Teaching Teamwork to Adolescents With Autism: The Cooperative Use of Activity Schedules

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ABSTRACT

We used a multiple baseline design to assess the effects of prompting and reinforcement to teach three pairs of adolescents with autism to use photographic activity schedules to cooperatively complete a multistep vocational task (e.g., cleaning a kitchen). Baseline data indicated that despite being competent schedule followers, participants did not coordinate their actions to complete the schedule cooperatively. Following intervention, we observed an increase in cooperative schedule following. All prompts were removed and the schedule of reinforcement was thinned to the end of the task for two of the three pairs. We discuss the results in terms of increasing the collaborative work skills of individuals with autism.

Keywords: activity schedules, adolescents with autism, teamwork, vocational tasks

With the Centers for Disease Control and Prevention (CDC) estimating the prevalence of autism spectrum disorders in children rising from approximately 1 in 150 in 2002 (CDC, 2007) to 1 in 110 children in 2006 (CDC, 2009), the number of adults with autism requiring long-term services will also be on the rise. Although there are no reliable data on types of services these individuals will need (Interagency Autism Coordinating Committee, 2011), the cost of providing services to an individual with autism throughout their lifespan is estimated to be $3.2 million (Ganz, 2007). Given these projected costs, it behooves service providers to focus on developing cost-effective instructional methods that permit a smaller number of staff members to serve a greater number of individuals.

Due to unique learning and behavioral challenges, teaching individuals with autism to work in groups often requires systematic and explicit programming. Additionally, many students with autism have participated in intensive educational programming in which the teacher to student ratio is one-to-one (Harris & Handleman, 2006). Individuals who have spent years learning in this instructional format may require assistance from staff members and caretakers to initiate and complete activities and make transitions between them (Wehman, 2006). Ultimately, financial contingencies may require a shift in service delivery methods for these individuals from a concentration on teaching one individual at a time to teaching individuals in pairs or groups. As such, it may become necessary to increase each individual learner's independence in order to make group instruction an efficient and effective strategy and to allow individuals with autism to learn vocational and domestic tasks as a group or in pairs.

Although teaching adults with autism to work with minimal supervision in groups and pairs is important, little research has evaluated strategies to address adults with autism to remain on-task in such situations. Indeed, most researchers who have taught individuals with autism to work in groups or pairs have focused on school-aged children. Wolery, Ault, Gast, Doyle, and Griffen (1991), for example, investigated the use of a constant time delay procedure in a small group instructional format. Pairs of youngsters with moderate mental retardation were taught to complete chained domestic and vocational tasks. Using modeling and verbal coaching, instructors taught the first member of each dyad to complete the first half of a designated task and the second member of the dyad to complete the second half of the designated task. A constant time delay procedure was effective in teaching the students to complete the tasks cooperatively.

Photographic and written activity schedules have also shown promise as a means to increase independence and reduce reliance on instructional prompting (MacDuff, Krantz, & McClannahan, 1993). Photographic prompts or written descriptions of activities are placed in a binder or list that may be used to cue a learner to complete a response chain (e.g., a photographic schedule for making the bed would include photographs depicting each component response of the behavior chain). While teacher or parent prompts (e.g., manual guidance) are

typically used to teach schedule following, these supplemental prompts are faded over time until the learner can complete the task relying only on the schedule. Research has demonstrated that activity schedules may be used to teach leisure (MacDuff et al., 1993), social (Krantz, MacDuff, & McClannahan, 1993; Krantz & McClannahan, 1998), and academic skills (Kinney, Vedora, & Stromer, 2003). Activity schedules also have been effective in teaching complex vocational skills. Wacker and Berg (1983), for example, taught five adolescents with mental retardation to complete complex behavior chains, such as a 21-step laundry folding task, using photographic activity schedules.

To date, most studies involving the use of activity schedules with individuals with autism have taught participants to follow a schedule individually (i.e., one person and a single schedule). A notable exception is the study by Betz, Higbee, and Reagon (2008), in which pairs of children with autism were taught to follow a single activity schedule together in order to play a series of interactive games. The joint activity schedule in the Betz et al. study differed from standard schedules in that two children referenced a single schedule, which included a picture of the participant responsible for initiating the designated game on each page. Data showed that the joint activity schedule led to an increase in peer engagement. These types of joint activity schedules have the potential benefit of reducing staffing ratios, because they allow two or more learners to engage in an activity under the occasional supervision of a single staff member.

The purpose of the current study was to extend the research on activity schedules by teaching pairs of adolescents with autism to complete vocational tasks cooperatively by following a single activity schedule. In our study, we defined cooperatively completing a schedule as both participants remaining on task, following the single schedule correctly (e.g., completing the steps in order), and refraining from repeating steps already completed by one's partner. We used a multiple baseline design across pairs of participants to examine the effects of prompting and reinforcer delivery on schedule following (i.e., percentage of component responses completed correctly and by only one of the participants) and the number of steps completed by each member of the pair.

Method

Participants

Six teenage males, Gary (19 years-of-age), Mark (19 years-of-age), Zeke (16 years-of-age), Joe (17 years-of-age), Sam (17 years-of-age), and Mike (16 years-of-age), participated in this study. All were independently diagnosed with autism as toddlers by outside physicians according to *DSM-III* criteria (APA, 1980) and exhibited significant deficits in language, socialization, and self-care skills. Vineland Adaptive Behavior Scales composite scores revealed low levels of adaptive functioning in the areas communication and socialization for all participants. In the daily living skills area, Gary, Mark, and Zeke received an adaptive level of low on all subdomains. Joe's scores indicated an adaptive level ranging from low to adequate, and Sam's and Mike's scores placed them in the moderately low and low levels.

These individuals were chosen for participation in this study because they were proficient in following activity schedules to complete tasks by themselves but were not able to complete a long response chain with another person. Before a baseline was initiated, we assessed the performance of each pair of participants in the absence of an activity schedule. Each pair was brought to the location where their assigned task would be completed (e.g., participants assigned to replenish supplies were brought to the kitchen) and was directed to complete the task (e.g., the experimenter said, "Please, replenish the supplies"); no prompts, reinforcers, or error correction were provided. The experimenter remained in the same room, but at least 2 m away from both participants for the entire session. If a participant attempted to leave the area, he was asked to stay in the assigned area. None of the pairs completed the task cooperatively under these conditions.

Further, these individuals were selected for participation because we anticipated that they would soon participate in an adult program with limited staffing ratios, requiring them to work in pairs or small groups. Each participant had some experience working in small groups (e.g., playing a board game, academic tasks). Participants were paired based on their competency in completing the assigned task independently (i.e., prior to the start of the study, each participant in the pair mastered completing the assigned task without adult prompts).

Setting

All of the participants attended a behaviorally based school serving individuals with autism (average length of enrollment for the participants was 12 years at the time of the study). We conducted sessions in either the main office or the kitchen of the school. The first two authors, who were senior level teachers and who had worked at the school for approximately 6 and 8 years respectively, conducted all sessions.

Tasks and Materials

The three tasks selected were cleaning the kitchen, replenishing kitchen supplies, and cleaning the main office. Cleaning the kitchen consisted of 18 steps, replenishing kitchen supplies contained 15 steps, and cleaning the office entailed 11 steps (see Table for task analyses).

Materials included supplies necessary to complete each task (e.g., spray cleaner, paper towels) and a schedule detailing the component steps of the assigned task. Each schedule was presented in a list format according to the sequence of steps in the assigned task. Schedules were individualized based on whether the pair of participants could both read or whether one or both of them required photographs to supplement the text. Gary and Mark's and Zeke and Joe's schedules contained both photographs and text (e.g., a photo of the kitchen island was placed next to the sentence "Clean the island"), whereas Sam and Mike's contained only text (e.g., the sentence "Take out garbage" had no supplemental photograph). The schedules

Table. Steps Contained Within Each Task Analysis

Cleaning the Kitchen	Replenishing Kitchen Supplies	Cleaning the Office
1. Cleans counter left of stove	1. Replenishes hot cups	1. Cleans computer screen
2. Cleans counter right of stove	2. Replenishes sugar	2. Refills printer paper
3. Cleans counter left of sink	3. Replenishes tea	3. Dusts mailboxes
4. Cleans counter right of sink	4. Replenishes Sweet'N Low®	4. Cleans secretary's window
5. Cleans tables	5. Replenishes Splenda®	5. Dusts island and computer table
6. Cleans island	6. Replenishes coffee stirrers	6. Asks secretary, "Do you need any copies?"
7. Cleans bar by windows	7. Replenishes plates	7. Takes out garbage
8. Cleans fronts of the refrigerators	8. Replenishes forks	8. Refills candy dish
9. Cleans sink & empties drain	9. Replenishes knives	9. Organizes caddy on island
10. Cleans top of the stove	10. Replenishes spoons	10. Cleans paper shredder & empties in custodial closet
11. Cleans microwaves	11. Replenishes napkins	
12. Cleans top cabinets	12. Replenishes straws	
13. Cleans bottom cabinets	13. Replenishes water cooler cups	
14. Cleans island cabinets	14. Replenishes salt & pepper on tables	
15. Empties water cooler drain	15. Puts a check mark on the calendar	
16. Straightens chairs		
17. Straightens bar stools		
18. Puts a check mark on calendar		

were laminated, and we gave the participants dry erase markers, which they used to cross off each step after they read but before they started it. Preferred edibles, presented contingently or on a fixed-time (FT) schedule depending on the condition, were placed in cups visible to the participants and were consumed by the participants at the end of each session.

Dependent Variables

We collected data during all baseline and probe sessions using paper and pencil. We did not collect data during teaching sessions for reasons that will be outlined below (also see rationale in the procedures for probe sessions).

Schedule following. Data were collected by one of the first two authors. The primary dependent measure was the percentage of component responses completed correctly and once by each pair of participants. For example, if Gary cleaned the stove, and then Mark cleaned it, that component response would be scored as incorrect because it was completed twice. The participants' performance was directly observed and pluses or minuses were placed on a data sheet when each completed the relevant step. Each step in the task was divided into four sequential component responses: (1) pointing to, reading aloud, or visually scanning the next step on the activity schedule; (2) crossing off the step on the activity schedule with a dry erase marker *before* completing it; (3) completing the step accurately; and (4) returning to the activity schedule to check the next step. The percentage correct was calculated for each pair by dividing the number of component responses completed correctly

by the total number of component responses in the sequence and summarized as the percentage of component responses completed correctly and once.

For the third component response (i.e., completing the step accurately), we determined accuracy individually for each response. For cleaning tasks, cleaning was defined as removing portable items from the area (e.g., taking napkin holders off the tables), spraying the surface with cleanser, wiping it with paper towels, and replacing the items that were removed. Replenishing was scored as correct if the participant added additional items until they neared the top of the container without overflowing. In addition, replenishing was correct if the participant did not add any additional items when the items already neared the top of the container.

Number of Task Steps Completed by each Participant. To determine the extent of teamwork occurring during each phase of the experiment, we also extracted data on the number of steps within the tasks completed by each participant and not repeated by his partner by examining the schedule-following data sheet and counting the number of task steps completed by each participant. A task step was scored as completed by a participant if he attempted, successfully or unsuccessfully, to complete the step. For example, if Gary engaged in the step of cleaning the tables, that step was scored as completed by him even if he brushed crumbs on the floor. In this example, the step would be scored as incorrect for the schedule-following measure but attributed to Gary in this measure. If both participants completed a step (i.e., one participant completed the step and then the other participant repeated it), the step was not attributed to either participant for this measure.

Design and Interobserver Agreement

A multiple baseline design across three pairs of participants was used to assess the effects of prompts and reinforcers to teach the participants to complete an activity schedule cooperatively. Interobserver agreement (IOA) data were collected by a second observer, who was present for 8% of baseline sessions and 37% of probe sessions and independently collected data on both dependent variables. IOA data were calculated on a point-by-point basis by dividing the number of agreements by the number of agreements plus disagreements and multiplying by 100%. An agreement was defined as both the primary and secondary observers independently recording a step as correct or incorrect. IOA data averaged 97% agreement (range, 92% to 100%) for schedule following across participant pairs and 98% (range, 89% to 100%) agreement for the number of component steps completed by each participant.

Procedures

Baseline. The performance of each pair of participants when given a single activity schedule was assessed in baseline. The experimenters brought each pair to the location where their assigned task would be completed (e.g., participants assigned to replenish supplies were brought to the kitchen) and presented them with the schedule (i.e., a single schedule containing photo and/or text cues describing each step) and a dry erase marker. The experimenter directed the participants to begin the task (e.g., the experimenter said, "Please, replenish the supplies") but provided no prompts, reinforcers, or error correction. The experimenter remained in the same room but at least 2 m away from both participants for the entire session. If a participant attempted to leave the area, he was asked to stay in the assigned area. An individual baseline session ended either when the task was completed or when both participants stopped working completely for three consecutive 1-min time samples observations.

Intervention. Intervention included two types of sessions, teaching sessions and probe sessions. Due to the challenges of collecting data reliably while providing effective prompts and delivering well-timed reinforcers, we opted to not collect data during teaching sessions and instead to schedule probe sessions to occur every third or fourth session to provide an opportunity for data collection. While this issue could have been resolved by assigning someone other than the experimenter to serve as the primary data collector, it was fundamental to the study that we develop an effective procedure to allow a single staff member to manage the implementation of the procedures with two participants at the same time.

Teaching sessions. As in baseline, the pair of participants was brought to the location where the assigned task would be completed (e.g., learners assigned to clean the kitchen were brought to the kitchen), and was presented with an activity schedule and a dry erase marker. The experimenter then instructed the participants to begin the task (e.g., the experimenter stated, "Please clean the kitchen"). After providing the instruction, the experimenter immediately manually guided one participant to point to and read the first step, cross it off with the marker, and initiate that step. The second participant was then manually guided to point to and read the second step, cross it off with the marker, and begin that step. The experimenter varied which participant in the pair was prompted to begin the schedule across sessions so that on one day, Zeke started the sequence, but on the following day, Joe began it. Because one experimenter could not manually guide two participants at the same time, when both required assistance, the experimenter told one of the participants to wait. Participants were taught to cross off a step *before* they completed it so that when their partners returned to the schedule, they would read the next step on the list (i.e., the first step that was *not* crossed off). When the participant completed the step, the experimenter guided him to return to the schedule to complete the next step in the schedule (i.e., the next step that was *not* crossed off). As needed, manual guidance was also provided when learners erred on component steps (e.g., cleaning the stove top).

Manual prompts were faded using graduated guidance (Cooper, Heron, & Heward, 2007). The experimenter began by providing hand-over-hand manual guidance and gradually across sessions, the experimenter shifted prompting to the participant's elbow, to his upper arm and to shadowing the participant. Shifts in prompting level were determined

by the participant demonstrating some ability to perform the response with less guidance (i.e., the experimenter felt the participant's hand move toward the dry erase marker correctly before a prompt was provided). When the experimenter shifted to shadowing the participant, she followed the participant very closely, without touching him, so that she could readily provide manual guidance if needed. Finally, the experimenter gradually increased the distance between herself and the participant until she was approximately 3 m away.

The experimenter placed small pieces of preferred edibles (e.g., Skittles, pieces of cookie) in paper cups marked with each participant's name following approximately every two to three accurate responses (e.g., returning to schedule, cleaning counter thoroughly). The cups were kept near the schedules, and when the experimenter provided the edibles, she would pick up the cup for the appropriate participant, bring it near him so he could see the delivery of the edibles, and drop the edibles into the cup. The edibles were provided contingent on each participant's individual performance (i.e., there was not a group contingency in place). The participants consumed the edibles after completing the entire task. Because the participants had prior experience with this method of reinforcer delivery, none of the participants made attempts to consume the edibles prior to the end of the task.

Probe Sessions. At the start of each probe session, the pair of participants was presented with the activity schedule for their assigned task, materials necessary to complete the task (e.g., cleaning supplies), and an instruction to begin the task. The experimenter remained in the same room, but at least 2 m away from both participants unless providing error correction or providing edibles. To make data collection more feasible during probe sessions, we did not provide immediate prompts as in the teaching sessions. Instead, we provided prompts using a constant time delay procedure (i.e., we waited 5 s before manual guidance was provided; Cooper et al., 2007). If the participant responded incorrectly or paused, the experimenter waited the 5 s time delay before providing error correction, in the form of manual guidance. The other difference between the teaching and probe sessions was that edibles were provided on an FT 120-s schedule, rather than contingent on participant responding. This change was instituted in order to avoid removing reinforcement all together, but also to avoid providing reinforcers target responses during probe sessions. The cups were kept near the schedules, and the experimenter dropped the edibles into the cup according to the FT schedule. Participants consumed the edibles at the end of the task as in the teaching sessions.

Procedure to fade experimenter presence and thin schedule of reinforcement. After at least one probe session at 95% accuracy on schedule following, teaching sessions were no longer conducted. Following at least one additional probe session above criterion, the fading procedure was initiated. For Joe and Zeke and Sam and Mike, fading took place in two steps. First, the experimenter increased her distance from the participants by standing across the room and thinned the delivery of edibles in a cup to an FT 180-s schedule. In the second step, delivery of the reinforcer was moved to the end of the session. The fading procedure was not conducted with Gary and Mark because although they reached the criterion set for schedule following, raw data indicated that they were inconsistent at completing the third of the four component responses of schedule following. That is, while cleaning the kitchen, they were often not thorough enough with the actual cleaning component of the task (e.g., failing to wipe surfaces completely or brushing crumbs on the floor). Therefore, the experimenter remained within 2 m of the participants throughout the study.

Results

Figure 1 depicts the accuracy of schedule following, and results indicated that all three pairs met the 80% criterion to complete tasks cooperatively using a single activity schedule. During baseline, Gary and Mark's accuracy of schedule following was near zero. Zeke and Joe's performance averaged 43%, and Sam and Mike's performance was variable with an average of 6%. Gary and Mark reached criterion in 15 teaching sessions and remained above criteria during all 7 probe sessions that followed. Zeke and Joe met criterion following 3 teaching sessions and remained above criterion during the remaining 7 probe sessions. Sam and Mike reached criterion following 8 teaching sessions and remained above criterion for all but one of the remaining 6 probe sessions. Both Zeke and Joe and Sam and Mike maintained above-criterion performance following the fading procedures.

Another way to assess cooperative behavior is to examine the number of task components completed by each participant during each condition (depicted in Figure 2) to determine if the task was divided and completed evenly. During baseline, out of 18 total steps, Gary completed a mean of 12.6 steps, and Mark completed a mean of 5.7 steps. Joe completed a mean of 11.5 out of 15 steps, and Zeke completed a mean of 4.5 steps. Sam completed a mean of 0.6, and Mike completed a mean of 1.0 step out of 10 steps. During the intervention phase, the average number of steps completed by each participant in the pair was nearly equivalent to his partner: Gary 9.6 and Mark 9.2; Joe 7.6 and Zeke 7.5; and Mike 4.9 and Sam 5.1.

Conclusions

The results of this study are promising, and indicate that individuals with autism can be taught to complete multistep tasks cooperatively using a single activity schedule. As seen in Figure 2, in the baseline condition, Gary completed twice as many steps as Mark, and Mike and Sam each completed very few steps. Although the number of task components completed by Joe and Zeke became equal at the end of baseline, their accuracy at schedule following significantly decreased. In addition, participants often repeated tasks already completed by their partner during the baseline phase (data not depicted). For example, in one observation, Mike dusted the island and then Sam re-dusted the island. Once teaching began, data collected during the probe sessions revealed that accuracy in schedule-following increased for all participants and the task components

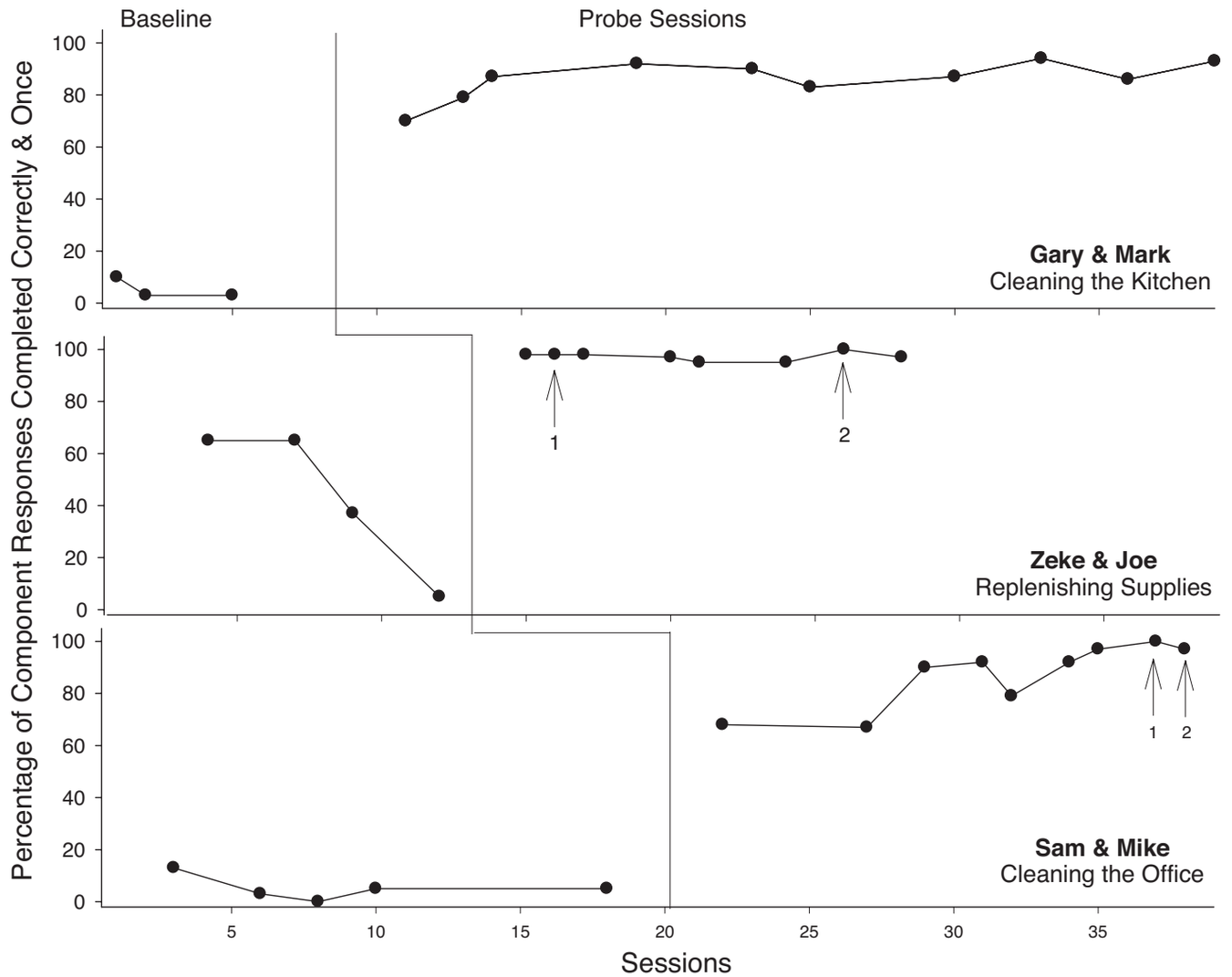

Figure 1: Percentage of schedule components completed correctly and only once for Gary and Mark (top panel), Zeke and Joe (middle panel), and Sam and Mike (bottom panel). The first arrow shows the first probe not preceded by a teaching session, and the second arrow indicates when the fading goal was achieved.

completed by each participant became equivalent indicating that the participants completed the task cooperatively (e.g., each completing a representative number of steps of the task, and not repeating steps already completed by the partner).

Although all of the participants in this study had the prerequisite skill of following a schedule to complete the designated tasks independently, they all required specific instruction to follow and complete an activity schedule cooperatively. This critical finding, also found by Betz et al. (2008), indicates that the ability to follow an activity schedule cooperatively is a distinct skill from following an individual activity schedule. Nevertheless, it is likely that some degree of proficiency in completing an activity schedule independently (without a peer) is an important prerequisite to learning to follow a schedule cooperatively. Moreover, skill in independent schedule-following may facilitate the efficient teaching of cooperative schedule following, and, as demonstrated in this study, may allow participants to remain on-task while staff members monitor them from further away.

In addition to competency in independently following an activity schedule, we noted two other important prerequisite skills. First, mastery (or near mastery) in completing each component of the task was important, as it permitted experimenters to focus on teaching cooperative schedule-following without the diversion of teaching discrete task components to a single participant (e.g., spending several minutes prompting one participant to clean a set of cabinets, while not attending to the other participant). Thus, before implementing a cooperative

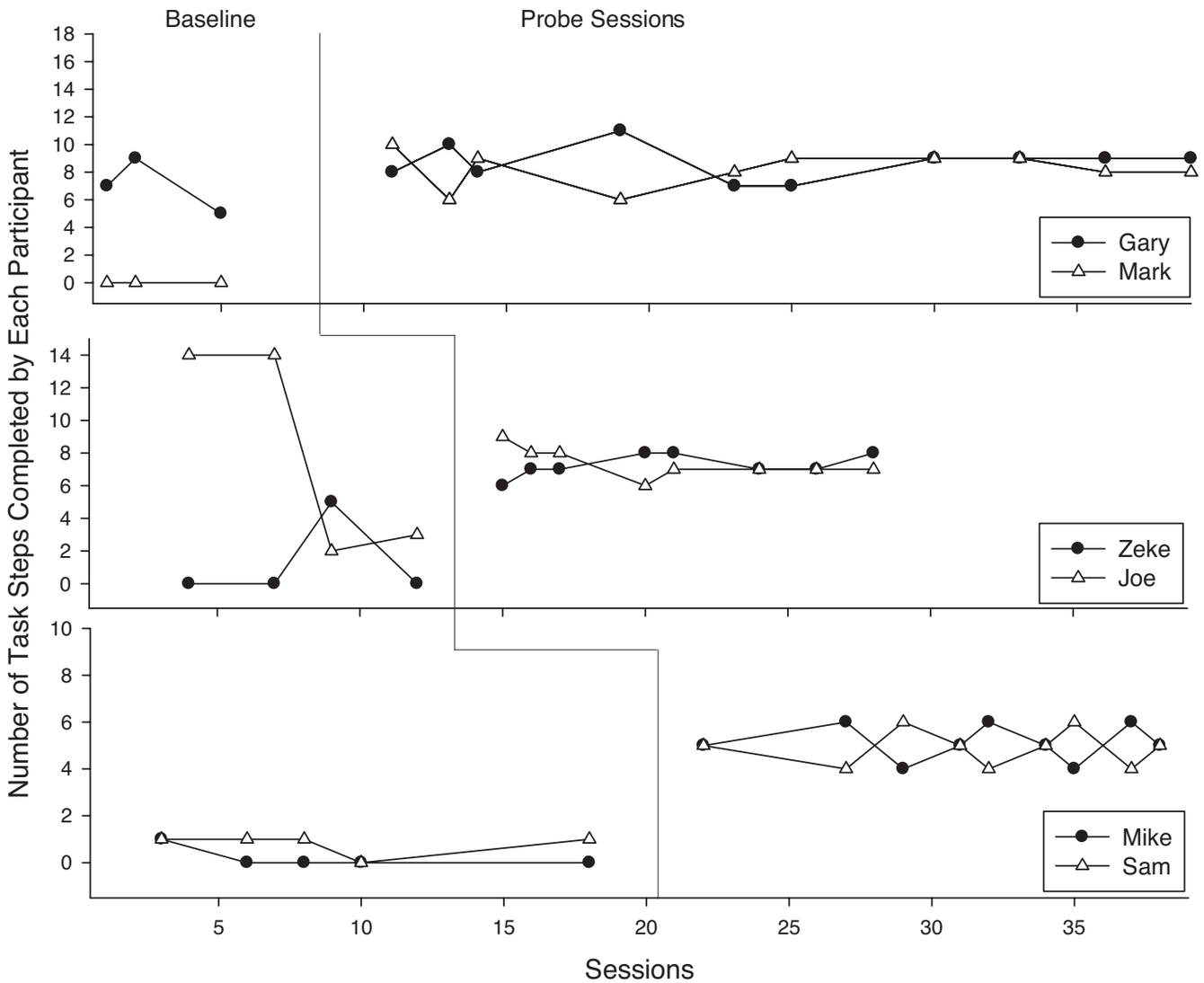

Figure 2: Number of task steps completed by Gary and Mark (top panel), Joe and Zeke (middle panel), and Mike and Sam (bottom panel). Attempts to complete components were also included in this definition (e.g., incomplete cleaning of a surface).

activity schedule, practitioners should ensure that participants are able to complete the tasks involved both accurately and independently.

Appropriate waiting surfaced as a second relevant prerequisite skill. During teaching, it was sometimes necessary to require one participant to wait while staff prompted or corrected the second participant. For example, during teaching, if the first participant began to complete the wrong component of the task at the same time that the second participant approached the schedule to check it, the second participant would be asked to wait while the staff member brought the first participant back to the schedule and prompted him to begin the correct step. Before implementing an activity schedule to be used cooperatively, practitioners should ensure that their students have the necessary waiting skills. Two ways to circumvent this prerequisite skill are to ensure each learner can complete the task accurately when working alone and to individually preteach crossing off steps on the activity schedule before completing them.

Selecting appropriate tasks was an important aspect of the study's design. It was critical, for example, that designated tasks could be completed using a single schedule, and that the steps of the task could be completed in any order: that is, no single step could rely on completion of a previous step. Thus, if one participant was working on a single time-consuming step (e.g., cleaning the stove), the other participant could continue to follow the schedule and complete several other steps (e.g., cleaning multiple countertops) without waiting for his partner to finish

his step. Tasks requiring that component steps be completed in a precise order may not lend themselves to this type of schedule (e.g., when baking cookies, the batter must be thoroughly mixed before it can be spooned out onto a baking sheet). For tasks of this nature, it may be necessary to teach learners to wait for specific steps to be completed before moving on to the next step, or perhaps to modify the schedule to include a visual cue that will signal the learners as to when it is appropriate to begin the next step. In addition, the tasks selected here did not include opportunities for social interactions between the participants in each pair. This deficit may be remedied by selecting skills (e.g., meal preparation) that naturally include opportunities for social exchange or by encouraging participants to provide praise when their partners complete steps.

Despite the task familiarity arranged in our study, our analysis suggest that the contingent use of preferred edibles was useful for promoting schedule following and that the effects maintained when the preferred edibles were provided noncontingently (see Koegel & Rincover, 1977, for an example of noncontingent reinforcement as a maintenance procedure). We were reluctant to completely remove the preferred edibles because we did not want to see the newly acquired schedule following performance extinguish. Nevertheless, our data showed that the preferred edibles could be provided at one time following completion of the entire task, which seemed like an acceptable arrangement for our setting.

There are two important limitations of our study. First, it should be noted that the operational definition of "cooperative" used in this study was relatively simplistic. Participants learned to work in close proximity to one another on separate component steps of the same task. However, more complex levels of cooperation certainly exist. For example, "cooperative" could be defined as two people coordinating their actions to complete each component step together (e.g., two learners putting a fitted sheet on a bed together). Additionally, in this study, the participants referenced their schedules to select the next component to complete rather than observing their partner's actions or engaging in a verbal exchange regarding who would complete each step.

Second, we did not assess generalization of these learned performances with novel activities or novel partners. Future work is warranted to identify effective procedures to teach learners with autism to engage in these more complex types of cooperation under a range of conditions.

In summary, funding limitations necessitate that individuals with autism learn to function in environments with reduced staffing ratios. In order for these individuals to continue to maintain skills and master new tasks with less instructional attention, practitioners must begin to incorporate strategies for delivering instruction in pairs or groups. We showed the viability of using activity schedules to teach adolescents with autism to complete vocational tasks cooperatively. These findings provide a promising direction for pairing individuals during instruction both throughout and beyond the school years.

Guidelines for Practitioners

The following best practice recommendations are offered for practitioners interested in conducting these teaching procedures.

- To increase the efficiency of teaching, ensure participants have the pre-requisite skills of: (a) following an independent activity schedule; (b) independently completing the designated task at a minimum of 80% accuracy; and (c) waiting for prompts appropriately when requested.
- Prior to pairing learners to cooperatively complete schedules, individually pre-teach them to cross off component steps *before* completing them.
- Collecting data every session while also implementing graduated guidance and contingent reinforcement procedures is challenging. Alternating between teaching and performance measurement conditions allows for both to occur with integrity.
- Select tasks that do not require the steps to be completed in a specific order, or, if the task does require the component steps be completed in a specific order, consider modifying the cooperative activity schedule. In some cases, the steps of a task may be broken down into two separate schedules in a way that ensures all steps on one schedule can be completed independently of all steps on the other schedule. Each participant can then be assigned a single schedule containing half of the steps needed to complete the task.

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