3-31-2018

Prompting Procedure Skill Acquisition: The Role of Performance Feedback

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77 Pages

There is a need for educators to implement evidence-based treatments for children with autism. Effective training of professionals is essential in ensuring treatment is implemented with integrity. Behavioral Skills Training (BST), an efficacious staff training method, identifies feedback as a critical component of training; however, the role of feedback in this process has not been systematically examined. This research evaluates the efficiency at which prompting skills are acquired, the accuracy at which prompting skills are maintained one-week post acquisition, and the acceptability of training experience across individuals who received either performance feedback or general feedback following brief, video BST.

KEYWORDS: behavioral skills; prompting; performance feedback

PROMPTING PROCEDURE SKILL ACQUISITION: THE ROLE OF PERFORMANCE FEEDBACK

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A Thesis Submitted in Partial
Fulfillment of the Requirements
for the Degree of

MASTER OF SCIENCE

Department of Psychology

ILLINOIS STATE UNIVERSITY

2018

PROMPTING PROCEDURE SKILL ACQUISITION: THE ROLE OF PERFORMANCE FEEDBACK

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ACKNOWLEDGMENTS

I would like to thank Dr. Karla Doepke for her support and guidance in the completion of this project. All throughout my training it has been an honor to witness her passion for providing hope to children and families. I feel so grateful to experience her mentorship in both clinical and research endeavors. In addition, I would like to thank Dr. Gary Cates and Dr. Jeff Wagman for their continued insight and support throughout this project. Finally, without my team of research assistants, completing this project would not have been possible. Thank you all for your dedication to this research.

E.C.W.

CONTENTS

TABLES

FIGURES

CHAPTER I: REVIEW OF LITERATURE

According to The Diagnostic and Statistical Manual of Mental Disorders (5th ed.; DSM 5; American Psychiatric Association, 2013) Autism Spectrum Disorder (ASD) is a neurodevelopmental disorder characterized by deficits in social communication and social interactions as well as the presence of restricted, repetitive patterns of behavior, interests or activities. In addition to these characteristics, many children with ASD display skill deficiencies in cognitive functioning, executive functioning, and sensory integration and regulation (Bryan & Gast, 2000). Taken together, the characteristics of autism combined with the aforementioned deficits make learning new skills exceptionally challenging; therefore, many children living with ASD require a substantial amount of support at home, in school, and in the community. Recent estimates suggest that one is 68 children are diagnosed with ASD: an almost thirtyfold increase from the prevalence rates documented in the late 1960s (Centers for Disease Control and Prevention, 2014).

Given this striking increase in prevalence, schools and mental health organizations are expected to provide support to individuals with ASD at continually growing rates (Simpson, 2004). In accordance with the Individuals with Disabilities Education Improvement Act (IDEA) of 2004, human service providers are required to implement empirically supported treatments with individuals with ASD (Individuals with Disabilities Education Act, 20 U.S.C. § 1400 2004). Presently, the most widely established and accepted evidence-based treatments are rooted in principles of applied behavior analysis (ABA; National Standards Project, 2015). ABA is the practice of creating meaningful improvements in behavior by systematically applying principles of behavior theory (Baer, Wolf, and Risley, 1968; Cooper, Heron, & Heward, 2007). ABA remains focused on the data-based evaluation of behavioral change so as to increase

practitioners' confidence that observed changes in behavior can be attributed to the intervention employed (Baer et al., 1968). With regard to individuals with ASD, the aim of ABA is to achieve socially significant behavioral change by methodically examining and manipulating the observable relationships between the behaviors exhibited by an individual and their environment (Cooper et al., 2007). Examples of evidence-based ABA interventions for individuals with autism include discrete trial training, pivotal response training, and antecedent manipulations (National Standards Project, 2015).

Discrete trial training (DTT) and pivotal response training (PRT) are examples of specific teaching procedures used when working with individuals with ASD, whereas antecedent manipulations are typically used to augment such teaching procedures by increasing the probability that a learner will successfully engage in a target behavior through modification of the environmental events that precede this behavior (National Standards Project, 2015). Prompting is one example of an antecedent package intervention (National Standards Project, 2015). A prompt can be defined as an auxiliary or artificial stimulus that is presented immediately before or after a cue which is intended to signal a learner to engage in a target behavior (MacDuff, Krantz & McClanahan, 2001). Auxiliary or artificial stimuli may take the form of instructions, gestures, demonstrations or touches (MacDuff et al., 2001). Prompts are beneficial to the learning process as they reduce the number of errors made while learning and mastering skills (Koegel & Egel, 1979). Further, they are an essential component in the implementation of other ABA interventions such as DTT and PRT (National Standards Project, 2015).

One frequently used prompting procedure described in the ABA literature is increasing assistance; otherwise known as least-to-most prompting (MacDuff et al., 2001). A least-to-most

prompting procedure entails providing gradually increasing assistance in order for a learner to successfully complete a target skill (MacDuff, Krantz & McClanahan, 2001). Typically, the least to most prompting hierarchy involves first allowing a learner an opportunity to engage in a target behavior independently and subsequently providing more assistance to the learner if they do not successfully engage in the target behavior (MacDuff et al., 2001). Prompts that allow a learner to respond to environmental cues with as much autonomy as possible include verbal instructions, gestures (e.g. pointing), and modeling, while prompts which provide more assistance to the learner in their completion of a target skill include forms of manual guidance (e.g. holding a child's hand while walking down the street). Therefore, the conventional sequence of the least to most prompting hierarchy requires first providing verbal instructions, next employing gestural cues, then demonstrating the task, and finally supporting the learner through with manual guidance. For example, if the target skill is tying a shoe, the cue which may provide the learner with the opportunity to respond the most independently may be a verbal instruction such as, "Tie your shoes." However, if the learner does not engage in shoe tying after the delivery of the first instruction, the instructor may increase their assistance by repeating the direction and pointing to the shoe. If the learner still did not tie the shoe, the instructor would continue to increase the level of assistance identified in the prompting hierarchy until the learner tied the shoe.

One of the major advantages of the increasing assistance prompt hierarchy is that each trial provides the learner an opportunity to respond to relevant, naturally occurring stimuli and allows instructors to ascertain the tasks that learners can complete independently or with minimal prompting (MacDuff et al., 2001). Prompting procedures have been proven as an effective technique in increasing motivation in children with ASD as they allow a child to more consistently complete tasks correctly which increases the child's opportunity for reinforcement

(Koegel & Egel, 1979). Further, tactile prompts have been shown to successfully increase the verbal initiations and responses to peer initiations made by young children with ASD (Shabani, Katz, Wilder, Beauchamp, Taylor & Fischer, 2002).

Empirical validation of interventions such as the increasing assistance prompt hierarchy is necessary, but not sufficient to secure positive client outcomes. Treatment procedures also must be implemented with adequate integrity (Wickstrom, Jones, LaFleur, Witt, 1998; DiGennaro, Martens, & McIntyre, 2005). Treatment integrity is defined as the degree to which an intervention is executed as designed (Wheeler, Baggett, Fox & Blevins, 2006) and is essential in helping researchers and practitioners to understand the cause and effect relationship between interventions and treatment outcomes in the laboratory and applied settings (Hagermoser Sanetti, Gritter & Dobey, 2011; McIntyre, Greshman, DiGennaro & Reed, 2007). It is unfortunate, but not surprising that published research in fields such as school psychology and autism often fail to report data on treatment integrity (i.e. independent variables; Hagermoser Sanetti et al., 2011). Gathering treatment integrity data is time and resource intensive, which almost certainly has limited researchers' ability to adequately address issues of integrity (Pereplectchikova, Treat & Kazdin, 2007).

The absence of treatment integrity data in the literature significantly compromises the ability of researchers to accurately explain and generalize research findings to practice (Wheeler et al., 2006). Without treatment integrity data, it is impossible to determine whether client progress can accurately be attributed to the intervention being described, and unfortunately the research may actually provide misinformation on intervention effectiveness to practitioners. Moreover, the probability of positive client outcomes in practice is further jeopardized by complications unique to applied settings. For example, employers may not have the financial

means to evaluate whether or not treatment procedures are being implemented correctly or to compensate employees for additional training in evidence-based techniques if it is determined that treatment integrity is low (LeBlanc, Ricciardi & Luiselli, 2005). Therefore, what is needed is research that uses and reports methods for measuring and evaluating treatment integrity (Hagermoser Sanetti et al., 2011) combined with high quality, time-efficient strategies to teach novice learners to implement evidence-based behavioral interventions with high integrity.

In an attempt to improve the quality of training received by the human service providers responsible for the implementation of evidence-based behavioral interventions, researchers and employers make use of behavioral skill training (BST; Fetherston & Sturmey, 2014). BST is a standardized and efficacious training method used for staff working with individuals with developmental disabilities (Ward-Horner & Sturmey, 2012). BST primarily involves four components: instruction of the behavioral task, modeling of the correct behavioral task response, rehearsal of the behavioral task, and providing trainees with feedback on task performance (Ward-Horner & Sturmey, 2012). BST is performance and competency based; meaning trainees are required to reach established mastery criteria (Parsons, Rollyson, & Reid, 2012). BST has been shown to effectively teach the appropriate use of applied behavioral analysis techniques via a number of different training formats and contexts (Miles & Wilder, 2009; Catania, Almeida, Liu-Constant, & Reed, 2009).

For example, brief BST video instruction on DTT skills proved to be an efficacious and beneficial method for teaching DTT skills to novice learners (Catania et al., 2009). Video training has the added benefits of allowing trainers to provide more standardized training experiences as well as providing trainees with the opportunity to demonstrate newly acquired skills in more relevant contexts. Moreover, brief video training may be of particular value in

work environments that are unable to provide sufficient compensation for the additional training of staff members, as this type of training is a potentially inexpensive and efficient method (Moore & Fisher, 2007).

In addition to teaching DTT skills, BST has been shown to successfully teach novice learners prompting strategies (Parsons et al., 2012). Parsons and colleagues (2012) developed and empirically examined a detailed, evidence-based training protocol that aligned with the four standard components of BST. Specifically, authors established six training steps: describing the target skill, providing a written description of the target skill, demonstrating the target skill, requiring the trainee to rehearse the target skill, providing feedback, and repeating steps four and five until mastery of the target skill has been attained. Researchers illustrated the effectiveness of this training protocol by teaching human service providers to implement a decreasing assistance prompting hierarchy when working with adults with disabilities. Within three sessions, across three days following intervention, all eight service providers improved their prompting performance. Moreover, all participants rated the training between "very" and "extremely" useful, practical and enjoyable. Results from this study supported the BST training protocol as an effective, efficient and acceptable means of teaching prompting strategies (Parsons et al., 2012).

While recent research on BST and brief video instruction has greatly advanced the literature on the training of effective implementation of evidence-based treatments for ASD, the role of feedback, lauded as an especially powerful component of BST (Auld, Belfiore & Scheeler, 2010; Noell, Witt, Slider, Connell, Gatti, Williams, Koenig, Resetar & Duhon, 2005), warrants further attention. Performance feedback is described as a component of behavioral consultation that involves reviewing process and outcome data (i.e. teacher implementation and student progress data), providing praise and corrective feedback, and allowing opportunity for

questions to be asked and addressed (Codding, Feinberg, Dunn & Pace, 2005; Noell, Witt, Gilbertson, Ranier & Freeland, 1997; Witt, Noell, LaFleur & Mortenson, 1997). In order to determine how best to improve the implementation of individualized treatment programs for children via consultation, researchers investigated the effectiveness of three consultation follow-up procedures (Noell et al., 2005). Researchers compared the effectiveness of weekly follow-ups, follow-ups with a commitment emphasis, and follow-ups including performance feedback in increasing the extent to which a teacher adhered to a student's individualized treatment plan. Weekly feedback was considered the standard practice and involved a brief meeting between teacher and consultant, a discussion about the teacher's integrity to the intervention, and the child's improvement. No materials were reviewed during weekly feedback sessions. Commitment emphasis follow-up sessions entailed the same components as the weekly follow-up condition; however, consultants also followed a social influence procedure in which the importance of commitment to treatment implementation implementing was discussed. The performance feedback condition required that consultants meet with the teachers, review the student's and the teacher's progress, provide praise for intervention components completed correctly and supportive feedback on components completed incorrectly. All interventions were implemented across a three-week time span. Following analyses, researchers learned that teachers who received weekly follow-up sessions with performance feedback demonstrated a marked increase in the integrity with which they implemented their student's individualized intervention (Noell et al., 2005).

In addition, performance feedback has been found to improve the treatment integrity in pre-service teachers' implementation of a differential reinforcement procedure (Auld et al., 2010). Specifically, pre-service teachers were provided with a brief training on the

implementation of a differential reinforcement procedure in a general education classroom. Following this training, pre-service teachers were observed and rated on the degree of integrity with which they implemented the reinforcement procedure and were provided with weekly performance feedback. The performance feedback included reviewing the observational data recorded by a research assistant and a discussion of how to apply the reinforcement procedure given each teacher's specific classroom environment. Following performance feedback, all pre-service teachers demonstrated a marked increase in integrity to the reinforcement procedure (Auld et al., 2010).

Further, the impact of performance feedback on educators' procedural integrity to DTT skills for students with ASD has been recently demonstrated as a successful approach to augmenting the delivery of DTT (McKenney & Bristol, 2014). During this study, special education teachers were first provided with full day instruction of DTT implementation. Research assistants observed teachers as they implemented the DTT procedures in their classrooms weekly. Following classroom observations teachers were given general feedback across multiple weeks, that consisted of simply providing each individual information about the steps they completed correctly and the steps they completed incorrectly or missed. Once teachers demonstrated a stable rate of responding after receiving general feedback, they continued to be observed and provided with performance feedback weekly (McKenney & Bristol, 2014). Performance feedback involved reviewing observational data of the teacher's implementation of DTT procedures, praising steps completed correctly, and reviewing and modeling steps completed incorrectly. Also, teachers were allowed the opportunity to ask questions regarding implementation of the DTT procedure (McKenney & Bristol, 2014). Performance feedback proved to be a more effective, yet more time-intensive strategy in increasing treatment integrity

of DTT skills than general feedback (McKenney & Bristol, 2014). Results of this research indicate that different forms of feedback result in different outcomes

Statement of the Problem

It is essential that behavioral interventions be implemented with a high degree of treatment integrity. Intervention fidelity allows researchers and practitioners to draw meaningful conclusions with regard to intervention effectiveness and expected treatment outcomes. Further, a high degree of treatment integrity allows for the possibility of generalization of research findings to practice. One strategy that has been demonstrated as an effective means of enhancing the degree of treatment integrity when implementing behavioral interventions is BST. Behavioral skill training utilizes instruction, modeling, rehearsal and feedback (Ward-Horner & Sturmey, 2012). While the first three components of BST are typically standard, different types of feedback have led to differing results. Specifically, in one study, performance feedback was found to be more effective than general feedback. Given that the generality of this finding is unknown; more information is needed in order to fully understand how performance feedback compares to other forms of feedback. Thus, the purpose of this research was to compare the efficiency of participants' increasing assistance hierarchy skill acquisition, the accuracy of maintained prompting skills, and the acceptability of participants' training experiences across individuals who received either performance feedback or general feedback following brief, video BST. Specifically, this investigation examined the relative efficacy of performance feedback compared to general feedback when acquiring increasing assistance prompting procedure skills. Additionally, the acceptability of these two types of feedback was evaluated. The overall goal of this research was to add to the literature on high quality and efficient training techniques for

educators who work with children with ASD. Specifically, this investigation examined the following three research questions.

1. Which type of feedback will lead to the most efficient learning? Given that performance feedback has been proven to successfully improve the integrity to DTT procedures when compared to general feedback (McKenney & Bristol, 2014), researchers hypothesized that participants who received performance feedback on their implementation of an increasing assistance prompting procedure would demonstrate the most efficient learning.
2. Which feedback format will lead to higher maintenance of prompting skills at a one-week follow-up? Research on the impact of immediate performance feedback on teachers' implementation of behavior support plans has shown that the presence of performance feedback led teachers to maintain high levels of treatment integrity at least five weeks post training (Codding et al., 2005). Thus, it was hypothesized that participants who received performance feedback during training would maintain higher levels of prompting skills at a one-week follow-up compared to participants that did not receive feedback.

Which feedback format will be rated as most acceptable? Acceptability of behavioral skills instruction is imperative to the training process, as effective interventions that are dissatisfying to staff members have a lower probability of being used. The effective, six-step training protocol developed by Parsons et al. (2012) has been rated favorably with a high degree of staff acceptance. While the reason for this finding has not been investigated experimentally, one possible explanation is the training protocol's use of supportive feedback. Therefore, it was hypothesized that participants who received performance feedback, which includes supportive

feedback, would demonstrate the highest acceptability ratings when compared to participants who received general feedback.

CHAPTER II: METHOD

Participants

To estimate a sufficient sample size, an a priori power analysis using G*Power was conducted for an independent samples *t*-test (Faul et al., 2007). The weekly feedback condition and performance feedback condition described in Noell et al. (2005) were structured in a similar manner to the general feedback condition and the performance feedback condition used in the present research. Therefore, to conduct the power analysis, an effect size (d = 1.49) was generated using the means and standard deviations from the weekly follow-up condition (M= 35, SD = 31.80) and the performance follow-up condition (M = 77.1, SD = 24.1; Noell et al., 2005). An α = .05, β = .95, d =1.49, and the two tails setting, yielded a total, desired sample size is 26 participants. Criteria for inclusion in the present study required that each participant: (a) be at least 18 years of age, (b) be enrolled as an undergraduate student at Illinois State University, (c) have no previous experience in the implementation of prompting strategies, and (d) possess the ability to listen to and comprehend video training independently. Exclusionary criteria included experiencing a significant vision or hearing impairment, that would limit their ability to understand the video. Participants were randomly assigned to two groups: one in which participants received video training and performance feedback and one in which participants received video training and general feedback.

A total of twenty-eight participants were recruited for this study via emails sent to undergraduate students by university advisors, a recruitment script read aloud in undergraduate and graduate courses by the research assistant, and Illinois State University's Research Participation Sign-Up system. Of the original 28 participants, data from nine participants were excluded from data analyses for the following three reasons: (a) four participants reached

mastery criteria after watching the video, but before receiving feedback; (b) four participants were excluded from analysis due to experimenter error; and (c) one participant was excluded due to leaving the study before reaching mastery criteria and before attempting at least three feedback sessions. The remaining 19 participants were randomly assigned to either the general feedback condition (n=11) or the performance feedback condition (n=8). Of the 11 participants in the general feedback condition 36% identified as male and 64% identified as female. Of the 8 participants in the performance feedback condition 12% identified as male and 88% identified as female. An independent samples t-test was used to compare potential differences between participants in the general feedback and performance feedback conditions with regard to demographic characteristics. The independent samples t-tests revealed that participants in the general feedback condition and participants in the performance feedback condition did not differ in age, $t(17) = 1.18$, $p = .25$, $d = .58$; with regard to gender $t(17) = -1.15$, $p = .27$, $d = .55$; in grade point average $t(13) = 1.47$, $p = .17$, $d = .77$; or years of experience working with individuals with ASD, $t(14) = 1.09$, $p = .29$, $d = .55$. However, participants in the general feedback condition and participants in the performance feedback condition differed significantly with regard to years of post-secondary study, $t(7.78) = 2.99$, $p = .02$, $d = 1.10$. Specifically, participants in the general feedback condition had significantly more years of post-secondary study than participants in the general feedback condition. It is not likely that this difference influenced the results as the participants were all undergraduate students. If this difference were to influence the data, the change would have been in the opposite direction of what was found. So, while there was a statistically significant difference between the two groups in years of post-secondary study, there is no reason to think this difference is practically significant. See Table 1 for descriptive statistics of participants' demographic characteristics.

Table 1

Descriptive Statistics of Participants

	Age		GPA		PSS		ASD Experience	
Condition	*n*	*M* (SD)	*n*	*M* (SD)	*n*	*M* (SD)	*n*	*M* (SD)
General Feedback	*11*	*20.18*(2.04)	*10*	*3.31*(.61)	*8*	*2.75*(2.19)	*8*	*.44*(.73)
Performance Feedback	*8*	*19.25*(1.04)	*5*	*2.78*(.76)	*8*	*.38*(.52)	*8*	*.13*(.35)

Note. Grade Point Average (GPA), Years of Post-Secondary Study (PSS), Autism Spectrum Disorder (ASD)

Research Design and Data Analysis

The present study used a between groups design to evaluate potential differences between the performance feedback and general feedback conditions. Independent samples *t*-tests were used to compare differences between these two conditions.

Additionally, behavioral skill acquisition was evaluated utilizing a single-subject A-B-C-D design replicated across participants. Consistent with the conventions of single-subject research design, participants were required to demonstrate stability in baseline trials in order to advance to the intervention phase. Criteria for stability included a minimum of three data points with a descending or zero trend, low levels of variability, and low to moderate levels of accuracy in baseline with higher levels of accuracy expected in subsequent phases. As visual inspection is the primary means by which single-subject design data is evaluated, agreement between at least

two researchers was necessary prior to making a final determination of stability. Each data point represented the participants' overall accuracy per session. One session was represented by the completion of the puzzle in its entirety and was comprised of five prompting trials. Visual inspection was used to examine participants' prompting skill acquisition, to analyze change in level, trend, and latency to respond to training, and to calculate the percentage of non-overlapping data points.

Interobserver Agreement

Reliability of the data coding was established prior to beginning the study. Specifically, research assistants were trained how to code participants' responses across all levels of prompting using training videos. Interobserver agreement of at least 80% was established prior to data collection. Throughout the study, periodic checks of interobserver agreement were taken to ensure a level of reliability of at least 80%.

To assess Interobserver agreement on prompting skill accuracy, data were collected by a second independent observer for 60% of the sessions across conditions. An agreement was scored when both observers indicated that a prompting skill step had or had not been completed correctly during a session. Agreement was calculated by dividing the total number of agreements by the total number of agreements and disagreements and then multiplying by 100%. Agreement averaged 98% across all the participants. The agreement ranged from 88% to 100%.

Materials

Researchers provided an informed consent document to all participants that discussed the role of the participant and the researchers during the experiment, the voluntary nature of the study, and any risks and benefits that were associated with participation in the study. Researchers presented participants with a demographic survey that included the participant's age, gender,

grade point average, major, years of post-secondary study, and years of experience working with individuals with ASD (see Appendix A for details). This information allowed researchers to determine if the two groups differed on any important demographic characteristics.

A brief training video demonstrating the use of an increasing assistance prompting procedure, developed by the researchers was used as the primary training stimulus. This training video was presented via a laptop computer.

Several simple puzzles were used as stimulus materials so that participants could complete the experimental task. A procedural script was used to assure that each participant is exposed to equivalent training environments and to enhance the likelihood that data were collected in a controlled, systematic manner (see Appendix B for details). Another script included details on the types of responses the confederate delivered during the training trials (see Appendix C for details). Additionally, a feedback script for the performance feedback and general feedback conditions was used to help research assistants provide consistent feedback across all participants (see Appendix D for details).

An observational data collection sheet and Microsoft Excel software (2015) were used to record all participant responses and monitor progress throughout the training (see Appendix E for data sheet).

At the completion of data collection, participants had the opportunity to complete a treatment acceptability questionnaire so as to promote the researchers' understanding of the training process as perceived by the participant (see Appendix F for details).

Measures

Demographic Information Sheet

The demographic information sheet solicited information regarding a participant's age, gender, grade point average, undergraduate major, years of post-secondary study, and number of years of experience working with individuals with ASD. This demographic information assisted researchers in obtaining descriptive information about the participant population.

Increasing Assistance Prompting Checklist. The increasing assistance prompting checklist was used to evaluate participants in the baseline phase, intervention phases, and maintenance phase. For each session of five trials, participants were evaluated on the completion of five steps: providing the initial instruction, pausing for the learner's response, delivering the correct prompt, performing the prompt correctly, and delivering immediate and specific reinforcement. Therefore, participants could have potentially earned up to 25 points per session (5 steps x 5 trials). The five steps are described in detail below.

Step one is the initial instruction. Initial instructions involve providing the confederate learner with the appropriate verbal direction. That is, the direction must instruct the learner to perform the proper task and be delivered in a concise manner so as to reduce the amount of language for the learner to process. Further, initial instructions should be phrased as a statement rather than a question. Examples of appropriate initial instructions include, "do puzzle," or "put in." Examples of inappropriate initial instructions include, "please put this puzzle together," or "can you do the puzzle?" All instructions phrased as a question and instructions that are longer than four words were scored as incorrect.

Step two is pausing for learner's response. Pausing for the learner's response involves waiting for the learner to response three to five seconds after the initial instruction is delivered.

This pause allows the learner time to process the direction and begin to complete the instruction independently. An example of an appropriate pause includes waiting three to five seconds after the initial instruction is delivered before delivering a prompt or providing reinforcement. Non examples of appropriate pauses include providing a prompt or reinforcement before three to five seconds has passed after the initial instruction has been delivered. Research assistants scored a failure to pause three to five seconds post the delivery of the initial instruction as incorrect.

Step three is delivering the correct prompt. After the initial instruction has been provided, the participant has waited three to five seconds for a response and the learner has either not responded or responded incorrectly, the appropriate prompt must be provided. The increasing assistance prompt hierarchy involves four prompts: verbal, gestural, modeling and physical. When providing increasing assistance prompts, the least intrusive prompt should be provided first with more intrusive prompts provided thereafter if necessary. Therefore, the order in which prompts are delivered is essential. Verbal prompts must be delivered before gestural prompts, which must be delivered before modeling prompts, and so on. In addition, after each prompt is delivered, the learner must be provided three to five seconds to process the direction. Examples of delivering the correct prompt in the increasing assistance hierarchy include delivering a verbal prompt after the initial instruction if no response or the incorrect response was made, pausing three to five seconds and then moving up the prompt hierarchy if no response or an incorrect response is made once more. Non examples of delivering the correct prompt in the increasing assistance hierarchy include delivering prompts in the incorrect order (i.e., beginning with modeling rather than a verbal prompt), or neglecting to pause three to five seconds between prompts. If prompts were delivered in the incorrect order or learners were not allowed three to five seconds time to process the prompt, this item on the checklist was scored as incorrect.

Step four is performing the prompt in the correct manner. In addition to delivering the prompts in the correct order, the prompt must also be delivered in the correct manner. Delivery of an appropriate verbal prompt involves repeating the initial instruction (i.e. "Do puzzle). Providing an appropriate gestural prompt involves pointing or motioning to the task while simultaneously delivering the appropriate verbal prompt, whereas modeling involves demonstrating the task for the learner while also delivering the appropriate verbal prompt. Physical prompts involve gentle physical guidance of the learner's body to complete the task while simultaneously providing the verbal prompt. If verbal prompts were delivered using language that differs from the initial instruction (i.e. the initial instruction was to "put in" and the participant's verbal prompt is "do puzzle") the item was scored as incorrect. If gestural or modeling prompts were delivered in a manner inconsistent with the task (i.e. a gesture for the learner to stand up rather than attend to the puzzle is provided, or a model of taking a puzzle piece out rather than putting a piece in is provided) the item was also scored as incorrect. Additionally, physical prompts were scored as incorrect if a learner was guided to complete a task inconsistent with the verbal instruction, or if the learner was forcefully assisted to complete the task. Finally, if a verbal prompt was not provided in conjunction with more intrusive prompts, the item was scored as incorrect.

Step five is: delivering reinforcement. The final step is delivering appropriate reinforcement to the learner. Reinforcement involves providing the learner immediate and specific praise for completing the task appropriately. Examples of appropriate reinforcement include "good doing puzzle!" or "nice putting in!" whereas non-examples of reinforce include "good job," or "that's it." It is important that reinforcement for the correct response is only provided after the learner has engaged in the correct response and that it comes within five

seconds of the completion of the task. Therefore, if reinforcement was provided without prompting the learner to engage in the correct task, was non-specific, or delivered more than five seconds after the learner correctly completes the task, the item was scored as incorrect.

Treatment Acceptability Questionnaire

The treatment acceptability questionnaire was comprised of six questions adapted from Logue (2014). A 7-point Likert scale with descriptors ranging from not at all acceptable to very acceptable, not at all willing to very willing, not at all beneficial to very beneficial, and strongly disagree to strongly agree was used to determine a participant's attitude toward the prompting strategy training.

Research Assistant Training

Research assistants were trained to collect data and to serve as confederate learners. In order for each research assistant to be cleared to collect data they watched and scored three videos in which a learner demonstrated both correct and incorrect prompting skills. Research assistants were required to score these videos with at least 80% accuracy before they could work with participants. In order to achieve this level of accuracy, discussions on differences in scoring were held during training. To ensure reliability of data collection during the experiment, research assistants were instructed only to advance a participant to the next stage of training if they had an IOA accuracy of 80%.

Research assistants were then trained to serve as the confederate learner. This required them to follow a script that instructed them to make the correct response once the participant had delivered the correct prompt. For example, if a confederate learner's script instructed them to comply with a verbal prompt, they would not respond to the participant's first instruction, but they would correctly respond to the participant's second verbal instruction. Confederate learners

did not engage in any challenging behaviors (i.e. throwing or elopement) during data collection. During each session, both research assistants coding data and the confederate learner had access to the same script. To ensure that confederate learners provided each participant with an opportunity to demonstrate each prompt level, assistants coding data checked in with the confederate learner before each session to confirm their script.

Procedure

Baseline. Upon the participants' arrival to the laboratory, researchers verbally explained the informed consent document, allowed the participants to read the informed consent document, clarified any questions or concerns the participants had about the experimental procedures, and provided an opportunity for the participant to give or decline consent. Next, researchers asked participants to complete a short demographic survey. After the survey was completed, one research assistant instructed the participant to sit in a chair across from the confederate learner. The two research assistants then sat in chairs side by side on one end of the table, so they sat perpendicular to the participant and the confederate learner. A researcher presented the puzzle and gave the participant the instruction, "Teach the learner to complete the puzzle in whatever way you know how. You have five attempts or four minutes to do so." The two research assistants then marked the correct number of steps the participant implemented on their data collection checklists, while the confederate learner followed a response script. The response script instructed the confederate learner to make responses that required the participant to demonstrate each prompt (e.g. verbal, gestural, modeling, physical, and a correct response) in the hierarchy once within each of the three baseline sessions. For example, during each session of five trials, the confederate learner made one response requiring a verbal prompt, a gestural prompt, a modeling prompt, a physical prompt, and one correct response requiring no prompt. If

a participant provided an unclear prompt, researchers and the confederate learner counted each attempt as a prompt; however, if a participant provided a physical prompt at an incorrect time, the confederate learner did not resist. No feedback was provided during baseline trials. After the participants had either made five responses or allowed two minutes to elapse, researchers removed the puzzle and determined the participant's accuracy for that session. Accuracy was calculated as a percentage; researchers divided the number of checklist criteria met by the total number of checklist criteria and multiplied this number by 100. At minimum, researchers conducted three baseline probes. Additional baseline probes were conducted if necessary to establish a stable rate of participant responding. Once the participants had attained a stable rate of responding, having completed at least three baseline probes, they moved to the intervention phase.

Intervention

Following baseline, research assistants randomly assigned participants to a condition in which either performance feedback or general feedback was provided during the training process. Participants in both feedback conditions were given the goal to achieve mastery of the following skills, that is, to perform all skills with at least 90% accuracy within an hour and a half. Next, participants in both conditions were instructed to watch a brief training video on how to implement an increasing assistance prompt hierarchy with individuals with ASD. The video defined prompting strategies, explained why they are important, described the five prompts that comprise an increasing assistance prompting hierarchy, and outlined the increasing assistance prompting procedure. In addition, the video included a brief demonstration of each prompt hierarchy step with a confederate learner and an example of an increasing assistance prompting procedure used when working with a child with ASD. Following the brief video training,

researchers, again, presented the puzzle used in baseline and told participants to, “Teach the learner to complete the puzzle using the increasing assistance prompting procedure, you have 5 attempts to do so.” Researchers recorded each participant’s response, and evaluated the participants’ accuracy in the same manner as was used in baseline data collection. In order to establish a stable rate of responding following video training, participants completed a minimum of three sessions before receiving either performance feedback or general feedback. Additional sessions were conducted if necessary to establish a stable rate of responding. Following completion of the task, either performance feedback or general feedback was delivered as follows.

Performance Feedback Condition

In the performance feedback condition, participants were provided with immediate verbal and visual feedback on the implementation of the prompting hierarchy. The first feedback session was based on the participants’ performance across the previous three sessions after viewing the brief video training. While subsequent feedback sessions were based on the participants’ performance on the single session they had completed immediately after the previous feedback session. Researchers first showed participants a graph of their performance on baseline and intervention trials. Next, researchers provided supportive feedback by praising the participants for the steps they completed correctly (i.e. “Nice work providing positive, specific reinforcement after the learner made the correct response”). Subsequently, researchers provided constructive feedback by acknowledging the steps the participant missed or completed incorrectly (i.e. “Remember to wait 3-5 seconds for the learner to respond before providing a prompt”). The researchers then modeled the correct implementation of the step(s) the participant missed or performed incorrectly, allowed time for the participant to ask any questions about the

implementation of the step(s), and instructed the participant to rehearse the step(s) they missed or completed incorrectly one time. If the participant incorrectly rehearsed a step, the research assistant immediately interrupted this rehearsal, provided constructive feedback, and requested that the participant complete the step again. If the participant correctly rehearsed the step after their first try or after receiving more immediate correction, the research assistant acknowledged the correct response by saying, "Good" or "That's right." Performance feedback was provided after all sessions, including those sessions during which the participant reached mastery criteria. When the participants performed the increasing assistance prompting procedure with an accuracy of 90% or higher, for three consecutive sessions, if they had tried 10 times, or until hour and a half allotted for their participation has passed, they arranged to come back to the laboratory in one week for a follow up condition and were dismissed.

General Feedback Condition

After each session, participants in the general feedback condition were provided with general statements regarding what step(s) they performed well (e.g. Good job using specific praise statements) and which step(s) they missed or performed incorrectly (e.g. "Remember to gain the learner's attention before delivering the initial instruction). Participants did not view a graphical representation of their performance, watch the researcher model the step(s) they missed or performed incorrectly, rehearse the steps they missed or performed incorrectly, or receive an opportunity to ask specific questions about the prompting procedure. Just as in the performance feedback condition, when the participants performed the increasing assistance prompting procedure with an accuracy of 90% or higher for three consecutive sessions, if they had tried 10 times, or until the hour and a half time slot for their participation has passed, they arranged to come back to the laboratory in one week for a follow up condition and were dismissed. General

feedback was provided after all sessions, including those sessions during which the participant reached mastery criteria.

Maintenance

Participants were asked to return to the laboratory one-week post training and instructed to, "Teach the learner to complete the puzzle using the increasing assistance prompting procedure." Researchers recorded each participant's response and evaluated the participants' accuracy in the same manner as was used in baseline and intervention data collection. Data was only collected for three, five trial sessions and participants were not provided feedback following this session.

At the conclusion of the study, all participants completed a treatment acceptability questionnaire, were told additional details of the study, thanked for their participation, and compensated for their time. Participants who signed up via Illinois State University's Research Participation Sign-Up system received extra credit, while participants who signed up for the study after hearing about it through their advisor or instructor simply gained experience with a new strategy or course credit.

CHAPTER III: RESULTS

Data Analysis

The researchers first asked which feedback condition, general feedback or performance feedback, would lead to the most efficient learning. Researchers hypothesized that participants who received performance feedback on their implementation of the least to most prompting procedure would demonstrate the most efficient learning. An independent samples *t*-test was used to compare potential differences between participants in the general feedback and performance feedback conditions with regard to the number of sessions needed to reach mastery criteria. The independent samples *t*-test revealed a non-significant difference in the number of sessions needed to reach mastery criteria, $t(1.94) = 1.94$, $p = .08$, $d = .83$ between the general feedback condition ($M = 8.64$, $SD = 3.32$, $N = 11$) and the performance feedback condition ($M = 6.63$, $SD = .744$, $N = 8$). That is, participants who received the performance feedback did not demonstrate more efficient learning in acquiring the increasing assistance prompt hierarchy skill than participants who received general feedback. The researchers' first hypothesis was not supported.

The second research question focused on which feedback format would lead participants to demonstrate higher maintenance of prompting skills one-week post skill acquisition. Researchers hypothesized that participants who received performance feedback would maintain higher levels of prompting skills at one week post initial skill acquisition session when compared to participants who received general feedback. To analyze the second hypothesis, an independent samples *t*-test was used to compare potential differences between the participants in the general feedback and performance feedback conditions with regard to average accuracy score during maintenance sessions. The independent samples *t*-test demonstrated that participants in the

general feedback condition (M = .79, SD = .15, N = 6) and participants in the performance feedback condition (M = .96, SD = .04, N = 4) differed in their average accuracy score during maintenance sessions, $t(8) = -2.28$, p = .05, d = 1.63. Thus, participants who received performance feedback demonstrated a greater average accuracy score during follow-up sessions one week post initial skill acquisition than participants who received general feedback. The researchers' second hypothesis was supported.

Interestingly, there was also a significant difference between individuals in the general feedback condition (M = .87, SD = .12, N = 11) and individuals in the performance feedback condition (M = .96, SD = .04, N = 8) with regard to average skill accuracy at the completion of the feedback phase $t(12.27) = -2.27$, p = .04, d = .98. On average, participants who received performance feedback demonstrated prompting skills with a greater overall accuracy than those in the general feedback condition. However, most importantly, their average skill accuracy did not decline from the feedback to maintenance phase.

Finally, researchers asked which feedback format would be rated as most acceptable by participants. Investigators hypothesized that participants in the performance feedback condition would demonstrate higher acceptability ratings than those in the general feedback condition. The third hypothesis was analyzed using an independent samples t-test Specifically, researchers used this statistical method to compare the potential differences between participants' ratings of training format acceptability in the general feedback and performance feedback conditions. The independent samples t-test indicated that participants in the general feedback condition (M = 5.19, SD = .55, N = 6) and participants in the performance feedback condition (M = 5.10, SD = .45, N = 4) did not differ in their acceptability rating of training format, $t(9) = .306$, p = .77, d = .19. Thus, there was no difference in the acceptability ratings between participants in the general

feedback condition and participants in the performance feedback condition; on average, individuals in both groups rated this training as moderately acceptable. The researchers' third hypothesis was not supported. Although there was no statistical difference between these two groups, it is important to state that on average individuals in the general feedback condition *(M* = 3.6) and in the performance feedback condition (*M* = 3.8) only felt somewhat confident using this skill.

Visual Analyses

Although the first and third hypotheses were not supported, visual analysis was used to examine other notable features across feedback conditions. Individual graphs and detailed descriptions of these graphs are provided in Appendices G, H, I, J, and K. For ease of digesting the single-subject design data, graphs are grouped by condition and performance in the following figures. Figure 1 depicts graphs of participants in the general feedback condition who did

complete maintenance trials and Figure 2 depicts graphs of participants in the general feedback

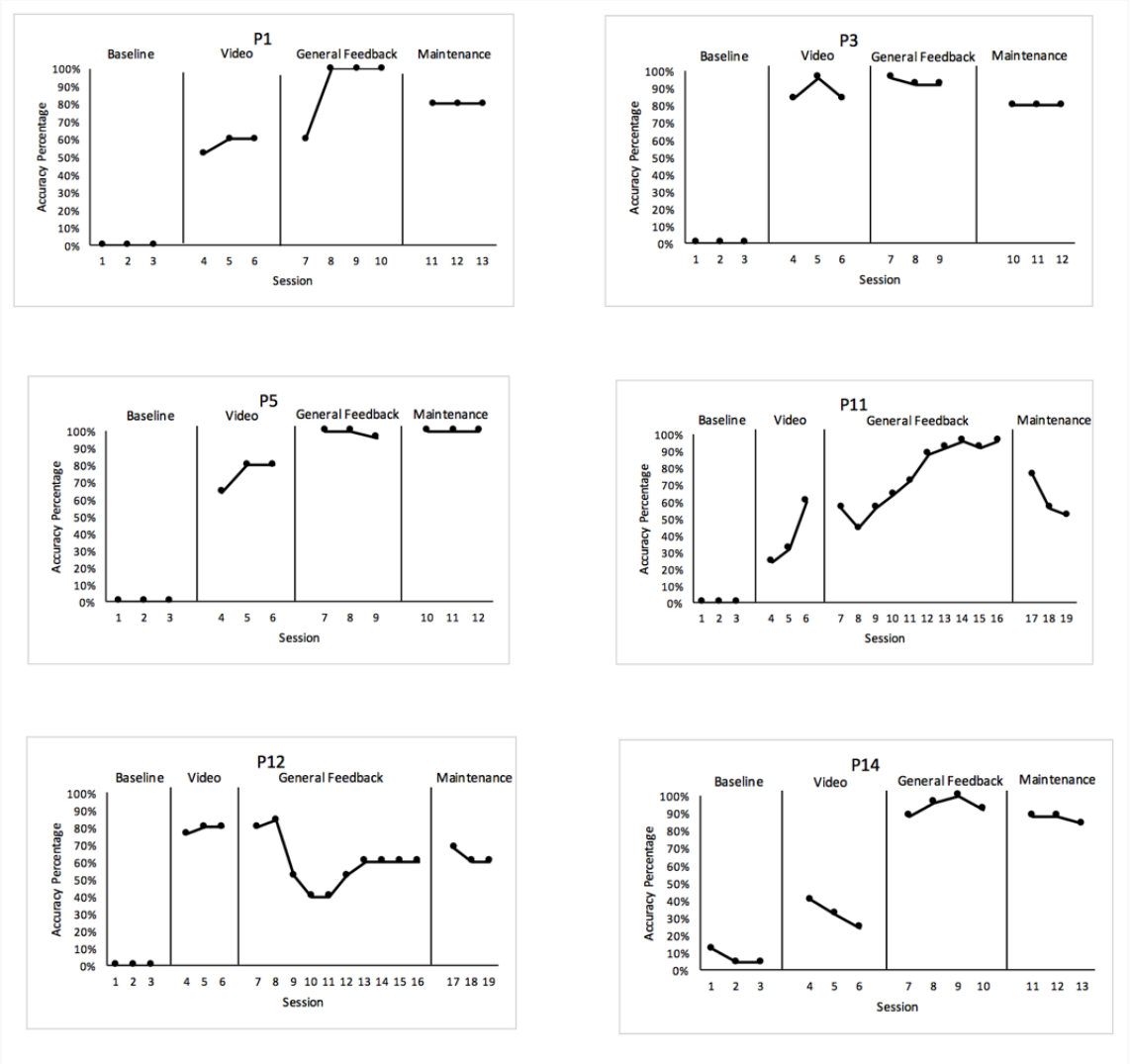

Figure 1. General feedback with maintenance. Each graph depicts performance of one participant. Sessions are depicted on the abscissa and accuracy percentage on the ordinate.

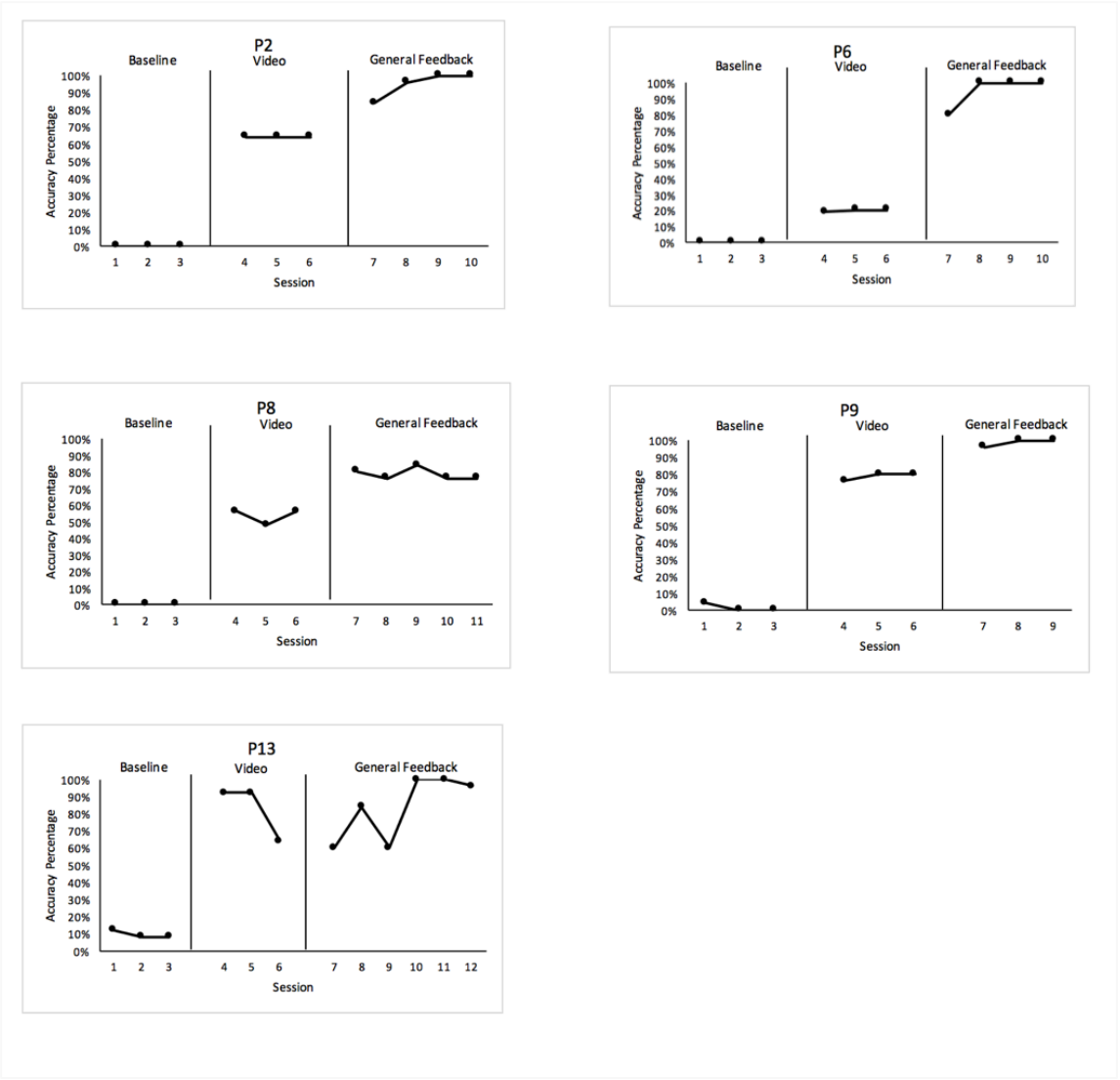

Figure 2. General feedback without maintenance. Each graph depicts performance of one participant. Sessions are depicted on the abscissa and accuracy percentage on the ordinate.

condition who did not complete maintenance trials. Figure 3 depicts performance of individuals in the performance feedback condition that did complete maintenance trials while Figure 4 shows participants in this condition that did not return for maintenance.

Participants in both the general feedback condition and the performance feedback demonstrated an immediate increase in skill level between video and feedback conditions.

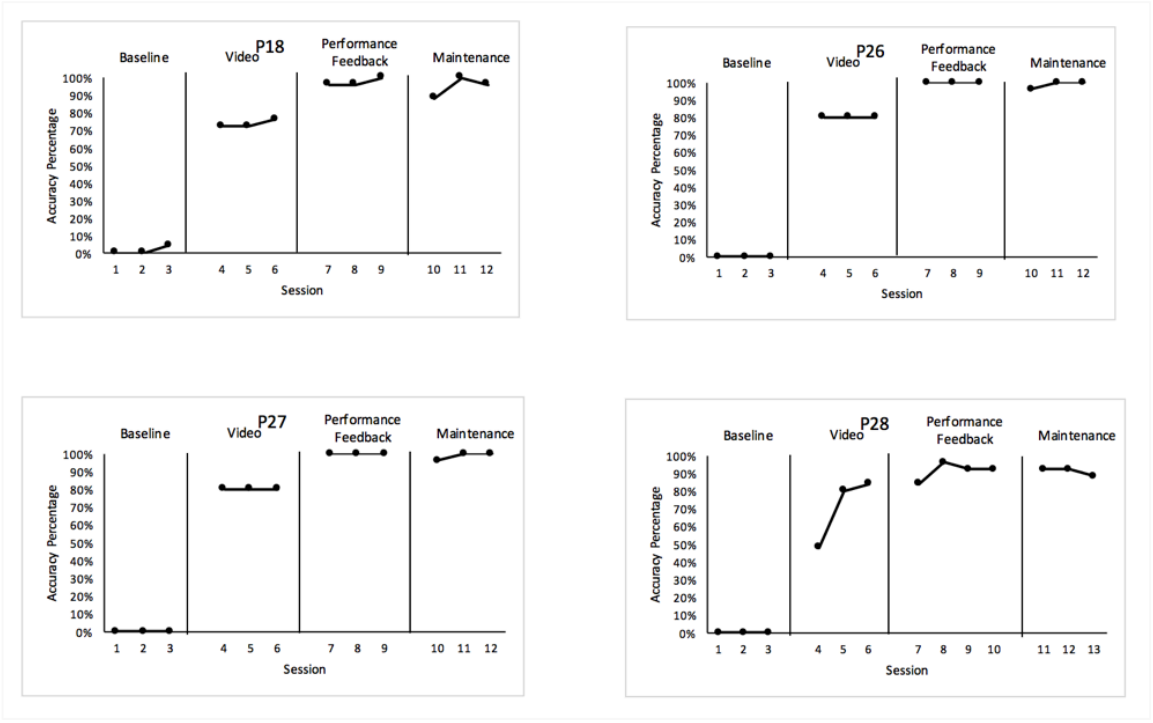

Figure 3. Performance feedback with maintenance. Each graph depicts performance of one participant. Sessions are depicted on the abscissa and accuracy percentage on the ordinate.

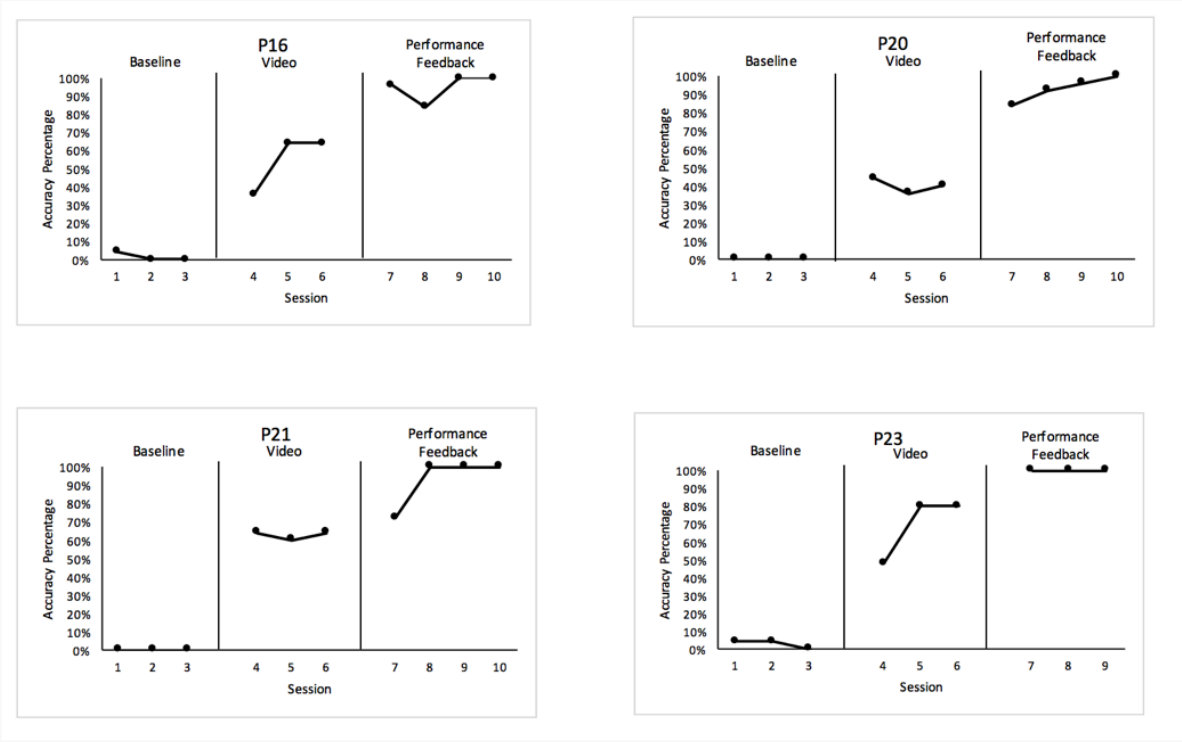

Figure 4. Performance feedback without maintenance. Each graph depicts performance of one participant. Sessions are depicted on the abscissa and accuracy percentage on the ordinate.

However, four out of 11 participants in the general feedback condition required six or more sessions of feedback prior to demonstrating mastery criteria; whereas, no participants in the performance feedback conditions required more than four sessions of feedback to meet mastery criteria. Notably, two individuals in the general feedback condition never reached mastery criteria, while all participants in the performance feedback reached mastery criteria. In the general feedback condition, three participants demonstrated a decreasing trend in performance during the feedback phase; however, individuals in the performance feedback condition only demonstrated an increasing trend during the feedback phase or an immediate increase in level with a stable trend at 100% accuracy.

With regard to participant performance during maintenance, one out of six participants who received general feedback maintained least to most prompting skills; whereas, two out of four participants maintained least to most prompting skills in the performance feedback condition. Three of the participants in the general feedback condition demonstrated a decreasing trend in performance during maintenance compared to one participant in the performance feedback condition. In addition, during the maintenance condition there was slightly less variability in the performance of participants who received performance feedback rather than general feedback.

Finally, it is worth describing the performance of individuals who met mastery criteria immediately after watching the training video (see Figure 5). Individuals in this group demonstrated an immediate increase in level above 90% accuracy following their viewing of the training video. Everyone in this group maintained the least to most prompting skill set at 100% accuracy. Interestingly, all participants who fell in this category returned for maintenance trials. While four out of the 28 participants met mastery criteria within three sessions following the brief training video, four more participants demonstrated an increasing trend in their performance with some sessions at or above 90% accuracy. Data from these participants was excluded as they were transitioned to the feedback condition without reaching a stable rate of responding. Therefore, it is unclear whether or not they would have reached mastery criteria with simply more sessions and without any feedback.

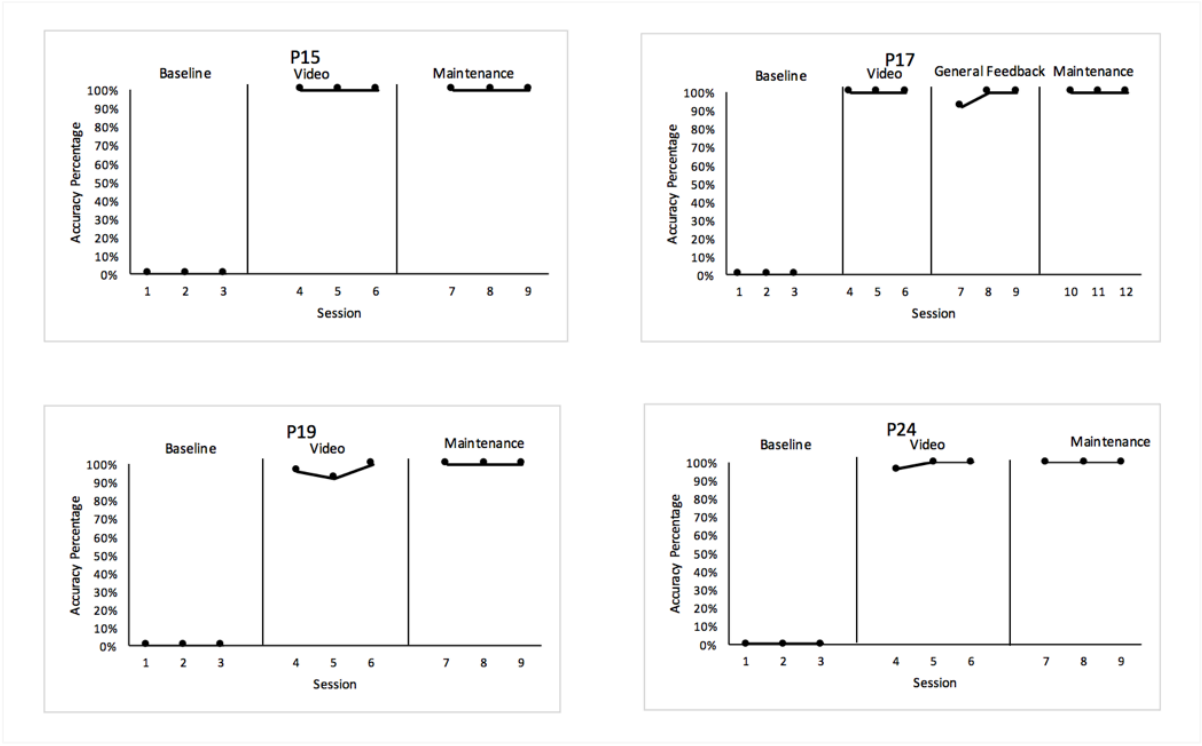

Figure 5. Mastery following watching the brief training video. Each graph depicts performance of one participant. Sessions are depicted on the abscissa and accuracy percentage on the ordinate.

CHAPTER IV: DISCUSSION

This research was designed to augment the existing literature on effective, behavioral skill trainings for educators who deliver evidenced based interventions to children with ASD. Specifically, this study provides data on how two differing types of supportive training, general feedback and performance feedback, influenced the efficiency of participants' prompting skill acquisition, the maintenance of their skills over time, and the acceptability of their training experience. Based on data analyses, several conclusions were drawn and inferences made on the efficiency, the accuracy of skills maintained, and the acceptability of each training strategy.

The first research question examined differences in the efficiency of skill acquisition between individuals in both the performance feedback condition and the general feedback condition. Researchers hypothesized that participants in the performance feedback condition would reach mastery criteria in fewer sessions than participants in the general feedback condition; however, the data indicated that participants performed similarly regardless of the feedback condition. That is, both types of feedback were effective and skills were acquired in similar amounts of time. Although previous research has found performance feedback to be more effective than general feedback in behavioral skills training (Codding et al., 2005; McKenney & Bristol, 2014), data from this study found that neither feedback condition was superior. One potential reason for the differences between the results of this study and prior studies may have to do with the complexity of the skills learned. For example, in a prior study where performance feedback was found to be a superior method, participants were expected to demonstrate behavioral skills across multiple students and tasks (McKenney & Bristol, 2014). In the current study, participants focused on learning just one, relatively simple task with a confederate learner. It is possible that task complexity may interact with feedback type such that general and

performance feedback produces similar results for simpler tasks, but performance feedback is superior to general feedback for more complex tasks. Future research may examine this possibility by comparing the efficiency of performance and general feedback using tasks that range from simple to complex.

Another possible reason that there were no differences between the efficiency of performance and general feedback is that the sample size of participants was too small for larger mean differences to be detected. The single-subject data provides support for this notion. Specifically, two participants in the general feedback condition (see Figure 1, graphs from Participants 11 and 12), had noticeably longer training times (10 sessions compared to an average of 3 for others) than other participants. Despite these multiple feedback sessions, one of these participants (Participant 12) did not reach mastery criteria within the hour and a half time period allocated for acquisition. Additionally, another participant in the general feedback condition discontinued participation after receiving feedback six times without noticeable improvement in their performance. This finding is contrasted against participants in the performance feedback condition who required no more than four feedback sessions to reach mastery criteria. Perhaps, the general feedback format these participants received was inadequate to improve their understanding of how to perform the prompting skills more accurately. As general feedback did not include viewing a graph of their performance, modeling, or rehearsal, it is possible that what participants needed to do to alter their performance was unclear with verbal feedback alone. Given that the most effective behavioral skills trainings make use of these additional teaching modalities, simply providing verbal feedback may not have been enough to help participants improve performance (Parsons et al., 2012). Another explanation may point to individual differences such as motivation or task comprehension. Individuals are likely to

demonstrate behavior change when they are motivated to do so (Rubak, Sandbæk, Lauritzen & Christensen, 2005). Therefore, some participants may have been more motivated to learn and perform these skills accurately. Another possible individual difference may have been the degree to which an individual understood the task. Perhaps the training may have been more clear to some participants than others.

A second interesting finding was that four participants reached mastery criteria within the three sessions following their viewing of the brief, instructional video. This information suggests that for some individuals the instructional video was sufficient in teaching the least to most prompting skill set. Further, this finding may have been more robust if it had not been for experimenter error as another four participants demonstrated an increasing trend in their prompting performance during this phase. It is possible, that given more sessions, these participants would have also reached mastery criteria after watching the video alone. This finding is supported by previous research on effectiveness of video-modeling in teaching other behavioral skill sets to novice learners (Catania et al., 2009; Moore & Fisher, 2007). Excitingly, these data encourage researchers and practitioners to make video instruction the first step in teaching behavioral skills. Video modeling can be a cost effective and consistent technique in training human service providers in both individual and group formats (Moore & Fisher, 2007). Once a video is developed, few resources would be necessary in the training process. In addition, videos can be viewed on multiple electronic formats which would provide trainees greater flexibility for when and where they choose to engage in professional development. Overall, video training may be a very practical way to jump start behavioral skill development. In the future, it would be beneficial to understand whether or not repeated viewing of instructional

videos without live feedback may also lead participants to demonstrating mastery of behavioral skills.

Notably, a majority of participants in both feedback conditions reached mastery criteria within approximately 45 min., a relatively brief time period in comparison to the one and a half to eight-hour time period cited in previous studies on behavioral skill acquisition (Downs, Downs, & Rau, 2008; LeBlanc et al., 2005). The brevity of this training is important to emphasize as organizations, such as schools, that expect human services providers to employ evidence based techniques often have a limited amount of time to facilitate their skill development (Wallace, Shin, Bartholomay, & Stahl, 2001). Offering a time effective solution may enhance the likelihood that learners are able to implement evidence based techniques with increased integrity.

Finally, even though this study did not find statistically significant differences between general feedback and performance feedback conditions, there is strong evidence from visual analyses to indicate practically significant distinctions between these two feedback formats. That is, all individuals in the performance feedback condition met mastery within four feedback sessions, whereas multiple individuals in the general feedback condition required six or more sessions to do so. Paired with other visual analysis findings such as the failure of two participants in the general feedback condition to reach mastery, performance feedback demonstrated strong clinical utility. This finding may be practically important to school districts and clinics in the training of human service providers.

The second research question explored which feedback method would lead to a higher maintenance of prompting skills at a one-week follow up. Previous research has demonstrated that participants who received performance feedback on implementing behavior support plans

did so with high levels of treatment integrity weeks following their training (Codding et al., 2005). The present researchers predicted that participants who would maintain higher levels of prompting skills at a one-week follow-up would be those who had received performance feedback rather than general feedback. The current data support this hypothesis. Therefore, when asked to demonstrate least to most prompting skills one-week post training, specific verbal feedback paired with visual representations of progress, modeling, and rehearsal led individuals to display prompting skills to a more accurate degree and with greater consistency than people who simply received specific verbal feedback. This evidence implies that performance feedback will help individuals achieve a high level of treatment integrity one-week post training.

Practitioners would likely benefit from continued research in this area. Specifically, future researchers might ask how many days, post initial training, does performance feedback lead to high levels of treatment integrity? Further, in the case that fidelity of treatment implementation does diminish over time, researcher could ask which training format best suits human service providers in booster sessions (i.e., video modeling, general feedback, performance feedback)?

The final research question centered on which feedback format would be perceived as most acceptable. In the past, supportive feedback has been included in favorably rated trainings (Parsons et al., 2012; Noell et al., 2005); however, whether or not performance feedback leads to a more acceptable training experience than general feedback had not yet been explored experimentally (Parsons et al., 2012). Data from this investigation shed light on the relative acceptability of the two different types of feedback. Ultimately, both feedback methods were rated as moderately acceptable, with no noticeable differences between the two.

As both feedback formats included elements of corrective feedback and praise, it is possible that both groups interpreted the feedback style they experienced as supportive. Prior research (Parsons et al., 2012; Noell et al., 2005) has indicated that supportive feedback is rated positively by participants. In contrast, participants' success reaching mastery criteria, independent of the feedback they received, may have influenced their perception of the training. Only participants who completed the study completed the acceptability ratings, leaving the data from participants who left the study prior to completing part two unavailable.

Another finding from satisfactory ratings indicated that participants in both groups were only somewhat confident in their ability to use these skills. This suggests that confidence and competence may be mutually exclusive, at least in short-term training contexts. One explanation for this discrepancy may be that participants were distanced from the clinical utility of this skill. In clinical work, using evidence based strategies with a high degree of treatment integrity has been shown to enhance client outcomes (Cook et al., 2010; Sterling-Turner, Watson & Moore, 2002). Had participants been able to see improvement in the confederate learner's skill development perhaps they would have felt they had been more effective teachers. It would benefit practitioners to explore this question further.

This said, previous research has found that a degree of professional self-doubt is a strong, positive predictor of patient change in psychotherapy (Nissen-Lie, Monsen, & Rønnestad, 2010). Research suggests that with proper coping strategies for this self-doubt and healthy levels of personal confidence, therapists may be more successful at prompting change; the ultimate goal (Nissen-Lie, Helge Rønnestad, Høglend, Havik, Solbakken, Stiles & Monsen, 2017). It is important that future research investigate why participants may not have felt confident using these skills and what aspects of training could be improved to help them cope with these feelings

of self-doubt. Other important questions to ask may be, do self-confidence ratings change over time and does lack of confidence over time impede performance of evidence based techniques?

Conclusions

Data from this research suggest that both general and performance feedback formats were effective in teaching the least to most prompting technique to novice learners; although, for a minority of individuals, general feedback was insufficient in helping them master these skills in the limited time frame. Surprisingly, for other individuals, the video training alone was enough to assist learners in reaching mastery criteria and maintain prompting skills. Participants in the performance feedback condition demonstrated prompting skills to a significantly higher degree than individuals in the general feedback condition at a one week follow up. Overall, participants across conditions viewed this training as moderately acceptable.

There were several strengths of this investigation. First, this study included its use of both inferential statistics and single subject design. This unique design allowed for quantitative and visual analyses which provided researchers the opportunity to examine data from multiple angles. In addition, the training format in both conditions was brief and practical enough to be used in clinical training contexts. Also, by dividing the participant's instruction into individual phases, researchers were able to evaluate the efficiency of video training and compare this to subsequent learning after receiving feedback. Finally, this study maintained high levels of interobserver agreement throughout data collection, allowing for confidence in data and conclusions.

Limitations & Future Directions

This research presented several limitations. The sample size of this study was small, limiting the ability to make statistical conclusions. To draw more confident conclusions about the

different feedback formats, it would be beneficial to dedicate increased time to recruiting and retaining a larger number of participants. It is possible that with more motivating incentives (e.g., a small gift card or a higher degree of course credit) for participation researchers may be able to recruit more individuals for studies on behavioral skills training.

Second, not all research assistants were blind to the hypotheses of this study which may have served as a confounding variable, especially when the research assistants were in the role of the confederate. That is, research assistants may have given subtle, unconscious clues to participants when they were expecting certain results. To enhance the strength of research findings in the future, it would be important that all research assistants were trained without knowledge of the purpose of the study.

Additionally, experimenter error made it challenging to draw conclusions about the efficacy of training. That is, some participants demonstrated increasing success following video instruction, and if they had been allowed to continue, may have met criteria. However, feedback was given despite the increasing trend in their success. In the future, researchers should attend to data trends as well as accuracy to make decisions regarding changing conditions.

Although this training format may have succeeded in helping participants reach mastery criteria, their perceptions of their skill acquisition indicated little self-confidence. Future researchers should ask participants how they may be able to help increase the participant's confidence with these skills and provide opportunities for participants to experience the effects of student learning directly. For example, future research may involve using this technique with a child with ASD.

Further, the sample of college students obtained may not be representative of all novice human service providers. Previous research indicates that often teachers and paraprofessionals

working in special education were apart of two disparate demographic groups. Paraprofessionals were more likely to be married, to have children, to be older than teachers, to identify as an ethnic minority, to practice an established religion and to be within a lower economic bracket (Haring, Saren, Lovett, & Shelton, 1992). To deepen understanding about how personal characteristics or identity may impact behavioral skill acquisition and training satisfaction, future research should focus on obtaining a sample more representative of individuals who are human service providers for individuals with disabilities and explore training techniques that affirm the identities of participants (Chrobot-Mason & Aramovich, 2013).

Finally, in order to learn under what conditions individuals are most likely to generalize behavioral skills to other techniques and contexts, future research should provide opportunities for generalization of the least to most prompting hierarchy to be observed (e.g., working with a child with ASD, teaching a visual schedule). Currently, there are fourteen established treatments for treating ASD (National Standards Project, 2015). Often, established treatments are used in combination with each other; therefore, clinicians are required to demonstrate one or more behavioral skills per intervention (National Standards Project, 2015). By learning about the conditions under which generalization of behavioral skills occurs, trainers may better understand how to help human service providers develop a more complete skills repertoire so as to improve the overall quality of treatment for individuals with ASD.

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APPENDIX A: DEMOGRAPHIC SURVEY

Age: _____
Gender: _____
Major: _____
GPA: _____
Years of post-secondary study: _____
Years of experience working with individuals with ASD: _____

APPENDIX B: PROCEDURAL SCRIPT

Phase A: Baseline
1. Provide participant with the informed consent document.
2. Provide participant with the demographic survey.
3. Arrange lab space by seating one research assistant across the table from the participant and two research assistants at the end of the table.
4. Present participant with puzzle and say, *"Teach the learner to complete the puzzle in whatever way you know how. You have five attempts or four minutes to do so."*
5. After the participant has made five attempts or four minutes has elapsed, remove the puzzle and record data.
6. Repeat steps 4 and 5 until at least three data points are collected and there is a stable rate of responding.

Phase B: Video Instruction
1. Say, *"Now you are going to watch a brief video on how to implement an increasing assistance prompting procedure. This will help you teach the learner how to make the puzzle. Over the next two hours, your goal is to perform the skills you are about to see with at least 90% accuracy."*
2. Play video.
3. Present the puzzle and say, "*Teach the learner to complete the puzzle using the increasing assistance prompting procedure, you have 5 attempts to do so."*
4. After the participant has made 5 attempts, collect the puzzle and record the data.
5. Repeat steps 3 and 4 until at least three data points are collected and there is a stable rate of responding.

Phase C: Performance feedback
1. Show the participant the graph of their progress and explain the average accuracy percentage for phase A and B.
2. For first feedback session, provide specific praise and supportive feedback for skills performed correctly and incorrectly based on performance across the last three sessions in phase B using the feedback script. For all future feedback conditions base feedback on performance on the last session completed in phase C using the feedback script.
3. Model the correct implementation of the step(s) they missed or completed incorrectly.
4. Ask the participant to rehearse the steps they missed or completed incorrectly.
*Immediately interrupt incorrect rehearsals, use feedback script to provide constructive feedback and instruct the participant to continue their 3 rehearsals.
5. Start the next session by presenting the puzzle and saying, *"Teach the learner to complete the puzzle using the increasing assistance prompting procedure, you have 5 attempts to do so."*
6. After the participant has made 5 attempts, collect the puzzle and record the data.
7. Repeat steps 1 through 6 until participant has completed three sessions at 90%, after two hours or ten sessions.
8. Schedule a time in one-week for the participant to come back for maintenance.

Phase C: General Feedback
1. Provide participants with general praise statements using script and provide a reminder about steps completed incorrectly using script.

2. Start the next session by presenting the puzzle and saying*, "Teach the learner to complete the puzzle using the increasing assistance prompting procedure, you have 5 attempts to do so."*
3. After the participant has made 5 attempts, collect the puzzle and record the data.
4. Repeat steps 1 through 4 until participant has completed three sessions at 90%, after two hours or ten sessions.
5. Schedule a time in one-week for the participant to come back for maintenance.

Maintenance
1. Present the puzzle and say, *"Teach the learner to complete the puzzle using the increasing assistance prompting procedure, you have 5 attempts to do so."*
2. After the participant has made 5 attempts collect the puzzle and record the data.
3. Be sure to thank the participant for their time.

APPENDIX C: CONFEDERATE SCRIPT EXAMPLE

Script 1

Trial 1	Trial 2	Trial 3	Trial 4	Trial 5
P (5)	M (4)	+ (1)	G (3)	V (2)

APPENDIX D: FEEDBACK SCRIPTS

PERFORMANCE FEEDBACK SCRIPT EXAMPLE

Initial Instruction

Praise Statement:

"Great job delivering the instruction as a statement."

Feedback Script:

(1) "Remember to phrase the instruction as a statement."
(2) "For example, 'Make puzzle.'"
(3) "Let's practice."
(4) Place the puzzle in front of them and say, "Give them an instruction using a statement."
(5) If participant answers correctly say, "Good" or "That's right"
(6) If participant answers incorrectly, interrupt, repeat (1) and say, "Give them an instruction using a statement."

Pause

Praise Statement:

"Nice job waiting three to five seconds for the learner to respond."

Feedback Script:

(1) "Remember to pause 3-5 seconds before providing a prompt."
(2) "For example, 'Make puzzle, and count in your head 1,2,3,4,5'"
(3) "Let's practice."
(4) Place puzzle in front of them and say, "Give the learner an instruction then pause 3-5 seconds."
(5) If participant answers correctly say, "Good" or "That's right"
(6) If participant answers incorrectly, interrupt, repeat (1) and say, "Give the learner an instruction then pause 3-5 seconds."

Correct Prompt

Praise Statement:

"Great job remembering to deliver the prompts in order and pausing 3 to 5 seconds after each prompt."

Feedback Script:

(1) "Remember to perform the prompts in the correct order."
(2) "For example, if they get it on the first try, I wouldn't give a prompt. But if they don't get it on the first try, first, I would say, 'make puzzle', second I would say, 'make puzzle'

and point, third, I would say, 'make puzzle' and show them how to do it, and fourth I would say make puzzle and physically guide their hand."
(3) "Let's practice."
(4) Place puzzle in front of them and say, "Explain or show me how you would give the prompts in order."
(4) If participant answers correctly say, "Good" or "That's right."
(5) If participant answers incorrectly, interrupt, repeat (1) and say, "Explain or show me how you would give the prompts in order."

Correct Prompt Performance

Praise Statement:
"Nice work remembering how to perform each prompt."
Feedback:
(1) "Remember, a verbal prompt means you repeat the first direction you give."
(2) "For example, if I say 'make puzzle' as the first direction, the verbal prompt would be 'make puzzle.'
(3) "Let's practice."
(4) "Give an example of a correct/verbal/gestural/modeling/physical prompt."
(5) If participant answers correctly say, "Good" or "That's right."

(6) If participant answers incorrectly, interrupt, repeat (1) and say, "Give an example of a correct/verbal/gestural/modeling/physical prompt."

Reinforcement

Praise Statement:
"Good job giving immediate, specific praise."
Feedback:
(1) "Remember to give immediate, specific feedback." For example, "Great job making puzzle."
(2) "Let's practice."
(3) Place puzzle in front of them and say "Give immediate, specific praise"
(4) If participant answers correctly say, "Good" or "That's right"
(5) If participant answers incorrectly, interrupt, repeat (1) and say, "Give an example of immediate, specific praise."

GENERAL FEEDBACK SCRIPT EXAMPLE

Initial Instruction

Praise Statement:
"Great job delivering the instruction as a statement."
Feedback Script:
"Remember to phrase the instruction as a statement"

Pause

Praise Statement:
"Nice job waiting three to five seconds for the learner to respond."
Feedback Script:
"Remember to pause 3-5 seconds before providing a prompt."

Correct Prompt

Praise Statement:
"Great job remembering to deliver the prompts in order and pausing 3 to 5 seconds after each prompt."

Feedback Script:
"Remember to perform the prompts in the correct order."

Correct Prompt Performance

Praise Statement:
"Nice work remembering how to perform each prompt."
Feedback:
"Remember, a verbal prompt means you repeat the first direction you give"

Reinforcement

Praise Statement:
"Good job giving immediate, specific praise."
Feedback:
"Remember to give immediate, specific feedback." For example, "Great job making puzzle."

APPENDIX E: SAMPLE DATA COLLECTION FORM

	Trial 1 P (5)	Trial 2 M(4)	Trial 3 +(1)	Trial 4 G (3)	Trial 5 V (2)
Initial Instruction					
Pause					
Correct Prompt					
Correct Prompt Performance					
Reinforcement					

Total (_____/25) * 100 = _____%

APPENDIX F: TREATMENT ACCEPTABILITY QUESTIONNAIRE

1. How acceptable did you find the format of your training?

1	2	3	4	5	6	7
Not at all Acceptable			Moderately Acceptable			Very Acceptable

2. How willing would you be to learn another skill using this format of training?

1	2	3	4	5	6	7
Not at all Willing			Moderately Willing			Very Willing

3. How beneficial would this type of training be for individuals working with children with autism?

1	2	3	4	5	6	7
Not at all Beneficial			Moderately Beneficial			Very Beneficial

4. I would prefer a different format of training if I had to do this again.

1	2	3	4	5	6	7
Strongly Agree			Neutral			Strongly Disagree

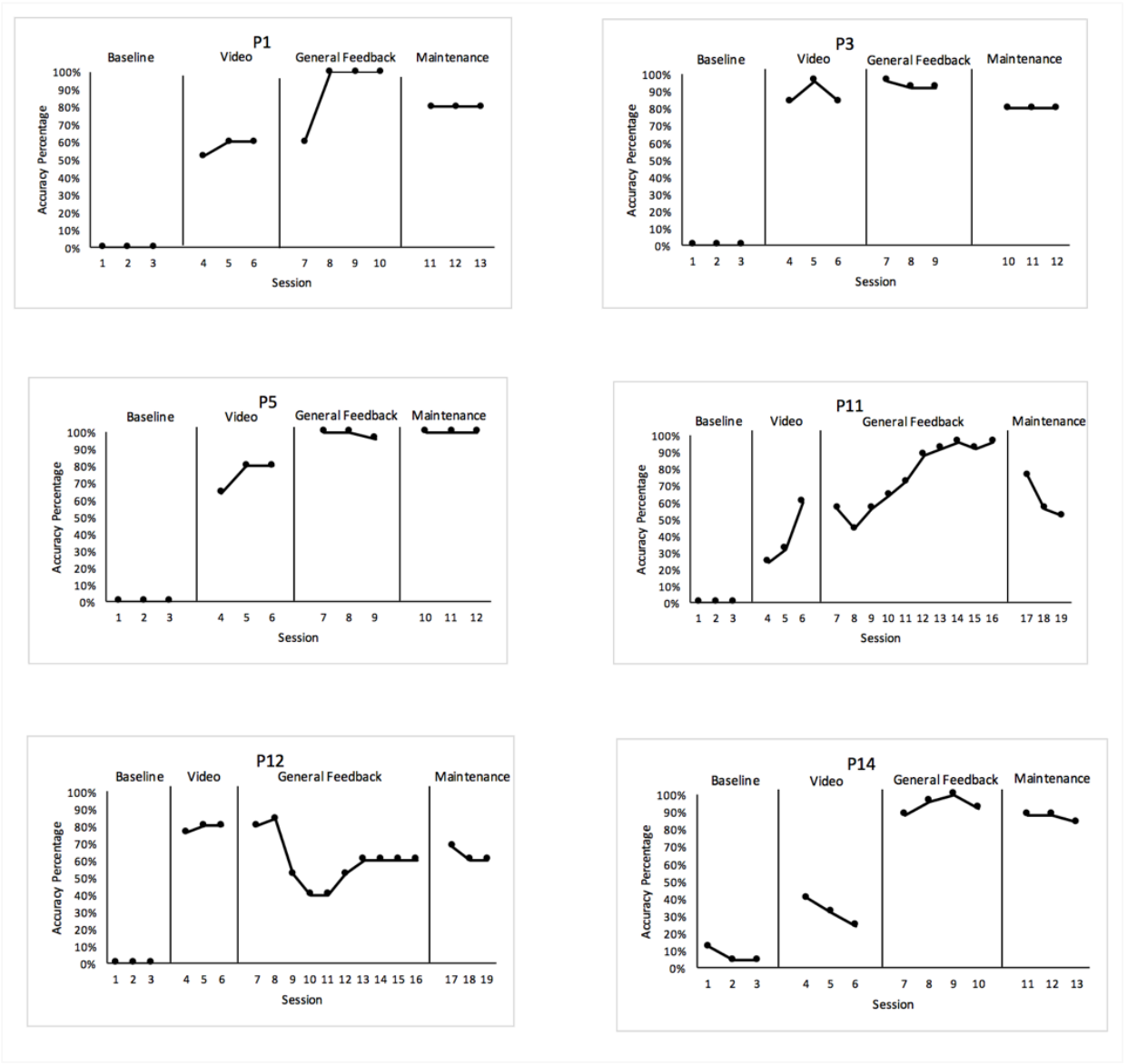
5. I would prefer a training that includes theory, for a better understanding of why the increasing prompting procedure is used with children with autism.

1	2	3	4	5	6	7
Strongly Agree			Neutral			Strongly Disagree

6. I felt confident in my ability to use the increasing assistance prompting procedure following the training.

1	2	3	4	5	6	7
Strongly Agree			Neutral			Strongly Disagree

APPENDIX G: GRAPH DESCRIPTIONS FOR GENERAL FEEDBACK CONDITION WITH MAINTENANCE



P1 Graph Description

During baseline, data from Participant 1 was stable with no trend. During the video condition, data demonstrated an immediate increase in level which remained stable, with a slightly increasing trend. During the feedback condition, data demonstrated an increasing change in level following the second feedback session, which remained stable. During maintenance, data

demonstrated a slight decrease in performance and remained stable. Participant 1 performed the least to most prompting hierarchy with an average accuracy of 0% during baseline sessions, 57% during the video condition, 90% during the feedback condition, and 80% during maintenance probes. Participant 1 reached mastery criteria within 7 sessions during the feedback condition. The percentage of non-overlapping data points for Participant 1 was 100% between the baseline and video conditions, 100% between the baseline and feedback conditions, and 100% between baseline and maintenance conditions. The percentage of non-overlapping data points between video and feedback conditions was 75%. The participant did not maintain the least to most prompting skill set from mastery to maintenance.

P3 Graph Description

During baseline, data from Participant 3 was stable with no trend. During the video condition, data demonstrated an immediate increase in level with variability in performance and no trend. During the feedback condition, data from Participant 3 demonstrated an increase in level with a slightly decreasing trend. During maintenance, data demonstrated a slight decrease in performance and remained stable with no trend. Participant 3 performed the least to most prompting hierarchy with an average accuracy of 0% during baseline sessions, 88% during the video condition, 90% during the feedback condition, and 80% during maintenance probes. Participant 3 reached mastery criteria within 6 sessions during the feedback condition. The percentage of non-overlapping data points for Participant 3 was 100% between the baseline and video conditions, 100% between the baseline and feedback conditions, and 100% between baseline and maintenance conditions. The percentage of non-overlapping data points between video and feedback conditions was 67% The participant did not maintain the least to most prompting skill set from mastery to maintenance.

P5 Graph Description

During baseline, data from Participant 5 was stable with no trend. During the video condition, data demonstrated an immediate increase in level with low variability, and an increasing trend. During the feedback condition, data demonstrated an increasing change in level following, which remained stable. During maintenance, data remained at a similar level as in the feedback condition and demonstrated a stable trend. Participant 5 performed the least to most prompting hierarchy with an average accuracy of 0% during baseline sessions, 75% during the video condition, 96% during the feedback condition, and 100% maintenance probes. Participant 5 reached mastery criteria within six sessions during the feedback condition. The percentage of non-overlapping data points for Participant 5 was 100% between the baseline and video conditions, 100% between the baseline and feedback conditions, and 100% between baseline and maintenance conditions. The percentage of non-overlapping data points between video and feedback conditions was 100%. The participant maintained the least to most prompting skill set from mastery to maintenance.

P11 Graph Description

During baseline, data from Participant 11 was stable with no trend. During the video condition, data demonstrated an immediate increase in level with low variability and an increasing trend. During the feedback condition, data demonstrated a decrease in level followed by an increasing trend with low variability after the third feedback session. During maintenance, data demonstrated a decrease in level and a decreasing trend with low variability. Participant 11 performed the least to most prompting hierarchy with an average accuracy of 0% during baseline sessions, 39% during the video condition, 80% during the feedback condition, and 61% on maintenance probes. Participant 11 reached mastery criteria within 12 sessions during the

feedback condition. The percentage of non-overlapping data points for Participant 11 was 100% between the baseline and video conditions, 100% between the baseline and feedback conditions, and 100% between baseline and maintenance conditions. The percentage of non-overlapping data points between video and feedback conditions was 70%. The participant did not maintain the prompting skills set from mastery to maintenance.

P12 Graph Description

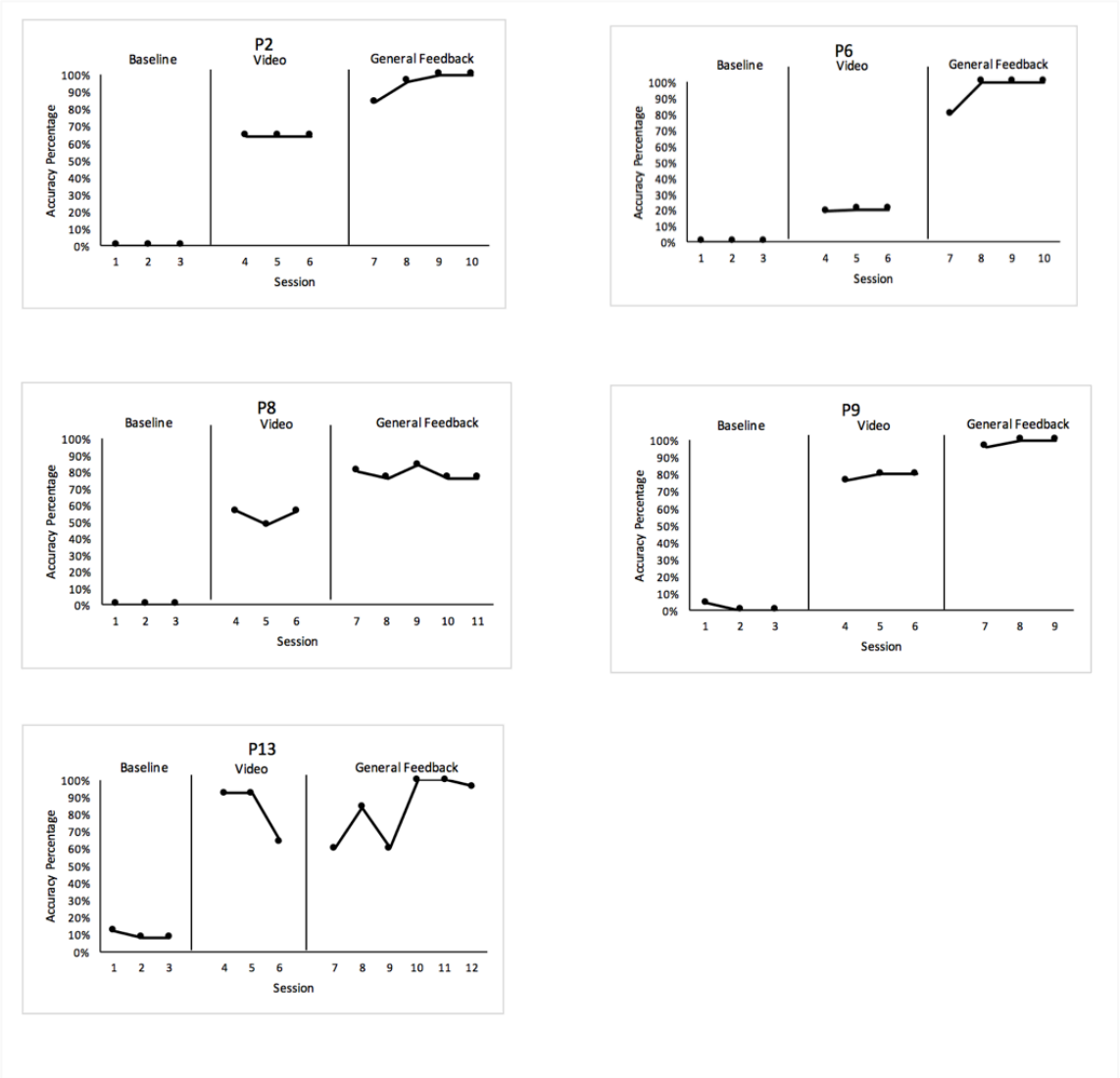
During baseline, data from Participant 12 was stable with no trend. During the video condition, data demonstrated an immediate increase in level which remained stable, with no trend. During the feedback condition, data demonstrated an abrupt decrease in level after the third feedback session and variable pattern of performance. During maintenance, data demonstrated a slight increase in level and the trend was slightly decreasing. Participant 12 performed the least to most prompting hierarchy with an average accuracy of 0% during baseline sessions, 79% during the video condition, 60% during the feedback condition, and 63% on maintenance probes. This participant did not reach mastery criteria. The percentage of non-overlapping data points for Participant 12 was 100% between the baseline and video conditions, 100% between the baseline and feedback conditions, and 100% between baseline and maintenance conditions. The percentage of non-overlapping data points between video and feedback conditions was 10%. Given that the participant did not reach mastery criteria, they were unable to maintain a level of performance at or above 90%.

P14 Graph Description

During baseline, data demonstrated a decreasing trend. During the video condition, data demonstrated an immediate increase in level followed by a decreasing trend. During the feedback condition, data indicated another immediate increase in level and a slightly increasing

trend with low variability. During maintenance, data demonstrated a slight decrease in performance and remained stable. Participant 14 performed the least to most prompting hierarchy with an average accuracy of 7% during baseline sessions, 32% during the video condition, 94% during the feedback condition, and 87% during maintenance probes. This participant completed maintenance probes two weeks post skill acquisition. Participant 14 reached mastery criteria within seven sessions during the feedback condition. The percentage of non-overlapping data points for Participant 14 was 100% between the baseline and video conditions, 100% between the baseline and feedback conditions, and 100% between baseline and maintenance conditions. The percentage of non-overlapping data points between video and feedback conditions was 100%. The participant did not maintain the least to most prompting skill set from mastery to maintenance conditions.

APPENDIX H: GRAPH DESCRIPTIONS FOR GENERAL FEEDBACK CONDITION WITHOUT MAINTENANCE



P2 Graph Description

During baseline, data from Participant 2 was stable with no trend. During the video condition, data demonstrated an immediate increase in level which remained stable, with no trend. During the feedback condition, data demonstrated an immediate increase in level with an increasing trend. Participant 2 performed the least to most prompting hierarchy with an average accuracy of 0% during baseline sessions, 64% during the video condition, and 100% during the

feedback condition. This participant did not complete maintenance trials. Participant 2 reached mastery criteria within 7 sessions during the feedback condition. The percentage of non-overlapping data points for Participant 2 was 100% between the baseline and video conditions, and 100% between the baseline and feedback conditions. The percentage of non-overlapping data points between video and feedback conditions was 75%.

P6 Graph Description

During baseline, data from Participant 6 was stable with no trend. During the video condition, data demonstrated an immediate, slight increase in level which remained stable, with no trend. During the feedback condition, data demonstrated an immediate increase in level. This was followed by an increase in performance which remained stable. Participant 6 performed the least to most prompting hierarchy with an average accuracy of 0% during baseline sessions, 20% during the video condition, and 100% during the feedback condition. The participant did not complete maintenance sessions. Participant 6 reached mastery criteria within seven sessions during the feedback condition. The percentage of non-overlapping data points for Participant 6 was 100% between the baseline and video conditions and 100% between the baseline and feedback conditions. The percentage of non-overlapping data points between video and feedback conditions was 100%.

P8 Graph Description

During baseline, data from Participant 8 was stable with no trend. During the video condition, data demonstrated an immediate increase in level. The data demonstrated slight variability with no trend. During the feedback condition, data demonstrated an increase in level with low variability and no trend. Participant 8 performed the least to most prompting hierarchy with an average accuracy of 0% during baseline sessions, 53% during the video condition, and

80% during the feedback condition. Participant 8 did not reach mastery criteria or complete maintenance trials. The percentage of non-overlapping data points for Participant 8 was 100% between the baseline and video conditions and 100% between the baseline and feedback conditions. The percentage of non-overlapping data points between video and feedback conditions was 100%.

P9 Graph Description

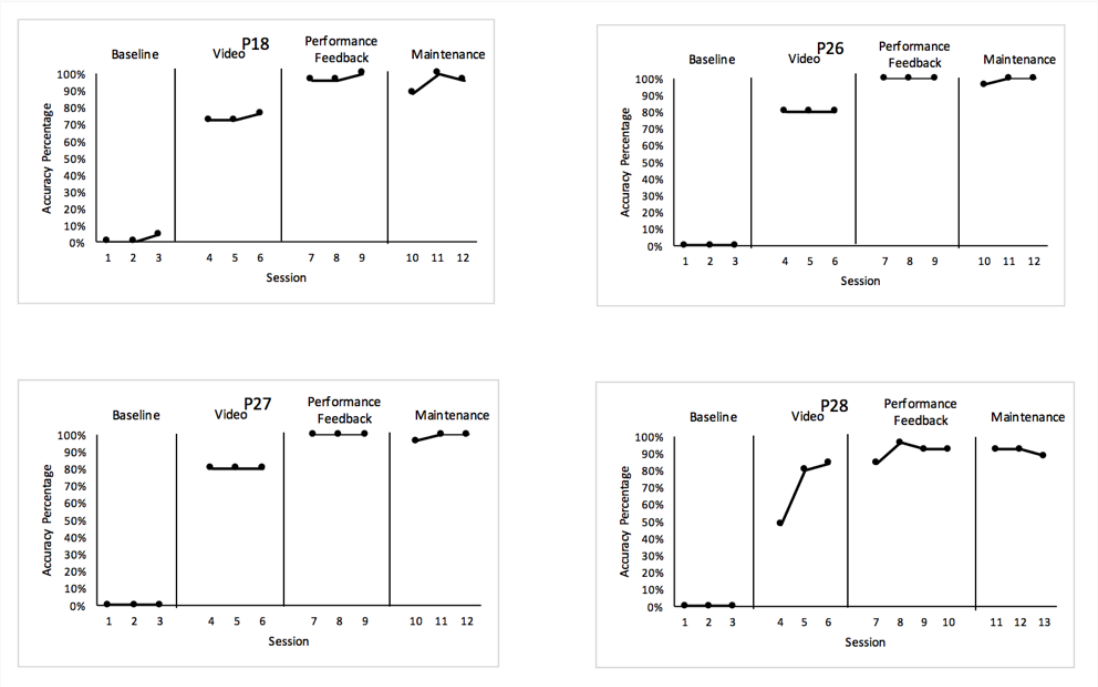
During baseline, data from Participant 9 was stable with a slightly decreasing trend. During the video condition, data demonstrated an immediate increase in level which remained stable, with low variability and a stable trend. During the feedback condition, data demonstrated an increase in level and stable trend. Participant 9 performed the least to most prompting hierarchy with an average accuracy of 1% during baseline sessions, 79% during the video condition, and 100% during the feedback condition. The participant did not complete maintenance sessions. Participant 9 reached mastery criteria within six sessions during the feedback condition. The percentage of non-overlapping data points for Participant 9 was 100% between the baseline and video conditions and 100% between the baseline and feedback conditions. The percentage of non-overlapping data points between video and feedback conditions was 100%.

P13 Graph Description

During baseline, data from Participant 13 was stable with a slightly decreasing trend. During the video condition, data demonstrated an immediate increase in level followed by abrupt decrease in level. During the feedback condition, data demonstrated variable performance with an increasing trend. Participant 13 performed the least to most prompting hierarchy with an average accuracy of 9% during baseline sessions, 83% during the video condition, and 83%

during the feedback condition. The participant did not complete maintenance sessions. Participant 13 reached mastery criteria within nine sessions during the feedback condition. The percentage of non-overlapping data points for Participant 13 was 100% between the baseline and video conditions and 100% between the baseline and feedback conditions. The percentage of non-overlapping data points between video and feedback conditions was 50%.

APPENDIX I: GRAPH DESCRIPTIONS FOR PERFORMANCE FEEDBACK CONDITION WITH MAINTENANCE



P18 Graph Description

During baseline, data from Participant 18 was stable with low variability and a slightly increasing trend. During the video condition, data demonstrated an immediate increase in level with a slightly increasing trend and low variability. During the feedback condition, data demonstrated an increasing change in level following the first feedback session, this data also indicated a slightly increasing trend. During maintenance, data demonstrated a slight decrease in performance with an increasing trend and moderate variability. Participant 18 performed the least to most prompting hierarchy with an average accuracy of 1% during baseline sessions, 73% during the video condition, 97% during the feedback condition, 95% on maintenance probes. Participant 18 reached mastery criteria within six sessions during the feedback condition. The percentage of non-overlapping data points for Participant 18 was 100% between the baseline and video conditions, 100% between the baseline and feedback conditions, and 100% between

baseline and maintenance conditions. The percentage of non-overlapping data points between video and feedback conditions was 100%. The participant maintained the least to most prompting skill set from mastery to maintenance conditions.

P26 Graph Description

During baseline, data from Participant 26 was stable with no trend. During the video condition, data demonstrated an immediate increase in level which remained stable, with no trend. During the feedback condition, data demonstrated an increasing change in level following the first feedback session, which remained stable. During maintenance, data demonstrated no significant change in performance and remained stable. Participant 26 performed the least to most prompting hierarchy with an average accuracy of 0% during baseline sessions, 80% during the video condition, 100% during the feedback condition, and 99% on maintenance probes. Participant 26 reached mastery criteria within six sessions during the feedback condition. The percentage of non-overlapping data points for Participant 26 was 100% between the baseline and video conditions, 100% between the baseline and feedback conditions, and 100% between baseline and maintenance conditions. The percentage of non-overlapping data points between video and feedback conditions was 0%. The participant maintained the least to most prompting skill set.

P27 Graph Description

During baseline, data from Participant 27 was stable with no trend. During the video condition, data demonstrated an immediate increase in level which remained stable, with no trend. During the feedback condition, data demonstrated an increasing change in level following the first feedback session, which remained stable. During maintenance, data demonstrated no significant change in performance and remained stable. Participant 27 performed the least to

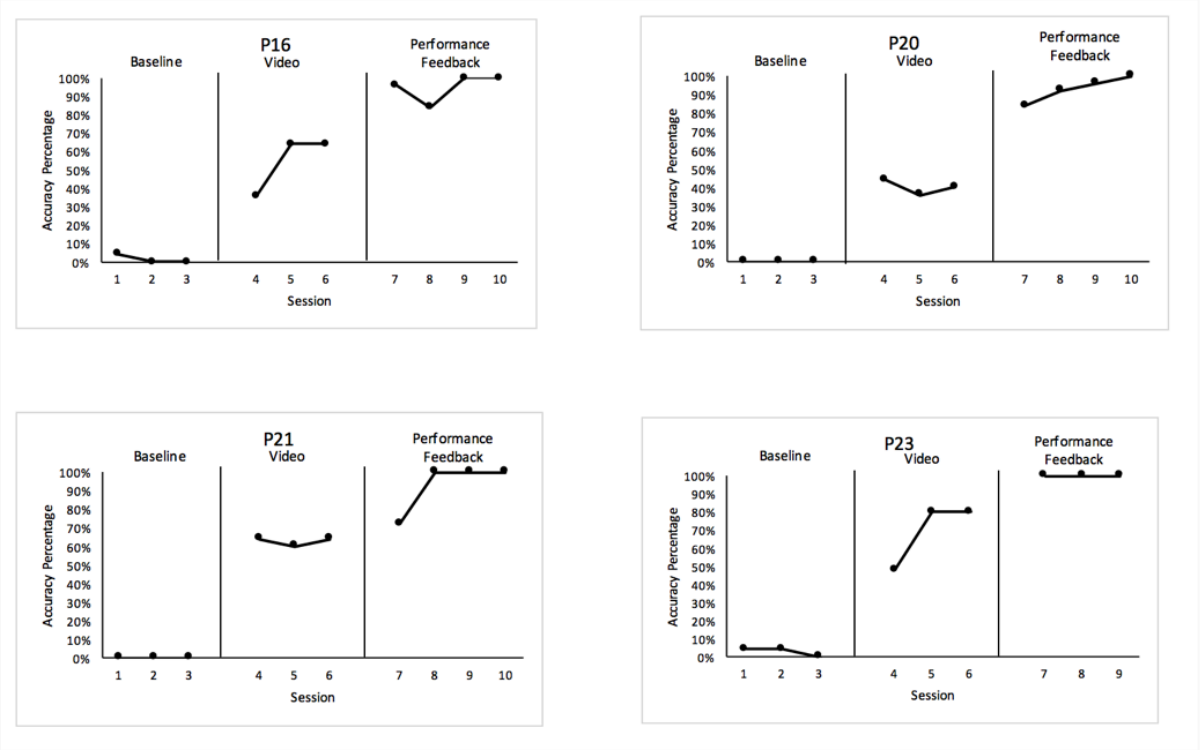
most prompting hierarchy with an average accuracy of 0% during baseline sessions, 71% during the video condition, 91% during the feedback condition, and 91% on maintenance trials. Participant 27 reached mastery criteria within six sessions during the feedback condition. The percentage of non-overlapping data points for Participant 27 was 100% between the baseline and video conditions, 100% between the baseline and feedback conditions, and 100% between baseline and maintenance conditions. The percentage of non-overlapping data points between video and feedback conditions was 100%. The participant maintained the least to most prompting skill set.

P28 Graph Description

During baseline, data from Participant 28 was stable with no trend. During the video condition, data from Participant 28 demonstrated an immediate increase in level. After the second video condition session, there was again, an immediate increase in performance. Overall, data in this phase demonstrated an increasing trend. During the feedback condition, the participant's performance indicated a slight increase in level following the second feedback session, data indicated an increasing trend. During maintenance, data demonstrated no significant change in performance and a decreasing trend. Participant 28 performed the least to most prompting hierarchy with an average accuracy of 0% during baseline sessions, 71% during the video condition, 91% during the feedback condition, and 91% on maintenance probes. Participant 28 reached mastery criteria within seven sessions during the feedback condition. The percentage of non-overlapping data points for Participant 26 was 100% between the baseline and video conditions, 100% between the baseline and feedback conditions, and 100% between baseline and maintenance conditions. The percentage of non-overlapping data points between

video and feedback conditions was 75%. The participant maintained the least to most prompting skill set.

APPENDIX J: GRAPH DESCRIPTIONS FOR PERFORMANCE FEEDBACK CONDITION WITHOUT MAINTENANCE



P16 Graph Description

During baseline, data from Participant 16 had a slightly decreasing trend with low variability. During the video condition, data demonstrated an increasing change in level following the second feedback session, which remained stable. During the feedback condition, data indicated another immediate increase in level with moderate variability and no trend. The participant did not complete maintenance trials. Participant 16 performed the least to most prompting hierarchy with an average accuracy of 1% during baseline sessions, 55% during the video condition, and 96% during the feedback condition. Participant 16 reached mastery criteria within six sessions during the feedback condition. The percentage of non-overlapping data points for Participant 16 was 100% between the baseline and video conditions, 100% between the

baseline and feedback conditions, and 100% between baseline and maintenance conditions. The percentage of non-overlapping data points between video and feedback conditions was 100%.

P20 Graph Description

During baseline, data from Participant 20 was stable with no trend. During the video condition, data demonstrated an immediate increase in level, a slightly decreasing trend and slight variability. During the feedback condition, data demonstrated an increasing change in level and an increasing trend. Participant 20 performed the least to most prompting hierarchy with an average accuracy of 0% during baseline sessions, 40% during the video condition, and 93% during the feedback condition. Participant 20 reached mastery criteria within seven sessions during the feedback condition. The participant did not return for maintenance trials. The percentage of non-overlapping data points for participant 20 was 100% between the baseline and video conditions and 100% between the baseline and feedback conditions. The percentage of non-overlapping data points between video and feedback conditions was 100%.

P21 Graph Description

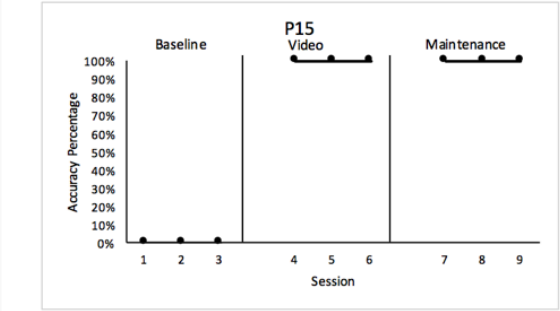
During baseline, data from Participant 21 was stable with no trend. During the video condition, data demonstrated an immediate increase in level with low variability. During the feedback condition, data demonstrated an increasing change in level following the second feedback session, which remained stable with no trend. The participant did not return for maintenance. Participant 21 reached mastery criteria within seven sessions during the feedback condition. Participant 21 performed the least to most prompting hierarchy with an average accuracy of 0% during baseline sessions, 63% during the video condition and 93% during the feedback condition. The participant did not complete maintenance trials. The percentage of non-overlapping data points for Participant 21 was 100% between the baseline and video conditions

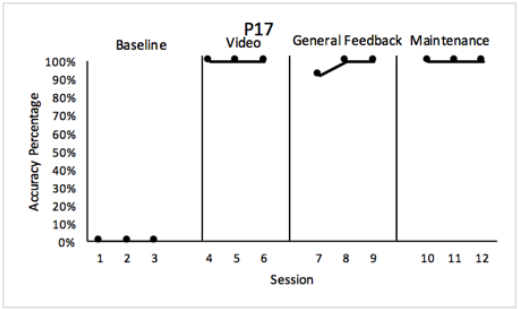
and 100% between the baseline and feedback conditions. The percentage of non-overlapping data points between video and feedback conditions was 100%.

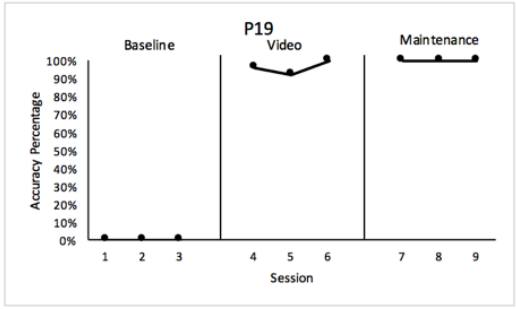
P23 Graph Description

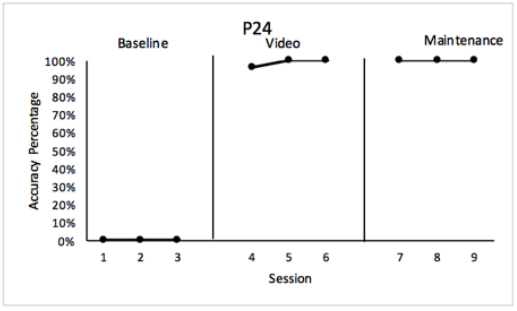
During baseline, data from Participant 23 was stable with a slight decreasing trend. During the video condition, data demonstrated an immediate increase in level with an increasing trend. During the feedback condition, data demonstrated an immediate increase in level which was stable with no trend. The participant did not return for the maintenance condition. Participant 23 performed the least to most prompting hierarchy with an average accuracy of 3% during baseline sessions, 69% during the video condition and 100% during the feedback condition. Participant 23 reached mastery criteria within 6 sessions during the feedback condition. The percentage of non-overlapping data points was 100% between the baseline and video conditions and 100% between the baseline and feedback conditions. The percentage of non-overlapping data points between video and feedback conditions was 100%.

APPENDIX K: GRAPH DESCRIPTIONS FOR INDIVIDUALS WHO MET MASTERY IN THE VIDEO PHASE









P15 Graph Description

During baseline, data from Participant 15 was stable with no trend. During the video condition, data demonstrated an immediate increase in level which remained stable, with no trend. During maintenance, data exhibited no change in level and remained stable. Participant 15 performed the least to most prompting hierarchy with an average accuracy of 0% during baseline sessions, 100% during the video condition, and 100% maintenance probes. Participant 15 reached mastery criteria within 3 sessions during the video condition. The percentage of non-overlapping data points was 100% between the baseline and video conditions and 100% between baseline and maintenance conditions. The participant maintained the least to most prompting skill set from mastery to maintenance.

P17 Graph Description

During baseline, data from Participant 17 was stable with no trend. During the video condition, data demonstrated an immediate increase in level which remained stable, with no trend. During the feedback condition, data demonstrated a slight decrease in performance following the first feedback session. However, following the second feedback condition, performance increased and remained stable. Thus, the trend was slightly increasing. During maintenance, performance remained high. The data was stable and indicated no trend. Participant 17 performed the least to most prompting hierarchy with an average accuracy of 0% during baseline sessions, 100% during the video condition, 98% during the feedback condition, and 100% on maintenance probes. Participant 17 reached mastery criteria within three sessions during the video condition. The percentage of non-overlapping data points for Participant 17 was 100% between the baseline and video conditions, 100% between the baseline and feedback conditions, and 100% between baseline and maintenance conditions. The percentage of non-overlapping data points between video and feedback conditions was 0%. The participant maintained the least to most prompting skill set from mastery to maintenance.

P19 Graph Description

During baseline, data from Participant 19 was stable with no trend. During the video condition, data demonstrated an immediate increase in level with a slightly increasing trend and low variability. During the maintenance condition, data demonstrated a slight increase in level which remained stable with no trend. Participant 19 performed the least to most prompting hierarchy with an average accuracy of 0% during baseline sessions, 96% during the video condition, and 100% on maintenance probes. Participant 19 reached mastery criteria within three sessions during the video condition. The percentage of non-overlapping data points for Participant 19 was 100% between the baseline and video conditions, and 100% between baseline

and maintenance conditions. The percentage of non-overlapping data points between video and maintenance conditions was 66%. The participant maintained the least to most prompting skill set from mastery to maintenance.

P24 Graph Description

During baseline, data from Participant 24 was stable with no trend. During the video condition, data demonstrated an immediate increase in level which remained stable, with a slightly increasing trend. During maintenance, performance remained high and stable. Participant 24 performed the least to most prompting hierarchy with an average accuracy of 0% during baseline sessions, 99% during the video condition, and 100% on maintenance probes. Participant 24 reached mastery criteria within three sessions during the video condition. The percentage of non-overlapping data points for Participant 24 was 100% between the baseline and video conditions and 100% between baseline and maintenance conditions. The percentage of non-overlapping data points between video and maintenance conditions was 33%. The participant maintained the least to most prompting skill set from mastery to maintenance.