

## Adult literacy and Precision Teaching: Repeated Readings and See/Cover/Write Practice to Improve Reading and Spelling<sup>1</sup>

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Roger, a 43 year old adult male with severe reading and spelling deficits was tutored in The Ohio State University PsychoEducational Clinic during the 1990 - 1991 academic year. Precision Teaching, repeated readings, and see-cover-write spelling practice were used for instruction in reading and spelling. Roger's data convincingly demonstrated the effectiveness and efficiency of these procedures for improving his literacy skills.

Literacy is one of the most important skills for successful functioning in our society. McCormick (1987) said: "Reading provides access to employment, increases educational opportunities, promotes social adjustment, offers entertainment, and serves as a source of life-long learning" (p. 3). The importance of reading permeates every level of our society. For instance, a student must read to be successful in school. A teenager must read to take a driver's license examination. An adult must read to complete an employment application. Unfortunately, a large portion of the adult population does not have sufficient reading skills even after years of schooling. Conservative estimates of illiterate and functionally illiterate persons range from 18 million to 31 million (Johnson & Layng, 1992). Although an exact number of reading disabled persons is difficult to establish, it is obvious that efforts to improve adult literacy are needed.

Adult illiteracy is a major social problem for the United States. A technological society depends upon a literate populace to keep the wheels of commerce turning. Adult illiteracy is a major threat to the economic well being of the nation. If the United States is to be economically competitive with other industrialized nations, the society must make the necessary investment in "human capital" by developing programs to prevent and remediate illiteracy (Braden, 1984).

Pennypacker (1986) described urban violence, economic decay, and adult illiteracy as intense national concerns that have been highly resistant to traditional social science solutions in the past. The obvious solution to these societal crises is effective

education. This is especially evident in solving the pressing problems of adult illiteracy.

Precision Teaching and Direct Instruction provide measurably superior reading instruction for a broad spectrum of students (e.g., Binder & Watkins, 1990; Brosovich-McGurr, 1991; Carroll, McCormick, & Cooper, 1991; Georgeff, 1991; Lee, 1990). These procedures are equally effective with adults. For instance, Kent Johnson and Joe Layng (1992) from Morningside Academy in Seattle and Malcolm X College in Chicago demonstrated significant improvement in literacy of unemployed, homeless, Afro-American adults as a result of providing instruction with a combination of Precision Teaching and Direct Instruction.

Reading fluently should be an outcome of reading instruction (Downs & Morin, 1990; Henk, Helfeldt, Platt, 1986; Howell & Lorson-Howell, 1990; Ivarie, 1986; Miccinati, 1985; Sindelar, 1987). The repeated readings technique (Samuels, 1979) with Precision Teaching is effective instruction for developing oral reading fluency of school children (Brosovich-McGurr, 1991; Carroll, McCormick, & Cooper, 1991; Georgeff, 1991; Lee, 1990; Wolking, Harris, Ferro, & Scott, 1990). Precision Teaching with repeated readings should be effective also for adults with severe reading deficits.

Improving just reading for adult literacy is not sufficient. Literacy instruction also should include communication and language arts skills such as spelling and written expression. Spelling is an integral component to literacy training. Although

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spelling receives less attention today than it has in the past, it remains an essential part of the curriculum in most elementary classrooms (Heron, Okyere, & Miller, 1991). One successful remedial approach to improve spelling uses a copy-cover-compare procedure (Graham & Miller, 1979). With this procedure, the student sees the word to spell, writes the word twice while looking at it (copy), covers the word and writes it again (cover). Finally, the student compares the words written in the see condition with the words written in the cover condition. This procedure emphasizes repeated practice and self-correction.

The copy-cover-compare procedure was adapted to a see-cover-write procedure to investigate the effects of self-correction on the acquisition, maintenance, and generalization of spelling words with elementary school children (Okoyere, 1990). This see-cover-write approach was effective in improving the spelling skills of elementary students experiencing spelling difficulty (Okoyere, 1990; Okoyere & Heron, 1991). See-cover-write is highly individualized and can easily be used with adult learners.

The purpose of this article is to demonstrate the effectiveness of Precision Teaching, repeated readings, and see-cover-write spelling practice for improving the reading and spelling fluency of an adult learner with a severe reading disability.

## **Method**

### *Participant and Setting*

Roger is a 43 year old white male who grew up in a coal mining region of the Mid-west. He had difficulty with academics in public school. Roger has a severe speech impediment that was diagnosed as "lazy tongue" in his early teens. He received speech therapy during junior high school. Roger attributes his reading difficulties to speech problems. This was especially apparent when he used phonics and syllabication to sound out words. Roger dropped out of school in the 10th grade.

Roger worked for 15 years as a butcher at a supermarket in Columbus, Ohio. He developed several adaptive strategies to compensate for his reading deficit. For example, customers spelled the cut of meat for their order. Roger matched what they spelled to the U.S.D.A. markings. He asked for landmarks (e.g., next to the McDonald's) rather than street signs as directions for different city locations. His adaptive strategies were successful. Roger is successfully employed

and raised a family. In the early 1980's after observing the help his daughter received in reading and math from the public schools, he tried schooling once again. Roger passed an oral examination through the Columbus Public Schools to receive his Graduate Equivalency Degree (G.E.D.) in 1985.

Starting in the fall of 1990 and continuing for the remainder of the academic year, Roger was tutored in reading and spelling on a biweekly basis. His literacy goals were to read at the 12th grade level, and to spell at the 5th or 6th grade level. A short term goal was to finish a novel during each quarter of the academic year.

### *Movement Cycle/Measurement Procedure*

The movement cycle for oral reading was number of words orally read correctly and incorrectly during a one minute timing. The learning channels for oral reading were see/say. The correct/incorrect pair were the number of words read correctly or incorrectly during a one minute counting period. Incorrect words were marked on a clear piece of transparency film with an erasable overhead marker. These errors included omissions, insertions, substitution (reversals), tutor prompts, repetitions, or skips. Beginning, ending marks, and self-corrections were also marked but were not recorded as incorrects.

The movement cycle for oral spelling was the number of letters orally said and written during a one minute counting period. The number of letters in correct sequence within each word and for stopping at the right letter were counted correct. The learning channels for the oral and written spelling were see/cover/say/write.

## **General Procedures**

The first three authors were tutors in The Ohio State University PsychoEducational Clinic during the 1990 - 1991 academic year. This clinic experience focused on the design and implementation of remedial academic instruction. The emphasis of this clinic was Precision Teaching. Bill Sweeney taught Roger during Autumn Quarter 1990, Chris Omness during Winter Quarter 1991, and Kristin Janusz during Spring Quarter 1991. Each tutor met with Roger twice weekly for an average of 16 sessions per quarter.

A pre-assessment phase was conducted by the first author to determine Roger's reading grade level (Fry, 1968). Also, Bill Sweeney taught Roger to

self-count and self-chart his performance. Roger counted and charted through out the academic year. The three tutors ensured accurate charting by checking the counts and Roger's charting after each counting period. Chart feedback, instructional aims, repeated readings, and see/cover/write spelling procedure were used to improve Roger's reading and spelling fluency.

*Reading Pre-assessment*

Three reading levels were chosen from the "Reading for Concepts" series (Liddle, 1977). The frequency of words read was counted during one minute timings on Levels C, E, and F. Levels C, E, and F had grade level reading equivalence of 3.2, 4.6, and 5.2 respectively. Total number of words read, and words read correctly and incorrectly were recorded. A summary of Roger's results appears in Table 1:

**Table 1**

<b>Reading Pre-Assessment Summary From <u>Reading for Concepts</u></b>			
<b>Instr. Levels</b>	<b>Total</b>	<b><u>Words Read Per Minute</u></b>	
		<b>Correct</b>	<b>Incorrect</b>
<b>C</b>	<b>94</b>	<b>64</b>	<b>30</b>
<b>E</b>	<b>74</b>	<b>60</b>	<b>14</b>
<b>F</b>	<b>84</b>	<b>73</b>	<b>11</b>

During pre-assessment, Roger's data show his correct responses multiplying and his learning opportunities dividing as he adapted to the one minute counting periods. Most learning opportunities were substitutions and omissions rather than reversals or decoding problems. Bill Sweeney selected Level F - "Reading For Concepts" for beginning instruction. Level F is the most difficult and challenging of the three assessment passages. An aim between 180 and 200 words read orally per minute was chosen.

*Spelling Pre-assessment*

The initial assessment on spelling was a simple oral spelling test over several spelling lists. Levels

A through D from the Houghton-Mifflin Word Recognition Tests were assessed. The Houghton-Mifflin basal reading program contained 20 vocabulary words per instructional level. The spelling lists from levels A through D corresponded to the sight-word vocabulary in the kindergarten through third grade basal reader. Levels A through D were chosen for the pre-assessment because Roger said he was a very poor speller. Results from the spelling assessments are represented in Table 2:

**Table 2**

<b>Spelling Preassessment Summary From <u>Houghton-Mifflin Word Recognition Tests</u><sup>a</sup></b>			
<b>Instructional Levels</b>		<b>Number of Letters Correct in Sequence</b>	<b>% Words Spelled Correctly</b>
<b>A</b>	<b>Pre-Primer</b>	<b>66 out of 69</b>	<b>90%</b>
<b>B</b>	<b>Primer</b>	<b>69 out of 72</b>	<b>95%</b>
<b>C</b>	<b>Grade 2</b>	<b>48 out of 76</b>	<b>55%</b>
<b>D</b>	<b>Grade 3</b>	<b>62 out of 79</b>	<b>60%</b>

a. All spelling lists contained 20 words.

These pre-assessment scores placed Roger's spelling vocabulary at a grade level equivalent between 2.0 and 3.0. Because levels C and D were both under 85% accuracy, Bill Sweeney believed these levels would be challenging enough to allow for significant learning. The second and third tutors used similar word lists (Dolch, 1960) at corresponding grade levels. The initial aim for the first spelling list was set at 90 correct written letters per minute. This aim was increased to 120 correct letters written per minute on subsequent spelling lists. The initial aim for the first spelling list was determined by using the median score from three one minute time trials where Roger copied words (See/Write) from a paragraph in a local newspaper. The aim was adjusted higher on subsequent spelling lists after Roger became more familiar with the instructional procedures.

### *Instruction*

The instructional procedure remained the same for the duration of the tutoring program. The first 5 to 10 minutes of each session were used to build rapport, review progress on goals, and review assessment data.

The next 10 minutes were used for the counting periods and evaluating the data from the reading and spelling assessments. The next 20 minutes focused on spelling. We used 2 sets of flashcards. Each set containing 20 cards was repeated 3 times each session to build sight-word recognition skills. The tutor showed a sight-word to Roger. He then pronounced the sight-word. If Roger did not correctly pronounce the word in 3 seconds (i.e., one one-hundred, two two-hundred, three three-hundred), the tutor helped him to phonically sound the word. After the correct pronunciation, the flash card was returned to the stack and the next word presented. This procedure continued until Roger completed the 2 sets of 20 flash cards 3 times. These flash card sets were two grade levels above what was assessed during the counting periods because the sight-word and listening vocabulary of most students tend to be more developed than their reading or spelling (McCormick, 1987).

Spelling instruction used an individualized self-correction see/cover/say/write/check/cover/write technique. A sheet was folded into three sections. The words were correctly written on the far left side of the paper. After viewing a particular word, Roger folded the paper to cover the correctly written words. He said the word, and then wrote the word correctly in the first writing space on the second third of the paper. Next, he checked the word by writing portions of the word spelled correctly and circling a space where errors were made until the word was correctly written. After the spelling check, Roger folded the second half, revealing only the last third of the page. On the last third of the page, he again attempted to correctly spell the word. The first and second tutors used the Houghton-Mifflin Word Recognition Tests, while the third tutor used similar words from the Dolch (1960) word lists.

The next fifteen minutes were used for reading instruction. The tutor orally read a given passage. Roger then orally read the passage. If 4 to 6 response prompts were needed or 3 to 5 errors were made, the tutor re-read that same passage. If Roger read the passage with under three errors, the tutor read the next passage. Roger orally read the

same passages as the tutor.

The last 5 to 10 minutes were for oral reading in novels, such as *The Outsiders* (Hinton, 1967), *Where the Red Fern Grows* (Wilson, 1961), and *Rumble Fish* (Hinton, 1975). These novels were selected for practice and pleasure reading. Standard Celeration Chart feedback was given. Roger was encouraged at the end of the session to continue reading at home. Praise was given throughout the session, contingent on the continued effort and performance.

## **Results**

### *Oral Reading*

Table 3 presents summary data from Roger's oral reading with repeated readings. Roger met or exceeded the oral reading fluency aim of 180 to 200 words per minute on 6 separate reading passages. The number of sessions to aim became progressively less as new passages were assigned. It took Roger 13 sessions to meet aim with Bill Sweeney, 9 sessions each for two separate passages with Chris Omness, and a median of 5 sessions to meet aim on three separate passages with Kristin Janusz. Charts 1 through 3 show a "jaws" learning picture with the celeration of corrects ranging from  $x$  1.25 to  $x$  1.60 across all six reading passages. The range of learning opportunities decelerated from a  $x$  1.1 to a  $/$  4.0. The median performance change for the six passages was a  $x$  2.25 improvement in oral reading.

### *See/Cover/Write Spelling*

The data regarding Roger's performance with the see/cover/write spelling practice is summarized in Table 4. Roger met or exceeded his aims for the number of letters correctly written in the proper sequence over eight separate spelling lists. These lists increased in difficulty as Roger met aim on the previous list. The number of sessions needed to reach aim with a given spelling list progressively decreased. Charts 4 through 6 showed a "take-off" learning picture with a median celeration for corrects of  $x$  1.30. The learning opportunities remained under 5 with the exception of the second tutor who showed decelerating trends of  $/$  1.90 and  $/$  2.0 respectively. The median performance change for all eight spelling lists was a  $x$  1.60 improvement when using the see/cover/write spelling practice.

## **Discussion**

Roger's oral reading fluency and written spelling improved during tutoring. Roger worked hard and

benefited in both acquisition of spelling and reading fluency. The Precision Teaching procedures were effective as visual feedback for both Roger and the three tutors. In fact, the first tutor was so skeptical of the charted data that he took several sessions after Roger had met aim in reading and spelling to replicate the results. The data convincingly demonstrated the effectiveness and efficiency of using the Precision Teaching measurement procedures to evaluate and guide instructional practice. All three tutors agreed that the use of Precision Teaching was powerful and efficient instruction and should be integrated into as many instructional settings as possible.

The feedback from the Standard Celeration Chart motivated Roger to improve his skills in reading and spelling. He repeatedly stated how much he enjoyed and learned with Precision Teaching and the other instructional strategies used in tutoring. In addition, Roger commented on how he liked the active participation of and response prompts from the tutors. Roger said that he hoped his next tutor would actively help him "struggle through a reading passage" and not just provide feedback at the end of a session. He believed that the more involved the tutors were in the measurement and instruction, the more he would learn during tutoring.

All three tutors recommended that Roger continue his instruction in reading and spelling at The Ohio State University's PsychoEducational Clinic. It was also suggested that Roger use Precision Teaching procedures at home for additional practice in reading and spelling. If these home components were included in a systematic, individualized remedial education program, hopefully, he would continue to succeed in his quest to become a more fluent and enduring reader and speller.

Roger was tutored only twice a week. This is a major limitation. All three tutors believe his improvements in oral reading fluency and spelling would be greater if he were tutored on a daily basis over the same time period. An intense, daily routine with Precision Teaching has the potential for remediating Roger's other skill deficits.

The results from this demonstration show the effectiveness of integrating Precision Teaching with other remedial instruction for adult learners. In addition, the results showed the effectiveness of repeated readings and see/cover/write spelling practice for improving oral reading and spelling fluency with an adult learner.

Binder and Watkins (1990) recommend the adoption of measurably superior instructional practices, such as Precision Teaching and Direct Instruction, to address the lack of "basic skills" evident with many students in American schools. This same emphasis on effective education can and should be used to remediate the pressing problem of adult illiteracy. Using Precision Teaching to develop and promote "measurably effective instructional practices" will significantly improve adult literacy in the United States.

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**Table 3**

**Summary Results: Oral Reading with Repeated Readings**

**Autumn Quarter: Tutor 1 - W. J. Sweeney**

	<b># of Sessions on Reading Passage</b>	<b># of Sessions to Aim</b>	<b>Number Correct: Median Score</b>	<b>Range of Correct Scores</b>	<b>Celeration of Corrects</b>	<b>Celeration of Learning Opportunities</b>	<b>Overall Performance Change</b>
<b>Passage #1</b>	<b>16</b>	<b>13</b>	<b>150</b>	<b>73 - 235</b>	<b>x 1.25</b>	<b>/1.50</b>	<b>x 2.50</b>

**Winter Quarter: Tutor 2 - C. K. Omness**

<b>Passage #1</b>	<b>9</b>	<b>9</b>	<b>148</b>	<b>92 - 218</b>	<b>x 1.50</b>	<b>/1.50</b>	<b>x 2.50</b>
<b>Passage #2</b>	<b>9</b>	<b>9</b>	<b>155</b>	<b>83 - 212</b>	<b>x 1.50</b>	<b>/2.0</b>	<b>x 2.60</b>

**Spring Quarter: Tutor 3 - K. L. Janusz**

<b>Passage #1</b>	<b>5</b>	<b>5</b>	<b>166</b>	<b>110 - 218</b>	<b>x 1.60</b>	<b>/4.0</b>	<b>x 2.0</b>
<b>Passage #2</b>	<b>4</b>	<b>4</b>	<b>163</b>	<b>120 - 205</b>	<b>x 1.50</b>	<b>X 1.0</b>	<b>x 1.90</b>
<b>Passage #3</b>	<b>6</b>	<b>6</b>	<b>160</b>	<b>128 - 209</b>	<b>x 1.25</b>	<b>/1.60</b>	<b>x 1.80</b>

**Table 4**

**Summary Results: See/Cover/Write Spelling**

**Autumn Quarter: Tutor 1 - W. J. Sweeney<sup>a</sup>**

	<b># of Sessions on Spelling List</b>	<b># of Sessions to Aim</b>	<b>Number Correct: Median Score</b>	<b>Range of Correct Scores</b>	<b>Celeration of Corrects</b>	<b>Celeration of Learning Opportunities</b>	<b>Overall Performance Change</b>
<b>Passage #1</b>	5	4	87	63 - 108	x 1.50	Errors under 5	x 1.80
<b>Passage #2</b>	10	6	108	72 - 126	x 1.40	Errors under 5	x 1.80

**Winter Quarter: Tutor 2 - C. K. Omness<sup>b</sup>**

<b>Passage #3</b>	8	8	89	77 - 212	x 1.25	/1.90	x 1.70
<b>Passage #4</b>	8	8	96	83 - 126	x 1.25	/2.0	x 1.90

**Spring Quarter: Tutor 3 - K. L. Janusz<sup>b</sup>**

<b>Passage #5</b>	5	5	102	88 - 122	x 1.25	Errors under 5	x 1.50
<b>Passage #6</b>	4	4	105.5	97 - 127	x 1.25	Errors under 5	x 1.50
<b>Passage #7</b>	3	6	112	101 - 124	x 1.60	Errors under 5	x 1.50
<b>Passage #8</b>	2	2	117.5	110 - 125	x 1.40	Errors under 5	x 1.10

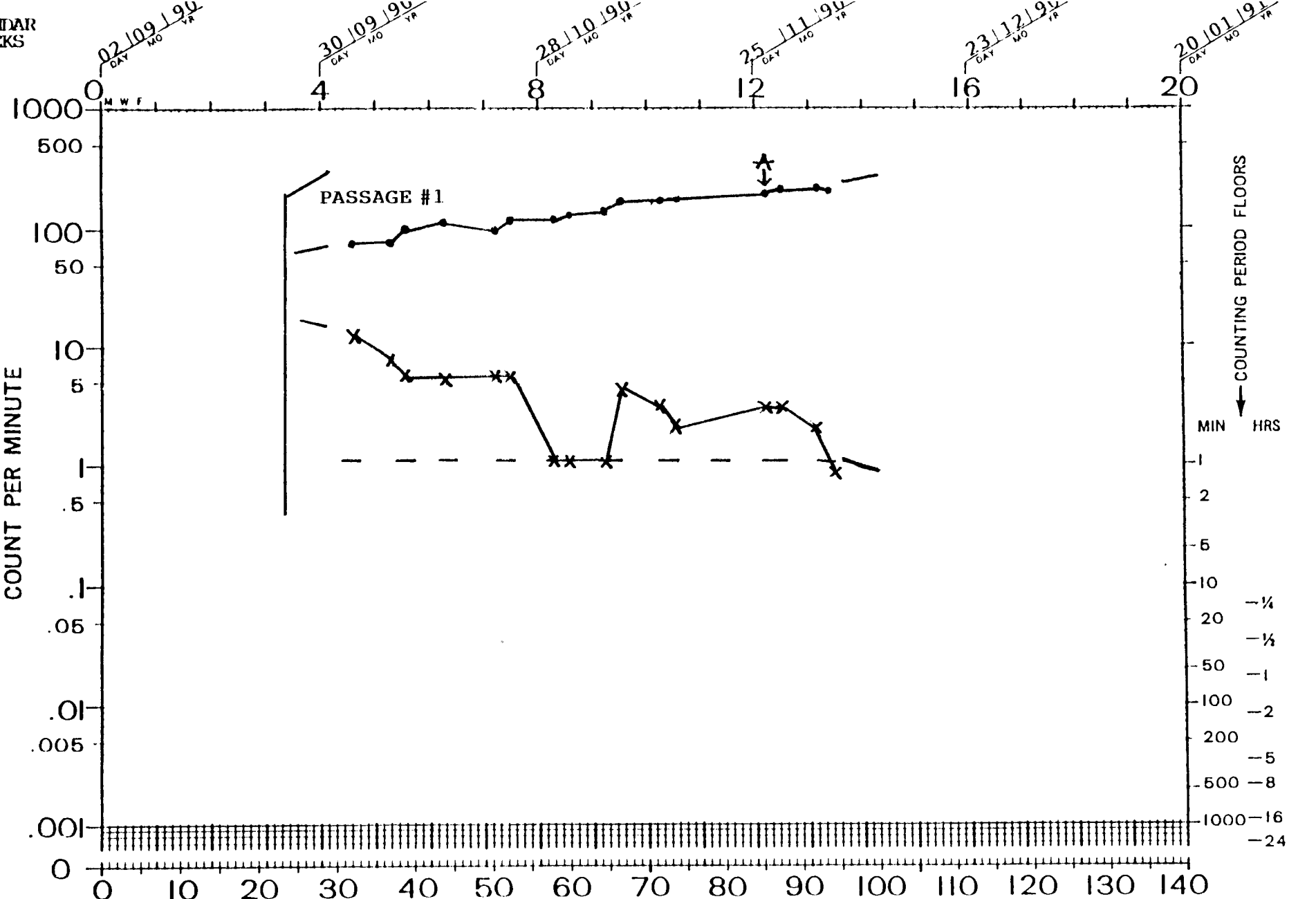
a. First tutors See/Cover/Write spelling aims were 105 and 120 letters in the correct sequence and spelled correctly on spelling list 1 & 2 respectively.

b. Second and third tutors See/Cover/Write spelling aims were 120 letters in the correct sequence and spelled correctly on spelling lists 3 through 8.



CALENDAR WEEKS

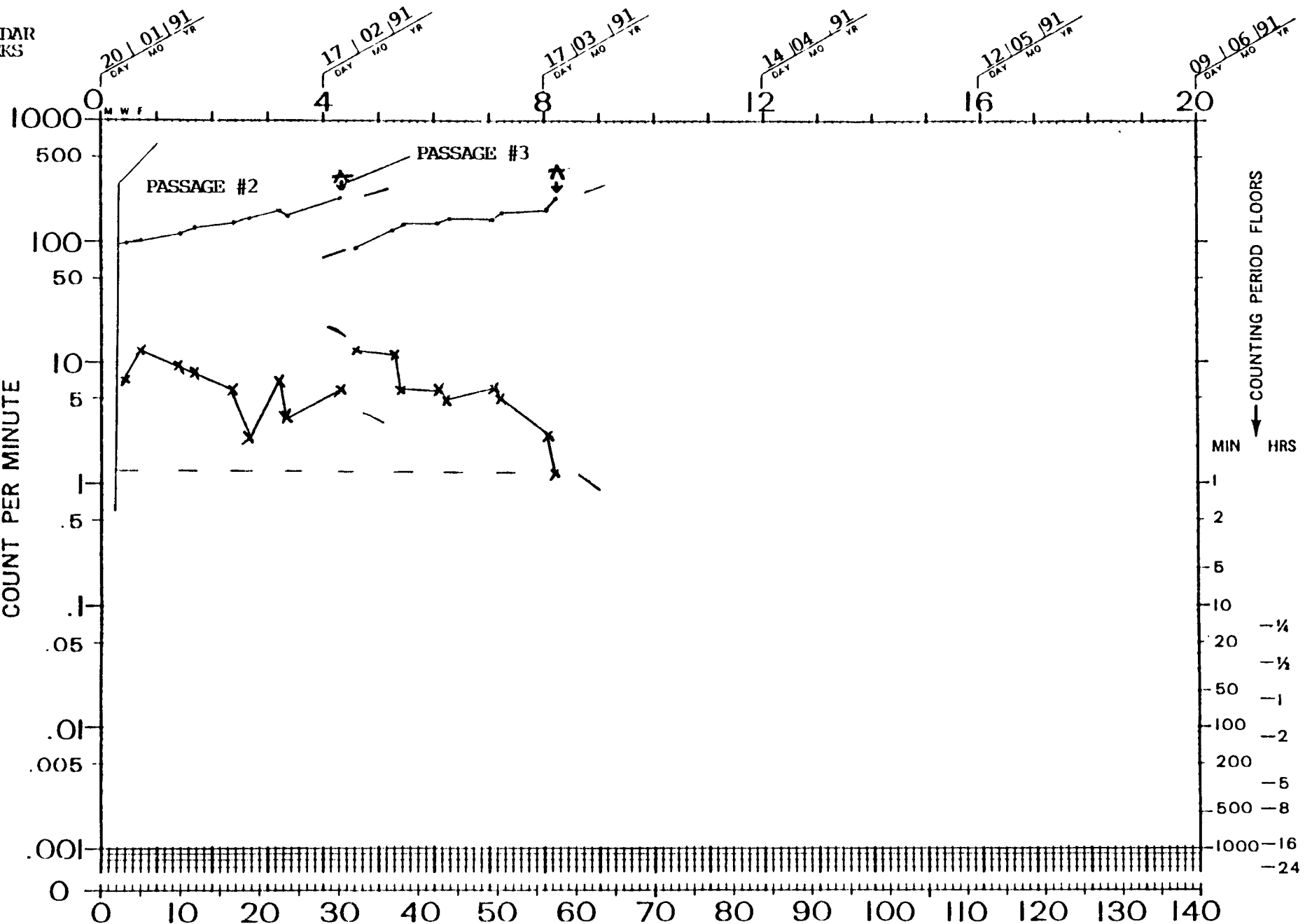
CHART 1



<u>JOC</u> SUPERVISOR		<u>JOC</u> ADVISER		<u>W. SWEENEY</u> MANAGER		<u>ROGER</u> BEHAVIOR		<u>43</u> AGE		<u>ADULT</u> LABEL		<u>SEE/SAY</u> ORAL READING COUNTED	
<u>JOC/WJS</u> DEPOSITOR		<u>OSU PSYCHO EDUCATIONAL CLINIC</u> AGENCY				<u>W. SWEENEY</u> TIMER		<u>W. SWEENEY</u> COUNTER		<u>W. SWEENEY</u> CHARTER			

CALENDAR WEEKS

CHART 2



SUCCESSIVE CALENDAR DAYS

SEE/SAY

JOC	JOC/ADM	C. OMNESS	ROGER	44	ADULT	ORAL READING
SUPERVISOR	ADVISER	MANAGER	BEHAVIOR	AGE	LABEL	COUNTED
JOC/WJS	OSU PSYCHO EDUCATIONAL CLINIC		C. OMNESS	C. OMNESS	C. OMNESS/SWEENEY	
DEPOSITOR	AGENCY		TIMER	COUNTER	CHARTER	

CALENDAR WEEKS

20 | 01 | 191  
DAY MO YR

17 | 02 | 91  
DAY MO YR

17 | 03 | 91  
DAY MO YR

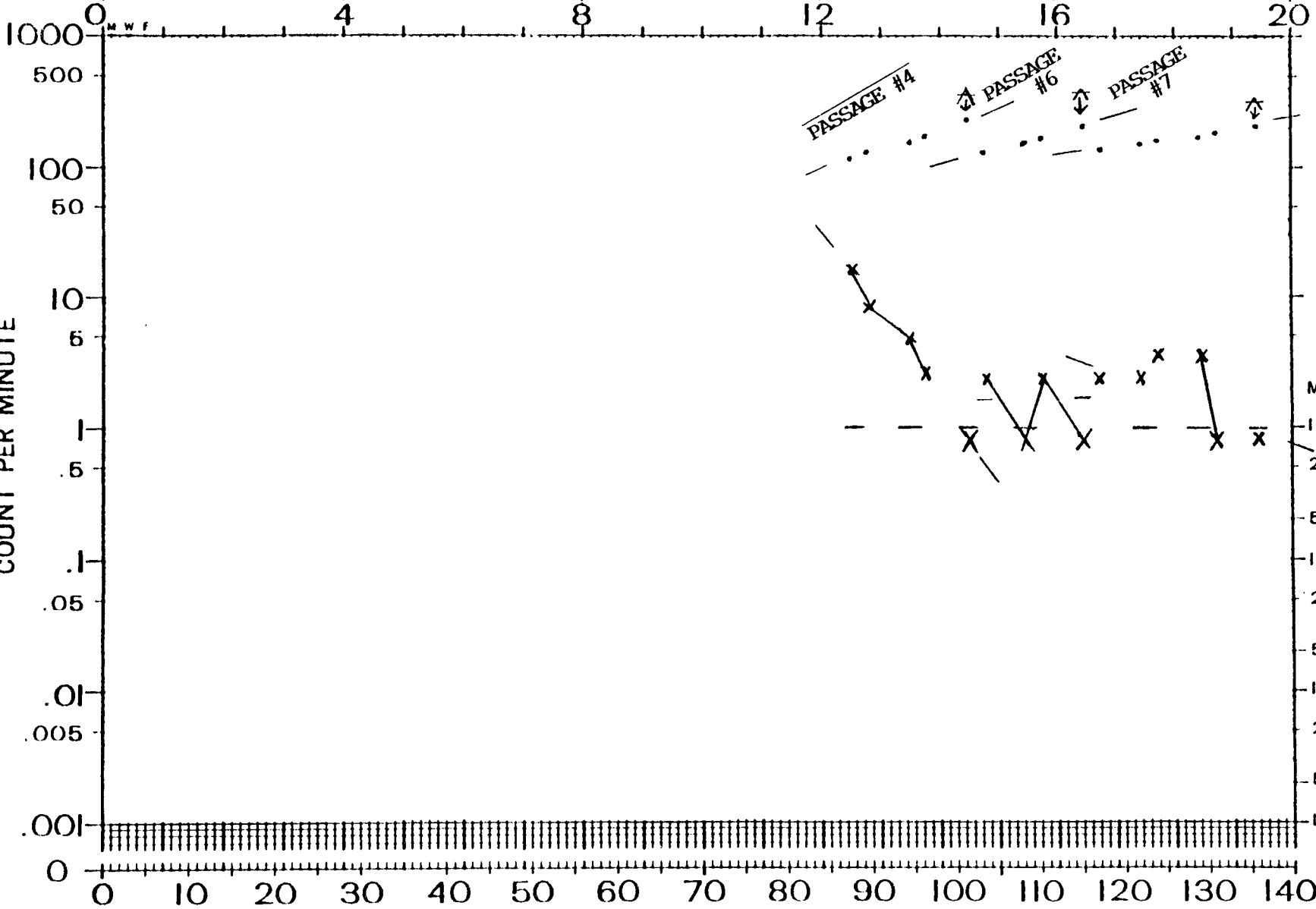
14 | 04 | 91  
DAY MO YR

12 | 05 | 91  
DAY MO YR

09 | 06 | 91  
DAY MO YR

CHART 3

COUNT PER MINUTE



SUCCESSIVE CALENDAR DAYS

MIN HRS

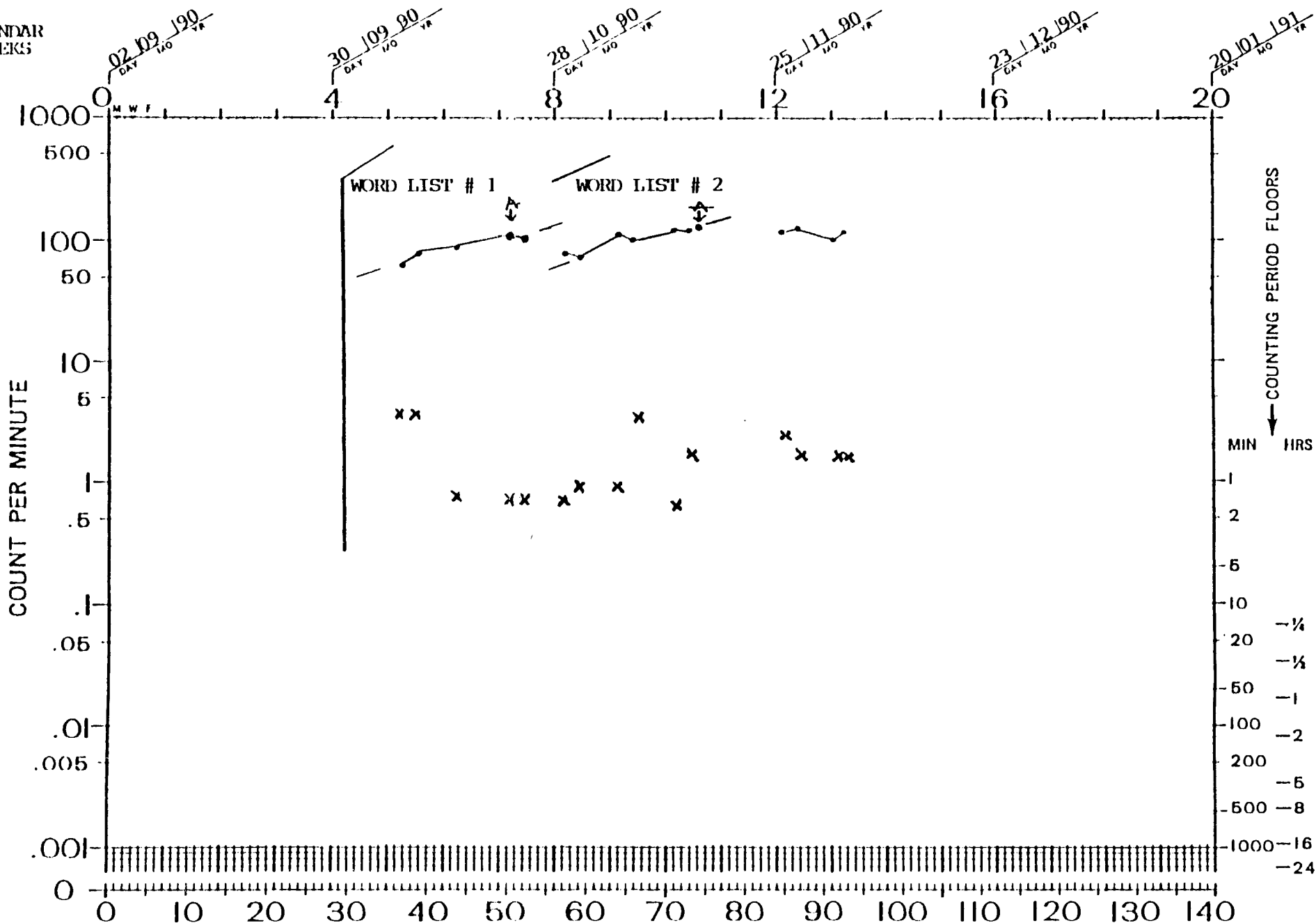
SEE/SAY ORAL READING COUNTED

JOC SUPERVISOR  
 JOC/WJS ADVISER  
 K. JANUSZ MANAGER  
 JOC/WJS DEPOSITOR  
 OSU PSYCHO EDUCATIONAL CLINIC AGENCY  
 K. JANUSZ TIMER

ROGER BEHAVIOR  
 44 AGE  
 ADULT LABEL  
 K. JANUSZ/SWEENEY CHARTER  
 K. JANUSZ COUNTER

CALENDAR WEEKS

CHART 4



SUCCESSIVE CALENDAR DAYS

SEE/COVER/WRITE

JOC  
SUPERVISOR

JOC  
ADVISER

W. SWEENEY  
MANAGER

ROGER  
BEHAVIOR

43  
AGE

ADULT  
LABEL

SPELLING  
COUNTED

JOC/WJS  
DEPOSITOR

OSU PSYCH EDUCATIONAL CLINIC  
AGENCY

W. SWEENEY  
TIMER

W. SWEENEY  
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CALENDAR WEEKS  
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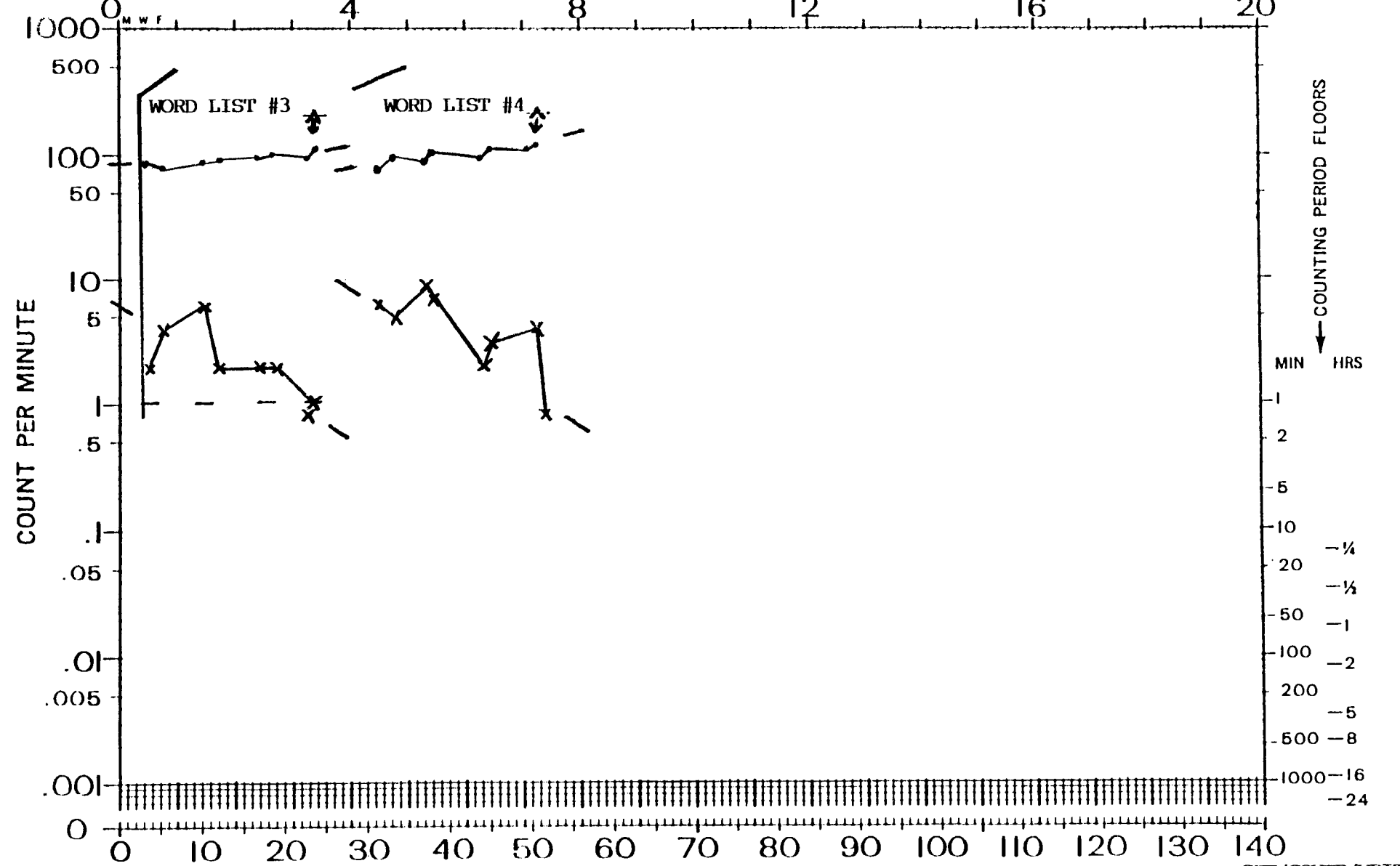
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 DAY MO YR

12 05 191  
 DAY MO YR

09 106 191  
 DAY MO YR

CHART 5



JOC SUPERVISOR    JOC/ADM ADVISER    C. OMNESS MANAGER    ROGER BEHAVIOR    44 AGE    ADULT LABEL    SEE/COVER/WRITE SPELLING COUNTED

JOC/WJS DEPOSITOR    OSU PSYCHO EDUCATIONAL CLINIC AGENCY    C. OMNESS TIMER    C. OMNESS COUNTER    C. OMNESS/SWEENEY CHARTER

CALENDAR WEEKS

20 / 01 / 91  
DAY MO YR

17 / 02 / 91  
DAY MO YR

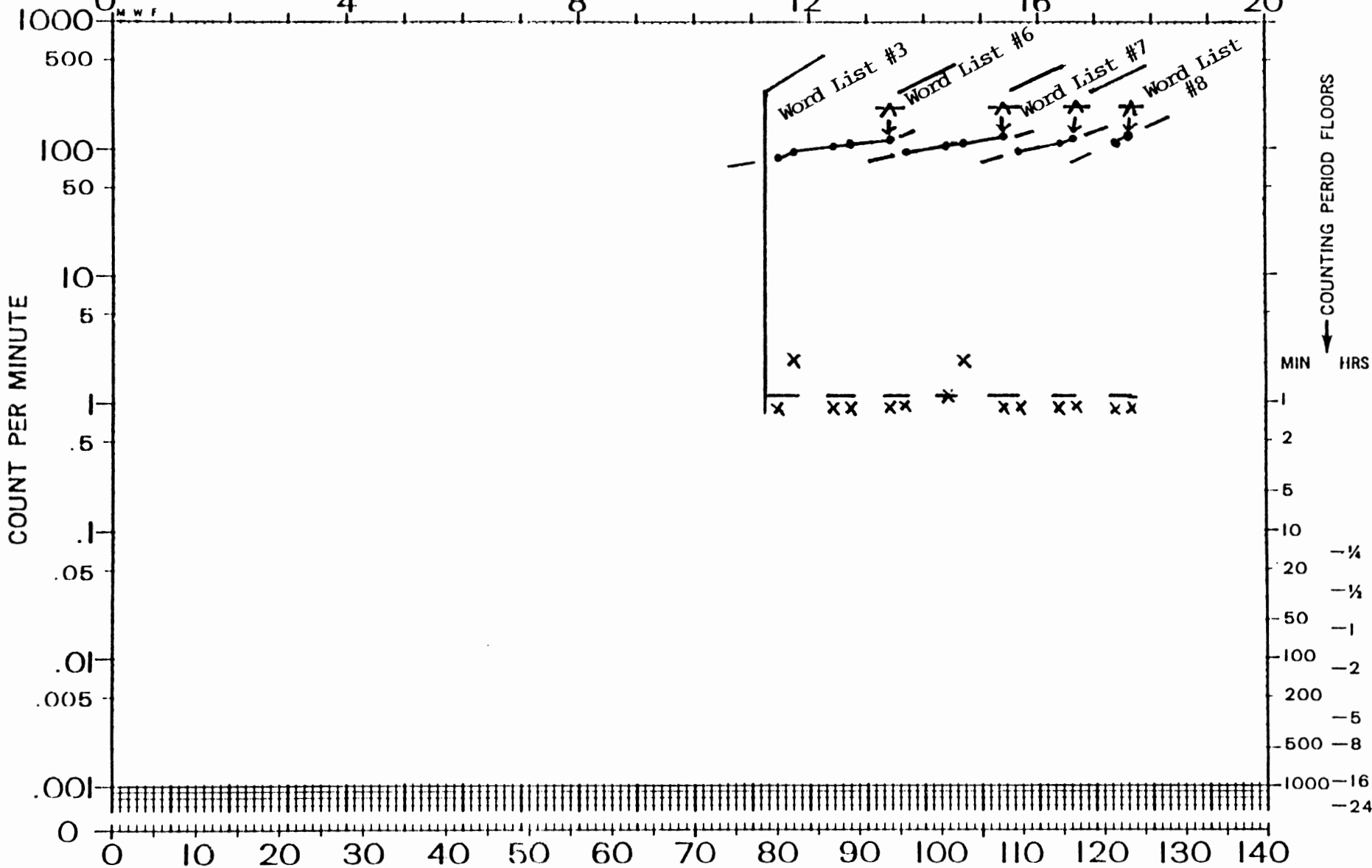
17 / 03 / 91  
DAY MO YR

14 / 04 / 91  
DAY MO YR

12 / 05 / 91  
DAY MO YR

09 / 06 / 91  
DAY MO YR

CHART 6



JOC	JOC/WJS	K. JANUSZ	SUCCESSIVE CALENDAR DAYS			ROGER	44	ADULT	SEE/COVER/WRITE
SUPERVISOR	ADVISER	MANAGER				BEHAVIOR	AGE	LABEL	SPELLING
JOC/WJS	OSU PSYCHO EDUCATIONAL CLINIC		K. JANUSZ	K. JANUSZ	K. JANUSZ/SWEENEY				COUNTED
DEPOSITOR	AGENCY		TIMER	COUNTER	CHAIRER				