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A Systematic Instructional Approach to Teaching Finance Vocabulary to Students with Moderate-to-Significant Disabilities

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Abstract

Federal law and judicial rulings in the United States direct educators to provide special education services to students with disabilities that enable them to demonstrate meaningful progress, considering their circumstances. The services are to comprise evidence-based practices and must account for students' unique learning characteristics and the time allotted for instruction. Accordingly, this paper reports on two interconnected investigations involving four high school students with autism and an intellectual disability who were taught to read and define finance vocabulary via a systematic instructional approach presented during short-duration lessons (5–8 min). A multiple-probe, nonconcurrent single-case design established a functional relationship between the lessons and the students' vocabulary acquisition. All four students learned to read their targeted words. One student demonstrated acquisition of all the definitions, whereas the other three demonstrated variable acquisition before the study was discontinued because of the end of the school year. The students also demonstrated variable skill maintenance and generalization. The results suggest an appropriate structure for a short-duration lesson and a corresponding research agenda for investigating parameters associated with its effectiveness and efficiency. The study offers teachers instructing students with moderate-significant disabilities a practical evidence-based instructional strategy that accounts for their time management challenges. Furthermore, the strategy's framework offers a theoretical way for investigating the impacts of increased academic learning time and practice opportunities.

Keywords: systematic instruction; explicit instruction; response prompting strategies; simultaneous prompting; students with disabilities; autism; intellectual disability; vocabulary instruction; evidence-based practice

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1. Introduction

Teachers must address a wide range of variables when planning and presenting instruction to students with moderate-to-significant disabilities (Wolery et al., 1992). Among them are scheduling lessons, structuring them with evidence-based practices, and monitoring their students' progress. Teachers also must consider these participants' learning characteristics in relation to those demonstrated by their typically developing peers. These characteristics include acquiring skills at a slower rate, learning less overall content, and challenges with skill maintenance and generalization (Collins, 2012; Lemons et al., 2016; Wolery et al., 1992).

Scheduling lessons involves time management. Arguably, time is among the most important instructional variables teachers must account for since the amount of time available for schooling sets a limit for the content teachers can address. Hence, teachers must

remain cognizant of the time available to them and how to structure it. Optimally, teachers will maximize every student's engaged (i.e., the time a student attends to instruction) and academic learning time (i.e., the time instructional-level content is addressed) (Archer & Hughes, 2011; Rosenberg et al., 2020).

One way is to identify brief periods of time (e.g., 5–10 min) during the school day when instruction is not presented in accordance with a master school schedule. Rather, the time is identified otherwise in the schedule, but it could be used to present instruction. Weingarten et al. (2019) highlighted this matter and its significance with respect to scheduling all the instruction in a school's multi-tiered system of supports (MTSS), an organizational scheme for matching a school's system of interventions with each participant's instructional needs (Potter, 2023). Weingarten et al. focused on the challenge of presenting sufficient intensive interventions to students manifesting significant, persistent academic achievement deficits due to unaccommodating schoolwide schedules. Hence, the authors discussed identifying times for small bits of instruction not listed in the master schedule. These times include (a) during transitions between and within lessons, (b) the time between when a student finishes lunch and the time allocated for the lunch period expires, and (c) time that becomes available when unexpected schedule changes occur.

Furthermore, Weingarten et al. (2019) emphasized structuring brief lessons properly. Of particular interest regarding students with moderate-to-significant disabilities is structuring lessons with instructional strategies that have proven effective in addressing the students' learning characteristics. For example, maximizing their opportunities to respond can address their challenges with acquiring content, and having them complete spaced, retrieval, and interleaved practice can address their challenges with skill maintenance (Gersten et al., 2008; Hughes & Lee, 2019; Morano, 2019).

A primary source of effective instructional strategies is evidence-based practices. Two evidence-based, systematic approaches that are complementary and address the learning characteristics of students with moderate-to-significant disabilities are explicit instruction and response prompting strategies.

Decades of research support the effectiveness of an explicit instruction approach with students with disabilities across a range of content (Chodura et al., 2015; Ciullo et al., 2016; Edmonds et al., 2019; Graham et al., 2012; Hughes et al., 2017; Kaldenberg et al., 2015). Recent research has addressed its effectiveness in teaching essential literacy skills, particularly vocabulary (Capin et al., 2021; McElroy et al., 2024; Stevens et al., 2023; Stevens & Mowbray, 2024; Walkey, 2024).

Similarly, two response prompting strategies, simultaneous prompting and time delay, have been established as evidence-based practices for students with disabilities. The most recent review by Tekin-Iftar et al. (2019) concluded that simultaneous prompting is an evidence-based practice in general for teaching a variety of skills to individuals with a variety of labels across the age span (i.e., preschool to adult). This review followed two reviews that established the procedure's effectiveness with students with IEPs (Morse, 2004; Waugh et al., 2011). Similarly, Spooner et al. (2025) reported that researchers have demonstrated time delay to be an effective strategy for teaching various academic content (e.g., academics and communication) to students with moderate-to-significant disabilities involving various categories of disability, including intellectual disability and autism (Browder et al., 2009; Horn et al., 2020; Tapp et al., 2021; Walker, 2008).

Employing evidence-based practices is important in the United States because doing so aligns with relevant federal law. The Individuals with Disabilities Education Act (2004), a federal law that has the most direct impact on special education services in public schools, stipulates that educators are to use scientifically based instruction (a term synonymous with evidence-based practice) when teaching students with disabilities. Using it increases

the probability that students will demonstrate meaningful progress considering their circumstances, which is the educational achievement standard for students receiving special education services set forth in a ruling by the United States Supreme Court (Yell & Bateman, 2020).

However, despite strong research support, explicit instruction and response prompting strategies warrant further investigation. Dr. Anita Archer, a foremost authority on explicit instruction, remarked that additional research must investigate ways of refining an explicit instruction approach to increase its effectiveness, efficiency, and utility for different purposes (Education Research Reading Room, 2021). One way it can be refined is by incorporating various evidence-based practices (e.g., response prompting strategies) in the framework's practice element. In discussing future research of simultaneous prompting, Tekin-Iftar et al. (2019) remarked that the research must address the utility of simultaneous prompting with specific disabilities and age ranges, the types of skills for which it is best suited, and its effectiveness in settings involving students with and without IEPs. This review and another about the procedure's effectiveness in teaching mathematics (Morse, 2023) revealed the need to apply it to reading and defining mathematics vocabulary.

Accordingly, the two studies reported herein investigated an instructional strategy comprising simultaneous prompting embedded within an explicit instruction framework. The strategy was presented in brief academic lessons (i.e., 10 min or less) focused on teaching finance vocabulary to high school students with moderate-to-significant disabilities. The finance vocabulary addressed a core standard in the state's curriculum addressing financial literacy. Furthermore, the vocabulary was referenced from the IDEA's focus on topics germane to the students' post-secondary transition plans, particularly the components addressing employment and independent living. These plans encompass a part of the individualized education program that is mandated in the IDEA. Moreover, vocabulary instruction comprises one of the five essential components of reading instruction. Explicitly teaching vocabulary increases a student's word knowledge and improves their reading comprehension (Archer & Hughes, 2011).

The multi-component, systematic instructional strategy emulated how most educators teach by combining instructional strategies (Cox et al., 2013). The brief lesson format offered a way for presenting instruction during the ephemeral times identified by Weingarten et al. (2019).

The research questions addressed in the studies are listed next.

1. Would the systematic instructional approach for presenting a short-duration lesson prove to be effective in teaching participants with moderate-to-significant disabilities to read six finance vocabulary words?
2. Would the approach prove to be effective in teaching participants with moderate-to-significant disabilities to identify the definitions for the six finance vocabulary words after the participants learned to read them?
3. Would the participants maintain their abilities to read the words and identify their definitions for up to four weeks?
4. Would the participants read the finance vocabulary and identify each term's definition across different materials and conditions?

2. Materials and Methods

2.1. Participants

Four male participants who attended a specialized school for students ages 3–21 with moderate-to-significant disabilities and extensive support needs received the intervention. Table 1 lists the participants' demographic data and targeted finance vocabulary words. The eligibility criteria that the participants had to meet to be included in the study are listed next.

- high levels of attendance (i.e., were in attendance more than 90% of the days school was scheduled to be in session);
- the ability to participate in a tabletop lesson for 15 min;
- low-level/stable performance of the targeted skill during baseline probes;
- visual and auditory acuity within normal limits; and
- the propensity to imitate a combination model/verbal/gestural/physical prompt.

Table 1. Participants' Demographic Data and Finance Vocabulary.

Participant	Grade	Disability	Race	Vocabulary Words
Darby	11	Autism	African American	rent, hired, wealthy, banker, salary, roommate
Jack	12	Intellectual disability	Caucasian	buy, cash, own, sell, poor, raise
David	12	Intellectual disability	African American	pay, earn, debt, save, poor, cent
Cody	11	Intellectual disability	African American	raise, cost, wealthy, earn, budget, sign

2.2. Setting

The lessons, which lasted 5–8 min, were presented four days each week in a 1:1 instructional format in a conference room in the school's library. The sole investigator, a licensed special education teacher, was the instructor. During each intervention and probe session, he sat directly across from the participant at a rectangular table measuring $3' \times 2'$. A second adult, an undergraduate student completing a research internship with the investigator, was seated beside the participant and investigator when she collected reliability data.

2.3. Design

A multiple-probe, nonconcurrent single-case design was employed to establish experimental control (i.e., show that the independent variable, a multi-component systematic instructional approach, was responsible for changes in the dependent variables, reading finance vocabulary and identifying each word's definition) (Gast & Ledford, 2014). Hence, the design involved two phases: baseline and intervention.

During the baseline phase, assessment data established each participant's performance regarding the dependent variable prior to the intervention. Data obtained from daily assessments during the subsequent intervention phase were analyzed to determine whether therapeutic changes in the level and trend occurred.

Altogether, two studies comprised this investigation. This arrangement was used to account for (a) the four-part vocabulary instructional protocol identified by Archer and Hughes (2011), and (b) a proper way to limit the demands that would be placed on each participant's working memory (Groshell, 2024; Lambert, 2024).

The four-part instructional protocol, which was derived from a review of the research involving explicit instruction to teach vocabulary, consisted of the steps listed below.

1. The participant must read the word aloud.
2. The instructor and participant discuss a participant-friendly definition for the word.
3. The instructor presents a concrete, pictorial, or verbal/written example of the word's definition. If necessary, the instructor presents non-examples in the same manner.
4. The instructor conducts a check for understanding.

So as not to exceed a participant's working memory by providing them with an excessive amount of new information to learn, the systematic instructional approach was used to first teach each participant to read all six targeted finance vocabulary words (Groshell, 2024; Lambert, 2024). Afterwards, the same approach was used to follow Archer

and Hughes's (2011) four-part instructional protocol to teach each word's definition. In both studies, the words and definitions were presented in sets of two.

2.4. Probes

Baseline probes (i.e., short assessments lasting less than two minutes) were conducted for a minimum of five sessions for each word pair. A session comprised four trials, as each word or definition was presented twice.

To assess word reading, each word was printed on a $3'' \times 5''$ index card that was shown to the participant along with a verbal directive to read the word. A correct response involved the participant correctly reading the word within the four-second response interval, while an incorrect response was recorded if the participant misread the word or did not make a response.

To assess a participant's ability to match a definition with a word, the participant was shown a word card and told to read the word. Afterwards, the participant was directed to touch, from among four choices presented in a row on the table in front of the participant, a graphic that depicted the word's definition and was printed on a $2'' \times 2''$ laminated card. The graphic was obtained from the database of icons that were used to construct the augmentative/alternative communication systems that were used at the school. The definition that each icon represented was reviewed by the instructor at the outset of the probe session, but not prior to a trial. A correct response involved the participant correctly reading the word and identifying its definition within separate four-second response intervals, while an incorrect response was recorded if the participant misread the word, touched an incorrect graphic, or did not make a response.

The daily probes conducted during the intervention phase and the maintenance probes conducted after a participant met the mastery criterion for a word pair (i.e., three daily probes with four correct responses/100% correct responding) followed the protocol that was established for the baseline probes. A pre- and post-test was conducted to assess the participants' skill generalization. The pre-test was administered during the first baseline probe session, while the post-test was administered one week after a participant met the criterion for mastery of reading the words and then again one week after identifying their definitions.

During the word reading generalization tests, the words were printed on a sheet of lined notebook paper (i.e., all six words were printed in two rows with three words in each row). The instructor directed the participant to read a word when the instructor pointed to it. Correct and incorrect responses were recorded as they were during baseline probes.

For the definition identification generalization tests, the definitions were presented in multiple modes (i.e., as graphics and printed sentences). Each is explained next.

1. The teacher held up a graphic and placed four vocabulary words printed on four separate index cards in a row in front of the participant. The teacher directed the participant to touch the word whose definition was represented by the graphic.
2. The teacher held up an index card with a word printed on it and placed four graphics printed on four separate cards in a row in front of the participant. Additionally, a printed definition that was presented on an index card that had been cut in half horizontally was read by the teacher and then placed above its corresponding graphic. The teacher directed the participant to touch the graphic/printed definition pair for the word.
3. The teacher held up a printed definition on an index card that had been cut in half horizontally, read it, and then placed four vocabulary words printed on four separate index cards in a row in front of the participant. The teacher directed the participant to touch the word for the definition that was presented.

4. The teacher held up an index card with a word printed on it and placed four printed definitions on index cards that had been cut in half horizontally in a row in front of the participant. The teacher read each definition and then directed the participant to touch the printed definition for the word.

For each generalization test, correct and incorrect responses were recorded as they were during baseline probes. Throughout all probes, intermittent feedback (i.e., after every third trial, on average) about a participant's on-task behavior and effort was provided (e.g., "Good job. I like how you are pointing to a graphic when I ask you to identify a word's definition."). No affirmative or corrective feedback was presented about a response.

Social validity data about aspects of the investigation's targeted learning outcome, instructional strategy, and results were obtained via interviews with the participants' classroom teacher and the school's principal.

2.5. Independent and Dependent Variables

A multi-component, systematic instructional approach was the independent variable in each study. The approach comprised simultaneous prompting embedded in an explicit instruction framework. It is a teacher-directed, intentional approach involving multiple research-supported instructional behaviors, also referred to as elements (Archer & Hughes, 2011). The explicit instruction approach's elements for this investigation are described next.

During the opening of the lesson, the instructor presented three elements orally: an attention directive, the learning objective, and a rationale for mastering the learning objective. The teacher explained the rationale as it related to a skill the participant had learned (e.g., reading a finance word, such as dollar) and a skill the participant would learn later (e.g., performing a financial task, such as opening a bank account).

Four elements comprised the body of the lesson. First, the instructor modeled performing the target skill while presenting a think-aloud. When teaching word reading, the instructor explained how he named each letter, looked at their order, thought about how someone demonstrated reading the word, and then read it aloud. To demonstrate identifying the word's definition, the instructor modeled reading the word, looking at each graphic while saying its definition, then touching the correct graphic. In both instances, the instructor modeled the skill twice.

Second, the instructor led the guided practice element using simultaneous prompting. For word reading, the instructor presented the target word card and a model prompt, after which the participant performed the skill. For definition identification, the instructor read the target word and presented a gesture prompt by pointing in the direction of the correct graphic.

The instructor presented 2–7 guided practice trials during each session. Affirmative, behavior-specific praise was presented after a correct response, while the discrete trial sequence was presented a second time following an incorrect response (e.g., "Let's try that again. Look at the order of the letters in this word. Think about how to read it. Read the word after me."). Afterward, the instructor read aloud two sentences with the word to exemplify its use in an appropriate context.

The third element comprising the body was a check for understanding. The instructor presented 1–3 probe trials for each word or definition to assess the participant's ability to perform the skill independently. The instructor used the data from this low-stakes assessment to decide whether to assign independent work at the end of the session.

The body's fourth element involved spaced, retrieval, and interleaved practice. The instructor presented 2–4 trials for each word or definition mastered to allow a participant to perform the skill independently from memory. The words and definitions were presented in random order as a type of interleaved practice.

The instructor then repeated the second, third, and fourth elements. The lesson concluded with a structured closing where the instructor reviewed the skills the participants were taught and the activities they engaged in, previewed the subsequent lesson, and assigned independent work if the check for understanding indicated the work was warranted. For instance, the independent work involved the participant reading the target words under daily probe conditions, except that affirmative and informative corrective feedback were provided.

Learning to read the finance vocabulary served as the dependent variable in the first study, and identifying each term's definition was the dependent variable in the second study. Vocabulary instruction was chosen because word knowledge serves as the foundation for the participants' development of literacy skills. Words are how the participants express themselves in reading and writing, and understand what others write and say (Archer, 2021). The finance vocabulary was selected from the participants' core mathematics curriculum. The words addressed a broad range of matters associated with money and a life skills curriculum. For instance, the words rent and roommate were targeted since it is likely that having a roommate would impact the amount a person would have to budget for their rent.

2.6. Reliability

2.6.1. Interobserver Agreement

Dependent variable reliability was calculated as (Number of agreements/Number of agreements + Number of disagreements) × 100 (Richards, 2019). Dependent variable reliability checks were conducted across 20% to 25% of the sessions for each participant. The checks were conducted in each condition (i.e., baseline, intervention, maintenance, and generalization) and occurred during the first one-third of the study. The undergraduate student referenced previously conducted the checks, which resulted in 100% agreement. Unfortunately, a scheduling change and an unanticipated extended sick leave prevented the student from completing these checks during the last two-thirds of the study. An alternative arrangement was sought but could not be established.

2.6.2. Procedural Fidelity

Procedural fidelity was calculated as the number of teacher behaviors observed divided by the number of teacher behaviors planned, then multiplied by 100 (Richards, 2019). Procedural fidelity checks were conducted by the undergraduate student across 20% to 25% of the sessions for each participant. The checks were conducted in each condition and occurred during the first one-third of the study. The data indicated 100% agreement.

When the undergraduate student was unavailable to conduct the checks during the subsequent two-thirds of the sessions, the instructor completed a self-check. It involved marking on a checklist of the instructional behaviors, which ones he performed. These reliability checks were conducted at the end of 25% of the sessions for each participant in each condition. The data indicated that the investigator executed 95% of the planned teacher behaviors across these checks.

3. Results

3.1. Acquisition, Maintenance, Generalization, Social Validity

3.1.1. Acquisition

Each participant met the criterion for mastery for reading all six of their vocabulary words, while the number of definitions they learned to identify varied. The results are presented in Figures 1–8. For all participants, the baseline probes in each study revealed

stable responding since the participants did not correctly read or identify the definitions for any words.

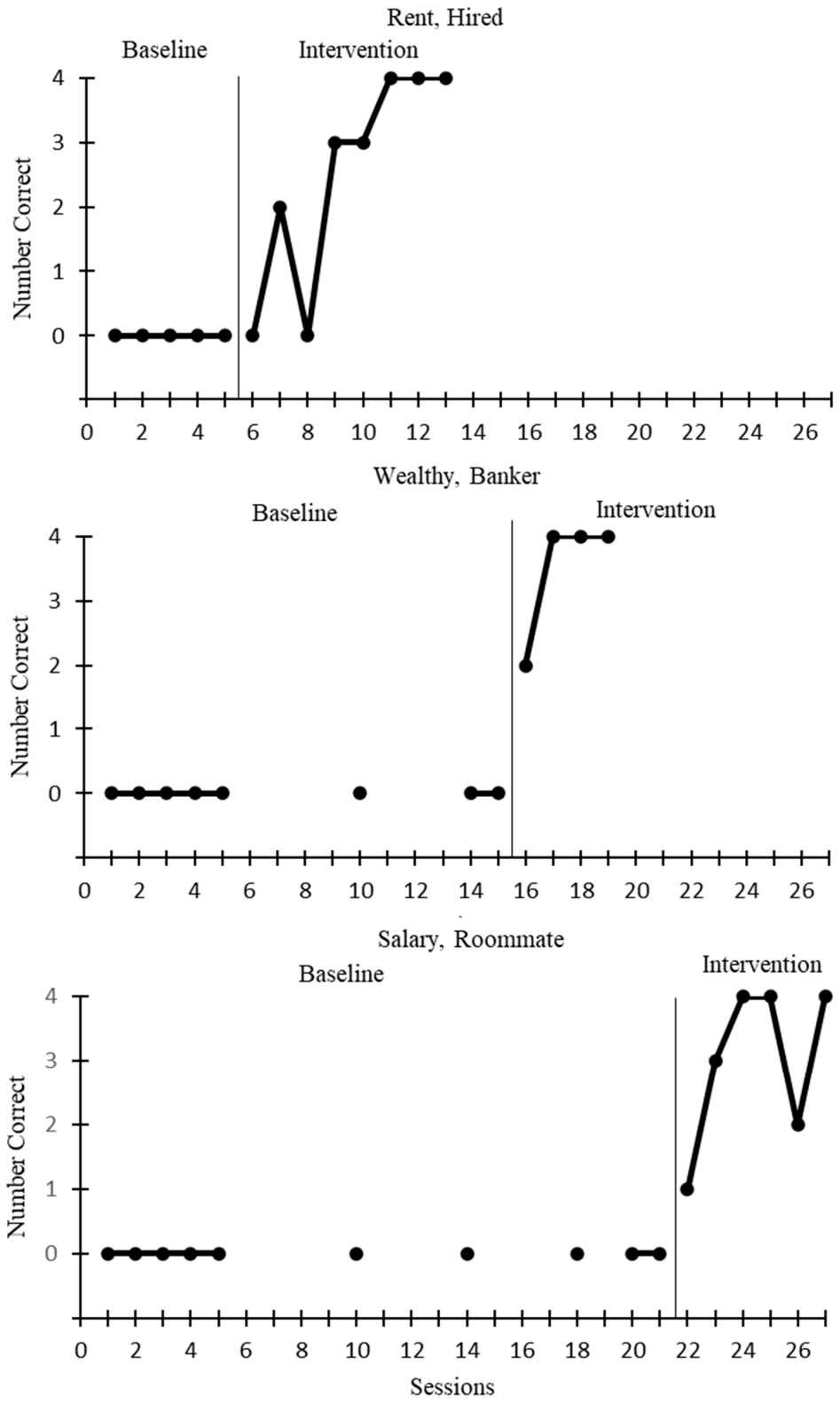


Figure 1. Darby's word-reading data. Word pairs are listed at the top of each graph. The mastery criterion was 100% correct (4/4 trials) during three separate intervention probe sessions.

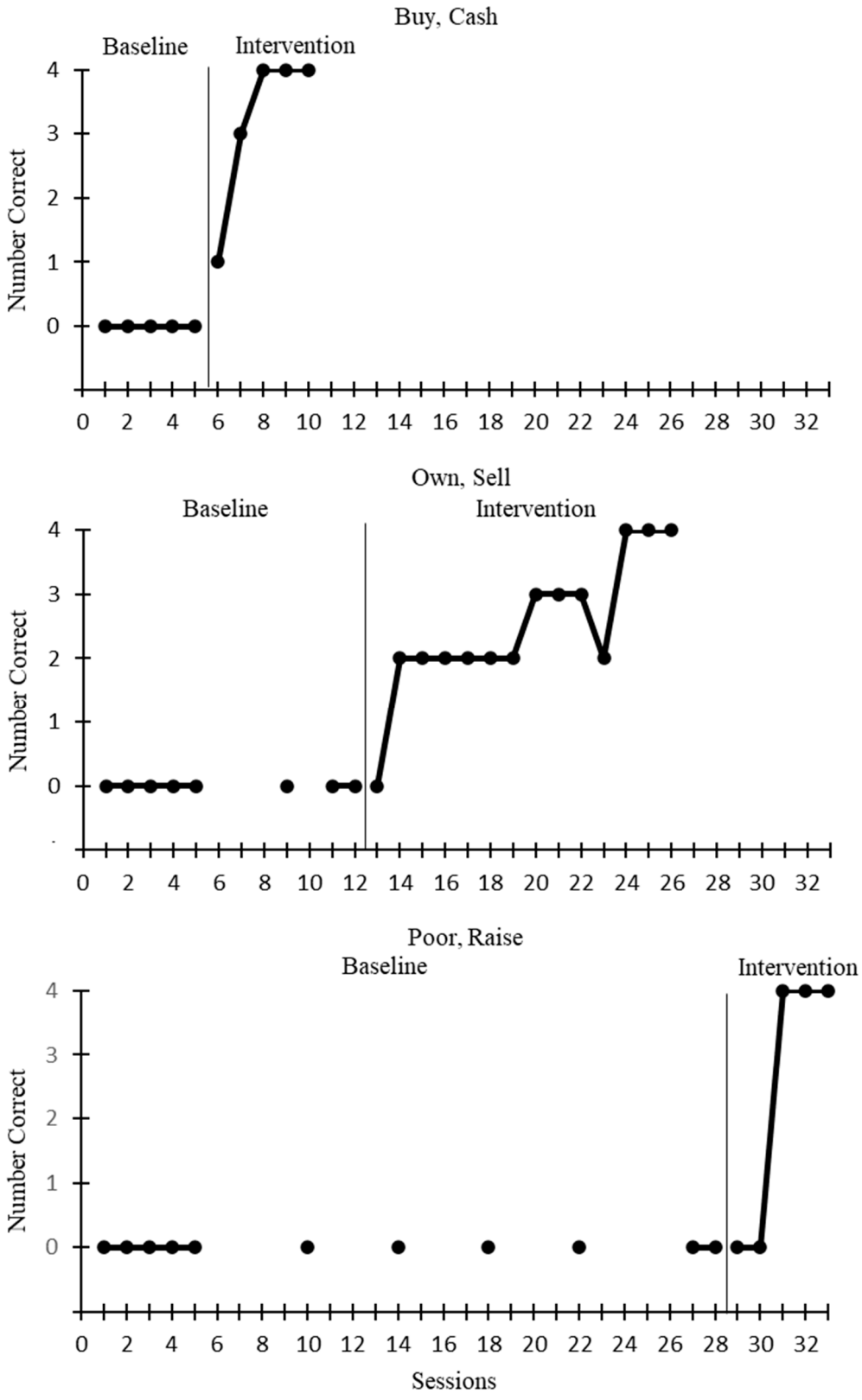


Figure 2. Jack's word-reading data. Word pairs are listed at the top of each graph. The mastery criterion was 100% correct (4/4 trials) during three separate intervention probe sessions.

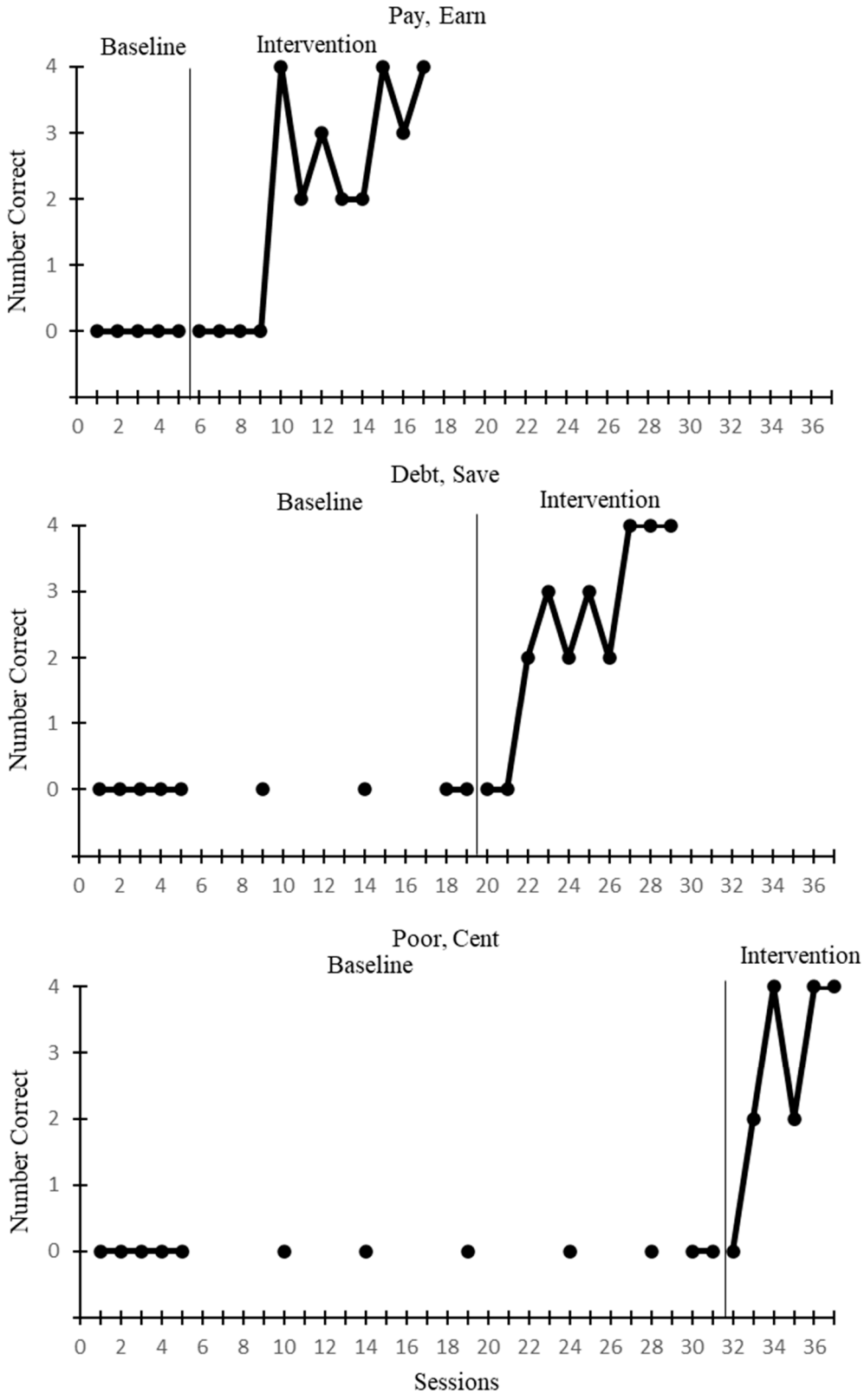


Figure 3. David's word-reading data. Word pairs are listed at the top of each graph. The mastery criterion was 100% correct (4/4 trials) during three separate intervention probe sessions.

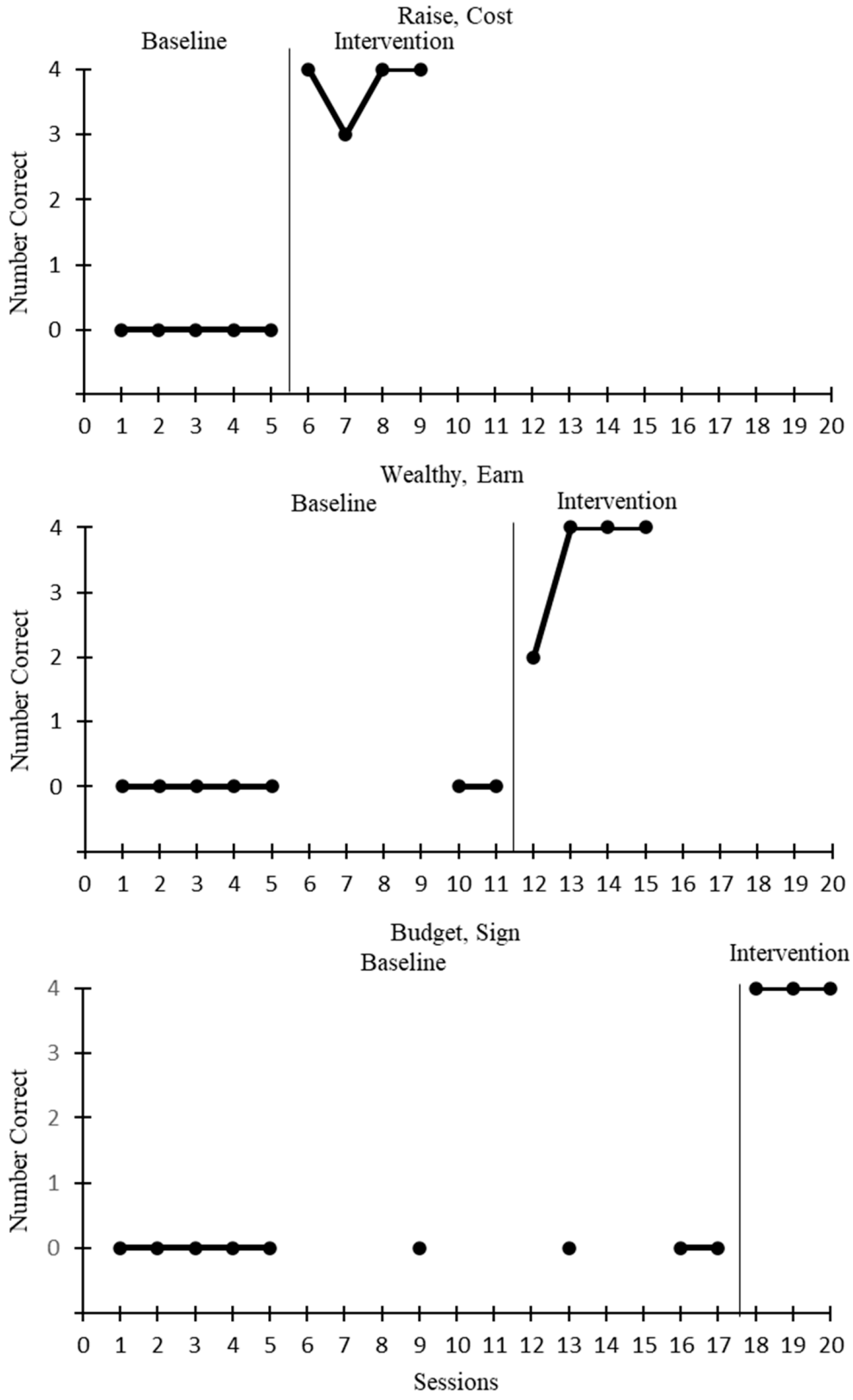


Figure 4. Cody's word-reading data. Word pairs are listed at the top of each graph. The mastery criterion was 100% correct (4/4 trials) during three separate intervention probe sessions.

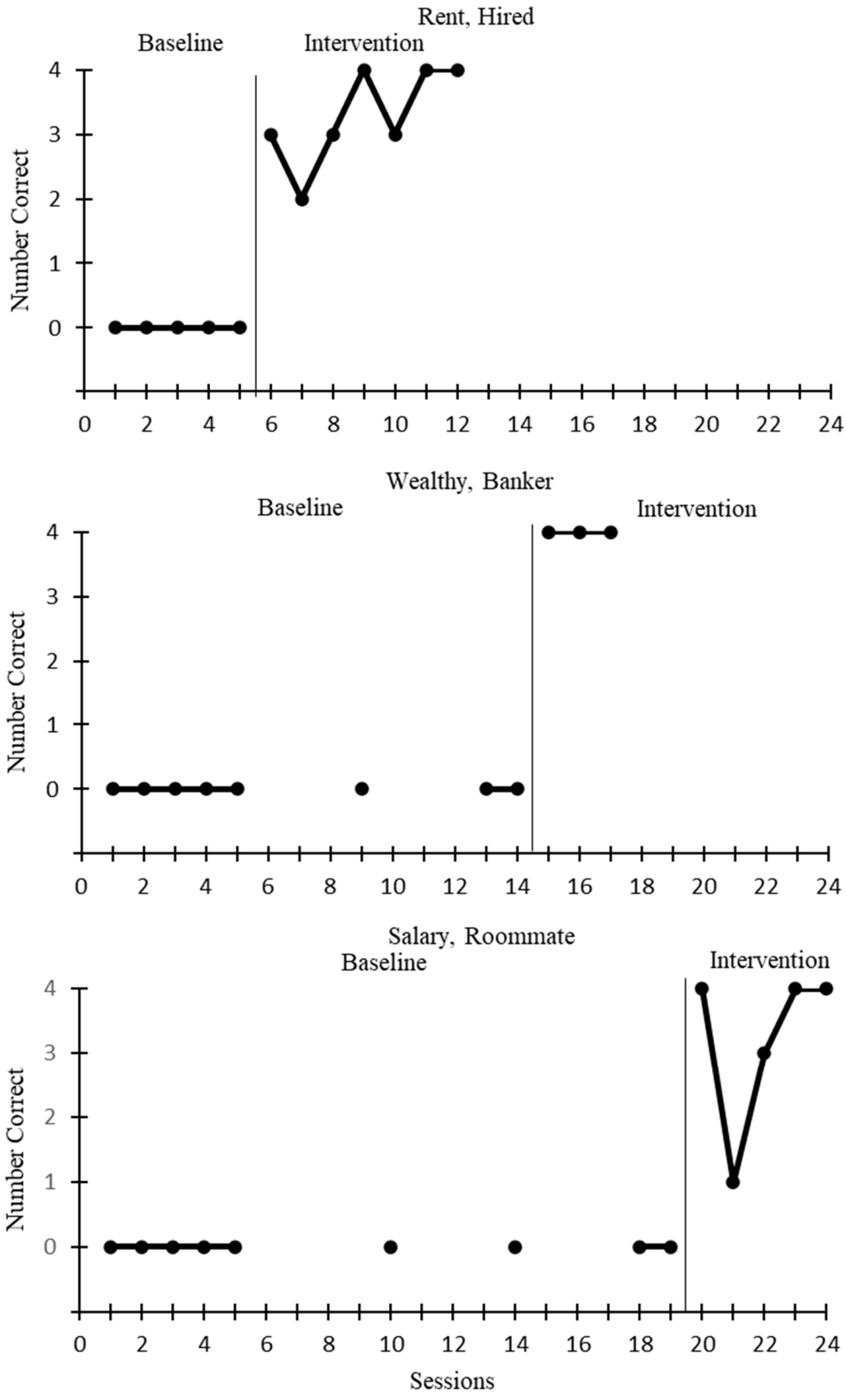


Figure 5. Darby's data for the identification of each word's definition as represented by a graphic. Word pairs are listed at the top of each graph. The mastery criterion was 100% correct (4/4 trials) during three separate intervention probe sessions.

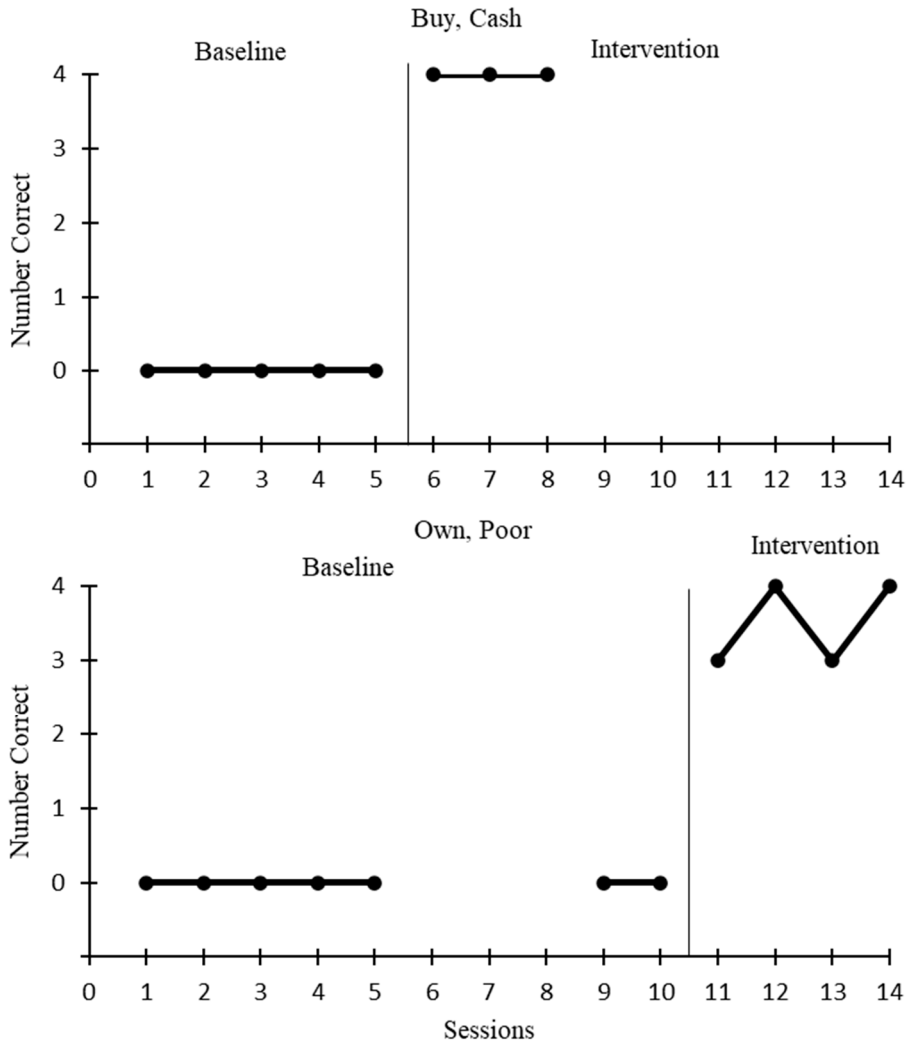


Figure 6. Jack's data for the identification of each word's definition as represented by a graphic. Word pairs are listed at the top of each graph. The mastery criterion was 100% correct (4/4 trials) during three separate intervention probe sessions.

Each participant's word-reading data showed a therapeutic change in level and trend only after the intervention was implemented, and until the criterion for mastery was met for all six of their words. The high percentage (85%) of all non-overlapping data points attests to the strength of the intervention (Gast & Ledford, 2014).

The participants' identification of the definition for each term varied. One participant (Darby) met the mastery criterion for all six vocabulary words, two participants (Jack and David) met the mastery criterion for two terms and showed progress toward the criterion for an additional two terms, and a visual analysis involving the split-half middle technique of the fourth participant's (Cody) data revealed a therapeutic trend toward the criterion for mastery for two vocabulary words (Gast & Ledford, 2014).

The high percentage (91%) of all non-overlapping data points attests to the strength of the intervention for teaching definitions. However, the relatively low percentage (71%) of non-overlapping data for the fourth participant indicates that the intervention's effect in this instance was significantly less robust. This characterization is further supported by the fact that he did not achieve the mastery criterion for any word pair (Gast & Ledford, 2014).

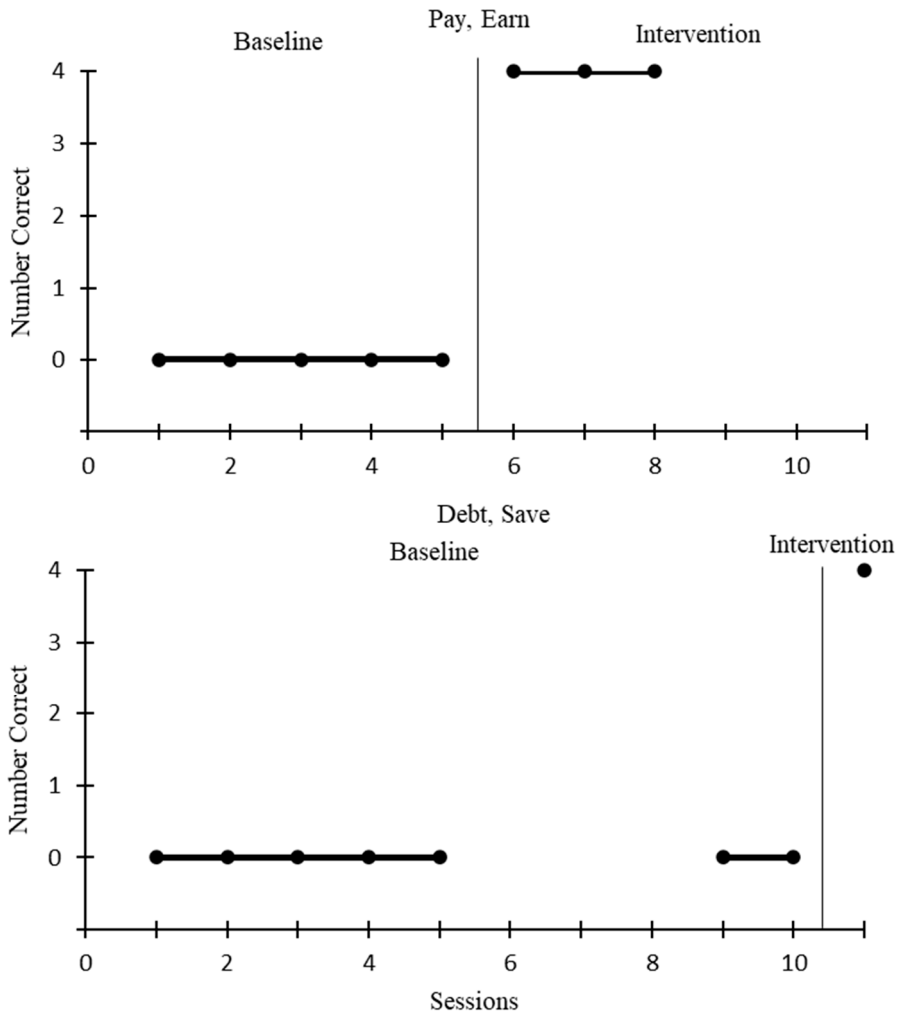


Figure 7. David's data for the identification of each word's definition as represented by a graphic. Word pairs are listed at the top of each graph. The mastery criterion was 100% correct (4/4 trials) during three separate intervention probe sessions.

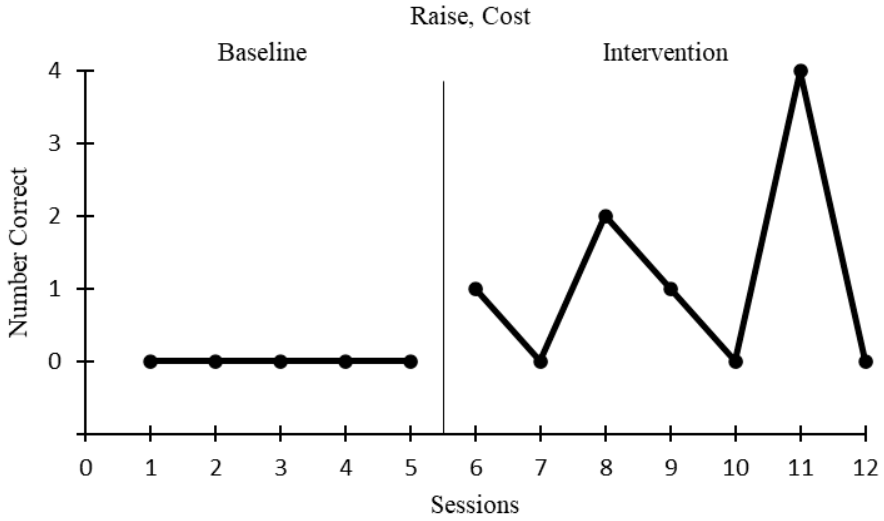


Figure 8. Cody's data for the identification of each word's definition as represented by a graphic. Word pairs are listed at the top of each graph. The mastery criterion was 100% correct (4/4 trials) during three separate intervention probe sessions.

3.1.2. Maintenance and Generalization

Each participant scored 100% on their word-reading maintenance probe that was conducted one month after they achieved the criterion for mastery on the last word pair. Three participants (Darby, Jack, and Cody) scored 100% on their word-reading generalization probe, while the fourth participant (David) read five of the six words correctly.

Each participant scored 100% on their definition identification maintenance probe that was conducted one to four weeks after they achieved the criterion for mastery on a word pair. Due to the end of the school year, the timeframe for these probes was adjusted to coincide with when the mastery criterion was met.

One participant (Darby) scored 100% on all generalization probes. The two participants (Jack and David) who met the criterion for mastery for identifying the definitions for one word pair scored 100% on the generalization probe in which they were shown a graphic for a definition and had to identify the corresponding vocabulary term from among a group of four terms. No other generalization probes were conducted due to the discontinuation of the study as the school year ended.

3.1.3. Social Validity

The participants' classroom teacher and the school's principal reported satisfaction with the investigation's targeted learning outcomes, instructional strategy, and results. The teacher was particularly impressed with the generalization data, while the principal reported satisfaction with the investigation's design that allowed for the numerous trials the participants needed to achieve the mastery criterion.

4. Discussion

The results indicate that the systematic instructional approach presented in a short-duration lesson to teach reading six finance vocabulary words and identifying their definitions can be effective with students with moderate-to-significant disabilities. The single-case design established experimental control for teaching word reading, as one demonstration of effect and two replications were established for each participant. This outcome adds to the research about explicit instruction as well as simultaneous prompting, the response prompting strategy that was incorporated in this investigation's explicit instruction framework. Over a dozen studies have reported on the effectiveness of simultaneous prompting in teaching various mathematics skills, but only one study involved mathematics vocabulary (Coleman et al., 2015; Morse, 2023).

It is worth noting that two participants did not evince the ability to name any lower or uppercase letters. Yet, in this investigation, they learned to read six words. This outcome lends credence to the literacy instructional model for students with moderate-to-significant disabilities manifesting extensive support needs offered by Lemons et al. (2016). It posits teaching core curriculum beginner reading skills (e.g., letter naming, phonemic awareness, and phonics) in the early grades (Kindergarten–Grade 5). For students who do not sufficiently master the skills, instruction shifts to functional sight word instruction in the upper grades (Grade 6–Grade 12).

While the single-case design established experimental control for identifying a word's definition, the strength of the evidence is limited by one demonstration of effect by three participants, with only one of these participants achieving two replications of this effect. No replications were achieved by the other two participants, even though they demonstrated progress in identifying definitions for a second word pair. Arguably, this outcome resulted from these participants' relatively slow rates of learning and the limits on allotted time posed by the school calendar. Thus, this reasoning leads to an empirical question awaiting resolution in a future study.

Also, a significant drawback is the study's limited, unconventional interobserver agreement and procedural fidelity data. They call into question the rigor of the study's experimental control.

Conversely, the study will be of interest to practitioners because parts of this investigation exemplify common school protocols. One is using a multi-component instructional strategy. Another is how selecting a graphical or pictorial representation of a word's meaning mirrors reputable receptive language testing formats (e.g., the Peabody Picture Vocabulary Test). Likewise, having the teacher read aloud directions and definitions is a legally permissible testing accommodation in the United States. This accommodation, and the multiple-choice questions in the baseline and intervention probes for identifying definitions, mimicked the formatting of a typical teacher-made test of receptive vocabulary.

This investigation establishes a basis for conducting future studies for various related purposes:

a. validating the systematic instructional approach's effectiveness in teaching other academic content;
b. assessing instructional efficiency parameters (e.g., trials, sessions, and total time to criterion, plus the amount of targeted content and incidental information learned);
c. determining the merits of including the different elements of explicit instruction;
d. comparing complimentary response prompting strategies, and their ordering in a lesson; and
e. obtaining fidelity of implementation and social validity data for evaluating the relative ease and difficulty involved with executing this intervention.

Studies similar to the proposed future studies have been conducted with other instructional strategies (e.g., response prompting strategies in isolation), thereby allowing those investigations to serve as models (Ledford et al., 2012; Tekin-Iftar et al., 2019).

This prototype systematic instructional approach for a short-duration lesson can assist a teacher with the time management challenges inherent in teaching students with moderate-to-significant disabilities. This matter is important because this type of lesson can readily supplement those provided as part of a school's master daily schedule, without having to revise it. The cumulative impact of short-duration lessons across a school year can be remarkable, as five minutes of instruction per day during a 180-day school calendar results in 15 h of instruction. Hypothetically, if a student with a disability is provided 6–12 opportunities to respond per minute as recommended by Harlacher (2023), this would amount to 5400–10,800 active responses. This matter could be the focus of future research. Addressing it highlights a proposition from Gersten et al. (2008), which is that students demonstrating significant, persistent academic achievement deficits require 10–30 more practice opportunities to learn a skill compared to their peers who learn at a rate enabling grade-level academic achievement. These numbers, in and of themselves, support further research about a short-duration intervention.

5. Conclusions

The investigations' results add to the extensive research supporting the effectiveness of explicit instruction and simultaneous prompting by examining their use for a new purpose, which is the presentation of short-duration lessons. However, the study's small sample size limits its generalizability. Additionally, the limited independent and dependent variable reliability data call into question the extent to which experimental control was established. Thus, while the data from the investigation reported herein and a few other similar studies present limited support for this type of intervention, much more work is required to establish the body of evidence necessary for characterizing a short-duration

lesson involving a systematic instructional approach as a promising, emerging, or evidence-based practice (Morse & Nguyen, 2024, 2025; The IRIS Center, 2009).

Nonetheless, in the United States, this study's work addresses the IDEA's call for the use of scientifically based instruction with students with disabilities. Additionally, it involves a multi-component intervention, which aligns with the type of instructional strategies used most often by teachers (Cox et al., 2013). Hence, the investigations reported above serve as examples for how to use the prototype systematic instructional approach to teach academic content to students with moderate-to-significant disabilities. The investigations also offer a theoretical framework for future research.

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Abbreviations

The following abbreviations are used in this manuscript:

IDEA	Individuals with Disabilities Education Act
MTSS	Multi-tier system of supports

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