



MSU Graduate Theses

Fall 2016

The Use Of Behavior Skills Training To Teach Paraprofessionals Discrete Trial Teaching

Ali Jo-Celeste Headley

As with any intellectual project, the content and views expressed in this thesis may be considered objectionable by some readers. However, this student-scholar's work has been judged to have academic value by the student's thesis committee members trained in the discipline. The content and views expressed in this thesis are those of the student-scholar and are not endorsed by Missouri State University, its Graduate College, or its employees.

Follow this and additional works at: <https://bearworks.missouristate.edu/theses>



Part of the [Applied Behavior Analysis Commons](#)

Recommended Citation

Headley, Ali Jo-Celeste, "The Use Of Behavior Skills Training To Teach Paraprofessionals Discrete Trial Teaching" (2016). *MSU Graduate Theses*. 3032.

<https://bearworks.missouristate.edu/theses/3032>

This article or document was made available through BearWorks, the institutional repository of Missouri State University. The work contained in it may be protected by copyright and require permission of the copyright holder for reuse or redistribution.

For more information, please contact bearworks@missouristate.edu.

**THE USE OF BEHAVIOR SKILLS TRAINING TO TEACH
PARAPROFESSIONALS DISCRETE TRIAL TEACHING**

A Master's Thesis

Presented to

The Graduate College of

Missouri State University

In Partial Fulfillment

Of the Requirements for the Degree

Master of Science, Applied Behavior Analysis

By

Ali Headley

December 2016

Copyright 2016 by Ali Jo-Celeste Headley

**THE USE OF BEHAVIOR SKILLS TRAINING TO TEACH
PARAPROFESSIONALS DISCRETE TRIAL TEACHING**

Psychology

Missouri State University, December 2016

Master of Science

Ali Headley

ABSTRACT

Behavioral skills training (BST) was used to teach discrete trial teaching (DTT) to three paraprofessionals. Discrete Trial Teaching (DTT) has been used successfully with students with autism to individualize and simplify classroom instruction. DTT is an evidence-based training procedure used with elementary aged children to promote the development of communication/language, adaptive behavior, cognitive/academic skills, social and play skills, and for reducing interfering behaviors. Behavioral skills training is a training package that includes instructions, modeling, rehearsal, and feedback. A multiple baseline design across participants was used to assess the treatment effects. The paraprofessionals in this study increased their implementation of DTT from 70%, 58%, and 66% during baseline to 97%, 96%, and 99% respectively. This data supports previous findings that Behavior Skills Training can be used to train paraprofessionals to correctly implement Discrete Trial Teaching.

KEYWORDS: autism, discrete trial teaching, behavior skills training, staff training, paraprofessionals

This abstract is approved as to form and content

Michael Clayton, PhD
Chairperson, Advisory Committee
Missouri State University

**THE USE OF BEHAVIOR SKILLS TRAINING TO TEACH
PARAPROFESSIONALS DISCRETE TRIAL TEACHING**

By

Ali Headley

A Master's Thesis
Submitted to the Graduate College
Of Missouri State University
In Partial Fulfillment of the Requirements
For the Degree of Master of Science, Applied Behavior Analysis

December 2016

Approved:

Michael Clayton, PhD

D. Wayne Mitchell, PhD

Leslie Echols, PhD

Julie Masterson, PhD: Dean, Graduate College

ACKNOWLEDGEMENTS

I want to express my sincere thanks to my advisor Dr. Michael Clayton as well as my thesis committee members Dr. Mitchell and Dr. Echols. I appreciate all of the guidance they have provided to me throughout my graduate studies and my thesis project. I also want to thank my colleague, Stephanie Aholt, for assisting me with my research. I want to thank my parents Susan Marcum and Glenn Marcum for always supporting me throughout my education and for instilling a desire to learn within me from a young age. Finally, I want to thank my husband Aaron for all of his love and support throughout my thesis project.

TABLE OF CONTENTS

Introduction.....	1
Literature Review.....	2
Discrete Trial Teaching.....	2
Behavior Skills Training.....	4
Methods.....	9
Participants.....	9
Setting and Materials.....	9
Experimental Design.....	10
Dependent Variables.....	10
Procedures.....	12
Results.....	14
Discussion.....	16
Limitations.....	16
Future Research.....	17
References.....	19
Appendices.....	25
Appendix A. Missouri State University Consent of Participation.....	25
Appendix B. Consent of Participation for Child.....	25

LIST OF FIGURES

Figure 1. Experimenter Data Collection Form.	16
Figure 2. Participant Data Collection Form.....	23
Figure 3. Treatment Integrity Checklist.....	54
Figure 1. Results of Paraprofessional Training.....	17

INTRODUCTION

Language delays in autism include deficits in social-emotional reciprocity, nonverbal communicative behaviors used for social interaction, and deficits in developing, maintaining, and understanding relationships. Social-emotional reciprocity deficits could include the failure to communicate back and forth, abnormal social approaches, reduced sharing of interests or emotions, or failure to initiate social interactions. Deficits in nonverbal communicative behaviors could include poorly combined verbal and nonverbal communication, poor eye contact, deficits in understanding others gestures, or a total lack of facial expressions. Deficits in developing, maintaining, and understanding relationships could range from deficits in adjusting socially appropriate behavior, difficulty making friends, or loss of interest in peers (American Psychiatric Association, 2013).

These language delays often affect cognitive and social development in children, which demonstrates the need for direct instruction to address language and skill acquisition deficits. Direct instruction is an instructional approach that is most commonly used in the United States that is structured, sequenced, and led by teachers (Direct Instruction, n.d.). Direct instruction could include lectures, demonstrations, or any direct one-on-one teaching. One type of direct instruction for students with autism is Discrete Trial Training, where the teacher is directly leading the instruction (Bogin, Sullivan, Rogers, & Stabel, 2010).

LITERATURE REVIEW

Discrete Trial Teaching

Discrete Trial Teaching (DTT) has been used successfully with students with autism to individualize and simplify classroom instruction. DTT is an evidence-based training procedure used with elementary aged children to promote the development of communication/language, adaptive behavior, cognitive/academic skills, social and play skills, and for reducing interfering behaviors (Bogin, 2008). Studies have shown that DTT is beneficial in teaching students new forms of behavior and new discriminations. New forms of behavior can include any behavior that a child didn't know or wouldn't perform before being exposed to DTT. Teaching new speech sounds and sign language is a common communication/language skill taught using discrete trials. New discriminations can include cognitive or academic abilities such as giving a correct response to teacher's cues. These skills can include learning the difference between colors, vocabulary, letters, etc. The skills that can be taught using this method have endless application.

DTT is made up of many short teaching sessions called a discrete trial. During a session, each discrete trial is broken down into five simple steps which are cue, prompt, response, consequence, and inter-trial interval (Smith, 2001). Before the first step is initiated, teachers make sure that proper materials are ready so that they are prepared for the first trial. Next, the teacher positions themselves facing the child and gains their attention before administering the cue. They will then provide the cue by telling the child what they are asking of them. An example of a cue might be saying "Touch yellow"

while holding up a yellow card and a blue card. Cues need to be stated directly and briefly as possible.

The next step is to provide a prompt if needed. If the learner is beginning a new discrimination of an academic skill, such as colors, they may need a hand-over-hand physical prompt to touch the yellow card. For a more experienced learner, the teacher may provide only a visual prompt (pointing to the yellow card) to show the child the correct response. Teachers should present and fade prompts in a systematic way using most to least prompting (Bogin, Sullivan, Rogers, & Stabel, 2010). Some children may require a full physical prompt at first (hand over hand), whereas some children may only need partial physical prompting (light touch to guide the hand), verbal prompting (modeling correct answer) or partial verbal prompting (“yel” to prompt “yellow”). The prompt should systematically fade over time in order for an errorless learning procedure to take place.

The next step, response, takes place when the child responds to the teacher's cue. The teacher will need to define how the response will be measured in order to track their responses. Some children may be working on touching the correct card and making a discrimination between multiple cards. Other children may be working on answering verbally when asked a question such as “What color?” Response topography looks different for every child and should be noted.

Following a response, the teacher will administer a consequence. If the child responds correctly, the teacher will quickly reinforce the child with a preferred item as well as using a positive praise statement. If the child responds incorrectly the teacher says “no” and looks away while withholding the edible reinforcer and moves into the inter-

trial interval, which is waiting 3-5 seconds and then beginning a new trial (Ghezzi, 2007). Many times teachers use excess language in their teaching and students repetitively get the incorrect answer, whereas DTT results in the student's acquisition of new discriminations and tries to minimize failure or confusion by using the appropriate level of prompting and a quick reinforcer.

Behavior Skills Training

In the school setting, paraprofessionals are used to assist teachers in educating students. Teachers rely on paraprofessionals throughout the school day to implement research based interventions with students with autism. Unfortunately, many paraprofessionals are unfamiliar with these evidence-based strategies. With the increasing number of children with autism in the public school system it is critical to train paraprofessionals in the correct implementation of interventions used in the classroom with children with autism (Rispoli, Neely, Lang, & Ganz, 2011). A BST package was put in to place to train paraprofessionals how to use an evidence based strategy in the classroom during the study.

In a literature review on training paraprofessionals to implement interventions with students on the Autism Spectrum Disorder, twelve studies were reviewed using various training techniques. Seven of the twelve studies provided positive outcomes. In every study, performance feedback was used in the training intervention. Performance feedback is one of the most effective ways of training personnel. Some of the other training interventions included videos, written instruction, verbal instruction, supervised practice, modelling, role-playing and supervisor feedback. Overall, the relative efficacy

of the procedures used to train paraprofessionals is unknown due to a mixture and combination of different training procedures (Rispoli et al., 2011).

Behavior Skills Training (BST) is a teaching procedure that teaches a set of skills by using a training package of instructions, modeling, rehearsal, and performance feedback. BST has been used in many settings to teach mastery of new skills. BST has been used to teach teachers the Picture Exchange System (Homlitas, Rosales, & Candel 2014). Teachers were given verbal instructions as well as a check sheet on PECS, the experimenter then modeled the correct instruction, the teachers then had time to rehearse and were provided with constructive feedback. They used modeling, feedback, and rehearsal until the teachers reached mastery. BST was successful in instructing the teachers to masterly level of PECS training.

Miltenberger, Flessner, Gatheridge, Johnson, Satterlund, and Egemo (2004) conducted a study in 2004 evaluating BST with children to prevent gun play. Each child got a one on one BST session that lasted between 15-20 minutes using instructions which included three safety rules for the child to learn. During rehearsal the child repeated the three safety rules that were given during the instruction. For the modeling phase the researcher put a real (disabled) gun in the room and modeled going up to the gun and using the three safety procedures taught as well as described scenarios and asked the child what he would do in that situation. The child then had their own opportunity to practice these skills and the researcher then provided praise and feedback in order to shape the child's behavior. They rehearsed this until the child did everything correctly and then used different settings to make sure the child was able to generalize the skill set.

The results of the study show that BST was more effective in teaching the 6 and 7 year olds as compared to the 4 and 5 year olds.

Behavior Skills Training has also been used to teach staff a skill. Researchers conducted a study teaching staff in a school for autism how to administer an epi-pen correctly (Whiting, Miller, Hensel, Dixon, & Szekely, 2014). The researchers used instructions, modeling, rehearsal, and feedback were used in order to teach epi pen administration. They conducted the training in a whole group setting. For the instructions, they were each provided with a checklist that explained each step in full. The experimenters then modeled each step in the list that they provided to the staff. The staff then got a chance to role play and try going through the steps to administer the epi-pen while the experimenter watched and provided praise and corrective feedback. The staff role played until they reached mastery criteria of 100% accuracy. The researchers concluded that Behavior Skills Training can be used successfully in teaching a small group format to quickly train staff the administration of epi-pens.

Research has also shown Behavior Skills Training to be successful in teaching installation of child passenger safety restraints (Himle & Wright, 2014). Ten undergraduate students were participants in the study and were trained using BST. They were first given the manual and 15 minutes to review this independently and were then asked to install the child restraint during the baseline phase. For Behavioral Skills Training they then used the same procedure as instruction, modeling, rehearsal, and praise and feedback. For the instruction phase the experimenter gave a brief lesson on why child passenger safety restraints are important, how to install them, and a few common errors made while installing. Then the experimenter modeled the installation

process. The students then had a chance to rehearse the installation and they were provided immediate praise and feedback on their installation. They continued modeling, rehearsal, and feedback until the student could install the safety restraint without error for three consecutive trials. All students showed substantial progress from baseline to intervention and their errors decreased during BST.

In other research, Sarokoff & Sturmey (2004) used BST to train three teachers on implementation of DTT. The teachers all had previous experience and training on DTT during their in-home work with children with autism. A multiple baseline design across participants was used and the measurement system was percentage of correct components during 10 discrete trial phases. The sessions were videotaped and scored at a later time. The intervention included giving the teachers a brief handout on BST, giving them feedback on their baseline data, letting them rehearse with a student, and the experimenter modeling proper procedures with the student. Rehearsal and modeling were repeated for a full 10 minutes.

After this training session, the teachers were told to perform 10 discrete trials, which was videotaped and scored at a later time. The training criterion was 90% or more correct responses on three consecutive training sessions (Sarokoff & Sturmey, 2004). All three teachers started with a baseline percentage of 43%, 49% and 43% and after intervention improved to 97%, 98%, & 99% accuracy, respectively.

A BST training package was employed in the current study to teach discrete trial teaching to three paraprofessionals without previous training in DST. The previous study (Sarokoff & Sturmey, 2004) taught three teachers with prior training so it is important to see how training will affect teachers without prior training. The weaknesses described in

the previous study included addressing maintenance and generalization of the skills. Therefore, a maintenance probe one month after training was used in this study. This is important to assess the long term benefits and effects of using BST to train paraprofessionals in the workplace. Finally, a treatment integrity checklist was added to the procedure and training, which included video instruction instead of the written pamphlet used previously.

METHOD

Participants

Three special education paraprofessionals employed at an elementary school in the Midwest served as participants in the study. All three participants were assigned to work with a child with autism. Participants One and Three had three years of experience working in special education classrooms and Participant Two had two years of experience. None of the participants had training in discrete trial training prior to beginning this study. Prior approval for this project was obtained from the Missouri State University IRB (January 12, 2016; approval # 16-0251)

Setting and Materials

Training took place in a large classroom with two rectangular tables and one u-shaped table. During training, the teacher sat at a u-shaped table across from the child. Each child had a set of 10 flash cards with sight words on them. The flashcards were laminated on 3 x 5 index cards. When working with a verbal child with autism, the teacher held up a flash card and asked the child what word it was. If the child was nonverbal, the teacher put 3 flash cards on the table and asked the child to pick up and hand them the correct sight word card. A correct answer was defined as the child verbally saying the correct sight word or picking up the correct flash card and giving it to the teacher. Correct answers resulted in either edible or sensory reinforcement such as a chip, a skittle, koosh ball, or high five for the child. The child's answers were recorded on a data sheet (Figure 2). If the child got all answers correct they were given a new set of

words so the participants were able to practice both the delivery of reinforcement as well as error correction procedures.

Experimental Design

A multiple baseline design across subjects was used to assess the treatment effects. A multiple baseline design is a single-subject research design in which each participant receives treatment at different times in a staggered baseline. Employing different length baselines control for changes in the behavior that is a function of chance and/or random factors. One of the strengths of the Multiple Baseline design over the typical employed ABAB design with single subjects, is that there is no need to revert to baseline (Kazdin, 2011).

Dependent Variables

The dependent variable was the percentage of 10 components implemented correctly during discrete trial training over a total of 10 consecutive discrete trials (10 flash cards). The 10 components included 1) a distraction free area, 2) materials ready, 3) gain child's attention, 4) give one clear verbal prompt, 5) wait for a response, 6) give behavior specific praise, 7) deliver a reinforcer if correct answer, 8) correction procedure if incorrect answer, 9) record data, and 10) wait 3-5 seconds before next trial.

A distraction free area was defined as a clean table surface with no extraneous objects present within 61cm of the working area. Having materials ready was defined as having the following present: pen or pencil, data sheet, flash cards, and an appropriate reinforcer. Gaining the child's attention was defined as having the child in their chair

facing the table and participant. One verbal prompt was defined as giving one direct prompt verbally in no more than four words. Waiting for a response was defined as the participants being silent and waiting for up to eight seconds for a child's response. If the child answered correctly, the participant delivered behavior specific praise which was defined as a praise statement with the behavior clearly stated (e.g. "Good job touching yellow!").

The participants would then deliver a reinforcer if the child's first response was correct, which was defined as giving the child a small edible reinforcer, 10 seconds or less of access to a preferred toy at the table where they were working, or a sensory reinforcer such as a squeeze, tickle, or high five. If a nonverbal child answered incorrectly during their first response, the participants were instructed to deliver an error correction procedure which was defined as stating "No" and showing them the correct response by pointing to the correct flash card and verbally saying "This is ____." and have the child give them the correct response. If a verbal child answered incorrectly the participants were instructed to verbally say "No" and say the correct word and have the child then repeat the word. Recording data was defined as marking a correct or incorrect response on a data sheet provided by the experimenter. The last step was to wait 3-5 seconds before starting the next trial which was defined as waiting silently for 3-5 seconds before starting the next trial. If the child answered correctly, the time spent with the reinforcer could also count towards waiting between trials. If the child had an incorrect response, the participant paused for 3-5 seconds before starting the next trial.

The experimenter videotaped each session and scored it after the session was complete. The percentage of correct components were calculated by dividing the total

number of correct paraprofessional responses by the total number of correct and incorrect responses, and multiplying the result by 100%.

Procedure

Baseline. During baseline, the experimenter showed the participants a video recorded on a laptop of discrete trial training with the 10 components demonstrated by the experimenter. After watching the video, the experimenter asked the participants to do discrete trial training to the best of their ability. This lasted for 10 discrete trials and was videotaped to be scored at a later time.

Training. During the training phase, the participants were given a list of 10 components that were expected of them. The experimenter also gave the participants their baseline performance graph and discussed their performance with them. The experimenter gave feedback and explained the scoring guidelines to the participants. The experimenter then sat down with the child and let the participants watch as five discrete trials were demonstrated. During rehearsal, the experimenter sat next to the participant while he/she performed five discrete trials with the student. The experimenter gave immediate feedback after the performance. The feedback consisted of positive praise statements as well as information about components that were missed or not practiced (e.g. “Great job giving behavior specific praise,” “Make sure you pause 3-5 seconds before moving on to the next trial”). Modeling and rehearsal were repeated for up to 10 consecutive minutes as the experimenter modeled five trials and the participant rehearsed for five trials until the participant rehearsed 5 consecutive trials correctly. The criterion

for mastery was the participant performing 10 discrete trials with 90% accuracy or more. The intervention training was video recorded for treatment integrity.

Post-Training. Following training, the participants were asked to do discrete trial training with the child to the best of their ability. They were asked to do 10 discrete trials and this was videotaped for later scoring. A maintenance phase was conducted one month after training was completed using the same process.

Interobserver Agreement. Interobserver agreement data were collected throughout 50% of baseline and intervention data collection sessions for all participants. Agreement was calculated by dividing the total number of agreements by the total number of agreements plus disagreements and multiplying by 100%. A treatment integrity checklist was also put in place to verify the integrity of the study (Figure 3).

RESULTS

The percentage of discrete trial training steps correctly performed by each participant during baseline (diamonds), behavior skills training (squares), and the maintenance probe (circles) is shown in Figure 4. The y-axis shows the percentage of steps performed correctly during all phases of the study. The x-axis shows the daily sessions over the course of the study. Participant One is represented in the top graph, Participant Two in the middle, and Participant Three at the bottom of Figure 4.

During the baseline phase, all three participants correctly implemented the DTT procedure an average of 65% of the time. After BST, the participants correctly implemented the procedure with an average of 97% accuracy. Participant One had a mean score of 70% during baseline, 97% during intervention (38.6% increase), and 96% for the maintenance check. Participant Two had a mean score of 58% during baseline, 96% during intervention (65.5% increase), and 91% for the maintenance check. Participant Three had a mean score of 66% during baseline, 99% during intervention (50% increase) and 93% for the maintenance check.

Interobserver agreement was collected for 50% of baseline and intervention phases. During baseline there was 93% agreement and during intervention there was 97% agreement. A treatment integrity checklist (see Figure 3) was also used and the implementation of the intervention had 97% procedural fidelity.

Although the students' themselves were not the primary focus of this investigation, anecdotal data suggests they did benefit from the procedures. Student One mastered two lists of words, Student Two mastered one list of words, and Student Three

mastered two lists of words throughout the study. Although there is no comparative data to support this, anecdotally, the students all acquired new sight words at a higher rate than they had previously.

DISCUSSION

The results of the current study supported the previous finding that Behavior Skills Training can be used in training paraprofessionals to correctly implement Discrete Trial Training (Sarokoff & Sturmey, 2004). Each participant significantly improved their accuracy of DTT following the intervention and were able to maintain the skill with high accuracy one month later.

The BST package consisted of instructions, rehearsal, modeling, and feedback. The treatment package resulted in significantly improved performance of the participants and is consistent with previous findings (Sarokoff & Sturmey, 2004). This study was intended to replicate and extend previous research. It differs from the previous study by Sarokoff and Sturmey (2004) by adding a follow-up probe 30 days after treatment ended as well as a treatment integrity checklist. The participants also had no prior training in the current study, unlike in the previous study. The study contributes to the current literature by confirming the efficacy of BST to train direct care staff in the implementation of discrete trial training methods. It extends the previous literature by using staff without prior exposure and by showing the generalization over time (30 days) of the targeted skills.

Limitations

The baseline data started out with a higher percentage than expected, which could be due to the fact that the current study used a video model before baseline as compared to the previous study which used a pamphlet on DTT. Video modeling may be more effective in teaching the skill, which could contribute to the higher baseline percentages.

Future research could compare the effects of a video model and pamphlet for skill acquisition. Another limitation of the study is that the paraprofessionals had all been exposed to the students and classroom before. Although they were never trained on DTT, they could have observed other teachers and staff using DTT with other students in the building.

Future Research

Future research should train newly hired staff that have not worked previously in a classroom with children with autism. It would also be beneficial to teach participants generalization across children, settings, and different learning tasks. Although there was a follow-up probe one month afterwards, it would be beneficial to do a long-term study to see the effects over a longer period of time to see how often paraprofessionals would need refresher trainings.

Paraprofessionals often work with students with the greatest needs but receive the least amount of training in many districts. The average national salary for a paraprofessional is \$24,465 which could contribute to such a high turnover rate (Glassdoor, 2016). There is not a lot of data on paraprofessional turnover rate due to reporting inconsistencies, but it is widely recognized by many school districts (Ghere, 2007). It is important for future studies to continue looking at the effects of training paraprofessionals in the workplace and to provide more training in order to keep experienced paraprofessionals in the classroom.

In conclusion, this study showed that BST was effective for training paraprofessional's in correct implementation of discrete trial training (DTT) and that

repertoire was maintained one month after the end of the study. Although the staff may have indirectly observed DTT during the course of their employment, they improved their implementation of that training method significantly over the course of the study and maintained that skill set for at least a month afterwards.

REFERENCES

- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders: DSM-5* (5th ed.). Arlington, VA: American Psychiatric Publishing.
- Bogin, J. (2008). Overview of discrete trial training. Sacramento, CA: National Professional Development Center on Autism Spectrum Disorders, M.I.N.D. Institute, The University of California at Davis Medical School.
- Bogin, J., Sullivan, L., Rogers, S., & Stabel, A. (2010). Steps for implementation: Discrete trial training. Sacramento, CA: The National Professional Development Center on Autism Spectrum Disorders, The M.I.N.D. Institute, The University of California at Davis School of Medicine.
- Direct Instruction (n.d.). In S. Abbott (Ed.), *The glossary of education reform*. Retrieved from <http://edglossary.org/direct-instruction/>
- Ghere, G., & York-Barr, J. (2007). Paraprofessional Turnover and Retention in Inclusive Programs: Hidden Costs and Promising Practices. *Remedial & Special Education*, 28(1), 21-32. doi: 10.1177/07419325070280010301
- Ghezzi, P. (2007). Discrete trials teaching. *Psychology in the Schools*, 44(7), 667-679. doi:10.1002/pits.20256
- Glassdoor, (2016, October 13). Paraprofessional Salaries. Retrieved October 17, 2016, from https://www.glassdoor.com/Salaries/paraprofessional-salary-SRCH_KO0,16.htm
- Himle, M., & Wright, K. (2014). Behavioral skills training to improve installation and use of child passenger safety restraints. *Journal of Applied Behavior Analysis*, 47(3), 549-559. doi:10.1002/jaba.143
- Homlitas, C., Rosales, R., & Candel, L. (2014). A further evaluation of behavioral skills training for implementation of the picture exchange communication system. *Journal of Applied Behavior Analysis*, 47(1), 198-203. doi:10.1002/jaba.99
- Kazdin, A. E. (2011). *Single-case research designs: Methods for clinical and applied settings*. New York: Oxford University Press.
- Miltenberger, R., Flessner, C., Gatheridge, B., Johnson, B., Satterlund, M., & Egemo, K. (2004). Evaluation of behavioral skills training to prevent gun play in children. *Journal of Applied Behavior Analysis*, 37(4), 513-516. doi:10.1901/jaba.2004.37-513

- Rispoli, M., Neely, L., Lang, R., & Ganz, J. (2011). Training paraprofessionals to implement interventions for people autism spectrum disorders: A systematic review. *Developmental Neurorehabilitation*, 14(6), 378-388. doi:10.3109/17518423.2011.620577
- Sarokoff, R. A. & Sturmey, P. (2004). The effects of behavioral skills training on staff implementation of discrete-trial teaching. *Journal of Applied Behavior Analysis*, 37(4), 535-538. doi:10.1901/jaba.2004.37-535
- Smith, T. (2001). Discrete Trial Training in the Treatment of Autism. *Focus On Autism & Other Developmental Disabilities*, 16(2), 86. doi: 10.1177/108835760101600204
- Whiting, S., Miller, J., Hensel, A., Dixon, M., & Szekely, S. (2014). Increasing the accuracy of EpiPen administration with a brief behavioral skills training package in a school for autism. *Journal of Organizational Behavior Management*, 34(4), 265-278. doi:10.1080/01608061.2014.973632

	1	2	3	4	5	6	7	8	9	10
WORD										
CORRECT or INCORRECT										
1) A distraction free area (cleared off table with no extraneous objects present within 2 feet of the working area)										
2) Materials ready (pen or pencil, data sheet, flash cards, & a reinforcer)										
3) Gain child's attention (child in their chair facing the table and participant)										
4) Give one clear verbal prompt (one direct prompt verbally in no more than 4 words)										
5) Wait for a response (participants being silent and waiting for up to 8 seconds)										
6) Give behavior specific praise if correct answer (a praise statement with the behavior clearly stated)										
7) Deliver a reinforcer if correct answer (giving the child a small edible reinforcer, 10 seconds or less of access to a preferred toy at the table where they were working, or a sensory reinforcer)										
8) Correction procedure if incorrect answer (stating "No" and showing them the correct response by pointing or saying to the correct flash card and verbally saying "This is .")										
9) Record data										
10) Wait 3-5 seconds before next trial (waiting silently for 3-5 seconds before starting the next trial, can include time with reinforcer)										
Percent Correct										

Average Percentage _____

Instructions: Observe the participants doing DTT and put a + if correct, - if incorrect, or N/A. If the child's first response is correct then 8 will be N/A. If the child's response was incorrect then 6 & 7 will be N/A. Number 10 on trial 10 is also N/A. The +'s and -'s will be added up and then a percentage correct will be calculated by dividing the correct answers by the total number of opportunities presented.

Figure 1. Experimenter Data Collection Form

Word	Correct	Incorrect

Instructions: Write the 10 sight words and after each discrete trial mark if the child got a correct or incorrect answer.

Figure 2. Participant Data Collection Form

Treatment Integrity Checklist	+ or -
1. Participants were shown the list of 10 components	
2. The experimenter showed participants baseline graph and explained their performance	
3. The experimenter gave feedback and explained the scoring guidelines to the participants.	
4. The experimenter demonstrated at least 5 discrete trials to the participant	
5. During rehearsal, the experimenter sat next to the participant while they performed five discrete trials with the student.	
6. The experimenter gave to participant's immediate feedback after the performance.	
7. The feedback consisted of positive praise statements as well as information about components that were missed or not practiced.	
8. Modeling and rehearsal were repeated until the participant performed 5 correct trials for up to 10 consecutive minutes as the experimenter modeled five trials and the participant rehearsed for five trials.	
Percentage Correct	

Figure 3. Treatment Integrity Checklist

Percentage of Discrete Trial Steps Correct

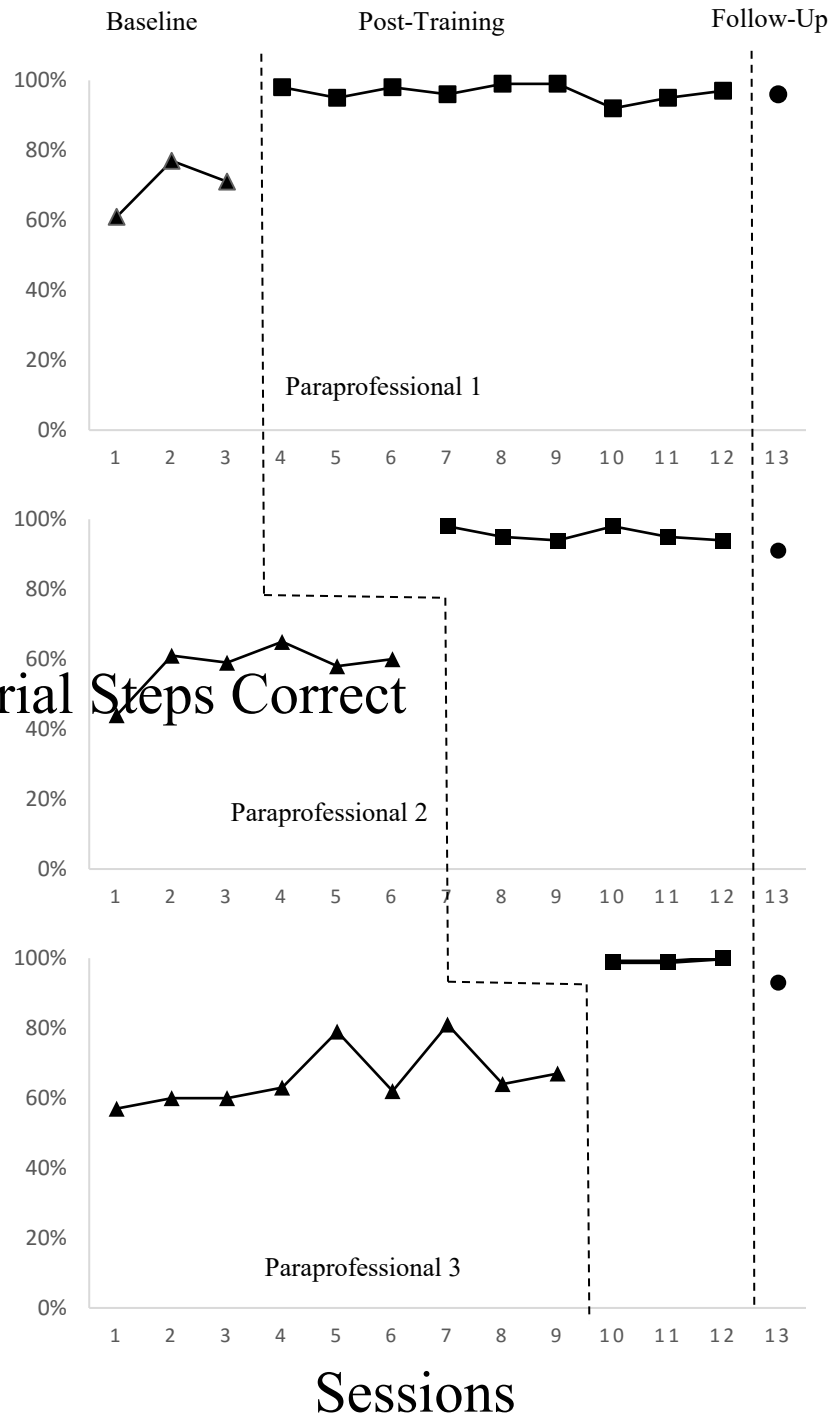


Figure 4. Results of Study. The percentage of discrete trial training steps correctly performed by each participant during baseline (diamonds), behavior skills training (squares), and the maintenance probe (circles). The y-axis shows the percentage of steps performed correctly during all phases of the study while the x-axis shows the daily sessions.

APPENDICES

Appendix A

Missouri State University Consent of Participation

This study is part of the Missouri State University Psychology Graduate Program designed to give us more information and to fulfill a thesis requirement for Ali Headley. The following information is provided so that you can decide whether you wish to participate in this study. If you agree to participate, you will (not necessarily in this order) watch a video of the researcher performing a task and do your best to perform the task. You will then be trained how to properly do the task and perform the task again. The researcher will have explained the purposes and procedures of the study to you, and will answer any questions you might have. Please be assured that if you agree to participate, you are free to withdraw from the study even after you have signed this consent form. If you wish to withdraw, simply stop any on-going task and tell the research staff you wish not to continue. Should you decide to terminate the research session; all data pertaining to you that have been collected will be destroyed.

Since it is our policy to protect the confidentiality of all our participants, your name will not be included in any data analyses, subsequent publication or presentations related to this research study. All raw data collected during this study will be identified only by code-number to insure confidentiality of the information collected.

If questions arise after you have left the research laboratory, feel free to give D. Michael Clayton, Ph.D. a call at 417-836-3783 or at MClayton@MissouriState.edu. We do not anticipate any risk to you as a result of participating in this study. The benefits include learning a new skill that can help you with your job performance. Your participation will also make an important contribution to our scientific knowledge, and we very much appreciate your cooperation.

I have read the above description of the study and I agree to participate.

Participant's Name (please print): _____.

Participant's Signature: _____.

Witness's Signature: _____.

Date: _____.

Appendix B

Consent of Participation for Child

This study is part of the Missouri State University Psychology Graduate Program designed to give us more information and to fulfill a thesis requirement for Ali Headley. The following information is provided so that you can decide whether you wish to participate in this study. If you agree to let your child participate, they will be observed working with a paraprofessional currently employed within the school district. The researcher is teaching the paraprofessionals how to implement a research based teaching strategy. The paraprofessionals would then practice using this teaching strategy with your child. The sessions will be video-recorded but will not include the child's face or any identifying information such as their name or school. The study is focusing on the paraprofessionals as participants learning to implement a teaching procedure correctly and will not be observing or taking data on your child. The researcher will have explained the purposes and procedures of the study to you, and will answer any questions you might have. Please be assured that if you agree for your child participate, you are free to withdraw them from the study even after you have signed this consent form. If you wish to withdraw, simply tell the researcher you wish not to continue.

Since it is our policy to protect the confidentiality of all our participants, your child's name will not be included in any data analyses, subsequent publication or presentations related to this research study.

If questions arise after you have left the research laboratory, feel free to give D. Michael Clayton, Ph.D. a call at 417-836-3783 or at MCclayton@MissouriState.edu. We do not anticipate any risk to you as a result of participating in this study. The benefits include learning a new skill that can help you with your job performance. Your participation will also make an important contribution to our scientific knowledge, and we very much appreciate your cooperation.

I have read the above description of the study and I agree to participate.

Child's Name (please print): _____.

Parent Signature: _____.

Witness's Signature: _____.

Date: _____.