



About the Institute

The Office of Special Education Programs (OSEP) has funded the Research Institute on Progress Monitoring to develop a system of progress monitoring to evaluate effects of individualized instruction on access to and progress within the general education curriculum.

The Institute is housed at the Institute on Community Integration and the Department of Educational Psychology, Special Education in the College of Education and Human Development at the University of Minnesota. Iowa State University for Science and Technology is a lead collaborator in this research.

Objectives of the Institute

- Establish conceptual framework and research plans for developing a *seamless and flexible* system of progress monitoring to be used across ages (K-12), abilities, and curricula.
- Identify and validate progress monitoring strategies in reading, writing, math and science using Curriculum Based Measurement (CBM).
- Establish measures that reflect performance and predict progress in the general education curriculum.
- Develop a process for determining Tables of Probable Success for passing state standards tests.
- Evaluate the effects of progress monitoring on student performance and teacher instruction.
- Assess the effects of instructional context (e.g., intensity and consistency of instruction) on student growth.

National Advisory Board Members

The Institute's National Advisory Board members provide input and guidance to Institute activities.

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The National Center on Student Progress Monitoring

This OSEP funded Center's mission is to provide technical assistance to states and districts and disseminate information about progress monitoring practices proven to work in different academic content areas (Gr. K-5). The Center is housed at the American Institutes for Research.

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Curriculum-Based Measurement (CBM): Reading and Writing Measures in Secondary Education

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Introduction

Progress monitoring is a research-based practice used to assess students' academic performance and evaluate the effectiveness of instruction. Curriculum-based measurement (CBM) consists of a simple set of procedures for repeated measurement of student growth toward long-range instructional goals. This handout provides methods for creating probes for measuring the reading (maze only) and writing performance of students in secondary education. Procedures for administering and scoring the measures and graphing the data are provided.

Characteristics of CBM (Deno, 1985)

- Inexpensive
- Easy to use
- Time efficient
- Sensitive to small changes in performance
- Easy to understand
- Reliable
- Valid: *Indicators* of general academic health
- The measures tell us *if* our teaching is effective
- The measures *do not* tell us what to teach

Advantages of CBM

- Provides teachers with information to make instructional change decisions
- Highly sensitive to student growth
- Time efficient
- Cost effective
- Results are easier to understand than normative tests
- Based on typically used curriculum
- Individually referenced
- Provides direct and continuous monitoring of student achievement

Maze passages: Indicator of general reading health

The maze passage measures the student's general reading performance.

Creating a maze passage/administration

- Select a passage from the students' curriculum (basal reader, newspaper passages, etc.)
- Delete every seventh word and create two "distractor" words as choices (should have the same number of letters as correct word plus or minus one letter; should be a different part of speech and should NOT be a possible choice for that sentence).
- If the seventh word is a name, skip that choice and proceed to the next word.
- Make sure that all the choices "fit" on the same line.
- Give students 3 minutes to complete the maze passage.

Sample maze passage

The Jump

The last thing I wanted to do / if / it was be afraid. So, I got hay / into / will the plane and got ready to over / hat / jump. I thought about my mother and father / awaited / singles and how proud my sister would he / in / be of me. Since the time I life / was / are thrown from the horse, I have been / light / rate afraid of everything. Now I had of / v at v a chance to show everyone that I was / far / how no longer that scared little girl. A / v To v I took a breath and jumped! I turbulent / immediately / documents fell out of the plane and up / of / it felt a little like I was floating.

Scoring maze passages

- Score as incorrect:
 - Any items that are skipped (no choice is made)
 - Any items where two answers are circled
 - Any items where the student's choice cannot be determined
- Mark a line through any incorrect choice that the student has made.
- Count the number of correct maze choices to obtain the student score.
- If a student makes three consecutive errors, stop scoring.
 - Return to the last correctly chosen word
 - Count the number of correct maze choices including and before the last correctly chosen word. Do not count any choices made after the last correctly chosen word.

Written expression prompts: Indicator of general writing health

Performance data gathered from writing prompts is a measure of the student's general writing performance.

Creating a written expression prompt/administration

- Choose a writing prompt (see below).
- Give students 30 seconds to think about what they will write and 5-7 minutes to respond to the prompt.

Sample writing prompts

- We got on the bus and discovered we had left someone behind...
- I saw the huge footprints in the sand and decided to follow them...
- It was the first day of summer vacation...
- One day my friend and I went to the zoo...
- My best friend suddenly screamed...
- I was the first one to smell smoke and...
- Yesterday was the strangest day...
- I woke up and I was on the moon...

Case study

Jennifer is a 16-year-old tenth grader who receives special education support for reading. Jennifer's special education teacher and her English teacher are concerned about her performance in reading. Jennifer's performance in reading is markedly below her peers, and she is having trouble passing the state graduation standards test in reading. Jennifer's special education teacher decides to monitor Jennifer's progress in reading using a 3-minute maze passage.

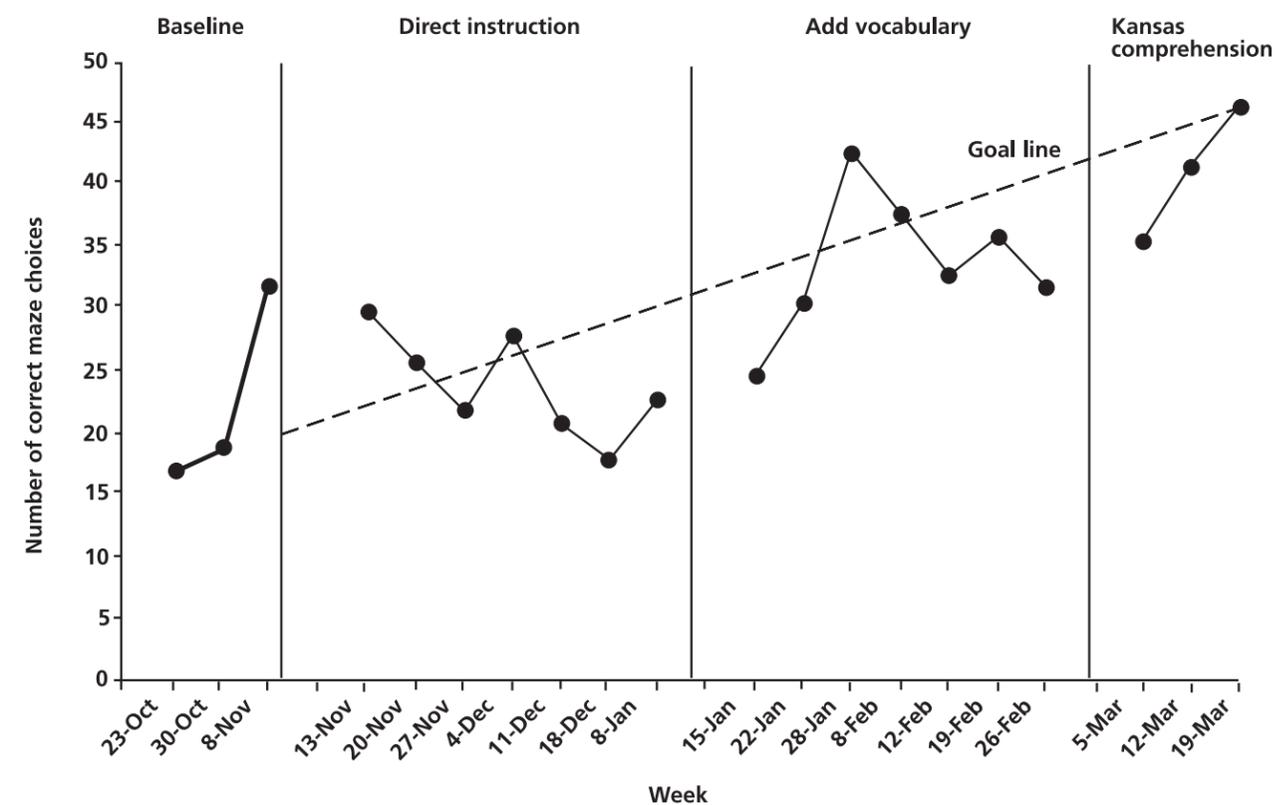
Set the long-range goal

Jennifer's teacher collects baseline data on Jennifer to determine Jennifer's current level of performance. Jennifer's baseline scores are 17, 19, and 32 correct maze choices in 3 minutes. Using 19 as a beginning point, the teacher draws a long-range goal representing Jennifer's expected rate of growth for the year, and draws the goal on the graph.

Monitor performance and evaluate instruction

The teacher then monitors Jennifer's progress once each week using maze passages of equivalent difficulty, and graph the scores. When Jennifer's progress falls below the goal line, the special and general education teacher discuss changes to Jennifer's program. If Jennifer's progress exceeds the expected goal, the teacher raises her goal.

Reading graph for Jennifer



Explanation

1. Should be *Espin's* – missing the possessive.
2. This is past tense, so *is* should be *was*.
3. Omitted words – *the most*
4. *Girl* needs to be plural.
5. Omitted word – *about*
6. *Binjiman* is obviously spelled incorrectly.
7. No end punctuation.
8. Should be *awhile*, not just *while*.
9. Can't begin sentence with *But*.
10. Should be past tense: *didn't*.
11. Omitted word – *like*.
12. Should be past tense: *was*.
13. Incorrect spelling.
14. Should be past tense: *was*.
15. Loud modifies a verb, should use adverb *loudly*.
16. Omitted word – *the*.
17. *No body* is incorrect, should be *nobody*.
18. Should be conjunction — *let's*

Progress monitoring and graphing

Steps for progress monitoring

Graphing baseline data

- Locate week in which data were collected (horizontal axis)
- Locate day within that week that probe was administered (horizontal axis)
- Locate student's score (vertical axis)
- Place a dot at intersection of day and value
- Repeat above steps for each baseline data point
- Draw vertical line from top to bottom of graph after the last baseline data point

Setting a long range goal (LRG)

- Determine median of baseline.
- Put an "X" on the vertical line at the level of the median value
- Set an ambitious goal for improvement in maze (number of choices improvement) or written expression (number of C-IWS improvement).
- Determine number of weeks you will progress monitor.
- Multiply the number of weeks by the criterion (e.g., expected rate of growth per week)
- Add this number to the median baseline point
- Calculate LRG; place an "X" at the intersection of the date of the last data point and the value of the LRG.
- Draw a line that connects the baseline data with the LRG.

Utilizing data and making decisions

- Most important aspect of CBM: USE THE DATA!!!
- You should ask yourself the following: Is the student progressing? Is my instruction effective? Do I need to change instruction? Is the instructional change I've made effective? Should I raise the student's goal?
- After three consecutive points below the goal line, change instruction.
- After six consecutive points above the goal line, raise the goal.

- When I got home, I looked in the mailbox...
- It was the first day at my new school...
- My mother let me hold my new baby brother...
- The cave was very dark...
- I turned on the TV and saw...
- The first day on my new job was awful...

Scoring CBM written expression measures

- Read the entire sample before beginning to score.
- Place a vertical line at the place where a sentence *should* end. You may have to judge where the sentence should end.
- Underline incorrect words (words spelled incorrectly, grammatically incorrect or used incorrectly).
- Score the passage for correct and incorrect word sequences using the following definition developed by Videen, Deno, & Marston, 1982:
 - A correct word sequence is one that contains any two adjacent, correctly spelled words that are acceptable within the context of the sample to a native speaker of the English language.
 - The term "acceptable" means that a native speaker would judge the word sequences as syntactically and semantically correct.
- Use the carat (^ v) method for scoring. Place a carat above two words if it represents a correct word sequence, and below the words if it represents an incorrect sequence. Score incorrect sequences first using a red pencil below the line. Count incorrect sequences. Then score correct sequences with a blue pencil above the line. Count correct sequences.
- Score a correct word sequence at the beginning of the sentence if the first word is capitalized and the word is spelled correctly. Score a correct sequence at the end of the sentence if the last word is spelled correctly, and the student uses correct end punctuation.

Rules for scoring correct and incorrect word sequences

Capitalization and punctuation

- Pay attention only to capitalization at the beginning of the sentence and capitalization of proper names, places, etc. If a word is not capitalized at the beginning of the sentence, there is one wrong sequence. If the word is not capitalized and not spelled correctly, it is two wrong sequences.

v she went ^ to ^ the ^ store ^.
v shee v went ^ to ^ the ^ store ^.
^ I ^ hate v minnesota ^ when ^ it ^
is ^ cold ^.

- Assign a correct sequence for a sensible beginning of a sentence. That is, a blank followed by a sensible sentence beginning. This first word of the sentence must be capitalized.
- Do not accept *and*, *but*, or *then* as correct words at the beginning of a sentence.

v And v I ^ didn't ^ clean ^ my ^
room ^ either ^.

The only exception to this rule is the first sentence in the story, since the students have been given a story starter. They may just be finishing the sentence. The story starter was:

It was a dark and stormy night...

The student writes as the first sentence to the story:

...and I had just gone to bed.

- Ignore capitalization of words within a sentence. If a student writes in all capitals or if a student writes some letters as capitals, ignore it.

^ She ^ wenT ^ To ^ the ^ stoRe ^.

- The word "I" must be capitalized.
- Assign a correct sequence for a sensible ending to the sentence and correct punctuation. Count only end punctuation. Ignore all other punctuation in the middle of the sentence (comas, quotes, etc.). The only exception to this rule is an apostrophe, because a missing apostrophe would make the word an incorrectly spelled word (*dont*).



Misspelled words

- The sequence before and after the misspelled word is incorrect.
^ I ^ liked v scool v today ^.
- Compound words that are written as two words are counted as 3 incorrect sequences.
^ I ^ didn't ^ do ^ my v home v work v yesterday ^.
- Children often make up names in their stories, or use unfamiliar names. In general, do not count a proper name as misspelled unless it's obvious that it is incorrect (like spelling *Sue* incorrectly: *Seu* or misspelling a name that was spelled differently earlier in the passage).

Sentence structure

- Run-on sentences
 - If the sentence is a run-on sentence, the scorer must decide where the sensible ending to the sentence is. Place a vertical line at this point.
 - If a run-on sentence is connected by conjunctions, the scorer must determine where to break the sentence apart. As a general rule, allow only one or two conjunctions per sentence. Cross out extra conjunctions and mark the end of the sentence. This rule does not refer to a list of things connected by the word *and*. I want a book *and* a pencil *and* a piece of paper is correct.
 - In a run-on sentence, do not give credit for end punctuation or for capitalizing the beginning of the next sentence.
^ I ^ went ^ to ^ the ^ store ^ and ^ asked ^ for ^ bread v I v and v looked ^ at ^ books ^ and ^ went ^ home ^.
- Word order reversed
 - If a student reverses the order of two words, there are three incorrect sequences. They often do this when embedding a question in a sentence.
^ I ^ was ^ thinking ^ about ^ what v would v my v friend ^ say ^.

Or think of it as needing to omit the word would and then put it after the word friend:

^ I ^ was ^ thinking ^ about ^ what v would v my ^ friend v say ^.

- Omitted words
 - One wrong sequence for an omitted word or words.
^ I ^ checked ^ every ^ room v if ^ lights ^ were ^ on ^. (to see was omitted).
- Added words
 - Sometimes students use words incorrectly and it is difficult to tell how to best score the sentence. In many cases, one word can be deleted to make a coherent sentence. This word should be marked wrong, just as a misspelled word is.
^ I ^ thought v since v I ^ wanted ^ to ^ be ^ home ^ as ^ soon ^ as ^ possible ^ because ^ it ^ was ^ storming ^.
- Sentence fragments
 - There are two types of sentence fragments. In one, students place end punctuation in the middle of two phrases that should be connected together. In such cases, the end of the first sentence and beginning of the next sentence are marked wrong.
^ When ^ I ^ came ^ home v. v The ^ door ^ was ^ open ^.
 - In the second type, there is just one fragment by itself. In such a case, either the beginning of the sentence or the end punctuation is marked wrong. In the following example, the words "They wear" have been omitted from the beginning of the sentence:
^ The ^ kids ^ at ^ school ^ wear ^ all ^ types ^ of ^ clothes ^. I v Baggy, ^ clothes ^ like ^ Levis ^.

- Repeated phrase
 - The repeated part is marked wrong.
^ When ^ I ^ saw ^ the ^ old ^ buildings ^ and v the v old v build- ings v and v, I ^ ran ^ home ^.

Grammar

- Wrong tense:
^ First ^ we ^ went ^ home ^ and ^ then ^ we v go v to ^ the ^ store ^.
- Number:
^ We ^ had ^ three v car v.
- Case:
v Me v and v Joe v went ^ to ^ the ^ store ^.
- Possessive:
^ My v mothers v house ^ is ^ on ^ that ^ street ^.
- Word choice:
^ I ^ am ^ the ^ only ^ one v that v is v here ^.

Miscellaneous

- Slang, like *gonna*, *yeah*, *kinda*, are ok in dialogue. If not in dialogue, count as a misspelled word.
- Count numbers, dates, and amounts as correct word.
- Count & as one correct word.
- Count hyphenated words as 1 word.
- *All of a sudden*, *all of the sudden*, and *all the sudden* are all ok.
- *A lot* is 2 words, not 1.
- *Lunchroom* is 1 word, not 2.
- *Gray* and *grey* are both proper spellings.
- *T-shirts*, *teeshirts*, and *t shirts* are all ok and counted as 1 word.
- *Like* in the middle of the sentence is wrong.
^ He ^ wore v like v a ^ t-shirt ^.
- Abbreviations are ok (min., hr., lb., etc.)

Sample passage for scoring

It was on Monday afternoon. Mrs. Espin 4th hour class is getting started. Sheila was one of talkative girl. She was telling the fight with Binjiman and Peter from her last class Mrs. Espin waited for while to let her finish her story. But Sheila doesn't seem she is going to stop. Mrs. Espin tried to teach the other students. Scince Sheila is talking loud in left corner no body paid any attention to Mrs. Espin. Mrs. Espin said, "Class, let settle down and get ready to begin working."

Scored passage

^ It ^ was ^ on ^ Monday ^ afternoon ^. I ^ Mrs. v Espin **1** v 4th ^ hour ^ class v is **2** v getting ^ started ^. I ^ Sheila ^ was ^ one ^ of v **3** talkative v girl **4** v. I ^ She ^ was ^ telling v **5** the ^ fight ^ with v Binjiman **6** v and ^ Peter ^ from ^ her ^ last ^ class v **7** I ^ Mrs. ^ Espin ^ waited ^ for v while **8** v to ^ let ^ her ^ finish ^ her ^ story ^. I v But **9** v Sheila v doesn't **10** v seem **11** v she v is **12** v going ^ to ^ stop ^. I ^ Mrs. ^ Espin ^ tried ^ to ^ teach ^ the ^ other ^ students ^. I v Scince **13** v Sheila v is **14** v talking v loud **15** v in v **16** left corner v no v body **17** v paid ^ any ^ attention ^ to ^ Mrs. ^ Espin ^. I ^ Mrs. ^ Espin ^ said, ^ "Class, v let **18** v settle ^ down ^ and ^ get ^ ready ^ to ^ begin ^ working ^." I