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Using Precision Teaching to Enhance Direct Instruction Sight-Word Reading

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This study assessed the effects of using Precision Teaching techniques with Direct Instruction to teach sight-word reading with three students in a rural elementary school. All three students used practice cards and showed an acceleration in learning to read sight-words.

In America, there has been a growing concern about the lack of "basic skills" taught in public schools as well as the weakening in the education system. Some believe that the current state of affairs in education represents "...an authentic crisis in our society" (Dubross, 1995, p. 1). However, possible solutions to the crisis have been in measurably superior instructional technologies which have existed for over 20 years: Direction Instruction (DI) and Precision Teaching (PT) (Binder & Watkins, 1990).

Direct Instruction, founded by Siegfried Engelmann, is a researched based approach to educational instruction and implementation. Rosenshine (1976) summarizes the variables that are associated with DI as a "high level of student engagement within academically focused, teacher-directed classrooms using sequenced, structured materials" (p. 17). Instructional objectives are made clear to students and amount of time allocated for instruction is prescribed. Student performance is monitored and feedback to students is immediate and academically oriented.

Precision Teaching, founded by Ogden Lindsley, has proven that it can greatly strengthen any curriculum (Beck & Clement, 1991; Lindsley, 1991). When Precision Teaching is used with Direct Instruction, "a powerful combination" is achieved (Desjardins & Slocum, 1993).

One area that benefits from the combination of DI and PT is reading. Systematically establishing the basic components of reading and then bringing those skills to fluent levels creates a solid foundation for reading. If component skills are not fluent, moving on to tasks predicated on those skills makes learning more difficult for the learner which may ultimately lead to dysfluency in that subject (Snyder, 1992).

Arguably the most basic component of reading is decoding single letters. This first step is crucial in reading due to its central recurrence (Perfetti, 1986). A collateral basic skill is reading sight-words. The general notion is that if students can identify key sight-words in a sentence or passage, they will spend "less time and effort...directed to recognition activities" (Gunderson, 1984, p. 267).

Words lists have been a popular way to teach sight-words. Usage of sight-word lists precedes 20 B.C. and has changed in forms numerous times (Otto, 1975). A few of the many popular word lists are the Dolch list, the Great Atlantic and Pacific Sight-Word list, and the Thorndike Word list. However, none of these word lists is included in a curriculum that provides practice and application of the words in the list. One curriculum that does is Direct Instruction. This curriculum uses word list exercises to systematically introduce and teach sight-word reading (Carnine, Silbert, & Kameenui, 1990). The words in the list comprise extensions of the beginning sounds necessary for decoding.

Augmenting DI with PT allows the acceleration of learning through daily practice and frequent feedback to learners and teachers. The purpose of this study was to determine if the learning of Direct Instruction sight words could be accelerated by Precision Teaching techniques.

Method

Participants

The participants in this study were three students in the second grade. Each student was diagnosed at the beginning of the school year as Learning Disabled and attended a special education classroom part-time. The students were Michael, an African-American 8 year old male, Joseph a Caucasian 8 year old male, and Wendy an African-American 8 year old female. The participants were selected on the basis of projected benefit from the intervention. Before the study began, all three students expressed fear and dislike when told they would be timed on reading words.

Setting. The study took place in a midwestern, rural public school. The setting was in the special education classroom. Teaching sessions were held Monday through Friday at 12:45 to 1:15 p.m. when the students were present at school. The classroom door was kept closed during class times.

Students sat at a table during instruction. When the timed trials occurred, each participant sat alone with his/her teacher, the first author, while the other students moved to another table to practice with each other.

Measurement. Practice cards were printed on standard 3 by 5 note cards. The front side had first grade level sight words, and the back was left blank. Words used were taken from Direct Instruction Reading Mastery 1 lessons, (Engelmann & Bruner, 1995).

A digital stopwatch was used to conduct one-minute timings. The first author scored corrects and learning opportunities during the one-minute timings. Students recorded their data on a spreadsheet and then transcribed them to Standard Celeration Charts (Pennypacker, Koenig, & Lindsley, 1972).

Procedures

Entry Assessment. The Reading Mastery 1 placement test was administered at the beginning of the study to determine where in the program each student should begin. All three students placed at lesson #11 of Reading Mastery 1 (first grade level). It was decided at that time not to begin to use practice cards until approximately two weeks later. During those two weeks, students learned beginning sounds and Vowel-Consonant (CV) and Consonant-Vowel-Consonant (CVC) words in small group Direct Instruction. For the remainder of the study, daily Direct Instruction lessons were used to introduce new sounds and sight words.

Instruction The practice card timings occurred an average of three to five times per week before the daily DI reading lesson. Each student sat next to the instructor with the deck of practice cards in hand. The student was told to shuffle the cards before the timing began.

During the first phase for all three students, the deck consisted of 10 cards. Each individual student began the one-minute timing by first shuffling the practice cards. The student then was instructed when to begin by the signal, "Go". As the student orally responded, the teacher would tally corrects and incorrects by placing a hash mark into the appropriate column of a data sheet.

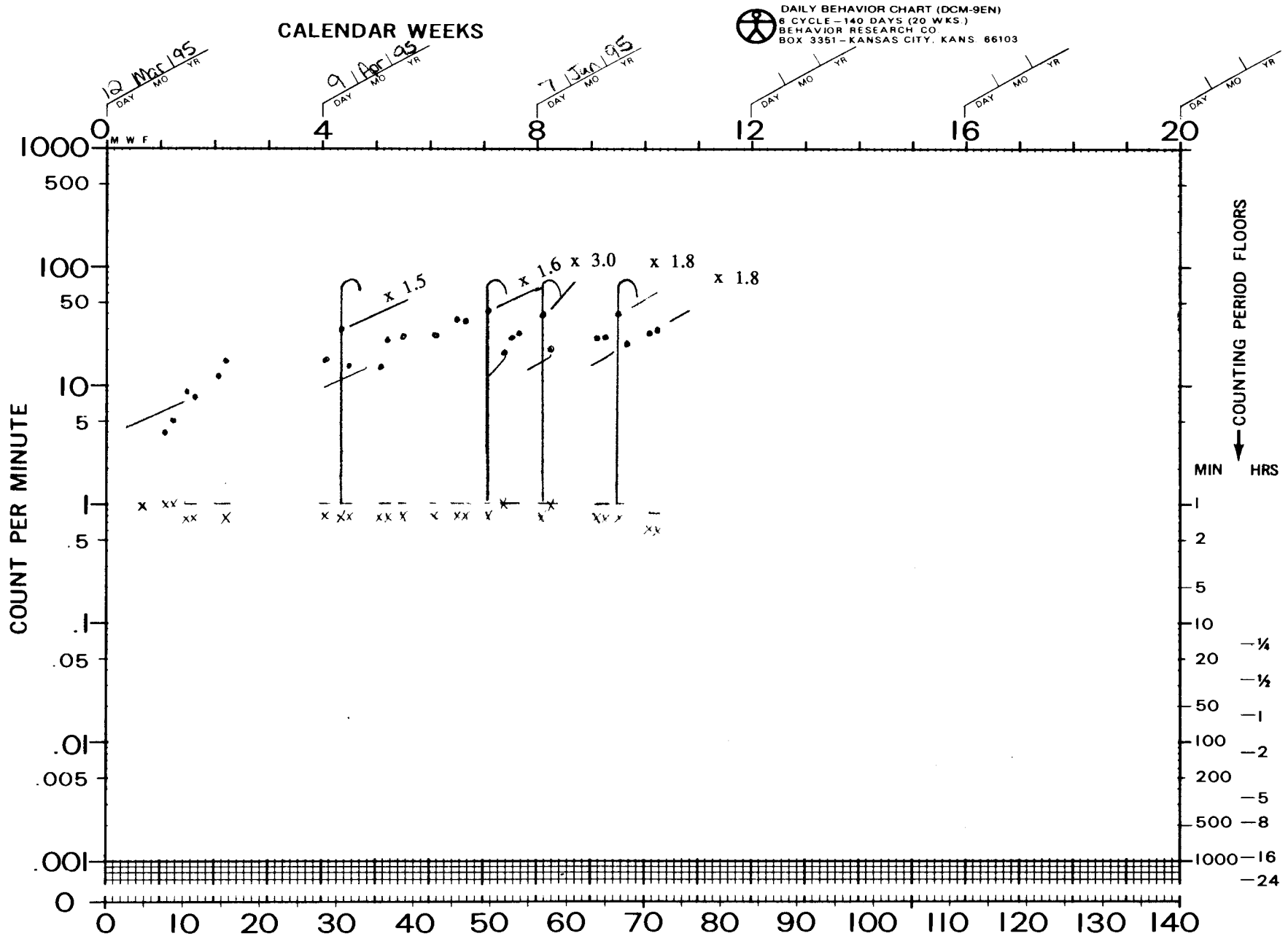
During this phase, a correct was determined by correctly saying the sight-word. An incorrect was making an incorrect pronunciation, or word, for the sight word. In all phases, skips were not counted as incorrect. The student would recycle through the deck if he/she went beyond the number of cards it contained.

Results

Charts 1, 2, and 3 show the count of correct responses and learning opportunities of sight-word practice cards for each student. These data present acceleration in all phases for the students.

Wendy

Chart 1 shows the results for Wendy. During the first phase, the deck consisted of 10 sight-word practice cards. Wendy's corrects accelerated x1.5. Total bounce for corrects was x2.6. She reached her aim of 20 corrects in three and a half weeks.



SUPERVISOR	ADVISER	MANAGER		BEHAVER	AGE	LABEL	COUNTED
		Michele		Wendy	8	2nd grade	Say words
DEPOSITOR	AGENCY		TIMER	COUNTER	CHARTER		
	McKinley Elementary		Michele	Michele	Wendy, Michele		

At the onset of all three subsequent phases, 10 new cards were added. In each of these phases her frequency aim was 40 words per minute. During the second phase Wendy took two and a half weeks to reach aim and her corrects accelerated by x1.6. The total bounce was x1.6. For the third phase, it took one week to reach her aim of 40 cards correct per minute. Corrects accelerated by x3.0 with a total bounce of x1.2. In the fourth phase, corrects multiplied by x1.8 during the one and a half weeks it took to reach aim. Total bounce was x1.0. For the final phase, before aim could be reached, school was out for summer vacation. Corrects were accelerating at x1.8, and total bounce was x1.0.

Michael

Chart 2 shows the results for Michael. During the first phase, Michael's deck consisted of the same 10 sight-word practice cards as the other students' decks. Aim for the first phase was set at 20 correct per minute which was reached in four and a half weeks. The corrects accelerated x1.7 during this period. The total bounce for the corrects was x3.3.

In the second phase, 10 new sight words were added to the deck and the aim was raised to 40 corrects. In the three and a half weeks of using sight-word practice cards, corrects accelerated by x1.2 with a total bounce of x1.8. Before aim was reached, school dismissed for summer vacation.

Joseph

Results for Joseph are displayed in Chart 3. In the first phase the practice card deck consisted of 10 cards. It took Joseph five and a half weeks to reach aim of 20 per minute. The overall celeration was x1.4, and the total bounce was x1.2. For the second phase Joseph was also out of school before aim could be reached. His corrects were accelerating at x1.1 with a bounce of x2.3.

Discussion

Young children are usually anxious to read; however, for some children who have been in an unproductive environment, reading becomes something to avoid. The children in our study not only wanted to avoid reading, they were initially convinced they would never read. When told they would be timed using practice cards, the children appeared very apprehensive, and one student began to cry.

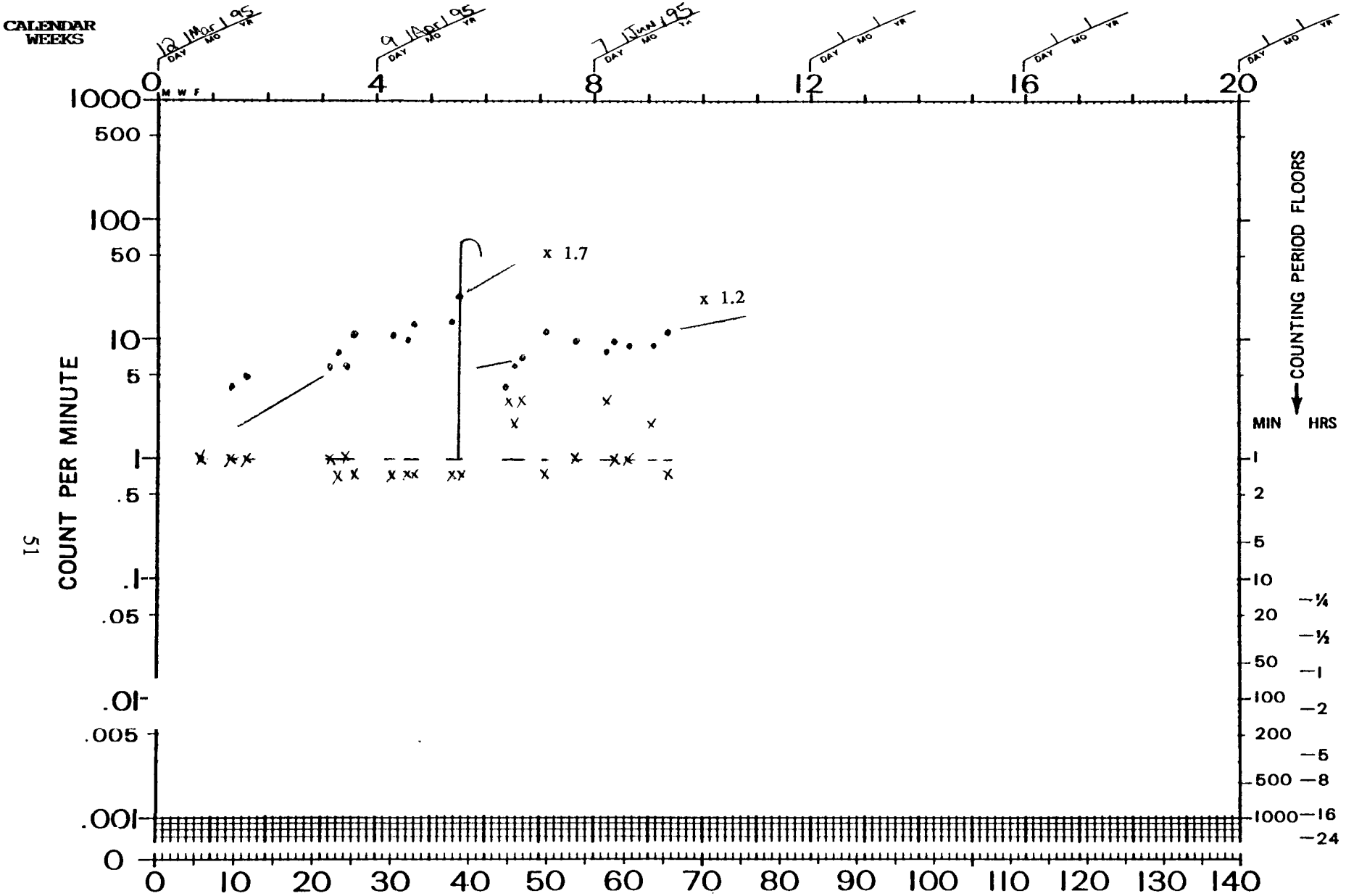
The children were introduced to the Chart and its uses. After one week of charting, the children not only wanted to practice more, they supported each other and acted like a team. The Chart was very motivational for the children. It was important for the students to see that they could learn, since they were halfway through 2nd grade and could not read any sight words prior to the intervention.

In this study we have coined the term practice cards, as opposed to word cards, for several reasons. First, word cards are typically used in a drill and practice format. The problems with the drill and practice format are "the learner does not have a specific GOAL and that it tends to be prescribed in intervals that are too long" (Binder, 1990). Second, we wanted to differentiate practice cards from SAFMEDS, even though they are similar. Practice cards are used like SAFMEDS (Potts, Eshleman & Cooper, 1993). They are "Say All Fast Every Day Shuffle", but differ in that the item on the front does not correspond with information on the back.

Using practice cards as opposed to word lists has various advantages. For instance, a word list can produce a serial position effect. Serial position is "an ordinal location an item occupies in a sequence" (Saufley, 1975, p. 418). In turn, this position can provide a cue to the particular list item. Shuffling practice cards controls for serial position.

A final advantage of practice cards is they require complete student attention and Active Student Response (ASR). ASR is defined as "...an observable student response made to an instructional antecedent" (Barbetta, Heron, & Heward, 1993, p. 111). With practice cards the instructional antecedents are the sight words and the students' responses are the correct pronunciation.

Direct Instruction sight-words formatted into practice cards created a potent mechanism to teach a basic reading skill. The DI reading program ensured the sight-words used would be encountered in other exercises, thereby giving context to the words. In the practice card exercises,



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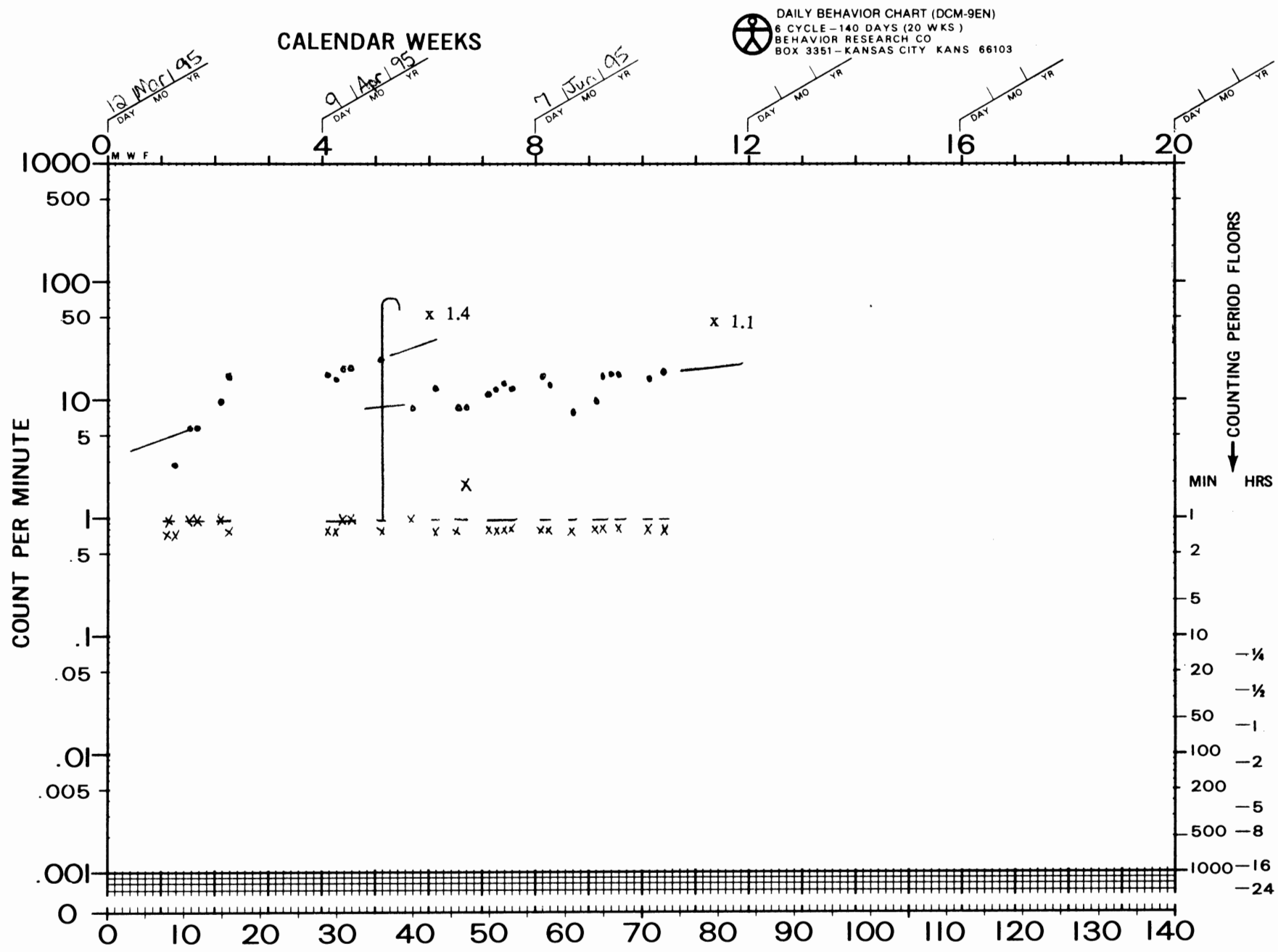
SUPERVISOR	ADVISER	MANAGER			HAVER	AGE	LABEL	COUNTED
		Michele			Michael,	8	2nd grade	Say words
DEPOSITOR	AGENCY		TIMER	COUNTER	CHARTER			
	McKinley Elementary		Michele	Michele	Michael Michele			



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SUPERVISOR	ADVISER	MANAGER		BEHAVER	AGE	LABEL	COUNTED
		Michele		Joseph	8	2nd grade	Say words
DEPOSITOR	AGENCY	TIMER	COUNTER	CHARTER			
	McKinley Elementary	Michele	Michele	Joseph, Michele			

students learned the words quickly and soundly. By the end of the intervention, all students had the beginnings of a firm foundation for further reading instruction and eagerly anticipated the next school year.

Limitations. This study had several limitations. First, the beginning practice card deck contained only 10 cards which allowed students to recycle through the deck. This could have produced a serial position effect. However, shuffling the practice deck before each session minimized the serial position effect.

Students skipped the cards that were difficult and responded to the ones they knew. They should have been encouraged to have learning opportunities. Attempting to respond to skipped words may have increased the probability of an eventual correct response. Further, if skips were counted, a learning pattern could have been attained. But at the request of the children, skips were omitted.

Finally, aims should have been set at a higher frequency. They were set at a low rate as the students were apprehensive about using practice cards and the Standard Celeration Chart. Students could have been encouraged by their own progress which may have mitigated their anxiety.

Future Research. In subsequent research, the use of practice cards can be applied to different topic areas. For instance, practice cards may be used with the instruction of decoding basic sounds Further generalization measures could include using practice cards with regular education students, emotionally impaired students, people with mental retardation, and students of varying ages. Research might also investigate the degree to which practice cards could improve the acquisition of composite reading skills subsequent to learning a component skill with practice cards.

Summary

This study presented the effects of Precision Teaching techniques, practice cards, used with a Direct Instruction reading curriculum. These methods were combined to improve sight-word reading with three students with Learning Disabilities. For each of the three students, learning in each phase showed acceleration in sight-word reading. Our results demonstrated that in a short amount of time our intervention could rapidly increase basic reading skills.

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