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TRAINING TEACHING ASSISTANTS TO IMPLEMENT SYSTEMIC TEACHING STRATEGIES IN PRESCHOOL CLASSROOMS WITH RELIABILITY

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THESIS

A thesis submitted in partial fulfillment of the
requirements for the degree of Masters of Science in the
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By

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ABSTRACT OF THESIS

TRAINING TEACHING ASSISTANTS TO IMPLEMENT SYSTEMIC TEACHING STRATEGIES IN PRESCHOOL CLASSROOMS WITH RELIABILITY

We are currently in an era of accountability, so the need for measuring fidelity of implementation is gaining attention. However, there is little research in the area of fidelity of implementation and an inclusive early childhood classroom. In addition, most of the research is conducted using teachers. This study examined the fidelity of implementation by two teaching assistants using the teaching strategies of time delay and system of least prompts with children with and without disabilities in an inclusive early childhood setting. A multiple-probe design with conditions across two behaviors and across two participants design was used to determine the effects of teaching assistants' fidelity of implementation of evidence-based teaching strategies. Also a multiple probe across two behaviors, replicated across children was used. Most importantly, the results showed that teaching assistants could implement systematic teaching strategies with fidelity. Secondly, the children were able to make progress towards their target skills.

KEYWORDS: Fidelity of Implementation, Teaching Assistants, Preschool Classroom, Constant Time Delay, System of Least Prompts

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Training Teaching Assistants to Implement Systemic Teaching Strategies in Preschool Classrooms with Reliability

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Introduction

In an era of accountability, the need for measuring fidelity of implementations is gaining attention. Mihalic (2002) defines fidelity of implementation "as the determination of how well an intervention is implemented in comparison with the original program design…" (pg. 34). It is important to measure fidelity of implementation in order to evaluate the accountability of the teacher to produce a desired effect. Fidelity of implementation should also measure the effectiveness of the intervention and child outcomes. Teachers must make databased decisions to plan and implement activities to better meet the needs of individual children (Grisham-Brown, Schuster, Hemmeter, & Collins, 2000; Hojnoski, Gischlar, & Missall, 2009). The purpose of this study is to examine the fidelity of implementation of two teaching strategies; time delay and system of least prompts with children with and without disabilities in a blended early childhood setting by two teaching assistants.

Fidelity of Implementation

"Fidelity of implementation can reveal important information about the feasibility of how likely an intervention can and will be implemented with fidelity in the classroom" (O'Donnell, 2008, p. 42). There are several reasons why studying fidelity of implementation is important. First, in studies in which there was a failure to implement the program as planned, there is a potential to determine that the observed findings were attributed to the concept of a particular intervention, when in fact it was not. Second, fidelity of implementation often helps to explain why interventions succeed and fail. If an intervention succeeds or fails because of the dose or quality of the intervention, this is

important information. Third, having an evaluation of fidelity of implementation allows researchers to identify what has been changed in a program and how changes impact outcomes. Finally, fidelity of implementation reveals important information about the probability of an intervention; how likely that the intervention can and will be implemented in practice (Dusenbury, Brannigan, Falco, & Hensen, 2001).

Most of the research on fidelity of implementation has been completed in the public and mental health fields. Research in these fields suggests significant correlations between the extent to which interventions are implemented with fidelity and the level of treatment outcomes (Dane & Schneider, 1988; Ruiz-Primo, 2005). Overall, there is little research on the fidelity of implementation and outcomes in the educational field. Much of the fidelity research has been conducted in the kindergarten to twelfth grade (O'Donnell, 2008; Azano et al., 2011). As well, there has been some research conducted in special education on both instruction and behavioral strategies (Cook & Odom, 2013; Azano et al., 2011). There is significantly less research in the early childhood setting (Hamre, Justice, Pianta, Kilday, Sweeney, Downer & Leach, 2010). While studies show the significance between fidelity of implement and child outcomes, there needs to be more research in this area to further conclude the research (Azano et al., 2011; O'Donnell, 2008; Hamre et al., 2010).

O'Donnell (2008) reviewed literature on fidelity of implementation and the relationship it has to the outcomes in kindergarten to 12th grade curriculum intervention research. Only five of 23 studies measured the relationship between fidelity of implement to kindergarten to 12th grade core curriculum interventions and outcomes. However, these five studies showed there were significantly higher outcomes of student

achievement scores when the intervention was implemented with greater fidelity. The study concluded that there is very little research available to guide educators on how fidelity of implementation of core curriculum interventions can be measured and related to outcomes.

Azano et al. (2011) researched the effectiveness of a research-based language arts curriculum for gifted third graders. The researchers used a sequential mixed-methods research design, beginning with the qualitative complement of the study. So the researchers were interested in the expectations and beliefs of the participants and how these beliefs and expectations influenced their adherence to and delivery of the research based curriculum. Next, the researchers used quantitative analysis to illuminate the qualitative component of the study and to further understand whether the degree to which a teacher exhibits fidelity of implementation. The study used 55 teachers across 10 states with a total of 740 students. The researchers found that teachers' belief and expectations influenced the degree to with they implemented the intervention with fidelity to its design. Further, the researchers found that students' achievement test scores were higher in classrooms whose teacher showed high fidelity of the intervention.

Hamre et al. (2010) studied fidelity of implementation of a classroom curriculum and whether fidelity was associated with preschool children's growth in language and literacy skills across the year. The researchers used 154 teachers, who were provided with materials to implement a supplemental classroom curriculum addressing six aspects of literacy and language development. The researchers examined three aspects of fidelity of implementations: dosage, the frequency and duration of an intervention; adherence, the degree to which program components were delivered as prescribed; and quality of

delivery, whether a teacher implements a unit in a manner consistent with the theoretical or pedagogical ideas and techniques embedded within the unit (Hamre et al, 2010). The findings indicated that teachers reported using the curriculum fairly often and that they were observed to generally follow curricular lesson plans. However the quality of the deliver of information was much lower. The study concluded that children whose teachers exhibited higher quality of delivery of literacy lessons made significantly greatly quality language gains in early literacy skills across the preschool year.

Grisham-Brown et al. (2000) studied the effects of response prompting procedures within an embedded skill approach on skill acquisition by 4 preschoolers with significant disabilities. They also measured the fidelity of implementation by the paraprofessionals in the study. While the response prompted strategies differed, each had some common factors. These included: presenting the object to the child, choice to the student prior to center activities, task request, appropriate response interval, controlling prompt and consequence. Based on these instructor behaviors, during baseline the instructors' implemented the behaviors with 93% accuracy and during intervention, the behaviors occurred with 95% accuracy. Additionally, the paraprofessionals collected data with reliability.

Time Delay

"The time delay procedure has been established as an evidence-based procedure (Browder, Ahlgrim-Delzell, Spooner, Mims, & Baker, 2009; Schuster et al., 1998; Walker, 2008; Wolery, Holcombe, Cybriwsky, Doyle, Schuster, & Ault, 1992) that is easy to implement and often results in learners reaching criterion in a shorter period of time or a shorter number of instructional sessions" (Collins, 2012, p. 54). The time delay

procedure starts with an instructor selecting one single prompt to be used across all trials and sessions. This prompt needs to be a controlling prompt. A controlling prompt is the least instructive prompt that can be used with a particular learner; the controlling prompt also needs be motivating enough so that the learner will likely produce a correct response in most of the trials or sessions (Collins, 2012). An important aspect of time delay procedure is the wait time. This is the time when the learner waits for a prompt rather than guessing. When a learner knows how to wait for a prompt, the time delay procedure is nearly errorless (Collins, 2012). There are two variations of time delay procedure: (a) progressive time delay, in which the wait time slowly increases and then naturally fades as the learner begins to perform the correct response and (b) constant time delay, when a controlling prompt follows a wait time that is a set interval and naturally fades as learners begin to perform the correct response before the delivery of the controlling prompt (Collins, 2012).

Alig-Cybriwsky, Wolery, and Gast (1990) studied the effects of constant time delay in teaching 4 preschoolers expressive word reading. All of the children in this study had either a disability or a delay, and the study took place in a combined preschool/kindergarten classroom that contained 4 and 5 year old children. While the intervention did take place in the classroom, the children and teacher were sitting at an isolated part of the classroom, while the other children in the classroom were engaged in different activities. During a trial, the teacher would provide an attending cue, card with word on it, and then would say "(Child's name), what word?" A constant time delay interval of 3 s was used during the trials; if the child did not state the word after 3 s, then the teacher would model the correct response and wait 3 s for the child to respond.

Children were praised and received an edible if they responded correctly. According to Alig-Cybriwsky et al 1(990), teacher reliability "...was measured for securing and reinforcing the appropriate intentional response, presenting the verbal cue, waiting the correct delay interval, delivering the model, providing the correct consequent events, and using the 3-s intertrial interval" (p. 106). The mean reliability for this study was 95%. This study found that the constant time delay procedure was effective in teaching expressive identification of sight words in a group to children. During baseline, the children's correct response were at 0%, but, during the first intervention session, the children reached the following correct response percentages: 100%, 75%, and 92%, with the fourth child was absent for this trial. The findings of this study supported the use of constant time delay in teaching discrete responses in groups to preschoolers who have the prerequisite skills (Alig-Cybriwsky et al., 1990).

Daughety, Grisham-Brown, and Hemmeter (2001) studied the use of constant time delay in embedded instruction to teach counting to 3 young children with speech and language delays. The children were enrolled in a half-day inclusive preschool program, 5 days a week in a public elementary school. The children were asked to count objects during ongoing classroom activities in which they were engaged. Additionally, non-target information was included in the task directions. For example the researcher would say, "Count the red blocks." During intervention, the researcher gave the children a task direction and then waited 0 to 3 s before delivering the controlling prompt of either a visual model or a verbal and visual model. Then, the researcher asked the child to model what she did; the trials ended with the researcher giving verbal praise or a pat on the back for correct responses while incorrect responses were ignored. The researcher collected

reliability data for the teachers having materials ready, warming up to the child, providing task directions, waiting the correct delay interval, prompting if necessary, providing the correct consequence, and reinforcing for attention. The number of average days for a child to reach criterion for each number was 5 to 6 days. Once the intervention was introduced, the correct responses increased to criterion levels for all 3 of the children. This study found that constant time delay was effective in teaching numbers to the 3 children. The classroom teacher collected dependent and independent variable reliability data once during each probe condition and three times during interventions for all 3 students. Procedural reliability and the dependent variable were 100% during all probe and training conditions.

In 2011, Odluyurt studied the effectives of constant time delay embedded into activities for teaching the names of clothing to 3 preschool children with Down syndrome, who were between the ages of 3.5 and 4 years old. The study took place at the Research Institute for the Handicapped Unit of Developmental Disabilities in Anadolu University, Turkey, which the children attended daily. The researchers made picture cards of 24 clothing items that the children did not know. The cards were divided into three instructional sets of eight cards each. Once the clothing item cards were prepared, then baseline data were collected until there were three stable consecutive sessions. Once baseline data were stable, the intervention of constant time delay was implemented. After criterion was met for the first instructional set, the second set of cards was taught, and so forth. All of the sessions were arranged in a one-to-one teaching arrangement. The intervention was embedded into everyday tasks, such as hanging the pictures of clothes on a panel, picking up the pictures and putting them into a basket, picking up clothes

from the clothes line, or touching the pictures. The results suggested that all 3 participants acquired the target skills at criterion levels. The children took between 24 and 27 sessions to reach criterion. Interobserver reliability data were collected and showed that an average of 99% agreement was maintained subjects and sessions.

System of Least Prompts

The procedure of system of least prompts is a strategy where the instructor allows the learner to perform a behavior independently before the prompt is delivered (wait time), and then prompts are provided in order from a hierarchy of intrusiveness, such as a verbal prompt, to more intrusive, for example a physical prompt. This is a good strategy to use for learners who do not require a more intrusive prompt (Collins, 2012).

Filla, Wolery, and Anthony (1999) studied the use of two interventions: (a) environmental modifications, using theme boxes in a restricted space with two conversational partners, and (b) adult prompting, using the system of least prompts in the themes box play context, to promote conversations between 9 preschoolers with and without disabilities. This took place within two public school mixed age preschool classrooms, and the study was conducted in the classroom during free play using theme boxes. In the first intervention, the children would select a theme box to play with another child. The teacher interacted with the children as she would usually. During this intervention, the rate of conversations and the number of turns per conversation did not increase for all of the children. However, during the second intervention, when the teacher was instructed to conduct the system of least prompts, the researcher found that the system of least prompts produced an increase in the rate of conversations and the number of turns per conversation. The system of least prompts took place in this order:

the teacher gave a general prompt to both children, then a direct prompt to one child, and finally a model to one child. The wait time was between 5 s to 10 s. If the children still did not start a conversation, the system of least prompts was repeated. Interobserver agreement was collected an average of 33% of the sessions. For Triad 1, the interobserver agreement was 94.9%, Triad 2 was 92.1%, and Triad 3 was 94.4%. The researchers concluded that further research should be done with the system of least prompts and procedures that use a single prompt.

Barton and Wolery (2012) conducted research to examine the use of an intervention of system of least prompts, contingent imitation, and praise on the acquisition, maintenance and generalization of pretend play of 4 preschool children with disabilities. The study took place within each child's classroom, and, during this time, the other adults and children in the room participated in their normal classroom routines and activities. During the trials, the teacher contingently imitated the child and then applied the system of least prompts to target the four types of behaviors: (a) functional play with pretense, (b) object substitution, (c) imagining absent objects, and (d) assigning absent attributes. The system of least prompts consisted of three to four levels depending on the child's response. The hierarchy of prompts was (a) independent, (b) verbal, (c) model, and (d) full physical hand over hand. These prompts were implemented after a 10 s to 12 s wait time. Teacher implementation data were collected for all sessions. The data suggested that the teachers' used the intervention package with high fidelity despite having a complex intervention system to learn. The use of this intervention package was functionally related to an increase in the children's frequency of pretense behaviors, which represents a nonliteral action of one or more objects; for example, child puts spoon

to doll's mouth. Researchers determined that further research should be done on the focus of generalization across settings and toys.

Coaching

According to Joyce and Showers (1980) coaching is often the last piece of professional development experiences. Research shows that teachers who were provided with coaching experiences had lasting, positive effects on their teaching. However, teachers who did not receive this feedback displayed fewer changes in behavior and the changes only lasted briefly (Leach & Conto, 1999).

Coaching involves observations in the classroom followed by written or oral feedback (Sparks, 1983; Sparks & Loucks-Horsley, 1989). Any type of coaching or observation followed by feedback allows for the teacher and child behaviors to be watched, then provides non-evaluative feedback about the observation, and assists with problem-solving based on the observations (Sparks, 1983; Sparks & Loucks-Horsley, 1989). Feedback from the observer allows the teacher implementing the new strategy to better understand the effects of the new strategy (Guskey, 2002). Other benefits of coaching are developing a shared language between co-workers, building a sense of community, providing a structure that is especially beneficially when participates are asked to shift their teaching and patterns of teaching and finally empowers the teacher by creating peer supports that can be drawn upon at a later time (Showers, 1985, p. 44; Webster-Stratton & Reid, 2004).

Activity-Based Intervention

According to Pretti-Frontczak and Bricker (2004) "Activity-based intervention is a child-directed, transactional approach in which multiple learning opportunities are

embedded into authentic activities and logically occurring antecedents and timely feedback are provided to ensure functional and generative skills are acquired and used by children" (p. 11). The main idea of activity-based intervention is that the child's daily contact with the environment, adults, and peers can create multiple and diverse learning opportunities. When using this strategy, the teacher needs to target meaningful and functional skills of children that can be addressed within the daily routine and environment (Grisham-Brown, Hemmeter, & Pretti-Frontczak, 2005). Another important aspect of activity-based interventions is the use of natural feedback given to children.

McBride and Schwartz (2003) evaluated the effects of a teacher-training package that included activity-based intervention and activity-based intervention with discrete trials on the rate of instructional opportunities presented to young children with disabilities. While an increase in the rate of instruction occurred during the activity-based intervention, it significantly increased when teachers were taught to embed discrete learning opportunities into the activity-based intervention.

Ozen and Ergenekon (2011) discussed some of the benefits of using activity-based interventions with children with disabilities. These included providing children with multiple opportunities to practice the skill, teaching the skill within the daily routine, and focusing on the children's interests. All of these benefits lead to an improved level of success in educational settings.

Ziolkowski and Goldstein (2008) researched explicit phonological awareness interventions embedded within repeated shared book reading with 13 preschool from low income backgrounds with language delays. They focused on rhyme and letter-sound knowledge. The researchers found that embedding an explicit phonological awareness

intervention into repeated storybook readings resulted in improved emergent literacy skills for children.

Rationale

Most of the current research on fidelity of implementation has been done in the public and mental health fields, with some research conducted in K-12 education and special education. The published research in the education field focuses primarily on teachers; this study focused on teaching assistants. The purpose of this study was to examine the fidelity of implementation by two teaching assistants using the teaching strategies of time delay and systems of least prompts with children with and without disabilities in an inclusive early childhood setting. This study adds to the literature by providing research-based data on fidelity of implementation by teaching assistants.

Research Questions

1) With training and coaching, can teaching assistants implement constant time delay and system of least prompts with 100% accuracy?

2) Can teaching assistants reliably collect child response data while implementing the intervention of constant time delay and system of least prompts?

3) Can young children with and without disabilities make progress on new skills when teaching assistants implement procedures of constant time delay and system of least prompts?

Chapter Two: Methods

Participants

Students Two children in this study who attended a public early childhood classroom for 3 hrs per day, 5 days per week in a university-based early childhood setting served as participants.

Henry was a 4-year-old boy diagnosed with Down syndrome. He received speech, occupational, and physical therapy in the classroom three times per week. Henry also received private therapies during the week. This was his second year in the preschool program. Henry liked coming to school and enjoyed playing in the sensory table and art activities. Henry had a difficult time following one-step directions and needed assistance to complete tasks. Henry had become more vocal over the last year and liked to talk with his peers. However, sometime Henry would become loud and frustrated with his peers and teachers. Henry would wander around the classroom and dump toys on the ground. Henry's scores on the *Assessment, Evaluation, and Programming System* (AEPS, Bricker, 2002) scores fell below the cut off for all areas, especially in social-communication and social. The cut off scores used by AEPS are an indicator that a child is below the range for typically developing children and could indicate that development is delayed. These items included following one- and two-step directions and responding to requests to start and stop activities. The target skills for Henry were following one-step directions and making choices between two items.

Ed was a typically developing 3-year-old boy. At home, Ed's family primarily spoke Chinese; however, at school, Ed spoke English. This was his first year in the preschool program, but he attended the school for 1 year as a toddler. Ed enjoyed playing

with dinosaurs and play-doh. However, Ed had a difficult time beginning an activity independently. He often wandered around the classroom. Ed liked to talk with peers and would also initiate greetings to familiar adults in the classroom. Ed demonstrated some aggressive behavior towards other peers in his classroom, especially peers that are the same age as he. When Ed's AEPS Assessment was complete, it showed that he was at the cut off score for Social Communication skills. This included following one- and two-step directions, asking questions, and using two-word utterances. Ed's target skills were following one-step directions and making choices between two items. .

Instructors Two teaching assistants also served as participates in this study. The first teaching assistant, Reese, was a 23 years old woman, who graduated from the University of Kentucky in 2012 with a bachelor's degree in Interdisciplinary Early Childhood Education. This was her second year teaching at the university-based early childhood setting. Reese started coursework towards her master's degree in the fall of 2013. Reese had no previous experience with systematic instructional strategies.

The second teaching assistant, Cassie, was a 22-year-old woman, who graduated from the University of Kentucky in 2013 with a bachelor's degree in Interdisciplinary Early Childhood Education. This was her first year teaching, and she started coursework towards her master's degree in Interdisciplinary Early Childhood Education, in the fall of 2013. Cassie also had no previous experience with systemic instructional strategies.

The author, in a one-to-one format, trained the teaching assistants to use the strategies of time delay and system of least prompts procedures specific to the targeted skills and how to collect data during the embedded instruction. The author graduated from the University of Kentucky in 2011 with a degree in Interdisciplinary Early

Childhood Education and was in her third year of teaching public preschool. This study was conducted for partial completion of a Masters degree in Interdisciplinary Early Childhood Education.

Reliability data collector One reliability data collector was used during this study. The reliability data collector was the lead teacher, Cathy, of a second preschool classroom in the university-based early childhood center. She helped to collect procedural reliability and interobserver reliability data during the intervention phase. She graduated with her bachelor's degree in Interdisciplinary Early Childhood Education from the University of Kentucky in 2002 and a master's degree in Interdisciplinary Early Childhood Education from the University of Kentucky in 2012. Cathy had been teaching preschool for 9 years, since the 2005-2006 school year. She had been trained in and conducted the systematic teaching strategies of time delay and system of least prompts in her classroom during her master's classes and coursework.

Setting

The study took place in two preschool classrooms between the times of 8:30 AM and 11:30 AM. Reese and Henry were in the first preschool classroom and Cassie and Ed in were in the second preschool classroom. The children in the classrooms were between the ages of 2 and 5 years old. Both classrooms had a diverse population of students, with different races, cultures, languages, and disabilities. Some of the children in the program received special education services through the public preschool program.

The classroom uses the *Brigance Screening* (Enright, 1991) and the AEPS (Bricker, 2002) to assess the children. Using results from these assessments the teachers and families developed goals for the children. These goals were targeted throughout the

year; and based on these goals the teachers developed appropriate daily activities for the children. The classroom consisted of developmentally appropriate materials for the children to play with, along with theme-specific learning activities on various tables in the room.

Materials

The materials were varied across children and activities. However, all materials and activities were provided daily to the children and in their natural environment. Examples of materials and activities that were available to the children were puzzles, markers and writing utensils, books, dramatic play materials, blocks, stuffed animals, scales, and measuring utensils. Some activities that were in the classroom were fine motor practice using tweezers and pom poms, painting with watercolors, exploration of sand and water using measuring cups and spoons, play-doh and play-doh tools of scissors, rolling pins, and cookie cutters.

Teacher assistants were trained using homemade videotapes that were made specifically for this project by the researcher. These videotapes were filmed in a preschool classroom of children between the ages 2 and 5 years old. They were videotaped using activities and materials that were in the classroom daily: puzzles, writing utensils and paper. They ranged from 55 s and 3 min 12 s. Additionally, each teaching assistant had data collection forms, clipboards, and pencils to use.

Data Collection

During baseline procedures, the author collected data on the teaching assistants ability to implement the teaching strategies, using a checklist. On demand the author asked the teaching assistants to implement either the strategy of time delay or system of

least prompts with the target child on their target skill. The author then placed a checkmark next to each of the steps that the teaching assistants were able to do correctly. Data were collected on the child's target skills, which were defined through +, correct; -, incorrect; and 0, no response for time delay and system of least prompts.

During Intervention, the teaching assistants collected data on the child's target behavior responses during their trials. For the procedure of time delay, the responses that were collected were +, correct; -, incorrect; and 0, no response and for system of least prompts the responses were independent (I), verbal (V) model (M), physical (P) and no response (0). Once per week procedural reliability checks took place. The author or reliability data collector observed at least three trials on the day of observation. During the procedural reliability checks, the author or reliability data collector collected data on the following steps being able to be implemented correctly.

The steps for time delay procedures were (Collins, 2012):

1. Get the attention of the learner.
2. Deliver the task direction: "(Child's Name), which one do you want?"
3. Wait a 0/3 seconds for the learner to respond.
4. Deliver the controlling prompt.
    a. For Henry, the controlling prompt was: Take Henry's hand and say, "Henry, you want this one." while putting his hand on item.
    b. For Ed, the controlling prompt was, Say, "Ed, you want…" "Ed say 'I want…'"
5. Praise correct response or repeat the prompt for incorrect responses or failures to response.

6. Collect data.

The steps for system of least prompts procedure were (Collins, 2012):

1. Secure the learner's attention.
2. Deliver the task direction "(Child's Name), go…."
3. Wait for 3 s for the learned to respond independently.
4. If the learner responds correctly, give praise; if there is not a response or an error, give the least intrusive prompt in the hierarchy, verbal and gesture, and again wait 3 s for a response.
5. If the learner responds correctly, give praise; if there is not a response or an error, give the least intrusive prompt in the hierarchy, physical, and again wait 3 s for a response.
6. Praise the correct response before going to the next trial.
7. Collect data.

General Procedures

Two teaching assistants were trained on two teaching strategies, time delay and system of least prompts. Each of the teaching strategies focused on a specific target skill. The target skill for time delay was making a choice between two items. The target skill for system of least prompts was following one-step directions. The target skills were the same for both children.

The independent variable was the training and coaching of the teaching assistants on the specific teaching strategies. The dependent variables were the accuracy with which the teaching assistants implemented the two teaching strategies and how well the children made progress toward their target skills.

Baseline

Three baseline sessions occurred. During baseline, the author collected data on the teaching assistant being able to implement the teaching strategies of time delay and system of least prompts. The teaching assistants would join the target child in their play or set up a situation to implement their teaching strategy. For example, Reese sat with Henry during snack, having a cereal bar and banana in each hand and then asked him "Which one?" However she was not able to implement the teaching strategy of time delay correctly, and she continued to ask Henry "Which one?" when he did not give a response. The author used the procedural reliability data forms to place a checkmark next to each step of the teaching strategy the teaching assistants were able to do accurately.

During this time, the author collected data on whether the child demonstrated the response after being given the task direction. Time delay data and system of least prompts, data were collected based on the + sign indicating that the response was correct (the child picked an item or followed the direction), the - indicating the response was incorrect (the child picked both items or the child ignored the direction) and the 0 indicating no response (the child picked no items or the child walked away).

Training Sessions

Training occurred after three consecutive baseline sessions were conducted. The training session occurred outside of work hours in one of the preschool classrooms at the University of Kentucky Early Childhood Laboratory for 1 hr. The teaching assistants received 1 hr of training for each teaching strategy. The teaching assistants were trained separately so that possible-testing threats to internal validity would not occur. This would also allow the training sessions to be more individualized for each of the teaching

assistants. The training session followed the Outline for Training found in Appendix X. The form developed by the author was provided to the author and the teacher assistants. The teaching assistant and author were asked to check off each item as it is discussed during the training session. These forms provided documentation of fidelity of training implementation.

During training the author explained the purpose of the study and how the intervention fit into existing classroom activities. The author explained the systemic teaching strategies of time delay or system of least prompts. During that time an outline of each procedure was distributed. The author then asked each teaching assistant to role play implementing the procedure with the author. During that time, the author collected procedural reliability on the role-playing and then provided feedback to the teaching assistants. This training occurred until each teaching assistant could implement the teaching strategies at 100% accuracy.

Next the author showed videos of time delay or system of least prompts, along with intervention plans that explained the steps of each procedure. The intervention plans explained the steps of the teaching strategies and gave them specific ideas on when the strategies could be implemented in to the classroom. The author and teaching assistants discussed the videos and different situations in which you could implement each procedure.

The final step of the training was data collection The teaching assistants were provided a data collection form. They were advised to collect data on each procedure while they re-watched the videos. After each video, they would discuss their results with

the author. The author would provide feedback. This training continued until the teaching assistants could collect data at 100% accuracy for two videos.

Intervention

The teaching assistants used time delay and system of least prompts to teach the target skills for each child. During the intervention of the first teaching strategy, a baseline probe was conducted of the second teaching strategy once per week. This helped account for maturation from both the teaching assistant and target child. Mastery of the teaching strategy was determined based on the teaching assistant conducting the teaching strategy correctly at 100% for 3 consecutive days. The author or reliability data collector collected procedural reliability and interobserver agreement during these three sessions.

During the intervention phase of the study, the author coached the teaching assistants. This coaching involved, but was not limited to, discussion of how implementation of the target behavior was going observation of the strategy implementation, review of the procedural reliability data sheets, positive examples of how the target skill was implemented, and suggestions on how to improve on implementation of the teaching strategy.

Time delay, Henry and Ed were taught to make choices through time delay. The teaching assistants provided the children with a minimum of six trials throughout the day.. For example, Henry and Ed were asked to make a choice (a) if they wanted milk or juice at snack, (b) the color of marker to use at the art table, (c) which spot they wanted to hold while walking outside, (d) which book to read in the library, (e) which animal to play with in the block area and (f) which backpack was theirs when it was time to go

home. The teaching assistant collected data on the child's response during these activities.

System of least prompts, Henry and Ed worked on following one-step direction through system of least prompts. The teaching assistants provided the children with a minimum of six trials throughout the day. For example, Henry and Ed could be asked to follow a one-step direction, such as (a) hang up your backpack, (b) clean up your snack, (c) paint a picture, (d) go to the bathroom, (e) clean up you toys and (f) find a spot on the rope. The teaching assistant collected data on the child's progress during these activities.

Procedural Reliability and Interobsever Agreement

The author and reliability data collector collected procedural reliability by observing three trials. They checked to see if the teaching assistants were implementing the teacher strategies accurately one time per week. The author and reliability data collector used a checklist for the steps of time delay and system of least prompt procedures. They checked off each step that was implemented of the teaching strategy that was implemented by the teaching assistants. The formula used to determine the percentage of steps being conducted correctly was: number of steps performed correct divided by number of total steps (Billingsley, White, & Munson, 1980). In addition to watching the teaching assistants, the author and reliability data collector observed the children's response to the intervention.

Also, during the procedural reliability checks, the author and reliability data collector collected interobserver agreement of the teaching assistant's ability to record data correctly on the child's target skill. The formula used for interobserver agreement was: agreements divided agreements + disagreements x 100 (Daugherty et al., 2001).

Interobserver agreement was at 100% for each of the teaching assistants and their teaching strategies.

Following the procedural reliability checks, the author conducted coaching sessions. During the coaching sessions she discussed how implementation of the target behavior was going, they reviewed of the procedural reliability data sheets, gave positive examples of how the target skill was implemented, and gave suggestions on how to improve. Coaching sessions were conducted once a week. Once the teaching assistant met mastery of their first teaching strategy, three baseline probes were conducted on the second teaching strategy. Once baseline sessions were complete, training was conducted on the second strategy. Training took place as stated above. Once completed, the teaching assistants began to complete intervention trials with their target child. As with the first teaching strategy, procedural reliability and interobserver agreement took place once per week. Mastery of the teaching strategy was determined based on the teaching assistant conducting the teaching strategy correctly at 100% for 3 consecutive days. The author or reliability data collector collected procedural reliability and interobserver agreement during these three sessions.

Maintenance

Maintenance data were collected once per week every 2 weeks, once the teaching assistant had met mastery of that systematic teaching strategy. The teaching assistants were asked to implement the teaching strategy and the author used a checklist, in which they received a check for each step that was implemented and also collected interobserver agreement.

Generalization

Generalization was measured in two ways. First, the teaching assistants implemented the teaching strategy in the same classroom but with a different child. Second, the author implemented the teaching strategy with the target child. This was to see if the skills of making choice or following 1 step directions would be generalized. Generalization took place at least once the teaching assistants had met mastery of each teaching strategy.

Experimental Design

A multiple-probe design with conditions (Horner & Baer, 1978) across two behaviors and across two participants design was used to determine the effects of teaching assistants' fidelity of implementation of evidence-based teaching strategies (Wolery, 2002). Also a multiple probe across two behaviors, replicated across children was used (Tawney & Gast, 1984). This allowed for the fewest baseline sessions for the participant not already involved in the intervention phase and helped to control for maturation and history. These experimental designs were used because they helped to limit the threat of the teaching assistants seeing each other conduct their teaching strategies. Also other individuals in the classroom were asked to not implement the teaching strategies and the target skills of the children.

Each child participated in three phases for each of the two behaviors: (a) baseline, (b) intervention and (c) maintenance phase. Data were collected during each of these phases. The first participant and teaching assistant began the intervention after at least three consecutive baseline sessions. Experimental control was established by the increase

of the accuracy of the systemic teaching strategy being implemented by the teaching assistant once training and intervention procedures were applied.

Chapter Three: Results

The systematic teaching strategies and target skills were embedded into naturally occurring classroom activities, which were either child-directed or teacher-directed for a total of six trials daily during baseline, intervention and maintenance sessions.

Cassie

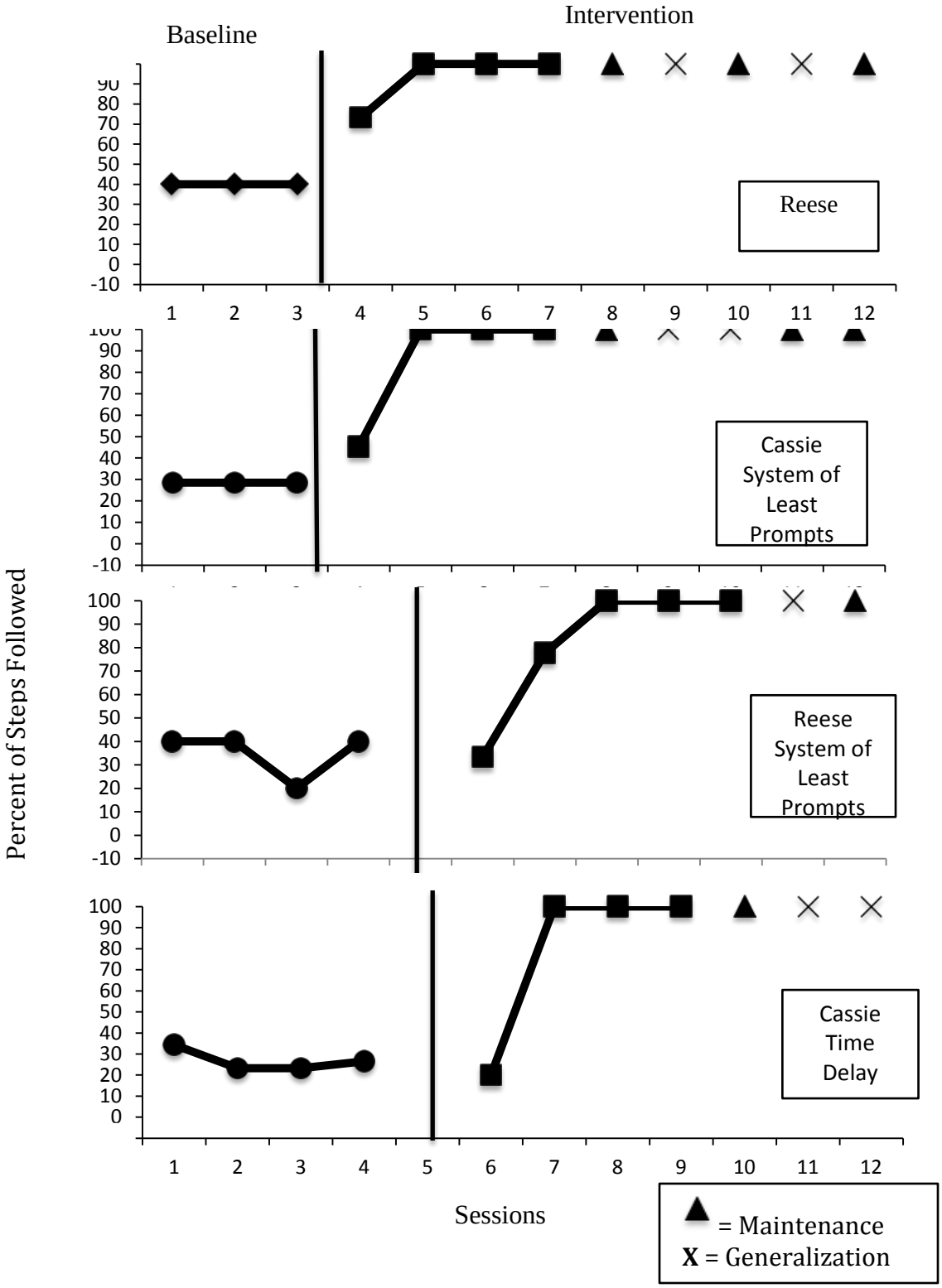
System of least prompts Cassie implemented the teaching strategy of system of least prompts first. During baseline, she averaged 28.5% correct steps of the intervention. She was able to get the target child's attention and then deliver a task direction; however, after these steps, she was incorrect in implementing the procedure. After 3 consecutive days of baseline, Cassie was trained in how to implement system of least prompts correctly. Cassie implemented the intervention 2 days and then was observed for procedural reliability by the author. During the procedural reliability check, Cassie implemented the intervention at 45.2 % correct. Cassie gave the child two prompts before implementing the system of least prompts. Since the intervention was implemented incorrectly, Cassie received coaching from the author which included observation of the strategy implementation, review of the procedural reliability data sheets, discussion of how implementation of the target behavior was going, positive examples of how the target skill was implemented, and suggestions on how to improve on implementation of the teaching strategy. Following the coaching, Cassie implemented the intervention 2 more days until she was observed again. During the second procedural reliability check, Cassie was implementing the intervention at 100%. The author observed Cassie for the

next 2 consecutive days, each day with Cassie implementing the intervention at 100%. Thus according to the criterion, Cassie had met mastery of implementation of the system of least prompts. It took Cassie 7 days following training to reach mastery of the teaching strategy of system of least prompts. Maintenance checks were completed 3 times, each time with Cassie implementing the intervention at 100%. Cassie performed generalization on 2 children following the intervention phase. Both times she was able to complete the intervention at 100%.

Time delay During the first intervention, a baseline probe of time delay was implemented. Cassie was observed to implement the strategy at 34.3% correctly. Following mastery of system of least prompts, 3 days of baseline of Cassie implementing the teaching strategy of time delay was collected. Cassie was observed completing the strategy at 24.4% (range= 23.3% - 26.6%) mastery. After baseline, Cassie was trained in how to implement time delay correctly. Cassie implemented the intervention 2 days and then was observed for procedural reliability by the author. During the procedural reliability check, Cassie implemented the intervention at 20% correct. Cassie was able to give the child the task direction but instead of implementing the controlling prompt, Cassie continued to deliver the task direction “Ed, which one do you want?” Since the intervention was implemented incorrectly, Cassie received coaching from the author. Following the coaching, Cassie implemented the intervention 2 more days until she was observed again. During the second procedural reliability check, Cassie was implementing the intervention at 100%. The author observed Cassie for the next 2 consecutive days, each day with Cassie implementing the intervention at 100%. Thus according to the criterion, Cassie had met mastery of implementation of the system of least prompts. It

took Cassie 8 days following training to reach mastery of the teaching strategy of system of least prompts. Maintenance checks were completed two times, each time with Cassie implementing the intervention at 100%. Cassie performed generalization on 1 child following the intervention phase. She was able to complete the intervention at 100%.

Figure 2.1. Percent of Steps Followed for Instructors



Reese

Time delay Reese implemented the teaching strategy of time delay first. During baseline, she was able to implement the strategy at 40% correct. Reese was able to get the attention of the child and give the task direction however after these steps she was incorrect in implementing the strategy. After 3 consecutive days of baseline, Reese was trained in how to implement time delay correctly. Reese implemented the intervention 1 day and then was observed for procedural reliability by the author. During the procedural reliability check, Reese implemented the intervention at 73.3% correct. Reese was delivering the incorrect task direction to the child. Since the intervention was implement incorrectly, Reese received coaching from the author. Following the coaching, Reese implemented the intervention 2 more days until she was observed again. During the second procedural reliability check, Reese was implementing the intervention at 100%. The author observed Reese for the next 2 days, each day with Reese implementing the intervention at 100%. Thus according to the criterion, Reese had met mastery of implementation of time delay. It took Reese 7 days following training to reach mastery of the teaching strategy of time delay. Maintenance checks were completed 3 times, each time with Reese implementing the intervention at 100%. Reese performed generalization on 2 children following the intervention phase. Both times she was able to complete the intervention at 100%. It should be noted that there was a snow day during the final procedural reliability check, so Reese was unable to implement the intervention for 3 consecutive days.

System of least prompts During the first intervention, a baseline probe of system of least prompts was implemented. Reese was observed being able to implement the

strategy at 40% correctly. Following mastery of time delay, 3 days of baseline of Reese implementing the teaching strategy of system of least prompts was collected. Reese was observed at completing the strategy at 33.3% (range= 20% - 40%) correctly. After baseline, Reese was trained in how to implement time delay correctly. Reese implemented the intervention 1 day and then was observed for procedural reliability by the author. During the procedural reliability check, Reese implemented the intervention at 33.3% correct. Reese was able to get the child's attention and deliver the task direction but instead of implementing the controlling prompt, Reese continued to deliver the task direction "Henry, go….". Since the intervention was implement incorrectly, Reese received coaching from the author. Following the coaching, Reese implemented the intervention 2 more days until she was observed again. During the second procedural reliability check, Reese was implementing the intervention at 77.7%. Reese was able to get the attention of the child, deliver the task direction and complete the order of prompts; however, she did not praise the child following each trial. Since the intervention was implement incorrectly, Reese received coaching from the author. Following the coaching, Reese implemented the intervention 5 more days until she was observed again. During the third procedural reliability check, Reese was implementing the intervention at 100%. The author observed Reese for the next 2 consecutive days, each day with Reese implementing the intervention at 100%. Thus according to the criterion, Reese had met mastery of implementation of the system of least prompts. It took Cassie 10 days following training to reach mastery of the teaching strategy of system of least prompts. A maintenance check was completed with Reese implementing the intervention at 100%. Reese performed generalization on 1 child following the intervention phase. She was able

to complete the intervention at 100%. It should be noted that during this intervention phase, there were 4 days that Reese was unable to complete intervention due to snow days.

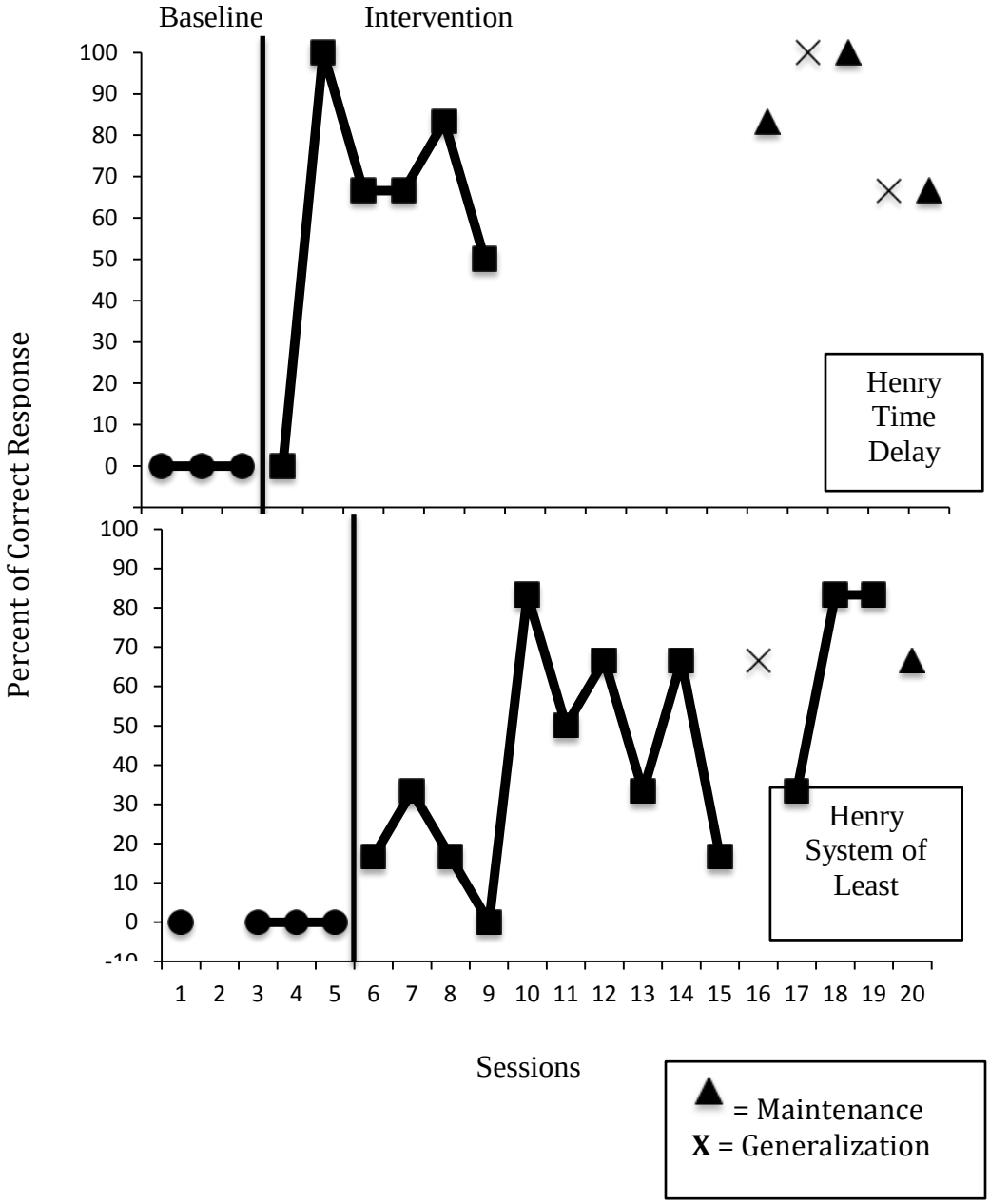
Henry

Time delay During the baseline sessions of time delay, Henry responded correctly 0% of the trials. Once intervention was introduced, time delay was initially implemented with a 0s delay interval, during this session Henry responded correctly 0% of the trials. Following the 0s delay, the interval was increased to 3s. During the 3s delay interval, Henry responded correctly at 73.3% (range= 50%-100%). Following the intervention, there were three maintenance checks. During the maintenance checks, Henry responded correctly 83.3% (range=66.6% -100%). Henry received generalization from the author two times, in which he responded correctly at 83.3% (range=66.6% - 100%).

System of least prompts During the first intervention a baseline probe of system of least prompts was completed. Henry responded correctly 0% of these trials. During 3 consecutive baseline days, Henry had 0% of correct responses to the system of least prompts. During intervention phase, Henry responded correctly 33.3% (range= 0% - 83.3%). Since the teaching assistant, Reese, who was working with Henry, reached mastery of system of least prompts the initial intervention was ended. Following the author's look over Henry's data, it was decided to have Reese continue to implement the intervention of system of least prompts because of Henry unstable data. Reese completed the intervention for seven additional sessions. During these trials, Henry responded correctly 54.7% (range= 16.6% - 83.3%) Henry had one maintenance check following the

intervention; he responded correctly 66.6%. Henry received generalization from the author in which he responded correctly at 66.6%. It should be noted that during this intervention phase, there were 4 days that Reese was unable to complete intervention due to snow days.

Figure 2.2. Percent of Correct Responses for Henry

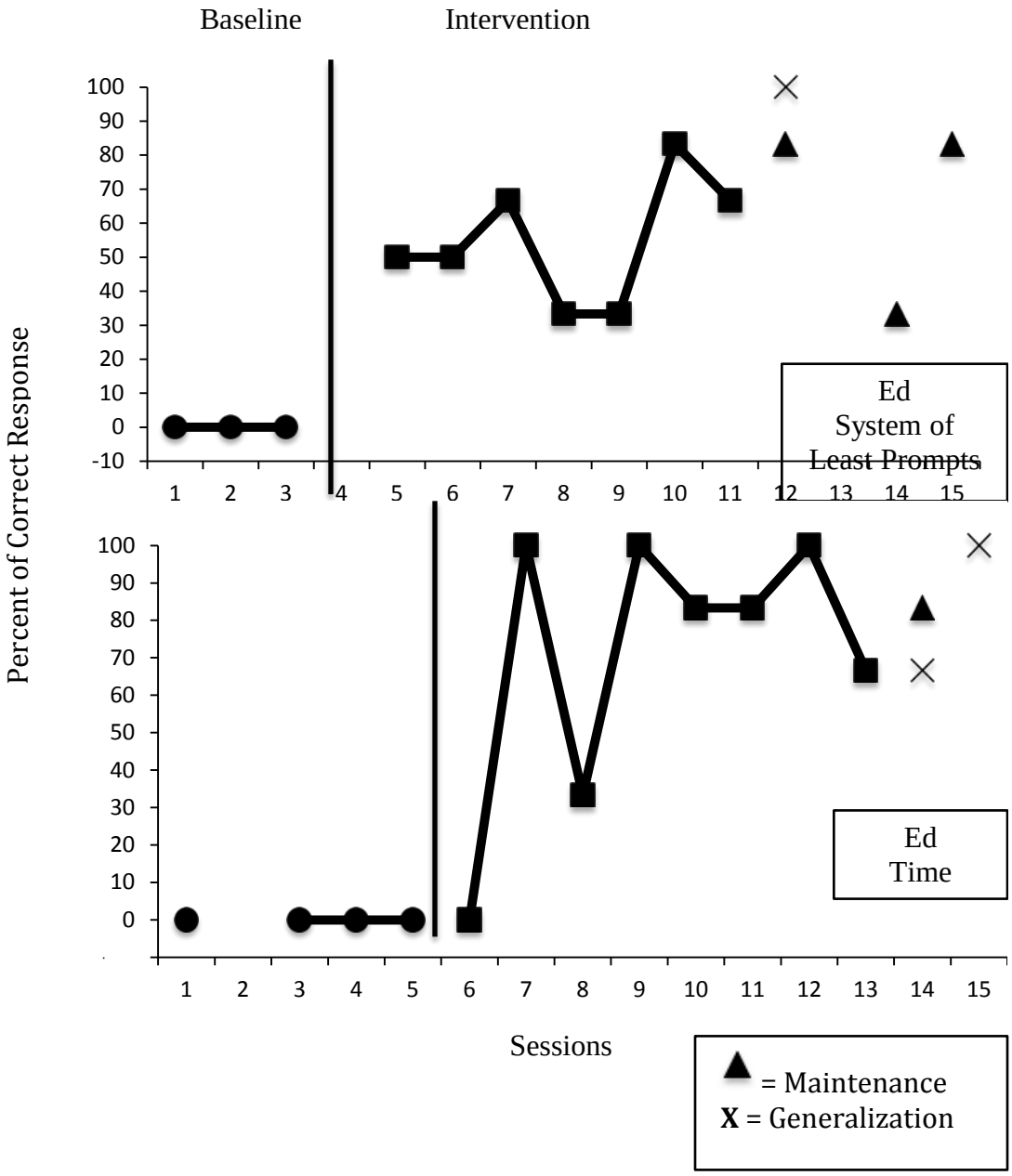


Ed

System of least prompts During 3 consecutive baseline days, Ed had 0% of correct responses to the system of least prompts. During intervention phase, Ed responded correctly 54.7% (range= 33.3% - 83.3%). Ed had three maintenance checks following the intervention; he responded correctly 66.63% (range= 33.3% - 83.3%). Ed received generalization from the author in which he responded correctly at 100%.

Time delay During the first intervention a baseline probe of time delay was completed. Ed responded correctly 0% of the trials. During the baseline sessions of time delay, Ed responded correctly 0% of the trials. Time delay was initially implemented with a 0s delay interval, during this session, Ed responded correctly 0% of the trials. Following the 0s delay, the interval was increased to 3s. During the 3s delay interval, Ed responded correctly at 80.92% (range= 33.3%-100%). Following the intervention, there was two maintenance checks. During the maintenance checks, Ed responded correctly 91.65% (range=83.3% -100%). Ed received generalization from the author in which he responded correctly at 66.6%.

Figure 2.3. Percent of Correct Responses for Ed



Chapter Four: Discussion

The purpose of the present study was to investigate the ability of teaching assistants to implement systematic teaching strategies with reliability to children with and without disabilities. The targeted skills were taught using time delay and system of least prompts embedded in naturally occurring opportunities in two preschool classrooms. The study also investigated the ability for teaching assistants to accurately collect data. The data indicated that teaching assistants were effective in implementing the systematic teaching strategies of time delay and system of least prompts. Both of the teaching assistants reached criterion for the skill and both demonstrated maintenance and generalization of the skills. The results also indicated that the teaching assistants were effective in collecting accurate data. Each of the teaching assistants reached criterion for the skill and both demonstrated maintenance and generalization of the skills. The final aspect of the study was to see if the children in the study would make progress in their target skills. This study shows that time delay and system of least prompts are effective teaching strategies to implement the skills of choice making and following one-step directions. The two children made progress in each of the target skills for the corresponding systematic teaching strategy used with it.

The present study contributed to the body of research involving fidelity of implementations in seven ways. First, this study focused in a preschool setting and on the outcomes of the implementation of the systematic teaching strategies. Much of the current research on fidelity of implements is done in public and mental health fields (Dane & Schneider, 1988; Ruiz-Primo, 2005) or in the grades from kindergarten to 12th grade (O'Donnell, 2008; Azano et al., 2011) or some research has been conducted in

special education on both instruction and behavioral strategies (Cook & Odom, 2013; Azano et al., 2011).

The present study also contributes to research in the area of fidelity of implementation because it was conducted in a blended early childhood setting, within classroom activities and routines by a classroom teacher. The children in the two preschool classrooms attend for childcare, public preschool and services, or Head Start. This is similar to the study conducted by Daugherty et al. (2001), in which the research was conducted in a preschool classroom by the first author, who was a practicum student in the classroom.

Most research in the education fields involves teachers implementing the intervention. The present study contributes to the literature because the focus was on teaching assistants to implement the intervention; whereas in Hamre et al. (2010) he studied fidelity of implementation of the teachers and preschool children's growth in language and literacy skills and Azano et al. (2011) researched the effectiveness of a research-based language arts curriculum for gifted third graders based on teacher's expectations and beliefs.

Next this study focused on systematic teaching strategies and the ability of the teaching assistants to implement these teaching strategies. Whereas other studies on the fidelity of implementation have used curriculums as the intervention tool (Azano et al, 2011; Hamre et al., 2010). In a study, where participants are given a specific curriculum, such as materials, tools and a script, it is easier for the intervention to be implemented because the participants know exactly what to do and when. However the present study required teaching assistants to understand the intervention and use naturally occurring

times throughout the day to implement the teaching strategy. No matter the type of intervention being used in a study, it is important that it is done with a high level of fidelity to help ensure that the student's make progress in their outcomes.

Another contribution the present study makes to the body of research involving fidelity of implementation is the idea that interventions need to be implemented with a high level. O'Donnell (2008) reviewed literature in fidelity of implementation and results indicated when intervention was implemented with greater fidelity, then there were significantly higher student achievement scores. This is similar to the present study that was conducted. When the teaching assistants implemented the systematic teaching strategies at a higher level the children's progress toward their target skills were improved as well. Similarly, when the teaching assistants did not implement the teaching strategies accurately, the children's progress either remained the same or declined. These findings are similar to the study conducted by Azano et al (2011) who focused on the effectiveness of a research-based language arts curriculum for gifted third grade students. As well as in the study conducted by Grisham-Brown et al. (2000), they primarily focused on the effects of response prompting procedures within an embedded approach on skill acquisition by 4 preschoolers with significant disabilities. However, their study included some data on the paraprofessionals and it was found that the paraprofessionals could implement the intervention with the high level of fidelity of 90%. The present study focused on the teaching assistants being able to implement the intervention at 100%. It was shown that when the intervention was at 100%, the child progress increased.

The present study adds to the literature of fidelity of implementation in the area of dosage, adherence and quality. In the study by Hamre et al. (2010) the researchers focused on fidelity of implementation in those three areas. Their findings indicated that teachers reported using the curriculum fairly often and that they were observed to generally follow curricular lesson plans. However the quality of the deliver of information was much lower. The study concluded that children whose teachers exhibited higher quality of delivery of literacy lessons made significantly greatly quality language gains in early literacy skills across the preschool year. In the present study, the teaching assistants were given the dosage they needed to use, which was 6 trials per day. The teaching assistants needed to reach criterion on the teaching strategies, with was at 100%, before the intervention could be withdrew; then this study the teaching assistants adhered to the program design at 100%. In the present study, the quality of delivery of teaching strategies was also at 100% because of the procedural reliability checks conducted throughout the study. Similar to the research by Hamre et al. (2010) the children in the present study made progress towards their target skills when the teaching assistants high quality of delivery of the teaching strategies.

Finally the present study has added to the literature because the target skills of the children were social behaviors. Typically the teaching strategies of time delay and system of least prompts are used to teach academic skills (Alig-Cybriwsky et al., 1990; Daughtery et al., 2001; Odluyurt, 2011). However the present study focused on the social behaviors of making choices and following one step directions.

Limitations of the Study

While the data from the present study indicated that teaching assistants can implement systematic teaching strategies with reliability, there were some limitations to the study. First, the teaching assistants were not typical teaching assistants. Both of the individuals had attend the University of Kentucky and earned their degrees in Interdisciplinary Early Childhood Education; they then started working as teaching assistants at the university lab school and then began coursework for their Master's degrees in in Interdisciplinary Early Childhood Education. Also both of the teaching assistants showed interest in behavior change and were taking coursework towards earning a credential as a Board Certified Behavior Analyst. It was because of their education level and background that the teaching assistants were not typically assistants that you would find in other preschool classroom. However, it should be noted that the intervention of using systematic teaching strategies is one that could still be used in a program such as in this study.

A second limitation of the study was having consistent time in the public preschool program. There were 4 snow days or hour delays in which that classroom was not open. In addition, there were two other school days in which the public preschool classroom was closed. The course of the study was interrupted by 6 days of no school. This could attribute to the fact that Henry's correct responses were unstable during the system of least prompts, which was being implemented during the snow days. However, even though there were snow days, Reese was still able to maintain the teaching strategy and implement it at a high level of fidelity during this time. While there was

inconsistence in the public preschool program, the university-based preschool consistently had school during the study.

A third limitation of the study was that the children did not reach criterion in their target skills; the interventions were stopped because the teaching assistants had mastered the teaching strategy. However, the children did make progress towards their target skills. For future research, the interventions could continue until the children have reached criterion.

Finally, while everyone in the classroom was asked to not use the systematic teaching strategies for the 2 children, the study was limited by history and maturation, as well as not knowing if therapists in the public preschool classroom would work with the target child using the teaching strategies or on their specific target skills.

Future Research

Future research in this area could include examining the effectiveness of systematic teaching strategies on larger samples of preschool children with varying abilities. The research could focus on teaching assistants who are more typical and have different education backgrounds or experiences. Another idea is to have the children reach criterion on their target skills before the intervention is stopped.

APPENDIX A

Consent to Participate in a Research Study for Students

Training Teaching Assistants to Implement Systemic Strategies in Preschool Classrooms with Reliability

WHY ARE YOU BEING INVITED TO TAKE PART IN THIS RESEARCH?
Your child is being invited to take part in a research study about fidelity of implements of systemic strategies by teaching assistants. Your child is being invited to take part in this research study because he/she can benefit from intentional and intensive instructional strategies. If your child volunteers to take part in this study, he/she will be one of about four people to do so.

WHO IS DOING THE STUDY?
The person in charge of this study is Rebecca Crawford of University of Kentucky Department of *Education*. Dr. Jennifer Grisham-Brown is guiding her in this research. There may be other people on the research team assisting at different times during the study.

WHAT IS THE PURPOSE OF THIS STUDY?

The purpose of this study is to see how well teaching assistant can implement teaching strategies, time delay and systems of least prompts, with fidelity and how well they can collect data on those interventions. We will also look at if children receiving these interventions acquire new skills.

By doing this study, we hope to learn about fidelity of implement of systemic strategies by teaching assistants.

ARE THERE REASONS WHY YOU SHOULD NOT TAKE PART IN THIS STUDY?

The criterion for the preschool research subjects is that they are children with and without disabilities who are in a preschool classroom and who is between the ages of 2 and 5 years old. These children could benefit from having extra specialized, intensive and intentional instruction from a teaching assistant. A preschool research subject would be excluded from this study if they were not in a preschool classroom, and were not between the ages of 2-5 years old.

WHERE IS THE STUDY GOING TO TAKE PLACE AND HOW LONG WILL IT LAST?

The research procedures will be conducted at the University of Kentucky Early Childhood Laboratory. Your child will need to come to Erikson Hall, Preschool Room. The study will take place during the normal classroom time of 8:30 to 11:30AM.

WHAT WILL YOU BE ASKED TO DO?

The research will take place during the normal classroom routine. Your child will not be asked to complete activities or routines that are not normally given.

WHAT ARE THE POSSIBLE RISKS AND DISCOMFORTS?

To the best of our knowledge, the things your child will be doing have no more risk of harm than your child would experience in everyday life.

WILL YOU BENEFIT FROM TAKING PART IN THIS STUDY?

There is no guarantee that your child will get any benefit from taking part in this study. Your child's willingness to take part, however, may, in the future, help society as a whole.

DO YOU HAVE TO TAKE PART IN THE STUDY?

If your child decides to take part in the study, it should be because your child really wants to volunteer. Your child will not lose any benefits or rights; your child would normally have, if your child chooses not to volunteer. Your child can stop at any time during the study and still keep the benefits and rights your child had before volunteering. If your child chooses not to volunteer, it will not affect your child's ability to stay in the preschool program.

IF YOU DON'T WANT TO TAKE PART IN THE STUDY, ARE THERE OTHER CHOICES?

If your child does not want to be in the study, there are no other choices except not to take part in the study.

WHAT WILL IT COST YOU TO PARTICIPATE?

There are no costs associated with taking part in the study.

WILL YOU RECEIVE ANY REWARDS FOR TAKING PART IN THIS STUDY?

Your child will not receive any rewards or payment for taking part in the study.

WHO WILL SEE THE INFORMATION THAT YOU GIVE?

We will make every effort to keep confidential all research records that identify you to the extent allowed by law.

Your information will be combined with information from other people taking part in the study. When we write about the study to share it with other researchers, we will write about the combined information we have gathered. You will not be personally identified in these written materials. We may publish the results of this study; however, we will keep your name and other identifying information private.

We will make every effort to prevent anyone who is not on the research team from knowing that you gave us information, or what that information is. All information collected will be stored at the University of Kentucky and will be kept for 6 years after the completion of the study

We will keep private all research records that identify you to the extent allowed by law. However, there are some circumstances in which we may have to show your information to other people. For example, the law may require us to show your information to a court. Also, we may be required to show information which identifies you to people who need to be sure we have done the research correctly; these would be people from such organizations as the University of Kentucky.

CAN YOUR TAKING PART IN THE STUDY END EARLY?

If your child decides to take part in the study your child still has the right to decide at any time that you no longer want to continue. Your child will not be treated differently if your child decides to stop taking part in the study.

The individuals conducting the study may need to withdraw your child from the study. This may occur if your child is not able to follow the directions they give your child, if they find that your child being in the study is more risk than benefit to your child, or if the agency funding the study decides to stop the study early for a variety of scientific reasons. There will be no consequences if your child withdraw or if the individual conducting the study may need to withdraw your child from the study.

WHAT IF NEW INFORMATION IS LEARNED DURING THE STUDY THAT MIGHT AFFECT YOUR DECISION TO PARTICIPATE?

If the researcher learns of new information in regards to this study, and it might change your willingness to stay in this study, the information will be provided to you. You may be asked to sign a new informed consent form if the information is provided to you after your child have joined the study.

WHAT ELSE DO YOU NEED TO KNOW?

There is a possibility that the data collected from your child may be shared with other investigators in the future. If that is the case the data will not contain information that can identify your child unless you give your consent or the UK Institutional Review Board (IRB) approves the research. The IRB is a committee that reviews ethical issues, according to federal, state and local regulations on research with human subjects, to make sure the study complies with these before approval of a research study is issued.

The principal investigator will be looking into your child's folders and assessment data, which is located at the University of Kentucky Early Childhood Laboratory. Information from your child's background, assessment and Individual Education Plan, if applicable, maybe included in the research.

WHAT IF YOU HAVE QUESTIONS, SUGGESTIONS, CONCERNS, OR COMPLAINTS?

Before you decide whether to accept this invitation to take part in the study, please ask any questions that might come to mind now. Later, if you have questions, suggestions, concerns, or complaints about the study, you can contact the investigator, _Rebecca Crawford_____ at _____(859) 257 - 7732____. If you have any questions about your rights as a volunteer in this research, contact the staff in the Office of Research Integrity at the University of Kentucky at 859-257-9428 or toll free at 1-866-400-9428. We will give you a signed copy of this consent form to take with you.

_____
Name of child agreeing to take part in the study

_____ _____
Signature of parent/guardian agreeing to take part in the study Date

_____
Printed name of parent/guardian agreeing to take part in the study

_____ _____
Name of (authorized) person obtaining informed consent Date

APPENDIX B

Consent to Participate in a Research Study for Instructors

Training Teaching Assistants to Implement Systemic Strategies in Preschool Classrooms with Reliability

WHY ARE YOU BEING INVITED TO TAKE PART IN THIS RESEARCH?
You are being invited to take part in a research study about fidelity of implements of systemic strategies by teaching assistants. You are being invited to take part in this research study because you are a current teaching assistant and can benefit from learning about systemic strategies, time delay and systems of least prompts, and how to implement them correctly with 100% accuracy. If you volunteer to take part in this study, he/she will be one of about four people to do so.

WHO IS DOING THE STUDY?
The person in charge of this study is Rebecca Crawford of University of Kentucky Department of *Education*. She is being guided in this research by Dr. Jennifer Grisham-Brown. There may be other people on the research team assisting at different times during the study.

WHAT IS THE PURPOSE OF THIS STUDY?

The purpose of this study is to see how well teaching assistant can implement teaching strategies, time delay and systems of least prompts, with fidelity and how well they can collect data on those interventions. We will also look at if children receiving these interventions acquire new skills.

By doing this study, we hope to learn about fidelity of implement of systemic strategies by teaching assistants.

ARE THERE REASONS WHY YOU SHOULD NOT TAKE PART IN THIS STUDY?

The criterion for the teaching assistant research subject is that they are teaching assistants in a preschool classroom and have not been trained in specific teaching strategies. A teaching assistant research subject would be excluded from this study if they were not a teaching assistant or if they had previously received training in teaching strategies of time delay and system of least prompts.

WHERE IS THE STUDY GOING TO TAKE PLACE AND HOW LONG WILL IT LAST?

The research procedures will be conducted at the University of Kentucky Early Childhood Laboratory. You will need to come to Erikson Hall, Preschool Room. The study will take place during the normal classroom time of 8:30 to 11:30AM.

WHAT WILL YOU BE ASKED TO DO?

The research will take place in the normal classroom environment. There will be some training of the teaching assistants on time delay and system of least prompts before the intervention can be implemented. The training will be a two-hour training that consists of watching a video and then role-playing. Throughout the training, the teaching assistants will receive feedback and coaching by the author.

Once the research has begun, the author will coach you on these teaching strategies in order to make sure that the invention is being done correctly.

The teaching assistants will also be trained on collecting data of the children-taking place in the research. You will receive a one-hour training on this prior to implementation.

WHAT ARE THE POSSIBLE RISKS AND DISCOMFORTS?

To the best of our knowledge, the things you will be doing have no more risk of harm than you would experience in everyday life.

WILL YOU BENEFIT FROM TAKING PART IN THIS STUDY?

There is no guarantee that you will get any benefit from taking part in this study. Your willingness to take part, however, may, in the future, help society as a whole.

DO YOU HAVE TO TAKE PART IN THE STUDY?

If you decide to take part in the study, it should be because you really want to volunteer. You will not lose any benefits or rights you would normally have if you choose not to volunteer. You can stop at any time during the study and still keep the benefits and rights you had before volunteering. As a student, if you decide not to take part in this study, your choice will have no effect on you academic status or grade in the class.

IF YOU DON'T WANT TO TAKE PART IN THE STUDY, ARE THERE OTHER CHOICES?

If you do not want to be in the study, there are no other choices except not to take part in the study.

WHAT WILL IT COST YOU TO PARTICIPATE?

There are no costs associated with taking part in the study.

WILL YOU RECEIVE ANY REWARDS FOR TAKING PART IN THIS STUDY?

You will not receive any rewards or payment for taking part in the study.

WHO WILL SEE THE INFORMATION THAT YOU GIVE?

We will make every effort to keep confidential all research records that identify you to the extent allowed by law.

Your information will be combined with information from other people taking part in the study. When we write about the study to share it with other researchers, we will write about the combined information we have gathered. You will not be personally identified in these written materials. We may publish the results of this study; however, we will keep your name and other identifying information private.

We will make every effort to prevent anyone who is not on the research team from knowing that you gave us information, or what that information is. All information collected will be stored at the University of Kentucky and will be kept for 6 years after the completion of the study

We will keep private all research records that identify you to the extent allowed by law. However, there are some circumstances in which we may have to show your information to other people. For example, the law may require us to show your information to a court. Also, we may be required to show information which identifies you to people who need to be sure we have done the research correctly; these would be people from such organizations as the University of Kentucky.

CAN YOUR TAKING PART IN THE STUDY END EARLY?

If you decide to take part in the study you still have the right to decide at any time that you no longer want to continue. You will not be treated differently if you decide to stop taking part in the study.

The individual conducting the study may need to withdraw you from the study. This may occur if you are not able to follow the directions given to you, if you being in the study is more risk than benefit to you, or if the agency funding the study decides to stop the study early for a variety of scientific reasons. There will be no consequences if you withdraw or if the individual conducting the study may need to withdraw you from the study.

WHAT IF NEW INFORMATION IS LEARNED DURING THE STUDY THAT MIGHT AFFECT YOUR DECISION TO PARTICIPATE?

If the researcher learns of new information in regards to this study, and it might change your willingness to stay in this study, the information will be provided to you. You may be asked to sign a new informed consent form if the information is provided to you after you have joined the study.

WHAT ELSE DO YOU NEED TO KNOW?

There is a possibility that the data collected from you may be shared with other investigators in the future. If that is the case the data will not contain information that can identify you unless you give your consent or the UK Institutional Review Board (IRB) approves the research. The IRB is a committee that reviews ethical issues, according to federal, state and local regulations on research with human subjects, to make sure the study complies with these before approval of a research study is issued.

WHAT IF YOU HAVE QUESTIONS, SUGGESTIONS, CONCERNS, OR COMPLAINTS?

Before you decide whether to accept this invitation to take part in the study, please ask any questions that might come to mind now. Later, if you have questions, suggestions, concerns, or complaints about the study, you can contact the investigator, _Rebecca Crawford_____ at _____(859) 257 - 7732____. If you have any questions about your rights as a volunteer in this research, contact the staff in the Office of Research Integrity at the University of Kentucky at 859-257-9428 or toll free at 1-866-400-9428. We will give you a signed copy of this consent form to take with you.

_____ _____

Signature of person agreeing to take part in the study Date

_____

Printed name of person agreeing to take part in the study

_____ _____

Name of (authorized) person obtaining informed consent Date

APPENDIX C

Outline for Training

Date: Start/End Time:

Directions: Check off each item as it is discussed during training session.

1. Explanation of Outline for Training sheet.
2. Purpose of Study
3. How the intervention will fit into existing classroom activities
4. Explanation of systemic teaching strategies
    a. Outline of each strategy provided
5. Role-Play of each strategy
    a. Author provides feedback
    b. Checklist shared with teaching assistants on implementation of procedures.
6. Introduction of Video Training
    a. Intervention Plans distributed
    b. Discussion of ways to implement strategies
7. Data Collection discussed
    a. Data collection sheet distributed
    b. Data collected on each video
    c. Results and feedback given by author
8. Introduction of ‘coaching’
    a. How this will occur?

APPENDIX D

Time Delay Procedures for Ed

First Session

Steps
1. Get the attention of the learner.
2. Deliver the task direction: "Ed, which one do you want?"
3. Wait 0 seconds for the learner to respond.
4. Deliver the controlling prompt immediately. Say, "Ed, you want…" "Ed say 'I want….'"
5. Praise correct response or repeat the prompt for incorrect response or failures to response.
6. Record data.

Remaining Sessions

Steps
1. Get the attention of the learner.
2. Deliver the task direction: "Ed, which one do you want?"
3. Wait 3 seconds for the learner to respond.
4. Deliver the controlling prompt immediately. Say, "Ed, you want…" "Ed say 'I want….'"
5. Praise correct response or repeat the prompt for incorrect response or failures to response.
6. Record data.

APPENDIX E

Intervention Plan: Time Delay, Ed

<table>
<tr><th>Antecedent</th><th>Behavior</th><th>Consequence</th></tr>
<tr><td rowspan="2">Where: Classroom

When:
* Making a choice between milk or water at snack
*Making a choice between a red or blue maker
* Making a choice between a square or triangle block
* Making a choice between painting or water play
*Making a choice between sinks in the bathroom
* Making a choice between which center to play in
*Making a choice between two books to read

Teacher Action:
“Ed, which one do you want?”

Wait 0 second for first session

Wait 3 seconds for all subsequent sessions</td><td>+ Targeted behavior

Child will give verbal response for item chosen. Child could also point or gesture to item chosen.</td><td>Teacher provides specific verbal praise – e.g., yes, Ed, you want_____
Then teacher provides access to the chosen object/activity.</td></tr>
<tr><td>- Not targeted behavior

Child does not respond within 3 seconds

Child chooses non-preferred object/activity.</td><td>(NOTE: For 0 second delay, the teacher does not wait. Immediately after giving the direction, teacher will say “Ed, say ‘I want _____.’”

Teacher repeats prompt and wait for student to respond. If no response, then teacher makes choice for student and says “Ed, say ‘I want ____.’” And provides access to object/activity

Teacher repeats prompt and wait for student to respond. If no response, then teacher makes choice for student and says “Ed, say ‘I want ____.’” And provides access to object/activity</td></tr>
</table>

APPENDIX F

Time Delay Procedural Reliability – First Session, Ed

Name:_____ Skill:_____
Instructor: _____ Setting:_____
Date: _____ Time:_____
Delay Interval:_____

Conducted (Indicate with ✓) Trials						**Steps**
1	**2**	**3**	**4**	**5**	**6**	
						1. Get the attention of the learner.
						2. Deliver the task direction: "Ed, which one do you want?"
						3. Wait 0 seconds for the learner to respond.
						4. Deliver the controlling prompt immediately. Say, "Ed, you want…" "Ed say 'I want….'"
						5. Praise correct response or repeat the prompt for incorrect response or failures to response.
						6. Record data.
						Child's Response

Key: Plus (+) sign indicates correct; minus (-) sign indicates incorrect;
Zero (0) indicates no response

APPENDIX G

Time Delay Procedural Reliability– Remaining Sessions, Ed

Name:_____ Skill:_____
Instructor: _____ Setting:_____
Date: _____ Time:_____
Delay Interval:_____

Conducted (Indicate with ✓) **Trials**						**Steps**
1	**2**	**3**	**4**	**5**	**6**	
						1. Get the attention of the learner.
						2. Deliver the task direction: "Ed, which one do you want?"
						3. Wait 3 seconds for the learner to respond.
						4. Deliver the controlling prompt immediately. Say, "Ed, you want…" "Ed say 'I want….'"
						5. Praise correct response or repeat the prompt for incorrect response or failures to response.
						6. Record data.
						Child's Response

Key: Plus (+) sign indicates correct; minus (-) sign indicates incorrect;
Zero (0) indicates no response

APPENDIX H

Time Delay Procedures for Henry

First Session

Steps
1. Get the attention of the learner.
2. Deliver the task direction: “Henry, which one do you want?”
3. Wait 0 seconds for the learner to respond.
4. Deliver the controlling prompt immediately. Take Henry’s hand and say “Henry, you want this one.” while putting his hand on item.
5. Praise correct response or repeat the prompt for incorrect response or failures to response.
6. Record data.

Remaining Sessions

Steps
1. Get the attention of the learner.
2. Deliver the task direction: “Henry, which one do you want?”
3. Wait 3 seconds for the learner to respond.
4. After 3 seconds, deliver the controlling prompt. Take Henry’s hand and say, “Henry, you want this one.” while putting his hand on item.
5. Praise correct response or repeat the prompt for incorrect response or failures to response.
6. Record data.

APPENDIX I

Intervention Plan: Time Delay, Henry

Antecedent	**Behavior**	**Consequence**
Where: Classroom When: * Making a choice between milk or water at snack *Making a choice between a red or blue maker * Making a choice between a square or triangle block * Making a choice between painting or water play *Making a choice between sinks in the bathroom Teacher Action: "Henry, which one do you want?" Wait 0 second for first session Wait 3 seconds for all subsequent sessions	**+ Targeted behavior** Child will put hand on item that is chosen. Child could also give verbal or sign for item chosen.	Teacher provides specific verbal praise – e.g., yes, Henry, you want_____ Then teacher provides access to the chosen object/activity.
	- Not targeted behavior Child does not respond within 3 seconds Child chooses non-preferred object/activity.	(NOTE: For 0 second delay, the teacher does not wait. Immediately after giving the direction, the uses hand-over-hand with Henry and picks an item. Teacher would say "Henry, you want _____") Teacher repeats prompt and wait for student to respond. If no response, then teacher makes choice for student and says "Henry you want____" and provides access to the chosen object/activity. Teacher repeats prompt and wait for student to respond. If no response, then teacher makes choice for student and says "Henry you want____" and provides access to the chosen object/activity.

APPENDIX J

Time Delay Procedural Reliability-First Session, Henry

Name:_____ Skill:_____
Instructor: _____ Setting:_____
Date: _____ Time:_____
Delay Interval:_____

Conducted (Indicate with ✓) Trials						**Steps**
1	**2**	**3**	**4**	**5**	**6**	
						1. Get the attention of the learner.
						2. Deliver the task direction: "Henry, which one do you want?"
						3. Wait 0 seconds for the learner to respond.
						4. Deliver the controlling prompt immediately. Take Henry's hand and say "Henry, you want this one." while putting his hand on item.
						5. Praise correct response or repeat the prompt for incorrect response or failures to response.
						6. Record data.
						Child's Response

Key: Plus (+) sign indicates correct; minus (-) sign indicates incorrect;
Zero (0) indicates no response

APPENDIX K

Time Delay Procedural Reliability–Remaining Sessions, Henry

Name:_____ Skill:_____
Instructor: _____ Setting:_____
Date: _____ Time:_____
Delay Interval:_____

Conducted (Indicate with ✓) **Trials**						**Steps**
1	**2**	**3**	**4**	**5**	**6**	
						1. Get the attention of the learner.
						2. Deliver the task direction: "Henry, which one do you want?"
						3. Wait 3 seconds for the learner to respond.
						4. After 3 seconds, deliver the controlling prompt. Take Henry's hand and say, "Henry, you want this one." while putting his hand on item.
						5. Praise correct response or repeat the prompt for incorrect response or failures to response.
						6. Record data.
						Child's Response

Key: Plus (+) sign indicates correct; minus (-) sign indicates incorrect;
Zero (0) indicates no response

APPENDIX L

Time Delay Data Sheet

Name:_____ Skill:_____
Instructor: _____ Setting:_____
Date: _____ Time:_____
Delay Interval:_____

Trials or Steps	Before Prompt	After Prompt
1.		
2.		
3.		
4.		
5.		
6.		
Number/% correct		
Number/% incorrect		
Number/% no response		

Key: Plus (+) sign indicates correct; minus (-) sign indicates incorrect;
Zero (0) indicates no response

APPENDIX M

System of Least Prompts Procedures

Step
1. Get the attention of the learner.
2. Deliver the task direction "(Child's Name), go…."
3. Wait for 3 seconds for the learned to respond independently.
4. If the learner responds correctly, give praise; if there is not a response or an error, give the least intrusive prompt in the hierarchy and again wait a 3 seconds for a response. VERBAL/GESTURE
5. If the learner responds correctly, give praise; if there is not a response or an error, give the least intrusive prompt in the hierarchy and again wait a 3 seconds for a response. PHYSICAL
6. Praise the correct response before going to the next trial.
7. Record data.

APPENDIX N

Intervention Plan: System of Least Prompts

<table>
<tr><th>Antecedent</th><th>Behavior</th><th>Consequence</th></tr>
<tr><td rowspan="2">Where: Classroom

When:
* Putting backpack away.
* Throwing trash away.
* Cleaning up activity.
* Putting jacket on.

Teacher Action:
“(Child’s Name), _____”
Teacher will give specific one step direction.

Wait 3 seconds</td><td>+ Targeted behavior

Child independently completed one step direction within 3 seconds of direction being delivered.</td><td>Teacher provides specific verbal praise – e.g., yes, (Child’s Name), you_____. {Stating direction completed}</td></tr>
<tr><td>- Not targeted behavior

Child does not respond within 3 seconds of receiving teacher direction.

Child walks away from teacher.</td><td>Teacher gives verbal and model/gesture of one step direction again.

Waits 3 seconds

If still no response, teacher provides physical support for completing one step direction.</td></tr>
</table>

APPENDIX O

System of Least Prompts Procedural Reliability

Name:_____ Skill:_____

Instructor: _____ Setting:_____

Date: _____ Time:_____

Conducted (Indicate with ✓) **Trials**						**Step**
1	**2**	**3**	**4**	**5**	**6**	
						1. Get the attention of the learner.
						2. Deliver the task direction "(Child's Name), go…."
						3. Wait for 3 seconds for the learned to respond independently.
						4. If the learner responds correctly, give praise; if there is not a response or an error, give the least intrusive prompt in the hierarchy and again wait a 3 seconds for a response. VERBAL/GESTURE
						5. If the learner responds correctly, give praise; if there is not a response or an error, give the least intrusive prompt in the hierarchy and again wait a 3 seconds for a response. PHYSICAL
						7. Praise the correct response before going to the next trial.
						8. Record data.
						Child's Response

Key: I, independent; VG, verbal/gesture; P, physical; 0, no response

APPENDIX P

System of Least Prompts Data Sheet

Name:_____ Skill:_____
Instructor: _____ Setting:_____
Date: _____ Time:_____

Trials or Steps	Response
1.	
2.	
3.	
4.	
5.	
6.	
Number/% independent	
Number/% verbal/gesture	
Number/ % physical	

Key: I, independent; VG, verbal/gesture; P, physical; 0, no response

Order of Prompts
Independent
Verbal/Gesture
Physical

APPENDIX Q

Coaching Protocol

Participant Name: _____ Date: _____

1. Greet the teacher.	Yes	No
2. Ask teacher for her thoughts on how implementing the target behavior is going.	Yes	No
3. Review procedural reliability data sheets		
4. State a positive example of implementation of the target behavior.	Yes	No
5. Give one concrete suggestion of how to improve	Yes	No
7. The consultant approaches the session as a partner with the teacher in a collaborative manner (i.e., sets positive tone, gives positive feedback, guides teacher through questioning, shares equally in the conversation)	Yes	No

References

Alig-Cybriwsky, C., Wolery, M., & Gast, D. L. (1990). Use of a constant time delay procedure in teaching preschoolers in a group format. *Journal of Early Intervention, 1990*(14), 99. doi: 10.1177/105381519001400201

Azano, A., Missett, T. C., Callahan, C. M., Oh, S., Brunner, M., Foster, L. H., & Moon, T. R. (2011). Exploring the relationship between fidelity of implementation and academic achievement in a third-grade gifted curriculum: A mixed-methods study. *Journal of Advanced Academics, 22*(5), 693-719. doi: 10.1177/1932202X11424878

Barton, E. E., & Wolery, M. (2010). Training teachers to promote pretend play in young children with disabilities. *Exceptional Children, 77*(1), 85-106.

Billingsley, F. F., White, O. R., & Munson, R. (1980). Procedural reliability: A rationale and an example. *Behavioral Assessment,* 2, 229-241.

Bricker, D. (Series ed.). (2002). *Assessment, Evaluation, and Programming System (AEPS®) for Infants and Children (*2nd ed., Vols. 1–4). Baltimore: Paul H. Brookes Publishing Co.

Browder, D., Ahlgrim-Delzell, L., Spooner, F., Mims, P.J., & Baker, J.N. (2009). Using time delay to teach literacy to students with severe developmental disabilities. *Exceptional Children, 75(3).* 343-364.

Collins, B. C. (2012). *Systematic instruction for students with moderate and severe disabilities*. Baltimore, Maryland: Paul H Brookes Publishing Co.

Cook, B. G., & Odom, S. L. (2013). Evidence-based practices and implementation science in special education. *Exceptional Children, 79*(2), 135-144. Retrieved from http://ezproxy.uky.edu/login?url=http://search.proquest.com/docview/1270781695?accountid=11836

Dane, A.V., & Schneider, B.H. (1998). Program integrity in primary and early secondary preventions: are implementation effects out of control? *Clinical Psychology Review, 18, 23-45*

Daugherty, S., Grisham-Brown, J., & Hemmeter, M. L. (2001). The effects of embedded skill instruction on the acquisition of target and nontarget skills in preschoolers with developmental delays. *Topics in Early Childhood Special Education, Winter 2001*(21), 213-221.

Dusenbury, L., Brannigan, R., Falco, M., & Hanse, W.B. (2003) A review of research on fidelity of implementation: implications for drug abuse prevention in school settings. *Health Education Research, 18, 237-256.*

Enright, B. (1991). BRIGANCE® Diagnostic Inventory of Early Development-Revised: A technical report. North Billerica, MA: Curriculum Associates, Inc.

Filla, A., Wolery, M., & Anthony, L. (1992). Promoting children's conversations during play with adult prompts. *Journal of Early Intervention, 1999*(22), 93. doi: 10.1177/105381519902200201

Grisham-Brown, J., Hemmeter, M.L., & Pretti-Frontczak, K. (2005). *Blended practices for teaching young children in inclusive settings.* Baltimore, Maryland: Paul H. Brookes Publishing Co.

Grisham-Brown, J., Schuster, J. W., Hemmeter, M. L., & Collins, B. C. (200). Using an embedded strategy to teach preschoolers with significant disabilities. *Journal of Behavioral Education, 10*(2/3), 139-162

Guskey, T.R. (2002). Professional development and teacher change. *Teacher and Teaching: Theory and Practice, 8,* 381-391.

Hamre, B. K., Justice, L. M., Pianta, R. C., Kilday, C., Sweeney, B., Downer, J. T., & Leach, A. (2010). Implementation fidelity of myteachingpartner literacy and language activities: Association with preschoolers' language and literacy growth. *Early Childhood Research Quaterly, 25*(2010), 329-347.

Hojnoski, R. L., Gischlar, K. L., & Missal, K. N. (2009). Improving child outcomes with data-based decision making: Collecting data. *Young Exceptional Children, 2009*(12), 32. doi: 10.1177/1096250609333025

Horner, D. R., & Baer, D. M. (1978). Multiple probe technique: A variation of the multiple baseline. *Journal of Applied Behavior Analysis, 11, 189–196.*

Joyce, B., & Showers, B. (1980). Improving inservice training: The messages of research. *Educational Leadership, 37,* 379-385.

Leach, D.J., & Conto, H. (1999). The additional effects of process and outcome feedback following brief in-service teacher training. *Educational Psychology, 19,* 441-462.

McBride, B. J., & Schwartz, I. S. (2003). Effects of Teaching Early Interventionists to Use Discrete Trials During Ongoing Classroom Activities. *Topics In Early Childhood Special Education, 23*(1), 5.

Mihalic, S. (2002). *The importance of implementation fidelity.* Boulder, CO: Center for the Study and Prevention of Violence.

Odluyurt, S. (2011). The effects of constant time delay embedded into teaching activities for teaching the names of clothes for preschool children with developmental disabilities. *Kuram Ve Uygulamada Eğitim Bilimleri, 11*(3), 1457-1460.

O'Donnell, C. L. (2008). Defining, conceptualizing, and measuring fidelity of implementation and its relationship to outcome in k-12 curriculum intervention reserach. *Review of Educational Research, 78*(1), 33-84.

Özen, A., & Ergenekon, Y. (2011). Activity-Based Intervention Practices in Special Education. *Educational Sciences: Theory & Practice*, *11*(1), 359-362.

Pretti-Frontczak, K., & Bricker, D. (2004). *An activity-based approach to early intervention* (3rd ed). Baltimore: Paul Brooks Pub.

Schuster, J.W., Morse, T.E., Ault, M.J., Doyle, P.M., Crawford, M.R., & Wolery, M. (1998). Time delay with chained tasks: A review of the literature. *Education and Treatment of Children, 21(1),* 74-106.

Showers, B. (1985). Teachers coaching teachers. *Educational Leadership, 42,* 43-48.

Sparks, G.M. (1983). Synthesis of research on staff development for effective teaching. *Educational Leadership, 41,* 65-72.

Sparks, D., & Loucks-Horsley, S. (1989) Five models of staff development for teachers. *Journal of Staff Development, 10,* 40 – 57.

Tawney, J.W., & Gast, D. L. (1984) Single subject research design in special education. Columbus, OH: Merrill.

Walker, G. (2008). Constant and progressive time delay procedures for teaching children with autism: A literature review. *Journal of Autism and Developmental Disorders, 38(2),* 261-175.

Webster-Stratton, C, & Reid, M.J. (in press) Incredible Years teacher training program: Content, methods, and processes. In J. Szapocznik, P. Tolan, & S. Sambrano (Eds.), Preventing substance abuse. Retrieved April 2, 2014, from http://www.son.washington.edu/centers/parenting-clinic.

Wolery, M. D. (2002). Embedding and Distributing Constant Time Delay in Circle Time and Transitions. *Topics In Early Childhood Special Education, 22*(1), 14.

Wolery, M., Holcombe, A., Cybriwsky, C., Doyle, P.M., Schuster, J.W., & Ault, M.J. (1992). Constant time delay with discrete responses: A review of effectiveness and demographic, procedural, and methodological parameter. *Research in Developmental Disabilities, 13(3),* 239-266.

Ziolkowski, R., A. & Goldstein, H. (2008) Effects of an embedded phonological awareness intervention during repeated book reading on preschool children with language delays. *Journal of Early Intervention*. *31*(1), 67 -90.

Vita

Rebecca V. Crawford was born in Lexington, Kentucky. After graduating in May 2007 from Lexington Catholic High School in Lexington, Kentucky, she attended the University of Kentucky, where she received her Bachelor's Degree in Interdisciplinary Early Childhood Education in May 2011. She taught in an Early Start classroom for Fayette County Public School from 2011 to present.