Using Student Progress Monitoring in a Response to Intervention Model

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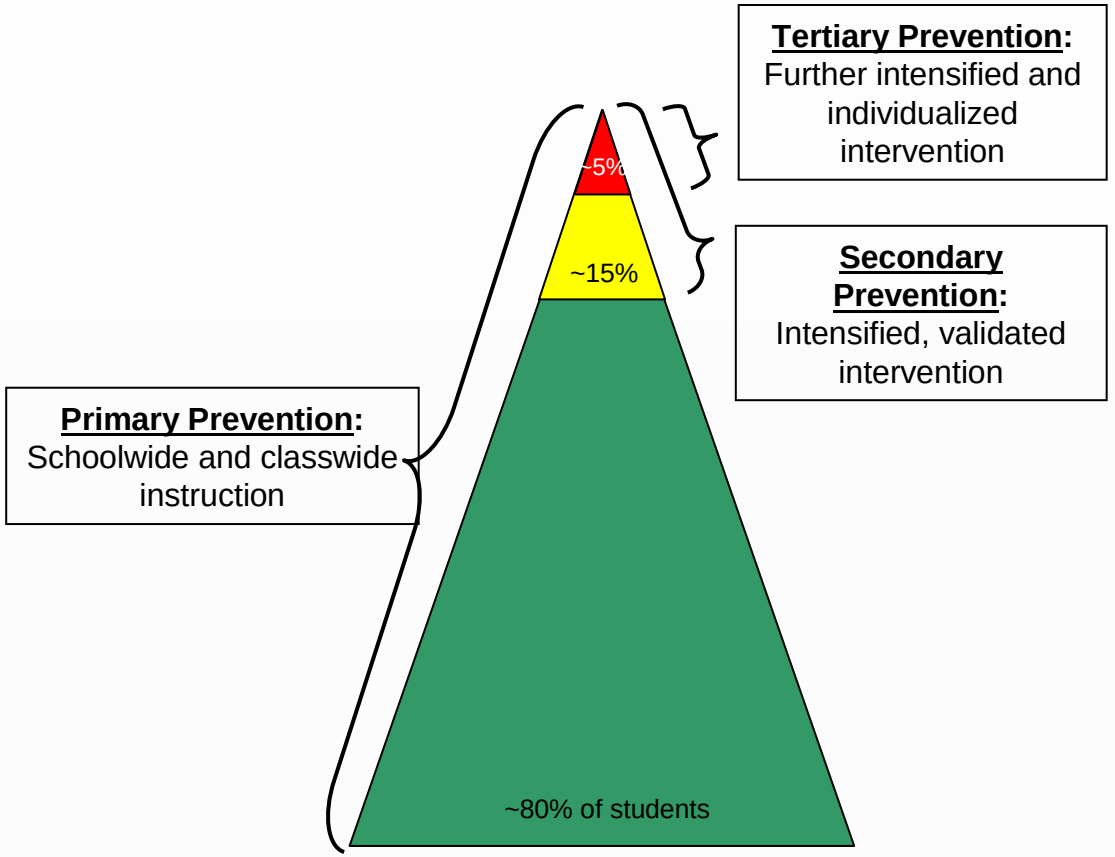
Our Working RTI Model

- RTI relies on a multi-tier prevention system to identify students with academic skill weaknesses and LDs:
  - Primary prevention level (Tier 1)
  - Secondary prevention level (Tier 2)
  - Tertiary prevention level (Tier 3)
- Each tier in the model is focused on a set of interrelated tasks:
  - Instructional Tasks
  - Assessment Tasks
  - Administrative/Managerial Tasks
- Responsiveness is determined via a dual discrepancy analysis
  - Student performance relative to benchmark standards
  - Student performance relative to rate-of-improvement or growth standards

Continuum of Schoolwide Support



Basics of RTI

- Primary Prevention (Tier 1):
  - All student receive a research supported core curriculum
  - All students screened seasonally (Fall, Winter, & Spring) to determine which students are suspected to be at risk
  - Students suspected to be at risk remain in primary prevention and their progress is monitored for 4 to 8 weeks
  - Progress monitoring in Tier 1 is used too:
    - Disconfirm risk. These responsive students remain in primary prevention.
    - Confirm risk. These unresponsive students move to secondary prevention.

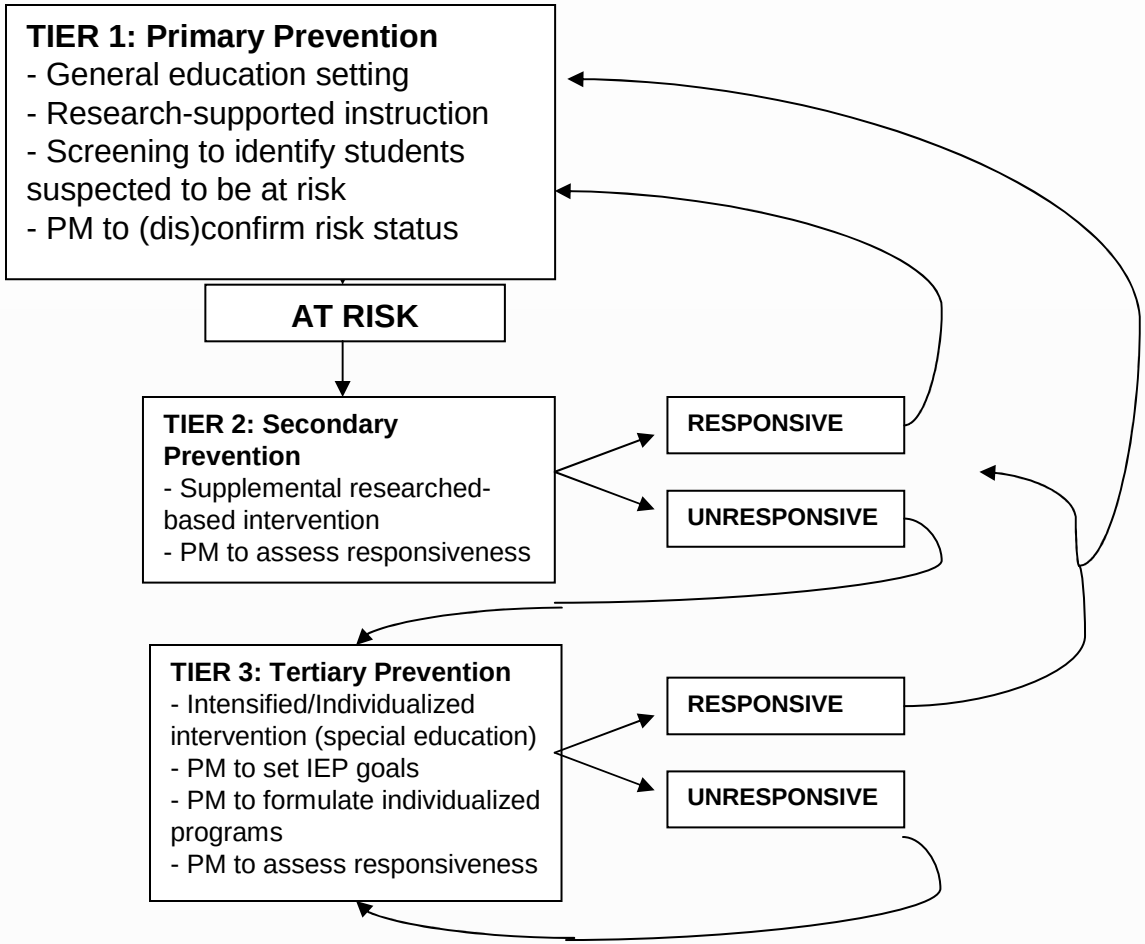
Basics of RTI

- Secondary Prevention (Tier 2):
  - Supplemental manualized intervention is provided in flexible groups for anywhere from 10-15 weeks
  - Student progress is monitored weekly
  - Student responsiveness is assessed continually :
    - Students who are responsive to Tier 2 intervention return to Tier 1
    - Students who are under-responsive to Tier 2 intervention move to tertiary Tier 3 intervention

Basics of RTI

- Tertiary Prevention (Tier 3):
  - Intensified individualized intervention (may or may not involve special education services)
  - Student progress is monitored weekly
  - Progress monitoring is used to:
    - Set Individualized education program (IEP) goals.
    - Design individualized instructional programs.
    - Monitor student response.
      - When progress monitoring indicates that a student has met benchmark performance standards, student exits Tier 3 (or special education), and returns to primary (Tier 1) or secondary (Tier 2) prevention, with ongoing progress monitoring.

Three Tiers of RTI



Summary

1. Screen all students to identify suspected at-risk students.
2. Monitor progress of students suspected to be at risk to (dis)confirm risk.
3. Provide supplemental standardized intervention to at-risk students, while progress is monitored to assess response.

Summary

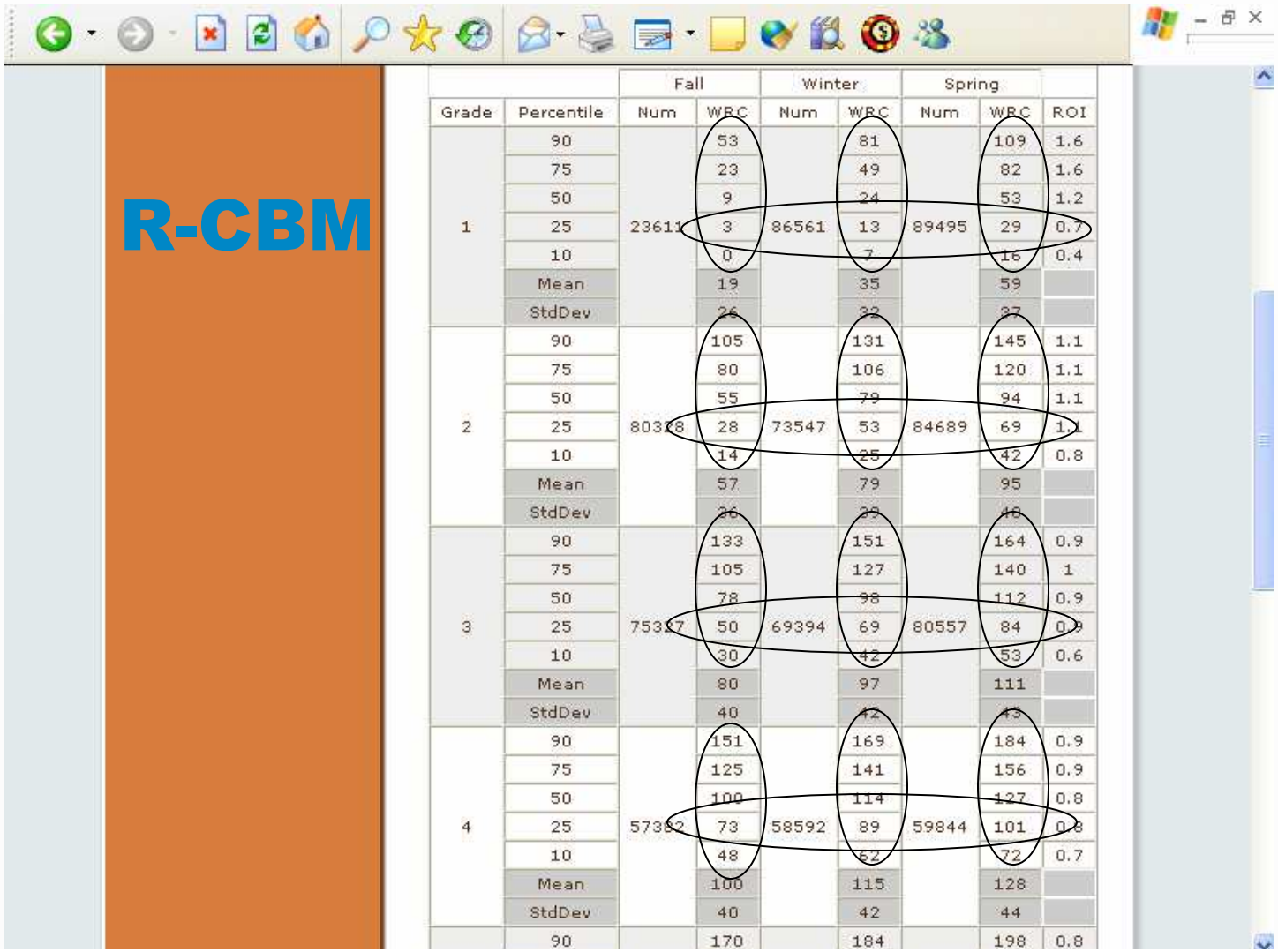
4. Students who are under-responsive to secondary preventative intervention are moved to tertiary intervention where intensified/individualized intervention is provided (may or may not be under the auspices of special education).
5. Progress is formatively monitored to tertiary intervention to determine effective programs and IEP goals are set (for students in classified for special education), and determine exit decisions.

Setting Goals & Making Decisions within the Three Tiers of RTI

Tier 1—Primary Prevention

- All students screened using CBM
- Students scoring below benchmark are suspected at risk for reading or math difficulties
- Suspected at-risk students monitored for 4 to 8 weeks during primary prevention using CBM and their risk-status is confirmed or disconfirmed

Tier 1—Primary Prevention: Screening for Possible Reading Risk

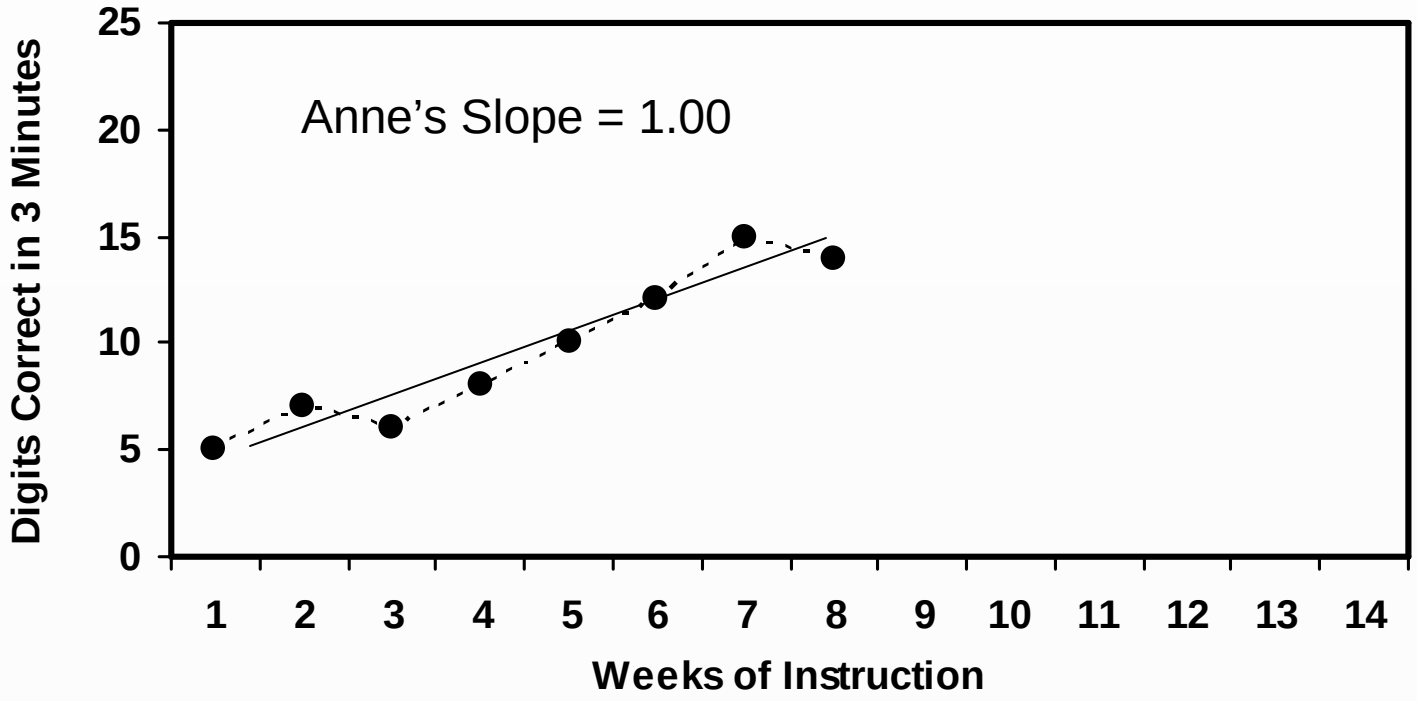


		Fall		Winter		Spring		
Grade	Percentile	Num	WRC	Num	WRC	Num	WRC	ROI
1	90		53		81		109	1.6
	75		23		49		82	1.6
	50		9		24		53	1.2
	25	23611	3	86561	13	89495	29	0.7
	10		0		7		16	0.4
	Mean		19		35		59	
	StdDev		26		32		37	
2	90		105		131		145	1.1
	75		80		106		120	1.1
	50		55		79		94	1.1
	25	80378	28	73547	53	84689	69	1.1
	10		14		25		42	0.8
	Mean		57		79		95	
	StdDev		36		35		40	
3	90		133		151		164	0.9
	75		105		127		140	1
	50		78		98		112	0.9
	25	75357	50	69394	69	80557	84	0.9
	10		30		42		53	0.6
	Mean		80		97		111	
	StdDev		40		42		43	
4	90		151		169		184	0.9
	75		125		141		156	0.9
	50		100		114		127	0.8
	25	57382	73	58592	89	59844	101	0.8
	10		48		62		72	0.7
	Mean		100		115		128	
	StdDev		40		42		44	
	90		170		184		198	0.8

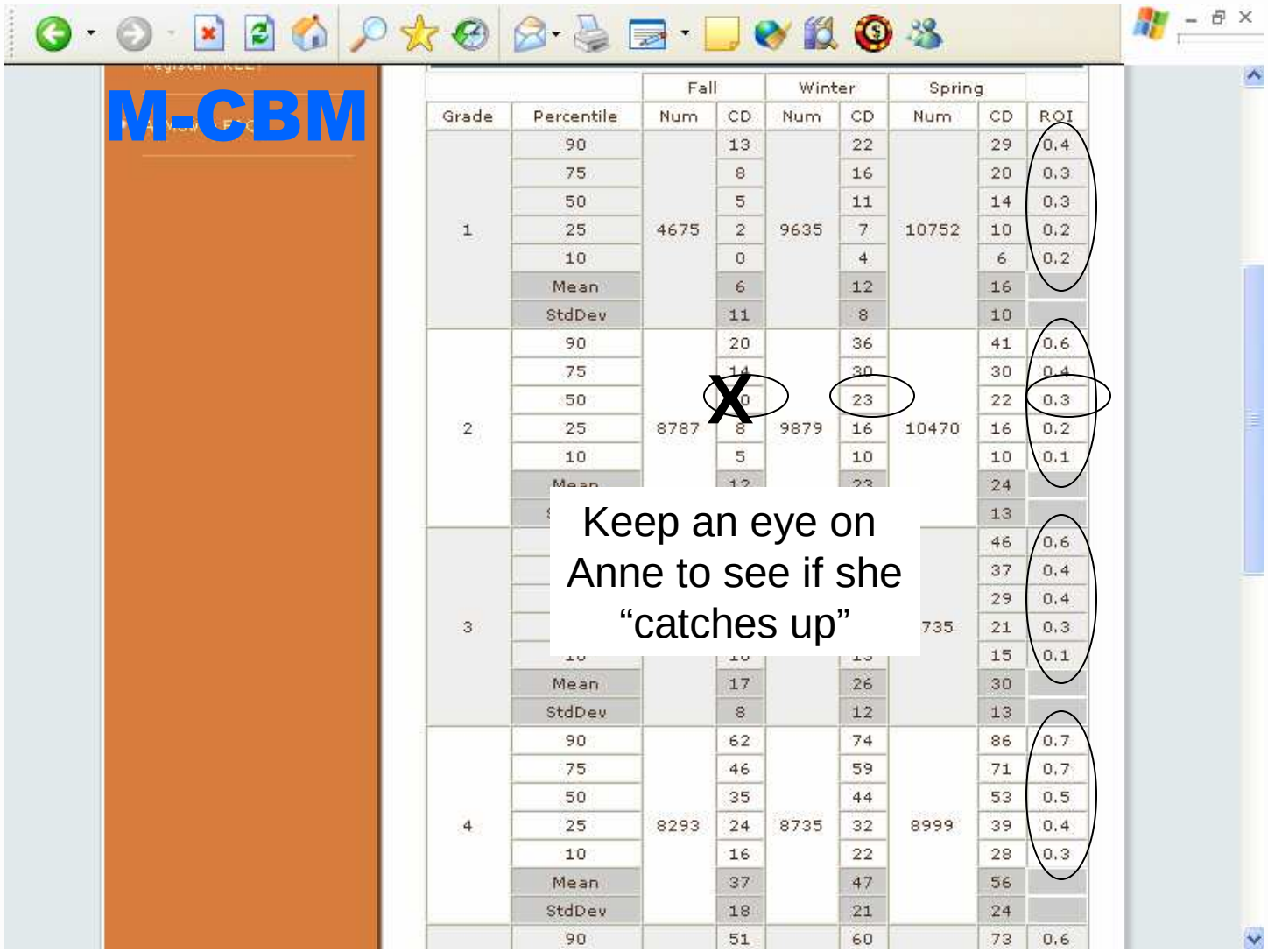
Tier 1—Primary Prevention: Confirming Risk Status With Progress Monitoring

- At the end of 4–8 weeks, student risk status is confirmed or disconfirmed via progress monitoring

Tier 1—Primary Prevention: Confirming Risk Status With PM

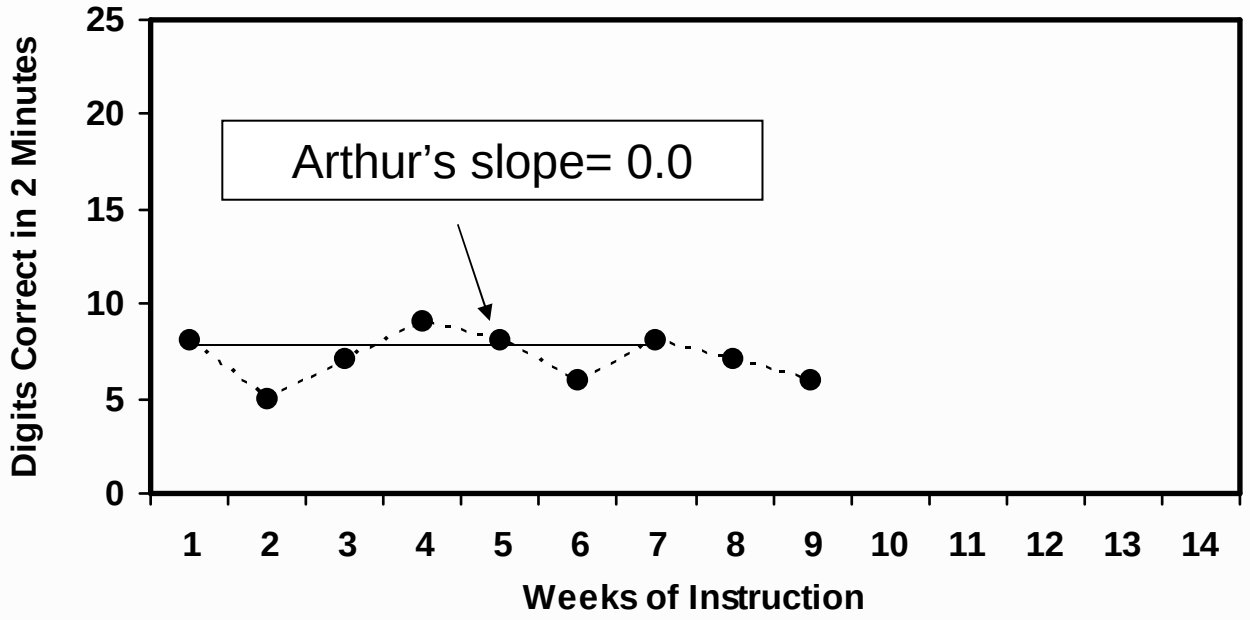


Tier 1—Primary Prevention: Screening for Possible Math Risk

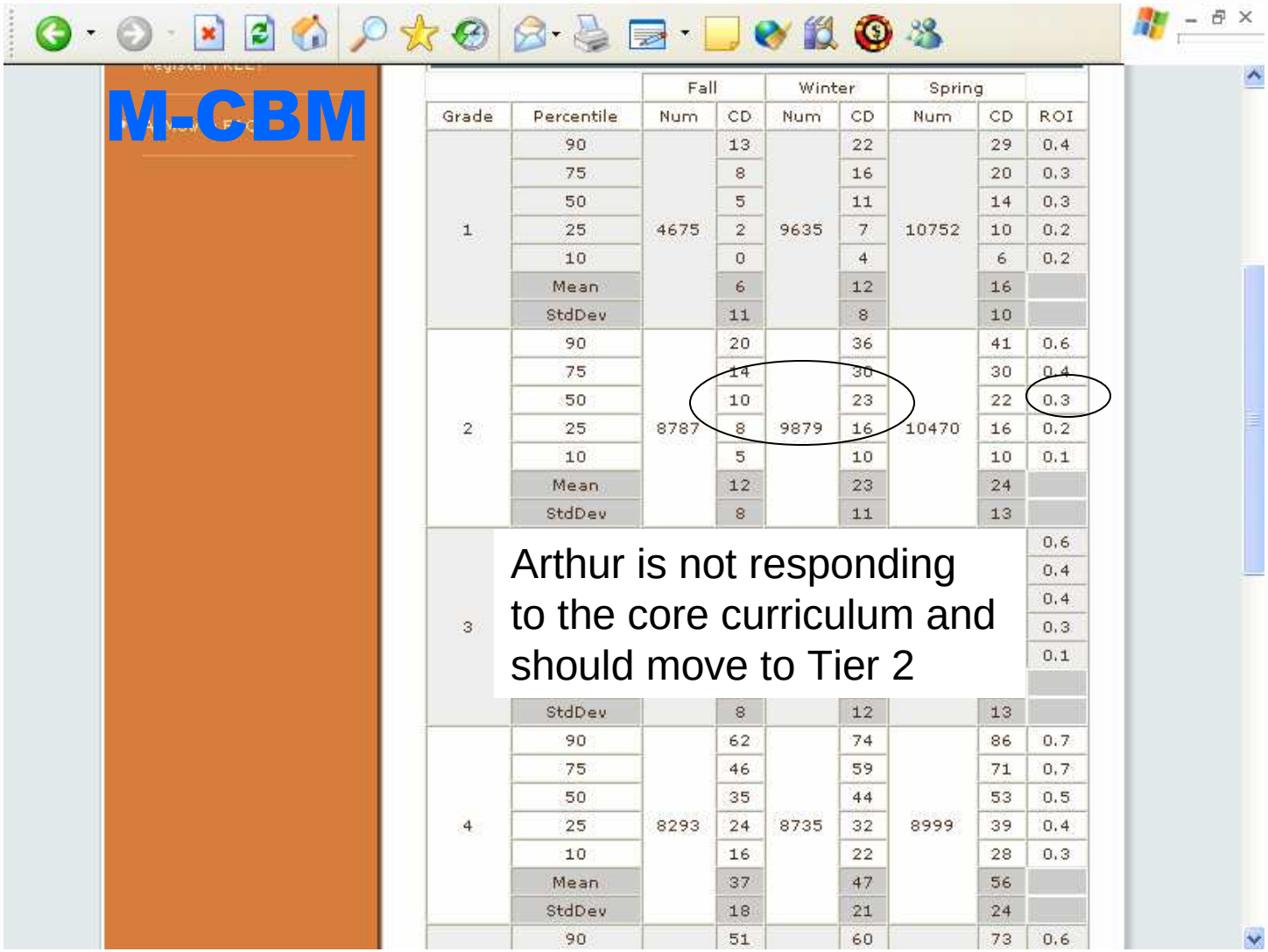


		Fall		Winter		Spring		
Grade	Percentile	Num	CD	Num	CD	Num	CD	ROI
1	90	4675	13	9635	22	10752	29	0.4
	75		8		16		20	0.3
	50		5		11		14	0.3
	25		2		7		10	0.2
	10		0		4		6	0.2
	Mean		6		12		16	
	StdDev		11		8		10	
2	90	8787	20	9879	36	10470	41	0.6
	75		14		30		30	0.4
	50		10		23		22	0.3
	25		8		16		16	0.2
	10		5		10		10	0.1
	Mean		12		23		24	
							13	
3						735	46	0.6
							37	0.4
							29	0.4
							21	0.3
							15	0.1
	Mean		17		26		30	
	StdDev		8		12		13	
4	90	8293	62	8735	74	8999	86	0.7
	75		46		59		71	0.7
	50		35		44		53	0.5
	25		24		32		39	0.4
	10		16		22		28	0.3
	Mean		37		47		56	
	StdDev		18		21		24	
	90		51		60		73	0.6

Tier 1—Primary Prevention: Confirming Risk Status With PM



Tier 1—Primary Prevention: Screening for Possible Math Risk



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	Mean		37		47		56	
	StdDev		18		21		24	
	90		51		60		73	0.6

Arthur is not responding to the core curriculum and should move to Tier 2

Tier 1—Primary Prevention: Review

- All classroom students screened to identify suspected at-risk students.
- Suspected at-risk students remain in primary prevention and are monitored using CBM for 4–8 weeks:
  - Students with adequate slopes remain in primary prevention.
  - Students with inadequate slopes move to Tier 2 (secondary prevention).

Tier 2—Secondary Prevention

- Use the same goal setting and decision making standards as in Tier 1
- In addition to the core curriculum, students in Tier 2 receive supplemental manualized intervention for 10 to 15 weeks
- At the end of Tier 2 intervention, student benchmark and growth status is evaluated
  - Students at or above benchmark return to Tier 1
  - Students below benchmark, but making adequate (or exceeding) growth progress may be maintained in Tier 2
  - Students below benchmark and continuing to demonstrate poor growth progress (i.e., under-responding) are moved to Tier 3

Tier 3—Tertiary Prevention

- Intensified/individualized programs are formulated for individual or small groups (2-3) of students
- For students who are classified (i.e., receiving special educational services) IEP goals are established.

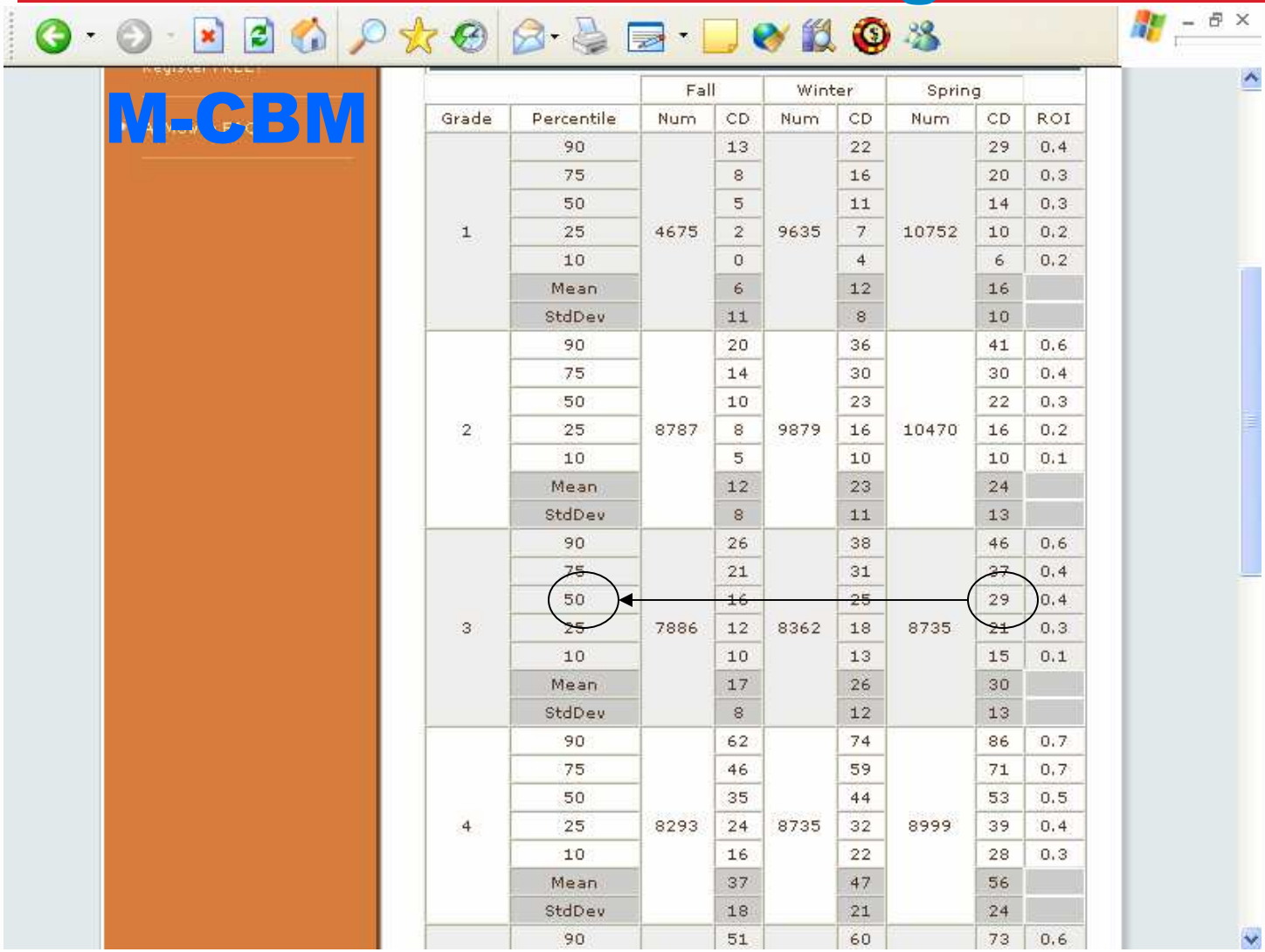
Tier 3—Tertiary Prevention: Goal Setting

- Three options for setting IEP goals:
  - Aggregated benchmark estimates
  - Aggregated rate of improvement (growth) estimates
  - Intra-individual framework

Tier 3—PM in Tertiary Prevention: Setting Goals With End-of-Year Benchmarking

- Setting IEP goals
  - End-of-year benchmarking
    - Identify appropriate grade-level benchmark
    - Mark benchmark on student graph with an X
    - Draw goal-line from the baseline CBM scores to X

Tier 3—PM in Tertiary Prevention: Setting Goals With End-of-Year Benchmarking



M-CBM

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	10		5		10		10	0.1
	Mean		12		23		24	
	StdDev		8		11		13	
3	90	7886	26	8362	38	8735	46	0.6
	75		21		31		37	0.4
	50		16		25		29	0.4
	25		12		18		21	0.3
	10		10		13		15	0.1
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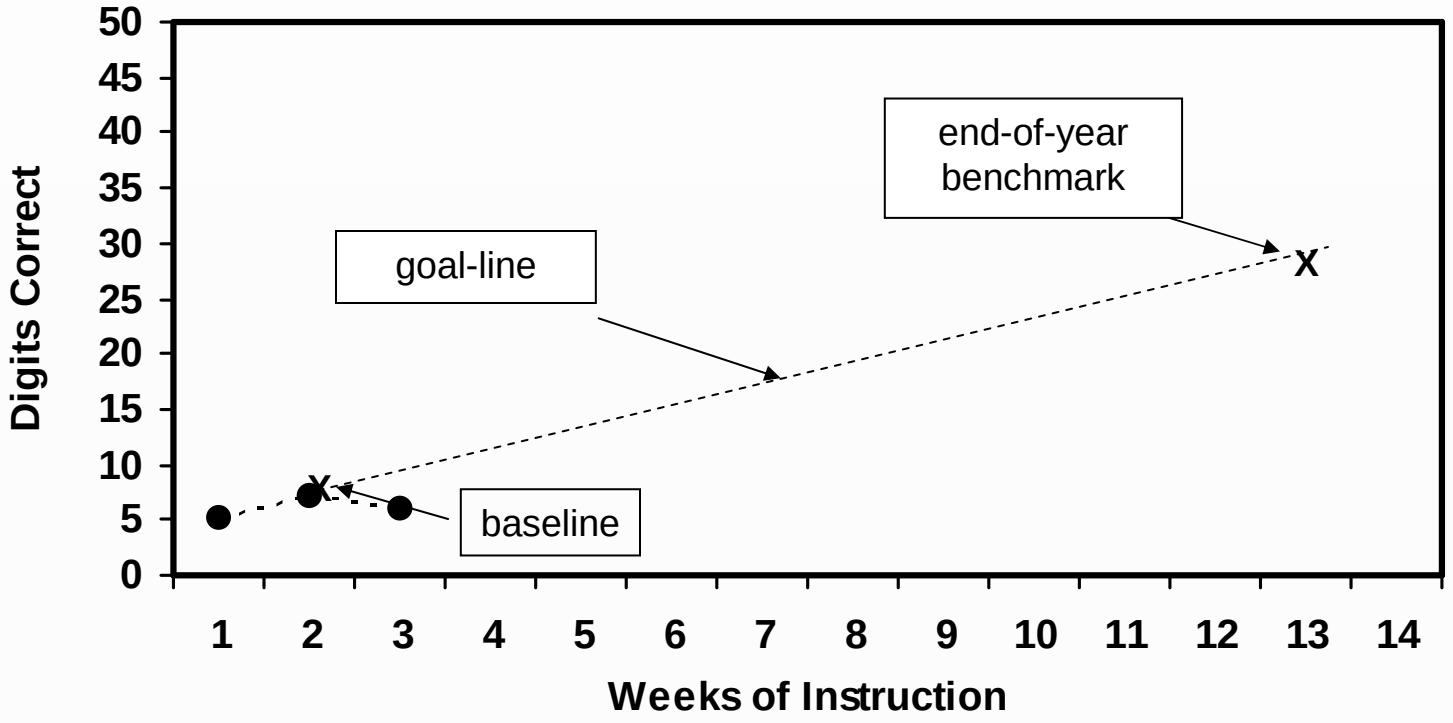
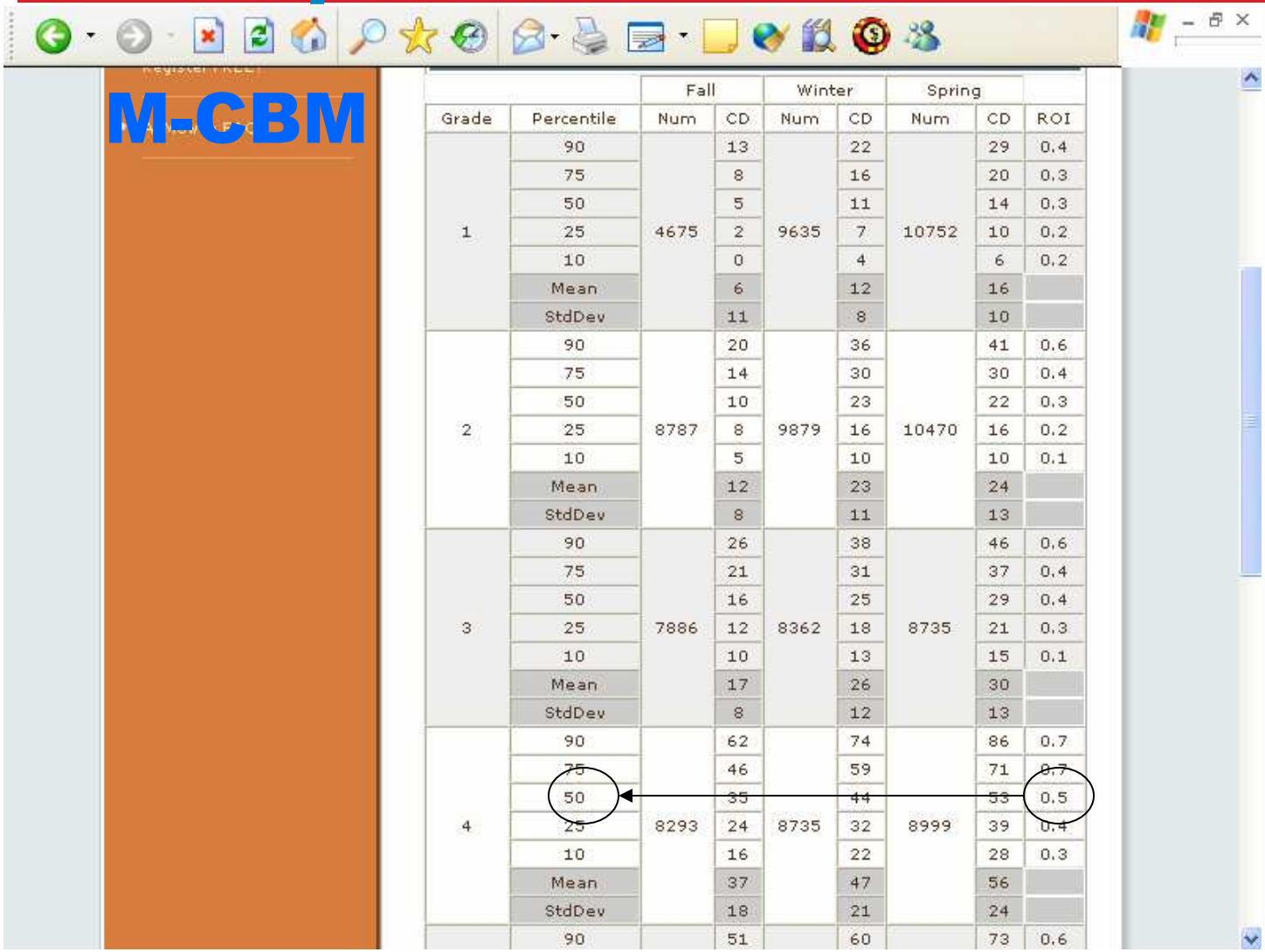
Tier 3—Tertiary Prevention: Setting Goals With End-of-Year Benchmarking



Tier 3—Tertiary Prevention: Setting Goals With Rate of Improvement Standards



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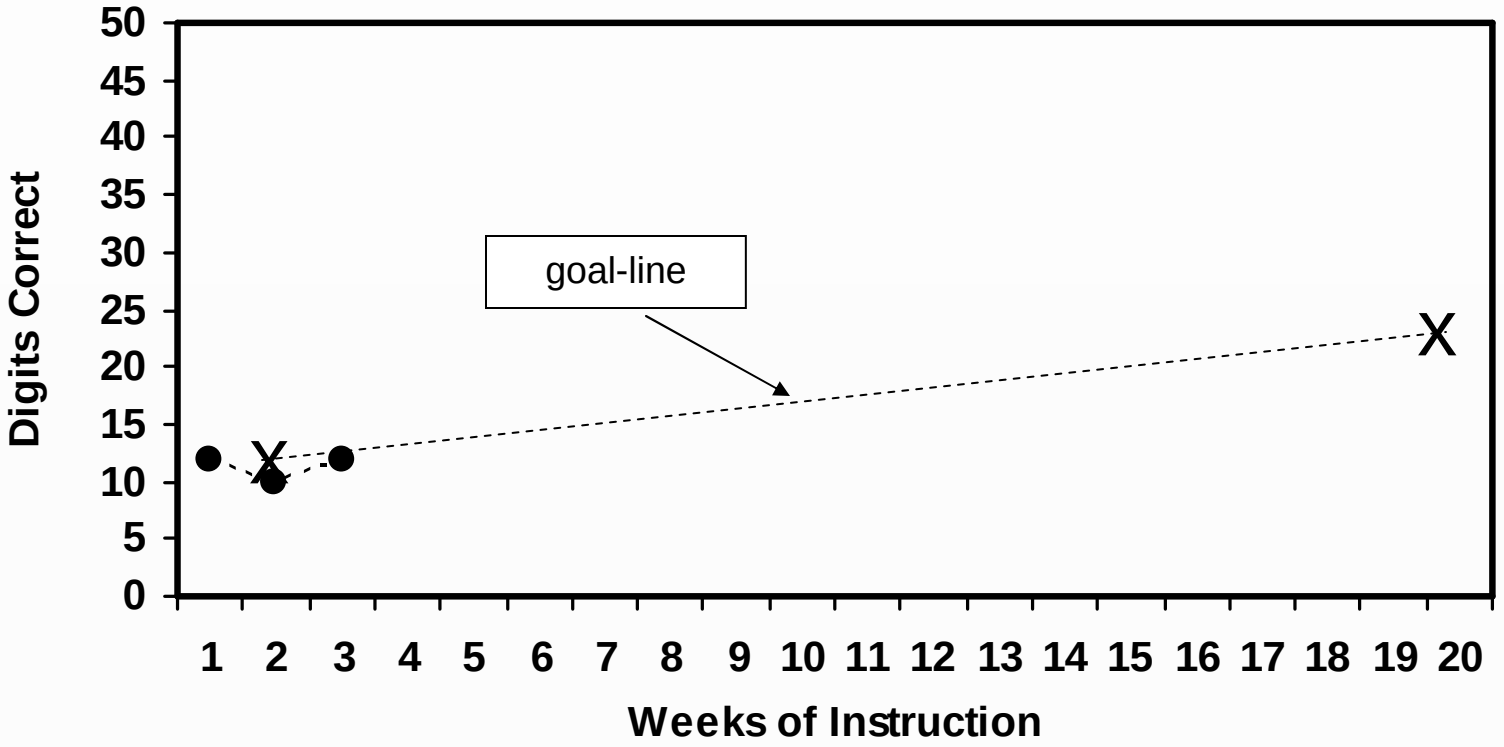
	Mean		37		47		56	
	StdDev		18		21		24	
	90		51		60		73	0.6

Tier 3—Tertiary Prevention: Setting Goals With Rate of Improvement Standards

- Setting IEP goals:
  - Rate of Improvement Standards
    - First three scores average (baseline) = 14
    - Norm for fourth-grade computation = 0.50
    - Multiply norm by number of weeks left in year
      - $16 \times 0.50 = 8$
    - Add to baseline average
      - $8 + 14 = 22$
    - Student's end-of-year goal is 22

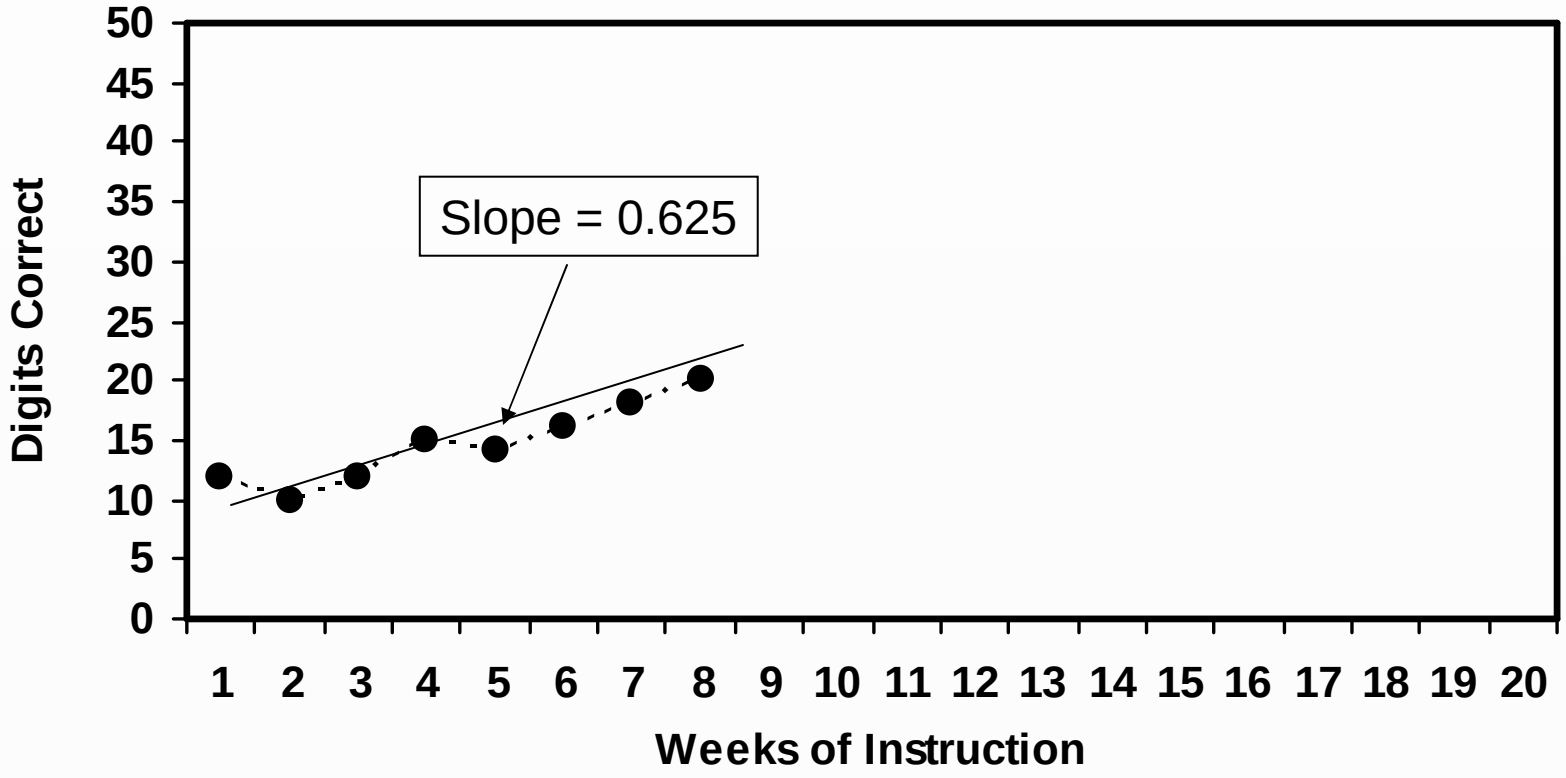
Tier 3—Tertiary Prevention: Setting Goals With Rate of Improvement Standards



Tier 3—Tertiary Prevention: Setting Goals With Intra-Individual Framework

- Setting IEP goals:
  - Intra-individual framework
    - Identify weekly rate of improvement (slope) using at least eight data points
    - Multiply slope by 1.5
    - Multiply by number of weeks until end of year
    - Add to student's baseline score
    - This is the end-of-year goal

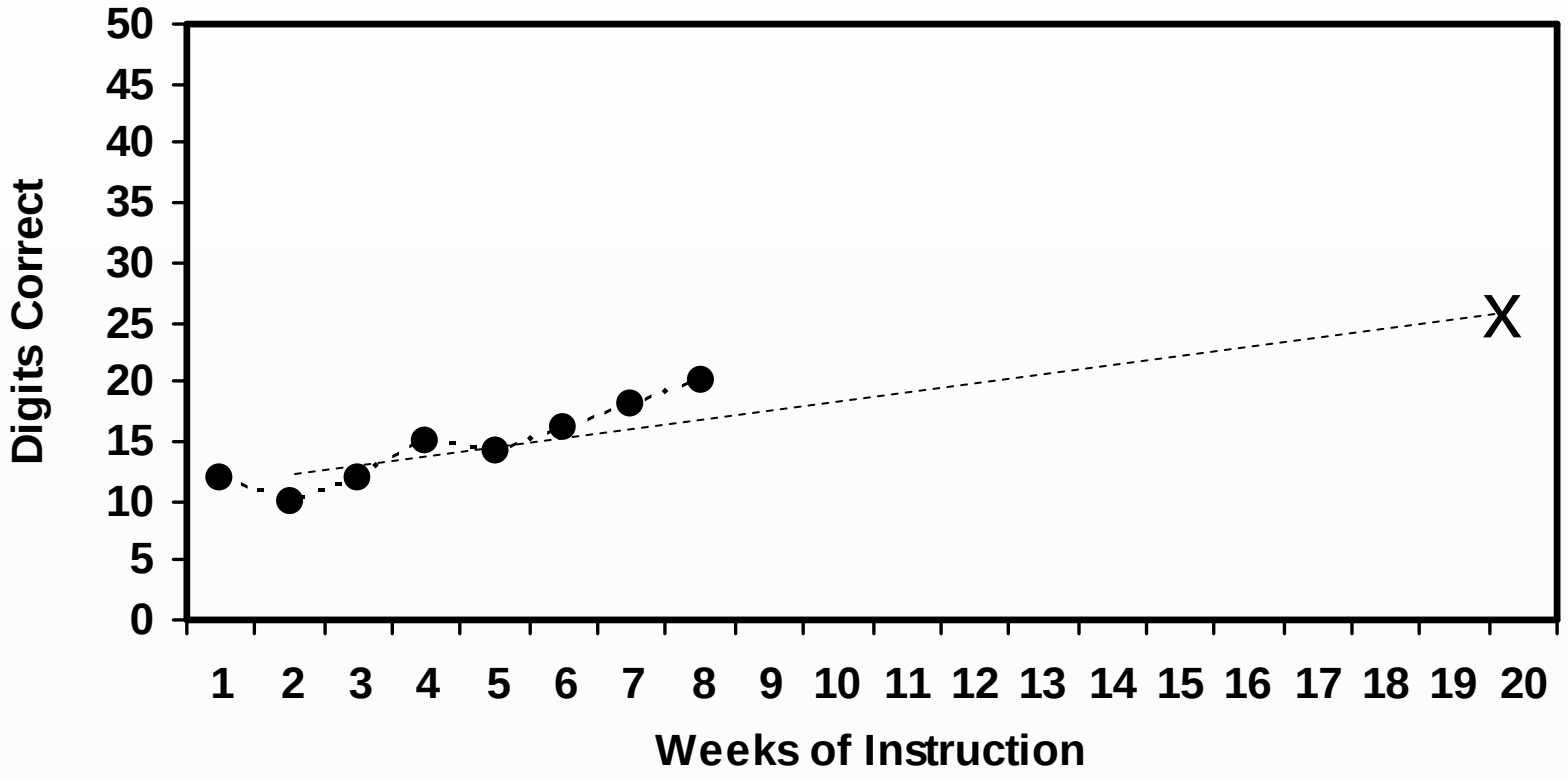
Tier 3—Tertiary Prevention: Setting Goals With Intra-Individual Framework



Tier 3—PM in Tertiary Prevention: Setting Goals With Intra-Individual Framework

- Setting IEP goals
  - Intra-individual framework
    - Identify weekly rate of improvement using at least eight data points
      - First eight scores slope = 0.625
    - Multiply slope by 1.5
      - 0.625 × 1.5 = 0.9375
    - Multiply by number of weeks until end of year
      - 0.9375 × 12 = 11.25
    - Add to student's baseline score
      - 11.25 + 12.00 = 23.25
    - 23.25 (or 23) is student's end-of-year goal

Tier 3—Tertiary Prevention: Setting Goals With Intra-Individual Framework



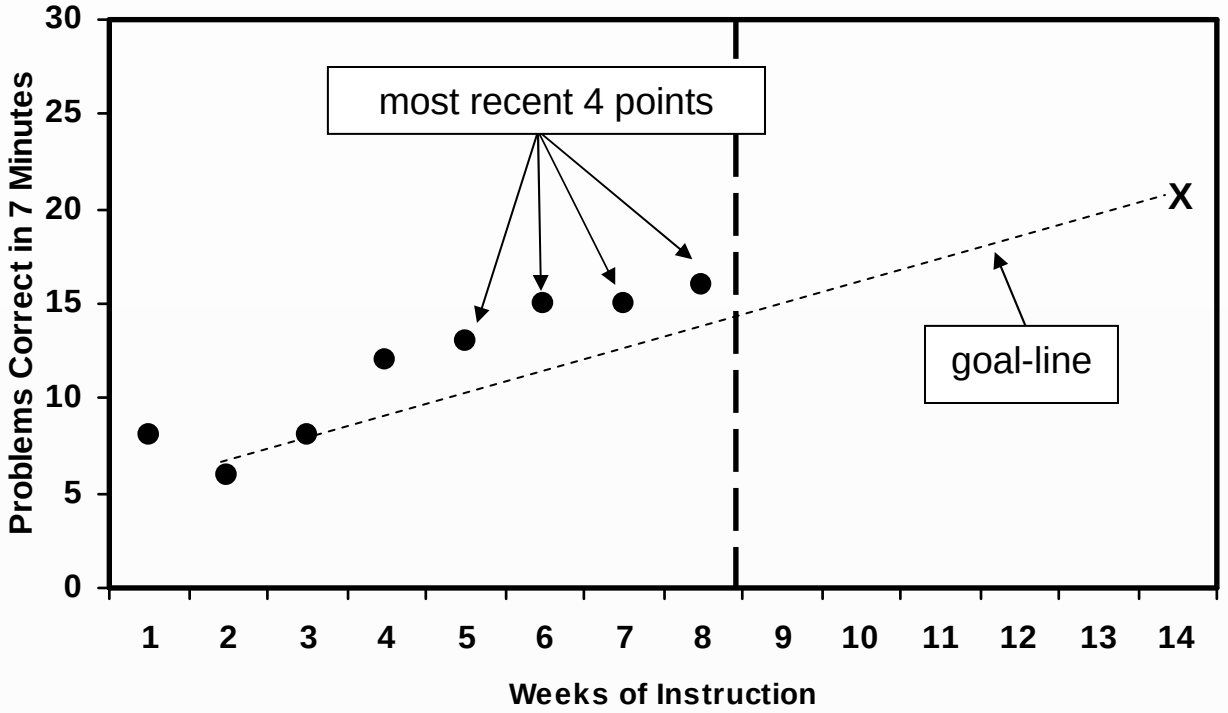
Tier 3—Tertiary Prevention: Decision Making with Formative Progress Monitoring Data

- Interpretative Approaches
  - Visual Analysis
    - Useful in evaluating practice when changes (either level or slope) are obvious
    - Based on baseline logic which can be an impediment
  - Analysis of Trend
    - With reliable and sufficient data can make adequate formative decisions
    - More data means better decisions
    - Errors in decision making are affected by variability in the data
  - Tests of Statistical Significance
    - Hypothesis Test for Slope

Analysis of Trend

- Decision rules for progress monitoring data:
  - Based on four most recent consecutive scores
  - Based on student's trend-line

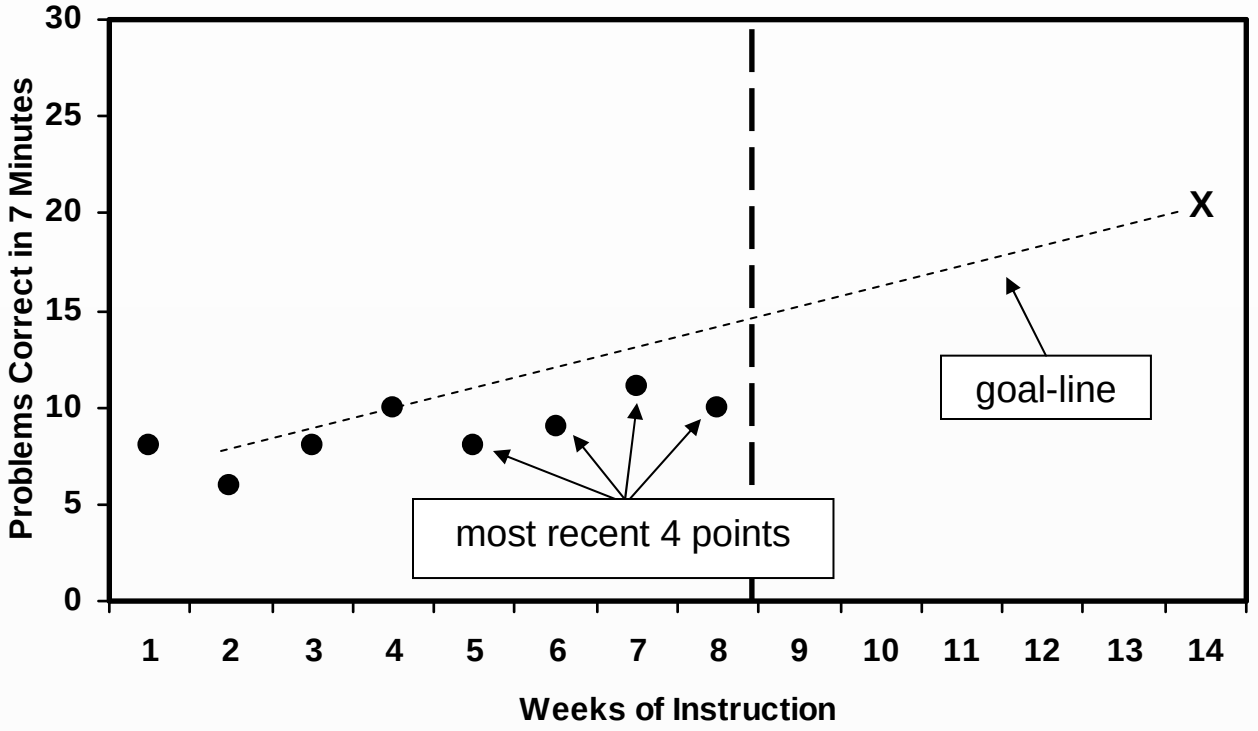
Tier 3—Tertiary Decision Making: Four-Point Method



Analysis of Trend

- Based on four most recent consecutive scores
  - If the four most recent consecutive scores are all **above** the goal-line, keep the current intervention and **increase** the goal

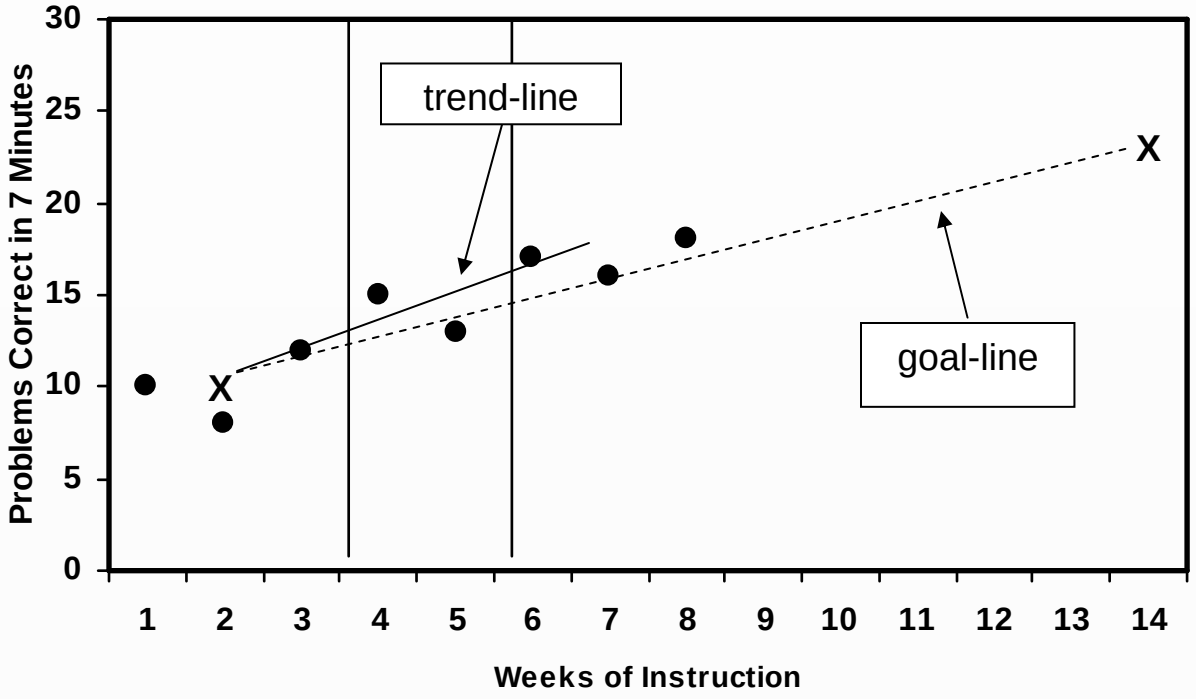
Tier 3—Tertiary Decision Making: Four-Point Method



Analysis of Trend

- Based on four most recent consecutive scores
  - If the four most recent consecutive scores are all **above** the goal-line, keep the current intervention and **increase** the goal
  - If the four most recent consecutive scores are all **below** the goal-line, keep the current goal and **modify** the instruction
  - When the four most recent consecutive scores are **neither** above or below the goal-line, **maintain** the current goal and instruction and continue to progress monitor

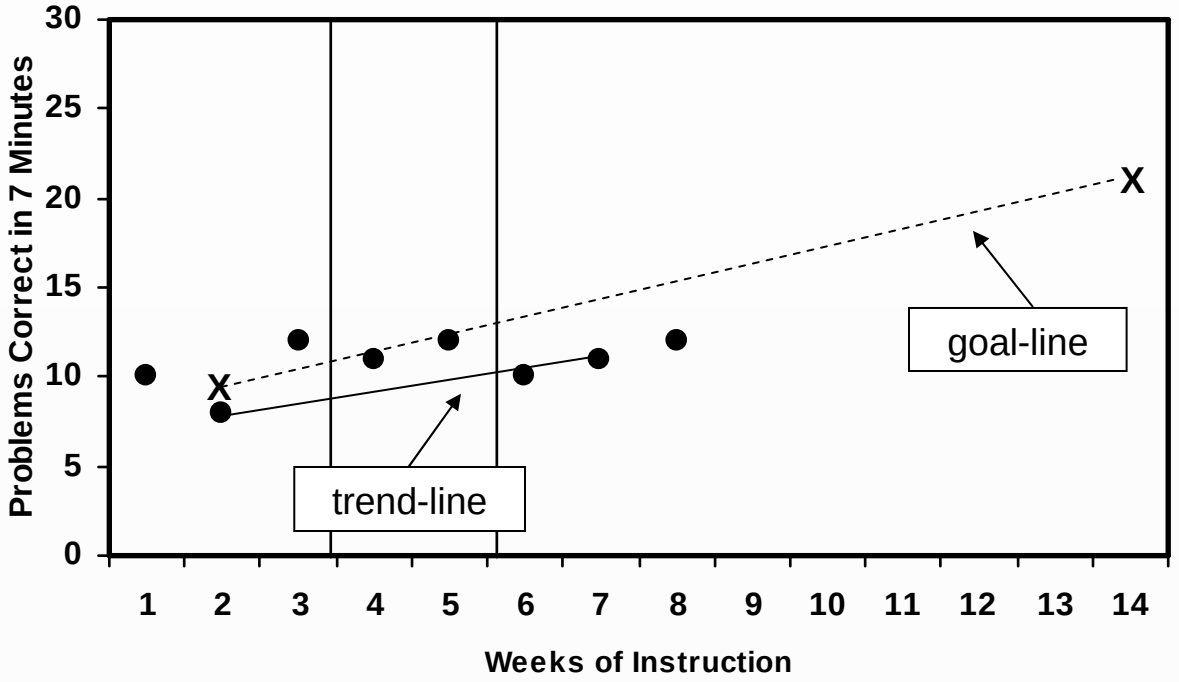
Tier 3—Tertiary Decision Making Based on Trend



Analysis of Trend

- When the trend-line is **steeper** (i.e., accelerating) relative to the goal-line, keep the current intervention and **increase** the goal
- When trend-line is **lower** (i.e., decelerating) relative to the goal-line, keep the current goal and **modify** the instruction
- When the trend-line is **equal** (i.e., parallel) to the goal-line, **maintain** current goal and instruction and continue to progress monitor

Tier 3—Tertiary Decision Making Based on Trend



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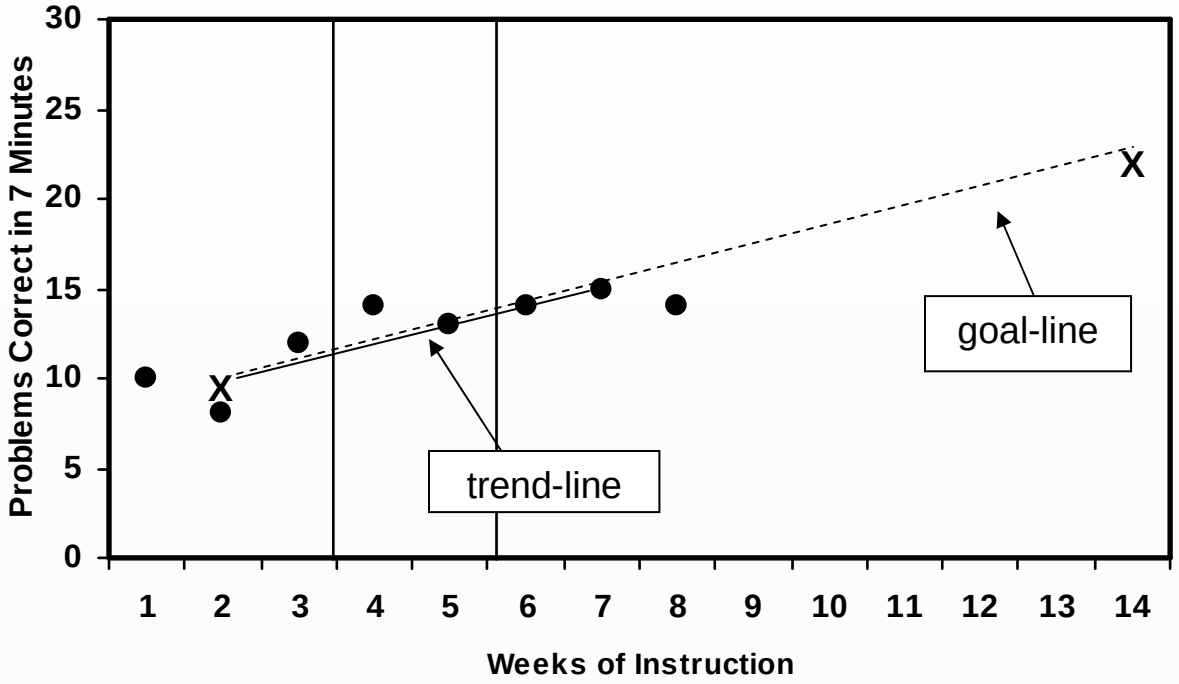

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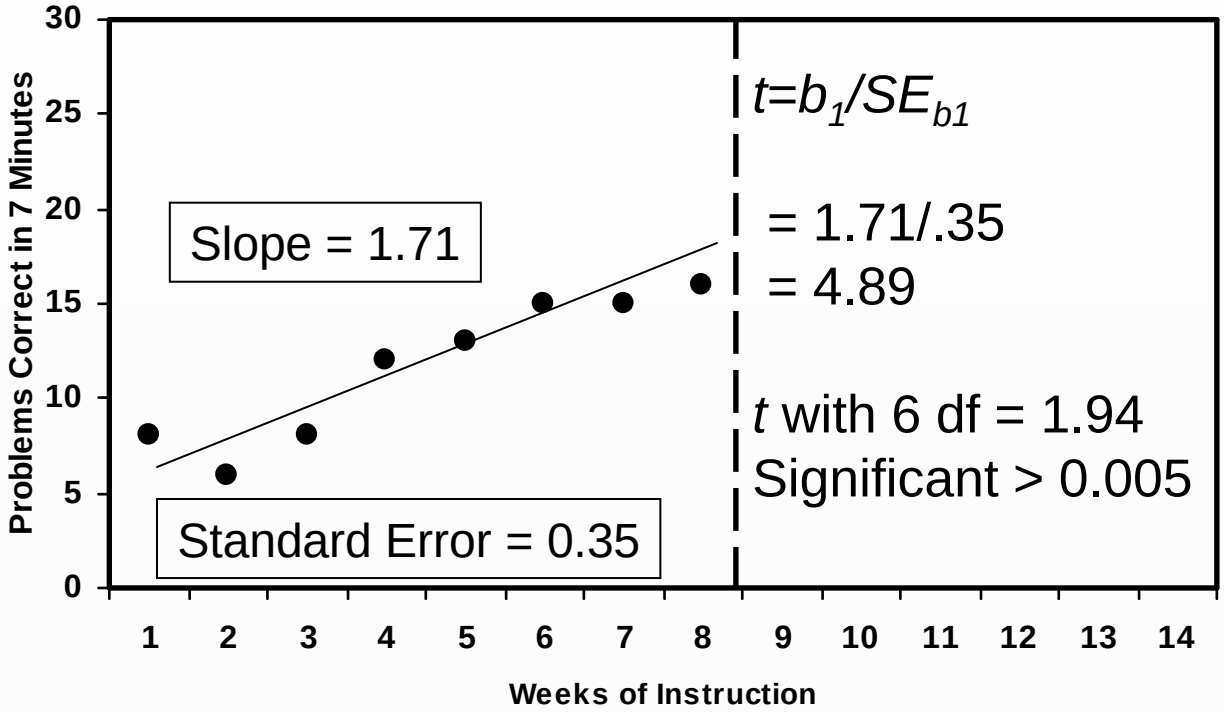
Hypothesis Test for Slope



Questions?