Two 8-year-old boys, who read 1.7 and 1.5 years below grade level respectively, participated in a program to accelerate their learning rates. Ss' reading levels were incorporated into a 6-year minimum objectives graphing system, and their progress was recorded every 18 days. The program involved daily work from the Ginn 100 Readers, with evaluation based on oral reading and comprehension of stories. One boy also received daily practice with word lists from the stories printed on flashcards. At the end of 108 days reading learning rates had accelerated to the point that achievement at grade level was predicted for both boys condensing 3 years of work into 1 year and 3 months for one boy and 2 years and 4 months of work into 9 months for the second boy. (LS)
Two Case Studies

Presented to the Fifth Behavioral Convention

and

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THE ACCELERATION OF LEARNING RATE
IMPLEMENTED IN A MULTILEVEL CLASSROOM
by
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Introduction
Organization and systematizing of antecedent stimuli is of prime importance in the implementation of an academic program. Burdett and Fox (1972) demonstrated the effective use of such a systematic program in teaching children to read, using a flash-card presentation to master words in isolation before attempting to read from a book. The effectiveness of teacher attention was established as a control over study behavior (Hall, Lund and Jackson 1963). This service uses components of the Burdett and Fox reading procedures and contingent teacher praise to accelerate the learning of two third grade boys.

Method

Subject and Setting
Bob and John were 8 year old boys in a primary classroom in a rural Vermont school. Their classmates ranged in age from 6 to 8 years of age. A free but quiet environment characterized this room where children worked on a wide range of assignments. The teacher was relaxed and showed much interest in each child. She chatted informally about the stories the children read. They seemed to enjoy reading even simple stories. They also worked carefully and independently on teacher selected materials.
Both boys were referred for deficits in reading. They had been reading from Ginn 100 Materials and their teacher was not satisfied with their performance. She expressed an interest in having them continue in the Ginn Readers.

**Instructional Objectives**

Instructional objectives were set for each boy. Bob's objective for the year was: Given any selected story from the Ginn 100 Readers through *Finding New Neighbors*, Bob will read orally with 95% to 100% accuracy and answer 5 comprehension questions based on that story with 80% to 100% accuracy.

An enabling objective was as follows: Given a pack of ten unknown words from the stories, printed on flashcards and presented one by one three times through the pack, Bob will respond correctly 3 times consecutively.

The terminal objective for John this year was as follows: Given any story from the Ginn 100 Basic Readers, through *Friends Far and Near*, the child will read orally with 95% to 100% accuracy and answer comprehension questions based on the story with 80% to 100% accuracy.

**Measurement and Reliability Procedures**

Bob's entry level was placed at the 1.4 reading level. John's entry was 1.6 reading level. This placed them 1.7 and 1.8 below grade level respectively. Their reading levels were incorporated into a six year minimum objectives graphing system. Under this system the child's expected grade level was plotted on the horizontal axis and the reading grade level equivalents on the vertical axis. Each school year was broken down into ten equal (18 day)
segments. Each year's reading materials were similarly divided, designating what stories should have been completed at the end of each 18 day period. A diagonal line (minimum rate line) was drawn on the graph signifying the slowest rate at which a child could achieve work and yet complete his assigned work in six years. The entry level is the first point on such a graph, this level represents the most advanced reading level at which a child was able to read on or above criteria.

Both boys' entry level was below the diagonal. Unless their learning rate changed they would not complete their assigned work in six years. A dotted line was drawn connecting the entry level point with the imaginary point at the intersection of 3.0 expected grade level (or end of the current year) and the reading level designated for each boy in the terminal objective.

Daily measures were taken of oral reading and comprehension accuracy; in addition, measures were taken of Bob's word recognition.

Bob was given an opportunity to read each word from a word list; a plus (+) was placed beside each known word, a zero (0) was marked beside each unknown word.

The flashcard procedure was used as described under procedures. A plus (+) was recorded on a data sheet for correct responses. A zero (0) was recorded for every incorrect response. When three plus scores appeared consecutively in a given session the word was considered 'learned'; a date that occurred was placed beside such words.

As each child read orally, the tutor recorded a tally for each word read incorrectly. Oral reading accuracy was calculated
by dividing the number of words read correctly by the total number of words in the story, and then multiplying by 100.

As each child answered the questions a plus was recorded beside the question for a correct response, a zero for an incorrect response. The percent correct was computed by dividing the number of correct answers by five and multiplying by 100.

All information from the packets was transferred to a tab sheet (fig. 1) ready to be plotted on a cumulative graph (fig. 2) for word acquisition and percentage graphs for oral reading and comprehension accuracy. (fig. 3)

A point was placed on the six year graph (fig. 4) every 18 days. Each of these points represents the highest reading level each boy had achieved, meeting criteria in oral reading and comprehension.

A second observer visited occasionally to evaluate procedures and to take simultaneous independent measures. Percentage of agreement was calculated by dividing the agreements by the agreements plus disagreements and multiplying by 100.

**Procedures and Materials**

The Ginn 100 Series Program Packets developed by Burdett, Fox (1972) were used to accompany appropriate books. These packets list all new words in each book. Five questions (with answers) were printed for each story. The word lists were keyed to show what words needed to be learned before a story could be read.

Bob was given an opportunity to read each word from the word list. From that list 10 unknown words were selected in order
and printed on 3 x 5 index cards.

Each day 10 such cards were presented to Bob, one by one placing each card at the back of the pack until each card had been presented three times. Each time a card was presented the child was asked to say the word. If he was correct he was praised. If he was incorrect the teacher said the word correctly and Bob repeated after her. Learned words were removed from the pack. The next unknown word or words were prepared and added to the pack for the next session.

When all words for a story had been learned, that story was read orally with the teacher.

After the story was read, the questions were asked and the child answered. The teacher then gave the corrected answer for any missed questions.

If the words needed for the next story had not been learned, a review story was read.

John did the oral reading and comprehension procedures only. When oral reading accuracy remained at or above 97% and comprehension accuracy remained at or above 80% every second story was omitted.

**Results**

Both boys established a rate of learning which would enable them to complete the objective for that year, as seen by the placement of the 18 day points in relation to the dotted line (accelerated rate line).

A slight decline in rate occurred in January but not sufficiently low to prevent completion of the year's objective. If the
present rate continues Bob will reach grade level by December of next year, a total of 3 years of work in one year three months time period.

If John maintains his present reading rate he will reach his grade level in June for a total of 2 years and 4 months of work completed in a nine month period.

Discussion

No data is available to support the assumption but it appears that the social exchange experienced between these boys and their teacher served as a powerful reinforcer. This coupled with the organization of the materials seemed to provide the totally effective reading program needed by these boys. The teacher attributes her success to the materials and to her daily commitment of time.

The decline in rate during January could be the function of greater demands on the teacher's time when the student teacher left the setting. To the author this study demonstrates once again the real importance of the classroom teacher's part in providing special education to the states children. If each teacher, each year, could provide this service to even one child the total impact on education would be striking. In addition, the financial saving both locally and at the state level would be considerable.
Bibliography

Burdett, Carol; and Fox, Wayne; *Measurement and Evaluation of Reading Behaviors, Word Recognition, Reading and Comprehension*, Special Education Area, College of Education and Social Services, University of Vermont, 1973.

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BOB'S PROGRESS TOWARD EXPECTED GRADE LEVEL IN READING

![Graph showing Bob's progress towards expected grade levels in reading. The graph includes a line representing the minimum rate of progress.](image-url)
JOHN'S PROGRESS TOWARD EXPECTED GRADE LEVEL IN READING

READING LEVELS

EXPECTED GRADE LEVEL

MINIMUM RATE