Teaching Young Children with Moderate to Severe Disabilities through Teacher-Made Video Mediated Instruction

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Teaching Young Children with Moderate to Severe Disabilities through Teacher-Made Video Mediated Instruction

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Chapter 1

Introduction

Students with disabilities are taught in their least restrictive environment; this means that many students with moderate, and sometimes severe, disabilities are being educated in the general education setting for the majority of the school day. The general education classroom allows students with disabilities to be taught core curriculum based on state standards with their peers and provides ample opportunities for socialization. While this is advantageous for students, it makes many techniques such as discrete trial training, constant time delay, and other teaching strategies commonly used by special education teachers difficult to implement. Banda, Dogoe, and Matuszny (2011) found, through a literature review, that the use of video modeling/prompting increases academic and behavioral skills and improves the experience of inclusion for students with disabilities.

Video modeling/video prompting is considered an evidence based practice in the field of special education (Banda et. al., 2011). Literature has reported that video modeling is a noninvasive and socially valid intervention strategy that is teacher friendly (Charlop-Christy, Le, & Freeman, 2000).

Significance of the Problem

Students are required to perform tasks throughout the school day that are seemingly simple, but for students with moderate and severe disabilities these tasks can be challenging and frustrating. Video modeling has become an increasingly recommended intervention for teaching students with disabilities. Past research has focused on social, communication, and behavior modification skills for students with autism, with few studies on functional and self-help skills among students with other disabilities and in small group settings (Mechling & Swindle, 2012).

The functional skills previously studied have focused on students in upper-elementary school and older, and have taught self-care or job skills; both of which are important for students in those age groups. There is a need for research on the effectiveness of video modeling for young students, preschool and kindergarten age, that is focused on self-help and functional skills.

Purpose of this Study

The purpose of this study is to examine the effectiveness of the implementation of video modeling to teach a group of children with moderate and severe disabilities the self-help and functional skill procedure for getting lunch in the cafeteria, and to measure maintenance over time and across settings by transitioning the participants from a small group to a large group setting. The hypothesis is that the participants will acquire the skills necessary to go through the lunch line within six weeks of school starting, and then generalize the skill to a large group setting by completing the task while in line with their peers with no more than two prompts.

Chapter 2

Literature Review

Students with disabilities are increasingly being educated in general education classrooms. The Individuals with Disabilities Act of 2004 (IDEA 2004) mandates that students with disabilities be educated in the least restrictive environment (LRE); with participation in the general education classroom is considered the least restrictive environment. Students are to be removed from the general education classroom only when the severity of the student's disability is such that education, in a general education classroom, cannot be accomplished (IDEA, 2004). Accordingly, children with a wide range of ability levels are being taught in general education classrooms; this means that students with disabilities who are mildly impacted by their disability, as well as students who are more severely impacted, are included with their typically developing peers. As a result, students with moderate and severe disabilities will enter the fast paced environment of the general education classroom, requiring them to learn self-help skills to navigate their environment and get their basic needs meet. Once students learn self-help skills, they become able to function independently with the day-to-day functions on the school campus which helps students to focus on learning academic and social skills. During the course of a school day, students move around the classroom, navigate the playground which includes play structures, restrooms, and drinking fountains, as well as travel with their class to the cafeteria, and possibly the library or computer lab. In the first few months of school, it is important that students learn skills for independence across the school campus; students who are able to perform self-help skills in all settings have a higher level of independence (Norman, Collins, & Shuster, 2001).

For a student entering kindergarten, self-help skills will include tasks such as: using the restroom, getting a drink of water, lining up to go to and return from recess, walking in line, using the computer, getting necessary supplies in the classroom, taking turns, and getting lunch in the cafeteria. Students need to be able to complete these tasks in order to increase their level of independence at school. Students with moderate and severe disabilities often have an adult with them to assist with functional skills, but the students would have more opportunities for socialization and would become more a part of their peer group if they did not need an adult to help them through the school day. Video modeling has been an effective method for teaching students with disabilities social skills (Cihak & Schrader, 2008; Delano, 2007), communication skills (Plavnick & Ferreri, 2011), functional skills (Alberto et al., 2005; Hammond, Whatley, Ayres,& Gast, 2010; Scott, Collins, Knight, & Kleinert, 2013; Shrestha, Anderson, & Moore, 2013; Taber-Doughty et al., 2011; Taber-Doughty, Miller, Shurr, & Wiles, 2013), self-help skills (Cihak & Schrader, 2008; Norman et al., 2010), and vocational skills (Cihak & Schrader; Taber-Doughty, et.al). Video modeling is based on observational learning; the student watches himself, or another person, model an appropriate behavior, then the student performs the modeled behavior. The video model provides an example of how the desired behavior or task is to be completed, which provides a positive learning experience by focusing on the desired behavior rather than focusing on correcting mistakes (Buggey, 2007).

Video Self Modeling

There are a variety of methods for using video modeling: video self-modeling, video prompting, and video modeling with another person as a model (referred to as video modeling). A review of the literature shows that all methods can be successful with each having its strengths and weaknesses.

Video self-modeling is an effective strategy for students with autism and other developmental disabilities. Buggey (2007) presents case studies of students who learned new skills or reduced instances of inappropriate behavior through the use of video self-modeling. Video self-modeling requires an adult to record the student performing an emerging or desired behavior. This is done by either having the student mimic someone performing the behavior or following the student while recording for a longer period of time, over days and possibly weeks, to catch him or her performing the emerging behavior; then the video must be edited to show only the positive behavior that is being taught. While this can be time consuming, it is effective for students with autism (Buggey). Buggey refers to video modeling used with students with Asperger Syndrome in reducing tantrum behavior, increasing utterance lengths and initiations for a seven year old with Down syndrome, and improving reading speed and accuracy of fourth grade students who were two years below grade level. Video self-modeling can be an effective strategy for teaching a variety of skills in a multitude of settings for students of all ages and ability levels.

Video modeling is reported to be most effective when the model is similar in age and ability to the student (Buggey, 2007; Cihak & Schrader, 2008). It implies that if the student himself could be the model it would be beneficial, but this is not always a feasible option and does not allow for students to be taught through the use of a video model in a group setting. Cihak and Schrader compared the implementation of video self-modeling to the implementation of a video with an adult as a model. The participants were ages 16-21; all were diagnosed with autism or intellectual disabilities, and were required to complete tasks with 10-12 steps. The study showed no significant difference in the acquisition of skills based on the model, and maintenance was maintained over a six week period. While this study shows that video modeling

and video self-modeling are equally effective, all participants in the study reported that they would rather watch themselves in the video than the adult (Cihak & Schrader).

Video Prompting and Video Modeling

Video modeling and video prompting are interventions in which a video is made of someone other than the student performing the task being taught. Mechling (2005) outlines the procedures as follows: in the video modeling procedure the student watches the video of the skill performed in its entirety and then performs the tasks. In the video prompting procedure, the student watches a step in the task analysis, performs the step, and based on performance, either watches the step again or moves on to the next task in the chain. Taber-Doughty et al. (2011) taught middle school students with mild intellectual disabilities to follow a recipe for cooking using both video modeling and video prompting. The results show that all students increased their ability to follow the recipe by increasing the number of independent steps completed. One student was able to perform more tasks with video prompting, while the other two students were more successful when using the video modeling procedures (Taber-Doughty et al.).

Scott et al. (2013) taught three adults age 18-20 years with moderate intellectual disabilities to use an ATM. In this study, the researchers provided participants with an iPod programed with a video prompt on a podcast for the student to view while standing in front of the ATM. Participants were to put on headphones, play the video, watch each step, then perform the step during the 10 second time allotted in the video. All three participants were able to quickly learn to withdraw money from the ATM. In fact, each participant increased task completion by at least 60% over baseline during the first session and maintained the skill over five weeks. A possible drawback in this study is that the participants had to wear headphones,

which would inhibit the participants' ability to interact with others if necessary while completing the task.

Video modeling may be more effective than video prompting for teaching students tasks in a natural setting, particularly when social interaction and communication will be necessary. Students in high school and post-high school education programs learn daily living and vocational skills in the community. While Community Based Instruction (CBI) is a research based teaching method, it is not always possible for teachers to take students into the community as often as is necessary to learn and generalize the multitude of skills to be taught (Alberto et al., 2005). Alberto et al. compared the use of picture prompts to video modeling combined with CBI to teach students to use an ATM to retrieve money and make a purchase. The researchers found both methods to be effective, but six of the eight students in the study were slightly more successful at completing the task when taught with video modeling and CBI combined (Alberto et al.). By combining CBI with video modeling, Alberto et al. taught students to effectively use the ATM. Multiple studies have shown that a combination of video modeling and other teaching strategies, i.e. constant time delay, forward chaining, or CBI, are effective for teaching students new skills.

Taber-Doughty et al. (2013) incorporated CBI and video modeling to teach high school age students with moderate intellectual disabilities to perform vocational and recreational tasks in the school workroom, at the grocery store, and at the bowling alley. Video modeling increased the level of task completion by all four students, and reduced the amount of time spent on the tasks. The videos were shown to students on an iPad, which allowed students to watch the video in the setting the task was to be performed and just prior to performing the task (Taber-Doughty et al.). Similarly, Yakubova and Taber-Doughty (2013) used video modeling and CBI to teach a

group of students purchasing tasks, incorporating the social skills necessary, in a grocery store. All three students in the study improved their ability to perform the task independently, and two of the students generalized their skills to a different grocery store. The researchers used verbal prompts along with the video model and found this to be effective for teaching the skill to students in the natural setting (Yakubova & Taber-Doughty). The opportunities for practicing a new skill in the natural setting that are created through CBI are an asset to students when they are learning a new skill. Once the students have learned a skill in the natural setting, they do not have to generalize that skill from the classroom to the natural setting. The previous studies show that video modeling can be effectively used in a natural setting to teach students daily living and functional skills.

As important as daily living and functional skills are, students also need to be taught how to access technology for many reasons, one of which is entertainment. Hammond et al. (2010) taught a group of three middle school students with moderate intellectual disabilities to use an iPod to access movies, music, and photos. Students were shown the video model for accessing movies, then asked to complete the task. A single opportunity probe was used for this study, meaning that if the student performed a step in the task incorrectly the iPod was removed and the session was over until the next day. If a student made the same error in 10 consecutive sessions, the researcher provided a gestural prompt to assist the student in completing the task. The task analysis consisted of 12 steps. Once students were able to complete all steps for watching a movie on the iPod with 100% accuracy they were taught to access music and then photos using the same method (Hammond et al.). For all students, fewer sessions were required for music and photos than movies; the task analysis is similar for all tasks, which likely explains the acquisition

of the latter skills more quickly. For students in this age group, this is an important recreational and social skill.

Video modeling can be effective when used in correlation with another research-based teaching method, or when used in isolation. Charlop-Christy et al. (2000) explored the effectiveness and efficiency of video modeling by comparing the use of video modeling with in vivo modeling (modeling by another person) to teach social/communication and self-help skills to students with autism from 7 years to 11years of age. There were five students included in the study, all of whom showed a moderate to severe delay in skill acquisition. Skills being taught were paired based on complexity; each student was taught a pair of skills, one skill was taught with video modeling and the other with in vivo modeling. The researchers found that students learned skills more quickly with video modeling versus in vivo modeling, and maybe more importantly only those skills taught via video modeling generalized across settings, stimuli, and people (Charlop-Christy et al.).

The second part of the study measured time and cost efficiency for the two methods. In using video modeling, students watch a video model, this does not require the adult teach the student the task and may or may not require adult assistance. In some cases, students are taught to operate the equipment themselves, which allows them to learn a new skill with minimal adult assistance. There is time associated with the production of the video, but once the video is created it can be used as many times as necessary with varying levels of independence, and some videos can be used with multiple students. With in vivo modeling, at least one adult and/or peer must be trained to model the skill and execute the modeling of the skill for the student during each session. Charlop-Christy et al. (2000) calculated the cost of implementing the two strategies by calculating the amount of time spent to create the video or to train for in vivo (635 minutes

for in vivo training and 170 minutes for video modeling); the amount of time was multiplied by a typical salary for a research assistant ($12/hr.). The difference in cost is $127 for in vivo modeling and $58 for video modeling (Charlop-Christy et al.). This implies that video modeling is an effective and efficient teaching strategy making it an option for teachers working with students in both special education and general education settings.

Mechling and Swindle (2012) used an adult model to teach students ages 7 to 11 years tasks involving both fine and gross motor skills. Three of the students being taught had moderate intellectual disabilities, and the other three students had autism. The researchers found that the students with intellectual disabilities were able to perform 83% of the tasks taught, whereas the group of students with autism were able to perform 73.8% of the tasks taught with the video model. In this study all six students improved their ability to perform fine and gross motor tasks following the implementation of video modeling (Mechling & Swindle). When compared to other studies, Mechling and Swindle had a comparatively large group of students who participated in the study, and all students were successful at improving their skills with video modeling. This study did not use a peer close in age to the students, and yet they were still successful.

Video modeling has been used to teach a variety of skills to students with a wide range of ages and ability levels. Researchers have taught students to use an iPod (Hammond et al., 2010), social skills(Wang, Cui, & Parrila, 2011; Yakubova & Taber-Doughty, 2013; Avcioğlu, 2013), imitation skills (Cardon & Wilcox, 2010; and Tereshko, MacDonald, & Ahearn, 2009), self-help skills such as: ATM use (Alberto et al., 2005; Scott et al., 2013), cleaning sunglasses, putting on a wristwatch, and zipping up a jacket (Norman et al., 2001), toilet training (Keen, Brannigan, & Cuskelly, 2007), making a snack (Shrestha et al. 2013), and vocational skills (Taber-Doughty et

al., 2013). The research for teaching students self-help skills typically focuses on older students who may or may not be involved in the general education setting for most of their school day. There is a lack of research with a focus on teaching young children skills to make them successful and independent on an elementary school campus, with the exception of Keen et al. (2007) who taught toilet training to preschool age students. An animated video model combined with operant conditioning was used to increase the instances of toilet use by three preschool students with autism. Two of the students generalized the skill to a new setting.

In a meta-analysis examining the effectiveness of peer-mediated and video modeling interventions for teaching social skills, Wang et al. (2011) determined that younger students responded better to video modeling interventions than older students which implies that age is a factor in the type of intervention and that video modeling may be more effective for younger students.

Self-help, or functional skills are an important part of the curriculum for students with disabilities, particularly those with moderate and severe disabilities. Students must be explicitly taught these skills in order to function from day to day with a higher level of independence. Norman et al. (2001) taught a group of three upper elementary school students with intellectual disabilities three self-help skills: cleaning sunglasses, putting on a wristwatch, and zipping up a jacket. This study is unique from others because it combines video modeling, showing the entire task, with video prompting, showing each step with a 5-second time delay for the student to perform the task. All students worked as a group, they watched the video and performed the tasks together. This kept students from learning at their own pace and moving to the next task when the criterion was met, but the researchers point out that it allowed for over learning which may have contributed to the long term maintenance of the skills (Norman et al.). A limitation of

this study is that students had others in the group as models, which may have contributed to their acquisition of the skills (Norman et al.). While this limits the fidelity of the study, it shows that group sessions may be advantageous for teaching students through video modeling.

Based on the research, there are multiple methods for implementing video mediated instruction with students with moderate to severe disabilities. Students can be successful with all methods, but only video modeling allows students to learn a new skill in a small group setting. Advances in technology make the implementation of video modeling cost effective and efficient for teachers in the special education and general education settings. The use of video modeling to teach self-help skills to students in elementary school would increase the students' level of independence and allow for increased opportunities for peer relationships.

Chapter 3

Method

Participants

Participants are four 4-5 year old students with disabilities in Kindergarten or Transitional Kindergarten (TK). TK is a two year Kindergarten program for students whose birthdays fall between October 1 and December 2. The Kindergarten entrance age in California was changed from December 2 to September 1 with a four year transition period. The TK classes have been created to meet the needs of students whose birthdays fall between the old requirements and the new requirements. All participants in this reserach were in a special education preschool program and have been transitioning to the elementary school. Participants received special education services for 51% or more of the school day. Although the participants are in a Kindergarten or TK environment, this was not an entirely unfamiliar setting for them because they were on the same campus as they were for preschool, and they interacted with many of their Kindergarten peers during recess while in preschool. Participants have not had any experience with video modeling nor getting meals in the cafeteria; in previous years the participants ate in the special education classroom and meals were served by the teacher or paraprofessionals.

Consent forms were presented to parents and explained to each participant. Upon parent consent, the students were placed in the study and given a pseudonym. A copy of the consent form is included in Appendix A. Approval for the research was obtained from the Institutional Review Board for Human Subjects Research of California State University, Bakersfield. A copy of the authorization is also included in Appendix A.

Table 1

Participant	Age	Gender	Primary Diagnosis	IQ	Adaptive Behavior	Autism Rating Scale
Group A:						
Cathy	5-1	F	Autism	93[a]	n/a	35.5[b]
Matthew	5-0	M	ID	73[a]	88[c]	n/a
Group B:						
Randy	5-8	M	ID	n/a	65[d]	n/a
Nolan	4-10	M	Autism	83[e]	n/a	130[f]

Participant Characteristics

Note. ID, Intellectual Disability. [a]Wechsler Preschool and Primary Scale of Intelligence–Third Edition (WPPSI-3). [b]Childhood Autism Rating Scale (CARS). [c] Brigance Inventory of Early Development (IED-II). [d]Vineland Adaptive Behavior Scales, Second Edition (Vineland-II).[e]Primary Test of Nonverbal Intelligence (PTONI). [f] Gilliam Autism Rating Scale-Second Edition.

Cathy. Cathy is a 5 year 1 month old female who has been diagnosed with Autism. She attended a special education preschool class for two years prior to entering Kindergarten. Cathy is at or above grade level on academic skills, but she has difficulty understanding and implementing appropriate social skills. Her self-help skills are lower than that of her peers. She is able to feed herself whole meals and open her milk with some assistance. In the preschool class she was able to empty her lunch tray into the trash can and place it in the dishwasher, but she frequently spilled food or milk off of the plate. Cathy is able to communicate her wants and

needs, but often requires prompting to initiate interactions with peers or adults. She answers questions appropriately and can follow one- and two-step related directions in familiar situations. She is able to imitate others. Cathy has a full scale IQ of 93 on the Wechsler Preschool and Primary Scale of Intelligence – Third Edition (Wechsler, 2002); on the Childhood Autism Rating Scale, Cathy was identified as being in the moderately autistic range with a score of 35.5 (Schopler, Reichler, & Remmer, 1988). Cathy qualifies for special education services under the category of Autism.

Matthew. Matthew is a 5 year 0 month old male who attended a special education preschool program two days a week for 1 ½ school years. Matthew is a friendly child who is beginning to communicate his wants and needs effectively. Matthew follows directions to the best of his ability, but sometimes has difficulty understanding and/or remembering directions. He wants to please the adults around him and works very hard to learn new concepts. Matthew is able to feed himself using utensils. He eats a wide variety of foods and seems to look forward to lunch time. During lunch, Matthew spends his time eating quickly and then having conversations with the adults at the table. He was able to empty his tray and place it in the dishwasher with minimal prompting at the end of his preschool year. Matthew has a full scale IQ of 73 on the Wechsler Preschool and Primary Scale of Intelligence – Third Edition (Wechsler, 2002), with an adaptive behavior composite of 88 on the Brigance Inventory of Early Development (2010). Matthew qualifies for special education under the category of Intellectual Disability.

Randy. Randy is a 5 year 8 month old male who has been diagnosed with Down Syndrome. Randy is a very happy and friendly child. He is able to repeat 1-4 word phrases, but he is unintelligible to people who are unfamiliar to speaking with him. Randy was in the special education preschool class for 2 ½ years prior to entering Kindergarten. In the preschool class,

Randy was able to feed himself using utensils although he was a very picky eater and would mostly move the food around on his plate. Randy was able to walk to the trash can holding his tray, but he required assistance with hand placement on the tray, as well as verbal and physical prompts to hold his tray flat while walking. He was able to place the tray in the dishwasher independently. Randy is able to follow one-step directions in familiar activities. He can imitate and is highly motivated by verbal praise and adult attention. According the Brigance Inventory of Early Development (2010), Randy's estimated academic/cognitive ability is under 4 years 9 months; the Vineland Adaptive Behavior Scales: Survey Edition places Randy's adaptive skills in the moderately low range with a standard score of 65 (Sparrow, Cicchetti, & Balla, 2006). Randy qualifies for special education services under the category of Intellectual Disability.

Nolan. Nolan is a 4 year 10 month old male who has been diagnosed with Autism. Nolan is in the TK class, and will complete one year of TK and one year of traditional Kindergarten. Nolan is energetic and shows a desire to be social by making frequent attempts to initiate play with his peers. Nolan was in the special education preschool class for 1 ½ years prior to entering TK. He has echolalic speech, and is able to answer yes or no questions on a preferred topic. However, open ended questions are very difficult for Nolan. Nolan requires a high level of verbal and physical prompting to complete tasks; he has the intellectual and physical capability to complete the tasks, but his level of attention and lack of interest increases the amount of prompts necessary. In the preschool class Nolan was able to empty his tray into the trash and place it in the dishwasher with verbal and physical prompts to hold his tray flat and to focus on completing the task. According to the Primary Test of Non-Verbal Intelligence, Nolan's standard score for cognitive functioning is 83 (Ehrler & McGee, 2008), which is in the low average range; this score may have been impacted by his lack of attention to task during testing. The Gilliam

Autism Rating Scale was completed and Nolan's score of 130 places him in the very likely range for autistic tendencies (2006).

Setting

All baseline and intervention data were collected in the cafeteria. The cafeteria had tables and benches at which students eat, a stage at one end, and the door to the food service area on the adjoining wall. The participants were taken to the cafeteria prior to other kindergarten students arriving. Participants lined up in the cafeteria, outside the food serving area, to wait for their turn to get lunch. Upon entering the food service area, there was a milk cooler, a cart with lunch trays, and the serving line. The serving line was a level surface for students to slide their tray on, the food was in front of the students, and the cafeteria workers stood on the opposite side serving the food. The students were required to choose at least three items, including milk, and were asked by the cafeteria staff "Would you like…" or "Do you want…" for each item available. There were typically 4-6 options, with one entrée and side dishes including fruits and vegetables. After the food was on the tray, students would carry the tray out the door of the serving area, into the hallway, and then walk a short distance back into the cafeteria to sit down. Paraprofessionals were in the cafeteria to guide students as to where to sit and to help open food items as needed.

During the course of the study, paraprofessionals were a part of the process of teaching students the lunch line procedures. The paraprofessionals involved were trained on the intervention procedures prior to the onset of the study. All paraprofessionals involved had worked with the researcher in the classroom for at least one school year and were familiar with the prompt hierarchy and procedures used to assist the participants in the study.

Materials

The video was recorded using an iPhone 4. The video was edited by the researcher using iMovie on an iPad and viewed by the participants on the same iPad.

Data Collection Procedures

A multiple probe approach was used to examine the effectiveness of video modeling. In order to implement a multiple probe approach, students were placed into two groups, Group A and Group B. Students were selected for each group based on their general education teacher. All data were collected by the researcher, who is also the student's special education teacher. Data were collected using a (+) and (-) on a chart, and circling the abbreviation of the level of prompt provided for each participant ("v" for verbal or "p" for physical). The chart consisted of the participant's name, the date, each step in the task analysis, and abbreviations for the prompt hierarchy (v: verbal, p: physical). Task analysis for lunch line procedures is shown in Table 2. A blank copy of the chart is included in Appendix B. The researcher gave the participant a (+) if he or she completed the step, as defined in the task analysis, with no prompting. If a prompt was provided, the researcher gave the student a (-) and circled the highest level of prompt used. This allowed the researcher to monitor whether the participants were achieving a higher level of independence by completing the task with a lower level of prompting.

During the baseline collection phase, data were collected on three days for each student group, beginning on the first day of school. During intervention, data were collected three days a week, with the days of the week varied each week. Intervention was provided every day, but data were not collected daily for every student. Data were collected for at least one student on every day of the week. During maintenance, data were collected one time each week.

Table 2

Task analysis for lunch line procedures

Task	Response Definition
1. Pick up tray	Pick up the tray from the top of the stack.
2. Place tray on serving line	Hold the tray with two hands while placing it on the serving line.
3. Choose a milk	Choose one milk: 2% white milk, or chocolate milk.
4. Place milk on tray	Place the milk on the tray in one of the small sections.
5. Make food choices	Respond to cafeteria server's question "Would you like some…" with "yes" or "no" (verbally or with a head nod).
6. Walk to the table	Carry the tray in with two hands (in the correct position to balance) while walking to the table.
7. Sit with a friend	Follow the instruction of the paraprofessional on where to sit on the bench in the cafeteria.

Video

The video was filmed by the researcher using an iPhone 4. With parent permission,, a 5 year old female student was willing to be videotaped getting her lunch. She was chosen because she knows the researcher well, and she would be comfortable being videotaped. She was taken to the cafeteria before any other students arrived for lunch and videotaped getting her lunch; still pictures from the video can be seen in Appendix C. There was one cafeteria staff person serving lunch to her, this is slightly different from the normal routine. There are usually three staff members serving food. The video does not show the staff member; therefore, this should not

affect the video modeling. The video contains verbal directions to guide the participants through each step in the task analysis. The video was 1 minute 4 seconds in length.

Baseline Procedures

Data were collected in the cafeteria by the special education teacher, who is also the researcher. All participants were taken to the cafeteria about 10 minutes before the other kindergarten students in order to reduce distractions and to reduce the need to rush through the line while the other students waited. Participants were guided to the food service area of the cafeteria and instructed to "get your lunch." The paraprofessionals were instructed to allow the participants five to eight seconds to complete the step before providing a prompt. Paraprofessionals used a verbal prompt, the lowest level, first and continued with a physical prompt as necessary. Following the first day of baseline data collection with all four students, Group B baseline was stopped and their lunch was delivered to them in the cafeteria by a paraprofessional for the following days while baseline data was collected for Group A. This was to ensure that the participants in Group B did not learn the lunch line procedures by watching the other students while the intervention was being implemented with Group A. Following the start of the intervention for Group A, baseline was continued with Group B.

Intervention

The video modeling with teacher prompts intervention was implemented with a multiple probe design. Intervention began in session 4 with Group A and in session 9 with Group B. Participants were taken to the cafeteria 15 minutes prior to the rest of the class going to lunch. On the first day of intervention for each group the researcher explained to the participants that they would be watching a video of a student getting her lunch in the cafeteria. The participants were encouraged to watch the video to learn how to get lunch. The video was activated on the

iPad by the researcher; the participants viewed the video in its entirety. Following the video the researcher reviewed the steps to get lunch with the participants before they lined up to get their lunch. This instruction was only provided on the first day of intervention for Group A, and on the first day of intervention for Group B; on all other sessions the video was shown and then students were instructed to line up to get lunch without any further teacher instruction about the lunch line procedures. In order to keep the participants from learning the lunch line procedures by watching each other, each participant was taken through the lunch line individually. Upon entering the food service area of the cafeteria the participants were instructed "get your lunch." Beginning in session 9, when all participants were in the intervention phase, the participants watched the video as a whole group each day.

Maintenance Sessions

Maintenance sessions were conducted three weeks after the completion of the intervention phase for each participant. Data were collected one session per week by the researcher while the participants went through the lunch line with their peers.

Interobserver Agreement

Interobserver agreement on participant performance was measured by one of the paraprofessionals involved with the participants during lunch. Interobserver agreement was completed on 25% of baseline data, 26% of intervention data, and 25% of maintenance data. Interobserver reliability was measured at 95% for baseline and 100% for both intervention and maintenance data. Each observer collected data independently and simultaneously for each participant. The data were then compared by counting the number of identical ratings on task independence and prompt level, dividing the number by the total number of tasks, and multiplying by 100.

Chapter 4

Results

The participants acquired the skills necessary to get their lunch independently as a result of the implementation of video modeling. Within five weeks, all participants were able get lunch with their general education class peers without the need to watch the video model. All participants had consistent attendance during the intervention phase. Each participant was absent from school for a 3-4 day period at different times during the intervention phase due to illness. During the intervention, Cathy was able to complete at least 6 out of 7 steps independently in 58% of the recorded sessions, Matthew in 86% of the recorded sessions, Nolan in 56% of the recorded sessions, and Randy in 73% of the recorded sessions. The participants had mastered the skill when they were able to complete the task independently for 3 consecutive sessions. Nolan acquired the skill within 9 sessions, while Cathy required 16 sessions to acquire the skill. Matthew and Randy were able to complete 6 out of 7 steps in the task in their second viewing of the video model, the results can be seen in Figure 1.

Cathy

Cathy was in the first group of participants to access the video. She appeared to have begun learning the skill through the verbal and physical prompts provided during baseline. She watched the video with little or no prompting each day; during the second week of viewing the video, Cathy began reciting the verbal directions along with the video. Cathy showed a regression of skills on her 10^{th} recorded session, following a three day break from school. During the fourth week of intervention, Cathy began the week with 3 consecutive independent days of completing the lunch line procedures. On Thursday of the fourth week, she went through

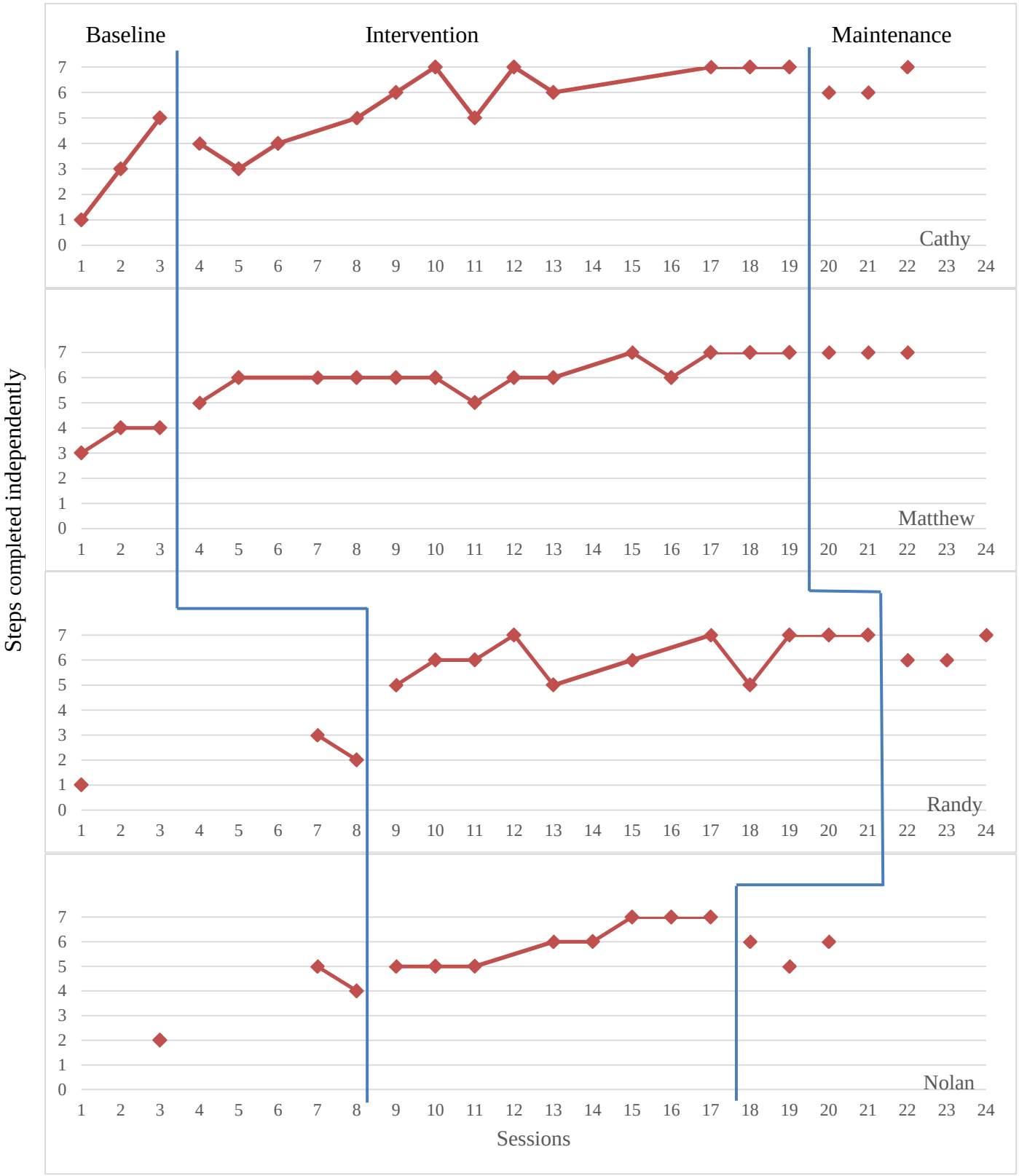

Figure 1. Results of video modeling intervention

the lunch line with her class. Cathy was able to maintain the skill over three weeks and in a large group setting with 6 of the 7 steps in the task analysis completed independently on the first two maintenance sessions, and all 7 steps in the task analysis completed independently on the final measure of maintenance.

Matthew

Matthew was able to complete four steps of the task analysis independently during baseline. He quickly gained the skills necessary for getting his lunch; on the second day of intervention he completed 6 out of 7 steps independently. Upon analysis of the recording sheets, Matthew consistently required verbal prompting on the third step, choose milk. This could be due to the way the serving line is set up; participants set the tray on the serving line, and then have to turn around to get milk. During week 5, Matthew began remembering to get his milk and was able to go through the lunch line with his class on the same day as Cathy. During maintenance Matthew maintained 100% independence when going through the lunch line with his peers over a three week period.

Randy

Randy showed the largest and fastest increase in the number of steps completed independently upon implementation of the video. At the end of baseline procedures, Randy completed 2 steps independently; on the following day, the first day of implementation, he completed 5 steps independently and 6 steps the second day of implementation. Randy acquired the skills in the task analysis within 13 sessions of the implementation of video modeling and was able to generalize the skills to get lunch with his peers. Randy had a slight decrease in the accuracy of completion during the first two weeks of maintenance, he completed 6 out of 7 steps

independently, and then in the 3rd week of maintenance data he completed 7 out of 7 steps independently.

Nolan

Nolan was absent during the first 4 days of school. His first day of baseline was his first day of school. Nolan's ability to perform the steps in the task analysis independently was more gradual than that of the other participants. Nolan may have begun to learn the steps in the task analysis from the teacher prompts provided during the first baseline procedure, he was able to complete 2 steps independently on the first day of baseline and 5 steps on the second day of baseline. Nolan was able to attain mastery with only 9 sessions of video implementation, and was able to begin going to lunch with his peers. There were four different colors of trays in the stack, Nolan wanted a green tray and required verbal and sometimes physical prompting to help him take the tray from the top of the stack. Nolan was the first participant to begin going through the lunch line with his peers. On the third day after Nolan began getting lunch with his peers, he started bringing a lunch from home most days. When the second and third maintenance data were measured, he needed one to two prompts in order to successfully get his lunch.

Maintenance

Maintenance was measured once a week for three weeks following the participants return to their general education class for lunch. All participants maintained the skills for getting their lunch in the cafeteria. During maintenance and generalization the video was not shown to participants and a paraprofessional was not with them as they got their lunch. Cathy and Randy continued to get their lunch with no more than one prompt, and Matthew was able to get his lunch independently each session.

Chapter 5

Discussion

In this study, four children with moderate and severe disabilities were taught to get their lunch in the cafeteria through the implementation of a video model. The participants were able to generalize the skill from a small group setting to a large group setting and maintain the skill over a three week period. Teaching the participants in a small group in the cafeteria prior to the Kindergarten classes coming in for lunch minimized the distractions and allowed the participants to focus on the video and learn the skills necessary to complete the steps in the task analysis. Upon the acquisition of the skills, participants immediately generalized the skill to a large group setting. During the maintenance phase the participants were able to complete the task with limited assistance. They watched their peers get lunch and were distracted by the other students in the cafeteria and serving line; this appears to have affected the participants' performance during the first two weeks of maintenance measurement. It is very noisy in the cafeteria as students are waiting in line for lunch and sitting at the tables eating. This appeared to cause some distractibility, and may have influenced the initial maintenance scores for Cathy and Randy.

Significance

An unexpected outcome from the study is that Randy and Nolan were able to acquire the skill more quickly than Cathy and Matthew. Randy and Nolan require more assistance during the school day with activities including toileting, social interaction, cooperative learning, task completion, and classroom participation; Cathy and Matthew are not independent in these areas, but they do not require the amount of assistance that Randy and Nolan do. Randy and Matthew both qualify for special education under the category of Intellectual Disability; when comparing the scores on the Brigance Inventory of Early Development II (IED-II) Randy is functioning at

about 1.9 years below what is expected for his age, in contrast with Matthew who is functioning between 4 and 11 months below what is expected for his age. Cathy and Nolan are both identified as having an Autism Spectrum Disorder, therefore the scores on the autism rating scales can be compared. Cathy was identified as being in the moderately autistic range with a score of 35.5 (Schopler et al., 2007), and Nolan was identified as being in the very likely range for having autism (GARS-2, 2006). This comparison shows that the participants who were more impacted by their disabilities responded at a faster rate when the video model was implemented. It suggests that video modeling may be more beneficial to students who are more severely impacted by their disability than those who are moderately impacted.

Nolan was the first participant to complete the intervention and get lunch with his peers. This appears to have influenced and motivated Cathy, Matthew, and Randy. On the first day that Nolan did not come to view the video with the group Cathy asked where he was. The group was told that Nolan would be going to lunch with his class because he had been able to get his lunch without any help. It was the beginning of the following week that Cathy, Mathew, and Randy began getting their lunches independently. This is an advantage of a implementing a video model intervention in a group setting, participants can be encouraged and motivated by one another to complete the task and earn the independence.

The step in the task analysis that was consistently difficult for participants to perform was choosing milk. The serving line is set up in such a way that participants must place the tray on the serving line and then turn around to get milk. The kindergarten teachers place each student's milk on their tray at the beginning of the school year to help students move through the lunch line at a quicker pace. Since the video was filmed at the end of the previous school year, this was unknown to the researcher and therefore was not included in the task analysis or the video. This

may have delayed the progress of the participants, particularly Matthew, from becoming completely independent in the lunch line. In order to avoid this, the researcher could have consulted with the general education teachers and shown them to video prior to implementation to allow an opportunity for corrections and modifications to be made to the video.

Limitations

This study was carried out in a natural setting, which may have affected the systematic implementation of prompts. The paraprofessionals assisting the participants were trained to allow the participants five to eight seconds of wait time before giving a prompt during baseline and intervention. The cafeteria staff should have been trained with the same information as the paraprofessionals. They were informed of the research being conducted and asked not to prompt the participants, but to greet the participants and ask about food choices in the same way that they do for other students. These instructions were not always followed; there were instances, more in the beginning of the study, when the participants were prompted prematurely by the cafeteria staff. In these instances, the score for the day was lower because the student was prompted without the appropriate wait time.

In this study, the participants were prompted for task completion during baseline. This was done because it is a natural procedure in the setting. Teachers must prompt students to complete the task to make sure that they get through the lunch line. It appears that the participants may have begun to learn to the steps in task analysis during baseline from the prompts which may have impacted the results of the video modeling procedures.

When the video was filmed and shown to the participants the researcher was unaware that the kindergarten teachers ask each student which milk they want and place it on the students' tray. For the first and second generalization probes the kindergarten teachers were asked not to

hand the participants their milk. This may have caused some confusion for the participants; they required verbal prompting to get milk after seeing the teacher hand milk to the other students and were waiting for her to do the same for them. When the researcher conducted the third maintenance probe the teachers were asked to assist the participants just as they would the other students and the participants were independent at getting their lunch.

Suggestions

The current study shows that participants were able to learn lunch line procedures through the use of video modeling and generalize the skill from a small group to a large group in order to independently get lunch and eat with their peers. While the participants were successful, this study is limited to only four participants with disability categories of Autism and Intellectual Disability. Further research needs to be conducted on the implementation of video modeling for groups of students with various other disability categories and ability levels. Additionally, there should be further research on the implementation of video modeling for other self-help and functional skills that would allow students more independence on an elementary school campus.

Teaching students with moderate and severe disabilities skills that provide them with independence is essential to their education and should be taught as soon as possible when they enter a new environment. These skills will be beneficial to the students throughout their school career and provide opportunities for interaction with peers and friendships that are important for all children.

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Appendix A

Institutional Review Board Protocol and Consent Forms

CSU Bakersfield
Academic Affairs
Office of the Grants, Research, and Sponsored Programs (GRaSP)

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Institutional Review Board for Human Subjects Research

Date: 17 June 2013

To: Marie Sampson, Special Education Student

From: Steve Suter, University Research Ethics Review Coordinator

cc: Paul Newberry, IRB Chair

Yeunjoo Lee, Special Education Program

Subject: **Authorization for Protocol 13-86**

I am pleased to inform you that your protocol, **"Teaching Young Children with Moderate to Severe Disabilities Through Teacher-Made Video-Mediated Instruction"** has been approved following expedited review. Authorization is based on the original protocol received May 29th, 2013, and your clarifications and revisions in response to reviewer feedback completed on June 17th, 2013.

This authorization is strictly limited to the specific activities that have been authorized by the IRB. In conducting this research, the investigator must carefully review the final, authorized, version of the protocol to ensure that the research is conducted as authorized by the IRB. If you want to modify these activities, notify the IRB in advance so proposed changes can be reviewed. If you have any questions, or there are any unanticipated problems or adverse reactions, please contact me immediately."

Note: The following personnel [*only*] are authorized to interact with subjects in obtaining informed consent or in collection of data.

Human Subjects Protection Training Certified:
Marie Sampson [1-20-2013] & Yeunjoo Lee [10-06-2010]

Any signed consent documents must be retained for at least three years to enable research compliance monitoring and in case of concerns by research participants. Consent forms may be stored longer at the discretion of the principal investigator [PI].The PI is responsible for retaining consent forms. If the PI is a student, the faculty supervisor is responsible for the consent forms. The consent forms must be stored so that only the authorized investigators or representatives of the IRB have access. At the end of the retention period the consent forms must be destroyed [not re-cycled or thrown away]. Please destroy audio tapes after scoring.

This authorization will be valid until the end of May 2014.

Steve Suter, University Research Ethics Review Coordinator

Parental/Guardian Consent: Teaching Young Children with Moderate to Severe Disabilities Through Teacher-Made Video Mediated Instruction
[Authorized by the CSUB Institutional Review Board: Protocol 13-86]

Your child's teacher, Mrs. Sampson, is doing research for her MA Culminating Project at CSUB. These results might also be presented at professional meetings or published in an article.

This form asks permission to use your child's data for her research. Mrs. Sampson will create a teacher-made video of a student getting her lunch in the cafeteria. Your child will then view this video to learn how to get lunch in the cafeteria. Data will be collected on the level of prompting (help from an adult) your child requires to successfully get his or her lunch. This consent is to use your child's performance data for research purposes.

The data collected for your child will be coded by a pseudonym and not listed by real name. Your child's name will not appear in any reports. The data will be kept in a locked cabinet. The written report will contain only summary statistics.

You are completely free to choose whether or not to grant permission for your child to participate in this research. If you decide not to grant permission, this will not affect my evaluation of your child in my class, including any of his/her grades or privileges.

Benefits: This study is designed to provide direct educational benefits to the participants. It also might result in more effective ways for special education teachers to teach social skills and self-help skills to groups of students in the future.

Risks: There are no costs/risks to the participant beyond those normally found in the classroom, such as anxiety over new environments or frustration when learning a new skill.

If you have questions about this research project, or would like a summary of the results, please contact:
Marie Sampson
Special Education Teacher
Master's Program Student
California State University, Bakersfield
PO Box 1303
Lake Isabella, Ca. 93240
(760)379-2422

Yeunjoo Lee, Ph.D.
Associate Professor of Special Education
California State University, Bakersfield
ylee@csub.edu
661-654-6478

If you have questions or concerns about your child's rights as a research participant, please contact:
Dr. Steve Suter
Research Ethics Review Coordinator
Department of Psychology
California State University
9001 Stockdale Highway
Bakersfield, CA 93311-1099
Phone: 661-654-2373

Your signature below indicates that you have read and understood this form, that you have been given an extra copy of this form to keep, and agree to allow your child's data to be used for research purposes.

Signature of Parent/Guardian: _____
Date: _____

Appendix B

Recording Form

Student Name: _____

Date: _____ Date: _____

Task	Prompt +/-	Level	Task	Prompt +/-	Level
Pick up tray		V P	Pick up tray		V P
Tray on serving line		V P	Tray on serving line		V P
Pick a milk		V P	Pick a milk		V P
Put milk on tray		V P	Put milk on tray		V P
Make food choices		V P	Make food choices		V P
Walk to the table		V P	Walk to the table		V P
Sit with a friend		V P	Sit with a friend		V P

No prompt: _____ No Prompt: _____

Verbal: _____ Verbal: _____

Physical: _____ Physical: _____

Notes:

V: Verbal P: Physical

Appendix C

Video Still Photos