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Comparison of two video prompting interventions to teach daily living skills to adolescents with autism

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Abstract

The present study used an adapted alternating treatment design to evaluate and compare the effects of video prompting (VP) and video prompting plus frequency building (VP + FB) to teach daily living skills to three adolescents with autism spectrum disorder. Results demonstrated all three students made substantial improvements over their baseline performance using VP and VP + FB. Furthermore, a strong intervention effect emerged for VP and VP + FB conditions when compared to the control task. However, in terms of one intervention proving superior to the other (e.g., VP to VP + FB), the data offer a mixed interpretation with VP + FB affecting changes better for two of the three students. The FB component in the VP + FB produced strong, consistent gains for all students in terms of retention.

KEYWORDS
autism spectrum disorder, daily living skills, frequency building, video prompting

The development of independent behavior embodies one of the primary goals of education for all students (Hendricks & Wehman, 2009). Although the development of functional independence and behavioral autonomy may prove challenging, most students move through high school and successfully transition into adulthood. Yet, for many students with disabilities, particularly for students with autism spectrum disorder (ASD), achieving independence remains a daunting task. Many individuals with ASD do not experience this functional independence and behavioral autonomy (Wehman et al., 2014), and independent behavior often reaches a plateau and declines throughout adulthood (Hume et al., 2014; Smith et al., 2012). Consequently, individuals with ASD experience less favorable outcomes during adulthood when compared to their peers, specifically in the area of independent living. Reports indicate that approximately 19% of adults with ASD live independently compared to their peers diagnosed with speech-language impairment or emotional disturbance (more than 60%) and those with learning disabilities (80%; Newman et al., 2011).

Instructions in daily living skills can assist with promoting independence for people with ASD. When individuals have the ability to complete tasks, such as caring for their personal hygiene, preparing a meal, and simple household chores, their need for assistance from others will decrease and their quality of life may increase (Cameron et al., 1992). Yet, learning how to complete daily living skill tasks tends to present many challenges for individuals with ASD (Hendricks & Wehman, 2009) and performance of these skills is often lower than their peers without an ASD diagnosis (Liss et al., 2001). Although reports have suggested that as individuals age, improvements in performance of these types of skills may occur and noteworthy challenges continue to exist for many (Hong et al., 2015).

Many individuals with ASD have unique learning challenges that may contribute to difficulties in acquiring daily living skills and developing independent behavior. Challenges include deficits in attending skills, difficulties sustaining attention, planning, and memory, as well as difficulties focusing on the most relevant features of instructional materials (Hume et al., 2009; Weiss et al., 2008). Moreover, many individuals exhibit problems in fluidity and speed of response, which can result in slow and effortful performance with long latencies to respond. Also, problems generalizing and maintaining skills over time can accompany an ASD diagnosis (Weiss et al., 2008). Considering the weighty role daily living skills play in increasing independence, it proves essential to continue to identify effective and efficient interventions to teach these skills.

1 | VIDEO PROMPTING

Video prompting (VP) represents one instructional approach used with students with ASD to promote acquisition of daily living skills (Domire & Wolfe, 2014; Gardner & Wolfe, 2013). With VP, video clips of short segments or steps of a skill are shown in a sequential order to the student. After viewing a video clip, the student then has an opportunity to practice the step seen in the video. Commonly, instructors will provide immediate feedback on the student's performance before the student views the next video clip (Cannella-Malone et al., 2006). Research suggests that VP procedures may help address some core deficits and learning challenges associated with ASD (Charlop-Christy et al., 2000). VP uses visually based instruction that aims to improve attention and motivation. Furthermore, VP presents information in small, teachable steps, which may help address difficulties sustaining attention and memory issues (Banda et al., 2011; Gardner & Wolfe, 2013).

Researchers have used different perspectives when recording video prompts. These perspectives include: first-person perspective or more commonly referred to as point-of-view perspective (POV), third-person perspective or spectators' perspective, and self-modeling where the target individual is filmed completing a task. When working with students with ASD, recording videos using a POV perspective has become more common. The POV perspective involves recording a video in a manner such that only the hands and/or forearms of the performer are shown as they complete the task. When using this perspective, instructors can minimize extraneous stimuli within the environment and focus on the most critical components of a task (Mason et al., 2013). In particular, researchers have reported increases in student's performance when using VP with a POV perspective in areas, such as domestic skills (Bereznak et al., 2012; Gardner & Wolfe, 2015; Sigafoos et al., 2007), cooking-related skills (Bereznak et al., 2012; Sigafoos et al., 2005), and clerical skills (Bennett et al., 2013; Bereznak et al., 2012).

In addition to recording videos using different perspectives, researchers and practitioners often implement VP intervention in combination with several additional strategies, including the use of voice-over narration (i.e., verbal descriptions of the steps; Bennett et al., 2013). Specifically, the majority of research demonstrating the effectiveness of VP with a POV perspective to teach daily living skills for individuals with ASD uses voice-over narration (Domire & Wolfe, 2014). Although researchers have suggested that the use of voice-over narration increases performance and assists individuals with successful completion of tasks (Kellems et al., 2017), some researchers have questioned whether the use of voice-over narration constitutes a necessary component of the VP intervention (e.g., Bennett et al., 2013). To date, comparison studies conducted to evaluate the effects of VP interventions with and without voice-over narration have yielded mixed results. Some researchers have found that the differences in performance

between the two conditions were negligible (Bennett et al., 2013; Gutierrez et al., 2016), while other have found that when using VP without voice-over narration, some participants did not improve their performance (Bennett et al., 2017). Due to the mixed results and overall lack of research investigating the effectiveness of VP without voice-over narration, more research proves warranted.

2 | FREQUENCY BUILDING

Frequency building (FB) refers to an intervention that involves three components: timed repletion of behavior, performance feedback, and a performance standard or quantitative goal expressed in terms of frequency or rate (Kubina, 2019). FB offers a systematic, efficient practice approach that can address common learning challenges individuals with ASD may encounter. FB occurs after the instruction or acquisition of content and leads to behavioral fluency (Kubina & Wolfe, 2005; Kubina & Yurich, 2012), although some studies have demonstrated that beginning FB early in the learning process produces benefits (Holding et al., 2011; Lee & Singer-Dudek, 2012; Nopprapun & Holloway, 2014). Behavioral fluency refers to "the fluid combination of accuracy plus speed that characterizes competent performance" (Binder, 1996, p. 164). FB forms a process that leads to an outcome, behavioral fluency. Several studies have demonstrated how FB leads to behavioral fluency in academic subjects, such as mathematics (e.g., Brady & Kubina, 2010), reading (e.g., Hughes et al., 2007; Kubina et al., 2008), spelling (e.g., Kubina et al., 2004), and writing (e.g., Datchuk et al., 2015; Datchuk & Rodgers, 2019; Dermer et al., 2009).

Researchers have considered the utility of FB for students with ASD and posited that attaining behavioral fluency may increase the functionality of skills as well as serve as a remedy for the issues related to long-term maintenance of skills (Kubina & Wolfe, 2005; Ramey et al., 2016; Weiss et al., 2008). Research in behavioral fluency has supported positive effects or beneficial outcomes for students with ASD, including maintenance of skills over time (Aravamudhan & Awasthi, 2022; Holding et al., 2011; Kelly & Holloway, 2015; Lee & Singer-Dudek, 2012; Singer-Dudek & Greer, 2005; Twarek et al., 2010), the ability to perform at a steady pace for a given time in the face of distraction (Aravamudhan & Awasthi, 2022; Lee & Singer-Dudek, 2012; Nopprapun & Holloway, 2014; Twarek et al., 2010), and application of previously learned behaviors to more advanced skills (Aravamudhan & Awasthi, 2022; Holding et al., 2011; Lin & Kubina, 2015; Twarek et al., 2010). Additionally, research suggests generalization may also occur because of attaining behavioral fluency (Young et al., 1986). FB interventions with daily living skills, social skills, and more complex behavioral chains have yet to receive attention. Therefore, an applied opportunity exists to examine FB with skills and behaviors meaningful to people with ASD.

3 | PRESENT STUDY

The ability to not only acquire daily living skills, but also demonstrate true mastery or fluency of the skills exemplifies a crucial outcome for adolescents with ASD as they transition into adulthood. Moving from acquiring daily living skills to mastering such skills requires systematic practice (i.e., FB) leading to behavioral fluency. Although researchers have reported increases in skill acquisition when using VP, they have suggested that some students may require further support when gaining independence and mastery of daily living skills (Goodson et al., 2007). Additionally, interventions designed to address behavioral fluency may further enhance skill acquisition and maintenance. Therefore, the present experimental study sought to evaluate and compare the effects of two VP interventions without voice-over narration, VP and VP plus FB (VP + FB). We posed the following questions: (a) What effects will VP and VP + FB have on student performance with daily living skills? (b) What effect will VP and VP + FB have on students' rate of learning? (c) To what extent will VP and VP + FB effects retain across time?

4 | METHOD

4.1 | Students

Three adolescents with ASD participated in the present study and consent was obtained for each participant. We selected the students based upon age, diagnosis, need for improved performance in daily living skills, recommendation by their educational team, and parental consent to participate. All three students received special education services in an autism support classroom where their educational program primarily focused on providing instructions and support in functional life skills. Based on information provided by the student's educational team, the participants were able to imitate basic gross and fine motor movements; however, we did not formally assess that students' imitative repertoire. Additionally, the educational teams reported that, to their knowledge, none of the students had previous experience with video-based instructions or FB interventions as well as never received formal instructions on the targeted skills.

Autumn, a 12-year-old female, had a primary diagnosis of ASD with a secondary diagnosis of speech and language impairment from a licensed psychologist. Information gathered from Autumn's Individualized Education Plan (IEP) indicated she obtained a score of 55 on the Pictorial Test of Intelligence—Second Edition (French, 2001), suggesting a very poor range of functioning. Autumn produced a general adaptive composite score of 50 on the Adaptive Behavior Assessment System—Second Edition (ABAS-II; Harrison & Oakland, 2003), which translated to an extremely low adaptive performance level. Autumn communicated her wants and needs primarily using one- to two-word utterances. Reports form the classroom staff indicted that Autumn would only work for very short durations of time and required frequent breaks from demands. She received speech and occupational therapy services.

Cameron, a 16-year-old male, received a previous diagnosis from a licensed psychiatrist of autistic disorder, intellectual disability, and phonological disorder. Information gathered from his IEP revealed an IQ score of 58 based on the Stanford Binet Intelligence Scale (Roid, 2003), indicating mildly impaired or delayed cognition. Reports of the Vineland Adaptive Rating Scale (Sparrow et al., 2005) reported an adaptive behavior composite score of 59, signifying mildly deficient adaptive behavior. Cameron communicated using one- to two-word utterances as well as picture icons in a communication notebook. Cameron also received speech and occupational therapy services.

Angelica, a 14-year-old female, received a previous diagnosis by a licensed psychologist of ASD with secondary diagnoses of intellectual disability and attention deficit hyperactivity disorder. Information gathered from her IEP indicated she obtained a Brief Intellectual Ability score of less than 40 on the Woodcock Johnson Test of Cognitive Ability—Fourth Edition (Schrank et al., 2014), suggesting her cognitive ability fell in the lower extreme range. Results from the ABAS-II (Harrison & Oakland, 2003) reported a general adaptive behavior composite score of 50. A score of 50 lies in the very low range of functioning. Angelica communicated simple requests using one-word utterances, such as yes and no. However, the majority of her vocal language came across as unintelligible. Angelica also had access to a low-tech picture icon communication board; however, she did not independently seek out or use the board when attempting to communicate. Additionally, the classroom staff indicated that Angelica required prompting to engage in most tasks throughout the school day and did not complete tasks independently. She also received speech, occupational, and physical therapy services.

4.2 | Setting

We conducted the study at a private school for students with ASD and behavioral support needs. During the study, we worked individually with each student in a learning suite that consisted of a kitchen, bathroom, and living room area. The kitchen contained two parallel countertops with a sink, microwave, refrigerator, and stove. The bathroom had a sink, toilet, and shower. The living room included two sofa chairs, a coffee table, an end table, a television, shelves with games and toys, and a u-shaped table and chairs. Starting on Day 19 (represented by a dotted vertical

line in Figure 1), Cameron's instructional sessions took place in different settings due to an injury he sustained at home that prevented him from using stairs for the remainder of the study. The new settings for Cameron comprised a small kitchen area on the first floor with a sink and refrigerator, a foyer with a door and one set of windows, and a small bathroom with a sink and toilet. All sessions took place from Monday through Friday between the hours of 9:15 a.m. and 12:30 p.m. depending on the students' schedules.

4.2.1 | Task selection

In order to identify tasks to be included within the present study, the first author Jennifer L. Wertalik conducted a three-step process. First, she collaborated with the school's administrator to create a list of potential daily living skill tasks that aligned with the school's current curriculum and students IEP goals. Jennifer L. Wertalik then created a survey that asked the students teachers and parents/guardians to rate the student's current ability to complete the tasks (i.e., independent, needs some assistance, needs a lot of assistance, cannot complete task, and not sure). The teachers and parents/guardians also identified their preference of which tasks would be taught. Based on the results of the survey, three daily living skill tasks were selected for inclusion within the study (i.e., mops floor, washes dish, and washes windows).

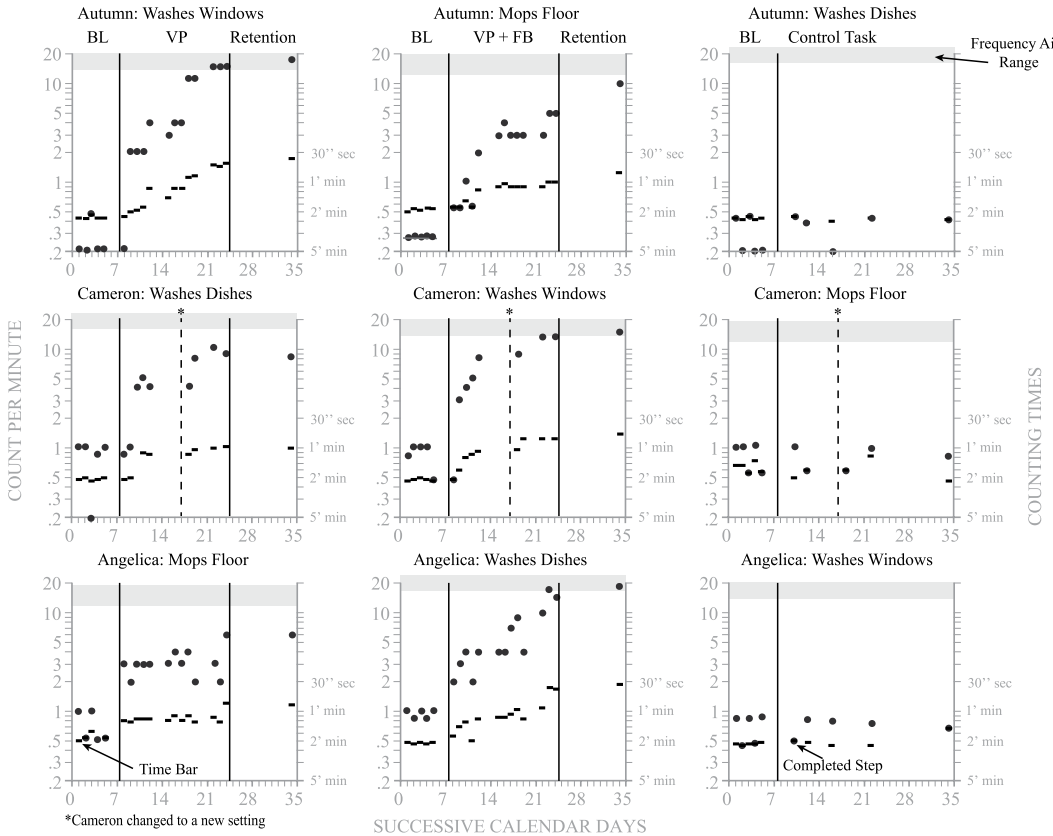

FIGURE 1 Frequency of steps performed correctly for each student. BL, baseline; VP + FB, video prompting plus frequency building

4.3 | Materials

4.3.1 | Task materials

Materials included plates, bottles of dish detergent, sponges, drying rack, spray bottles, paper towels, garbage pail, mops, and buckets. During experimental conditions, students used an Apple fourth-generation iPad Mini to watch the VP videos. The device measured 8.0 × 5.31 × 0.24 inches in size and contained a 128 GB storage capacity. An Otterbox Defender Series Case was used to prevent damage to the device during the sessions. Other materials included a digital timer, data collection sheets, procedural integrity checklists, and GoPro HD Hero 960 camera used to video record all sessions.

4.3.2 | Videos

We created video recordings for each of the three tasks (i.e., mops floor, washes dishes, and washes windows) using a GoPro HD Hero 960 camera and head strap mount accessory. Using the head strap mount, we filmed the videos from a POV, which primarily featured the first authors' forearms and hands completing each task. Once filmed, we edited the videos using iMovie and then imported the video clips into a Keynote slide presentation.

4.4 | Response measurement and accuracy

4.4.1 | Dependent variable

The dependent variable consisted of the frequency (i.e., count per min) of steps performed correctly for three target behaviors (i.e., mops floor, washes dish, and washes windows). Before starting the study, we task-analyzed the three tasks into multiple steps (Table 1). When measuring the dependent variable, we used a count up timer to account for the amount of time that elapsed and counted the number of steps performed correctly. A correct response was defined as the student initiating the target step within 10 s of the instruction or previous behavior and completing the target step within 10 s. It is important to note that some of the steps of each task did not have to occur in a lockstep order for it to be counted as correct. For instance, when completing the washes dish task, the student's response of completing step 3 (i.e., opens top of soap container) would be counted as correct if it occurred prior to step 2 (i.e., picks up the soap container).

4.4.2 | Accuracy

Accuracy describes the "extent to which observed values estimate events that took place in an experiment" (Johnston et al., 2020). Stated differently, accuracy reveals the precision with which a study's measures reflect what happened during the study. To reach such a high bar, accuracy involves the application of extra efforts to identify a true value and minimize measurement error. Researchers who compare observed values in a study against a carefully identified true value employ the highest form of measurement assessment (Cooper et al., 2020; Kostewicz et al., 2016). Accuracy differs from interobserver agreement, which only provides information on believability of data or how closely two or more independent observers agree with one another (Johnston et al., 2020).

The first author Jennifer L. Wertalik video recorded experimental sessions for each student in order to facilitate the calculation of the accuracy of the dependent variable. The recorded video sessions would serve as the basis for the true value (Johnston et al., 2020). The video showed a participant engaging in all behaviors during the

TABLE 1 Task analysis of daily living skills

Mops floor	Washes dishes	Washes windows
1. Picks up the mop	1. Turns on water (both hot and cold)	1. Picks up the spray bottle
2. Puts mop into the bucket	2. Picks up the soap	2. Sprays top of window from left to right
3. Lifts mop out of the bucket	3. Opens top	3. Puts the spray bottle down
4. Pulls handle	4. Picks up the sponge	4. Gets the paper towel
5. Squeezes sponge into the bucket	5. Pours the soap on sponge and puts the soap down	5. Puts the paper towel on top left window and wipes the window from top to bottom moving left to right (5 times)
6. Snaps handle back	6. Picks up the plate and wipes the top of plate (3 times)	6. Throws the paper towel away
7. Puts the mop on the floor near the bathtub and moves the mop back and forth from left to right (5 times)	7. Turns the plate over and wipes the bottom of plate (3 times)	7. Picks up the spray bottle
8. Puts the mop on the floor near the toilet and moves mop back and forth from left to right (5 times)	8. Puts the sponge down	8. Sprays the top of the second window from left to right
9. Lifts the mop off floor and puts in the bucket	9. Rinses the bottom of plate for at least 3 s	9. Puts the spray bottle down
	10. Turns over and rinses the top of plate for at least 3 s	10. Gets the paper towel
	11. Puts the plate in dish rack	11. Puts the paper towel on top left window and wipes the window from top to bottom moving left to right (5 times)
	12. Turns off water	12. Throws the paper towel away

experimental session, visually presented actions demonstrating the presence or absence of the behavior, and also had sound. The process for generating the true value from the video record had a second observer independently score 30% of the videos and compare their scores to Jennifer L. Wertalik's scores; accuracy came to 98%. Given disagreements, Jennifer L. Wertalik and the second observer discussed the discrepancies until they came to a consensus and agreement on the different instances of what represented an occurrence or nonoccurrence of the behavior. If the raters did not come to a consensus, a third observer evaluated the disagreement. A final decision on the disagreement then occurred with two of the three observers. The previously described process produced a true value. Then, we could check the observed scores (i.e., observed values taken during the assessment) for the dependent variable against 30% of randomly selected videotaped sessions (i.e., the established true value). The final accuracy measure came to 95%.

4.5 | Independent variable and procedural integrity

4.5.1 | Independent variable

The independent variables consisted of VP and VP + FB. For each task, we created frequency aims by sampling four neurotypical adults performing the tasks and recording the total time it took to complete the steps identified in the task analysis (Table 1). A frequency aim represents an optimal rate of behavior depicted with a range

(Binder, 1996). Based on the adult's average performance, the frequency aims for the three tasks came to: (a) 14–19 correct responses per min for mopping the floor, (b) 18–23 correct responses per min for washing dishes, and (c) 16–20 correct responses per min for washing windows.

4.5.2 | Procedural integrity

To assess procedural integrity, we created a checklist that specified the procedural methods for all conditions. We videotaped each session for each participant and a second observer viewed 25% of randomly selected sessions for each student. Using the checklist, the second observer marked whether we correctly implemented each procedural component in the correct sequence. In order to calculate procedural integrity, we divided the number of procedural steps correctly completed by the total number of possible steps and multiplied it by 100 (Ledford & Gast, 2018). Procedural integrity came to 98% (range: 87%–100%). The most common errors in procedural integrity included remembering to deliver verbal praise following a correct response as well as refraining from delivering prompt/feedback during the VP + FB condition.

4.5.3 | Social validity

At the conclusion of the study, we shared videos of the intervention sessions as well as videos of the students' performance with the two classroom teachers and two classroom assistants. The videos of the student's performance included baseline sessions for each skill and their performance during the retention check. After viewing the videos, the staff members completed a social validity rating using paper-and-pencil questionnaire. We created the questionnaire to mainly assess the staff's opinions regarding the acceptability of the procedures used in the study and the acceptability of the results (Ledford & Gast, 2018). The questionnaire consisted of five statements: (a) The VP procedures used were appropriate for my students; (b) The VP + FB procedures were appropriate for my students; (c) I believe I would implement (or use) the VP procedures in my classroom; (d) I believe I would implement (or use) the VP + FB procedures in my classroom; (e) I feel that my student(s) perform the targeted daily living skills better after receiving VP and VP + FB instructions. Each staff member rated the five items on with a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

4.5.4 | Experimental design

The present study used an adapted alternating treatments design (AATD) to evaluate and compare the effects of VP and VP + FB (Holcombe et al., 1994; Wolery et al., 2014). When using an AATD, we introduced two or more treatment conditions in a rapidly alternating fashion with a randomized order of presentation. The current study consisted of three conditions, including a baseline, comparison phase, and control task condition. During the baseline condition, students' performances on each of the three tasks were measured prior to the treatment conditions. A third task (i.e., control task) appeared in the baseline condition and was intermittently measured during the comparison condition. During the comparison condition, we assigned VP and VP + FB interventions to two separate tasks. We taught each student a different skill within each condition and then counterbalanced the skills across conditions and students to control for task difficulty. In addition, the presentation order of the conditions was randomly selected each day (Cariveau et al., 2020). Lastly, we conducted a logical analysis in order to ensure the tasks included equal response difficulty. Three special education teachers and one behavior analyst, all with at least 5 years of experience, independently rated the tasks and concluded them to be equivalent in terms of the tasks having a comparable number of steps and response requirements/effort (Wolery et al., 2014).

4.6 | Procedure

4.6.1 | Baseline

We conducted baseline sessions to assess students' performance prior to the start of intervention. We set up all necessary materials, delivered the instruction to perform the targeted task (e.g., "Mop the floor"), and started the count up timer. If the student failed to correctly complete the step within 10 s, we completed the step by blocking the student's view and completing the step as unobtrusively as possible and then allowing the student an opportunity to perform the subsequent step in the task. During the condition, the students did not receive any prompts or feedback for correct or incorrect responses. Immediately following, we presented each student with three preferred items (e.g., iPad, chocolate, and music) and allowed the student to choose one item regardless of their performance during the condition. In order to identify the preferred items, we interviewed staff members who were most familiar with the student and generated a list of edible and/or tangible items in the order of preference observed within the classroom. For each student, we used the top three items identified as the choices presented to the student following measurement of the dependent variable and did not vary the stimuli across the study.

4.6.2 | VP

VP sessions took place for 8 min in order to control for the number of practice opportunities that took place during the VP + FB condition. During the VP condition, we set up all necessary materials (e.g., iPad, spray bottle, and paper towels). To begin the session, we presented the iPad to the student, delivered the instruction "Watch," and simultaneously started a pre-set timer set for 8 min. Next, the student was shown the first video clip corresponding to the first step of the task. As soon as the clip ended, we provided the instruction, "You do it." If the student correctly performed the skill as seen in the video, we provided behavior specific praise (e.g., "Good job picking up the mop"). The instructor then directed the student's attention back to the iPad screen while giving the instruction, "Watch the next step." If the student did not initiate the step within 10 s, we completed the step identically to the procedure used during baseline procedures by blocking the student's view and completing the step as discreetly as possible. If the student began to complete a step incorrectly or failed to complete the step within 10 s, we interrupted the student, blocked the student's view, and completed the step as unobtrusively as possible. Once the step was completed, the next video clip was shown as described above. The procedure continued until the timer sounded, indicating that the instructional session was finished.

4.6.3 | VP + FB

During the VP + FB condition, all the materials needed to complete the targeted task were set up by us prior to starting the session. To start the session, we presented the iPad to the student and delivered the instruction, "Watch." Students then watched a video clip of the first step of the task. When the video clip ended, we placed the initial set of materials needed to complete the step directly in front of the student, provided the instruction, "You do it," and started a timer pre-set for 15 s. The student received as many opportunities to imitate the behavior seen in the video clip as possible until the timer sounded. For example, if the student viewed a video clip of the model picking up a sponge, during FB, we provided the student with multiple sponges to pick up in a row without interruption during the time period. During the 15 s timing, the students received coaching to "keep going" and to "go fast" and verbal praise for correct responses. If the student errored or did not respond, no prompts or feedback were provided. When the timer sounded, we recorded the number of correct responses and provided corrective feedback to the student using a model, prompt, and check procedure.

When providing corrective feedback, we represented the video model of the step, prompted the student to imitate the behavior seen in the video, and checked the student by having them to perform the step independently. Following the delivery of feedback, we presented the iPad to the student to watch the video of the model performing the second step of the task following the same procedures as stated above. The procedure continued until the student viewed all the video clips in a sequence. Each session lasted approximately 8 min.

4.6.4 | Control task condition

We intermittently presented the control task during the comparison condition. Presentation of the control task occurred once per week. The control task occurred identically to the baseline condition described above.

4.6.5 | DV measurement

In order to conduct the measurement of the dependent variable (DV), we followed the same procedures as baseline sessions. Immediately following the VP and VP + FB sessions, we assessed the student's performance on the dependent variable by having the student perform the task one more time. After delivering the instruction (e.g., wash windows), we started the count up timer. During the assessment, the student did not have access to the video model. In addition, students did not receive any prompts or feedback. If the student failed to initiate the target step within 10 s of the instruction or previous behavior or failed to complete the target step correctly within 10 s, we blocked the student's view and completed the step as unobtrusively as possible without stopping the timer. As soon as the assessment was complete, we provided the student with a choice of their three preferred items regardless of their performance.

4.6.6 | Retention

Retention indicates the relationship between performance frequencies measured at two points where the students did not have an opportunity to engage in the target behavior (Fabrizio & Moors, 2003; Kubina & Yurich, 2012). A retention check occurred 10 days after cessation of intervention. The retention check followed the same procedures as the baseline and the DV measurement sessions.

4.7 | Data display and quantitative analysis

We analyzed student data via the Standard Celeration Chart (SCC) and used segments to display all time-series data (Graf & Lindsley, 2002; Lindsley, 2005; Pennypacker, et al., 2003). The segments of the SCC offer accurate illustrations of behavior change over time, display behavior change proportionately, and quantify changes in behavior facilitating a statistical analysis (Pennypacker et al., 2003). The growth of SCC segments in behavioral journals as a method for providing clear visual and quantitative analysis has accelerated (e.g., Barosky et al., 2020; Bulla et al., 2020; Kinney et al., 2020; Kostewicz et al., 2020; Kubina et al., 2016; Meyer et al., 2020; Mrachko et al., 2017; Vostanis et al., 2021). The use of SCC segments meets the call for single-case research to add quantification, objectivity, and decision rules to the visual analysis (Brossart et al., 2006; Bulté & Onghena, 2012; Lanovaz et al., 2019; Roane et al., 2013; Shaddish, 2014).

The following measures supplemented the visual analysis: Level and Celeration. The level of performance, or the mean performance for the frequency of correct steps for each target behavior, was calculated using the geometric

mean. Celeration represents the change in the frequency of responding over time (Johnston et al., 2020). The trend lines were calculated using the split-middle technique (White, 1974) and then we quantified the trends into celeration values using a "Finder" for paper charts (Kubina & Yurich, 2012; Pennypacker, et al., 2003) or an algorithm for digital charts (e.g., ordinary least squares). We also used a level multiplier to show the difference in levels (mean performance) of the frequency of correct steps between baseline and the intervention conditions as well as between the intervention and control conditions (Kubina, 2019). They used a celeration multiplier to quantify the differences in speed when comparing the frequency of correct steps for baseline and the intervention conditions as well as between the intervention and control conditions (Kubina, 2019). For full description of these measures, refer to Wertalik and Kubina (2018).

5 | RESULTS

Table 2 contains all of the performance outcomes for Level and Celeration for each student. Table 3 includes the Level and Celeration Multipliers for the baseline condition versus VP and the baseline condition versus VP + FB. Table 4 includes the Level and Celeration Comparison Analysis for the VP versus the control condition and VP + FB versus the control condition. Table 5 contains the retention outcome measures for each student. Figure 1 displays the data of correct steps completed with the dots on the chart segments signifying correct performance frequencies and the small horizontal dashes (i.e., time bars) show the time interval for the behavior that was measured. Figure 2 shows the celeration and level lines on segments of the SCC. The black, solid lines represent the celeration and the gray-dashed lines signify the level. The three column graphs in Figure 3 summarize the number of steps completed independently by Autumn, Cameron, and Angelica at three points in time (i.e., Day 1, 10, and 34).

The SCC has a dual vertical axis with count on the left and time on the right. The dual vertical axes allow chart users to display behavioral measurements with different recorded intervals of time. In order to calculate the "per min" frequency, the chart user multiplies the number of counted responses by the time bar value. The time bar value appears both visually and mathematically on the SCC. As an example, in the bottom tier of Figure 1, the time bar conveys a 2-min observation or "counting time" (i.e., the time Angelica spent starting and completing the behavior was 2 min) and sits on the 0.5 line of the SCC. A time bar for 2 min or 120 s will appear on the 0.5 frequency line (i.e.,

TABLE 2 Student performance outcomes

	Level						Celeration					
	BL	VP	BL	VP+	BL	Control	BL	VP	BL	VP+	BL	Control
Autumn	0.25	4.32	0.26	2.01	0.27	0.33	×1.0	×3.5	×1.0	×2.5	×1.0	÷1.2
Cameron	0.70	3.88	0.82	5.61	0.80	0.75	÷1.09	×2.1	÷1.7	×2.3	÷2.0	×1.0
Angelica	0.69	3.01	0.94	5.56	0.66	0.68	÷2.5	×1.0	×1.0	×2.0	×1.0	×1.15

Abbreviations: BL, baseline; VP, video prompting.

TABLE 3 Comparison analysis between baseline and intervention

	Level comparison		Celeration comparison	
	BL compared to VP	BL compared to VP + FB	BL compared to VP	BL compared to VP + FB
Autumn	×17.28	×7.73	×3.5	×2.5
Cameron	×5.54	×6.84	×2.3	×3.9
Angelica	×4.36	×5.91	×2.5	×2.0

Abbreviations: BL, baseline; VP + FB, video prompting plus frequency building.

TABLE 4 Comparison analysis between intervention and control task condition

	Level comparison		Celeration comparison	
	VP compared to control	VP + FB compared to control	VP compared to control	VP + FB compared to control
Autumn	×12.7	×5.9	×4.2	×3.0
Cameron	×5.2	×7.5	×2.1	×2.3
Angelica	×4.4	×8.2	÷1.15	×1.7

Abbreviation: VP + FB, video prompting plus frequency building.

TABLE 5 Retention measure

	Condition	Last intervention data point	Retention data point	Retention frequency multiplier
Autumn	VP	16	18	×1.1 (10% gain)
	VP + FB	5	10	×2.0 (100% gain)
Cameron	VP	9	8	÷1.1 (11% loss)
	VP + FB	14	15	×1.1 (10% gain)
Angelica	VP	6	6	×1.0 (0% gain)
	VP + FB	15	19	×1.3 (30% gain)

Abbreviation: VP + FB, video prompting plus frequency building.

60 s ÷ 120 s = 0.5). The subsequent data are then multiplied to indicate the count per min. In the top tier of Figure 1, Angelica's performance of 2 responses in 120 s converts into 1 per min (i.e., 2 × 0.5 = 1).

The complexity of the information in the present study necessitates a novel approach to a visual presentation of the data in an AATD design. Rather than presenting all three sets of dots (i.e., intervention and control data) and dashes (i.e., time bars showing varying completion times) on one graph, three separate graphs of each condition appear next to each other. Conducting a visual analysis involves looking at the data points from left to right and comparing the data and time bars to each other (Figure 1). We provide the celeration and level lines in Figure 2 to aid comparison, show the differences between each data set, and verify the necessary effects for an experimental effect with an AATD design.

5.1 | Participant performance outcomes

5.1.1 | Autumn

The top tier row of SCC segments in Figure 1 displays the data for Autumn. During baseline, Autumn produced an average frequency of correct responses of 0.25, 0.26, and 0.27 for washing windows, mopping floors, and washing dishes, respectively. She also produced a flat celeration or trend of ×1.0 per week for all three tasks, indicating the frequency of steps performed correctly neither grew or decayed. During the VP condition, Autumn had an average frequency of 4.32 correct responses for washing dishes and her behavior grew by ×3.5 per week (250% weekly growth). Additionally, Autumn reached the frequency aim for washing windows (i.e., 16–20 correct responses per min) with the VP instruction. With the VP + FB instruction, Autumn averaged a frequency of 2.01 correct steps for mopping the floor and her behavior grew by ×2.5 per week (150% weekly growth). The skill assessed during the control condition (washing dishes) remained at low levels (0.33) with a descending celeration of ÷1.2 per week (17% weekly decay).

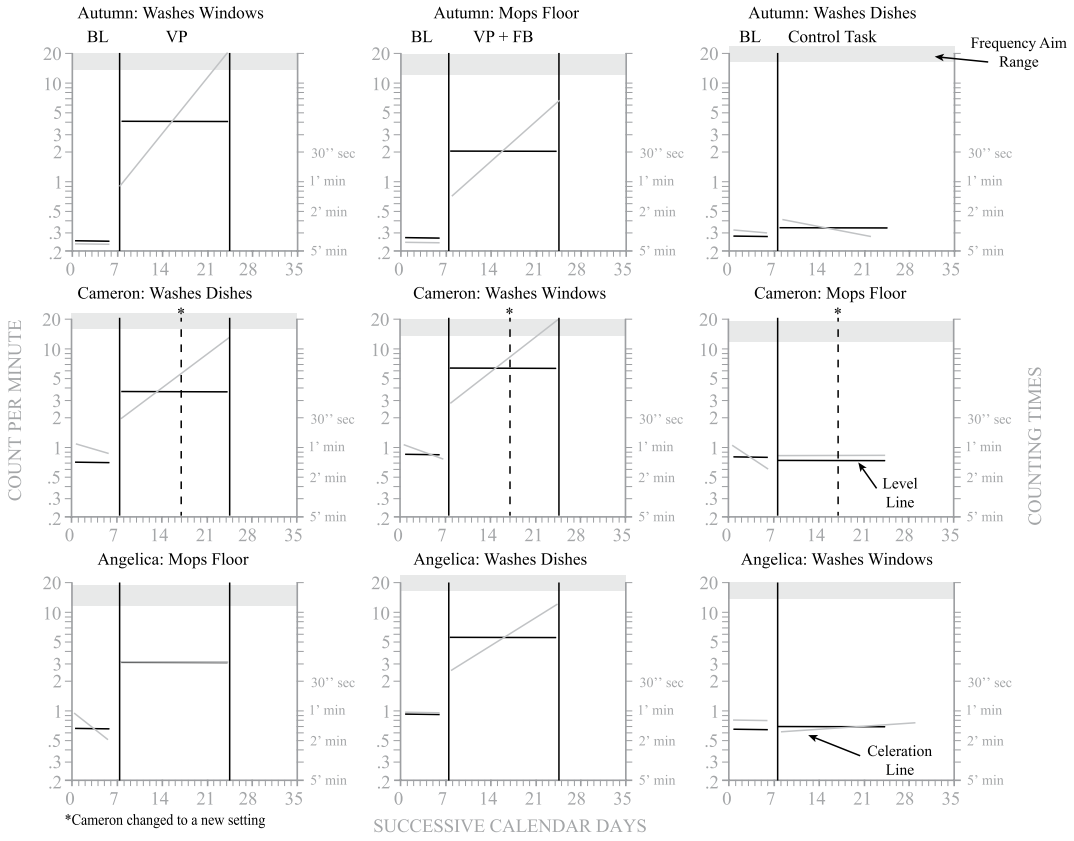

FIGURE 2 Level lines and celeration lines. BL, baseline; VP + FB, video prompting plus frequency building

When compared to baseline levels, Autumn produced ×17.28 (1628%) more correct steps for washing windows with the instruction using VP (i.e., Level Multiplier). For the Celeration Multiplier, the frequency of steps Autumn performed correctly occurred ×3.5 faster during VP than during baseline. For the VP + FB instruction, Autumn produced a Level Multiplier of ×7.73 (673%) more for the frequency steps performed correctly for mopping the floor compared to baseline. In the Celeration Multiplier, Autumn had a ×2.5 speed differential in frequency of steps performed correctly during the VP + FB condition compared to baseline.

The Level Multiplier analysis between the VP and control condition showed that Autumn had ×12.7 (117%) more correct responses per min for washing windows. Additionally, the Celeration Multiplier analysis showed Autumn's frequency of correct steps changed ×4.2 (320%) faster with VP compared to the control condition. For VP + FB, Autumn produced a Level Multiplier of ×5.9 (490%) more correct responses per min than in the control. Based on the Celeration Multiplier, Autumn's performance occurred ×3.0 faster with VP + FB than during the control condition.

5.1.2 | Cameron

The middle tier of SCC segments in Figure 1 has the data for Cameron across the three conditions. During baseline, Cameron yielded an average frequency of correct responses of 0.70, 0.82, and 0.80 for washing dishes, washing windows, and mopping the floor, respectively. The frequency of correct responses Cameron produced during baseline decelerated by ÷1.09 per week (8.3% weekly decay) for dishwashing, ÷1.7 per week (41% weekly decay) for washing windows, and ÷2.0 per week (50% weekly decay) for mopping the floor. Within the first condition, Cameron

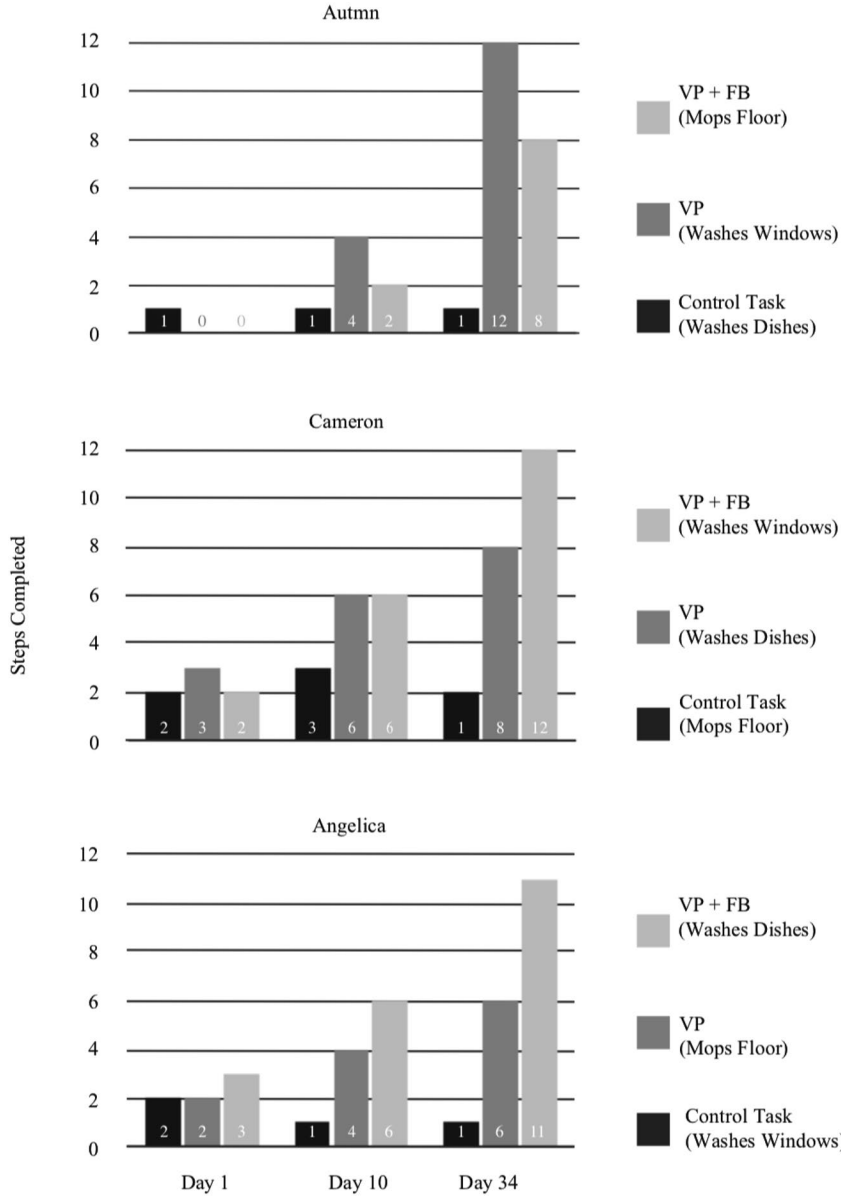

FIGURE 3 Number of steps performed independently. VP + FB, video prompting plus frequency building

produced an average frequency of 3.88 correct responses for washing dishes with the VP instruction and his behavior grew by ×2.1 per week, a 101% weekly growth in performance frequency. During the VP + FB instruction, Cameron had an average frequency of 5.61 correct responses and his frequency of correct responses grew by ×2.3 per week (130% weekly growth). Additionally, Cameron reached the frequency aim for washing windows (i.e., 16–20 correct responses per min) with the VP + FB instruction. The skill in the control condition (mopping the floor) remained at a low level (0.75) with a flat celeration of ×1.0 per week.

The comparison analysis showed that Cameron produced a Level Multiplier of ×5.54 (454%) more correct responses per min during the VP instruction (washes dishes) compared to baseline. During VP, Cameron had a Celeration Multiplier of ×2.3 (130% faster) for frequency of correct steps during the task of washing dishes compared to

baseline. For VP + FB, Cameron had a Level Multiplier of ×6.84 (584%) more correct responses per min for washing windows when compared to baseline. The results of the Celeration Multiplier indicated the frequency of steps Cameron performed correctly during VP + FB changed ×3.9 faster than during the baseline condition.

When compared to the control condition, Cameron produced ×5.2 (420%) more correct steps for mopping the floor with the instruction using VP (i.e., Level Multiplier). For the Celeration Multiplier, the frequency of steps Cameron performed correctly occurred ×2.1 faster during VP when compared to the control condition. For the VP + FB instruction, Cameron's level changed 7.5 times (a ×7.5 Level Multiplier or 650% rise) more for the frequency steps performed correctly than the control. In the Celeration Multiplier, Cameron had a ×2.3 speed differential in the frequency of steps performed correctly during the VP + FB condition compared to the control condition.

5.1.3 | Angelica

The bottom tier of SCC segments in Figure 1 displays the data for Angelica. In the baseline condition, Angelica produced an average frequency of correct responses of 0.69, 0.94, and 0.66 for mopping the floor, washing dishes, and washing windows, respectively. For mopping the floor, Angelica's frequency of correct responses decelerated by ÷2.5 per week (60% weekly decay). Angelica had a flat celeration of ×1.0 per week for washing dishes and washing windows, indicating her behavior neither grew nor decayed during the baseline condition. During the VP instruction, Angelica's level or average frequency of responses came to 3.01 correct for mopping the floor and had a flat celeration of ×1.0 per week. With the VP + FB instruction, she produced a level of 5.56 correct responses per min for washing dishes and her behavior grew by ×2.0 per week (100% weekly growth). The skill assessed during the control condition (washing windows) remained at a low level (0.68) but had a slight accelerating trend of ×1.15 per week (15% weekly growth).

For the Level Multiplier, Angelica had ×4.36 (336%) more correct responses per min for mopping the floor during the VP instruction compared to baseline. The Celeration Multiplier indicated Angelica's frequency of correct responses changed ×2.5 (150%) faster during VP than during baseline. For VP + FB, Angelica produced a Level Multiplier of ×5.91 (691%) more correct responses per min for washing dishes when compared to baseline. The Celeration Multiplier indicated Angelica's frequency of correct responses changed ×2.0 (100%) faster with the VP + FB instruction compared to baseline.

The comparison analysis between intervention conditions and the control condition showed that Angelica produced a Level Multiplier of ×4.4 (340%) more correct responses per min during the VP instruction (washes dishes). During VP, Angelica had a Celeration Multiplier of ÷1.15 (13%) slower for frequency of correct steps during the task of washing dishes than the control. For VP + FB, Angelica had a Level Multiplier of ×8.2 (720%) more correct responses per min for washing dishes when compared to the control condition. The results of the Celeration Multiplier indicated that the frequency of steps Angelica performed correctly during VP + FB changed by ×1.7 faster than during the control condition.

5.2 | Number of steps performed independently

Figure 3 includes column graphs for each student that show the number of steps they performed correctly for each skill during VP, VP + FB, and control conditions across three points in time (Day 1, 10, and 34 or the first day, approximately the middle day, and the last day). The column graphs provide a visual display of changes that took place in the student's performance across time. For example, the top column graph in Figure 3 shows the number of steps Autumn performed independently for each task. On Day 1, Autumn completed one step for washing dishes, zero steps for washing windows, and zero steps for mopping the floor. At Day 10, Autumn's performance of independent steps remained the same during the control task condition (one step for washing dishes). However, the number of steps

she completed independently increased for washing windows (VP) and mopping floors (VP + FB) with her performing four and two steps, respectively. And on Day 34, the number of steps Autumn completed independently during the control condition and VP + FB condition did not show any improvement with her continuing to complete one and four steps, respectively. Further, during VP, Autumn's performance of steps completed independently substantially increased to completion of all 12 steps for washing the windows.

5.3 | Retention measures

The results of the retention measures for each student appear in Table 5. Additionally, we conducted an analysis between the intervention phase and retention measure. We used a retention frequency multiplier to quantify the change between two frequencies (Kubina, 2019; Pennypacker et al., 2003). Specifically, we measured the change from the last data point of intervention and the retention measure taken 10 days later. The calculation for the change measure involves dividing the larger value by the smaller value and then applying the multiply or divide sign of the greater initial value depending on the positions of the two compared frequencies. For instance, Cameron's retention frequency multiplier for VP came to ÷1.1, which means from his last data point in intervention to 10 days later, his behavior decayed by 10%. The data show all three students performance grew in the VP + FB condition. In the VP condition, one student's performance grew (i.e., Autumn), one remained the same (i.e., Angelica), and the other decayed (i.e., Cameron).

5.4 | Social validity

Results from the social validity assessment indicated the respondents had favorable opinions concerning the VP and VP + FB procedures. The mean rating came to 4.5 out of 5 for acceptability of the procedures used with the students. The respondents all agreed that both interventions helped improve the students' performance on the daily living skills targeted in the study with a mean rating of 4 out of 5. In terms of wanting to implement VP and/or VP + FB in the future, the mean rating came to 3.75. It is important to note that the responders expressed that they would require training in order to independently implement these interventions.

6 | DISCUSSION

The purpose of the present study was to evaluate and compare the effects of VP and VP + FB on student's performance with daily living skills. The results indicated all students made substantial improvements over their baseline performance using VP and VP + FB. Furthermore, a strong intervention effect emerged for VP and VP + FB conditions when compared to the control task. However, in terms of one intervention proving superior to the other (e.g., VP to VP + FB), the data offer a mixed interpretation with VP + FB producing stronger gains for two of the three students.

6.1 | Point-of-view video prompting

The results of the current study support and contribute to the evidence base for daily living skills for individuals with ASD (e.g., Domire & Wolfe, 2014; Gardner & Wolfe, 2013). Researchers have investigated the use of VP with a POV perspective with favorable results (e.g., Bereznak et al., 2012; Sigafoos et al., 2005). In the present study, all three students produced larger gains with the VP intervention when compared to baseline and control task conditions. Therefore, the findings lend further support to the overall effectiveness of VP with a POV perspective with students with ASD.

Although previous research demonstrates increases in skill acquisition with the VP instruction, differences in responding during acquisition and maintenance have been reported (Domire & Wolfe, 2014). One component of VP interventions that has been identified as a possible factor in performance is the inclusion of voice-over narration. Rayner et al. (2009) speculated that the video-based instruction with voice-over narration could inhibit the performance of some individuals with ASD. When including voice-over narration with a video model, students must simultaneously attend to multiple stimuli that affect different learning channels, which may interfere with responding (Rayner et al., 2009). Additionally, many individuals have difficulties processing auditory information (O'Connor, 2012).

In contrast to most research investigating the use of VP to teach daily living skills, the present study did not include voice-over narration as a component of the video clips and yet still found all students made substantial improvements compared to baseline and the control task condition. By eliminating the voice-over narrative, the presented instruction affected only one learning channel, thereby possibly increasing the student's attention to the most relevant features of instruction. Furthermore, presenting instructional stimuli through purely a visual means mirrors the learning strengths (McCoy & Hermansen, 2007) and sometimes preferred instructional style of individuals with ASD (Arthur-Kelly et al., 2009; Cihak & Schrader, 2009). Therefore, the present study investigating the use of VP without voice-over narration may lead to enhanced efficacy.

6.2 | Frequency building and behavioral fluency

The addition of FB, a systematic practice procedure including timed repetition of behavior followed by corrective feedback (Kubina, 2019), further differentiates the present study from the existing VP literature as well as adds to the existing literature. By including procedures where students have multiple opportunities to respond to specific stimuli in a quick and accurate manner, students can increase their rate of responding. Additionally, providing corrective feedback immediately across the multiple trials increases fluency and learning (Carnine et al., 2009; Miller et al., 1995); the previous point illustrated in Cameron and Angelica's data as displayed in Figures 1 and 2. By adding FB, Cameron and Angelica demonstrated meaningful improvement in their performance (i.e., greater level change and faster celeration) within a 2-week period than with VP alone. FB maximizes the opportunities for the students to respond, focuses attention on the targeted skill at hand, and reduces prompt dependency (Scott et al., 2000). Therefore, the addition of FB with key instructional methods, such as VP, holds promise for remedying acquisition problems experienced by many individuals with ASD.

FB leads to an important outcome: behavioral fluency (Hughes et al., 2007). A performance standard represents a certain rate or frequency range of behavior suggesting the person has attained behavioral fluency (McTiernan et al., 2016). A strong evidence base exists supporting performance standards (Johnson & Street, 2013). Before determining a performance standard, one must set a frequency aim and measure those aims for critical learning outcomes, such as long-term retention, endurance, and application (Binder, 1996). However, neither research or clinical practice has established performance standards for activities of daily living. Therefore, the present study sampled adult performers on each daily living skill to identify a frequency aim. Two of the three students (Cameron and Angelica) reached the frequency aim with VP + FB and one student (Autumn) reached the frequency aim with VP. The three students performed their targeted skills as competent adults. Thus, the frequency aim identified in the current study served as a useful guide signaling proficiency and functionality for each behavior.

Behavioral fluency asserts that when students reach a frequency aim or performance standard, critical learning outcomes, such as retention occur (Holding et al., 2011; Nopprapun & Holloway, 2014). For individuals with ASD, retention represents an especially critical learning outcome; given the well-documented difficulties, many have with maintaining skills (e.g., Sigafoos et al., 2005). Researchers have found regardless of whether FB to behavioral fluency proved more effective for skill acquisition when compared to another intervention (e.g., discrete trial training), strong retention effects came about with FB (Holding et al., 2011; Nopprapun & Holloway, 2014). Moreover, when students met accuracy criteria alone, sufficient maintenance of the skills did not occur (e.g., Holding et al., 2011; Lee

& Singer-Dudek, 2012; Nopprapun & Holloway, 2014). Therefore, achieving accuracy will not necessarily result in long-term retention of skills (Kubina & Wolfe, 2005). As a result, students need instructions geared toward all levels of response competency (i.e., acquisition, fluency, maintenance, and generalization) in order to maintain skills long term (Alberto & Troutman, 2003).

In the current study, VP + FB resulted in all three students not only maintaining performance but also improving their performance at the retention check. Improvements ranged from ×1.1 to ×2.0, indicating a 10%–100% increase in the frequency of steps completed correctly from the last day of intervention with the largest increase seen in Autumn's data. Interestingly, during VP + FB, Autumn did not reach the frequency aim; however, her performance during the retention measure resulted in a ×2 (100%) increase in the frequency of steps performed correctly, thereby lending support to the utility of FB. The retention data corroborate behavioral fluency by demonstrating superior recall and use of a skill after termination of the intervention (Holding et al., 2011; Lee & Singer-Dudek, 2012; Singer-Dudek & Greer, 2005). Additionally, the frequency aims identified within this study serve as initial aims that future research can further evaluate for critical learning outcomes related to behavioral fluency.

Another feature that distinguishes the present study from previous research in VP and further advances the literature based includes the use of the SCC segments and precision measurement and analysis. Considering the call for augmenting single-case designs with the statistical analysis (Brossart et al., 2006; Parker et al., 2006; Shadish, 2014; Shadish et al., 2015; Young, 2018), the SCC segments permitted us to calculate personalized statistics, such as celeration or the speed in which behavior changed (Graf & Lindsley, 2002; Johnston et al., 2020; Lindsley, 2005; Pennypacker et al., 2003). Celeration provides an accurate, numerical measurement of learning (Datchuk & Kubina, 2011). Typically, a single-case design qualitatively describes learning change with words, such as rapidly or moderately increasing (Kennedy, 2005). However, by measuring celeration, one can determine precisely and quantitatively how fast a student learns. Additionally, quantifying trends enhances transparency of reporting and aids replication (Manolov, 2018).

As an example of a replicable, quantified learning rate statistic, VP and VP + FB produced changes in learning ×2.3 to ×3.5 faster than baseline performance, indicating robust changes in learning within a short period of time (i.e., 2 weeks). Considering many students with ASD experience slow acquisition rates, specifically in the area of daily living (Cullen & Alber-Morgan, 2015), using celeration and celeration multipliers to determine a students' personal rate of learning can assist teachers with decision-making and judging the significance of behavior change (Kubina & Yurich, 2012). The SCC could have many positive benefits for researchers using single-case designs without the need to apply separate statistical tests.

6.3 | Limitations

Although the results of the present experimental study demonstrated positive effects for VP and VP + FB, a number of limitations do exist. First, the study only included three individuals with ASD, which may limit the generality of the results. Second, the major feature of the AATD involves the identification of equivalent but functionally independent behaviors (Holcombe et al., 1994), which can prove difficult. To ensure equivalence of the targeted tasks, we conducted a logical analysis in which the three tasks were deemed equivalent in terms of number of steps and response effort. In addition, we included a baseline condition that established the equivalence of performance on the three tasks for each student.

Another possible limitation includes the increased number of opportunities to respond as well as opportunities for feedback during the VP + FB condition. In an attempt to control for the increased number of opportunities, we equated the VP and VP + FB conditions based on the duration of instructions. However, the VP + FB instruction may still have produced more opportunities to respond and provide feedback and therefore may have affected the results. Additionally, during the measurement of the dependent variable, we did not stop the timer when completing a step of the task for the participant. Therefore, the frequency reported included the time it took for us to complete the response. However, within the SCC segments, the time bar accounts for the time spent performing the behavior. As

the students began to perform more steps independently, the time bars moved up the SCC segment indicating the students took less time to perform the behavior.

Also, during the comparison condition, we periodically measured the task assigned to the control condition. Therefore, the number of data points in the control did not match the number data points in the intervention conditions. Lastly, Cameron's setting changed midway through the experiment. The setting change may have affected him though that limitation seems tempered by the fact that his control task performance did not change.

6.4 | Future research

The results of the present experimental study provide initial support for combining VP and FB. Future research should continue to explore the efficacy of VP + FB and its use to teach daily living skills. In addition, future research should continue to examine the use of frequency aims for daily living skills to determine if meeting the high frequencies will result in critical learning outcomes, such as retention, endurance, and application. The SCC segments and subsequent visualization and quantification may also reveal other compelling change measures and means to augment single-case experimental research designs.

The present study also provided support for VP with a POV perspective without voice-over narration for teaching daily living skills with individuals with ASD. Future research should continue to examine the use of VP with different perspectives as well as with and without voice-over narration to determine which components and/or combination of components produce the most effective and efficient results. Additionally, most of the research examining the use of VP involve the researchers or members of the research team implementing the interventions. Future research should focus on training teachers or participants themselves to implement the VP instruction to better inform practice.

Although the present study assessed social validity in relation to the teacher's opinions of the intervention procedures and outcome, we did not evaluate the student's opinions. Future research should work to identify means to assess social validity for the student's or clients receiving the intervention services. For example, providing the student with a choice of which daily living skill they want to complete or using a color-coding system where each intervention is associated with a different color and then providing the student a choice between the colors. Furthermore, future research should aim to include experimental questions relating to assessing social validity of procedures and outcomes in order to better guide practitioner's selection and implementation of interventions.

CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

ETHICS STATEMENT

All procedures performed in studies involving human participants were in accordance with the ethical standards of The Pennsylvania State University institutional review board (STUDY00006844) and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. Informed consent was obtained from all individual participants included in the study.

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REFERENCES

Alberto, P. A., & Troutman, A. C. (2003). *Applied behavior analysis for teachers* (6th ed.). Merrill.

Aravamudhan, S., & Awasthi, S. (2022). The use of prompts and precision teaching to address speech sound disorders in a 17-year-old girl with autism. *Behavior Analysis and Practice*, *14*(3), 644–659. https://doi.org/10.1007/s40617-020-00470-7

Arthur-Kelly, M., Sigafoos, J., Green, V., Mathisen, B., & Arthur-Kelly, R. (2009). Issues in the use of visual supports to promote communication in individuals with autism spectrum disorder. *Disability & Rehabilitation*, *31*, 1474–1486. https://doi.org/10.1080/09638280802590629

Banda, D. R., Dogoe, M. S., & Matuszny, R. M. (2011). Review of video prompting studies with persons with developmental disabilities. *Education and Training in Autism and Developmental Disabilities*, *46*, 514–527. https://www.jstor.org/stable/24232363

Barosky, C., Keane, N., & Gallagher, C. (2020). Increasing trials presented to children with autism: Using frequency building with modeling and feedback. *Behavior Analysis in Practice*, *14*(3), 673–678. https://doi.org/10.1007/s40617-020-00472-5

Bennett, K. D., Crocco, C., Loughrey, T. O., & McDowell, L. S. (2017). Effects of video prompting without voice over narration among students with autism spectrum disorder. *Behavioral Development Bulletin*, *22*(1), 147–158. https://doi.org/10.1037/bdb0000058

Bennett, K. D., Gutierrez, A., & Honsberger, T. (2013). A comparison of video prompting with and without voice over narration on the clerical skills of adolescents with Autism. *Research in Autism Spectrum Disorders*, *7*(10), 1273–1281. https://doi.org/10.1016/j.rasd.2013.07.013

Bereznak, S., Ayres, K. M., Mechling, L. C., & Alexander, J. L. (2012). Video self-prompting and mobile technology to increase daily living and vocational independence for students with autism spectrum disorders. *Journal of Developmental and Physical Disabilities*, *24*(3), 269–285. https://doi.org/10.1007/s10882-012-9270-8

Binder, C. (1996). Behavioral fluency: Evolution of a new paradigm. *The Behavior Analyst*, *19*(2), 163–197. https://doi.org/10.1007/BF03393163

Brady, K. K., & Kubina, R. M. (2010). Endurance of multiple fact fluency for students with attention deficit hyperactivity disorder. *Behavior Modification*, *34*(2), 79–93. https://doi.org/10.1177/0145445510361331

Brossart, D. F., Parker, R. I., Olson, E. A., & Mahadevan, L. (2006). The relationship between visual analysis and five statistical analyses in a simple AB single-case research design. *Behavior Modification*, *30*(5), 531–563. https://doi.org/10.1177/0145445503261167

Bulla, A. J., Wertalik, J. L., & Crafton, D. (2020). A preliminary investigation of question type used during response card activities on establishing concept formation in an introductory college class. *European Journal of Behavior Analysis*, *22*(1), 133–150. https://doi.org/10.1080/15021149.2020.1737406

Bulté, I., & Onghena, P. (2012). When the truth hits you between the eyes: A software tool for the visual analysis of single-case experimental data. *Methodology: European Journal of Research Methods for the Behavioral and Social Sciences*, *8*(3), 104–114. https://doi.org/10.1027/1614-2241/a000042

Cameron, M. J., Ainsleigh, S. A., & Bird, F. L. (1992). The acquisition of stimulus control of compliance and participation during an ADL routine. *Behavioral Residential Treatment*, *7*(5), 327–340. https://doi.org/10.1002/bin.2360070502

Cannella-Malone, H., Sigafoos, J., O'Reilly, M., de la Cruz, B., Edrisinha, C., & Lancioni, G. E. (2006). Comparing video prompting to video modeling for teaching daily living skills to six adults with developmental disabilities. *Education and Training in Developmental Disabilities*, *41*, 344–356. https://www.jstor.org/stable/23879661

Cariveau, T., Batchelder, S., Ball, S., & La Cruz Montilla, A. (2020). Review of methods to equate target sets in the adapted alternating treatments design. *Behavior Modification*, *45*(5), 695–714. https://doi.org/10.1177/0145445520903049

Carnine, D. W., Silbert, J., Kame'enui, E. J., & Tarver, S. G. (2009). *Direct instruction reading* (5th ed.). Prentice Hall/Merrill.

Charlop-Christy, M. H., Le, L., & Freeman, K. A. (2000). A comparison of video modeling with in vivo modeling for teaching children with autism. *Journal of Autism and Developmental Disorders*, *30*(6), 537–552. https://doi.org/10.1023/A:1005635326276

Cihak, D. E., & Schrader, L. (2009). Does the model matter? Comparing video self-modeling and video adult modeling for task acquisition and maintenance by adolescents with autism spectrum disorders. *Journal of Special Education Technology*, *23*(3), 9–20. https://doi.org/10.1177/016264340802300302

Cooper, J. O., Heron, T. E., & Heward, W. L. (2020). *Applied behavior analysis* (3rd ed.). Pearson Prentice.

Cullen, J. M., & Alber-Morgan, S. R. (2015). Technology mediated self-prompting of daily living skills for adolescents and adults with disabilities: A review of the literature. *Education and Training in Autism and Developmental Disabilities*, *50*, 43–55. https://www.jstor.org/stable/24827500

Datchuk, S. M., & Kubina, R. M. (2011). Communicating experimental findings in single case design research: How to use celeration values and celeration multipliers to measure direction, magnitude, and change of slope. *Journal of Precision Teaching and Celeration*, *27*, 3–17. https://eric.ed.gov/?id=EJ986279

Datchuk, S. M., & Rodgers, D. B. (2019). Text writing within simple sentences: A writing fluency intervention for students with high-incidence disabilities. *Learning Disabilities Research & Practice*, *34*(1), 23–34. https://doi.org/10.1111/ldrp.12185

Datchuk, S. M., Kubina, R. M., & Mason, L. H. (2015). Effects of sentence instruction and frequency building to a performance criterion on elementary-aged students with behavioral concerns and EBD. *Exceptionality*, *23*(1), 34–53. https://doi.org/10.1080/09362835.2014.986604

Dermer, M. L., Lopez, S. L., & Messling, P. A. (2009). Fluency training a writing skill: Editing for concision. *Psychological Record*, *59*(1), 3–20. https://doi.org/10.1007/BF03395646

Domire, S. C., & Wolfe, P. (2014). Effects of video prompting techniques on teaching daily living skills to children with autism spectrum disorders: A review. *Research and Practice for Persons with Severe Disabilities*, *39*(3), 211–226. https://doi.org/10.1177/1540796914555578

Fabrizio, M. A., & Moors, A. L. (2003). Evaluating mastery: Measuring instructional outcomes for children with autism. *European Journal of Behavior Analysis*, *4*(1–2), 23–36. https://doi.org/10.1080/15021149.2003.11434213

French, J. L. (2001). *Pictorial test of intelligence* (2nd ed.). Pro-Ed.

Gardner, S. J., & Wolfe, P. S. (2015). Teaching students with developmental disabilities daily living skills using point-of-view modeling plus video prompting with error correction. *Focus on Autism and Other Developmental Disabilities*, *30*(4), 195–207. https://doi.org/10.1177/1088357614547810

Gardner, S., & Wolfe, P. (2013). Use of video modeling and video prompting interventions for teaching daily living skills to individuals with autism spectrum disorders: A review. *Research and Practice for Persons with Severe Disabilities*, *38*(2), 73–87. https://doi.org/10.2511/027494813807714555

Goodson, J., Sigafoos, J., O'Reilly, M., Cannella, H., & Lancioni, G. E. (2007). Evaluation of a video-based error correction procedure for teaching a domestic skill to individuals with developmental disabilities. *Research in Developmental Disabilities*, *28*(5), 458–467. https://doi.org/10.1016/j.ridd.2006.06.002

Graf, S., & Lindsley, O. (2002). *Standard celeration charting 2002*. Graf Implements.

Gutierrez, A., Jr., Bennett, K. D., McDowell, L. S., Cramer, E. D., & Crocco, C. (2016). Comparison of video prompting with and without voice-over narration: A replication with young children with autism. *Behavioral Interventions*, *31*(4), 377–389. https://doi.org/10.1002/bin.1456

Harrison, P. L., & Oakland, T. (2003). *Adaptive behavior assessment system* (2nd ed.). Harcourt Assessment, Inc. Manual.

Hendricks, D. R., & Wehman, P. (2009). Transition from school to adulthood for youth with autism spectrum disorders: Review and recommendations. *Focus on Autism and Other Developmental Disabilities*, *24*(2), 77–88. https://doi.org/10.1177/1088357608329827

Holcombe, A., Wolery, M., & Gast, D. L. (1994). Comparative single-subject research description of designs and discussion of problems. *Topics in Early Childhood Special Education*, *14*(1), 119–145. https://doi.org/10.1177/027112149401400111

Holding, E., Bray, M. A., & Kehle, T. J. (2011). Does speed matter? A comparison of the effectiveness of fluency and discrete trial training for teaching noun labels to children with autism. *Psychology in the Schools*, *48*(2), 166–183. https://doi.org/10.1002/pits.20535

Hong, E. R., Ganz, J. B., Mason, R., Morin, K., Davis, J. L., Ninci, J., Neely, L. C., Boles, M. B., & Gilliland, W. D. (2015). The effects of video modeling in teaching functional living skills to persons with ASD: A meta-analysis of single-case studies. *Research in Developmental Disabilities*, *57*, 158–169. https://doi.org/10.1016/j.ridd.2016.07.001

Hughes, J. C., Beverley, M., & Whitehead, J. (2007). Using precision teaching to increase the fluency of word reading with problem readers. *European Journal of Behavior Analysis*, *8*(2), 221–238. https://doi.org/10.1080/15021149.2007.11434284

Hume, K., Boyd, B. A., Hamm, J. V., & Kucharczyk, S. (2014). Supporting independence in adolescents on the autism spectrum. *Remedial and Special Education*, *35*(2), 102–113. https://doi.org/10.1177/0741932513514617

Hume, K., Loftin, R., & Lantz, J. (2009). Increasing independence in autism spectrum disorders: A review of three focused interventions. *Journal of Autism and Developmental Disorders*, *39*(9), 1329–1338. https://doi.org/10.1007/s10803-009-0751-2

Johnson, K., & Street, E. M. (2013). *Response to intervention with precision teaching: Creating synergy in the classroom*. Guilford.

Johnston, J. M., Pennypacker, H. S., & Green, G. (2020). *Strategies and tactics of behavioral research and practice* (4th ed.). Routledge.

Kellems, R. O., Sabey, C. V., Hansen, B. D., Frandsen, K. R., Clarke, B. M., & Simons, K. J. (2017). Does the noise matter? Exploring salient audio components in video prompting interventions. *Advances in Neurodevelopmental Disorders*, *1*(4), 294–307. https://doi.org/10.1007/s41252-017-0036-2

Kelly, L., & Holloway, J. (2015). An investigation of the effectiveness of behavioral momentum on the acquisition and fluency outcomes of tacts in three children with autism spectrum disorder. *Research in Autism Spectrum Disorders*, *9*, 182–192. https://doi.org/10.1016/j.rasd.2014.10.007

Kennedy, C. H. (2005). *Single-case designs for educational research*. Allyn & Bacon.

Kinney, C. E., Begeny, J. C., Stage, S. A., Patterson, S., & Johnson, A. (2020). Three alternatives for graphing behavioral data: A comparison of usability and acceptability. *Behavior Modification*, *46*(1), 3–35. https://doi.org/10.1177/0145445520946321

Kostewicz, D. E., King, S. A., Datchuk, S. M., Brennan, K. A., & Casey, S. D. (2016). Data collection and measurement assessment in behavioral research: 1958–2013. *Behavior Analysis: Research and Practice*, *16*(1), 19–33. https://doi.org/10.1037/bar0000031

Kostewicz, D. E., Kubina, R. M., & Brennan, K. A. (2020). Improving spelling for at-risk kindergartners through element skill frequency building. *Behavioral Interventions*, *35*(1), 131–144. https://doi.org/10.1002/bin.1701

Kubina, R. M. (2019). *The precision teaching implementation manual*. Greatness Achieved.

Kubina, R. M., & Wolfe, P. S. (2005). Potential applications of behavioral fluency for students with autism. *Exceptionality*, *13*(1), 35–44. https://doi.org/10.1207/s15327035ex1301_5

Kubina, R. M., & Yurich, K. K. L. (2012). *The precision teaching book*. Greatness Achieved.

Kubina, R. M., Amato, J., Schwilk, C. L., & Therrien, W. J. (2008). Comparing performance standards on the retention of words read correctly per minute. *Journal of Behavioral Education*, *17*(4), 328–338. https://doi.org/10.1007/s10864-008-9071-4

Kubina, R. M., Young, A. E., & Kilwein, M. (2004). Examining an effect of fluency: Application of oral word segmentation and letters sounds for spelling. *Learning Disabilities: A Multidisciplinary Journal*, *13*, 17–23. https://eric.ed.gov/?id=EJ808001

Kubina, R. M., Yurich, K. L., Durica, K. C., & Healy, N. M. (2016). Developing behavioral fluency with movement cycles using SAFMEDS. *Journal of Behavioral Education*, *25*(1), 120–141. https://doi.org/10.1007/s10864-015-9232-1

Lanovaz, M. J., Cardinal, P., & Francis, M. (2019). Using a visual structured criterion for the analysis of alternating-treatment designs. *Behavior Modification*, *43*(1), 115–131. https://doi.org/10.1177/0145445517739278

Ledford, J. R., & Gast, D. L. (2018). *Single subject research methodology: Applications in special education and behavioral sciences* (3rd ed.). Routledge.

Lee, G. T., & Singer-Dudek, J. (2012). Effects of fluency versus accuracy training on endurance and retention of assembly tasks by four adolescents with developmental disabilities. *Journal of Behavioral Education*, *21*, 1–17. https://doi.org/10.1007/s10864-011-9142-9. https://www.jstor.org/stable/43551218

Lin, F. Y., & Kubina, R. M. (2015). Imitation fluency in a student with autism spectrum disorder: An experimental case study. *European Journal of Behavior Analysis*, *16*(1), 2–20. https://doi.org/10.1080/15021149.2015.1065637

Lindsley, O. R. (2005). Standard celeration chart system. In M. Hersen, G. Sugai, & R. Horner (Eds.), *Encyclopedia of behavior modification and cognitive behavior therapy. Volume III: Education applications* (pp. 1545–1548). Sage.

Liss, M., Harel, B., Fein, D., Allen, D., Dunn, M., Feinstein, C., Morris, R., Waterhouse, L., & Rapin, I. (2001). Predictors and correlates of adaptive functioning in children with developmental disorders. *Journal of Autism and Developmental Disorders*, *31*(2), 219–230. https://doi.org/10.1023/a:1010707417274

Manolov, R. (2018). Linear trend in single-case visual and quantitative analyses. *Behavior Modification*, *42*(5), 684–706. https://doi.org/10.1177/0145445517726301

Mason, R. A., Davis, H. S., Boles, M. B., & Goodwyn, F. (2013). Efficacy of point-of-view video modeling: A meta-analysis. *Remedial and Special Education*, *34*(6), 333–345. https://doi.org/10.1177/0741932513486298

McCoy, K., & Hermansen, E. (2007). Video modeling for individuals with autism: A review of model types and effects. *Education and Treatment of Children*, *30*(4), 183–213. https://doi.org/10.1353/etc.2007.0029. https://www.jstor.org/stable/42899952

McTiernan, A., Holloway, J., Healy, O., & Hogan, M. (2016). A randomized controlled trial of the Morningside math facts curriculum on fluency, stability, endurance and application outcomes. *Journal of Behavioral Education*, *25*(1), 49–68. https://doi.org/10.1007/s10864-015-9227-y

Meyer, S., Newsome, D., Fuller, T., Newsome, K., & Ghezzi, P. M. (2020). Agility: What it is, how to measure it, and how to use it. *Behavior Analysis in Practice*, *14*(3), 598–607. https://doi.org/10.1007/s40617-020-00465-4

Miller, A. D., Hall, S. W., & Heward, W. L. (1995). Effect of sequential 1-minute time trials with and without inter trial feedback and self-correction on general and special education students' fluency with math facts. *Journal of Behavioral Education*, *5*(3), 319–345. https://doi.org/10.1007/BF02110318

Mrachko, A. A., Kostewicz, D. E., & Martin, W. P. (2017). Increasing positive and decreasing negative teacher responses to student behavior through training and feedback. *Behavior Analysis: Research and Practice*, *17*(3), 250–265. https://doi.org/10.1037/bar0000082

Newman, L., Wagner, M., Knokey, A. M., Marder, C., Nagle, K., Shaver, D., & Schwarting, M. (2011). *The post high school outcomes of young adults with disabilities up to 8 years after high school*. A report from the national longitudinal transition study-2 (NLTS2) (NCSER 2011–3005). SRI International.

Nopprapun, M., & Holloway, J. (2014). A comparison of fluency training and discrete trial instruction to teach letter sounds to children with ASD: Acquisition and learning outcomes. *Research in Autism Spectrum Disorders*, *8*(7), 788–802. https://doi.org/10.1016/j.rasd.2014.03.015

O'Connor, K. (2012). Auditory processing in autism spectrum disorder: A review. *Neuroscience & Biobehavioral Reviews*, *36*(2), 836–854. https://doi.org/10.1016/j.neubiorev.2011.11.008

Parker, R. I., Cryer, J., & Byrns, G. (2006). Controlling baseline trend in single-case research. *School Psychology Quarterly*, *21*(4), 418–443. https://doi.org/10.1037/h0084131

Pennypacker, H. S., Gutierrez, A., & Lindsley, O. R. (2003). *Handbook of the standard celeration chart*. Cambridge Center for Behavioral Studies.

Ramey, D., Lydon, S., Healy, O., McCoy, A., Holloway, J., & Mulhern, T. (2016). A systematic review of the effectiveness of precision teaching for individuals with developmental disabilities. *Review Journal of Autism and Developmental Disorders*, *3*(3), 179–195. https://doi.org/10.1007/s40489-016-0075-z

Rayner, C., Denholm, C., & Sigafoos, J. (2009). Video-based interventions for individuals with autism: Key questions that remain unanswered. *Research in Autism Spectrum Disorders*, *3*(2), 291–303. https://doi.org/10.1016/j.rasd.2008.09.001

Roane, H. S., Fisher, W. W., Kelley, M. E., Mevers, J. L., & Bouxsein, K. J. (2013). Using modified visual-inspection criteria to interpret functional analysis outcomes. *Journal of Applied Behavior Analysis*, *46*(1), 130–146. https://doi.org/10.1002/jaba.13

Roid, G. H. (2003). *Stanford binet intelligence scales* (5th ed.). Riverside Publishing.

Schrank, F. A., Mather, N., & McGrew, K. S. (2014). *Woodcock-Johnson IQ tests of achievement*. Riverside.

Scott, J., Clark, C., & Brady, M. (2000). *Students with autism: Characteristics and instructional programming*. Singular Publishing Group.

Shadish, W. R. (2014). Statistical analyses of single-case designs: The shape of things to come. *Current Directions in Psychological Science*, *23*(2), 139–146. https://doi.org/10.1177/0963721414524773

Shadish, W. R., Hedges, L. V., Horner, R. H., & Odom, S. L. (2015). *The role of between-case effect size in conducting, interpreting, and summarizing single-case research (NCER 2015–002)*. National Center for Education Research, Institute of Education Sciences, U.S. Department of Education. This report is available on the Institute website at http://ies.ed.gov/

Sigafoos, J., O'Reilly, M., Cannella, H., Edrisinha, C., de la Cruz, B., Upadhyaya, M., Lancioni, G. E., Hundley, A., Andrews, A., Garver, C., & Young, D. (2007). Evaluation of a video prompting and fading procedure for teaching dishwashing skills to adults with developmental disabilities. *Journal of Behavioral Education*, *16*(2), 93–109. https://doi.org/10.1007/s10864-006-9004-z

Sigafoos, J., O'Reilly, M., Cannella, H., Upadhyaya, M., Edrisinha, C., Lancioni, G. E., Hundley, A., Andrews, A., Garver, C., & Young, D. (2005). Computer-presented video prompting for teaching microwave oven use to three adults with developmental disabilities. *Journal of Behavioral Education*, *14*(3), 189–201. https://doi.org/10.1007/sl0864-005-6297-2

Singer-Dudek, J., & Greer, R. D. (2005). A long-term analysis of the relationship between fluency and the training and maintenance of complex math skills. *Psychological Record*, *55*(3), 361–376. https://doi.org/10.1007/BF03395516

Smith, L. E., Maenner, M. J., & Seltzer, M. M. (2012). Developmental trajectories in adolescents and adults with autism: The case of daily living skills. *Journal of the American Academy of Child & Adolescent Psychiatry*, *51*(6), 622–631. https://doi.org/10.1016/j.jaac.2012.03.001

Sparrow, S. S., Cicchetti, D. V., & Balla, D. A. (2005). *Vineland adaptive behavior scales* (2nd ed.). AGS Publishing.

Twarek, M., Cihon, T., & Eshleman, J. (2010). The effects of fluent levels of big 6 + 6 skill elements on functional motor skills with children with autism. *Behavioral Interventions*, *25*(4), 275–293. https://doi.org/10.1002/bin.317

Vostanis, A., Padden, C., McTiernan, A., & Langdon, P. E. (2021). Comparing the minimum celeration line and the beat your personal best goal-setting approaches during the mathematical practice of students diagnosed with autism. *Journal of Behavioral Education*. Advance online publication. https://doi.org/10.1007/s10864-021-09432-7

Wehman, P., Schall, C., Carr, S., Targett, P., West, M., & Cifu, G. (2014). Transition from school to adulthood for youth with autism spectrum disorder: What we know and what we need to know. *Journal of Disability Policy Studies*, *25*(1), 30–40. https://doi.org/10.1177/1044207313518071

Weiss, M. J., Fabrizio, M., & Bamond, M. (2008). Skill maintenance and frequency building: Archival data from individuals with autism spectrum disorders. *Journal of Precision Teaching and Celeration*, *24*, 28–37. https://eric.ed.gov/?id=EJ904038

Wertalik, J. L., & Kubina, R. M. (2018). Comparison of TAGteach and video modeling to teach daily living skills to adolescents with autism. *Journal of Behavioral Education*, *27*(2), 279–300. https://doi.org/10.1007/s10864-017-9285-4

White, O. R. (1974). *The split middle a quickie method of trend estimation*. University of Washington, Experimental Unit, Education Unit, Child Development and Mental Retardation Center.

Wolery, M., Gast, D. L., & Ledford, J. R. (2014). Comparison designs. In D. L. Gast & J. R. Ledford (Eds.), *Single subject research methodology: Applications in special education and behavioral sciences* (pp. 297–345). Routledge.

Young, K. R., West, R. P., Howard, V. F., & Whitney, R. (1986). Acquisition, fluency training, generalization and maintenance of dressing skills of two developmentally disabled children. *Education and Treatment of Children*, *9*, 16–29. https://www.jstor.org/stable/42898943

Young, M. E. (2018). A place for statistics in behavior analysis. *Behavior Analysis: Research and Practice*, *18*(2), 193–202. https://doi.org/10.1037/bar0000099

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