

written an essay exam in pathophysiology performed 1.4x better than the traditionally taught students whose performance was always measured in this manner.

Discussion

Precision teaching has been shown to enhance the short term retention of college students (Spangler & Hawkins, 1975). Also, frequency testing of key concepts in a discipline until proficiency is reached has been found to generalize to applications of these concepts in the less structured situation of essay exams (McDade, Rubenstein, & Olander, 1982; Olander, et al., 1981b). The data generated in the present study support the conclusion that precision teaching enhanced generalization of this type as well as long term (eight month) retention.

References

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Spangler, R. S., & Hankins, N. E. (1975). Comparison of two evaluative procedures on retention by college students. **Psychology Reports**, 36, 613-614.

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Abstracts

The following are abstracts of recently published articles or completed research. Figure 2 from the first article is included to demonstrate how the data was displayed in standard format for a traditional journal.

Merbitz, C. T., King, R. B., Bleiberg, J., & Grip, J. C. (1985). Wheelchair push-ups: Measuring pressure relief frequency. **Archives of Physical Medicine and Rehabilitation**, 66, 433-439.

Abstract: Ischial pressure sores (PS) are a long-recognized complication of wheelchair confinement, yet teaching spinal-cord patients to establish lift-off behavior habitually and permanently remains a challenge. A new device was developed to record automatically and continuously the wheelchair lift-off behavior of spinal-cord injured patients. Data from seven patients who used the device for between 768 and 1800 hours each are reported. The device was used to monitor longitudinally the behavioral compliance of each individual with prescribed lift-off intervals using standard teaching procedures. Wide variability between patients and within patients over time was found. Experimental interventions including the use of an electronic timer and written and oral feedback of the previous day's data also varied in their effectiveness. Data from one patient who developed a pressure sore while being monitored suggest that there is no simple relationship between lift-off intervals and PS formation.

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Ferrucci, B. J. (1985). **The relationship of precision teaching to the speed, computational skill development, and concept development of working with rational numbers.** Unpublished manuscript, Mendon-Upton School District, Mendon, MA.

Abstract: This study investigated the relationship of precision teaching as an evaluative procedure to the achievement of rational numbers in a grade five regular education mathematics class. The areas of speed, computational skill development, and concept development of working with rational numbers were studied.

Worksheets, known as rated assessment sheets, which focus on direct and daily measurements were designed for this study and were used in conjunction with other precision teaching tools, such as IS plans, Standard Celeration Charts, and data decisions and instructional changes.

A non-equivalent control group design was used. Student performance was measured with three different tests. The computational skill test was used as a pre-treatment and post-treatment achievement test and consisted of twenty-five multiple choice questions. Speed in working with rational numbers was evaluated by a timed-test of twenty-five computational problems. The area of concept development was a testing process which consisted of two parts. The first part was to identify instances of a rational number as belonging or not belonging to a set of rational numbers. The second part was giving the name of the concept.

The sample consisted of grade five students from two different school districts with similar socioeconomic backgrounds. One entire school district was selected as the experimental group with five classes. Another district was chosen as the control group with seven classes.

All 310 students were administered the pretest, posttest, and speed test. Twenty percent of the subjects from each district were selected to participate in the concept test.

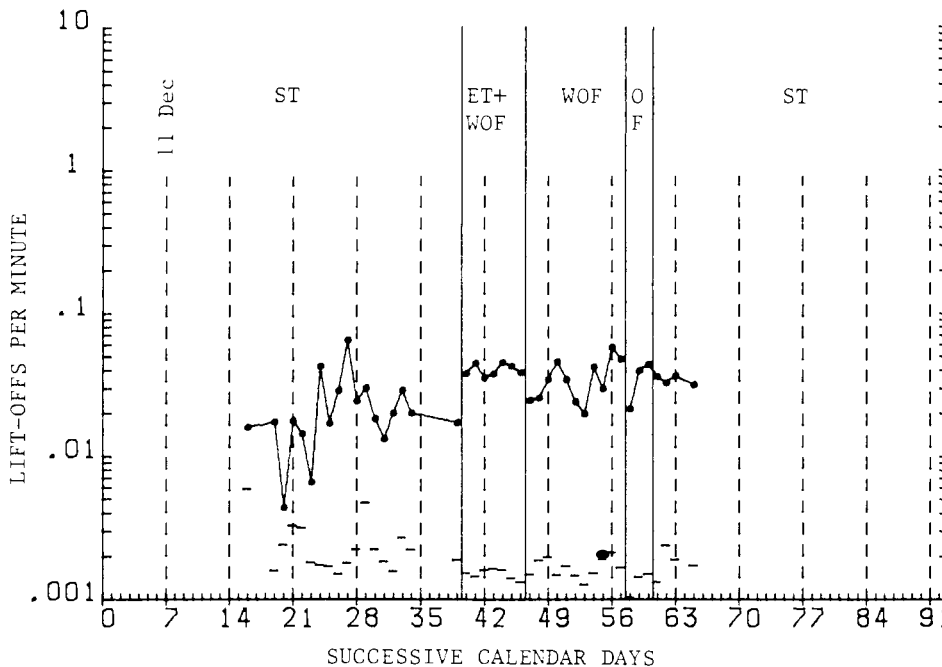


Fig 2—Lift-off frequencies, patient A. Dots are daily lift-off frequencies. Dashes are reciprocal of total minutes spent in the wheelchair. Numbered, vertical dashed lines are Sundays. Day 0 is the Sunday before hospital admission. Intervention codes as in fig 1. Temporarily discharged on days 17-18 and 35-38. No data collected on day 64.

Prior to the study, the teachers involved with the experimental group attended three workshop sessions which introduced the philosophy and components of precision teaching. The participants had no previous knowledge or experience with precision teaching techniques.

The statistical analyses focused on a multiple analysis of variance test (MANOVA) with nested designs and a Scheffe test of multiple comparisons. Analyses of the data revealed that the experimental and control groups differed significantly at the .05 level of significance in their mean scores on the tests of speed, computational skill development, and concept development in favor of the experimental group. The Scheffe test showed that some of the lower achieving classes of the control group differed significantly from some of the higher achieving classes of the experimental group.

In summary, this research shows that a group using precision teaching techniques achieved better than a comparable control group. A group that used brief systematic practice during the unit of rational numbers had higher performance on all three researcher-constructed evaluations. Moreover, when such intensive practice was accompanied with classroom activities and explanations, greater scores on speed, computational skill development, and concept development of rational numbers was found.

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stories, nice art work, accurate math, and a few papers that just showed completion. In one sense or another each displayed a "well done performance".

One of my submissions was the learning record of a 6 year old first grade girl before and after help by her 12 year old brother. The learning chart and its story were each mounted on light blue construction paper to highlight the chart lines (first grade teachers quickly learn about such detail), and a large gold star was placed on the presentation. The principal wrote praise to both children and signed her name. After a weeks' display, the chart, story, star, and praise were sent home for the parent to see. The story and the chart are displayed in Chart 1; the children's names were changed, though they really deserve full recognition.

Most schools do an adequate job publishing pupil performances in some manner. Reminders and new ideas are usually welcome. Publishing pupil performances on the Principal's Pride Wall is a grand idea. Since performance and learning are different school products, precision learning/precision teaching teachers need two walls--The Principal's Pride Performance Wall for rewarding pupil frequency and The Principal's Pride Learning Wall for rewarding pupil learning.

Reference

LaFray, Barbara. (1984). **Principal's pride wall.** Panther Lake Elementary School, Federal Way, WA.

Malcolm Neely is a teacher at Panther Lake Elementary School and resides at 29811 6th Ave. South, Federal Way, WA, 98003.

Chart-sharing

PRINCIPAL PRIDE WALLS

Malcolm D. Neely
Federal Way School District

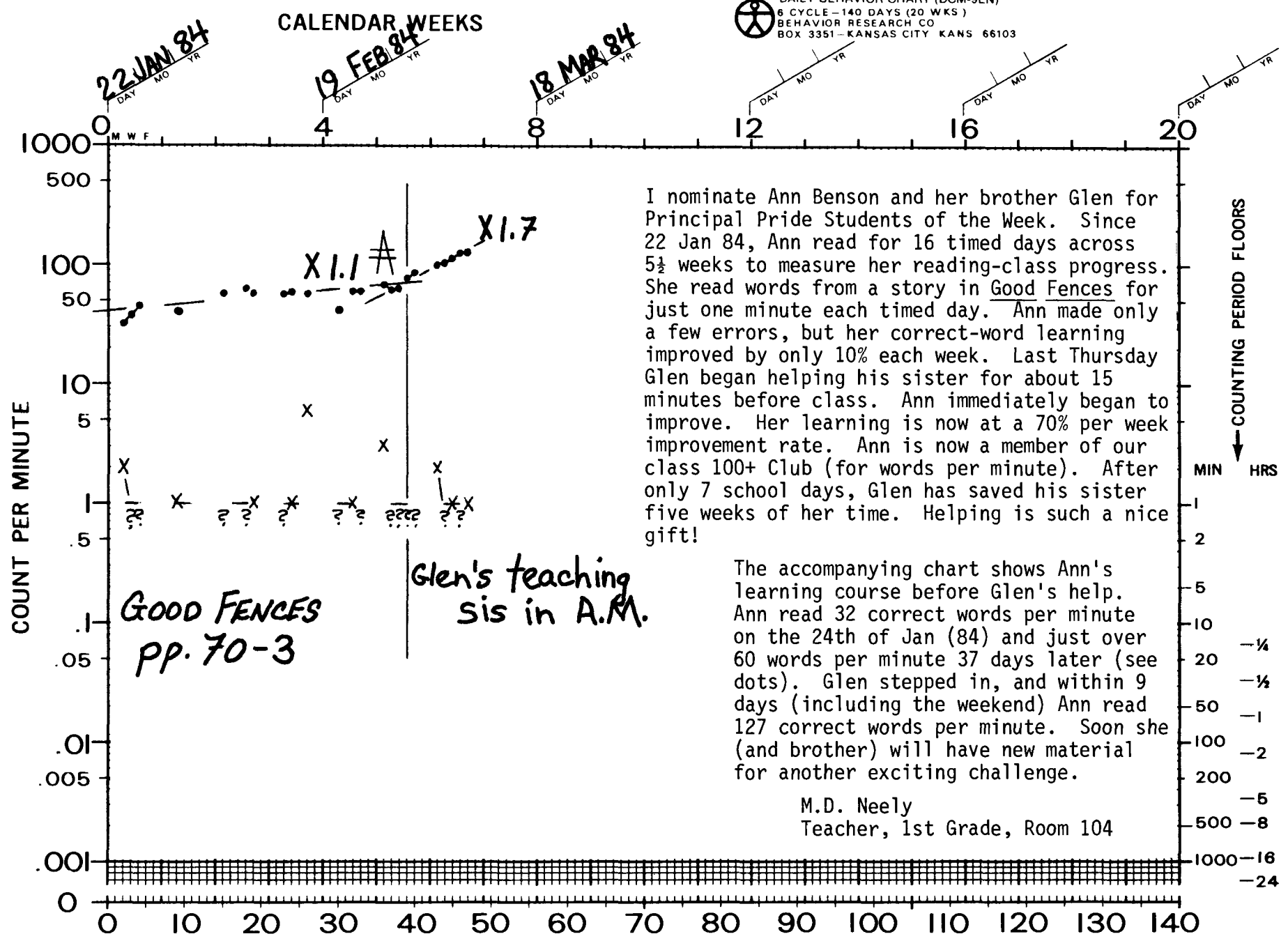
In the spring of 1984 our building principal, Barbara LaFray, requested samples of pupil work that we teachers thought deserved recognition on her new Principal's Pride Wall (LaFray, 1984). From each classroom came good penmanship, clever poems, impressive

CLEARING THE SMOKE

John R. Caimi
Southeast Missouri State University

In order to gain experience collecting and plotting data on a Standard Celeration Chart, our class (taught by Dr. Larry Lowrance) was given the assignment to select a few behaviors (our own or those of others) which we would be able to keep track of and possibly affect. I chose to try a structured reduction of the number of cigarettes I smoked each day. In the past, I had found that I could easily quit cold turkey for a day or two, but would soon revert to my original level of consumption.

DAILY BEHAVIOR CHART (DCM-9EN)
 6 CYCLE-140 DAYS (20 WKS)
 BEHAVIOR RESEARCH CO
 BOX 3351-KANSAS CITY KANS 66103



I nominate Ann Benson and her brother Glen for Principal Pride Students of the Week. Since 22 Jan 84, Ann read for 16 timed days across 5½ weeks to measure her reading-class progress. She read words from a story in Good Fences for just one minute each timed day. Ann made only a few errors, but her correct-word learning improved by only 10% each week. Last Thursday Glen began helping his sister for about 15 minutes before class. Ann immediately began to improve. Her learning is now at a 70% per week improvement rate. Ann is now a member of our class 100+ Club (for words per minute). After only 7 school days, Glen has saved his sister five weeks of her time. Helping is such a nice gift!

The accompanying chart shows Ann's learning course before Glen's help. Ann read 32 correct words per minute on the 24th of Jan (84) and just over 60 words per minute 37 days later (see dots). Glen stepped in, and within 9 days (including the weekend) Ann read 127 correct words per minute. Soon she (and brother) will have new material for another exciting challenge.

M.D. Neely
 Teacher, 1st Grade, Room 104

M. Neely		SUCCESSIVE CALENDAR DAYS		Ann	6½	see-say words
SUPERVISOR	ADVISER	MANAGER		BEHAVER	AGE	COUNTED
Panther Lake Elementary	Federal Way Public Schools	Federal Way, WA		Room Moms		
AGENCY				CHARTER		