4-2021

Programming Common Stimuli to Assess Generalization Across School Settings

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Programming Common Stimuli to Assess Generalization Across School Settings

by

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A Thesis

Submitted to the Graduate Faculty at

St. Cloud State University

In Partial Fulfillment of the Requirements

For the Degree of

Master of Science

In Applied Behavior Analysis

May, 2021

Thesis Committee:
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Abstract

The Preschool Life Skills curriculum has been used to teach functional communication, instruction following, friendship skills, and tolerance to typically developing preschoolers. The purpose of this study is to teach three of the curriculum's skills - following single-step instructions, following multiple-step instructions, and requesting adult assistance to an eight-year-old public-school student with autism. To plan for generalization, common stimuli from the general education setting were used to teach these skills. Throughout the study, the participant's performance was assessed during observations in the general education classrooms.

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Chapter I: Programming Common Stimuli to Assess Generalization Across School Settings

In 2019, 95% of students with disabilities received special education services in public schools (U.S. Department of Education, 2019). These services are based on the impact of the individual's disability and are offered across a continuum of placements, ranging from weekly consultative services to daily, one-on-one services in the special education setting. Special education teachers who instruct in the most restrictive model, self-contained classrooms, provide specialized instruction in a separate classroom for students who require significant academic or behavioral support (Iris Center, n.d.). Self-contained classrooms are only considered when students are unable to learn when provided supplementary aids and services in the general education environment (Individuals with Disabilities Act, 2004). Students in self-contained classrooms, 15% to 23% of all students with disabilities (Kleinert, 2015), often qualify for special education services due to a diagnosis (e.g., intellectual disability, autism spectrum disorder) and major behavioral deficits and excess that significantly impact successful participation in general education settings.

Broadly, these behavioral deficits include skills necessary for interpersonal relationships, social competence, and personal responsibility (Clark et al., 1994). These students should receive individualized instruction on these skills and prerequisite skills as early as possible. Within this instruction, it is also imperative for teachers to assess the extent to which these skills (e.g., following instructions and requesting assistance) occur in general education settings. Because students in self-contained classrooms often have these skill deficits, special education teachers should prioritize a functional curriculum in which these deficits are addressed (Kurth, 2014). Furthermore, if these students acquire pivotal social and life skills this may decrease the

likelihood of problem behavior and increase the student's school achievement. In addition, the absence of functional skills (e.g., functional communication for adult assistance and interaction) has been correlated with interfering problem behavior (McClelland & Morrison, 2003).

Initial Development and Evaluation of the Preschool Life Skills Curriculum

One such functional curriculum that may be useful for students in self-contained classrooms is Preschool Life Skills (PLS; Hanley et al., 2007). The PLS curriculum addresses four specific skill domains: (a) instruction following, (b) functional communication, (c) delay tolerance, and (d) friendship skills. Hanley et al. (2007) selected these skill domains based on school readiness data provided by the National Center for Education Statistics (NCES) in 2000. The NCES gathered information from 3,000 kindergarten teachers across 10 years (1989-1999). The teachers were asked what the necessary skills kindergarteners needed when entering school. These skills included (a) expressing needs and thoughts, (b) refraining from disruptive behavior, (c) following instructions, (d) turn taking and sharing, and (e) showing sensitivity to others. Using the NCES information and the behavior-analytic literature for functional assessment and treatment of problem behavior, Hanley et al. designed the PLS curriculum to address most functions (escape, tangible, and attention) of problem behavior while also teaching appropriate replacement behaviors that coincided with the NCES report.

In its inception, Hanley et al. (2007) developed the PLS curriculum and corresponding class wide teaching model to teach these pivotal skills to 16 preschool-aged participants (ages three-five) at-risk for developing problem behaviors with developmentally appropriate listener and speaker skills. Using a multiple probe design across behaviors, Hanley et al. used behavioral skills training (BST) to teach 13 skills across the four units to participants during routine

activities (free choice activities, circle time, meals, centers, and transitions). During circle time, the teacher explained the importance of each skill. Next, the teacher modeled a situation in which the use of the skill would be appropriate. After this introduction, the teacher provided opportunities to the students to practice the skill with her. When students did not engage in target behaviors, the teacher repeated the description and provided another practice opportunity. If the participants engaged in correct responses, the teachers provided behavior-specific praise.

When compared to baseline sessions, all participants improved performance across all 13 skill sets, with an average of 13 teaching opportunities per child (Hanley et al., 2007). In addition, participants engaged in less problem behavior (aggression, vocal disruptions, and noncompliance) following the PLS class wide instruction when compared to baseline sessions. Following the study, researchers asked the teachers and program coordinator to complete a questionnaire to assess the program's effectiveness. In general, the teachers favorably rated the PLS program on its effectiveness. When researchers conducted maintenance sessions (two days following the completion of the study) and additional booster teaching sessions, participants exhibited the target behaviors across people, situations, and daily activities. Though the initial implementation was successful in increasing participants' functional communication, friendship, instruction following, and delay tolerance skills, the generality of the behaviors outside of the preschool context remains unknown. In addition, it is unclear if this teaching model, which consisted of BST in the typical preschool classroom setting, would be successful when working with children with behavioral deficits, or those with developmental disabilities.

Replications of PLS Curriculum

To address the ranging skill sets children may have when entering the preschool setting, Luczynski and Hanley (2013) adjusted the modality of instruction (small group instruction) and skills taught (raising hand, looking at the instructor, and tolerating denials) to instruct the skills within the PLS curriculum. For this study, Luczynski and Hanley provided only small group instruction (using similar methods outlined by Hanley et al. 2007) for two classrooms (one classroom for younger children under four years old, and the second, for older children from four to five years old). Teachers identified 12 participants who engaged in problem behaviors and had deficits in communication and self-control skills. Researchers randomly assigned half of the participants from each classroom to either a control group (no treatment) or PLS treatment group.

Using both a group design and multiple-probe design across skills, researchers exposed participants to evocative situations and measured the occurrence and non-occurrence of the PLS skills and problem behavior during classroom activities. In the treatment group, researchers explained the target skill, modeled the skill, and allowed for the participants to practice. Researchers arranged evocative situations for teacher attention, assistance with materials, and access delays and denials when at least two of the group's participants were present. Researchers modified instruction when the small groups did not meet their mastery criteria. For example, all participants required further intervention to meet mastery criteria for requesting attention, so the researcher implemented two interventions for the younger (visual prompt) and older classes (ignoring incorrect responses), while also reducing the mastery criteria.

Overall, participants in the PLS group engaged in an 84% increase in skills following the intervention, whereas those participants in the control groups did demonstrate statistically significant improvements in skills. In addition, most participants engaged in problem behavior prior to instruction for the treatment group. Participants in the control group continued to engage in problem behavior when researchers collected data during the final phase of the study. PLS treatment participants did not engage in problem behavior following the PLS teaching procedures. Specifically, following acquisition and during maintenance observations, five of six participants in the PLS treatment group exhibited targeted skills in 80% of the opportunities. Though these data are promising, researchers limited their data collection to one setting, center time.

To address this limitation, Luczynski et al. (2014), conducted an extension of the Lucyznki & Hanley (2013) with the six treatment participants described above. Seven days following the Luczynski & Haney (2013) study, five teachers conducted pre-informed and post-informed generalization sessions with participants while being video recorded. Teachers had no teaching experience with the participants, and researchers were not present. Researchers gave the teachers minimal directions; only instructing that the activities should be 15-45 minutes in length and include completing a project. During post-informed teaching sessions, the researchers provided additional instruction and guidance for one of the teachers regarding the target skills and how to respond to participant bids for attention and problem behavior. The teacher informed of the study's purpose was associated with higher levels of engagement in targeted skills. In addition, because the researchers planned for generalization, this application of the PLS

curriculum was successful in generalization and maintenance across participants for at least two of the targeted skills.

Participants inconsistently engaged in skills during informed teaching conditions. They decreased skill engagement during generalization, overall. During the generalization plus teaching condition, participants' engagement increased again. During the maintenance period, all participants engaged in target behaviors at moderate or high levels for at least two out of three skills, during the three-month time period of no teaching.

The researchers' initial goals of the PLS curriculum and subsequent replications were to create a curriculum that would teach foundational skills that would prevent typically developing preschool children from engaging in problem behavior when they transitioned to the kindergarten setting. Recently, researchers have conducted studies using the PLS curriculum with those with disabilities (autism spectrum disorder, Down syndrome, speech apraxia, oppositional defiant disorder, and developmental delays). Because these students often require more individualized support, it is possible they may not benefit from a class wide approach. However, children with disabilities may also lack the behavioral repertoires outlined as critical in the PLS curriculum (Hanley et al., 2007). Thus, further evaluation is necessary when instructing with students with behavioral deficits, as well as guidance in how to program for skill generalization across novel, or untrained, contexts.

Use of PLS with Students in Special Education

Recent studies show that students in special education may benefit from the PLS curriculum when instruction is individualized at the small group or individual level using a tiered approach (Hanley et al., 2014; Falligant & Pence, 2017; Robison et al., 2020). One such tiered

approach, response-to-intervention (RTI) is often used in public schools (National Center on Response to Intervention, 2010). According to the National Center on Response to Intervention (2010), the RTI model features three levels of instruction: primary level (all students), secondary level (targeted instruction in homogeneous groups), and tertiary level (intensive supports in small, homogeneous groups or individually). The RTI model can be used in public school settings to identify and address academic, and behavior needs.

For instance, Falligant and Pence (2017) used a RTI approach to instruct eight preschool-aged children with developmental disabilities enrolled in an inclusive preschool program to engage in five PLS skills (responding appropriately to name, requesting adult attention, requesting adult assistance, delay tolerance, and denial tolerance) during regular activities, in a pull-out area with tables and chairs in the classroom, or at the university's therapy room. Initially, all participants experienced Tier 1 (a class wide BST model) for 10-16 min sessions per day across five sessions. If participants did not reach mastery of all skills with correct, independent responses for 85% of trials across two consecutive sessions, participants would move on to Tier 2. In Tier 2 instruction, researchers conducted BST teaching sessions in groups of three children. If participants engaged in correct responses, the researchers provided specific praise and brief physical interaction. Following incorrect responses or no responses, the researcher represented the evocative situations and provided vocal and physical prompts to guide the participant. Following the practice opportunity, the researcher arranged another practice trial in which the antecedent was presented again to identify if the participant would engage in the correct response. If the participants did not demonstrate an upward trend in skill acquisition, or if the participant had not reached mastery by the fifth session, they continued to Tier 3 instruction.

Tier 3 instruction included one-to-one instruction, modeling, and role playing for the remaining four participants. If participants failed to reach mastery with the standard Tier 3 intervention, researchers implemented individualized procedures (e.g., most-to-least prompting) for the participants.

Six of eight participants met the mastery criteria for the five targeted skills. One participant mastered all skills in Tier 1 and Tier 2. Three participants mastered most of the skills in Tier 1; however, each of these participants needed Tier 2 and Tier 3 interventions for the remaining skills. Another participant required Tier 2 and Tier 3 to master all skills. Two participants were unable to master skills at Tier 3 and required individualized modifications to complete the PLS program. Following mastering skills in the training setting, researchers also observed participants in the natural environment for 20 minutes across a range of settings (free choice, circle time, meals, centers, and transitions) and recorded how often the participants engaged in the previously taught skills. In general, participants exhibited poor generalization with peers and adults. Only one (Tier 1 mastery) participant who completed the study demonstrated generalization across different settings with adults at 80% for two skills. Participants who received Tier 3 instruction exhibited the lowest levels of generalization. Researchers did not actively plan for generalization across people during their training sessions. Thus, it is unsurprising these participants did not generalize skills. In addition, researchers failed to include stimuli that may be common in the generalization settings within their training sessions.

More recently, Robison et al. (2020) taught all four units of the PLS curriculum in a special education setting, using a tiered approach. Participants included nine children, ages three

to nine, who received services in a special education classroom. Similar to Falligant and Pence (2017), researchers contrived opportunities for the students to engage in PLS behaviors and provided descriptive praise and prompts to teach skills. Participants who did not master skills at Tiers 1 advanced to higher tiers. Researchers provided 10 opportunities to evoke each skill for class wide and small group sessions. If participants did not demonstrate 80% mastery, they advanced to Tier 2 for small group instruction, where the conditions were the same, just with fewer students present. If participants continued to not meet mastery criteria, they advanced to Tier 3. The evocative situations decreased to six scenarios, and instruction continued until 80% mastery was reached.

Researchers conducted post-unit probes to measure maintenance the day following mastery. Participants who did not achieve 75% accuracy during maintenance sessions participated in Tier 3 booster teaching sessions. Overall, participants acquired skills during class wide (Tier 1) or small group (Tier 2) sessions. However, seven out of nine participants received Tier 3 instruction throughout the study. In general, the researchers failed to collect generalization data for the participants across people and settings. The researchers hypothesized that additional observations across school settings would provide necessary data to evaluate the generality of PLS programs with this population.

Chapter II: The Present Study

The aforementioned studies (Hanley et al., 2007; Luczynski & Hanley, 2013; Luczynski et al., 2014) demonstrate that preschool-aged participants who are typically developing will acquire skills in following instructions, requesting, responding to name, and delay tolerance when using the PLS curriculum and teaching strategies. Moreover, there is emerging evidence these strategies may also be effective for young students with disabilities in special education settings (Falligant & Pence, 2017; Hanley et al., 2014; Robison et al., 2020). Despite these strengths of the PLS curriculum, future researchers need to investigate the extent to which replacement behaviors taught within PLS aid in the stimulus generalization for older students with disabilities. Stimulus generalization is the occurrence of behavior across untrained stimuli (e.g., settings, people, items; Burt & Whitney, 2018). According to Stokes and Baer (1977), behavior analysts can only conclude therapeutic behavioral change occurred if the clients engage in a target skill (or refrain from the behavior) over time, with different people, and across settings.

Halle and Holt (1991) describe several implications regarding stimulus generalization control. First, they suggest varying the sets of stimuli that controlled responding during training sessions, rather than varying an abundance of stimuli, could be sufficient to reach generalization. Second, although the same training is provided, people will respond differently, as a result of a lack of subject generality. This suggests that conditions should be varied in order to promote generalization. Third, to analyze generalization, we must assess to identify stimuli responsible for controlling responses. Fourth, stimulus control of naturally occurring behaviors is complex, so any number of stimuli could control responding.

Practitioners must program and assess for generalization (Neely et al., 2015) in systematic ways to ensure their clients achieve meaningful behavioral change in the settings that matter the most. Stimulus generalization will not occur as a result of behavior change in a specific training setting or scenario. For example, some PLS studies instructed participants in one environment and minimally assessed behaviors in other settings (typically post skill mastery). In addition, these studies lacked details in how researchers promoted stimulus generalization and failed to repeatedly measure the behaviors across the study to assess if and when stimulus generalization occurred.

Given the limitations of the literature in PLS, it is imperative the future researchers outline details in how they plan for generalization along with direct skill instruction (Neely et al., 2015). One such generalization strategy may be the use of programming common environmental stimuli (Stokes & Baer, 1977). For stimulus generalization to occur, training stimuli must be present in the non-training environment in order to access reinforcement (Halle & Holt, 1991). Common stimuli refer to use of instructional conditions that mirror generalization settings as closely as possible. This may include the use of setting-specific objects or people and similar physical arrangements. For example, using a tray from a school cafeteria to teach a lunch routine in an isolated setting.

Thus, the purpose of the present study is to evaluate the effectiveness of the modified version of the PLS curriculum, that programs common stimuli, to teach special education students to (a) follow simple and multiple-step instructions, and (b) request for assistance in a self-contained classroom. Throughout the course of the study, the researcher will monitor the

extent to which (or if) these skills generalize to general education settings (e.g., art, music, library) (Stokes & Baer, 1977).

Chapter III: Method

Participant

The researcher recruited one public school student, Cody, who met the criteria set forth by a state's Department of Education for special education services. Based on her individualized education plan, she received special education services in a self-contained environment (60-100% of the school day). She had academic deficits (reading, math, writing), communicative skill deficits (limited vocalizations and articulation deficits), and behavioral concerns (aggression, self-injurious behavior, property destruction, task refusals, and eloping). She communicated using limited vocalizations. She was diagnosed as having an autism spectrum disorder. As confirmed by her individualized education plan, the student did not have visual or hearing disabilities. The student did not engage in problem behavior that resulted in tissue damage to themselves or others or irreparable destruction. The researcher sent home the informed consent form (see Appendix A) to receive consent from the participant's guardian.

Special Education Staff Members

The self-contained classroom included five school staff members: one lead teacher (hereafter referred to as the researcher), a second teacher, and three paraprofessionals. The researcher had nine years of experience in special education and was an applied behavior analysis graduate student. The second teacher had four years of experience in public education, held a degree in elementary education, and was seeking special education licensure.

The three paraprofessionals have a range of experience in special education, from less than one year to 19 years. The paraprofessionals met the state's paraprofessional requirements: two years of higher education, an associate degree, or standardized paraprofessional training

(Virginia Department of Education, 2010). Outside of the study, paraprofessionals were responsible for implementing specialized instruction to special education students, providing personal care (e.g., toileting), and supervision in general education settings (e.g., music, art, PE, and library). For the study, one paraprofessional (hereafter referred to as the observer) collected reliability data and arranged evocative situations in the general education settings.

Special Education Classroom and Training Setting

Due to the COVID-19 pandemic, Cody attended school according to the district's hybrid model. This model included four days of in-person instruction and one day of virtual learning each week. Upon arrival, she reported to the researcher's classroom. She unpacked her belongings and stayed in this room until her assigned times to attend general education classes or recess. The researcher conducted training sessions for the study during regularly scheduled work times in the special education classroom at her individually assigned table.

Generalization Settings

Before beginning the project, the researcher discussed the purpose of this study with the general education teachers and requested their cooperation. The researcher discussed the class structure, content, accommodations, modifications, and inclusion strategies for Cody for their respective classrooms. The researcher and observer planned meaningful opportunities for the participant to evoke the skills that the researcher taught in this study.

Throughout the study, the researcher assessed the participant's generalization of skills in general education settings. These settings included music, art, library, and physical education (PE) classes. Cody attended these classes for approximately 30 minutes on a rotating schedule with approximately 15 general education students. Participants attended these generalization

settings with one or two classroom paraprofessionals. Based on the school's schedule, Cody attended music, art, and library classes once per week. Participants attended PE daily.

In the music classroom, all students sat on the floor. In the classroom were a teacher's desk with a computer, a whiteboard, stacks of chairs, musical instruments, and storage shelves. In the art classroom, Cody had individual, assigned desks. The art classroom included a teacher's desk, whiteboard, and storage cabinets. In the library, students had assigned seats on a large rug. There were large bookshelves with books, a checkout counter, some furniture, and an interactive whiteboard. In PE, Cody sat on her assigned spot on the gym floor with basketball hoops and a storage closet. The gym floor was empty aside from the materials for the day's lesson.

Dependent Variables

The researcher and observer collected paper-and-pencil data using data sheets during training sessions (see Appendix B) and generalization observations (see Appendix C) on the occurrence of the three targeted skills for training (requesting assistance, following one-step instructions, and following multiple-step instructions) and problem behavior. The data was then transferred to a password-protected computer.

The researcher adapted operational definitions from the PLS curriculum (Hanley et al., 2007). During training sessions, the observer scored the engagement of an independent or prompted response for requesting assistance and following instructions. Observers scored requesting assistance as independent if the participant used her primary communication modality to state, "Help me please" within 30 seconds of the presentation of the evocative situation (e.g., when asked to draw without given any materials). If the participant required additional vocal, gestural, or physical prompts from the researcher, the observer scored this response as prompted.

The observer scored following one-step and multiple-step instructions as independent if the participant completed the task within 30 seconds of the evocative situation (e.g., when given materials and a vocal instruction). If the participant required additional vocal, gestural, or physical prompts from the researcher, the observer scored this response as prompted. The researcher calculated the percentage of independent responses during each training session by dividing the total number of independent responses by the total number of number trials to obtain an accuracy percentage.

During training sessions, the researcher and observer also collected data on the engagement of problem behavior during each trial. The observer scored an occurrence of problem behavior if the participant engaged in elopement (leaving the work area, seat, table, or classroom), aggression (biting or scratching), destruction (tearing paper, throwing objects, or swiping objects), and yelling (voice above her typical conversational level). The researcher calculated the percentage of trials with problem behavior during each training session by dividing the total number of trials with problem behavior by the total number of number trials and multiplied it by 100.

During generalization setting observations, the observer collected data on the performance of each skill (requesting assistance, following one-step instructions, and following multiple-step instructions) during 15 min observations. The observer indicated whether the skill did or did not occur independently. The researcher calculated the percentage of independent responses during each generalization observation by dividing the total number of independent responses by the total number of number opportunities and multiplied it by 100. The researcher

and observers used continuous data collection to record the occurrence of problem behavior during 15 min generalization observations.

Observer Training

Using BST (Digennaro-Reed et al., 2018), the researcher trained the observer to collect data for training sessions and generalization observations (see Appendix D for training protocol). The researcher provided vocal instructions on how to begin collecting data (retrieve pencil, paper, clipboard and orient body and eye gaze to observe participants). Next, the researcher modeled the data collection (observe behavior, record frequency on data sheet) while the co-teacher simulated a participant's response to the evocative situation. The researcher used eight evocative situations with a range of different responses (independent, correct; prompted, correct; prompted, incorrect; and incorrect), so the observer could practice the different data collection codes. Following the model, the researcher rehearsed the data collection procedure with the observer. The researcher simulated the participant's responses to an evocative situation and engaged in problem behavior, while also scoring data. The observer also collected data. When the researcher and observer obtained 100% agreement across two consecutive practice opportunities, the researcher considered the observer to be a reliable data collector for this study.

Interobserver Agreement

The researcher assessed interobserver agreement (IOA) using the trial-by-trial method (Cooper et al., 2020) for baseline and training sessions. The researcher summed the number of trials in which there were agreements, divided by the number of trials within a session, and multiplied the proportion by 100 to calculate a percentage. The researcher and observer independently collected data during 22% of baseline and training sessions. The average

agreement was 80% (range, 11%-100%). IOA generalization observations data were collected on 27% of opportunities. Average agreement was 97% (range, 69%-100%).

Treatment Fidelity

To ensure treatment effectiveness, the researcher also trained the observer to collect treatment fidelity using similar procedures as described above. The observer collected data (see Appendix E) on the accuracy in which the researcher arranged evocative situations, delivered the discriminative stimulus, provided the prompt, responded to correct responses according to the condition, implemented the error correction procedures, and responded to problem behavior (Falligant & Pence, 2017). To ensure quality treatment, the researcher and observer collected treatment fidelity data during 33% of baseline and training sessions and treatment fidelity was 100%. The researcher summarized the data by dividing the number of correct researcher responses by total response opportunities per session and multiplied it by 100 to obtain a percentage (Cook et al., 2015).

Experimental Design

To evaluate the extent to which common stimuli influenced correct, independent responding during training sessions, the researcher used a randomized multiple probe design, across behaviors (Horner & Baer, 1978). Similar to Robison et al. (2020), the researcher conducted multiple probes across the three target skills: following single-step instructions, following multiple-step instructions, and requesting adult assistance. A priori, the researcher randomly assigned, using random.org, the sequence of behaviors in which instruction on the three skills (Kratochwill, 2010) was provided. The researcher implemented the instruction for the three target skills in a staggered fashion across the skills in the same location with the same

researcher. Throughout the study, the observer also continued to collect data on the occurrence of skills and problem behavior during generalization observations. Using a masked visual analysis design, the data was analyzed by a graduate student in behavior analysis who was blind to participant identifying information. During baseline, the graduate student reviewed data trends and outliers that could jeopardize experimental control. Once stable baselines were established, the graduate student determined when treatment could begin. During the treatment phase, she continued to monitor data and requested further data to determine trends, as necessary (Byun et al., 2017).

Preference Assessments

Prior to beginning the study, the researcher sent a reinforcer inventory home with Cody for her parent to complete (see Appendix F). The parent chose the description that best describes the participants' preference for each stimulus. For example, the parent chose "not at all" to indicate that Cody did not like an item, action, or edible. Following the completion of the reinforcer inventory, the researcher instructed the parent to send the sheet back to the school.

Using the information from the reinforcer inventory, the researcher completed a multiple stimulus without replacement (MSWO) preference assessment with five to seven items available at school with items parent scored as enjoying "a fair amount," "much, or "very much" (see Appendix G). During the MSWO, the researcher provided an array of the selected items. Once Cody selected an item and either consumed it, or interacted with the item for 30 s, the researcher removed this item from the array, rotated the new array, and asked the participant to select another item (e.g., "What do you want?"). The researcher continued this process until there were no more items available or the participant met the selection criteria (DeLeon & Iwata, 1996;

Chazin & Ledford, 2016). The information gathered from this assessment determined reinforcers (fruit snacks, crackers, chocolate, and specific songs) that were used throughout the intervention. During work sessions, Cody was provided with a choice of three highly preferred items, as determined by the MSWO during the training sessions.

Procedure

The researcher and one observer conducted generalization observations across the duration of the study (prior to baseline, following baseline, during training, and following skill mastery). The researcher also conducted baseline and training sessions with the participant across three skill domains.

Generalization Observations

Throughout the duration of the study, the researcher and observers collected data on the occurrence of the three target skills for instruction (requesting assistance, following single-step, and following multiple-step instructions) and problem behavior during general education settings, as described above. Using random.org, the researcher determined the skills in which generalization data was collected. The researcher and/or observer collected data in the generalization settings a maximum of one time per week for all settings (art, music, library), except PE, which was on a different schedule than the other classes.

During each generalization observation, Cody entered the location according to her usual routines with a special education staff member within 1.0 m of the participant. During the 15 min observations, the observer collected data on the occurrence or nonoccurrence of each targeted skill (requesting adult assistance, following single-step instructions, and following multiple-step instructions) and problem behavior (see Appendix C). In the event natural opportunities did not

occur within the first seven minutes of the observation, the researcher or observer contrived opportunities for the participant to engage in a target skill every one to three minutes. If she engaged in the target skill, the researcher or observer provided brief praise (e.g., “Great asking.”) and assistance (if requesting assistance). If the skill did not occur after 30 s, the researcher or observer did not provide any prompts to engage in the skill. If problem behavior occurred, the researcher or observer refrained from commenting and redirecting. In the event that severe problem behavior occurred (e.g., eloping and disrobing), the researcher or observer terminated data collection to ensure the safety of Cody, others, and the classroom.

Baseline

Across all baseline sessions for each skill, the researcher presented three to five different evocative scenarios (see Appendix H). Sessions had nine trials with common stimuli from the generalization environments (e.g., musical instruments, paint, library books). The researcher arranged the evocative situation for the targeted skill and waited for correct, incorrect, or no responses for 30 s. The researcher did not deliver feedback or prompts to Cody. Following each trial, regardless of if she engaged in a correct response, the researcher provided a choice of highly preferred items (as indicated by the MSWO) and vocal praise (e.g., “Thanks for helping me!”) for appropriate attending (e.g., sitting in a chair, responding to vocal directions). If problem behavior occurred, the researcher refrained from commenting and redirecting. Once she ceased the engagement of problem behavior for 10 s, the researcher provided the choice of preferred items and vocal praise for appropriate attending.

Following Single-Step Instructions. The researcher delivered single-step instructions with common stimuli from the generalization environments to Cody. If Cody followed the

instruction within 30 s, the researcher reinforced the response with general, brief, vocal praise that was not behavior specific (e.g., “Good job.”) and choice of preferred items. If she did not follow the instruction within 30 s, the researcher responded with brief, vocal praise for attending or (e.g., “Cool looking at me!”) other untargeted appropriate behavior and a choice of preferred items.

Following Multiple-Step Instructions. The researcher delivered multiple-step vocal instructions with common stimuli from the generalization environments. If Cody followed the instructions within 30 s, the researcher reinforced the response with brief, vocal praise (e.g., “Good job.”) and choice of preferred items. If she did not follow the instructions within 30 s, the researcher responded with brief, vocal praise for attending or other untarged appropriate behavior and choice of preferred items.

Requesting Adult Assistance. The researcher contrived situations for Cody to request assistance by withholding preferred items or an item needed to complete an activity. Situations were relevant to the stimuli to each generalization setting. For example, the researcher assigned a task involving writing with a marker, but she did not provide markers (art class). If the Cody independently requested adult assistance, the researcher reinforced the response with brief vocal praise, then provided the needed assistance for the remaining portion of the 30 s trial. If she did not request assistance, the researcher provided the necessary assistance following 30 s and said, “Let me help you,” and then provided a choice of preferred items.

Training Sessions

Similar to baseline, during each training session, the researcher presented three to five different evocative scenarios. Sessions had nine trials with common stimuli from the

generalization environments. The researcher arranged the evocative situation for the target skills and used most-to-least prompting to guide the correct response. Similar to Falligant and Pence (2017), there were five levels of prompting: (a) full physical or vocal prompting with 0-s delay, (b) full physical and vocal prompting after 1-s delay, (c) full physical or vocal prompting after 2-s delay, (d) full physical or vocal prompting after 3-s delay, and (e) independent response. Once the participant achieved 89% correct (prompted or independent) during one session, the researcher decreased the intrusiveness of the prompt. If Cody engaged in two consecutive trials of an incorrect or no response, the researcher increased the prompt level (see Appendix B). If she responded correctly (independent or prompted), the researcher provided a choice of highly preferred items (as indicated by the MSWO) and behavior-specific, vocal praise (e.g., "Fantastic asking for help!"). If problem behavior occurred, the researcher refrained from commenting and redirecting. Once she ceased engaging in the problem behavior for 10 s, the researcher arranged a new opportunity for the subsequent trial. If the participant engaged in an incorrect or no response, the researcher repeated the evocative condition and provided the most intrusive prompt, similar to Falligant and Pence's (2017) Tier 3 procedure. The researcher vocally told the participant, "say ___" or "do ___" while physically guiding a correct response.

Once Cody reached 89% independent correct responses across three consecutive sessions, the researcher considered the skill mastered. If she did not meet the mastery criteria within 10 training sessions, the researcher adjusted the training procedures.

Following Single-Step Instructions. The researcher delivered single-step instructions to the participant in a neutral tone and clear manner that were common in the generalization settings. These single-step directions included using an instrument, sitting on a carpet spot,

playing with sports equipment, or using a writing utensil. Using the most-to-least prompting strategy described above, the researcher reinforced correct responses (independent and prompted) with a choice of preferred items to access for 30 s or an edible to consume and behavior-specific praise (e.g., “Wonderful finding the drum!”). If Cody engaged in incorrect responses or no responses occurred, the researcher implemented the error correction procedure described above.

Following Multiple-Step Instructions. The researcher delivered multiple-step verbal instructions to Cody in a neutral tone and clear manner. Instructions included two or more sequential demands that were common in the generalization settings. These multiple-step instructions included actions such as, “get the baseball, then get the bat.” Using the most-to-least prompting described above, the researcher reinforced correct responses (independent and prompted) with a choice of preferred items to access for 30 s or an edible to consume, and behavior-specific praise (e.g., “Great job drawing a line and cutting the line!”). If incorrect responses or no responses occurred, the researcher implemented the error correction procedure described above. Cody did not master this skill within 10 sessions, so a modification was made to the procedure. For the modified condition, the demand to sit at her table was removed. She was presented with the task and given the direction to complete the task at her preferred location in the classroom. However, during this session, she went to the table, without any additional prompts, to complete the assignment.

Requesting Adult Assistance. The researcher contrived situations for Cody to ask for items needed to complete an activity. Situations used common stimuli from generalization environments (e.g., asking for a pencil when told to draw a circle). Using the most-to-least

prompting described above, the researcher reinforced correct responses (independent and prompted) with the requested assistance, a choice of preferred items to access for 30 s or an edible to consume, and behavior-specific praise (e.g., “I love how you asked me for a pencil!”). If incorrect responses or no responses occurred, the researcher implemented the error correction procedure described above.

Maintenance

Following mastery, the researcher continued to present three to five different evocative scenarios (see Appendix H) for the mastered skill (requesting assistance). Like in baseline, there were nine trials with common stimuli from the generalization environments (e.g., musical instruments, paint, library books) in each session. The researcher arranged the evocative situation for requesting assistance by withholding items or an item needed to complete an activity. For example, telling Cody to “kick the ball,” while withholding the ball. The researcher waited for correct, incorrect, or no responses for 30 s. The researcher did not deliver feedback or prompts to the Cody. Following each trial, regardless of if she engaged in a correct response, the researcher provided a choice of highly preferred items (as indicated by the MSWO) and vocal praise (e.g., “Thanks for helping me!”) for appropriate attending (e.g., sitting in a chair, responding to vocal directions). Cody requested assistance 89-100% of independent responses, without engaging in any problem behavior.

Chapter IV: Results

Figure 1 shows Cody's percentage of independent, correct responding during baseline and training sessions for requesting assistance (top panel), following single-step directions (middle panel), and following multiple-step directions (bottom level). During baseline sessions, Cody engaged in low levels of independent, correct responses for requesting assistance. Following training, Cody met mastery criteria for this skill in nine sessions. Cody's level of independent, correct responses remained high during maintenance sessions. During baseline sessions of following multiple-step directions, Cody's performance was variable (range, 11%-100%). Once training began, performance remained variable (range, 0%-100%). Following the protocol modification, Cody achieved 100% independent, correct responding for following multiple-step directions in one session. Cody's performance for following single-step directions remained variable in baseline (range, 22%-100%), and training was not introduced for this skill.

Table 1 shows the correct responding and problem behavior across baseline and training conditions for the two skills that entered training. For requesting assistance, Cody's correct responding increased, while problem behavior occurrences minimally decreased. She also demonstrated an increase in following multiple-step directions during the training condition; however, this was associated with an increase in problem behavior. Table 2 shows correct responses and problem behavior across the four sets of materials (art, music, library, and PE) during baseline and training conditions for requesting assistance and multiple-step directions. Across all four sets of materials, Cody engaged in increased levels of correct responding. However, problem behavior also increased for two out of four materials (Music and PE) during training sessions. In Table 3, correct responding (across multiple-step and requesting assistance)

and problem behavior during generalization observations across the four locations is shown. These data show that the highest rates of problem behavior occurred in art and library classes, followed by music and PE.

Table 1

Average Correct Responding and Problem Behavior by Skill Across Baseline and Training Sessions

Skill	Independent, Correct Responses		Problem Behavior	
	Baseline	Training	Baseline	Training
Requesting Assistance	9%	47%	29%	22%
Multiple-Step Directions	47%	66%	18%	27%

Table 2

Correct Responses and Problem Behavior Across Materials During Baseline and Training Sessions

Materials	Correct Responses		Problem Behavior	
	Baseline	Training	Baseline	Training
Art	37%	60%	67%	10%
Music	32%	47%	25%	50%
Library	66%	89%	0%	0%
PE	18%	47%	0%	25%

Figure 1

Percentage of Cody's Independent, Correct Responses Across Sessions

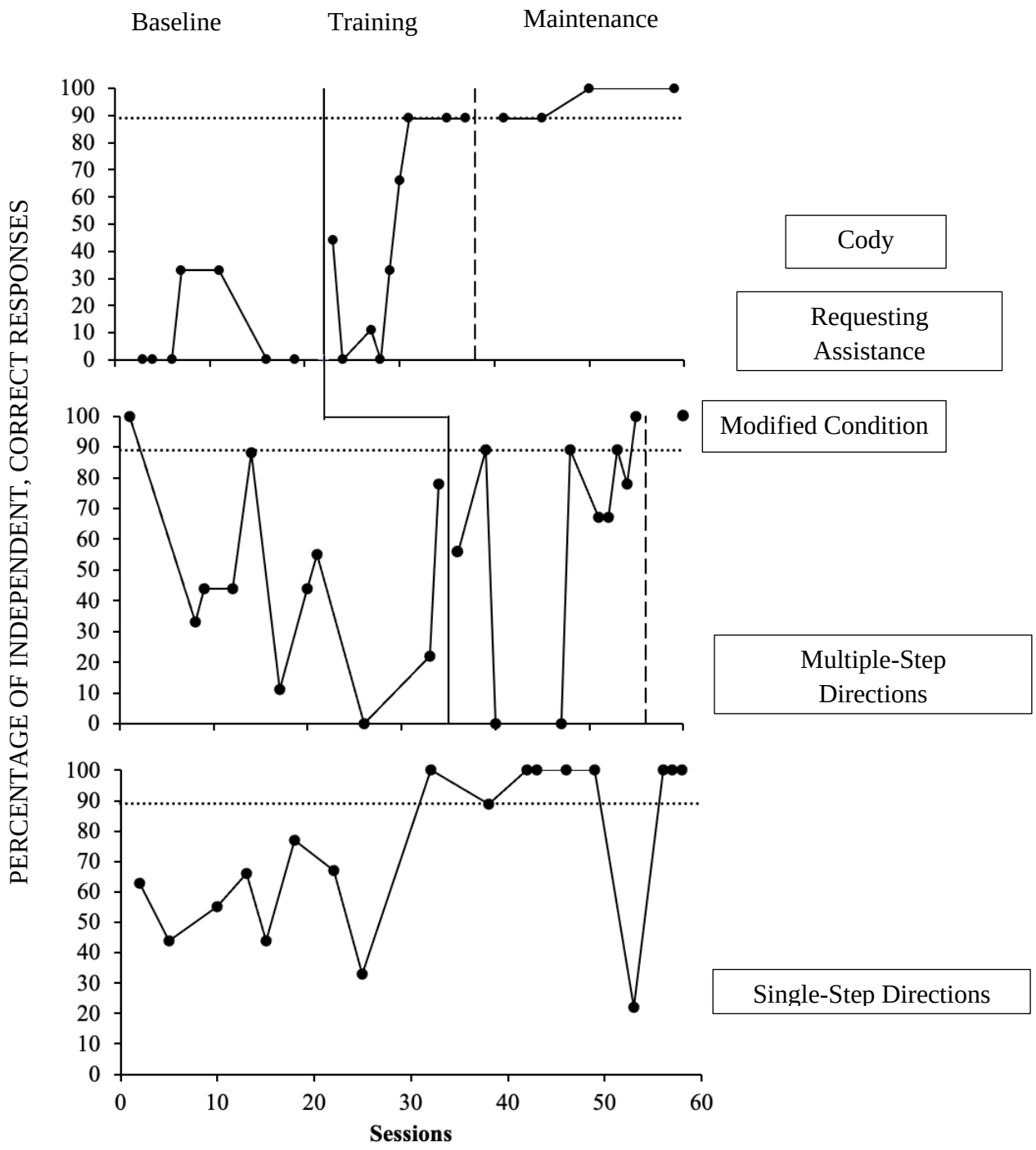


Table 3

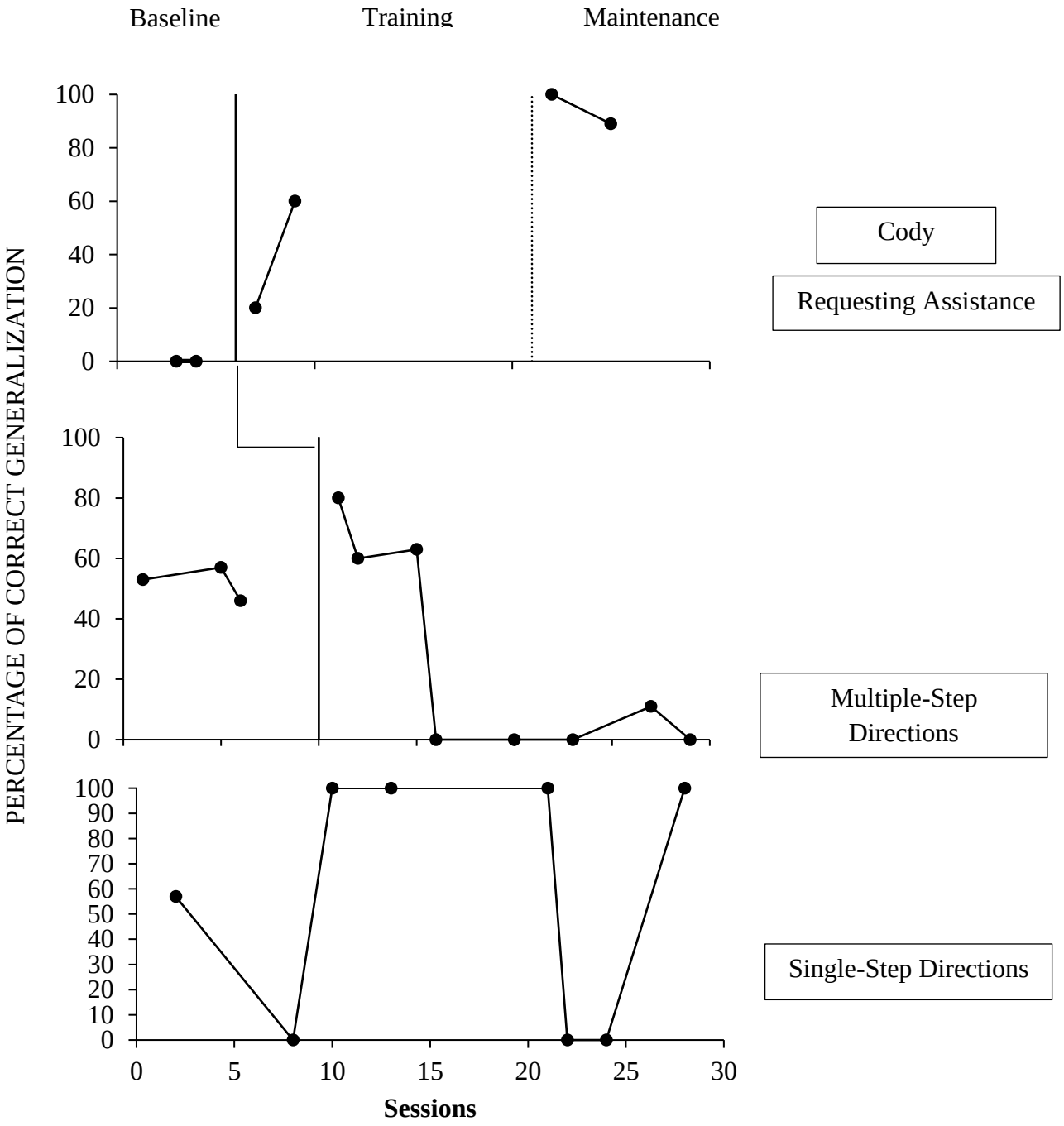
Correct Responses and Problem Behavior Across Generalization Locations

Classroom Location	Correct Responses		Problem Behavior	
	Baseline	Training	Baseline	Training
Art	80%	0%	-	100%
Music	57%	60%	0%	0%
Library	23%	0%	0%	100%
PE	32%	10%	0%	0%

Figure 2 shows Cody's performance during generalization observations across the course of the study. Due to resource constraints, including staffing, needs of other students, needs of Cody, schedule changes, absences, and inclement weather, there were limited opportunities for generalization observations. For generalization observations (art, music, library, and PE classes) that occurred in baseline for requesting assistance, Cody engaged in low levels of correct responses. For generalization observations (art, music, library, and PE classes) that occurred during training sessions, Cody engaged in higher levels of correct responses. For generalization observations that occurred during maintenance sessions, Cody's requesting assistance was at high levels. Cody's performance during generalization observations for following single-step and multiple-step directions was variable (range, 0-100%). For multiple-step, Cody's correct performance showed an overall decrease in correct responding since beginning the study. Cody's correct performance of single-step directions in generalization settings were, at times, at high levels (100%).

Figure 2

Generalization Correct Responses Across Baseline and Training Conditions



Chapter V: Discussion

The purpose of this study was to teach three skills from the PLS program and plan for generalization across general education classroom settings (art, music, library, and PE) by programming common stimuli (Stokes & Baer, 1977). The study included one participant, who was diagnosed autism spectrum, displayed limited communication, and received the majority of her instruction in the special education setting. She met mastery criteria for requesting assistance, and she mastered following single-step directions during baseline. She did not meet mastery criteria (89% across three consecutive sessions) for following multiple-step directions prior to ending this study.

Cody's results in this study were inconsistent across materials (common stimuli) during training sessions and the extent to which her skills generalized across locations. During training sessions with the researcher (her special education teacher), Cody's correct responses were highest across library materials for multiple-step and requesting assistance skills. Further, Cody did not engage in problem behavior during these training sessions, although Cody's did engage in problem behavior occurred across all library generalization observations. Anecdotally, it appeared that library materials during the training sessions were preferred, while *attending* the library class with the similar materials was not as preferred. In addition, Cody's correct performance for single-step, multiple-step, and requesting assistance was lowest when music and PE materials were used. Contrastingly, during generalization observations, Cody's correct responses for single-step, multiple-step, and requesting assistance skills were higher during music class, when compared to the other settings; music class was also associated with low levels of problem behavior. During training sessions, Cody engaged in problem behavior across

materials (music, library, PE, and art), with music materials having more occurrences than library, art, or PE materials. Cody's correct responses for requesting assistance and multiple-step directions during art training sessions were relatively high (though not as high as library) while rates of problem behavior were the lowest of the materials with problem behavior (art, music, and PE). Cody's correct responses in generalization observations for art, PE, and library decreased during training sessions, while correct responses in music increased. Cody's problem behavior increased from baseline rates in library generalization observations. The increase in problem behavior during training sessions and generalization settings could be attributed to preference for materials (e.g., library materials), lower preference for a generalization setting (as a result of demands, attention provided, or adults present), and higher p reference for 1:1 teacher-student interaction.

The findings of this study extend the behavior-analytic literature in three ways. First, this study replicated the use of a modified PLS program (Falligant and Pence, 2017). The training procedures in this study were similar to Falligant and Pence's (2017) tier 3 intervention in which Cody was taught multiple-step and requesting assistance using errorless learning procedures, and her training was individualized. Specifically, Cody's multiple-step and requesting assistance skills were taught using most-to-least prompting (physical and vocal) with embedded delays, with prompt intrusiveness decreasing as performance increased. Because Cody engaged in minimal requesting assistance during baseline, across materials (art, music, and PE), most-to-least prompting procedures were critical in her acquisition of requesting assistance skill. Other PLS researchers have examined generalization outcomes across staff and peers (Falligant & Pence, 2017; Luczynski et al., 2014), or during naturally occurring classroom opportunities

(Falligant & Pence, 2017; Luczynski et al., 2014) with participants aged 3 to 5-years old, pre and post training. Unlike these studies, the current study programmed for generalization within the PLS training and concurrently measured the generalization of skills in a public-school environment throughout the study. Although the results were inconclusive in regard to programming common stimuli for generalization among settings in public school, these results do support the strategy of concurrently measuring generalization progress across settings during training. By using concurrent data collection (for both training and generalization environments), researchers and practitioners can analyze if and when generalization occurs (rather than two, isolated time points in a study). This practice could provide opportunities for researchers and practitioners to identify confounding variables and their impact on client generalization performance.

Second, this study demonstrates the reality of conducting research in a public school with limited resources, staff members, and professional support (Sheridan & Erchul, 2014) with a student with high needs. Cody was a student in a program for students with other significant needs, so those students were always nearby during training sessions and generalization observations. At times, her peers' needs interfered with her schedule. Due to resource constraints (staffing, space, training), these disruptions may have negatively impacted her skill acquisition and problem behavior.

Third, the researcher employed masked visual analysis (MVA). The MVA procedure includes the use of an intervention team and analysis team. The intervention team provides the intervention and collects data, while the analysis team reviews the masked data and determines appropriate phase changes. Visual analysis is used in single-subject experimental designs, and

methods often are unclear to how researchers make decisions about introducing a participant to training or intervention. However, by using masked visual analysis, the level of researcher bias might be limited (Byun et al., 2017). Limiting bias was especially important in this study since the researcher was also the participant's special education teacher. When there are dual relationships (teacher and student vs. researcher and participant), this should be reported in the method section and steps to limit the researcher's bias should be addressed. The researcher and a fellow graduate student, who served as the blind analyst, met weekly or biweekly to review graphed data. After the data were reviewed, the blind analyst determined if Cody's behaviors should enter treatment or continue baseline conditions. Limiting bias, especially among practitioner-client research, might allow for increased transparency when reporting a study's methods.

This study warrants discussion of limitations. The present study lacked functional control of correct responding of requesting assistance, following multiple-step directions, and following single-step directions. First, there was baseline interference in following single-step directions. Single-step instructions did not enter training conditions, as the skill was mastered during baseline conditions. During this time, following multiple-step directions entered training, while single-step performance increased. It is possible this is due to the similar format of directions of multiple-step and single-step, single-step mastery occurred without training. Although this baseline interference weakens control, this outcome could be clinically beneficial. The outcomes might suggest practitioners can provide multiple-step training, and, in turn, acquisition of single-step directions might occur. Future research should investigate this phenomenon.

Second, the researcher was unable to replicate the procedure using the multiple probe design across behaviors with additional participants. Due to time and resource constraints (the lead researcher was informed she could not work with students off her caseload) and COVID-19 safety protocols, the researcher could only recruit students in her classroom. Many of her students attended virtually, thereby unable to participate in the study due to the in-person format. In sum, out of all consent letter sent and multiple reminders, only Cody's guardian agreed to her participation. When presented with the opportunity for their child to receive additional services to address pivotal skills, parents did not opt-in for their child. The lack of participation might be due to a) lower rapport with the researcher (she only knew the parents for a few months before asking for their consents for the child), b) mistrust with research protocols, c) avoidance of teacher interactions, or d) concerns of research interfering with academic instruction. Further researchers should include more participants with similar needs as Cody's, who receive specialized services throughout the school day and investigate how to recruit and retain these participants to allow for meaningful research projects to occur in the public school system.

Third, Cody's level of problem behavior increased in the study and outside of the study, which were unwanted outcomes. Due to the intensity of her problem behavior outside of the study, Cody had limited opportunities for training sessions for this study. Cody's problem behavior intensity resulted in fewer generalization observation opportunities. In addition, the school's policy dictated Cody could not attend the general education classroom (hence the limited opportunities to assess generalization) until problem behavior had ended. The school's policy allowed for potentially escape-maintained problem behavior during general education classes to be reinforced, given Cody could not be taken back to that classroom to resume

instruction. Outside of the study, Cody also engaged in increased problem behavior which could be attributed to variety of variables, including medication changes. In sum, future researchers should consider collecting and reporting participants' problem behaviors outside of the research study, along with problem behaviors in the context of the study. This practice could increase outcome transparency in behavior analysis and provide an accurate measurement of the extent to which the treatment impacts participants' behaviors.

During the course of this study, one participant, Cody, participated in a modified version of the PLS curriculum, which incorporated common stimuli, where three behaviors (requesting assistance and following single and multi-step directions) were measured in baseline, training, and generalization settings (i.e., general education classes). Despite engaging in problem behavior, Cody acquired three skills during sessions; however, performance of these skills was limited across generalization observation settings. Results of this study might prompt further research in how researchers plan for generalization, conduct research in public-service settings with limited resources, and use of the PLS curriculum with older children with disabilities.

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Appendix A: Consent Form

Your child is invited to participate in a study involving teaching life skills to students with disabilities. This study has been approved by The University Institutional Review Board at St. Cloud State University. This research project will be conducted as a final project for a master's degree and will take place during school hours only. Participation is not mandatory or associated with FCPS. After reviewing the following information, you can choose to consent by signing and returning this form.

Purpose of the Study

If you agree, your child will participate in a research study about teaching life skills to elementary age children with disabilities. The purpose of this study is to investigate the carryover of life skills taught in an individualized setting to other settings, including PE, music, library, and art classes.

If you allow you consent to participation in this study:

- Your child will receive one on one instruction in the areas of requesting assistance and following instructions 4-12 times per week during the school day.
- Your child will be observed in general education settings to examine their carryover of the above skills in other settings.
- Your child could be audio/video recorded. These videos would be shared with university faculty for educational purposes only. Recordings would be deleted after the completion of this research project.
- Your child will remain anonymous at all times. The data resulting from your child's participation may be made available to other researchers in the future for research purposes not detailed within this consent form.

By signing below, you indicate that you have read the above information and consent for your child to participate in this research study. You may contact Estella Bagnal at any point during the course of this project at embagnal@gmail.com.

_____

Child's name

_____ _____

Parent's name Date

_____ _____

Graduate student's signature Date form received

Appendix B: Baseline and Training Session Data Sheet

Date:		**Participant:**	**Initials:**	**Prompt Level:**
Skill (circle one): RA 1-step 2+ step			**Phase (circle one): Baseline Training**	
Trial	**Situation**	**Data**	**Problem Behavior**	
1		**+ +P - -P NR**	**Yes No**	
2		**+ +P - -P NR**	**Yes No**	
3		**+ +P - -P NR**	**Yes No**	
4		**+ +P - -P NR**	**Yes No**	
5		**+ +P - -P NR**	**Yes No**	
6		**+ +P - -P NR**	**Yes No**	
7		**+ +P - -P NR**	**Yes No**	
8		**+ +P - -P NR**	**Yes No**	
9		**+ +P - -P NR**	**Yes No**	

Prompt Levels	
Level 1	full physical and vocal prompt with 0-s delay
Level 2	full physical and vocal prompting after 1-s delay
Level 3	full physical or vocal prompting after 2-s delay
Level 4	full physical or vocal prompting after 3-s delay
Level 5	independent response
Decrease Prompt Intrusiveness: 89% correct (prompted or independent) over one session. Increase Prompt Intrusiveness: incorrect or no response	

Data Collection:
+: independent, correct response
+P: prompted, correct response
-: incorrect response before prompt
-P: incorrect response with prompt
NR: no response after 30 s
Problem Behavior: aggression, elopement, destruction, yelling

Appendix C: Generalization Observation Data Sheet

Operational Definitions	
Requesting adult assistance (RA)	use of vocals, signs, or pictures to request adult assistance
Following single-step instruction (1-step)	Taking action to respond to single commands
Following multiple-step instructions (2+step)	Taking action to respond to multiple commands

Setting (circle):	art	music	PE	library
Initials:	Start Time:	End time:		
Opportunity (circle one and indicate)		**Skill Data (+: independent, correct -: incorrect, did not occur)**		**Problem behavior (tally)**
RA 1-step 2+ step Situation:		+	-	
RA 1-step 2+ step Situation:		+	-	
RA 1-step 2+ step Situation:		+	-	
RA 1-step 2+ step Situation:		+	-	
RA 1-step 2+ step Situation:		+	-	

Appendix D: Observer Training Protocol

1. Tell observers that we will be working on data collection for baseline and training sessions, generalization sessions, and treatment fidelity.
2. Explain and review baseline and training sessions, generalization sessions, and treatment fidelity data sheets.
    a. Baseline and training sessions: Observers will collect data along with the researcher
    b. Generalization Sessions: Tell the observers to remind the teacher of the situation for the day. If there is no situation within the first 7 minutes, contrive one yourself based on the day's random.org assignment (following multiple step instructions/single step instruction or requesting assistance).
    c. Procedural integrity: Observers will complete the checklist while observing the researcher
3. Assign observer to simulate a student.
4. Assign observers, one a time, to collect data
5. Model the data collection procedure with the observers
    a. Watch the student
    b. Tell the student to evoke given behavior (not asking for assistance, ignoring instructions, screaming, etc.)
    c. Mark on the data sheet based on the response
        i. Record + or - on the data sheet for the occurrence or nonoccurrence of the target behavior (following multiple step instructions/single step instruction or requesting assistance).
        ii. Tally each occurrence of problem behavior.
        iii. If the child follows the instruction, provide neutral praise ("Good job.").
6. Rotate procedure among observers until accuracy is met for all observers across all data sheets

Observer Performance Data Sheet

Staff Member:	**Date**	**Start/End Time**:	**Skill assessed (circle one)**: Baseline sessions Training Sessions Generalization Sessions Procedural integrity	
Trial	**Practice Opportunity 1**	**Practice Opportunity 2**	**Practice Opportunity 3**	**Practice Opportunity 4**
1				
2				
3				
4				
5				
6				
7				
8				
Reliability Score				

Appendix E: Treatment Fidelity

Operational Definitions (circle the skill set addressed)	
Requesting adult assistance (RA)	use of vocals, signs, or pictures to request adult assistance
Following single-step instruction (1-step)	Taking action to respond to single commands
Following multiple-step instructions (2+step)	Taking action to respond to multiple commands

Participant: **Initials:** **Date:**		
Components	**Correct**	**Incorrect**
Arranges evocative situation		
Researcher starts trial once all materials are arranged, attention is obtained, student is oriented towards the materials, and SD is delivered		
When the student responds correctly (at prescribed prompt step), provides enthusiastic, descriptive praise and reinforcer		
When student responds incorrectly or does not respond, researcher implements error correction		
During error correction, researcher correctly provides brief praise or neutral statement contingent on student response		
Arranges 3-5 trials of each antecedent situation (9 total)		
Percentage correct (number correct/ total opportunities) X 100		

Appendix F: Reinforcer Inventory

Reinforcement Inventory

Instructions: The items in this questionnaire refer to things and experiences that may give a person joy, satisfaction, and/or pleasurable feelings. For each item, activity, and event, check one option in the columns below that indicates how much this individual "enjoys" the described item, activity, or event.

Individual: _____ **Date:** _____

Person Completing Form: _____

Description of Potentially Reinforcing Items, Activities, and/or Events	Not at All	A Little	A Fair Amount	Much	Very Much
A. Food Items					
1. Candy (What kind?)					
a.					
b.					
c.					
2. Raisins					
3. Cereals					
4. Nuts					
5. Chips					
6. Cake					
7. Cookies					
8. Beverage (What kind?)					
a.					
b.					
9. Ice Cream (What kind?)					
a.					
b.					
10. Other Food Items					
a.					
b.					
c.					
d.					
e.					
f.					
g.					

Reinforcement Inventory

Instructions: ***The items in this questionnaire refer to things and experiences that may give a person joy, satisfaction, and/or pleasurable feelings. For each item, activity, and event, check one option in the columns below that indicates how much this individual "enjoys" the described item, activity, or event.***

Description of Potentially Reinforcing Items, Activities, and/or Events	Not at All	A Little	A Fair Amount	Much	Very Much
C. Arts/Crafts					
1. Playing an Instrument					
2. Singing					
3. Dancing					
4. Drawing					
5. Building Models					
6. Others					
a.					
b.					
c.					
d.					
e.					
f.					
g.					
h.					
i.					
j.					
k.					
l.					

Reinforcement Inventory

Instructions: ***The items in this questionnaire refer to things and experiences that may give a person joy, satisfaction, and/or pleasurable feelings. For each item, activity, and event, check one option in the columns below that indicates how much this individual "enjoys" the described item, activity, or event.***

Description of Potentially Reinforcing Items, Activities, and/or Events	Not at All	A Little	A Fair Amount	Much	Very Much
D. Excursions					
1. Ride in Car					
2. Visit Relatives/Friends					
3. Picnic					
4. Lunch/Dinner Outing					
5. Go to Store					
6. Go for a Walk					
7. Amusement Park					
8. Go to a Mall					
9. Others					
a.					
b.					
c.					
d.					
e.					
f.					
g.					
h.					
i.					
j.					

Reinforcement Inventory

***Instructions:** The items in this questionnaire refer to things and experiences that may give a person joy, satisfaction, and/or pleasurable feelings. For each item, activity, and event, check one option in the columns below that indicates how much this individual "enjoys" the described item, activity, or event.*

Description of Potentially Reinforcing Items, Activities, and/or Events	Not at All	A Little	A Fair Amount	Much	Very Much
E. Social/Interactions					
1. Social Praise (By whom?)					
a.					
b.					
c.					
2. Being Hugged					
3. Being Touched					
4. Group Activities					
5. Talking with Others					
6. Time Alone (With whom?)					
a.					
b.					
c.					
7. Others					
a.					
b.					
c.					
d.					
e.					
f.					
g.					

Reinforcement Inventory

Instructions: ***The items in this questionnaire refer to things and experiences that may give a person joy, satisfaction, and/or pleasurable feelings. For each item, activity, and event, check one option in the columns below that indicates how much this individual "enjoys" the described item, activity, or event.***

Description of Potentially Reinforcing Items, Activities, and/or Events	Not at All	A Little	A Fair Amount	Much	Very Much
F. Domestic Activities					
1. Setting Table					
2. Making Bed					
3. Sweeping					
4. Dusting					
5. Outside work					
6. Cooking					
7. Shopping					
8. Menu Planning					
9. Running Errands					
10. Exemptions from Chores					
11. Others					
a.					
b.					
c.					
d.					
e.					
f.					
g.					

Reinforcement Inventory

Instructions: The items in this questionnaire refer to things and experiences that may give a person joy, satisfaction, and/or pleasurable feelings. For each item, activity, and event, check one option in the columns below that indicates how much this individual "enjoys" the described item, activity, or event.

Description of Potentially Reinforcing Items, Activities, and/or Events	Not at All	A Little	A Fair Amount	Much	Very Much
G. Personal Appearance					
1. New Clothes					
2. Costumes					
3. Getting Haircut					
4. Having Picture Taken					
5. Others					
a.					
b.					
c.					
d.					
e.					
f.					
g.					
h.					
i.					
j.					
k.					

Reinforcement Inventory

Instructions: ***The items in this questionnaire refer to things and experiences that may give a person joy, satisfaction, and/or pleasurable feelings. For each item, activity, and event, check one option in the columns below that indicates how much this individual "enjoys" the described item, activity, or event.***

Description of Potentially Reinforcing Items, Activities, and/or Events	Not at All	A Little	A Fair Amount	Much	Very Much
H. Sensory Stimulation					
1. Smells					
2. Colors					
3. Noise Makers					
4. Cold					
5. Warm					
6. Wet					
7. Rocking					
8. Others					
a.					
b.					
c.					
d.					
e.					
f.					
g.					
h.					

Reinforcement Inventory

Instructions: ***The items in this questionnaire refer to things and experiences that may give a person joy, satisfaction, and/or pleasurable feelings. For each item, activity, and event, check one option in the columns below that indicates how much this individual "enjoys" the described item, activity, or event.***

Description of Potentially Reinforcing Items, Activities, and/or Events	Not at All	A Little	A Fair Amount	Much	Very Much
I. Other Events/Activities					
1. Reading					
2. Being Read to					
3. Books/Magazines					
4. Discussing Current Needs					
5. Math					
6. Money					
7. Having Free Time					
8. Pet					
9. Bath/Shower					
10. Decorating Room					
11. Choosing Bedtime					
12. Others					
a.					
b.					
c.					
d.					
e.					
f.					
g.					
h.					
i.					
j.					

Reinforcement Inventory

Instructions: ***The items in this questionnaire refer to things and experiences that may give a person joy, satisfaction, and/or pleasurable feelings. For each item, activity, and event, check one option in the columns below that indicates how much this individual "enjoys" the described item, activity, or event.***

Description of Potentially Reinforcing Items, Activities, and/or Events	Not at All	A Little	A Fair Amount	Much	Very Much
J. Tokens					
1. Star Chart					
2. "Happy Faces"					
3. Badges					
4. Certificates					
5. "Honor Roll"					
6. Token Accumulation					
7. Points					
8. Money					
9. Gift Certificates					
10. Tickets					
11. Others					
a.					
b.					
c.					
d.					
e.					
f.					

Appendix G: MSWO Preference Assessment

MSWO for 5 items

Item A: ______________________________
Item B: ______________________________
Item C: ______________________________
Item D: ______________________________
Item E: ______________________________

Sum of trial #s for A: ___________________
Sum of trial #s for B: ___________________
Sum of trial #s for C: ___________________
Sum of trial #s for D: ___________________
Sum of trial #s for E: ___________________

Date:		
Child name:		
Teacher name:		
Trial #	**Item selected**	**Placement of item selected**
1		x x x x x
2		x x x x
3		x x x
4		x x
5		x

Date:		
Child name:		
Teacher name:		
Trial #	**Item selected**	**Placement of item selected**
1		x x x x x
2		x x x x
3		x x x
4		x x
5		x

Date:		
Child name:		
Teacher name:		
Trial #	**Item selected**	**Placement of item selected**
1		x x x x x
2		x x x x
3		x x x
4		x x
5		x

Date:		
Child name:		
Teacher name:		
Trial #	**Item selected**	**Placement of item selected**
1		x x x x x
2		x x x x
3		x x x
4		x x
5		x

Date:		
Child name:		
Teacher name:		
Trial #	**Item selected**	**Placement of item selected**
1		x x x x x
2		x x x x
3		x x x
4		x x
5		x

Highest preferred items (lowest summed trial #s):

Moderately preferred items (moderate summed trial #s):

Lowest preferred items (highest summed trial #s):

Appendix H: Evocative Situations

Following single step instructions			
Art	**Music**	**Library**	**PE**
Write your name	Sit on your spot	Sit on your spot	Sit on your spot
Put the brush in the sink	Get your instrument	Checkout your book	Dribble the basketball
Put the paper on the table	Write your name	Pick your book	Kick the soccer ball
Color on the paper	Put the instrument away	Return your book	Throw the baseball
Draw a heart with the crayon	Touch the trumpet	Pick a book	Run the track
Draw a circle with the marker	Find your partner		Walk the track
Use the paint	Clap your hands with the song		Walk to the net
Tear the paper	Dance	Read to your classmate	Get your hula hoop
Sit in your chair	Blow in the recorder	Go to the basket	Jump rope

Following Multiple-Step Instructions			
Art	**Music**	**Library**	**PE**
Clean up area and wash your brush	Pick up egg shaker and shake it	Pick your book then checkout your book	Pick up your basketball then throw it in the hoop
Choose a brush and paint	Sit on your spot and touch your nose	Get your book and put it in the return slot	Put the soccer ball on the ground and kick it
Get a pencil and write your name	Pick up the sticks and hit them together	Put your book in the return slot and sit down	Get the baseball then get the bat
Pick up your paper and put it in the tray	Stand up and sing with me	Sit down and look at the book	Go to your spot and do a push up
Put the markers in the container and put it on the shelf	Hit the drum then sit down	Get the computer then open it	Run a lap and get a drink of water
Cap the markers and put in container	Touch the red key and the blue key	Get a book and give it to your teacher	Do a sit up then do a push up
Clean up and wash your hands	Pick up the stick and shake it	Touch the board then sit down	Stretch your arms and stretch your legs
Push in your chair and line up	Play the ukulele then put it on the floor	Give your library card to the librarian and sit down	Do a jumping jack and clap your hands

Requesting Assistance			
Art	**Music**	**Library**	**PE**
Paint (withhold paint)	Sit on your spot (unknown spot)	Sit on your spot (unknown spot)	Sit on your spot (unknown spot)
Paint (difficult to open container)	Get your instrument (unknown instrument)	Checkout your book (no book to checkout)	Go play (no assignment)
Paint with brush (withhold brush)	Play the recorder (unknown task)	Return your book (book left in classroom)	Play basketball (no ball)
Color (withhold crayons)	Shake your egg (withhold egg)	Get a book from that bookshelf (access blocked)	Play soccer (no ball)
Color on paper (withhold paper)	Find your partner (unknown partner)	Use your library card to check out the book (no library card)	Play baseball (no ball)
Put away crayon (withhold container)	Sing (unknown song)		Get a drink (water fountain access blocked)
Put away marker (withhold cap)			Run the track (door access blocked)
Put away marker (withhold container)			Hit the tennis ball (no tennis racket)
Sit in your chair (withhold chair)			Bounce the bouncy ball (no ball)