Effects of Self-Directed Video Prompting on Vocational Task Acquisition

Thesis

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By

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Abstract

Efficient vocational skills instruction is needed to meet the needs of a growing number of job-seekers with intellectual and developmental disabilities (IDD). This study examines the effects of self-directed video prompting used to teach transition-age students with IDD chained vocational tasks. A multiple baseline design across behaviors was replicated across two participants. Both participants mastered iPhone navigation after observing a model and completing 2–3 sessions in a training phase. After training, students independently navigated the iPhone and played video prompts. Both students made substantial progress on all three tasks, reaching 100% accuracy in two of the tasks. Students were given the opportunity to self-fade in maintenance sessions following mastery of all three tasks.

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Chapter 1

Introduction

The U.S. Congress passed IDEA (2004), designating education as the means to establish a “national policy of ensuring equality of opportunity, full participation, independent living, and economic self-sufficiency for all individuals with disabilities(sec. 601).” Paid employment after secondary school is an essential step toward realizing the intent of the law that governs special education, as it is inextricably linked to all the desired outcomes listed above. Employment leads young adults, with and without disabilities, toward independent living and economic self-sufficiency. Employment is also tied to an individual’s identity, social circle, and degree of community integration (Kiernan, Hoff, Freeze, & Mank, 2011; Verdonschot, Witte, Reichrath, Buntinx, & Curfs, 2009).

Students with intellectual and developmental disabilities (IDD) who receive at least one service (other than case management) consistently have relatively low rates of competitive, paid employment once they leave secondary school (National Core Indicators, 2015). In 2015, the employment-population rate for people without disabilities in the U.S. was 65%, but only 20% of individuals with developmental disabilities between the ages of 18 and 34 indicated that they currently had community employment, despite 59% of individuals in this age range without a job in the community reporting that they would like one (National Core Indicators, 2015; United States

Department of Labor, 2016). There are several potential reasons for this disparity, including employment discrimination in certain fields (Houtenville & Kalargyrou, 2015), lack of a marketable skillset, social skill deficits, insufficient available supports (Test, Smith, & Carter, 2014), low expectations from family and educators (Doren, Gau, & Lindstrom, 2012), and lack of work and internship experiences (Carter et al., 2016; Carter et al., 2009).

Currently, vocational rehabilitation (VR) agencies and transition coordinators in school districts are tasked with preparing every person with IDD to obtain the skills and strategies that will lead to paid employment (Rehabilitation Act, 1979; IDEA, 2004). The U.S. Department of Labor and 46 states have taken a philosophical or legislative approach that prioritizes employment in the community as the first option for individuals with disabilities (Association of People Supporting Employment First, 2013). Despite over 25 years of culture shifts, advocacy, and policy changes, this Employment First movement has not yet reached the goal of total systems change, as is evident from the labor force participation rate flat-lining for individuals with IDD (Association of People Supporting Employment First, 2013; Kiernan, Hoff, Freeze, & Mank, 2011). Adjustments are still needed in job development, employee training and support, and effective resource allocation to reach the goals of the Employment First movement (Kiernan, Hoff, Freeze, & Mank, 2011).

Providing individualized employment services and skill building for every person eligible for special education or VR services has beleaguered these institutions with a more formidable task than they can address with the current available resources, strategies, and systems structure, particularly in rural areas (Mwachofi, 2009). According

to a national study, the usual waiting time for Social Security Disability Insurance beneficiaries was between 3 and 5 months beyond their period of eligibility determination, which can last up to 60 days (Stapleton & Honeycutt, 2012). This extended wait time is a symptom of the congestion of the VR system, which places an institutional pressure for cases to be pushed forward. This, along with the time-limited nature of many vocational services, indicates a need for increased efficiency in use of job training services, so that individuals with IDD can make the most of their time with one-on-one training, and have lasting supports after those services lapse.

Technology-Based Instruction

As a result of a climate of limited resources for 1:1 job coaching support in schools and the community, school transition professionals and VR services need tools to teach a diverse set of skills efficiently, with as little staff support as possible. Portable, individualized instruction and support through technology could be one such strategy to supplement the work of job coaches, teachers, and educational aides, as they are often supporting multiple students. Self-directed video prompting is an instructional strategy that has potential to lend itself to efficient skill building for transitioning students and young adults in vocational tasks and settings. Test et al.'s (2009) review of evidence-based practices in secondary transition cited job training using computer-based instruction, including video and audio-visual self-prompting strategies, as being a strategy for transition student development supported with moderate evidence.

Video technology-based instruction has demonstrated growing support in the special education literature over the last 30 years (Banda, Dogoe, & Matuszny, 2011). Video technology has been used to teach a wide range of skills including academic skills

such as fraction problem solving (Yakubova, Hughes, & Hornberger, 2015), some vocational and pre-vocational skills (Allen, Wallace, & Renes, 2010; Bereznak, Ayres, Mechling, Alexander, 2012; Cullen, 2013; Van Laarhoven, Johnson, & Grider, 2009;), daily living skills such as cooking and cleaning (Sigafos et al., 2007; Shiply-Benamou, Lutsker, & Taubman, 2002; Taber-Doughty et al., 2011), and fire safety (Tiong et al., 1992).

Vocational Settings

Study of self-directed video prompting in vocational settings increased along with the demand for vocational instruction in recent years (Bereznak, Ayres, Mechling, & Alexander, 2012; Cullen, 2013). These studies have shown relatively rapid acquisition rates as well as unique challenges to be considered in future replications. Cullen (2013) used a multiple probe across behaviors design to demonstrate the use of self-directed video prompting for the rapid acquisition of vocational skills. Students were trained to use the MyPicsTalk app to access short video clips on an iPad as the student completed tasks in their internships. However, this study ran into some logistical concerns inherent in attempting to implement in an integrated employment setting, such as having to use in vivo prompts to complete some of the tasks in the baseline phase to meet the demands of the integrated environment, despite the possible learning effect on the student (Cullen, 2013). Cullen (2013) is one of several self-directed video prompting studies to gather and report technology navigation data for the student (Cannella-Malone, Brooks, & Tullis, 2013; Jimenez, 2014). Navigation data is an important measure in studies claiming to be student-directed, so the data can demonstrate whether the student's technology use was sufficiently independent to be considered self-directed.

Video Prompting Procedures

Video prompting is a technology-assisted form of simultaneous prompting, in which the model is broken into video clips of each step of the task analysis, so the learner can complete steps of the task as they watch the videos (Le Grice & Blampied, 1994).

Using a video-recorded model has several advantages over in vivo prompting, because it provides a consistent model that contributes to consistent results and is transportable across settings and staff (Charlop-Christy, Le, & Freeman, 2000; Mechling, 2005).

Videos also have the potential to gain the attention of students who are reinforced by interaction with the video (Charlop-Christy, Le, & Freeman, 2000). The use of video prompting is cost efficient because the videos can be recorded and displayed on smart phones that the majority of American adults already own (Anderson, 2015).

Using self-directed video prompting, learners independently navigate through short video clips of individual steps of a task analysis, as they are completing the task (Jimenez, 2014). Video prompts that are operated by the student add an additional advantage of cost efficiency because it decreases the need for one-on-one staff support for prompting tasks that have not yet been mastered, allowing instructors to work with multiple students at the same time (Mechling, 2005). Self-directed video prompting has the potential to be discrete in some work settings where an individual would stand out more with a job coach shadow than they would occasionally referencing an iPhone, potentially decreasing stigma while still providing the individual with a lasting support. However, this procedure still involves a small degree of job coach intervention during acquisition, as some students may need occasional error correction to prevent them from practicing errors.

Recent studies investigated error correction procedures that have demonstrated promising effects for use with video prompting. Video-based error correction procedures typically involve informing participants that their response was incorrect and playing video prompts a second time following an error (Cannella-Malone, Wheaton, Wu, Tullis, & Park, 2012). Studies have varied the timing of implementation of error correction procedures, with some adding the procedure after the individual's acquisition trend stabilizes (Goodson, Sigafoos, O'Reilly, Cannella, & Lancioni, 2007), and others using error correction from the outset (Van Laarhoven et al., 2009). Cannella-Malone et al. (2012) used an alternating treatments design to compare the efficiency in acquisition between conditions of video prompting with error correction from the beginning of intervention and error correction added after plateau, and results suggested that use of the video-based error correction procedure from the outset led to more efficient acquisition. Error correction support naturally fades out as the student masters the task, however, fading the self-directed video prompts to an appropriate level remains an area open to further investigation.

As with all forms of prompting, fading can be a concern in video prompting to avoid prompt dependence (Cooper, Heron, & Heward, 2007). Few studies have investigated fading procedures for video prompting. In one such study, Sigafoos et al. (2007) tested fading approaches for video prompting, starting with a removal of the video prompts completely when the individuals met the mastery criterion, which was unsuccessful in this case. They then reintroduced the video prompts and implemented a more gradual 3-step fading procedure that systematically grouped videos together into larger chunks. This procedure showed promise in effectively fading a majority of

participants to fewer video clips while maintaining high levels of task completion accuracy (Sigafoos et al., 2007). Mechling, Gast, and Seid (2009) did not systematically attempt to fade the picture, audio, and video prompts in their PDA study, but noted that students began self-fading over time as they became fluent in the task—they chunked steps together or moved to less intrusive prompts. This self-fading effect has not yet been systematically tested. In the present study, we attempt to provide students with video prompts as an effective, lasting support that they could unobtrusively reference without a job coach. If students self-faded prompts by skipping videos after mastering steps of the tasks without direct instruction, as reported in Mechling, Gast, & Seid (2009), this would decrease the amount of time needed to complete each task. Therefore, the purpose of this study was to replicate the effect of previous studies that show video prompting as an efficient means of instruction to acquire vocational skills that maintain over time, and to determine if students will naturally self-fade as they master vocational tasks. This study will expand on the previous work of Cullen (2013) and Bereznak, Ayres, Mechling, and Alexander (2012) by increasing the efficiency of the preparation procedures through elimination of extraneous software or video editing processes, as well as increasing the amount of experimental control over tasks by opting for a school-based training setting and novel tasks for the students.

Research Questions:

1. After a brief training on iPhone use, can students with moderate intellectual disabilities acquire vocational skills using self-directed video prompting?
2. Will students self-fade during instruction without direct instruction to do so?

Chapter 2

Method

Participants

Two participants were included in this study. The school district's transition program teacher was asked to recommend students between 18 and 22 years of age with moderate-intensive intellectual disabilities, who needed job training in discrete vocational skills. Student assent and parental permission were obtained before the study began.

Hannah. Hannah was a 21-year-old female with diagnoses of moderate intellectual disability, Down Syndrome, selective mutism, and moderate post-lingual hearing loss. She was in her third year in the vocational skills transition program. Hannah scored proficient in all academic subjects on her alternate assessments before entering the vocational program. She attended internship sites at retail shops, restaurants, offices, and animal shelters through the school program. Outside of the vocational skills program, Hannah worked a paid housekeeping internship through her church. Her teacher reported that they were working on self-monitoring during chained tasks, completing tasks efficiently, having appropriate social interactions, and asking for help when needed.

Will. Will was a 21-year-old male with diagnoses of moderate intellectual disability and Down Syndrome. He was in his third year in the vocational skills transition program. Will scored proficient in all academic subjects on his alternate assessment before entering the transition program. Will was interning at a mail room, as well as attending internship sites at retail shops, restaurants, offices, and animal shelters through

the school program. Will's teacher reported that they were working on building skills that would allow for him to gain responsibility and become more independent in vocational settings, and ultimately find a job that he enjoys.

Setting

All iPhone training, baseline, and intervention sessions took place in the students' transition program homeroom or in the union common space. Both rooms are located within a small, alternative high school in a suburban public school district. The school contains specified programs for students with and without disabilities, such as a specialized STEM program. The transition program is for students with intellectual disabilities, ages 18–22, who defer graduation to obtain additional vocational experience and independent living skills. The homeroom has six large tables, each with four chairs. Student daily and weekly schedules are posted on the wall, and various areas around the room are designated for in-school businesses (e.g., coffee delivery service, snack cart). The 10 students in the transition program move in and out of this space as they get ready to go to internship placements and do vocational tasks throughout the school, so there are typically only 3–4 students in the space at a time. The union common space has tables and chairs, couches, and standing tables. It is a multi-use space where the students eat lunch, socialize, and wait for their next class. This space typically had 0–5 students when we were working in it. We worked in the classroom on days when there was sufficient table space, because half the class were at their work sites. We worked in the union on days when most of the students in the classroom were working on laptops and using all of the table space.

Materials

During the baseline condition, students were provided the task materials required to complete the task and a paper task analysis. During the iPhone training and intervention phases, the students were provided with the materials needed to complete the task and were also provided with an iPhone SE loaded with a video clip for the steps of each task, organized into folders by task in the default Apple “Photos” app. Task lists for the videos were developed through observation of several individuals completing the three selected tasks. Each video clip began with a verbal instruction followed by a visual demonstration of the step. All videos were shot from a first-person perspective, over the shoulder of an adult male actor. Verbal instructions in the videos were given by the adult female researcher. The coffee task had 17 video clips that were 156 s long total, with an average of 9 s per clip (range: 6 s–17 s). The nametags task had 28 video clips that were 304 s long total, with an average of 11 s per clip (range: 6 s–19 s). The wrapping task had 40 video clips that were 394 s long total, with an average of 10 s per clip (range: 6 s–27 s). When one of the videos was found to be unclear, and a participant was making a repeated error as a result, it was replaced with a new video that showed the same step from a different angle. This change is marked with an asterisk on Figure 2.

During iPhone training, both students were provided a three-hole punch machine and a stack of 25 pieces of printer paper and asked to three-hole punch the papers. Both students worked on the same three tasks for the intervention and baseline conditions: (a) making conference nametags, (b) setting up hotel room coffee trays, and (c) wrapping a box. For the nametags task, students were provided with an Avery Top-Loading Hanging Name Badge kit and a small clear container of finished name tags. Materials provided for the coffee task included a tray with three sections and a supply bin containing disposable

coffee, coffee cups, lids, stirring straws, sugar packets, creamer, coffee filters, and welcome cards. For the wrapping task, students were provided with an empty box, a roll of wrapping paper, invisible tape, a pencil, and scissors.

Dependent Variables

Accuracy of task completion was the dependent variable researchers used to assess the effectiveness of the intervention. Accurate completion of the task was defined as completing the step as described in the task analysis. Accurate use of the iPhone navigation taught in training was also measured throughout.

Data Collection

iPhone Training. Data on the training were collected on a task analysis for the training task that also included the steps to use the iPhone. The datasheet included the task analysis steps for iPhone use along with each step of the task analysis for the training task (see Appendix H).

Vocational task. Data collection occurred simultaneously for the dependent variable (completion of the task) and the iPhone navigation measure (accurate use of the iPhone). Data were collected on correct and incorrect performance. For task completion, the data sheet included the task analysis for each skill. Next to each step, data collectors indicated the student's level of performance. Two types of data on correct responding were collected. Independent plus was defined as the student completing the step correctly before watching the video, a correct response was also coded if the student completed the step correctly after watching the video. Incorrect responses were coded if the student responded correctly after watching the video a second time, or if the student made two errors on the same step and the researcher completed it as a model. Responses that took

longer than 4 s to initiate were counted as errors. Missing steps and incorrect responses were also counted as errors. Steps completed out of order were counted as correct as long as the result were functionally equivalent. For use of the iPhone, the data sheet included a task analysis. Data collectors scored whether the student completed the steps correctly with no prompts, correctly with a verbal prompt, correctly with a gestural prompt, or correctly with a physical prompt. The percentage of independent steps completed was calculated for the iPhone task list as well. Percentage of steps completed correctly were calculated as accurate responses / total number of steps x 100.

Experimental Design

This study used a multiple probe design across three behaviors per participant. Baseline data were collected for all behaviors and the first behavior was moved into intervention following at least 5 sessions showing a stable flat trend. After meeting the mastery criterion of at least five sessions demonstrating a clear effect and a stable or increasing trend for all three intervention tiers, students were moved into the maintenance phase.

Procedures

iPhone Training. Students were individually taught to use the iPhone to access video prompts. Students were presented with an in vivo model of how to use the iPhone in which the experimenter demonstrated (a) waking up the device, (b) opening the pictures app, (d) selecting the folder from within the app that matched the task (e.g., “hole punching”), (e) playing the first video clip for that task, (f) doing the step shown in the first video, and (g) navigating between videos. Following the model, each student was given a chance to practice with an unfamiliar task. Each participant was asked to “Hole

punch these papers by following the instructions on the iPhone.” If a student did not independently initiate within 4 s, or if the student made an error in either navigation of the iPhone or the task portions, the researcher stopped the student and used a least-to-most prompting hierarchy until the student demonstrated the correct action. The least-to-most prompting hierarchy included four levels: verbal prompt (e.g., “look for the rainbow circle icon”), gestural prompt (e.g., pointing at materials or icon on iPhone), partial physical prompt (e.g., touching the student’s forearm to guide them to the correct icon on the iPhone), and full physical prompt (e.g. hand-over-hand guidance to complete the task). The experimenter used the successively more intrusive prompting level after waiting 4 s for initiation, or after additional attempted errors for the same step occurred. At the end of each iPhone training session, the students received non-specific praise (e.g., “thanks for working with us”). The student was required to reach 90% accuracy for both iPhone use and completion of the training task before moving into baseline.

Baseline. Students were provided with a verbal direction to complete their vocational task and a paper copy of the task analysis so the steps were available to them, but the iPhone was not available to them. Experimenters used a multiple opportunity method during baseline sessions (Cooper, Heron, & Heward, 2007). When a student made an error, the researcher interrupted the student, stood in front of the student to block their view of the task, and completed the step for the student. Then, the experimenter stepped out of the way to give the student an opportunity to complete the next step. No verbal or gestural prompts were given to the student at this time.

Intervention. Students were given the iPhone and instructed to use the video clips to complete the task. If the student did not initiate the iPhone within 4 s, or if after

the video the student made an error, the error correction process began. The first time there was an error, the researcher interrupted the student saying, “that’s not quite right,” reset the scene, and gave the student specific feedback about the error. Then the researcher verbally prompted the student to re-watch the video and pay close attention to the part they missed (e.g., “You took too many sugar packets. Play the video one more time and look closely at how many sugar packets are needed” or “you didn’t start folding the corner of the paper, play the video again and give it a try”). If the student made an error or did not initiate within 4 s during the second attempt, the experimenter completed the step for the student as a model. After each step the student completed correctly, they would move on to the next video and the process was repeated. Prior to moving on to the next skill, each student’s data showed a clear and increasing trend across a minimum of three trials.

Maintenance. Maintenance probes were taken every 2 weeks for 1 month, starting the first session after the student met the mastery criterion for all tasks. During maintenance probes, the iPhone was placed in a location visible to the students, but they were not directly instructed to use it and no error correction procedures were implemented.

Interobserver Agreement (IOA) and Procedural Integrity

IOA data were collected in 29.4% of baseline sessions, 25% of intervention sessions, and 50% of maintenance sessions for Will. IOA data were collected in 26.3% of baseline sessions, 29.4% of intervention sessions, and 50% of maintenance sessions for Hannah. IOA was calculated as $\text{agreements} / (\text{agreements} + \text{disagreements}) \times 100$. The data sheet used to record IOA during baseline was the same as the primary data collection

sheet. Two graduate students in special education served as secondary data collectors. The first author trained secondary data collectors by demonstrating how to appropriately record on the data sheet, and by giving examples and non-examples. The first author was available to answer questions. Overall point-by-point interobserver agreement for sessions with Hannah was 100% for baseline conditions, 100% for treatment conditions, and 100% for maintenance probes. Overall point-by-point interobserver agreement for sessions with Will was 100% for baseline conditions, 100% for treatment conditions, and 100% for maintenance probes.

Procedural integrity data were collected in 29.4% of baseline sessions, 25% of intervention sessions, and 50% of maintenance sessions for Will. Procedural integrity data were collected in 26.3% of baseline sessions, 29.4% of intervention sessions, and 50% of maintenance sessions for Hannah. Procedural integrity data were recorded by a second data collector and calculated as the number of applicable steps completed correctly divided by the total number of applicable steps, and multiplied by 100. Data were collected on a fidelity checklist (see Appendixes B, D, F, and G) to indicate whether the experimenter (a) provided the student with the needed materials, (b) verbally directed the student to use the iPhone to complete the task, (c) completed the error correction procedure using some or all of the three steps in the correct sequence (e.g., specific feedback, replaying the video, modeling the step). Overall point-by-point procedural integrity for sessions with Hannah was 100% for baseline conditions, 96.4% (range: 85.7–100%) for treatment conditions, and 100% for maintenance probes. Overall point-by-point procedural integrity for sessions with Will was 100% for baseline conditions, 100% for treatment conditions, and 100% for maintenance probes.

Chapter 3

Results

Two multiple baseline across tasks experiments were conducted, providing six opportunities to demonstrate an effect. An increase in accuracy of task completion coincided with the use of self-directed video prompting for both students across all three tasks. Acquisition data showed a similar pattern across tasks and replicated across students. Both students demonstrated high levels of iPhone navigation accuracy throughout all tasks in the study. Neither student self-faded video prompts in maintenance sessions.

iPhone Training

Hannah. After viewing an in vivo model, Hannah completed 87.5% of the steps for iPhone navigation, and 100% of the steps for the training task, hole punching. In the first training session, Hannah required a verbal prompt to unlock the iPhone and to select the correct task. She completed 2 sessions of training before reaching 100%. Hannah used the iPhone correctly in 100% of intervention sessions.

Will. After viewing an in vivo model, Will completed 81% of the steps for iPhone navigation and 100% of the steps for the training task, hole punching. In the first training session, Will required a verbal prompt to select the correct app, select the task within the app, and to play the first video clip. He completed iPhone training in 3 sessions before reaching 100%. Will's iPhone navigation accuracy during intervention sessions was 100% in all sessions.

Task Accuracy

Hannah. Results for Hannah's task completion accuracy are shown in Figure 1. During baseline, Hannah did not complete any steps of the three tasks. Hannah accurately completed 89% of the nametag assembly steps in the first session with self-directed video prompting. Hannah's nametag assembly accuracy increased to 100% by the second session and remained at 100% for the remaining intervention sessions. Hannah's average accuracy during intervention sessions was 97.8% (range: 89–100%). Hannah made one error in threading the string backwards in the first session of intervention for this task, requiring a level 1 error correction (i.e., provide specific feedback, reset the scene, direct to replay video). Maintenance data were collected for the nametag task 2 and 4 weeks following intervention, Hannah's performance remained at 100% for both maintenance sessions.

Hannah accurately completed 88% of the steps for the coffee trays task in the first session with self-directed video prompting. Hannah's coffee tray task accuracy increased to 100% by the second session and remained at 100% for all intervention sessions. Hannah's average accuracy for the coffee tray task was 98% for all intervention sessions (range: 88–100%). Both errors Hannah made with this task required level 1 error correction. Maintenance data were collected for the coffee trays task 2 weeks and 4 weeks after intervention sessions were complete. Hannah's performance remained at 100% in both maintenance sessions.

Accuracy for the third task (wrapping) increased to 92% in the first session of intervention. Hannah demonstrated significant improvement from baseline sessions, but

did not reach 100% accuracy with this task because she struggled conceptually with centering the box on the paper, often centering the box on the width or the length of the paper, but not both. Average accuracy was 96% for all intervention sessions (range: 92–97%). Both errors Hannah made with this task required level 1 error correction. Maintenance data were collected at 3 and 4 weeks after the last intervention session for the wrapping task. During maintenance for the wrapping task, Hannah’s performance remained at 96% for both maintenance sessions.

Figure 1. Percentage of accurate task completion for Hannah

Will. Results for Will's task completion accuracy are shown in Figure 2. Will did not complete any of the steps of the three tasks independently during baseline. Accuracy for the first task (nametag assembly) increased to 89.3% in the first session of intervention when self-directed video prompting was introduced. Accuracy reached 100% in the following session and remained at 100% for all remaining intervention sessions. Will's average accuracy during intervention sessions was 98.2% (range: 89.3–100%). All three errors Will made with this task required level 1 error correction. Maintenance data were collected 3 and 5 weeks for the nametag task, Will's performance remained at 100% for both sessions.

Accuracy for the second task (coffee trays) increased to 94.1% in the first session of intervention. Accuracy remained at 94.1% for three more sessions until one of the videos for this task was reshot at a different angle. After the new video was in place, performance reached 100% for all remaining sessions. Will's performance on the coffee task ranged between 94.1% and 100% ($M = 96\%$). All four errors Will made in this task required level 1 error correction. Maintenance data were collected at 3 and 5 weeks after the last intervention session for the coffee trays task. Will's performance remained 100% in both maintenance sessions.

Accuracy for the third task (wrapping) increased to 90% in the first session of intervention. Will made significant gains from baseline, but did not reach 100% accuracy for this task because he had ongoing struggles with some of the fine motor skills required to stick the tape in the correct location and accurately fold on the first try. Average accuracy in intervention sessions was 91.5% (range: 90–92.5%). Out of the 17 errors for this task, 94% required level 1 error correction (i.e., provide specific feedback, reset the

scene, and direct to replay video), and 6% required level 2 error correction (i.e., reset the scene, provide specific feedback, and complete the step as a model). Maintenance data were collected at 3 and 5 weeks after the last intervention session for the wrapping task. During both maintenance sessions for the wrapping task, Will's performance remained 92.5%.

Figure 2. Percentage of accurate task completion for Will

Chapter 4

Discussion

Efficient instruction is essential for support systems with limited staffing and budget to meet the needs of large numbers of job seekers with IDD as they enter integrated workplaces. Self-directed video prompting is one potential solution to address the need to train multiple job seekers with disabilities when there are limited support staff available. This study investigated the effect of self-directed video prompting on the accuracy and completion of chained vocational tasks by young adults with moderate intellectual disabilities. This study used brief technology iPhone training with least-to-most prompting, self-directed video prompts viewed on an iPhone, and a video-based error correction procedure combined with specific feedback. Both students' results suggest a functional relation because self-directed video prompting immediately increased accuracy in all three tasks. This study extends the literature on self-directed video prompting in several ways.

First, the present findings contribute to the literature by replicating previous studies that suggest video prompting as a viable instructional strategy, leading to the efficient acquisition of chained tasks (e.g., Cannella-Malone et al., 2006; Sigafoos et al., 2005). Results of this study showed an immediate and consistent effect of the target behavior, similar to a few other studies that have targeted vocational and daily living skills using self-directed video prompts (e.g., Bereznak, Ayres, Mechling, & Alexander,

2012; Cannella-Malone, Brooks, & Tullis, 2013; Jimenez, 2014). However, it should be noted that similar self-directed video prompting studies by Payne, Cannella-Malone, Tullis, Sabielny (2012) and Cullen (2013) found significantly more variability in their results between sessions and across participants, while our findings suggest a high degree of consistency across tasks and students. Potential explanations for these inconsistencies may be a result of the small number of relatively homogenous participants included in this study.

Second, relatively few studies have collected data on the student's navigation of the technology (Cannella-Malone, Brooks, & Tullis, 2013; Cullen, 2013; Payne, Cannella-Malone, Tullis, & Sabiely, 2012; Jimenez, 2014). Results of this study support the findings of Cullen (2013) and Jimenez (2014) that brief training in technology use can be sufficient to learn to access technology-based instruction. Cullen (2013) and Jimenez (2014) included participants with similar traits (e.g., age, disability, socioeconomic status) to the participants included in this study, which may account for the similar results. Contrary to these findings, other studies have had less promising outcomes for their student navigation data. One of the participants in Payne et al. (2012) did not learn to navigate the iPod Touch independently during the course of the study. This inconsistency suggests that variables such as the participant's previous reinforcement history with the technology and the severity of disability, may affect navigation outcomes. Some learners may require significantly more intensive instruction to learn to use the technology. In cases in which the job seeker lacks the basic navigation prerequisite skills, trainers should evaluate their instructional priorities because self-directed video prompting may not be the most efficient tool for all students.

Self-directed video prompting was not only effective in teaching student's novel skills, it also had strong validity in this transition program setting for continued and expanded use. After observing the first few sessions of the study, the teacher expressed interest learning to make videos to teach some of the other students in her class skills, such as shoe tying. The teacher and educational aides expressed enthusiasm about the students' progress and implemented self-directed video prompting with other students throughout the course of this study. By the end of the study, the teacher was designing a system of Quick Response (QR) codes printed and attached to task materials that would link to video prompts, to simplify navigation through large numbers of videos. This continued and expanded use of the intervention lends validity to the intervention's usefulness and feasibility in a transition program setting with a range of students with moderate IDD.

iPhone Training

Both students had high levels of skill navigating the technology before training, and showed consistently high accuracy in iPhone use. Hannah navigated the iPhone at 87.5% after observing the experimenter modeling it once in vivo. Hannah uses an iPad regularly as a communication device, therefore navigation on an Apple interface was not a novel skill, and she caught on quickly, reaching 100% accuracy by her second session and sustaining that skill level throughout the study. Will has no communication device and uses an android smart phone, so the interface was slightly less familiar to him, which is likely the reason he was slightly less accurate on his first session (81%), and it took him one session longer to reach 100% accuracy.

Hannah

Hannah showed drastic and sustained increase in accuracy with the introduction of the intervention. This protocol was effective for her, as it led to accurate completion of all three tasks. Hannah maintained her skill level from the last intervention sessions at 2-week and 4-week maintenance probes. However, Hannah completed the task at a slow rate, sometimes taking more than 40 min to complete a single task. This speed of completion makes her results less ecologically valid, as that pace would not be competitive in the workforce. This study did not address rate of task completion because Hannah initiated all steps within the 4 s time limit during intervention. She continued through the entire task without needing a prompt to keep working, which is anecdotally different than her work behavior observed in the classroom, where she frequently stopped working and sat quietly until receiving a prompt to continue to the next step. Perhaps the routine of the video was reinforcing, or served as a reminder to move on to the next step.

The video prompts used in this study had visual and audio components. After a few sessions of intervention, Hannah stopped looking at the video. Instead, she would press play and look away from the video at the floor or the wall. Hannah continued to accurately complete the task without looking at the visual prompt, presumably relying on her memory and the auditory cues.

Will

Will showed a sustained increase in accuracy for each task following the introduction of the intervention. Will's implementation of the intervention was effective in that he reached mastery for a majority of the target skills, though he did not have the fine motor prerequisite skills to accurately complete steps of the wrapping task list. Will

maintained his performance at maintenance sessions 3 weeks and 5 weeks following intervention. Will's data also showed some variability with a few steps for the nametag task, likely caused by missing some of the requisite fine motor skills involved with folding and threading string.

Unlike Hannah, Will seemed to rely almost exclusively on visual cues in the videos. As a result of this, he consistently missed one step of the coffee task list due to the angle of the camera making it difficult to see how many sweetener packets he needed to pick up, despite a verbal direction clearly stating the correct number of packets. When that video was reconfigured to include a clearer visual of this step, Will selected the correct number of sweeteners and reached 100% accuracy.

Implications for Practice

Findings from this study have implications for practice in special education transition services and vocational rehabilitation. Each student in this study relied more heavily on either visual or auditory cues supports use of both in future use of video prompting in vocational settings. Providing prompts through multiple pathways also creates a built-in accommodation for students with mild to moderate hearing or vision impairment.

Literature on video prompting has reported success across many tasks, but the procedure is most often applied to chained tasks that are consistent observable skills (Banda, Dogoe, & Matuszny, 2011). The findings of this study suggest other considerations for practitioners when selecting tasks to teach using self-directed video prompting. The participants in this study struggled with some tasks more than others due to their initial levels of fine motor skills. Therefore, it is important to consider

prerequisite skill levels in areas such as fine motor skills to maximize student success. If possible, practitioners should consider consulting with an occupational therapist to select appropriate tasks or modify existing tasks to suit the student's skill level.

One of the students in this study completed their tasks significantly slower than would be acceptable to meet the standards of most competitive workplaces. In such cases, to complete the task in a more competitive amount of time, teachers may consider pairing self-directed video prompting with differential reinforcement of a higher rate (DRH) procedures.

Limitations and Future Research

This study had several limitations that should be considered when interpreting the results. First, this study was conducted with participants with a relatively high level of experience with touch screen technology and navigation through tablets and phones. If navigation of similar technology was a novel skill, participants may need more intensive instruction to proficiently navigate the device independently prior to intervention. Second, given that the students were still receiving IDEA services in a school-based program, this study was conducted in a school rather than a competitive work setting. Future studies should consider extending this study in an integrated work setting. However, it is important to consider the challenges of maintaining experimental control in a study in an integrated work setting. To complete a video prompting study in a competitive work environment, you would need to have high levels of employer buy-in, some scheduling flexibility so that targeted tasks are only trained during experimental sessions, and a work environment that can tolerate baseline measures. Third, this study included two participants, both of whom had a moderate intellectual disability and Down

syndrome. To validate these results for broader populations, future researchers should attempt to include more diverse groups of students and students with more intensive support needs.

Fourth, students were given an opportunity to self-fade because the self-directed video prompting was intended as a long-term support that students could reference as needed in the future. Perhaps fading might have occurred with more sessions, but to make this process more efficient, future research could encourage self-fading by explicitly teaching students to skip videos of steps that they have memorized and know how to do. Future research could also promote decreased staff reliance by pairing self-directed video prompting with training in how to recognize errors and recruit trainer attention to eliminate the need for someone to be constantly watching for them to do error correction, increasing efficiency and independence.

Conclusion

In summary, results of this study suggest that self-directed video prompting is an efficient method to teach multi-step vocational tasks to young adults with moderate intellectual disabilities. However, more research needs to be done to further increase student independence and efficiency through procedures such as self-fading of the prompts and recruiting help when needed.

References

- Allen, K. D., Wallace, D. P., Renes, D., Bowen, S. L., & Burke, R. V. (2010). Use of video modeling to teach vocational skills to adolescents and young adults with autism spectrum disorders. *Education and Treatment of Children, 33*, 339–349. doi: 10.1353/etc.0.0101
- Anderson, M. (2015). Technology Device Ownership. *Pew Research Center*.
- Association of People Supporting Employment First. (2013). *APSE History*, edited by Paul Wehman. Accessed 12 Jan. 2017.
- Bereznak, S., Ayres, K. M., Mechling, L. C., & Alexander, J. L. (2012). Video self-prompting and mobile technology to increase daily living and vocational independence for students with autism spectrum disorders. *Journal of Developmental and Physical Disabilities, 24*, 269–285. doi: 10.1007/s10882-012-9270-8
- Banda, D. R., Dogoe, M. S., & Matuszny, R. M. (2011). Review of video prompting studies with persons with developmental disabilities. *Education and Training in Autism and Developmental Disabilities, 46*, 514–527.
- Cannella-Malone, H. I., Wheaton, J. E., Wu, P. F., Tullis, C. A., & Park, J. H. (2012). Comparing the effects of video prompting with and without error correction on skill acquisition for students with intellectual disability. *Education and Training in Autism and Developmental Disabilities, 47*, 332–344.

- Carter, E. W., Blustein, C. L., Bumble, J. L., Harvey, S., Henderson, L. M., & McMillan, E. D. (2016). Engaging communities in identifying local strategies for expanding integrated employment during and after high school. *American Journal on Intellectual and Developmental Disabilities, 121*, 398–418. doi: 10.1352/1944-7558-121.5.398
- Carter, E. W., Trainor, A. A., Cakiroglu, O., Cole, O., Swedeen, B., Ditchman, N., & Owens, L. (2009). Exploring school-business partnerships to expand career development and early work experiences for youth with disabilities. *Career Development for Exceptional Individuals, 32*, 145–159. doi: 10.1177/0885728809344590
- Cooper, J. O., Heron, T. E., & Heward, W. L. (2007). *Applied behavior analysis*, 2nd ed. Upper Saddle River, NJ: Pearson Prentice Hall.
- Cullen, J. M. (2013) *Effects of Self-Directed Video Prompting Using iPads on the Vocational Task Completion of Young Adults with Intellectual and Developmental Disabilities* (Unpublished doctoral dissertation). The Ohio State University.
- Doren, B., Gau, J. M., & Lindstrom, L. E. (2012). The relationships between parent expectations and postschool outcomes for adolescents with disabilities. *Exceptional Children, 79*, 7–23.
- Goodson, J., Sigafoos, J., O'Reilly, M., Cannella, H., & Lancioni, G. E. (2007). Evaluation of a video-based error correction procedure for teaching a domestic skill to individuals with developmental disabilities. *Research in Developmental Disabilities, 28*, 458–467. doi: 10.1016/j.ridd.2006.06.002

- Houtenville, A., & Kalargyrou, V. (2014). Employers' perspectives about employing people with disabilities: A comparative study across industries. *Cornell Hospitality Quarterly*, 56, 168–179. doi: 10.1177/1938965514551633
- Human Services Research Institute & National Association of State Directors of Developmental Disabilities Services. (2015). *Adult Consumer Survey 2014–15 Final Report* [PDF document]. Retrieved from <http://www.nationalcoreindicators.org/>.
- Individuals With Disabilities Education Improvement Act (IDEIA), 20 U.S.C. § 1400*et seq.* (2004).
- Kiernan, W. E., Hoff, D., Freeze, S., & Mank, D. M. (2011). Employment First: A beginning not an end. *Intellectual & Developmental Disabilities*, 49, 300–304. doi: 10.1352/1934-9556-49.4.300
- Mechling, L. (2005). The effect of instructor-created video programs to teach students with disabilities: A literature review. *Journal of Special Education Technology*, 20, 25–36. doi: 10.1177/016264340502000203
- Mechling, L., Gast, D., & Seid, N. (2009). Using a personal digital assistant to increase independent task completion by students with autism spectrum disorder. *Journal of Autism and Developmental Disorders*, 39, 1420–1434. doi:10.1007/s10803-009-0761-0
- Mwachofi, A. (2007). Rural access to vocational rehabilitation services: Minority farmers perspective. *Disability and Rehabilitation*, 29, 891–902. doi: 10.1080/09638280701240409

- Shipley-Benamou, R., Lutzker, J. R., & Taubman, M. (2002). Teaching daily living skills to children with autism through instructional video modeling. *Journal of Positive Behavior Interventions*, 4, 166–177. doi: 10.1177/10983007020040030501
- Sigafoos, J., O'Reilly, M., Cannella, H., Edrisinha, C., de la Cruz, B., Upadhyaya, M., & Young, D. (2007). Evaluation of a video prompting and fading procedure for teaching dish washing skills to adults with developmental disabilities. *Journal of Behavioral Education*, 16, 93–109. doi: 10.1007/s10864-006-9004-z
- Stapleton, D., & Honeycutt, T. (2012). *Waiting Time for Vocational Rehabilitation (VR) Services and Post-Closure Outcomes for SSDI Beneficiaries* [PowerPoint slides]. Retrieved from <http://www.researchondisability.org>.
- Taber-Doughty, T., Bouck, E. C., Tom, K., Jasper, A. D., Flanagan, S. M., & Bassette, L. (2011). Video modeling and prompting: A comparison of two strategies for teaching cooking skills to students with mild intellectual disabilities. *Education and Training in Autism and Developmental Disabilities*, 46, 499–513.
- Test, D. W., Fowler, C. H., Richter, S. M., White, J., Mazotti, V., Walker, A., Kohler, P., Kortering, L. (2009). Evidence-based practices in secondary transition. *Career Development and Transition for Exceptional Individuals*, 32, 115–128. doi: 10.1177/0885728809336859
- Test, D. W., Smith, L., & Carter, E. W. (2014). Equipping youth with autism spectrum disorders for adulthood: Promoting rigor, relevance, and relationships. *Remedial and Special Education*, 35, 80–90. doi: 10.1177/0741932513514857
- United States Department of Labor. (2016). Persons with a Disability: Labor Force Characteristics Summary. In *Bureau of Labor Statistics*.

- Van Laarhoven, T., Johnson, J. W., Van Laarhoven-Myers, T., Grider, K. L., & Grider, K. M. (2009). The effectiveness of using a video iPod as a prompting device in employment settings. *Journal of Behavioral Education, 18*, 119–141. doi: 10.1007/s10864-009-9077-6
- Yakubova, G., Hughes, E. M., & Hornberger, E. (2015). Video-based intervention in teaching fraction problem-solving to students with autism spectrum disorder. *Journal of Autism and Developmental Disorders, 45*. 2865–2875. doi: 10.1007/s10803-015-2449-y

Appendix A: Nametag Datasheet

Task: Nametags

Student Initials: _____

<p>+ = Independent before video is shown</p> <p>I = Correct after viewing the video once</p> <p>- = Correct after feedback and viewing the video twice (error correction)</p> <p>0=incorrect after error correction</p> <p>V= Correct after verbal prompt</p> <p>G = Correct after gestural prompt</p> <p>P = Correct after physical prompt</p> <p>*= Independent iPod use</p>
--

Date	
Data Collector (Primary)	
Data Collector (IOA)	
Condition (BL, I, M)	
% Correct	

A. Wake up iPhone by pressing the center button	* V
	G P
B. press again to unlock	* V
	G P
C. Select pictures app	* V
	G P
D. Select "Name tags"	* V
	G P

1. Pull side flap to open box	+ I	C. Played 1 st video clip	* V
	- 0		G P
2. Take 3 plastic cases out of the box	+ I	D. Played 2 nd video clip	* V
	- 0		G P
3. Grab 3 strings out of the box	+ I	E. Played 3 rd video clip	* V
	- 0		G P
4. Take out one sheet of nametags	+ I	F. Played 4 th video clip	* V
	- 0		G P
5. Fold excess paper on side of name tags forward and crease it	+ I	G. Played 5 th video clip	* V
	- 0		G P

6. Fold excess paper backward and crease it	+ I - 0	H. Played 6 th video clip	* V G P
7. Pull gently to remove excess paper	+ I - 0	I. Played 7 th video clip	* V G P
8. Fold first name tag at perforated line and crease it	+ I - 0	J. Played 8 th video clip	* V G P
9. Fold first name tag in the opposite direction and crease it	+ I - 0	K. Played 9 th video clip	* V G P
10. Pull gently to separate first name tag	+ I - 0	L. Played 10 th video clip	* V G P
11. Fold second name tag at perforated line and crease it	+ I - 0	M. Played 11 th video clip	* V G P
12. Fold second name tag in opposite direction and crease it	+ I - 0	N. Played 12 th video clip	* V G P
13. Pull gently to separate remaining name tags	+ I - 0	O. Played 13 th video clip	* V G P
14. Slide a name tag into the plastic case with the front side facing down	+ I - 0	P. Played 14 th video clip	* V G P
15. Thread the string through the left hole from the front side to the back side	+ I - 0	Q. Played 15 th video clip	* V G P
16. Thread the string through the right hole from the front side to the back side	+ I - 0	R. Played 16 th video clip	* V G P
17. Gently pull up on the middle of the string	+ I - 0	S. Played 17 th video clip	* V G P
18. Set finished name tag in “finished” box	+ I - 0	T. Played 18 th video clip	* V G P

19. Slide a name tag into the plastic case with the front side facing down	+ I - 0	U. Played 19 th video clip	* V G P
20. Thread the string through the left hole from the front side to the back side	+ I - 0	V. Played 20 th video clip	* V G P
21. Thread the string through the right hole from the front side to the back side	+ I - 0	W. Played 21 st video clip	* V G P
22. Gently pull up on the middle of the string	+ I - 0	X. Played 22 nd video clip	* V G P
23. Set finished name tag in “finished” box	+ I - 0	Y. Played 23 rd video clip	* V G P
24. Slide a name tag into the plastic case with the front side facing down	+ I - 0	Z. Played 24 th video clip	* V G P
25. Thread the string through the left hole from the front side to the back side	+ I - 0	AA. Played 25 th video clip	* V G P
26. Thread the string through the right hole from the front side to the back side	+ I - 0	BB. Played 26 th video clip	* V G P
27. Gently pull up on the middle of the string	+ I - 0	CC. Played 27 th video clip	* V G P
28. Set finished name tag in “finished” box	+ I - 0	DD. Played 28 th video clip	* V G P

Appendix B: Nametag IOA and TI datasheet

Task: Nametags

Student Initials: _____

Date	
Data Collector (Primary)	
Data Collector (IOA)	
Condition (BL, I, M)	
% Correct	

+ = Independent before video is shown
 I = Correct after viewing the video once
 - = Correct after feedback and viewing the video twice (error correction)
 0=incorrect after error correction

 V= Correct after verbal prompt
 G = Correct after gestural prompt
 P = Correct after physical prompt
 *= Independent iPod use

TI: Instructor provides student with all needed materials for task: Y / N

Did the instructor say "Time to get started" Y / N

A. Wake up iPhone by pressing the center button

*
 V
 G
 P

TI: If the student makes an error:

Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N

B. press again to unlock

*
 V
 G
 P

TI: If the student makes an error:

Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N

C. Select pictures app

*
 V
 G
 P

TI: If the student makes an error:

Did the instructor use LTM prompting in

		the correct sequence (V, G, P)? Y / N	
		D. Select "Name tags"	* V G P
		TI: If the student makes an error: Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N	
1. Pull side flap to open box	+ I - 0	C. Played 1 st video clip	* V G P
TI: If the student completes the step incorrectly once: Did the instructor give specific feedback about error? Y / N Did the instructor "reset the scene?" Y / N Did instructor direct student to replay the video and try again? Y / N If the student completes the step incorrectly twice (after error correction) Did the instructor complete the step for the student? Y / N		TI: If the student makes an error: Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N	
2. Take 3 plastic cases out of the box	+ I - 0	D. Played 2 nd video clip	* V G P
TI: If the student completes the step incorrectly once: Did the instructor give specific feedback about error? Y / N Did the instructor "reset the scene?" Y / N Did instructor direct student to replay the video and try again? Y / N		TI: If the student makes an error: Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N	

If the student completes the step incorrectly twice (after error correction) Did the instructor complete the step for the student? Y / N			
3. Grab 3 strings out of the box	+ I - 0	E. Played 3 rd video clip	* V G P
TI: If the student completes the step incorrectly once: Did the instructor give specific feedback about error? Y / N Did the instructor “reset the scene?” Y / N Did instructor direct student to replay the video and try again? Y / N If the student completes the step incorrectly twice (after error correction) Did the instructor complete the step for the student? Y / N		TI: If the student makes an error: Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N	
4. Take out one sheet of nametags	+ I - 0	F. Played 4 th video clip	* V G P
TI: If the student completes the step incorrectly once: Did the instructor give specific feedback about error? Y / N Did the instructor “reset the scene?” Y / N Did instructor direct student to replay the video and try again? Y / N If the student completes the step incorrectly twice (after error correction) Did the instructor complete the step for the student? Y / N		TI: If the student makes an error: Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N	

5. Fold excess paper on side of name tags forward and crease it	+ I - 0	G. Played 5 th video clip	* V G P
TI: If the student completes the step incorrectly once: Did the instructor give specific feedback about error? Y / N Did the instructor “reset the scene?” Y / N Did instructor direct student to replay the video and try again? Y / N If the student completes the step incorrectly twice (after error correction) Did the instructor complete the step for the student? Y / N		TI: If the student makes an error: Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N	
6. Fold excess paper backward and crease it	+ I - 0	H. Played 6 th video clip	* V G P
TI: If the student completes the step incorrectly once: Did the instructor give specific feedback about error? Y / N Did the instructor “reset the scene?” Y / N Did instructor direct student to replay the video and try again? Y / N If the student completes the step incorrectly twice (after error correction) Did the instructor complete the step for the student? Y / N		TI: If the student makes an error: Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N	
7. Pull gently to remove excess paper	+ I - 0	I. Played 7 th video clip	* V G P

TI: If the student completes the step incorrectly once: Did the instructor give specific feedback about error? Y / N Did the instructor “reset the scene?” Y / N Did instructor direct student to replay the video and try again? Y / N If the student completes the step incorrectly twice (after error correction) Did the instructor complete the step for the student? Y / N		TI: If the student makes an error: Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N	
8. Fold first name tag at perforated line and crease it	+ I - 0	J. Played 8 th video clip	* V G P
TI: If the student completes the step incorrectly once: Did the instructor give specific feedback about error? Y / N Did the instructor “reset the scene?” Y / N Did instructor direct student to replay the video and try again? Y / N If the student completes the step incorrectly twice (after error correction) Did the instructor complete the step for the student? Y / N		TI: If the student makes an error: Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N	
9. Fold first name tag in the opposite direction and crease it	+ I - 0	K. Played 9 th video clip	* V G P
TI: If the student completes the step incorrectly once: Did the instructor give specific feedback about error? Y / N Did the instructor “reset the scene?” Y / N Did instructor direct student to replay the video and		TI: If the student makes an error: Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N	

try again? Y / N If the student completes the step incorrectly twice (after error correction) Did the instructor complete the step for the student? Y / N			
10. Pull gently to separate first name tag	+ I - 0	L. Played 10 th video clip	* V G P
TI: If the student completes the step incorrectly once: Did the instructor give specific feedback about error? Y / N Did the instructor “reset the scene?” Y / N Did instructor direct student to replay the video and try again? Y / N If the student completes the step incorrectly twice (after error correction) Did the instructor complete the step for the student? Y / N		TI: If the student makes an error: Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N	
11. Fold second name tag at perforated line and crease it	+ I - 0	M. Played 11 th video clip	* V G P
TI: If the student completes the step incorrectly once: Did the instructor give specific feedback about error? Y / N Did the instructor “reset the scene?” Y / N Did instructor direct student to replay the video and try again? Y / N If the student completes the step incorrectly twice (after error correction) Did the instructor complete the step for the student?		TI: If the student makes an error: Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N	

Y / N			
12. Fold second name tag in opposite direction and crease it	+ I - 0	N. Played 12 th video clip	* V G P
TI: If the student completes the step incorrectly once: Did the instructor give specific feedback about error? Y / N Did the instructor “reset the scene?” Y / N Did instructor direct student to replay the video and try again? Y / N If the student completes the step incorrectly twice (after error correction) Did the instructor complete the step for the student? Y / N		TI: If the student makes an error: Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N	
13. Pull gently to separate remaining name tags	+ I - 0	O. Played 13 th video clip	* V G P
TI: If the student completes the step incorrectly once: Did the instructor give specific feedback about error? Y / N Did the instructor “reset the scene?” Y / N Did instructor direct student to replay the video and try again? Y / N If the student completes the step incorrectly twice (after error correction) Did the instructor complete the step for the student? Y / N		TI: If the student makes an error: Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N	
14. Slide a name tag into the plastic case with the front side facing down	+ I -	P. Played 14 th video clip	* V G

	0		P
TI: If the student completes the step incorrectly once: Did the instructor give specific feedback about error? Y / N Did the instructor “reset the scene?” Y / N Did instructor direct student to replay the video and try again? Y / N If the student completes the step incorrectly twice (after error correction) Did the instructor complete the step for the student? Y / N		TI: If the student makes an error: Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N	
15. Thread the string through the left hole from the front side to the back side	+ I - 0	Q. Played 15 th video clip	* V G P
TI: If the student completes the step incorrectly once: Did the instructor give specific feedback about error? Y / N Did the instructor “reset the scene?” Y / N Did instructor direct student to replay the video and try again? Y / N If the student completes the step incorrectly twice (after error correction) Did the instructor complete the step for the student? Y / N		TI: If the student makes an error: Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N	
16. Thread the string through the right hole from the front side to the back side	+ I - 0	R. Played 16 th video clip	* V G P
TI: If the student completes the step incorrectly once: Did the instructor give specific feedback about error? Y / N		TI: If the student makes an error: Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N	

<p>Did the instructor “reset the scene?” Y / N</p> <p>Did instructor direct student to replay the video and try again? Y / N</p> <p>If the student completes the step incorrectly twice (after error correction)</p> <p>Did the instructor complete the step for the student? Y / N</p>			
17. Gently pull up on the middle of the string	+ I - 0	S. Played 17 th video clip	* V G P
<p>TI: If the student completes the step incorrectly once:</p> <p>Did the instructor give specific feedback about error? Y / N</p> <p>Did the instructor “reset the scene?” Y / N</p> <p>Did instructor direct student to replay the video and try again? Y / N</p> <p>If the student completes the step incorrectly twice (after error correction)</p> <p>Did the instructor complete the step for the student? Y / N</p>		<p>TI: If the student makes an error:</p> <p>Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N</p>	
18. Set finished name tag in “finished” box	+ I - 0	T. Played 18 th video clip	* V G P
<p>TI: If the student completes the step incorrectly once:</p> <p>Did the instructor give specific feedback about error? Y / N</p> <p>Did the instructor “reset the scene?” Y / N</p> <p>Did instructor direct student to replay the video and try again? Y / N</p> <p>If the student completes the step incorrectly twice (after error correction)</p>		<p>TI: If the student makes an error:</p> <p>Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N</p>	

Did the instructor complete the step for the student? Y / N			
19. Slide a name tag into the plastic case with the front side facing down	+ I - 0	U. Played 19 th video clip	* V G P
TI: If the student completes the step incorrectly once: Did the instructor give specific feedback about error? Y / N Did the instructor “reset the scene?” Y / N Did instructor direct student to replay the video and try again? Y / N If the student completes the step incorrectly twice (after error correction) Did the instructor complete the step for the student? Y / N		TI: If the student makes an error: Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N	
20. Thread the string through the left hole from the front side to the back side	+ I - 0	V. Played 20 th video clip	* V G P
TI: If the student completes the step incorrectly once: Did the instructor give specific feedback about error? Y / N Did the instructor “reset the scene?” Y / N Did instructor direct student to replay the video and try again? Y / N If the student completes the step incorrectly twice (after error correction) Did the instructor complete the step for the student? Y / N		TI: If the student makes an error: Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N	
21. Thread the string through the right hole from the front side to the back side	+ I -	W. Played 21 st video clip	* V G

	0		P
TI: If the student completes the step incorrectly once: Did the instructor give specific feedback about error? Y / N Did the instructor “reset the scene?” Y / N Did instructor direct student to replay the video and try again? Y / N If the student completes the step incorrectly twice (after error correction) Did the instructor complete the step for the student? Y / N		TI: If the student makes an error: Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N	
22. Gently pull up on the middle of the string	+ I - 0	X. Played 22 nd video clip	* V G P
TI: If the student completes the step incorrectly once: Did the instructor give specific feedback about error? Y / N Did the instructor “reset the scene?” Y / N Did instructor direct student to replay the video and try again? Y / N If the student completes the step incorrectly twice (after error correction) Did the instructor complete the step for the student? Y / N		TI: If the student makes an error: Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N	
23. Set finished name tag in “finished” box	+ I - 0	Y. Played 23 rd video clip	* V G P
TI: If the student completes the step incorrectly once: Did the instructor give specific feedback about error? Y / N		TI: If the student makes an error: Did the instructor use LTM prompting in	

<p>Did the instructor “reset the scene?” Y / N</p> <p>Did instructor direct student to replay the video and try again? Y / N</p> <p>If the student completes the step incorrectly twice (after error correction)</p> <p>Did the instructor complete the step for the student? Y / N</p>		the correct sequence (V, G, P)? Y / N	
<p>24. Slide a name tag into the plastic case with the front side facing down</p>	<p>+ I - 0</p>	Z. Played 24 th video clip	<p>* V G P</p>
<p>TI: If the student completes the step incorrectly once:</p> <p>Did the instructor give specific feedback about error? Y / N</p> <p>Did the instructor “reset the scene?” Y / N</p> <p>Did instructor direct student to replay the video and try again? Y / N</p> <p>If the student completes the step incorrectly twice (after error correction)</p> <p>Did the instructor complete the step for the student? Y / N</p>		<p>TI: If the student makes an error:</p> <p>Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N</p>	
<p>25. Thread the string through the left hole from the front side to the back side</p>	<p>+ I - 0</p>	AA. Played 25 th video clip	<p>* V G P</p>
<p>TI: If the student completes the step incorrectly once:</p> <p>Did the instructor give specific feedback about error? Y / N</p> <p>Did the instructor “reset the scene?” Y / N</p> <p>Did instructor direct student to replay the video and try again? Y / N</p> <p>If the student completes the step incorrectly twice (after error correction)</p>		<p>TI: If the student makes an error:</p> <p>Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N</p>	

Did the instructor complete the step for the student? Y / N			
26. Thread the string through the right hole from the front side to the back side	+ I - 0	BB. Played 26 th video clip	* V G P
TI: If the student completes the step incorrectly once: Did the instructor give specific feedback about error? Y / N Did the instructor “reset the scene?” Y / N Did instructor direct student to replay the video and try again? Y / N If the student completes the step incorrectly twice (after error correction) Did the instructor complete the step for the student? Y / N		TI: If the student makes an error: Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N	
27. Gently pull up on the middle of the string	+ I - 0	CC. Played 27 th video clip	* V G P
TI: If the student completes the step incorrectly once: Did the instructor give specific feedback about error? Y / N Did the instructor “reset the scene?” Y / N Did instructor direct student to replay the video and try again? Y / N If the student completes the step incorrectly twice (after error correction) Did the instructor complete the step for the student? Y / N		TI: If the student makes an error: Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N	
28. Set finished name tag in “finished” box	+ I	DD. Played 28 th video clip	* V

	- 0		G P
TI: If the student completes the step incorrectly once: Did the instructor give specific feedback about error? Y / N Did the instructor “reset the scene?” Y / N Did instructor direct student to replay the video and try again? Y / N If the student completes the step incorrectly twice (after error correction) Did the instructor complete the step for the student? Y / N		TI: If the student makes an error: Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N	
TI: Instructor thanks the student for working with them: Y / N At the end of all sessions for the day, instructor writes “ticket” for class raffle: Y / N			

Appendix C: Coffee Trays Datasheet

Task: Coffee Trays

Student Initials: _____

Date	
Data Collector (Primary)	
Data Collector (IOA)	
Condition (BL, I, M)	
% Correct	

+ = Independent before video is shown
 I = Correct after viewing the video once
 - = Correct after feedback and viewing the video twice (error correction)
 0=incorrect after error correction

 V= Correct after verbal prompt
 G = Correct after gestural prompt
 P = Correct after physical prompt
 *= Independent iPod use

A. Wake up iPhone by pressing the center button	* V	G P
B. press again to unlock	* V	G P
C. Select pictures app	* V	G P
D. Select "Coffee trays"	* V	G P

1. Pull 2 coffee cups out of supply bin	+ I - 0	C. Played 1 st video clip	* V G P
2. Place coffee cups in the back section of tray	+ I - 0	D. Played 2 nd video clip	* V G P
3. Pull 2 coffee cup lids out of supply bin	+ I - 0	E. Played 3 rd video clip	* V G P
4. Place lids on the coffee cups on the tray	+ I - 0	F. Played 4 th video clip	* V G P
5. Pull 2 filters out of supply bin	+ I - 0	G. Played 5 th video clip	* V G P

6. Place filters on center section of tray	+ I - 0	H. Played 6 th video clip	* V G P
7. Pull two coffee packets from supply bin	+ I - 0	I. Played 7 th video clip	* V G P
8. Place coffee packets into filters on tray	+ I - 0	J. Played 8 th video clip	* V G P
9. Pull 3 sweetener packets from supply bin	+ I - 0	K. Played 9 th video clip	* V G P
10. Place sweetener in filters on tray	+ I - 0	L. Played 10 th video clip	* V G P
11. Pull two stir straws out of supply bin	+ I - 0	M. Played 11 th video clip	* V G P
12. Place straws in the middle section of tray	+ I - 0	N. Played 12 th video	* V G P
13. Pull 3 creamers out of supply bin	+ I - 0	M. Played 13 th video clip	* V G P
14. Line up creamers in the front section of tray	+ I - 0	N. Played 14 th video clip	* V G P
15. Pull 1 “welcome card” out of supply bin	+ I - 0	O. Played 15 th video clip	* V G P
16. Fold welcome card in half	+ I - 0	P. Played 16 th video clip	* V G P
17. Place welcome card in front section of tray.	+ I - 0	Q. Played 17 th video clip	* V G P

Appendix D: Coffee Trays IOA and TI

Task: Coffee Trays

Student Initials: _____

Date	
Data Collector (Primary)	
Data Collector (IOA)	
Condition (BL, I, M)	
% Correct	

+ = Independent before video is shown
 I = Correct after viewing the video once
 - = Correct after feedback and viewing the video twice (error correction)
 0=incorrect after error correction

V= Correct after verbal prompt
 G = Correct after gestural prompt
 P = Correct after physical prompt
 *= Independent iPod use

TI: Instructor provides student with all needed materials for task: Y / N

Did the instructor say "Time to get started"
 Y / N

A. Wake up iPhone by pressing the center button

*
V
G
P

TI: If the student makes an error:

Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N

B. press again to unlock

*
V
G
P

TI: If the student makes an error:

Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N

		C. Select pictures app	* V G P
		TI: If the student makes an error: Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N	
		D. Select “Coffee trays”	* V G P
		TI: If the student makes an error: Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N	
1. Pull 2 coffee cups out of supply bin	+ I - 0	C. Played 1st video clip	* V G P
TI: If the student completes the step incorrectly once: Did the instructor give specific feedback about error? Y / N Did the instructor “reset the scene?” Y / N Did instructor direct student to replay the video and try again? Y / N If the student completes the step incorrectly twice (after error correction) Did the instructor complete the step for the student? Y / N		TI: If the student makes an error: Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N	
2. Place coffee cups in the back	+ I	D. Played 2nd video clip	*

section of tray	- 0		V G P
TI: If the student completes the step incorrectly once: Did the instructor give specific feedback about error? Y / N Did the instructor “reset the scene?” Y / N Did instructor direct student to replay the video and try again? Y / N If the student completes the step incorrectly twice (after error correction) Did the instructor complete the step for the student? Y / N		TI: If the student makes an error: Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N	
3. Pull 2 coffee cup lids out of supply bin	+ I - 0	E. Played 3rd video clip	* V G P
TI: If the student completes the step incorrectly once: Did the instructor give specific feedback about error? Y / N Did the instructor “reset the scene?” Y / N Did instructor direct student to replay the video and try again? Y / N If the student completes the step incorrectly twice (after error correction) Did the instructor complete the step for the student? Y / N		TI: If the student makes an error: Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N	
4. Place lids on the coffee cups on the tray	+ I - 0	F. Played 4th video clip	* V G P
TI: If the student completes the step incorrectly once:		TI: If the student makes an error:	

<p>Did the instructor give specific feedback about error? Y / N</p> <p>Did the instructor “reset the scene?” Y / N</p> <p>Did instructor direct student to replay the video and try again? Y / N</p> <p>If the student completes the step incorrectly twice (after error correction)</p> <p>Did the instructor complete the step for the student? Y / N</p>		<p>Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N</p>	
<p>5.</p> <p>Pull 2 filters out of supply bin</p>	<p>+ I</p> <p>- 0</p>	<p>G. Played 5th video clip</p>	<p>*</p> <p>V</p> <p>G</p> <p>P</p>
<p>TI: If the student completes the step incorrectly once:</p> <p>Did the instructor give specific feedback about error? Y / N</p> <p>Did the instructor “reset the scene?” Y / N</p> <p>Did instructor direct student to replay the video and try again? Y / N</p> <p>If the student completes the step incorrectly twice (after error correction)</p> <p>Did the instructor complete the step for the student? Y / N</p>		<p>TI: If the student makes an error:</p> <p>Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N</p>	
<p>6.</p> <p>Place filters on center section of tray</p>	<p>+ I</p> <p>- 0</p>	<p>H. Played 6th video clip</p>	<p>*</p> <p>V</p> <p>G</p> <p>P</p>
<p>TI: If the student completes the step incorrectly once:</p> <p>Did the instructor give specific feedback about error? Y / N</p> <p>Did the instructor “reset the scene?” Y / N</p> <p>Did instructor direct student to replay the video and try again? Y / N</p>		<p>TI: If the student makes an error:</p> <p>Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N</p>	

<p>If the student completes the step incorrectly twice (after error correction)</p> <p>Did the instructor complete the step for the student? Y / N</p>			
<p>7.</p> <p>Pull two coffee packets from supply bin</p>	<p>+ I</p> <p>- 0</p>	<p>I. Played 7th video clip</p>	<p>* V G P</p>
<p>TI: If the student completes the step incorrectly once:</p> <p>Did the instructor give specific feedback about error? Y / N</p> <p>Did the instructor “reset the scene?” Y / N</p> <p>Did instructor direct student to replay the video and try again? Y / N</p> <p>If the student completes the step incorrectly twice (after error correction)</p> <p>Did the instructor complete the step for the student? Y / N</p>		<p>TI: If the student makes an error:</p> <p>Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N</p>	
<p>8. Place coffee packets into filters on tray</p>	<p>+ I</p> <p>- 0</p>	<p>J. Played 8th video clip</p>	<p>* V G P</p>
<p>TI: If the student completes the step incorrectly once:</p> <p>Did the instructor give specific feedback about error? Y / N</p> <p>Did the instructor “reset the scene?” Y / N</p> <p>Did instructor direct student to replay the video and try again? Y / N</p> <p>If the student completes the step incorrectly twice (after error correction)</p> <p>Did the instructor complete the step for the student? Y / N</p>		<p>TI: If the student makes an error:</p> <p>Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N</p>	

9. Pull 3 sweetener packets from supply bin	+ I - 0	K. Played 9 th video clip	* V G P
TI: If the student completes the step incorrectly once: Did the instructor give specific feedback about error? Y / N Did the instructor “reset the scene?” Y / N Did instructor direct student to replay the video and try again? Y / N If the student completes the step incorrectly twice (after error correction) Did the instructor complete the step for the student? Y / N		TI: If the student makes an error: Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N	
10. Place sweetener in filters on tray	+ I - 0	L. Played 10 th video clip	* V G P
TI: If the student completes the step incorrectly once: Did the instructor give specific feedback about error? Y / N Did the instructor “reset the scene?” Y / N Did instructor direct student to replay the video and try again? Y / N If the student completes the step incorrectly twice (after error correction) Did the instructor complete the step for the student? Y / N		TI: If the student makes an error: Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N	
11. Pull two stir straws out of supply bin	+ I - 0	M. Played 11 th video clip	* V G P

<p>TI: If the student completes the step incorrectly once:</p> <p>Did the instructor give specific feedback about error? Y / N</p> <p>Did the instructor “reset the scene?” Y / N</p> <p>Did instructor direct student to replay the video and try again? Y / N</p> <p>If the student completes the step incorrectly twice (after error correction)</p> <p>Did the instructor complete the step for the student? Y / N</p>		<p>TI: If the student makes an error:</p> <p>Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N</p>	
<p>12. Place straws in the middle section of tray</p>	<p>+ I</p> <p>- 0</p>	<p>N. Played 12th video</p>	<p>* V G P</p>
<p>TI: If the student completes the step incorrectly once:</p> <p>Did the instructor give specific feedback about error? Y / N</p> <p>Did the instructor “reset the scene?” Y / N</p> <p>Did instructor direct student to replay the video and try again? Y / N</p> <p>If the student completes the step incorrectly twice (after error correction)</p> <p>Did the instructor complete the step for the student? Y / N</p>		<p>TI: If the student makes an error:</p> <p>Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N</p>	
<p>13. Pull 3 creamers out of supply bin</p>	<p>+ I</p> <p>- 0</p>	<p>M. Played 13th video clip</p>	<p>* V G P</p>
<p>TI: If the student completes the step incorrectly once:</p> <p>Did the instructor give specific feedback about error? Y / N</p> <p>Did the instructor “reset the scene?” Y / N</p>		<p>TI: If the student makes an error:</p> <p>Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N</p>	

<p>Did instructor direct student to replay the video and try again? Y / N</p> <p>If the student completes the step incorrectly twice (after error correction)</p> <p>Did the instructor complete the step for the student? Y / N</p>			
<p>14.</p> <p>Line up creamers in the front section of tray</p>	<p>+ I</p> <p>- 0</p>	N. Played 14 th video clip	<p>*</p> <p>V</p> <p>G</p> <p>P</p>
<p>TI: If the student completes the step incorrectly once:</p> <p>Did the instructor give specific feedback about error? Y / N</p> <p>Did the instructor “reset the scene?” Y / N</p> <p>Did instructor direct student to replay the video and try again? Y / N</p> <p>If the student completes the step incorrectly twice (after error correction)</p> <p>Did the instructor complete the step for the student? Y / N</p>		<p>TI: If the student makes an error:</p> <p>Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N</p>	
<p>15.</p> <p>Pull 1 “welcome card” out of supply bin</p>	<p>+ I</p> <p>- 0</p>	O. Played 15 th video clip	<p>*</p> <p>V</p> <p>G</p> <p>P</p>
<p>TI: If the student completes the step incorrectly once:</p> <p>Did the instructor give specific feedback about error? Y / N</p> <p>Did the instructor “reset the scene?” Y / N</p> <p>Did instructor direct student to replay the video and try again? Y / N</p> <p>If the student completes the step incorrectly twice (after error correction)</p>		<p>TI: If the student makes an error:</p> <p>Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N</p>	

Did the instructor complete the step for the student? Y / N			
16. Fold welcome card in half	+ I - 0	P. Played 16 th video clip	* V G P
TI: If the student completes the step incorrectly once: Did the instructor give specific feedback about error? Y / N Did the instructor “reset the scene?” Y / N Did instructor direct student to replay the video and try again? Y / N If the student completes the step incorrectly twice (after error correction) Did the instructor complete the step for the student? Y / N		TI: If the student makes an error: Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N	
17. Place welcome card in front section of tray.	+ I - 0	Q. Played 17 th video clip	* V G P
TI: If the student completes the step incorrectly once: Did the instructor give specific feedback about error? Y / N Did the instructor “reset the scene?” Y / N Did instructor direct student to replay the video and try again? Y / N If the student completes the step incorrectly twice (after error correction) Did the instructor complete the step for the student? Y / N		TI: If the student makes an error: Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N	
TI: Instructor thanks the student for working with them: Y / N			

At the end of all sessions for the day, instructor writes “ticket” for class raffle: Y / N

Appendix E: Wrapping Datasheet

Task: Wrapping

Student Initials: _____

+ = Independent before video is shown
 I = Correct after viewing the video once
 - = Correct after feedback and viewing the video twice (error correction)
 0=incorrect after error correction

 V= Correct after verbal prompt
 G = Correct after gestural prompt
 P = Correct after physical prompt
 *= Independent iPod use

Date	
Data Collector (Primary)	
Data Collector (IOA)	
Condition (BL, I, M)	
% Correct	
A. Wake up iPhone by pressing the center button	* V G P
B. press again to unlock	* V G P
C. Select pictures app	* V G P
D. Select “packaging”	* V G P
1. Roll out wrapping paper from left to right	+ I - 0 * V G P
2. Set box on paper right-side-up, with the longer end facing toward you	+ I - 0 * V G P
3. Fold the end of the paper up until it can fold over the top of the box	+ I - 0 * V G

			P
4. Make a pencil mark on the closest dotted line to the box right side	+ I - 0	Played 4 th video clip	* V G P
5. Remove box from paper	+ I - 0	Played 5 th video clip	* V G P
6. Follow dotted line with pencil mark to the edge of the paper	+ I - 0	Played 6 th video clip	* V G P
7. Cut straight across this dotted line	+ I - 0	Played 7 th video clip	* V G P
8. Place box upside down in the center of cut paper	+ I - 0	Played 8 th video clip	* V G P
9. Cut 2 pieces of invisible tape, approximately 1-inch long, and place on the table	+ I - 0	Played 9 th video clip	* V G P
10. Pull one of the long ends of the paper over the side and top of the box	+ I - 0	Played 10 th video clip	* V G P
11. Line up the end of the paper with the edge of the box and hold it	+ I - 0	Played 11 th video clip	* V G P
12. tape the center of the paper to the box where you are holding it	+ I - 0	Played 12 th video clip	* V G

			P
13. Fold the other long end of the paper over the box and hold it in place	+ I - 0	Played 13 th video clip	* V G P
14. Tape the center of the paper you are holding it	+ I - 0	Played 14 th video clip	* V G P
15. Turn the box so one of the open ends are facing you	+ I - 0	Played 15 th video clip	* V G P
16. Cut 3 pieces of invisible tape, approximately 1-inch long, place on edge of table	+ I - 0	Played 16 th video clip	* V G P
17. Crease top side of paper along the edge of the box	+ I - 0	Played 17 th video clip	* V G P
18. Smooth paper and tape top edge to the box	+ I - 0	Played 18 th video clip	* V G P
19. Crease the flap of paper on the left side, starting at the corner	+ I - 0	Played 19 th video clip	* V G P
20. Crease the flap of paper on the right side, starting at the corner	+ I - 0	Played 20 th video clip	* V G P

21. Pull the end of the right crease to the center of the box and hold it there	+ I - 0	Played 21st video clip	* V G P
22. Crease the bottom right flap starting at the corner	+ I - 0	Played 22 nd video clip	* V G P
23. Pull the end of the left crease to the center of the box and hold it there	+ I - 0	Played 23 rd video clip	* V G P
24. Crease the bottom left flap starting at the corner	+ I - 0	Played 24 th video clip	* V G P
25. Pull the bottom flap tight against the box and hold it there	+ I - 0	Played 25 th video clip	* V G P
26. Tape the flap on the right side	+ I - 0	Played 26 th video clip	* V G P
27. Tape the flap on the left side	+ I - 0	Played 27 th video clip	* V G P
28. Turn the box so the remaining open end is facing you	+ I - 0	Played 28 th video clip	* V G P
29. Cut 3 pieces of invisible tape, approximately 1-inch long, place on edge of table	+ I - 0	Played 29 th video clip	* V G P

30. Crease top side of paper along the edge of the box	+ I - 0	Played 30 th video clip	* V G P
31. Smooth paper and tape top edge to the box	+ I - 0	Played 31 st video clip	* V G P
32. Crease the flap of paper on the left side, starting at the corner	+ I - 0	Played 32 nd video clip	* V G P
33. Crease the flap of paper on the right side, starting at the corner	+ I - 0	Played 33 rd video clip	* V G P
34. Pull the end of the right crease to the center of the box and hold it there	+ I - 0	Played 34 th video clip	* V G P
35. Crease the bottom right flap starting at the corner	+ I - 0	Played 35 th video clip	* V G P
36. Pull the end of the left crease to the center of the box and hold it there	+ I - 0	Played 36 th video clip	* V G P
37. Crease the bottom left flap starting at the corner	+ I - 0	Played 37 th video clip	* V G P
38. Pull the bottom flap tight against the box and hold it there	+ I - 0	Played 38 th video clip	* V G P

39. Tape the flap on the right side	+ I - 0	Played 39 st video clip	* V G P
40. Tape the flap on the left side	+ I - 0	Played 40 th video clip	* V G P

Appendix F: Wrapping IOA and TI Datasheet

Task: Wrapping

Student Initials: _____

+ = Independent before video is shown
 I = Correct after viewing the video once
 - = Correct after feedback and viewing the video twice (error correction)
 0 = incorrect after error correction

 V = Correct after verbal prompt
 G = Correct after gestural prompt
 P = Correct after physical prompt
 * = Independent iPod use

Date	
Data Collector (Primary)	
Data Collector (IOA)	
Condition (BL, I, M)	
% Correct	

TI: Instructor provides student with all needed materials for task: Y / N

Did the instructor say "Time to get started" Y / N

A. Wake up iPhone by pressing the center button

*
 V

 G
 P

TI: If the student makes an error:

Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N

B. press again to unlock

*
 V

 G
 P

TI: If the student makes an error:

Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N

C. Select pictures app

*
 V

 G
 P

TI: If the student makes an error:

Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N

		D. Select “packaging”	* V G P
		TI: If the student makes an error: Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N	
1. Roll out wrapping paper from left to right	+ I - 0	Played 1 st video clip	* V G P
TI: If the student completes the step incorrectly once: Did the instructor give specific feedback about error? Y / N Did the instructor “reset the scene?” Y / N Did instructor direct student to replay the video and try again? Y / N If the student completes the step incorrectly twice (after error correction) Did the instructor complete the step for the student? Y / N		TI: If the student makes an error: Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N	
2. Set box on paper right-side-up, with the longer end facing toward you	+ I - 0	Played 2 nd video clip	* V G P
TI: If the student completes the step incorrectly once: Did the instructor give specific feedback about error? Y / N Did the instructor “reset the scene?” Y / N Did instructor direct student to replay the video and try again? Y / N If the student completes the step incorrectly twice (after error correction)		TI: If the student makes an error: Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N	

Did the instructor complete the step for the student? Y / N			
3. Fold the end of the paper up until it can fold over the top of the box	+ I - 0	Played 3 rd video clip	* V G P
TI: If the student completes the step incorrectly once: Did the instructor give specific feedback about error? Y / N Did the instructor “reset the scene?” Y / N Did instructor direct student to replay the video and try again? Y / N If the student completes the step incorrectly twice (after error correction) Did the instructor complete the step for the student? Y / N		TI: If the student makes an error: Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N	
4. Make a pencil mark on the closest dotted line to the box right side	+ I - 0	Played 4 th video clip	* V G P
TI: If the student completes the step incorrectly once: Did the instructor give specific feedback about error? Y / N Did the instructor “reset the scene?” Y / N Did instructor direct student to replay the video and try again? Y / N If the student completes the step incorrectly twice (after error correction) Did the instructor complete the step for the student? Y / N		TI: If the student makes an error: Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N	
5. Remove box from paper	+ I	Played 5 th video clip	*

	- 0		V G P
TI: If the student completes the step incorrectly once: Did the instructor give specific feedback about error? Y / N Did the instructor “reset the scene?” Y / N Did instructor direct student to replay the video and try again? Y / N If the student completes the step incorrectly twice (after error correction) Did the instructor complete the step for the student? Y / N		TI: If the student makes an error: Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N	
6. Follow dotted line with pencil mark to the edge of the paper	+ I - 0	Played 6 th video clip	* V G P
TI: If the student completes the step incorrectly once: Did the instructor give specific feedback about error? Y / N Did the instructor “reset the scene?” Y / N Did instructor direct student to replay the video and try again? Y / N If the student completes the step incorrectly twice (after error correction) Did the instructor complete the step for the student? Y / N		TI: If the student makes an error: Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N	
7. Cut straight across this dotted line	+ I - 0	Played 7 th video clip	* V G P
TI: If the student completes the step incorrectly once:		TI: If the student makes an error: Did the instructor use LTM prompting in	

<p>Did the instructor give specific feedback about error? Y / N</p> <p>Did the instructor “reset the scene?” Y / N</p> <p>Did instructor direct student to replay the video and try again? Y / N</p> <p>If the student completes the step incorrectly twice (after error correction)</p> <p>Did the instructor complete the step for the student? Y / N</p>		the correct sequence (V, G, P)? Y / N	
<p>8. Place box upside down in the center of cut paper</p>	<p>+ I</p> <p>- 0</p>	<p>Played 8th video clip</p>	<p>* V G P</p>
<p>TI: If the student completes the step incorrectly once:</p> <p>Did the instructor give specific feedback about error? Y / N</p> <p>Did the instructor “reset the scene?” Y / N</p> <p>Did instructor direct student to replay the video and try again? Y / N</p> <p>If the student completes the step incorrectly twice (after error correction)</p> <p>Did the instructor complete the step for the student? Y / N</p>		<p>TI: If the student makes an error:</p> <p>Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N</p>	
<p>9. Cut 2 pieces of invisible tape, approximately 1-inch long, and place on the table</p>	<p>+ I</p> <p>- 0</p>	<p>Played 9th video clip</p>	<p>* V G P</p>
<p>TI: If the student completes the step incorrectly once:</p> <p>Did the instructor give specific feedback about error? Y / N</p> <p>Did the instructor “reset the scene?” Y / N</p> <p>Did instructor direct student to replay the video and try again? Y / N</p>		<p>TI: If the student makes an error:</p> <p>Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N</p>	

If the student completes the step incorrectly twice (after error correction) Did the instructor complete the step for the student? Y / N			
10. Pull one of the long ends of the paper over the side and top of the box	+ I - 0	Played 10 th video clip	* V G P
TI: If the student completes the step incorrectly once: Did the instructor give specific feedback about error? Y / N Did the instructor “reset the scene?” Y / N Did instructor direct student to replay the video and try again? Y / N If the student completes the step incorrectly twice (after error correction) Did the instructor complete the step for the student? Y / N		TI: If the student makes an error: Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N	
11. Line up the end of the paper with the edge of the box and hold it	+ I - 0	Played 11 th video clip	* V G P
TI: If the student completes the step incorrectly once: Did the instructor give specific feedback about error? Y / N Did the instructor “reset the scene?” Y / N Did instructor direct student to replay the video and try again? Y / N If the student completes the step incorrectly twice (after error correction) Did the instructor complete the step for the student? Y / N		TI: If the student makes an error: Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N	

12. tape the center of the paper to the box where you are holding it	+ I - 0	Played 12 th video clip	* V G P
TI: If the student completes the step incorrectly once: Did the instructor give specific feedback about error? Y / N Did the instructor “reset the scene?” Y / N Did instructor direct student to replay the video and try again? Y / N If the student completes the step incorrectly twice (after error correction) Did the instructor complete the step for the student? Y / N		TI: If the student makes an error: Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N	
13. Fold the other long end of the paper over the box and hold it in place	+ I - 0	Played 13 th video clip	* V G P
TI: If the student completes the step incorrectly once: Did the instructor give specific feedback about error? Y / N Did the instructor “reset the scene?” Y / N Did instructor direct student to replay the video and try again? Y / N If the student completes the step incorrectly twice (after error correction) Did the instructor complete the step for the student? Y / N		TI: If the student makes an error: Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N	
14. Tape the center of the paper you are holding it	+ I - 0	Played 14 th video clip	* V G P
TI: If the student completes the step incorrectly		TI: If the student makes an error:	

<p>once:</p> <p>Did the instructor give specific feedback about error? Y / N</p> <p>Did the instructor “reset the scene?” Y / N</p> <p>Did instructor direct student to replay the video and try again? Y / N</p> <p>If the student completes the step incorrectly twice (after error correction)</p> <p>Did the instructor complete the step for the student? Y / N</p>		<p>Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N</p>	
<p>15. Turn the box so one of the open ends are facing you</p>	<p>+ I</p> <p>- 0</p>	<p>Played 15th video clip</p>	<p>* V G P</p>
<p>TI: If the student completes the step incorrectly once:</p> <p>Did the instructor give specific feedback about error? Y / N</p> <p>Did the instructor “reset the scene?” Y / N</p> <p>Did instructor direct student to replay the video and try again? Y / N</p> <p>If the student completes the step incorrectly twice (after error correction)</p> <p>Did the instructor complete the step for the student? Y / N</p>		<p>TI: If the student makes an error:</p> <p>Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N</p>	
<p>16. Cut 3 pieces of invisible tape, approximately 1-inch long, place on edge of table</p>	<p>+ I</p> <p>- 0</p>	<p>Played 16th video clip</p>	<p>* V G P</p>
<p>TI: If the student completes the step incorrectly once:</p> <p>Did the instructor give specific feedback about error? Y / N</p> <p>Did the instructor “reset the scene?” Y / N</p> <p>Did instructor direct student to replay the video and try again? Y / N</p>		<p>TI: If the student makes an error:</p> <p>Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N</p>	

<p>If the student completes the step incorrectly twice (after error correction)</p> <p>Did the instructor complete the step for the student? Y / N</p>			
<p>17. Crease top side of paper along the edge of the box</p>	<p>+ I</p> <p>- 0</p>	<p>Played 17th video clip</p>	<p>* V G P</p>
<p>TI: If the student completes the step incorrectly once:</p> <p>Did the instructor give specific feedback about error? Y / N</p> <p>Did the instructor “reset the scene?” Y / N</p> <p>Did instructor direct student to replay the video and try again? Y / N</p> <p>If the student completes the step incorrectly twice (after error correction)</p> <p>Did the instructor complete the step for the student? Y / N</p>		<p>TI: If the student makes an error:</p> <p>Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N</p>	
<p>18. Smooth paper and tape top edge to the box</p>	<p>+ I</p> <p>- 0</p>	<p>Played 18th video clip</p>	<p>* V G P</p>
<p>TI: If the student completes the step incorrectly once:</p> <p>Did the instructor give specific feedback about error? Y / N</p> <p>Did the instructor “reset the scene?” Y / N</p> <p>Did instructor direct student to replay the video and try again? Y / N</p> <p>If the student completes the step incorrectly twice (after error correction)</p> <p>Did the instructor complete the step for the student? Y / N</p>		<p>TI: If the student makes an error:</p> <p>Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N</p>	

19. Crease the flap of paper on the left side, starting at the corner	+ I - 0	Played 19 th video clip	* V G P
<p>TI: If the student completes the step incorrectly once:</p> <p>Did the instructor give specific feedback about error? Y / N</p> <p>Did the instructor “reset the scene?” Y / N</p> <p>Did instructor direct student to replay the video and try again? Y / N</p> <p>If the student completes the step incorrectly twice (after error correction)</p> <p>Did the instructor complete the step for the student? Y / N</p>		<p>TI: If the student makes an error:</p> <p>Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N</p>	
20. Crease the flap of paper on the right side, starting at the corner	+ I - 0	Played 20 th video clip	* V G P
<p>TI: If the student completes the step incorrectly once:</p> <p>Did the instructor give specific feedback about error? Y / N</p> <p>Did the instructor “reset the scene?” Y / N</p> <p>Did instructor direct student to replay the video and try again? Y / N</p> <p>If the student completes the step incorrectly twice (after error correction)</p> <p>Did the instructor complete the step for the student? Y / N</p>		<p>TI: If the student makes an error:</p> <p>Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N</p>	
21. Pull the end of the right crease to the center of the box and hold it there	+ I - 0	Played 21st video clip	* V G P

<p>TI: If the student completes the step incorrectly once:</p> <p>Did the instructor give specific feedback about error? Y / N</p> <p>Did the instructor “reset the scene?” Y / N</p> <p>Did instructor direct student to replay the video and try again? Y / N</p> <p>If the student completes the step incorrectly twice (after error correction)</p> <p>Did the instructor complete the step for the student? Y / N</p>		<p>TI: If the student makes an error:</p> <p>Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N</p>	
<p>22. Crease the bottom right flap starting at the corner</p>	<p>+ I</p> <p>- 0</p>	<p>Played 22nd video clip</p>	<p>*</p> <p>V</p> <p>G</p> <p>P</p>
<p>TI: If the student completes the step incorrectly once:</p> <p>Did the instructor give specific feedback about error? Y / N</p> <p>Did the instructor “reset the scene?” Y / N</p> <p>Did instructor direct student to replay the video and try again? Y / N</p> <p>If the student completes the step incorrectly twice (after error correction)</p> <p>Did the instructor complete the step for the student? Y / N</p>		<p>TI: If the student makes an error:</p> <p>Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N</p>	
<p>23. Pull the end of the left crease to the center of the box and hold it there</p>	<p>+ I</p> <p>- 0</p>	<p>Played 23rd video clip</p>	<p>*</p> <p>V</p> <p>G</p> <p>P</p>
<p>TI: If the student completes the step incorrectly once:</p> <p>Did the instructor give specific feedback about error? Y / N</p> <p>Did the instructor “reset the scene?” Y / N</p> <p>Did instructor direct student to replay the video and</p>		<p>TI: If the student makes an error:</p> <p>Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N</p>	

try again? Y / N If the student completes the step incorrectly twice (after error correction) Did the instructor complete the step for the student? Y / N			
24. Crease the bottom left flap starting at the corner	+ I - 0	Played 24 th video clip	* V G P
TI: If the student completes the step incorrectly once: Did the instructor give specific feedback about error? Y / N Did the instructor “reset the scene?” Y / N Did instructor direct student to replay the video and try again? Y / N If the student completes the step incorrectly twice (after error correction) Did the instructor complete the step for the student? Y / N		TI: If the student makes an error: Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N	
25. Pull the bottom flap tight against the box and hold it there	+ I - 0	Played 25 th video clip	* V G P
TI: If the student completes the step incorrectly once: Did the instructor give specific feedback about error? Y / N Did the instructor “reset the scene?” Y / N Did instructor direct student to replay the video and try again? Y / N If the student completes the step incorrectly twice (after error correction) Did the instructor complete the step for the student?		TI: If the student makes an error: Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N	

Y / N			
26. Tape the flap on the right side	+ I - 0	Played 26 th video clip	* V G P
TI: If the student completes the step incorrectly once: Did the instructor give specific feedback about error? Y / N Did the instructor “reset the scene?” Y / N Did instructor direct student to replay the video and try again? Y / N If the student completes the step incorrectly twice (after error correction) Did the instructor complete the step for the student? Y / N		TI: If the student makes an error: Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N	
27. Tape the flap on the left side	+ I - 0	Played 27 th video clip	* V G P
TI: If the student completes the step incorrectly once: Did the instructor give specific feedback about error? Y / N Did the instructor “reset the scene?” Y / N Did instructor direct student to replay the video and try again? Y / N If the student completes the step incorrectly twice (after error correction) Did the instructor complete the step for the student? Y / N		TI: If the student makes an error: Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N	
28. Turn the box so the remaining open end is facing you	+ I - 0	Played 28 th video clip	* V G

			P
TI: If the student completes the step incorrectly once: Did the instructor give specific feedback about error? Y / N Did the instructor “reset the scene?” Y / N Did instructor direct student to replay the video and try again? Y / N If the student completes the step incorrectly twice (after error correction) Did the instructor complete the step for the student? Y / N		TI: If the student makes an error: Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N	
29. Cut 3 pieces of invisible tape, approximately 1-inch long, place on edge of table	+ I - 0	Played 29 th video clip	* V G P
TI: If the student completes the step incorrectly once: Did the instructor give specific feedback about error? Y / N Did the instructor “reset the scene?” Y / N Did instructor direct student to replay the video and try again? Y / N If the student completes the step incorrectly twice (after error correction) Did the instructor complete the step for the student? Y / N		TI: If the student makes an error: Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N	
30. Crease top side of paper along the edge of the box	+ I - 0	Played 30 th video clip	* V G P
TI: If the student completes the step incorrectly once: Did the instructor give specific feedback about error? Y / N		TI: If the student makes an error: Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N	

<p>Did the instructor “reset the scene?” Y / N</p> <p>Did instructor direct student to replay the video and try again? Y / N</p> <p>If the student completes the step incorrectly twice (after error correction)</p> <p>Did the instructor complete the step for the student? Y / N</p>			
<p>31. Smooth paper and tape top edge to the box</p>	<p>+ I</p> <p>- 0</p>	<p>Played 31st video clip</p>	<p>* V G P</p>
<p>TI: If the student completes the step incorrectly once:</p> <p>Did the instructor give specific feedback about error? Y / N</p> <p>Did the instructor “reset the scene?” Y / N</p> <p>Did instructor direct student to replay the video and try again? Y / N</p> <p>If the student completes the step incorrectly twice (after error correction)</p> <p>Did the instructor complete the step for the student? Y / N</p>		<p>TI: If the student makes an error:</p> <p>Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N</p>	
<p>32. Crease the flap of paper on the left side, starting at the corner</p>	<p>+ I</p> <p>- 0</p>	<p>Played 32nd video clip</p>	<p>* V G P</p>
<p>TI: If the student completes the step incorrectly once:</p> <p>Did the instructor give specific feedback about error? Y / N</p> <p>Did the instructor “reset the scene?” Y / N</p> <p>Did instructor direct student to replay the video and try again? Y / N</p> <p>If the student completes the step incorrectly twice (after error correction)</p>		<p>TI: If the student makes an error:</p> <p>Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N</p>	

Did the instructor complete the step for the student? Y / N			
33. Crease the flap of paper on the right side, starting at the corner	+ I - 0	Played 33 rd video clip	* V G P
TI: If the student completes the step incorrectly once: Did the instructor give specific feedback about error? Y / N Did the instructor “reset the scene?” Y / N Did instructor direct student to replay the video and try again? Y / N If the student completes the step incorrectly twice (after error correction) Did the instructor complete the step for the student? Y / N		TI: If the student makes an error: Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N	
34. Pull the end of the right crease to the center of the box and hold it there	+ I - 0	Played 34 th video clip	* V G P
TI: If the student completes the step incorrectly once: Did the instructor give specific feedback about error? Y / N Did the instructor “reset the scene?” Y / N Did instructor direct student to replay the video and try again? Y / N If the student completes the step incorrectly twice (after error correction) Did the instructor complete the step for the student? Y / N		TI: If the student makes an error: Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N	
35. Crease the bottom right flap starting at the corner	+ I - 0	Played 35 th video clip	* V

			G P
TI: If the student completes the step incorrectly once: Did the instructor give specific feedback about error? Y / N Did the instructor “reset the scene?” Y / N Did instructor direct student to replay the video and try again? Y / N If the student completes the step incorrectly twice (after error correction) Did the instructor complete the step for the student? Y / N		TI: If the student makes an error: Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N	
36. Pull the end of the left crease to the center of the box and hold it there	+ I - 0	Played 36 th video clip	* V G P
TI: If the student completes the step incorrectly once: Did the instructor give specific feedback about error? Y / N Did the instructor “reset the scene?” Y / N Did instructor direct student to replay the video and try again? Y / N If the student completes the step incorrectly twice (after error correction) Did the instructor complete the step for the student? Y / N		TI: If the student makes an error: Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N	
37. Crease the bottom left flap starting at the corner	+ I - 0	Played 37 th video clip	* V G P
TI: If the student completes the step incorrectly once: Did the instructor give specific feedback about error? Y / N		TI: If the student makes an error: Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N	

<p>Did the instructor “reset the scene?” Y / N</p> <p>Did instructor direct student to replay the video and try again? Y / N</p> <p>If the student completes the step incorrectly twice (after error correction)</p> <p>Did the instructor complete the step for the student? Y / N</p>			
<p>38. Pull the bottom flap tight against the box and hold it there</p>	<p>+ I</p> <p>- 0</p>	<p>Played 38th video clip</p>	<p>* V G P</p>
<p>TI: If the student completes the step incorrectly once:</p> <p>Did the instructor give specific feedback about error? Y / N</p> <p>Did the instructor “reset the scene?” Y / N</p> <p>Did instructor direct student to replay the video and try again? Y / N</p> <p>If the student completes the step incorrectly twice (after error correction)</p> <p>Did the instructor complete the step for the student? Y / N</p>		<p>TI: If the student makes an error:</p> <p>Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N</p>	
<p>39. Tape the flap on the right side</p>	<p>+ I</p> <p>- 0</p>	<p>Played 39st video clip</p>	<p>* V G P</p>
<p>TI: If the student completes the step incorrectly once:</p> <p>Did the instructor give specific feedback about error? Y / N</p> <p>Did the instructor “reset the scene?” Y / N</p> <p>Did instructor direct student to replay the video and try again? Y / N</p> <p>If the student completes the step incorrectly twice (after error correction)</p>		<p>TI: If the student makes an error:</p> <p>Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N</p>	

Did the instructor complete the step for the student? Y / N			
40. Tape the flap on the left side	+ I - 0	Played 40 th video clip	* V G P
TI: If the student completes the step incorrectly once: Did the instructor give specific feedback about error? Y / N Did the instructor “reset the scene?” Y / N Did instructor direct student to replay the video and try again? Y / N If the student completes the step incorrectly twice (after error correction) Did the instructor complete the step for the student? Y / N		TI: If the student makes an error: Did the instructor use LTM prompting in the correct sequence (V, G, P)? Y / N	
TI: Instructor thanks the student for working with them: Y / N At the end of all sessions for the day, instructor writes “ticket” for class raffle: Y / N			

Appendix G: Baseline TI

Baseline TI		
Date:		
Observer Initials:		
Student Initials		
1. Experimenter provides student with all needed materials for task	Y	N
2. Experimenter says, "Time to get started"	Y	N
3. If the student makes an error or waits longer than 4 seconds to initiate the next step, the experimenter completes that step out of the view of the participant and sets up for the opportunity to complete the next step.	Y	N
4. Experimenter thanks the student for working with them	Y	N
5. Experimenter writes "ticket" for class raffle	Y	N
Percent correct:		

Appendix H: Navigation Training Datasheet

Task: Hole punching

Student Initials: _____

Date	
Data Collector (Primary)	
Data Collector (IOA)	
Condition (BL, I, M)	
% Correct	

+ = Independent before video is shown
 I = Correct after viewing the video once
 2 = Correct after viewing the video twice (error correction)
 V = Correct after verbal prompt
 G = Correct after gestural prompt
 P = Correct after physical prompt
 *= Independent iPod use

A. Wake up iPhone by pressing the center button	* V	G P
B. press again to unlock	* V	G P
C. Select pictures app	* V	G P
D. Select "Hole punching"	* V	G P
C. Played 1 st video clip	* V	G P
D. Played 2 nd video clip	* V	G P
E. Played 3 rd video clip	* V	G P
F. Played 4 th video clip	* V	G P
G. Played 5 th video clip	* V	G P

1. Pick up 3 pieces of paper from the stack	+ I 2 V G P
2. Tap the end of papers on table until straight	+ I 2 V G P
3. Slide left side of papers into hole punch	+ I 2 V G P
4. Press hole punch lever all the way down	+ I 2 V G P
5. remove papers from hole punch	+ I 2 V G P

6 Place face-down in “finished” pile	+ I 2 V G P	H. Played 6 th video clip	* V G P
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