior Intervention Rating Scale at the beginning and at the end of the study; it should take approximately 20 minutes to complete each rating.

What are the benefits of the study?

You may not directly benefit from this research; however, we hope that our student’s participation in the study may help us find out if this intervention is effective in promoting food consumption in children with ASD. Due to the fact that feeding problems are more prevalent in children with ASD, it would be helpful to have a strategy that is not only effective, but also less restrictive than consequence base strategies that are currently being used in research. Video self-modeling could help students try new foods, and with repeated attempts at trying new foods, may include these foods into their diet. VSM may help to improve the student’s compliance to try new foods, which may be a potential benefit for the student and parents since increasing food
choices may provide a more nutritional balanced diet. If the results do not indicate that VSM is effective as an intervention to increase food acceptance, then you have been included in a study that investigated the effect and important knowledge was still gained.

Will I receive payment for participation? Are there costs to participate?

There are no costs and you will not be paid to be in this study.

How will my personal information be protected?

The following procedures will be used to protect the confidentiality of the data collected from you. The researchers will keep all study records (including any codes to your data) locked in a secure location. Research records will be labeled with a code. The code will be derived from your first and last initial followed by a sequential 3-digit code and a number that reflects how many participants are enrolled in the study. A master key that links names and codes will be maintained in a separate and secure location. The master key and videos will be destroyed after 3 years. All electronic files (e.g., database, spreadsheet, etc.) containing identifiable information will be password protected. Any computer hosting such files will also have password protection to prevent access by unauthorized users. Only the primary investigator and student researcher will have access to the passwords. Data that will be shared with others will be coded as described above to help protect your identity. At the conclusion of this study, the researchers may publish their findings. Information will be presented in summary format and you will not be identified in any publications or presentations.

We will do our best to protect the confidentiality of the information we gather from you but we cannot guarantee 100% confidentiality. In certain situations, such as when child abuse or neglect is suspected, the student researcher will have to break confidentiality.

You should also know that the UConn Institutional Review Board (IRB) and the Office of Research Compliance may inspect study records as part of its auditing program, but these reviews will only focus on the researchers and not on your responses or involvement. The IRB is a group of people who review research studies to protect the rights and welfare of research participants.

Can I stop being in the study and what are my rights?

You do not have to be in this study if you do not want to. If you agree to be in the study, but later change your mind, you may drop out at any time. There are no penalties or consequences of any kind if you decide that you do not want to participate.

If you are unable to adhere to study procedures, you may be withdrawn from the study.

Whom do I contact if I have questions about the study?

We will be happy to answer any question you have about this study. If you have further questions about this study or if you have a research-related problem, you may contact the
principal investigator, Thomas Kehle at (860) 486-0166 or the researcher Gail Loughlin Rogers at (860) 298-9079. If you have any questions concerning your rights as a research participant, you may contact the University of Connecticut Institutional Review Board (IRB) at 860-486-8802.

How do I submit the consent form?

If you decide to participate, place the consent in the sealed envelope provided and return the form in person, or place it in my school mailbox. You have one week to complete the consent form.
Appendix F: Support Staff Consent Form for Participation in a Research Study

Consent Form for Participation in a Research Study

Return Slip

Principal Investigator: Thomas Kehle, Ph.D., Professor of School Psychology
Student Researcher: Gail Loughlin Rogers, Doctoral Candidate in School Psychology
Study Title: Examining Video Self-Modeling in Promoting Food Acceptance in Children with Autism Spectrum Disorder in a School Setting
Sponsor: University of Connecticut

Documentation of Consent:

I have read this form and decided that I will participate in the project described above. Its general purposes, the particulars of involvement and possible risks and inconveniences have been explained to my satisfaction. I understand that I can withdraw at any time. My signature also indicates that I have received a copy of this consent form.

_____________________________       ________________________       ___________________
Participant Signature:               Print Name:                          Date:                  

_____________________________       ________________________       ___________________
Signature of Person Obtaining Consent: Print Name:                          Date:                  

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Appendix G: Parent Phone Call Script

Parent Phone Call Script

Step 1: Initial Contact

Hello. This is Gail Loughlin Rogers, from River Street School. May I please speak to (Mr./Ms.) (parent’s full name)

When desired person gets on the phone

Hello (Mr./Ms.) (parent’s surname). This is Gail Loughlin Rogers, one of the School Psychologists at River Street School. I’m calling to talk to you about a research study that I am conducting as part of my doctoral program at UConn. It is about using an intervention called video self-modeling to increase (insert student’s name)’s food choices. Although it’s not guaranteed, the video self-modeling intervention has the potential to increase the number of foods that (insert student’s name)’s consumes.

I would like to give you some more information about the study so you can decide whether you would like (insert student’s name) to participate. It will take about 10 minutes. Is now a good time?

IF NO, GO TO STEP 2a
IF YES, GO TO STEP 2b

If desired person is not available

Is there a better day and time to reach (Mr./Ms.) (parent’s surname)?

Note days and times and enter into the research phone log.

Thank you. I will try to call back then.

End call

Step 2: Project Description

STEP 2a
If interrupted or strong immediate refusal

Is there another time I can call you back?

IF YES, Thank you. I will try to call back then. (Note date and time)
IF NO/NOT INTERESTED, Okay, thanks for your time.

End call

STEP 2b
If not interrupted

Before I continue, I need to ask if you are (child’s first name)’s parent or legal guardian?

IF NO, GO TO STEP 2c
IF YES, GO TO STEP 3

STEP 2c

We very much appreciate your time, but we need to discuss participation in the study with a parent or legal guardian of the child. However, I would be happy to answer any questions you have about the
Step 3. Details for of the study

Perfect. Since you’re the legal guardian, I can provide you with more information.

The study is being conducted by myself, as a doctoral student, working under the supervision of Dr. Thomas Kehle from the Educational Psychology Department at the University of Connecticut.

If you decide to let your child participate in the study, he/she will be asked to complete a few activities before the start of the study to make sure that he/she is able to participate. These screening tests will include your child:

- Being videotaped for 3 minutes and watching the video of him/herself to ensure that he/she can pay attention to a short video of him/herself.
- Looking at him/herself on an iPad to see if he/she can recognize him/herself.
- Your child will be observed during eating by a qualified evaluator to be sure that your child demonstrates safe swallowing.

The screening tests will take about a 10 minutes to complete and will be done during times that do not interfere with your child’s instruction. If your child meets the criteria to participate, I will also need to review educational records and psychological evaluations to gather information on behavior support plans, services, and diagnosis.

Next, I will ask you to complete a Food Preference Inventory to determine what foods your child is currently eating, and then we can work together to determine foods that we can target for use in the study. I would also ask that you fill out a rating instrument, the Brief Assessment of Mealtime Behavior Inventory, which has 10 items and should take no more than 10 minutes to complete. If you would like, we could do both the Food Preference Inventory and the rating instrument over the phone or in person together. Detailed procedures for this will be outlined in a consent form that will be sent home to you.

The goal of the video self-modeling intervention being studied is to increase your child’s acceptance of new foods. Before beginning the intervention, a 2-to 3-minute long video recording of your child will be created. The video will be comprised of five video clips. Each clip will depict the your child consuming non-preferred or target foods by editing a video of your
child consuming preferred foods. To maintain privacy, filming will take place in a separate room. Filming should take no longer than 15-minutes, but may be done over several sessions.

Once the intervention begins, your child will be brought to the designated area, and will be shown the video on an iPad seated at the table. After the video, we will provide social praise for attending to the video. Immediately after the video, the target food will be presented.

While we believe that there are no known risks to your child because of his/her participation in this study, there is always the potential risk of non-compliance, aggression, or self-injury associated with any demand. Every effort to minimize these risks have been included in the treatment design, which includes limited demands, of only one prompt “It’s time to eat”, and no additional prompting. There are also no consequences associated with not attempting to eat, or ending the session by getting up from the table. A behavior analyst will be in attendance as an independent observer during the study, and will assist if any behavior should occur. You will be notified of any behavior that occurs during the study.

Due to the fact that new foods will be introduced to your child, there is also the risk of an unanticipated adverse event such as an unexpected reaction to a new food. In the unlikely event an allergic reaction occurs, there are a minimum of 2 school nurses on site at all times. Emergency protocols will be followed including monitoring breathing and airway, and administering any medication deemed necessary. You will be contacted immediately.

Your child may also be inconvenienced at times, and may miss a portion of a scheduled activity. When creating the videos, your child will be unable to participate in approximately 15-minutes of free time, but it may over several sessions. The researcher will verify with the teacher that they are not missing a preferred activity or direct instruction time. In addition, the your child may be unable to participate with their classroom at lunch for approximately 10 minutes during the intervention and baseline phase, but will be returned to the classroom lunch period to eat with their classroom. If your child needs more time to finish their lunch, we will accommodate them. We will make every effort to make sure that minimal disruptions to your child’s schedule are made. Your child will not miss any services (i.e., occupational therapy, physical therapy, or speech).

Your child may not directly benefit from this research. However, we hope that your child’s participation in the study may help us find out if this intervention is effective in promoting acceptance of new foods in children with autism spectrum disorder. Due to the fact that feeding problems are more prevalent in children with ASD, it would be helpful to have a strategy that is not only effective, but also less restrictive than consequence base strategies that are currently being used in research. Video self-modeling could help your child try new foods, and with repeated attempts at trying new foods, may include these foods into their diet. You may find it easier at mealtime when attempting to introduce new foods. In addition, your child may increase the selection of foods consumed, which may increase the nutritional value of their diet.

I have given you a lot of information today. Do you have any questions that would help you decide whether or not you would like to have your child take part?
Appendix G: Parent Phone Call Script

If you are still interested in having your child take part in the study, I would like to send a consent form home with your child.

Step 4. Ending the call

Thanks for taking the time to learn about the study. If you have any questions or concerns before the meeting, please feel free to call me at (860) 298-9079 extension 2036. Thanks for your time today.
Appendix H: Parental Permission Form for Participation in a Research Study

Parental Permission Form for Participation in a Research Study

Principal Investigator: Thomas Kehle, Ph.D., Professor of School Psychology
Student Researcher: Gail Loughlin Rogers, Doctoral Candidate in School Psychology
Study Title: Examining Video Self-Modeling in Promoting Food Acceptance in Children with Autism Spectrum Disorder in a School Setting
Sponsor: University of Connecticut

Introduction

Your child is invited to participate in a research study to see if video self-modeling will help your child try more new foods. In other words, we are interested in knowing if your child’s watching a videotape of themselves eating a food they don’t eat now, will make them more willing to try the food. Your child is being asked to participate because your child’s teacher (or you) has indicated that your child eats a limited number of foods.

Although the student researcher is works as one of the school psychologists at your child’s school, any information from the study, or that you choose to tell them, will not be part of your child’s educational record.

Why is this study being done?

The purpose of this research study is to see if video self-modeling can help increase the number of foods your child will try, and possibly add to their diet. Currently, there are other interventions that are usually done in hospitals, or at clinics. We are conducting this research study to be able to offer parents and educators an effective alternative intervention that may be helpful in increasing your child’s food choices that could be done in school or at home.

What are the study procedures? What will my child be asked to do?

If you give permission for your child to take part in this study, he/she will be asked to watch a videotape of him/herself eating foods that we (you and student researcher) have chosen to try to add to their diet.
Appendix H: Parental Permission Form for Participation in a Research Study

We will also ask your child if they want to participate in this study. The study will be explained to your child (for children over the age of 7) in language that they should understand by the student researcher (a copy of the approximate wording is attached). If your child agrees to participate, we will have them sign the form attached, or will indicate how we determined they indicated they would participate on the form.

There are a number of steps before the actual study can begin. First your child will be screened to be sure they meet the requirements of the research study. This should take approximately 10 to 15 minutes of your child’s time, will include the following:

1. We would verify your child’s diagnosis of autism by reviewing their educational record after your permission has been given.
2. We would make sure that your child will watch a videotape for approximately 2 minutes by videotaping them during an activity, and playing the video back to them and seeing if they watch it for approximately 2 minutes.
3. We would make sure that your child can recognize that they are the one on the videotape by recording them on an iPad, and while it is being recorded, have them watch the screen. If they react to the screen (for example, smile, stick out their tongue, laugh, make funny faces) they can recognize themselves.
4. We would also have a Speech Pathologist or Occupational Therapist (specifically trained) observe your child while they eat to be sure that they are safely swallowing their food and drinks.

You will be contacted after the screening is complete. If your child does not pass any part of the screening, we cannot include them in this study, and we will discuss the results with you. If your child successfully completes all of the screening requirements, you will be asked to complete 2 questionnaires and fill out the Participant Intake Questionnaire.

You will have the opportunity to complete the questionnaires at home, or with the student researcher at the school (or by phone). You may also ask questions at any time by contacting the student researcher at school.

1. Food Preference Inventory – which is a list of foods that includes fruits, vegetables, proteins (meat, beans), starches (pasta, bread, etc.), dairy, and mixed foods (macaroni and cheese). You will be asked to check how often a food is eaten (never to more than once per day), and if a food is eaten by your family. We will use this list to help us pick foods that could be used in the study.

2. The Brief Assessment of Mealtime Behavior in Children – which has 10 items. It includes behaviors that your child may or may not have during meals. This will be used to describe your child’s behavior at home during mealtime.

3. The Participant Intake Questionnaire will be used to gather information about your child (age, sex, primary language spoken in the home). It will include any medical concerns that may impact your child’s participation in the study (i.e., allergies or reactions to foods, acid reflux). We would also like to know if your child receives, or has received, any private services relating to feeding or eating problems.
Appendix H: Parental Permission Form for Participation in a Research Study

Study Procedures will include the following:

Making the videotape:

1. Once we have all the forms completed, we can talk (either in person or over the phone) about what foods might be used in the study. These will be foods that you would like to see added to your child’s diet.

2. When we have a list of foods, we will then offer those foods a number of times at snack, during lunch, or during cooking activities at school, or at dinner. We will keep track of the foods that your child may have tasted, and if they ate any of the foods we have chosen. Any of the foods not eaten can be used during the study.

3. Once we have our foods selected, we can begin to make the videotape that we will use in the study. To make the videotape, we will have your child come down to the room where we will conduct the study (a room near your child’s classroom without other children in the room). We will videotape your child eating foods that we know they eat regularly.

4. We will then put a plate of the foods we have chosen for the study on the table so we can videotape them with the plate of food. We will not ask your child to eat any of the food.

5. We will then edit the videotape so that it looks like your child is eating those foods.

After the videotape is made:

1. We will then collect data on which foods your child will eat without seeing the video.

2. To do this, we will put a plate of several of the foods in front of your child and say, “It’s time to eat”.

3. We will record what food your child eats, and whether or not your child gets up and walks away, or gets upset in anyway.

4. We will not make your child eat any of the food. If your child either asks to leave, or gets up from the table to go back to class, we will bring them back to class.

5. We will collect data several times before we start showing your child the videotaped recording.

6. When we begin the intervention that includes the videotape, we will show the 2 minute video that has been edited to show them eating the foods we want them to try.

7. They may be asked to look at the videotape if they look away, and at the end of the videotape, we will tell them they have done a great job watching the movie.

8. We will then place a plate of the foods we have chosen in front of them and say, “It’s time to eat”.

9. We will record what foods your child eats, and whether they get up and walk away, or if they get upset in anyway.
Appendix H: Parental Permission Form for Participation in a Research Study

10. We will not make your child eat any of the food, and if they either ask to leave, or get up from the table and indicate that they want to leave, we will bring them back to class.

11. Approximately 30 days after the intervention (watching the video and presenting food) is over, we will include the target foods in your child’s snack, lunch, or dinner here at school. Your child’s classroom staff will say, “It’s time to eat”. We will collect data on whether or not your child eats any of the foods presented without watching the video.

Below is a timeline for the study:

<table>
<thead>
<tr>
<th>TIMELINE FOR STUDY*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Week 1</strong></td>
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<tr>
<td></td>
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<tr>
<td></td>
</tr>
<tr>
<td><strong>Weeks 2-3</strong></td>
</tr>
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<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>Weeks 4-5</strong></td>
</tr>
<tr>
<td><strong>Weeks 6-8</strong></td>
</tr>
<tr>
<td><strong>Week 12</strong></td>
</tr>
</tbody>
</table>

*Estimated

It should take 10 to 15 minutes for your child to complete each session (that includes walking down to the room, watching the video, being presented with the food, time to eat 5 bite size pieces of food, and walk back to class). If your child asks for a break during the session, they can have a break and come back to the session. The study should last for approximately 20 to 30 sessions.

Additional Information:

1. All sessions will be videotaped so that we can verify the data that are collected.
2. If your child behavior worsens during any part of the study, whether or not we can say it was because of the study, and we will contact you to discuss whether you would like the study to continue.
3. If at anytime your child indicates they do not want to participate on any day, they do not have to participate that day.
4. Due to the possibility of your child’s behavior changing if your were watching the session as it was occurring, we will not be able to honor a request for you to be present during the sessions, but you are welcome to view videotape recordings of any of the sessions.
5. During the study, please do not offer your child any of the foods that we have chosen to use in the study.

What other options are there?

There are other options to increasing foods that your child may eat at school. Some of those options include the following:
Appendix H: Parental Permission Form for Participation in a Research Study

1. We can offer new foods as part of a specific objective in your child’s individualized education plan (IEP) through the services recommended by a Planning and Placement Team (PPT).
2. These services may or may not include conducting a functional behavioral assessment and designing a behavior intervention plan.

What are the risks or inconveniences of the study?

While we believe there are no known risks associated with your child being part of this study, the following is a list of inconveniences and a list of unforeseen situations that could arise:

Your child may be inconvenienced at times.
- Because your child will be taken from the classroom for approximately 10-15 minutes for each session, they may miss some of their lunchtime or snack with classmates.
- To minimize any inconvenience, we will plan our sessions during transition times, and when it is least likely that your child will miss social time with friends.
- If your child needs more time to eat, we will be sure to give them additional time.
- If the classroom is cooking on a particular day, we will either reschedule the session, be sure that your child does not miss the activity.
- Your child will also not be given food as rewards (if it is part of their regular plan) between snack and lunch, or after lunch and snack or dinner) during the study. They will continue to get all other rewards (musical toys, social praise, stars, etc.) throughout the day.

It is unlikely, but the following situation could happen:

Your child could have a reaction to a new food that we have chosen to use in the study.
- Because we are offering your child food that they may not be eating now, there is the possibility that they could have an allergic reaction to the food.
- We would ask that you list any foods that your child has ever had a reaction to, or has been sensitive to, in the past, so that we can be sure not to choose any food in that family of food to minimize the risk.
- If a reaction should occur, we have at least two full time nurses in the building at all times that would immediately attend to your child.
- We would contact you immediately.

Your child could stop eating some of the foods that they are now eating.
- There are no indications in the literature that interventions for feeding problems have made a feeding problem worse.
- Your child may change the foods that they are now eating for other foods.

Your child could become aggressive, non-compliant, or self-injurious.
Appendix H: Parental Permission Form for Participation in a Research Study

- Depending on your child’s history, there may be the potential risk of non-compliance, aggression, or self-injury that may occur when your child is asked to do something new or that they may not want to do. To minimize the risk, we have included the following in our procedures:
  a. Your child can leave the room anytime they want.
  b. We will only give one request to eat.
  c. They do not have to eat any food if they don’t want to.
  d. There will be a Behavior Analyst in the room at all times.
  e. You will be notified of any behavior that occurs during the study.

Risks and inconveniences for parent participants:
There are no known risks for your participation in the study. Inconveniences for you as the parent include the time necessary to complete the following forms, decide on foods to be used in the study, and discuss results of the study:

<table>
<thead>
<tr>
<th>Forms and Meetings</th>
<th>Approximate time to complete (or meet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food Preference Inventory</td>
<td>15 minutes</td>
</tr>
<tr>
<td>Brief Assessment of Mealtime Behavior in Children</td>
<td>10 minutes</td>
</tr>
<tr>
<td>Participant Intake Questionnaire</td>
<td>15 minutes</td>
</tr>
<tr>
<td>Discussion regarding foods to be used in the study and to go over any questions (in person or over the phone)</td>
<td>30 minutes</td>
</tr>
<tr>
<td>Discussion about the results of the study at the conclusion of study (in person or over the phone)</td>
<td>30 minutes</td>
</tr>
</tbody>
</table>

Specific foods used in the study should not be offered to your child while your child is participating in the study; foods may continue to be eaten by family members.

What are the benefits of the study?

Your child may benefit directly from this research study by increasing the number of foods that they eat. Also, the research shows that children with autism have more difficulty with adding new foods than other children. If this research shows that video self-modeling is effective in helping children with autism add new foods, it may benefit other children with autism.

Will my child receive payment for participation? Are there costs to participate?

There are no costs to you and your child for participating in this study. Your child will not be paid to participate in this study.

How will my child’s information be protected?

Study data will be shared with you after the study is complete. If at that time, you wish to share any information from the study with your child’s teacher, you may forward any information directly. No data from the study will be shared with the school, school staff (outside of staff involved with the study), or be included in your child’s educational record.
Appendix H: Parental Permission Form for Participation in a Research Study

The following procedures will be used to protect the confidentiality of the data collected from your child. The researchers will keep all study records (including any codes to your child’s data) locked in a secure location. Research records will be labeled with a code. The code will be derived from your child’s first and last initial followed by a 3-digit code and a number that reflects how many people have enrolled in the study. A master key that links names and codes will be maintained in a separate and secure location. The master key will be destroyed after 3 years. All electronic files (e.g., database, spreadsheet, etc.) containing identifiable information will be password protected. Any computer hosting such files will also have password protection to prevent access by unauthorized users. Any study records kept after three years, will be stripped of identifiable information. Video recordings will only be shared with expressed written permission. Only the members of the research staff will have access to the passwords. Data that will be shared with others will be coded as described above to help protect your child’s identity. At the conclusion of this study, the researchers may publish their findings. Information will be presented in a format so that your child will not be identified in any publications or presentations.

We will do our best to protect the confidentiality of the information we gather from your child but we cannot guarantee 100% confidentiality. In certain situations, such as when child abuse or neglect is suspected, the student researcher will have to break confidentiality.

You should also know that the UConn Institutional Review Board (IRB) and Research Compliance Services may inspect study records as part of its auditing program, but these reviews will only focus on the researchers and not on your child’s responses or involvement. The IRB is a group of people who review research studies to protect the rights and welfare of research participants.

Can my child stop being in the study and what are my and my child’s rights?

Your child does not have to be in this study if you do not want him/her to participate. If you give permission for your child to be in the study, but later change your mind, you may withdraw your child at any time. There are no penalties or consequences of any kind if you decide that you do not want your child to participate. For your child’s safety, your child may also be removed from the study if at any time their behavior deteriorates significantly, whether or not the deterioration it can be attributed to the study.

Whom do I contact if I have questions about the study?

Take as long as you like before you make a decision. We will be happy to answer any question you have about this study. If you have further questions about this study or if you have a research-related problem, you may contact the principal investigator, Dr. Thomas Kehle at (860) 486-0166 or the student researcher Gail Loughlin Rogers at (860) 298-9079. If you have any questions concerning your child’s rights as a research participant, you may contact the University of Connecticut Institutional Review Board (IRB) at 860-486-8802.
Appendix H: Parental Permission Form for Participation in a Research Study

Parental Permission Form for Participation in a Research Study

Return Slip

**Principal Investigator:** Thomas Kehle, Ph.D., Professor of School Psychology  
**Student Researcher:** Gail Loughlin Rogers, Doctoral Candidate in School Psychology  
**Study Title:** Examining Video Self-Modeling in Promoting Food Acceptance in Children with Autism Spectrum Disorder in a School Setting  
**Sponsor:** University of Connecticut

**Documentation of Permission:**

I have read this form and decided that I will give permission for my child to participate in the study described above. Its general purposes, the particulars of my child’s involvement and possible risks and inconveniences have been explained to my satisfaction. I understand that I can withdraw my child at any time. My signature also indicates that I have received a copy of this parental permission form. Please return this form to the child’s teacher by (insert date).

---

Child Signature: ___________________________  Print Name: ___________________________  Date: ___________________________

Parent/Guardian Signature: ___________________________  Print Name: ___________________________  Date: ___________________________

Relationship to Child (e.g. mother, father, guardian): ____________________________

---

Signature of Person Obtaining Consent  Print Name: ___________________________  Date: ___________________________
Appendix I: Research Study Photo/Video Release Form

Research Study Photo/Video Release Form

Protocol #___________

Principal Investigator: Thomas Kehle, Ph.D., Professor of School Psychology
Student Researcher: Gail Loughlin Rogers, Doctoral Candidate in School Psychology
Study Title: Examining Video Self-Modeling in Promoting Food Acceptance in Children with Autism Spectrum Disorder in a School Setting

As part of this research study the University of Connecticut and those acting pursuant to its authority (“UCONN”) may record your child’s likeness and/or voice on a particular medium (“recordings”) including but not limited to video, audio, photographic, digital, and electronic mediums during your child’s participation in this research study. Please indicate what uses of these recordings you are willing to permit, by putting your initials next to the uses you agree to and signing the form at the end. The choice is completely up to you. We will only use recordings in the ways that you agree to. In any recording, your child will not be identified by name. The photo/videos will not be used for commercial purposes.

1._______ The recordings can be studied by the research team for use in the research project
2._______ The recordings can be used for scientific publications
3._______ The recordings can be used for scientific conferences or meetings
4._______ The recordings can be used for educational purposes
5._______ The recordings can be used for public presentations to non-scientific groups
6._______ The recordings can be used on television or the audio portion can be used on radio
7._______ The recordings can be posted to a UCONN website
8._______ The recordings can be used for reports/presentations to any research funding agencies

I understand that all such recordings, in whatever medium, shall remain the property of UCONN. My child’s name will not be used in any publication. I agree that I will not be compensated for the use of the recordings.
I have read the above descriptions and give my consent for the use of the recordings as indicated by my initials above. *(Youth under 18 years of age must have a parent/legal guardian signature.)*

(Name, please print)  

(Signature of Subject)  (Date: MM/DD/YY)  

(Parent/Guardian Signature, if participant is a minor)  (Date: MM/DD/YY)  

(Signature of Person Obtaining Consent)  (Date: MM/DD/YY)
Appendix J:Participant Intake Questionnaire

Participant Intake Questionnaire

This questionnaire will be used to obtain: (1) demographic information about your child and (2) information about any treatments or services that your child is currently (or previously) receiving to address food selectivity, eating difficulties, or behavioral problems in the home. Please fill out the required information indicated in yellow. The Intervention Services (green) and Optional Information (blue) are not required for your child to participate in this study. No information from this questionnaire will be shared with school staff.

<table>
<thead>
<tr>
<th>Completed by (Circle one):</th>
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</thead>
<tbody>
<tr>
<td>Child’s Name:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date of Birth:</td>
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<td></td>
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</tbody>
</table>

REQUIRED INFORMATION FOR THE SAFETY OF YOUR CHILD

ANY ALLERGIES OR ADVERSE REACTIONS TO FOODS NOW OR IN THE PAST?
If yes, please explain in detail.

Has your child ever had issues with swallowing or gagging on liquids or solid foods?
YES  NO
If yes, please explain.

INTERVENTION SERVICES RECEIVED OUTSIDE OF SCHOOL TO ADDRESS BEHAVIORAL OR FEEDING ISSUES

Type of Service:  
Goal of Service:  
Name of Service Provider | Hours per Week:  
Start Date: | End Date:  
Outcome of Services (i.e., improvement, no change):
Appendix J: Participant Intake Questionnaire

<table>
<thead>
<tr>
<th>Type of Service:</th>
<th></th>
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<tbody>
<tr>
<td>Goal of Service:</td>
<td></td>
</tr>
<tr>
<td>Name of Service Provider</td>
<td>Hours per Week:</td>
</tr>
<tr>
<td>Start Date:</td>
<td>End Date:</td>
</tr>
<tr>
<td>Outcome of Services (i.e., improvement, no change):</td>
<td></td>
</tr>
</tbody>
</table>

**OPTIONAL INFORMATION**

If you feel comfortable with sharing this information, please fill out below or call me and we can discuss any of the questions. No identifying information will be used in reporting. This data will be reported as group data.

Medical diagnosis (if any) or current medical concerns:

Have you ever discussed your child’s eating difficulties with your pediatrician?  
YES  
NO  
If yes, what was the result?

Has your child ever been treated for gastroesophageal reflux (GER)?  
YES  
NO  
If yes, what was the result?

Does your child have frequent problems with either constipation or diarrhea?  
YES  
NO  
If yes, are they currently being treated?

If there any other feeding issues that would you like to tell me about, please indicate them in this area, or call me directly to discuss in greater detail.
Appendix K: Child Assent Form: Written and Oral Script

Child Assent Form: Written and Oral Script
Study Title: Examining Video Self-Modeling in Promoting Food Acceptance in Children with Autism Spectrum Disorder in a School Setting
Principal Investigator: Dr. Thomas Kehle
Student Researcher: Gail Loughlin Rogers

Your teacher and parents have talked to you about being part of a study using videos to help you try new foods.

If you decide to be in the study you will be asked to do these things:

1. Help me make some videos of you playing and eating.
2. Watch a video of you playing and eating.
3. You will get to try new foods.

You won’t miss any lunch with your friends, and will get to eat all your lunch or snack with your class. If you miss anytime at lunch because you are helping me, and need more time to eat, that’s okay. You do not have to eat anything that you don’t want to and you will still do a great job just helping out. We will be doing this study during the summer.

You can ask me any questions at any time. You can say “NO” you don’t want to do the study, or even if you start the study, later on, you can decide that you want to stop, you can. Whatever you decide to do, no one will be mad at you.

Participant’s Signature_______________________ Date _______

Researcher’s Signature_______________________ Date _______

Reason why Participant/Patient did not sign:

The participant indicated that they were willing to participate in the study by:

___________________________________________
Appendix L: Brief Assessment of Mealtime Behavior in Children

| Child's Name: ___________________ Date: _________ Age: ______ | Filled Out By: ___________________
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td><strong>How often did it occur?</strong></td>
</tr>
<tr>
<td>Think about mealtimes with your child over the past 6 months. Rate the following items according to how often each occurs, using the following scale: Then, circle YES if you consider the item to be a problem or NO if you think it is not a problem.</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>My child turns his/her face or body away from food.</td>
</tr>
<tr>
<td>My child cries or screams during mealtimes.</td>
</tr>
<tr>
<td>My child is aggressive during mealtimes (hitting, kicking, scratching others).</td>
</tr>
<tr>
<td>My child displays self-injurious behavior during mealtimes (hitting self, biting self).</td>
</tr>
<tr>
<td>My child is disruptive during mealtimes (pushing/throwing utensils, food).</td>
</tr>
<tr>
<td>My child closes his/her mouth tightly when food is presented.</td>
</tr>
<tr>
<td>My child is willing to try new foods.</td>
</tr>
<tr>
<td>My child dislikes certain foods and won't eat them.</td>
</tr>
<tr>
<td>My child prefers the same foods at each meal.</td>
</tr>
<tr>
<td>My child accepts or prefers a variety of foods.</td>
</tr>
</tbody>
</table>

Brief Assessment of Mealtime Behavior in Children, by H. M. Hendy, L. Seiverling, C. T. Lukens, and K. E. Williams, 2013, used with permission.
Appendix M: Food Preference Inventory

<table>
<thead>
<tr>
<th>Food</th>
<th>How often is food eaten by your child?</th>
<th>Is this food eaten by the family?</th>
<th>Food</th>
<th>How often is food eaten by your child?</th>
<th>Is this food eaten by the family?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apple</td>
<td>No Week Day Many Yes</td>
<td></td>
<td>Crackers</td>
<td>No Week Day Many Yes</td>
<td></td>
</tr>
<tr>
<td>Apple Juice</td>
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<td></td>
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Appendix M: Food Preference Inventory

Food Preference Inventory (page 2)

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<th>Day</th>
<th>Many</th>
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<td></td>
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<td>Day</td>
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<td>Day</td>
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<td></td>
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<td>Day</td>
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<td>Day</td>
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<td>Day</td>
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<td>Day</td>
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<td>Day</td>
<td>Many</td>
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<td></td>
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<td>Day</td>
<td>Many</td>
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</table>

**Drinking Preference Inventory (circle or fill-in the blank; 1 cup = 8 ounces)**

Does your child drink a supplement (e.g. Pediasure, Boost, etc.)? Yes No

If yes, which one? __________________________ How much? day? __________

What kind of milk does your child usually drink? Whole 2% 1% Skim Soy Rice

How much/day? ______

Is your child’s milk usually flavored? Yes No

If yes, what is used? Chocolate/strawberry syrup Flavored powder Instant Breakfast Ovaltine Other________

Does your child drink: Hot chocolate Milkshake Drinkable yogurt

How many ounces of these drinks does your child drink per day? ________ ounces

How much 100% juice does your child drink per day? ________ ounces

How much other fruit drinks (Hi-C, Kool Aid, etc.) does your child drink per day? ________ ounces

How much soda or iced tea does your child drink per day? ________ ounces

Does it usually have caffeine? Yes No What type is it usually? Regular Diet

How much water does your child drink per day? ________ ounces

K. A. Schreck and K. Williams, 2006, used with permission.
Appendix N: Behavior Intervention Rating Scale (BIRS)

<table>
<thead>
<tr>
<th>Please evaluate the intervention by circling the number which best describes your agreement or disagreement with each statement. You must answer each question.</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Slightly Disagree</th>
<th>Slightly Agree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. This would be an acceptable intervention for the child’s problem behavior.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>2. Most teachers would find this intervention appropriate for behavior problems in addition to the one described.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>3. The intervention should prove effective in changing the child’s problem behavior</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>4. I would suggest the use of this intervention to other teachers.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>5. The child’s behavior problem is severe enough to warrant use of this intervention.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
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<tr>
<td>6. Most teachers would find this intervention suitable for the behavior problem described.</td>
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<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>7. I would be willing to use this in the classroom setting.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
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<tr>
<td>8. The intervention would not result in negative side-effects for the child.</td>
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<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
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<tr>
<td>9. The intervention would be an appropriate intervention for a variety of children.</td>
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<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
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<tr>
<td>10. The intervention is consistent with those I have used in the classroom setting.</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<td>5</td>
<td>6</td>
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<tr>
<td>11. The intervention was a fair way to handle the child’s problem behavior.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
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<tr>
<td>12. The intervention is reasonable for the behavior problem described.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
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<td>6</td>
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<tr>
<td>13. I like the procedures used in the intervention.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
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<tr>
<td>14. This intervention was a good way to handle this child’s behavior problem.</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<td>5</td>
<td>6</td>
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<tr>
<td>15. Overall, the intervention would be beneficial for the child.</td>
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<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>16. The intervention would quickly improve the child’s behavior.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>17. The intervention would produce a lasting improvement in the child’s behavior.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>18. The intervention would improve the child’s behavior to the point that it would not noticeably deviate from other classmates’ behavior.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>19. Soon after using the intervention, the teacher would notice a positive change in the problem behavior.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>20. The child’s behavior will remain at an improved level even after the intervention is discontinued.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>21. Using the intervention should not only improve the child’s behavior in the classroom, but also in other settings (e.g., other classrooms, home).</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>22. When comparing this child with a well-behaved peer and after use of the intervention, the child’s and the peer’s behavior would be more alike after using the intervention.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>23. The intervention should produce enough improvement in the child’s behavior so the behavior is no longer a problem in the classroom.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>24. Other behaviors related to the problem behavior also are likely to be improved by the intervention.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

Elliot & Von Brock Trueting (1991)
Appendix O: Feeding/Swallowing Safety Screening

Feeding/Swallowing Safety Screening

Student Name: ___________________________  Date: ______________

Location of Observation: ____________________________________________

Foods Consumed During Observation: ________________________________

Drinks Consumed During Observation: ________________________________

Observations/Notes: _______________________________________________

________________________________________________________________

________________________________________________________________

________________________________________________________________

________________________________________________________________

________________________________________________________________

________________________________________________________________

Impressions/Recommendations:

________________________________________________________________

________________________________________________________________

Signature: _________________________________________________________

Qualified Evaluator (SLF/GT)
Appendix P: Treatment Integrity Checklist

**Treatment Integrity Checklist**

**Instructions:** During the video viewing session, check off each step that is completed. Note any modifications that were made to the procedures. Next, rate the participant’s attentiveness during the video viewing session (Adapted with permission; Diorio, R., 2014).

<table>
<thead>
<tr>
<th>Session Date:</th>
<th>Rater:</th>
<th>Presenter:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Video Viewing Session

<table>
<thead>
<tr>
<th>Procedures</th>
<th>Describe any modifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Participant is brought down to the intervention area and seated at the table.</td>
<td></td>
</tr>
<tr>
<td>☐ Participant views the video on an iPad.</td>
<td></td>
</tr>
<tr>
<td>☐ The video is played all the way through to the end.</td>
<td></td>
</tr>
<tr>
<td>☐ The participant was redirected back to the video if needed.</td>
<td></td>
</tr>
<tr>
<td>☐ The participant was socially reinforced after watching video.</td>
<td></td>
</tr>
<tr>
<td>☐ The target food is presented immediately after video has ended.</td>
<td></td>
</tr>
</tbody>
</table>

### Attentiveness Rating

Instructions: Rate the degree to which the participant focused his/her attention on the video by circling the appropriate number.

The participant focused his/her attention on the video.

1………2………3…………4………5………6…………7………8………9
   Never/Seldom   Sometimes   Usually/Always

### PROMPT DELIVERY

<table>
<thead>
<tr>
<th>Presenter Behavior</th>
<th>Modifications Noted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Make eye contact – “It’s time to eat”</td>
<td></td>
</tr>
<tr>
<td>No additional prompts given</td>
<td></td>
</tr>
<tr>
<td>No consequences for rejection or consumption of food</td>
<td></td>
</tr>
<tr>
<td>Describe any environmental circumstances (i.e., changes in services/routines, major life events) could be impacting the child’s</td>
<td></td>
</tr>
</tbody>
</table>