

**A Resource Manual for the Development and Evaluation
of Special Programs for Exceptional Students**

**Volume V-D
Techniques of
Precision Teaching
Part 1: Training Manual**

Florida Department of Education
Bureau of Exceptional Education and Student Services
1983 Reprinted 2008

A Resource Manual for the Development and Evaluation of
Special Programs for Exceptional Students

Volume V-D

Techniques of Precision Teaching

Part 1: Training Manual

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INTRODUCTION

The purpose of this manual is to serve as a user's guide for Precision Teaching. It is important that teachers understand that Precision Teaching can be a valuable tool in their classrooms. Therefore, the information presented to them during beginning training needs to be clear, concise, and void of any technical jargon. When Ogden Lindsley first developed Precision Teaching he was concerned with taking the vocabulary and techniques out of the laboratory and into the classroom where great strides could be made with students.

The approach in this manual is very simple and straightforward. The material presented is all teacher-related and has been tried in classrooms and proven to be helpful to teachers as they set up Precision Teaching. This guide should be read thoroughly and the techniques followed closely as outlined. Begin on a small scale and remember that any new technique takes some time to organize and run smoothly.

The Precision Teaching Reading and Math Basic Skills Curriculum is available with this manual. The curriculum and accompanying practice sheets can further assist the teacher in implementing Precision Teaching in the classroom.

STUDENT CHANGE - ORANGE COUNTY DATA

Precision Teaching can make a change in student learning. Teachers that use it can make observations that students are learning faster and better with this technique. Because Precision Teaching is based on collecting daily data, it is wise for those in the field to gather data to substantiate the benefits of this system.

During the 1981-82 school year classes were chosen in two elementary schools in Orange County to be trained in Precision Teaching. The scores from the Comprehensive Tests of Basic Skills were compared between these classes and the classes using the "normal" methods of monitoring.

The scores below represent the mean standard score gain for the classes in the study. The class with the asterisk marked in Elementary #1 was one in which the teacher used a large amount of drill and practice in basic math skills which is a segment of Precision Teaching.

Elementary #1

	<u>Mean Standard Score Gain</u>
<u>Math 3rd Grade</u>	
1. Group 1, NonPT	29
2. Group 2, PT	74
3. Group 3, PT	72
<u>Math 5th Grade</u>	
1. Group 1, NonPT (Special Instruction)*	76
2. Group 2, NonPT	32
3. Group 3, PT	71

Elementary #2

	<u>Mean Standard Score Gain</u>
<u>Reading 4th Grade</u>	
1. Group 1, NonPT	45
2. Group 2, NonPT	41
3. Group 3, PT	76
4. Group 4, PT	56

<u>Math 5th Grade</u>		<u>Mean Standard Score Gain</u>
1.	Group 1, NonPT	28
2.	Group 2, NonPT	28
3.	Group 3, PT	61
4.	Group 4, PT	43

These results indicate that Precision Teaching can make a difference in learning.

HISTORY OF PRECISION TEACHING

Precision Teaching was developed in the mid 1960's by Dr. Ogden Lindsley at the University of Kansas. Dr. Lindsley was a student of Dr. B.F. Skinner, the founder of operant conditioning. Dr. Skinner's work was based on laboratory research with lower animals. Dr. Lindsley was interested in applying these principles of operant conditioning to the management of instruction in special and regular classes. All of Lindsley's early work proved to be very successful, and is the basis of Precision Teaching as we know today. Since that time, three major projects have had significant influence on the development of precision procedures and materials, and on education in general. The experimental Education Unit at the University of Washington, the SST Screening Project conducted by the State of Washington, and the Sacajawea Project in Great Falls, Montana, have been major developers.

PRECISION TEACHING: What Is It - What Can It Do?

Skip Berquam, Port Angeles School District, Port Angeles, Washington

Can we avoid having to review and reteach so much every September? Are there programs to identify and help students with learning problems, before they get so far behind? What is mastery? Is there a way to guarantee mastery? Can we get students more involved in their own learning? How can we promote the most learning in the shortest time?

WHAT IS PRECISION TEACHING?

Precision Teaching is a procedure to measure learning and proficiency of skills. It has three main characteristics. First, it is a direct measure; second, it is a continuous or daily measure; and third, it uses rate or frequency as a unit. Let's look at these points individually.

Direct Measure. Most of the standardized tests given every year in schools are very indirect measures of student performance. They sample only small portions of individual skills, and then only in a general manner. A direct measure of reading performance would be to count the number of correct and incorrect words a student reads from a passage in his assigned reader, and then to ask him questions from that passage. If arithmetic performance is of interest, we should count the number of addition problems or division or word problems the student can do correctly. The key is to find the most direct measure of the skill of interest.

Continuous Measure. Traditionally, we measure quite infrequently in education. A measure taken at the end of a unit, or at the end of the year can provide information on ending performance, but cannot

provide any feedback to be used to modify instruction during the unit. In short, occasional measurement can tell us only who has failed, while continuous measurement can pinpoint who might fail, which allows teachers to make instructional changes. Bankers, pilots, cooks, carpenters -- people in many professions use continuous or frequent measurement. It certainly is no less critical to monitor the learning progress of a child than it is the building of a house or the direction and speed of an airplane. To provide useful information, educational measurement must be done often.

Frequency of Response. It is this characteristic that separates precision teaching from other highly structured and programmed systems. The most common unit of measurement used in classrooms today is number correct or percent correct. Precision Teaching includes a time factor. We measure number correct and incorrect for a specific time period. In almost all fields, the proficient or fluent worker is not one who does every task correctly, but one who does tasks correctly within set time limits. The proficient waitress doesn't just get each order accurately, she does so quickly. We remember Babe Ruth not for one homerun, but for 60 homeruns in a season and 714 in his career. Thomas Edison invented the light bulb, but also held 1,092 other patents. Leonardo da Vinci is remembered for painting the Mona Lisa, but his other surviving works include 17 paintings, over 4,000 technical sketches, and 19 books. Frequency, or how often something happens, is a critical factor in everyday life. We have found it also to be critical for academic skills.

ADVANTAGES OF PRECISION TEACHING

Some of Precision Teaching's advantages have already been men-

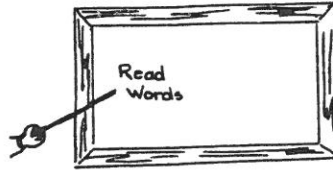
tioned. This kind of measurement is often more valid (it measures what it is designed to measure), and more reliable (it gives a more accurate and consistent measure of performance) than traditional tests. Perhaps the greatest advantage of Precision Teaching is that it provides a measure of PROFICIENCY and a measure of LEARNING. When two students each score 100% correct on the same math paper, their performances seem to be identical. However, if one student finished in five minutes, while the other finished in ten minutes, there is a tremendous difference in performance. Rate or frequency of response will measure this difference. Once a student achieves 100% accuracy there is no way for him to show improvement, unless frequency is measured. A change in frequency is a measure of learning.

Because Precision Teaching provides useful information, it can help teachers and students get the most benefit out of the school day. We can see, for example, which students are ready to move to the next skill, which need more practice, and which need instruction. Practice, fluency building, and instructional decisions based on direct, continuous data form the foundation of Precision Teaching. Appropriate practice and instruction will allow all students to learn and to reach proficiency.

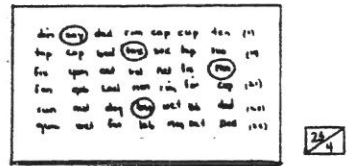
Several questions were asked in the opening paragraph. Precision Teaching can help provide answers to those questions. Precision Teaching combines what has been learned about learning in the past 100 years, and applies it to practical school settings. Drill, practice, direct and frequent measurement, fluency; these are hardly new concepts in education. What Precision Teaching has done is to build them into a manageable and useful program with one goal: to promote efficient learning and proficient performance of the skills we are teaching.

Precision Teaching is easy to implement in the regular or special class.
 There are Five Steps To Follow.

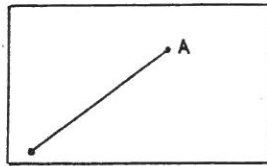
1. PINPOINTING



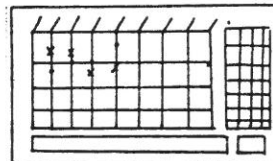
2. COUNTING AND RECORDING



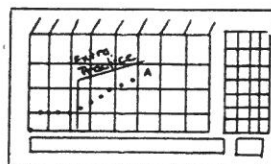
3. SETTING AIMS

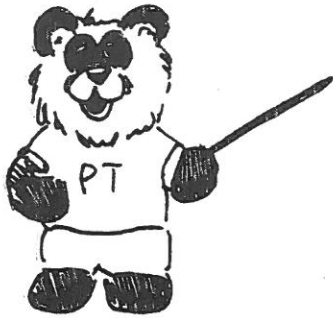


4. CHARTING



5. DECISION-MAKING





PINPOINTING

PINPOINTING is choosing a behavior (academic or social) that the teacher wants to change. In order to change a behavior the teacher must be able to count it. In order to count it.....

Any Pinpointed Behavior Must:

1. Be Observable
2. Be Repeatable
3. Have A Start And End

Here are a few examples of good PINPOINTED behaviors:

Reading - reading vocabulary words (Words can be observed as they are read. Words are repeated as they are read and each word has a start and end.)

Math - writing addition facts (Digits can be observed as they are written. Digits are repeated as they are written and each digit has a start and end.)

Social Behavior - talk outs (Talk outs can be observed. If you are counting talk outs they should be repeated often enough to have a high count. Each talk out has a start and end.)

Let's get more practice with choosing good PINPOINTS.....

Pretend you're trying to count the following behaviors. Read each sentence and answer with a YES or NO whether you could count the behavior or not and then check your answers on page 13.

1. "Mary has a learning disability." _____
2. "Betty is talented." _____
3. "Sue reads Houghton Mifflin vocabulary words." _____
4. "John writes answers to multiply facts." _____
5. "Sam is a poor student." _____
6. "David is autistic." _____
7. "Shirley touches the blue blocks." _____

Now let's get practice with knowing what to count. Read the following statements and choose the exact behavior you could count. Check your answers on page 13.

1. "Bob reads Houghton Mifflin vocabulary words." _____
2. "Angie talks out during reading class." _____
3. "Nancy writes her weekly spelling words." _____
4. "Cathy points to the letters of the alphabet." _____
5. "David tells the class important facts from a Science chapter." _____
6. "Jennifer grasps a small sponge." _____

Adapted from Teaching and Learning in Plain English,
Patrick McGreevy, Kansas City, Missouri, 1981.

The next step in pinpointing is learning to describe the behavior more precisely. The behavior needs to be stated in observable terms and it is necessary to discuss learning channels first.

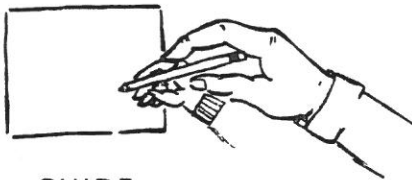
We all receive information through one or more of the following channels. These are called INTAKE CHANNELS.



SEE



THINK

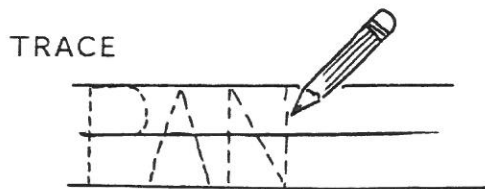
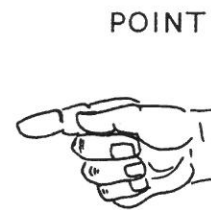
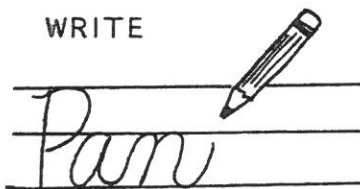
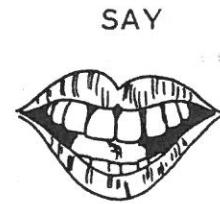


GUIDE

HEAR



We all send information out through one or more of the following channels. These are called OUTPUT CHANNELS.



Adapted from Teaching and Learning in Plain English,
Patrick McGreevy, Kansas City, Missouri, 1981.

Each behavior has an INTAKE and OUTPUT channel.
INTAKE CHANNEL + OUTPUT CHANNEL + PINPOINT =
LEARNING STATEMENT.

<u>PINPOINT</u>	<u>LEARNING STATEMENT</u>
reading vocabulary words	see-say vocabulary words
writing addition facts	see-write addition facts
writing spelling words from dictation	hear-write CVC words
grasping a toy with partial assistance	guide-do (grasp toy)
writing history facts after a lecture	think-write history facts

Look at the examples below and decide upon the correct INTAKE and OUTPUT channels and write the Learning Statement for each one. Check your answers with the key on page 13.

1. John writes answers on a multiplication fact sheet. _____
2. Sue reads Houghton Mifflin vocabulary words. _____
3. Nancy's teacher calls her weekly spelling words out to her and she writes them. _____
4. David's hand is guided as he ties his shoe. _____
5. Cindy feels the shape of the letter and says the sound. _____
6. Gary writes the important concepts from a biology chapter. _____

ANSWER KEYS

Page 9.

- | | |
|---------------|-----------------------|
| 1. "Mary" | <u>NO</u> |
| 2. "Betty" | <u>NO</u> |
| 3. "Sue" | <u>YES</u> |
| 4. "John" | <u>YES</u> |
| 5. "Sam" | <u>NO</u> |
| 6. "David" | <u>NO</u> |
| 7. "Shirley" | <u>YES</u> |
| | |
| 1. "Bob" | <u>vocab. words</u> |
| 2. "Angie" | <u>talks out</u> |
| 3. "Nancy" | <u>spelling words</u> |
| 4. "Cathy" | <u>letters</u> |
| 5. "David" | <u>Science facts</u> |
| 6. "Jennifer" | <u>sponge grasps</u> |

Page 12.

1. see-write multiplication facts
2. see-say HM words
3. hear-write weekly spelling words
4. guide-do (tie shoe)
5. feel-say letter sounds
6. think-writes biology concepts

Learning statements are helpful in making each pinpointed skill more observable. By writing a student's objectives as learning statements, a teacher can be more aware of the learning channels being used for each skill. If a student does not improve on certain skills just a change in the learning channels would possibly improve performance. For example, a change could be made from see-write facts to see-say facts.

The Precision Teaching Reading and Math Basic Skills Curriculum is written in learning statements. The following examples are taken from several strands in the curriculum.

Reading
see-say consonant and vowels
see-say vowels
see-say consonants

Math
see-write addition facts 0-18
see-write addition facts
0-9

These learning statements are clear, concise and can be very beneficial to the teacher in writing IEP's.

Specific practice sheets have been designed to measure the proficiency of most skills located in the Precision Teaching Basic Skills Curriculum. The Mixed Mastery practice sheet is a compilation of all the skills in a strand and can be used to measure proficiency of mixed skills. For example, on page 16 the Mixed Mastery sheet for Addition has a random sample of all the skills for that strand. This practice sheet can also be very useful as a pre-assessment which can assist the teacher in pinpointing the skills a student may lack.

Many teachers have found that choosing larger "chunks" of skills as pinpoints is beneficial to a student's overall progress. For example, a teacher may find that a student does not know any addition facts but

instead of going back to Sums 0-5, it may be advantageous to begin with Sums 0-18. The student may need more instruction or practice with this skill but the teacher may save valuable time by not taking the student through the several smaller steps to reach 0-18.

Another excellent example of "chunking" is a teacher who chooses to teach a list of 25 Functional Words rather than breaking the list into groups of five words each. This teacher may find that her students will learn the whole list faster with just a little instruction and extra practice. Therefore, breaking a skill into smaller parts is not always the most effective method of teaching. It may be advantageous to first guide students through a curriculum in larger steps. If necessary the skills can be "broken down" into smaller segments if there is no progress.



ORANGE COUNTY PUBLIC SCHOOLS
PRECISION TEACHING PROJECT
ORLANDO, FLORIDA

see-write

(multi-digit, no reg. & reg.)

A-21

74
+13
38
+0
233
+3
123
+45
456
266
254
+168
58
+62
186
+5
48
+8
648
+25

25

219
+3
9765
+1703
4321
+2348
746
+221
513
+191
943
+164
51
+8
121
323
120
+202
35
+47

54

415
+4
262
425
366
234
29
+8
372
+162
756
+23
8872
+1162
2865
3739
4620
+
778
+8
18
+9

83

15
+9
721
+8
8606
+2642
4787
8293
47
+58
9173
+1898
219
+382
446
+25
15
+4

114

6180
+2719
97
+36
754
+849
880
+20
35
+22
964
+6
3865
5738
+2620
7064
+424
666
+41

145



COUNTING AND RECORDING

After a behavior has been chosen to count, the next step is to decide upon the counting period. The unit of measure used in Precision Teaching is "FREQUENCY per minute."

FREQUENCY is the number of behaviors occurring during a specified time period.

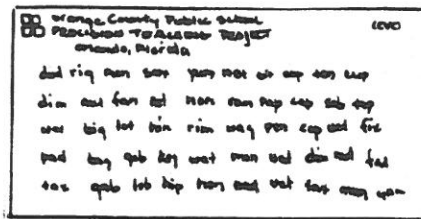
$$\text{FREQUENCY} = \frac{\text{count of behaviors}}{\text{\# of minutes}}$$

which yields

$$\underline{\text{COUNT PER MINUTE}}$$

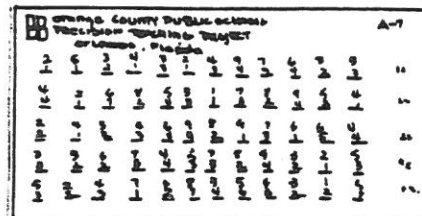
One minute is used most often as a counting period for academic behaviors. It is a quick and efficient measure of the student's behavior and a reliable picture of what the student can do. For social behaviors the counting period chosen will depend on how often the behavior occurs. For example, if the student is talking out during math class, the teacher may only count the talk-outs during a 45 minute period. For each selected pinpoint, both correct and incorrect, or positive and negative responses need to be counted. This is known as a "FAIR PAIR."

The next step is RECORDING.



READING

Pretend that the CVC (consonant-vowel-consonant) practice sheet has been chosen for the student's reading pinpoint. The student will read the words from the sheet and the checker will follow along with another copy. To save paper, it is a good idea for the checker's copy to have some type of acetate cover. "Please Begin" is a good signal for starting the student and "Thank You" is a good signal for stopping the student. As the student reads the words, the incorrect responses should be marked. Self-corrected words are counted as errors. (See page 19 for more specific directions on checking.) Subtract the incorrect responses from the total words read to get the number of correct responses. Record the number correct and incorrect words read.



MATH

Pretend that a multiplication facts practice sheet has been chosen for a math pinpoint. The students may write directly on the sheets or on the acetate covers. The same signals should be used for this timing. After one minute check correct and incorrect responses (in most cases the students will use an Answer Key to check their own sheets). When checking math always count each digit as a separate response. (See page 20 for more specific directions on checking.) Record the number of correct and incorrect digits written.



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PA-4

CVC

see-say

nap	tip	leg	t/n	fix	map	cub	fgn	cut	vet	10
mom	slp	d/m	web	r/g	bed	dug	keg	pop	yum	20
yam	cap	hip	bun	yes	hot	yum	flb	hug	fat	30
sun	s/t	bob	flz	rag	sob	rod	zip	lug	pen	40
zap	tax	pet	cop	tot	h/d	rag	h/m	run	hum	50
rut	web	men					rut	hen	cub	60
bed	hip	hen					fat	liz	rod	70
rod	run	hug					hot	yum	sob	80
h/d	r/g	hum					zap	tin	flz	90
bun	cut	fan	fix	flb	w/g	mom	pop	slp	bob	100
pet	keg	zip	pen	tot	yes	nap	leg	h/m	men	110
yum	fan	mum	hip	flz	pet	mom	bob	zip	slp	120
d/m	web	yam	r/g	bed	dug	keg	pop	yum	w/g	130

When correcting a reading practice sheet, mark the words that are read incorrectly. At the end of one minute, draw a stop line. Subtract the incorrect from the total words read to get the number of correct responses. The cumulative count on the side can expedite the checking process. On this sheet the count is 28 correct, 6 incorrect (28/6). The next day the student can begin the sheet after the stop line or back at the beginning of the page. Another alternative is to have the student begin on a different row each day.



ORANGE COUNTY PUBLIC SCHOOLS
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see-write

36/6

(Mastery-probe)

11-9M

7	5	1	9	6	6	7	2	7	5	6	7	0	9	3	8
$\overline{x6}$	$\overline{x7}$	$\overline{x9}$	$\overline{x8}$	$\overline{x5}$	$\overline{x3}$	$\overline{x9}$	$\overline{x4}$	$\overline{x3}$	$\overline{x3}$	$\overline{x3}$	$\overline{x4}$	$\overline{x8}$	$\overline{x5}$	$\overline{x9}$	$\overline{x6}$
42		9	72	30	18	63	8	12	15	18	20	8	45		48
															29

6	4	9	5	3	3	4	8	2	9	8	5	8	9	8	7
$\overline{x9}$	$\overline{x3}$	$\overline{x2}$	$\overline{x5}$	$\overline{x2}$	$\overline{x8}$	$\overline{x4}$	$\overline{x7}$	$\overline{x5}$	$\overline{x1}$	$\overline{x8}$	$\overline{x8}$	$\overline{x6}$	$\overline{x4}$	$\overline{x1}$	$\overline{x8}$
54	12	18	10	6	24	16	56	10							58

7	3	9	7	5	9	5	5	3	8	3
$\overline{x2}$	$\overline{x1}$	$\overline{x3}$	$\overline{x7}$	$\overline{x9}$	$\overline{x9}$	$\overline{x9}$	$\overline{x2}$	$\overline{x9}$	$\overline{x3}$	$\overline{x3}$

When correcting a math practice sheet, each digit is counted as an answer. A stop line should be drawn where the student finishes. Incorrect digits are marked and subtracted from the total number of digits to get the number of correct digits. The cumulative count on the side can expedite the checking. On this sheet the count is 36 correct, 6 incorrect (36/6). The next day the student can begin the sheet after the stop line or back at the beginning if acetates are used. Students can also begin on a different row each day.

1	3	4	2	5	7	9	6	6	6
$\overline{x4}$	$\overline{x6}$	$\overline{x7}$	$\overline{x3}$	$\overline{x6}$	$\overline{x5}$	$\overline{x7}$	$\overline{x6}$	$\overline{x6}$	$\overline{x7}$

2	5	3	9	3	8	8	4	4	2	3	2	8	6	4	2
$\overline{x8}$	$\overline{x4}$	$\overline{x9}$	$\overline{x7}$	$\overline{x5}$	$\overline{x2}$	$\overline{x3}$	$\overline{x6}$	$\overline{x2}$	$\overline{x9}$	$\overline{x7}$	$\overline{x7}$	$\overline{x5}$	$\overline{x4}$	$\overline{x0}$	$\overline{x2}$



ORANGE COUNTY PUBLIC SCHOOLS
PRECISION TEACHING PROJECT

ORLANDO, FLORIDA

see-write

Write in the suffix that completes the word for each sentence.

ment ion ship ful y en less able ous th ly ness

Suffix Meanings*

- The little girl had to take a spoonful of the medicine. The watch dog will not bite you, he is harmful. 7
- Mary took her car to the garage for inspection. The flashlight brightened the darkness. She walked 74
- softly so she would not wake the baby. The joke was very humorous. He was going to the doctor for 79
- treatment She wanted to straighten her curly hair. Sue is very friendly, she is like her. The 29
- woman had not slept well, she was sleepy. The two children had a strong friendship. David was in 34
- the fourth grade. The winding road was very dangerous. The lost puppy was homeless. The china 41
- dish was breakable. Patti gladly went to the store for her mother. Her toothache was very painful. 48
- The shipment arrived on air freight. The selected of dresses at the shop was very good. The couple 55
- celebrated their tenth anniversary. She was granted membership in 61
- the club. We thanked her for spelling, each letter is counted as an answer. () the room. The baby 69
- missed its nap and was cranky as a correct answer. Any omissions are counted Bob was nervous about the 75
- final exam. All of the eight to get the number of correct responses. On owned a car dealership. 78
- Soon after the concrete is poured incorrect (43/9). this sheet the count is 43 correct and 9 81
- the teacher expected perfectness. or all of his birthday gifts. 87
- There was much sadness among the family when their pet ran away. In space the astronauts are weightless. 95
- The family gets a lot of enjoyment out of doing things together. His college graduation was a joyous 102
- occasion. That material is washable. My mother puts bleach in the wash to brighten the clothes. 108

It is a good idea if teachers and students will look at errors as "Learning Opportunities." Students need to be encouraged not to be afraid to make errors and to look at errors as opportunities to learn. With practice, high errors usually drop to a low frequency within a short period of time. There will be more dramatic learning if there are errors at the beginning. Errors can provide a challenge for the students!

With many students it is best to encourage "skips" when they first begin a timing. Fluency is harder to attain when students hesitate to pause over problems or words they do not know. It is up to each individual teacher whether the "skips" count against the students. A good suggestion is to not count the "skips" as errors when a student first begins. If the "skips" do not decrease over a short period of time the teacher may want to count them as errors. Remember, "skips" still signal to the teacher which problems or words need extra attention.

Timings alone will not guarantee that students will increase their learning. Many opportunities for instruction and practice must be provided for with the skill that has been chosen for a PINPOINT.

The next important element of the pinpointed skill is TOOL SKILLS. All skills have basic skills that are a necessary part in performing the original skill more proficiently. Working with these tool skills is beneficial to a student's overall progress.

For each pinpoint an appropriate tool skill needs to be chosen. For example, if the teacher has pinpointed addition facts for the student to work on, it is very important that the student has the tool skill of writing numbers at a fast rate. If the student is unable to write

numbers at a fast rate he/she will be unable to perform computational skills at a fast rate. The tool skill of writing numbers can be measured by giving the student a one minute timing of writing digits 0-9 repeatedly. Count the number of digits written. (See page 25)

For a reading pinpoint a good tool skill would be to say the alphabet or easy words. This tool skill aids the student in saying higher level words at a fast rate. The teacher can ask the student to say the alphabet from memory or look and say the alphabet repeatedly for one minute. A quick way to find the correct count is to multiply the number of times the alphabet was completed by twenty-six (the number of letters in the alphabet). Also, be sure to add any extra letters that were said.

There are proficiency aims for TOOL SKILLS (see Suggested Performance Standards page 28) and it's important that timings be continued each day on TOOL SKILLS until proficiency is reached. Every student may not be able to reach the Suggested Performance Standards on Tool Skills, but opportunities should be given to each student to reach the highest aim possible on individual tool skills.

TOOL SKILLS

are . . .

basic skills that are necessary to perform the original skill.

Here are a few examples of tool skills for academic skills:*

Math

- Think - write digits (0-9)
- Think - say counting forward (1-10, 1-20) Addition
- Think - say counting backwards (10-1, 20-1) Subtraction
- Think - say count by's (1's-9's) Multiplication

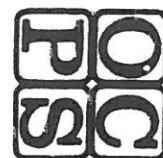
Reading

- Think - say alphabet
- See - say alphabet
- Think - say basic vocabulary words
- Think - say phonetic sounds

Writing

- See - write slashes
- Think - write slashes
- See - write circles
- Think - write circles
- See - write alphabet
- Think - write alphabet

*Adapted from Precision Teaching Project Training Manual, Great Falls
Public Schools, Great Falls, Montana



ORANGE COUNTY PUBLIC SCHOOLS
PRECISION TEACHING PROJECT
ORLANDO, FLORIDA

0	1	2	3	4	5	6	7	8	9
0	1	2	3	4	5	6	7	8	9
0	1	2	3	4	5	6	7	8	9
0	1	2	3	4	5	6	7	8	9
0	1	2	3	4	5	6	7	8	9
0	1	2	3	4	5	6	7	8	9
0	1	2	3	4	5	6	7	8	9
0	1	2	3	4	5	6	7	8	9
0	1	2	3	4	5	6	7	8	9
0	1	2	3	4					

A GOOD AIM IS 120 - 140 DIGITS
IN ONE MINUTE.

95/0

TELL STUDENTS THAT NUMBERS NEED TO
BE WRITTEN QUICKLY BUT LEGIBLY.
STRESS THAT PERFECT FORMATION IS
NOT IMPORTANT AS LONG AS THE
NUMBERS CAN BE READ.



SETTING AIMS

It is important that teachers help students reach a proficiency level on each skill that is pinpointed. If proficiency is reached it is believed that maintenance of the skill is assured. We need to "expect the best" of each student and assist each one in reaching their highest potential.

Therefore, it is advantageous to set individual AIMS for each skill pinpointed. An AIM is an ending goal usually expressed as a specific frequency range, for example, 70-90 correct with 2 or less errors would be an excellent aim for math facts. Setting aims in ranges allows for individual differences. There will be students who reach the lower frequency aim and there are others who will reach the middle and high range. It is wise to set an accuracy measure -- 2 errors or less is considered a good standard accuracy for most skills.

Some teachers may feel that many of the standards written in this manual seem too high for students to reach. High frequencies are recommended so students will have better retention of skills. Do not be satisfied with lower frequencies. Give students every opportunity to grow and reach a high aim.

Many students benefit from the teacher setting daily or weekly aims. Other students may enjoy the teacher setting the final aim with the date it should be met. The most important tactic to remember is to look at students individually when setting AIMS. The following page should be helpful to the teacher in setting aims.

*Several ways to set AIMS is to use . . .

1. The Suggested Performance Standards (see page 28)
2. Grade Level Information
 - a. Based on frequencies typically reached in the past,
or
 - b. Based on the median performance for this particular group of students.
3. The Individual Student's Motor Tool Skill Frequency
 - a. Assess tool skill for approximately two weeks.
 - b. Apply the following formula: $1/2$ to $2/3$ of tool skill frequency = reasonable aim for a related basic skill. For example, if a student's tool skill of writing numbers 0-9 is 100 then a good aim for basic facts would be 65.
 - c. Raise the aim, as necessary, throughout the year.
4. Functional Frequencies
 - a. Ideally, locate nine "experts" - people whom you would assume are proficient at the skill,
or
 - b. Use yourself and/or several other teachers.
 - c. Perform the timed task twice
 - 1) Use the first timing as a warm-up.
 - 2) Use the median score of the group as an aim.

*Adapted from Precision Teaching Project Training Manual Great Falls Public Schools, Great Falls, Montana.

SUGGESTED PERFORMANCE STANDARDS*

PINPOINT

READING

STANDARD

See/Say Isolated Sounds	60-80 sounds/min.
See/Say Phonetic Words	60-80 words/min.
Think/Say Alphabet (forward or backward)	400+ letters/min.
See/Say Letter Names	80-100 letters/min.
See/Say Sight Words	80-100 words/min.
See/Say Words in Context (oral reading)	200+ words/min.
See/Say Words in Context (silent reading)	400+ words/min.
Think/Say Ideas or Facts	15-30 ideas/min.

HANDWRITING

Emphasizing Speed

See/Write Slashes	200-400 slashes/min.
See/Write Circles	100-150 circles/min.
Think/Write Alphabet	80-100 letters/min.

Emphasizing Accuracy

See/Write letters (count of 3 for each letter: slant, form and ending)	75 correct/min.
See/Write - Cursive letters connected (count of 3 per letter)	125 correct/min.

SPELLING

Hear/Write Dictated Words	80-100 letters/min.
Hear/Write Dictated Words	15-25 words/min.

MATH

See/Write Numbers Random	100-120 digits/min.
Think/Write Numbers (0-9 serial)	120-160 digits/min.
See/Say Numbers	80-100/min.
Think/Say Numbers in Sequence (count by's)	150-200+/min.
See/Write Math Facts	70-90 digits/min.

*Adapted from Great Falls Precision Teaching Project Training Manual,
Great Falls Public Schools, Great Falls, Montana.