

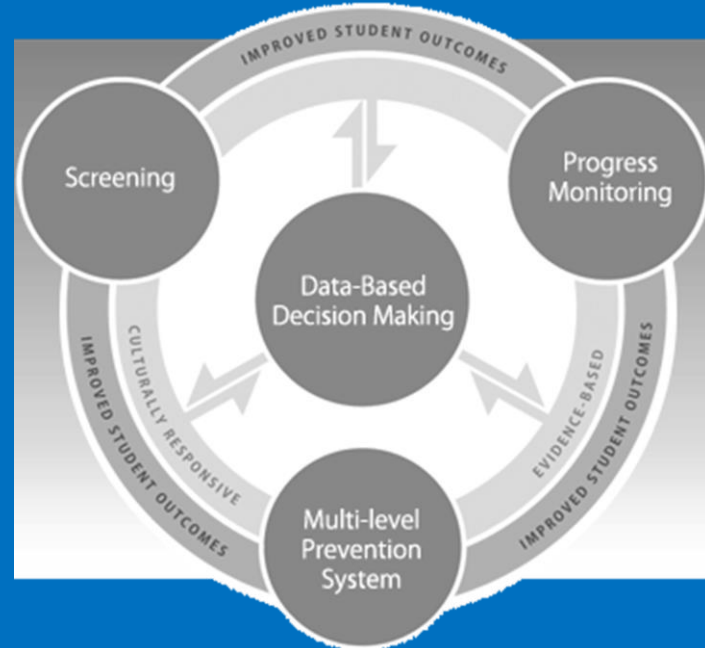
Using Curriculum-Based-Measurement to Identify Students At Risk for Reading Difficulties in Basic Education: Results From a Cross-Sectional Study

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INTRODUCTION



The Curriculum-Based-Measurement (CBM) (Deno, 1985) is a simple standard, reliable, valid, time and cost efficient, procedure that can inform about students level and progress, and that is widely used for screening and progress monitoring purposes across general and special education within response to intervention frameworks (Deno, Reschly, Lembke, Magnusson, Callender, et al., 2009). In this study we tested the use of CBM as a **school-wide screening and progress monitoring system**. Additionally, we used results to add knowledge in what concerns how fluency can be considered as the basis of reading comprehension, as mentioned by several experts (Padeliadu & Antoniou, 2014), in European Portuguese language.

Figure 1. Response to Intervention Model as the framework of the research (<http://www.rti4success.org>)



"better learnings for better futures"
(<https://www.cied.uminho.pt/>)

GOALS

- What are the reading fluency and comprehension levels.
- What is the impact of risk for reading difficulties (results equal or below percentile 20th) in reading fluency and comprehension.
- What is the relationship between reading fluency and comprehension.
- How much of reading comprehension is predicted by fluency.

METHODOLOGY

Context: 3 master degree quantitative research projects.
Sample: 324 students, across grades 2, 3 and 4, who attended public schools in 3 districts in the north in Portugal.
Data collection instruments: 2 CBM probes for reading: CBM-Oral (fluency) & CBM-Maze (comprehension).
Data collection analysis: descriptive, inferential, and regression.

Inform inclusive education about researched based **practices** for students with reading difficulties.
Promote knowledge about **universal screening** for reading difficulties during elementary school.

RESULTS

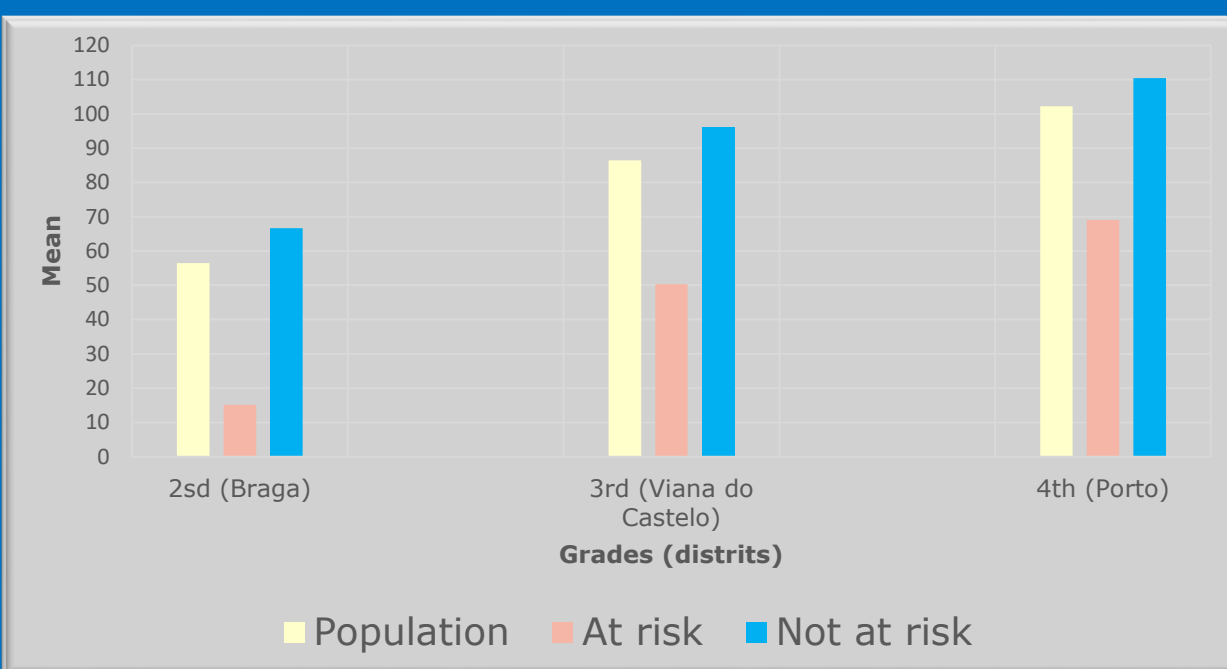


Figure 2. CBM oral by grade & district

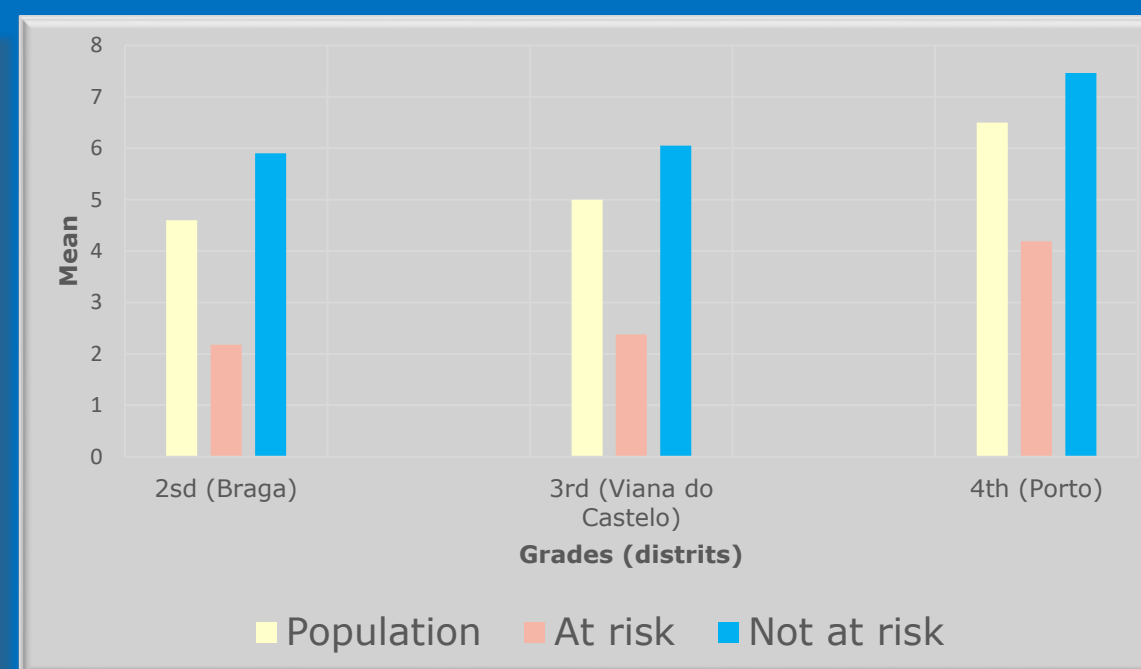


Figure 3. CBM Maze by grade & district

Table 1. Percentiles of CBM oral & CBM Maze by grade & district

Percentile	2 nd grade Braga		3 rd grade Viana do Castelo		4 th grade Porto	
	Oral (M)	Maze (M)	Oral (M)	Maze (M)	Oral (M)	Maze (M)
10	18,5	2	51,9	2,3	73,4	4
20	31,4	3	63	3	81,6	5
50	57,5	4,5	90	5	102	6
90	101,35	7	118	8	132	9

Table 2. Correlation between CBM oral & CBM Maze by grade & district

		Maze					
		2 nd grade Braga		3 rd grade Viana do Castelo		4 th grade Porto	
Oral		Population	At risk*	Population	At risk*	Population	At risk*
<i>r</i>		0,60	0,70	0,74	0,32	0,703	0,404
<i>p</i>		<0,001	<0,001	<0,001	>0,05	<0,001	<0,05
Total		126	25	72	15	126	25

* In fluency

Table 3. % of the variation of the results obtained in reading comprehension that is explained by fluency

	2 nd grade Braga		3 rd grade Viana do Castelo		4 th grade Porto	
	Population	At risk*	Population	At risk*	Population	At risk*
	36%	49%	55%	10%	50%	16%

CONCLUSIONS

- CBM probes were **well accepted** by all the participants, as well as **economical, fast and easy** to apply.
- Results of the two CBM probes presented **good internal consistency**.
- In April, the students who **reached the curricular goals** defined by the Ministry of education for the end of the school year (June) for fluency in reading, were the ones in **percentile 90** for grade 2, in **percentile 80** for grade 3, and in **percentile 75** for grade 4.
- Being at risk had impact in the results across the 3 grades:** Both in fluency and comprehension, the average achievement of students at risk is almost twice lower than the average of the remaining students; the **performance of students at risk students was more homogeneous**.
- Gender variable had impact** in both fluency and reading comprehension only in **grade 3**, with girls getting better results.
- Reading **comprehension is stronger associated with fluency rates across grade levels then across ability levels in grades 3 and 4**.

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CONTACT & FUNDING

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