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easyCBM® Reading Criterion Related Validity Evidence:

Grades K-1

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Abstract

In this technical report, we present the results of a study to gather criterion-related evidence for Grade K-1 easyCBM® reading measures. We used correlations to examine the relation between the easyCBM® measures and other published measures with known reliability and validity evidence, including the Dynamic Indicators of Basic Early Literacy Skills (DIBELS), the Test of Word Reading Efficiency (TOWRE), and the Comprehensive Test of Phonological Processing (CTOPP). The correlation between easyCBM® and comparator measures ranged from a low of $r_s=.39$ to a high of $r_s=.86$ for Grade K and a low of $r_s=.04$ to a high of $r_s=.95$ for Grade 1. The easyCBM® fluency-based measures had high correlations with comparator measures ($r = .79- .95$).

easyCBM® Reading Criterion Related Validity Evidence: Grades K-1

In this report, we present the results of a criterion validity study examining the relation between easyCBM® reading measures and a variety of comparator measures for use with students in Kindergarten and Grade 1. Using correlation analyses, we examined the relation between the easyCBM® Kindergarten and Grade 1 Phoneme Segmenting, Letter Names, Letter Sounds, and Word Reading Fluency measures and the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) measures, the Test of Word Reading Efficiency (TOWRE), and the Comprehensive Test of Phonological Processing (CTOPP), all published measures with known reliability and validity evidence.

The easyCBM® Progress Monitoring Assessments

The online easyCBM® progress monitoring assessment system, launched in September 2006 as part of a *Model Demonstration Center on Progress Monitoring*, was funded by the Office of Special Education Programs (OSEP). At the time this technical report was published, the assessment system was used by over 325,000 educators, representing over 2.3 million students, with accounts from every US state. Over 17.4 million easyCBM® tests have been taken since the system was first made available in the fall of 2006. The system provides both universal screener assessments for fall, winter, and spring administration and multiple alternate forms of a variety of progress monitoring measures designed for use in K-8 school settings.

As part of Response to Intervention (RTI) initiatives, schools need technically-adequate measures for monitoring progress. Given the increasing popularity of the easyCBM® system, it is imperative that a thorough analysis of the measures' technical adequacy be conducted and the results shared with research and practitioner communities. This report addresses that need directly, providing criterion validity evidence supporting the use of the easyCBM® reading assessments.

Methods

In this section, we describe the methods used in this study, including our setting and subjects, and the process used for data collection and analysis.

Setting and Subjects

Data came from a convenience sample of students recruited from three elementary schools in one district in Oregon. The district uses easyCBM® reading measures as part of their Response to Intervention (RTI) model. In all, 214 Kindergarten students and 227 Grade 1 students participated in the study. Data for the study were collected during three weeks in February of 2013. No demographic information was collected in this study (see Tables 1a and b for descriptive statistics); however, on average, the participating schools comprised of 53% male students, 2% American Indian/Alaskan, 2% Asian/Pacific Islander, less than 1% of Black, 23% Hispanic, 67% White, and 8% two or more races students. 70% of the students are eligible for Free and Reduced Lunch programs. The district consists of 6% English Language Learners and 17% of students with Individualized Education Program (IEP).

Data Collection

Fifteen data collectors were trained to administer and score the measures used in this study. These individuals included undergraduate and graduate students at the University of Oregon. Prior to working with students, they received a three-hour training on the importance of standardized test administration and how specifically to administer and score each measure according to the test developers' guidelines. All data collectors were trained by a Ph.D., licensed school psychologist with nine years of assessment experience. At the training, data collectors practiced administering each measure under the trainer's supervision. The training was videotaped, and data collectors had the option of reviewing the videotape as often as they found necessary. Each morning before data collection occurred, data collectors were reminded of the

key administration procedures to be used during data collection.

Additionally, the trainer conducted observations of data collectors and provided feedback throughout the study. To ensure that scoring procedures were implemented with fidelity, the scoring of each student's test packet containing all the measures was checked by another data collector, followed by random checks conducted by the trainer. Once data collection was complete, each participating teacher was given \$100 to be used for classroom supplies to thank them for their assistance in the study.

Measures

We first describe the easyCBM® reading measures for Kindergarten and Grade 1, followed by the comparator measures. Additional technical information for the easyCBM® early reading assessments can be found in Lai et al. (2010), and reliability information in Anderson et al. (2012), Patarapichayatham et al. (2011), and Alonzo and Tindal (2007, 2009).

To avoid form-effects, all easyCBM® and comparator measures were combined into a test booklet organized such that they were administered in one of two rotations (see Table 2)

Table 2

Organization of Measures for Test Administration

Grade	Rotation		Order of Measures		
K	1	DIBELS ISF, PSF, LNF	easyCBM® PS, LN, LS, WRF	TOWRE	CTOPP
	2	easyCBM® PS, LN, LS, WRF	DIBELS ISF, PSF, LNF	CTOPP	TOWRE
1	1	DIBELS PSF, LNF, NWF	easyCBM® PS, LN, LS, WRF	CTOPP	TOWRE
	2	easyCBM® PS, LN, LS, WRF	DIBELS PSF, LNF, NWF	TOWRE	CTOPP

Note. ISF = Initial Sound Fluency, PSF = Phoneme Segmenting Fluency, LNF = Letter Naming Fluency, PS = phoneme segmenting, LN = Letter names, LS = Letter sounds, WRF = Word reading fluency.

Kindergarten and Grade 1 easyCBM® Measures

Phoneme Segmenting measures. The Phoneme Segmenting measure tests students' ability to segment a word into its constituent phonemes. In this individually-administered measure, test administrators follow a standard written protocol on which is listed a series of words. They say each word aloud, asking students to segment the word into its individual sounds. As students finish segmenting one word, test administrators provide the next word verbally, repeating this sequence for 60 seconds as students segment as many words into phonemes as they can. As students say the phonemes, assessors indicate on their own test protocol each phoneme the student correctly segments. Student self-corrections are counted as correct responses, and students are prompted to go on if they hesitate for more than three seconds. At the end of the allotted time, the assessor marks the last phoneme produced and calculates the total number of phonemes segmented correctly to arrive at the student's score, phonemes segmented correctly in one minute.

Letter Names measures. The Letter Names measure tests students' ability to name the letters of the English alphabet, both in their lower case and capitalized forms. In this individually-administered measure, students are shown a series of letters organized in a chart on one side of a single sheet of paper and given 60 seconds to name as many of them as they can. A trained assessor follows along as the student names the letters, indicating on his/her own test protocol each letter the student reads incorrectly and prompting the student to go on if he/she hesitates at a letter for more than three seconds. Student self-corrections are counted as correct responses. At the end of the allotted time, the assessor marks the last letter named and calculates the total number of letters read correctly to arrive at the student's score, letters named correctly in one minute.

Letter Sounds measures. The Letter Sounds measure tests students' ability to identify the sounds associated with the letters of the English alphabet, both in their lower case and capitalized forms. In this individually-administered measure, students are shown a series of letters organized in a chart on one side of a single sheet of paper and given 60 seconds to name as many of them as they can. A trained assessor follows along as the student produces the sounds associated with each of the letters, indicating on his/her own test protocol each letter for which the student fails to correctly identify the sound and prompting the student to go on if he/she hesitates at a letter for more than three seconds. Student self-corrections are counted as correct responses. At the end of the allotted time, the assessor marks the last letter sound produced and calculates the total number of letter sounds produced correctly to arrive at the student's score, letter sounds produced correctly in one minute.

Word Reading Fluency measures. The Word Reading Fluency measure tests students' ability to read both sight-words and words following regular patterns of letter/sound correspondence in the English language, allowing them to be easily decodable. In this individually-administered measure, students are shown a series of words organized in a chart on one side of a single sheet of paper and given 60 seconds to read as many of them as they can. A trained assessor follows along as the student reads the words, indicating on his/her own test protocol each word the student reads incorrectly and prompting the student to go on if he/she hesitates at a word for more than three seconds. Student self-corrections are counted as correct responses. At the end of the allotted time, the assessor marks the last word read and calculates the total number of words read correctly to arrive at the student's score, words read correctly in one minute.

Comparator Measures

In the next section, we provide a brief description of each of the comparator measures included in the study.

The Dynamic Indicators of Basic Early Literacy Skills (DIBELS)

The DIBELS (6th edition; Good & Kaminski, 2001) are standardized and individually administered one-minute measures that assess reading fluency rates and accuracy. The measures represent the essential early literacy domains discussed in the National Reading Panel's report (National Institute of Child Health and Human Development, 2000) to assess student development of phonological awareness, alphabetic understanding, and automaticity and fluency with code. Each measure of the DIBELS has demonstrated reliability, has been shown to be useful in identifying students who are not progressing as expected, and is predictive of later reading proficiency (Good & Kaminski, 2002). Correlation results reported from concurrent validity studies comparing DIBELS to other measures of cognitive ability, readiness, teacher ratings, and oral reading fluency range from .46 to .85 for the Kindergarten measures (Kaminski & Good, 1996). Studies comparing the CTOPP to the DIBELS assessments report a moderate relation between the Phonological Awareness Composite of the CTOPP and the Initial Sound Fluency, Letter Naming Fluency, and Phoneme Segmentation Fluency subtests of DIBELS (Hintze, Ryan, & Stoner, 2003; Tanner, 2006), with correlations around .55. Table 3 lists the DIBELS measures used for this study.

Table 3

DIBELS Measures Used

Grade	Measure	Probe
Kindergarten	Phoneme Segmenting Fluency	Benchmark 2
	Letter Naming Fluency	Benchmark 2
	Initial Sound Fluency	Benchmark 2
1	Phoneme Segmenting Fluency	Benchmark 2
	Letter Naming Fluency	Benchmark 1
	Nonsense Word Fluency	Benchmark 2

DIBELS Grade K and 1 Phoneme Segmenting Fluency (PSF). This task measures children’s ability to segment words into phonemes. The examiner asks children to say individually each of the phonemes in three- and four-phoneme words. Tests are administered for 60 seconds, at the end of which time, test administrators note the students’ score, phonemes segmented correctly in one minute. This measure measures the same skills as the Grades K and 1 easyCBM® Phoneme Segmentation measures.

DIBELS Grade K Initial Sound Fluency (ISF). The ISF measures children’s awareness of the initial sounds in words. The examiner provides the names of four pictures at a time (16 pictures total), and children are required to identify the picture that begins with the sound produced by the examiner. Children are also asked to produce the beginning sounds of words presented orally by the examiner. The score is the total number of onsets correctly produced in 1 minute. This measure measures the same skills as the Grades K easyCBM® Letter Sounds measure.

DIBELS Grade 1 Nonsense Word Fluency (NWF). The NWF assesses children's ability to use letter-sound correspondence to decode words. In this task, children are presented with printed vowel-consonant or consonant-vowel-consonant nonsense words (e.g., foj, hon, tum) and asked to produce verbally the individual letter sound of each letter or verbally produce, or read, the whole nonsense word. The test is administered one-on-one to students for a period of 60 seconds, after which the score is reported as words read correctly per minute. NWF, particularly for the measure's aim to assess letter-sound correspondence, was selected for this study because DIBELS has no ISF measures for Grade 1 (i.e. corresponding to the easyCBM® Grade 1 Letter Sounds measure).

DIBELS Grade K and 1 Letter Naming Fluency (LNF). The LNF measure assesses children's ability to rapidly identify upper- and lowercase letters of the alphabet arranged in a random order. Children are asked to name as many letters as he or she can in 1 minute. The score is the total number of letters named correctly. The skills measures in the DIBELS LNF corresponds to the Grades K and 1 easyCBM® Letter Names measures.

The Comprehensive Test of Phonological Processing (CTOPP)

The Comprehensive Test of Phonological Processing (CTOPP) for ages 7-24 includes six core measures (Elision, Blending Words, Memory for Digits, Rapid Digit Naming, Nonword Repetition, and Rapid Letter Naming), all designed to be individually administered (Torgesen, Wagner, & Rashotte, 1999). The CTOPP is normed on a nationally representative sample of 1,656 people in 30 states. Test-retest reliability estimates, gathered over a year of studies, indicate reliabilities ranging from .70 to .94, with an overall median time sampling reliability estimate of .84. Content development and validation of the CTOPP uses both conventional item analysis and item response theory modeling. Criterion-predictive validity of the CTOPP indicates strong relations with measures of word identification, word analysis, sight word efficiency,

phonemic decoding efficiency, and connected reading. Construct validity evidence for the measure includes confirmatory factor analyses that suggest three distinct yet correlated phonological processing abilities.

The CTOPP manuals recommend three subtests (Elision, Blending Words, and Sound Matching) for 5- and 6-year-old and two subtests (Elision and Blending Words) for 7- through 24-years-old to measure phonological awareness. However, in our study, we selected a single measure, Elision, from the possible CTOPP assessments of phonological awareness to administer due to concerns from our participating teachers about overwhelming the Kindergarten and first-grade students with too many tests in a short period of time. This subtest assesses the ability to manipulate sounds in words. The student listens to an orally presented word, says the word, listens to an orally presented sound in that word, removes that sound from the word, and says the resulting word.

Test of Word Reading Efficiency (TOWRE)

The second edition Test of Word Reading Efficiency (TOWRE-2; Torgesen, Wagner, & Rashotte. (1999) measures the ability to pronounce printed words. The TOWRE-2 is normed on a sample of over 1,700 from 12 states and Washington, DC. The test developer reports high average test-retest reliability for the same form (exceeds .90) and high alternate form reliability on the subtests (.87). The test administration time is 45 seconds. Students are asked to read as many words as possible from a list of words of increasing difficulty arranged in four columns. The score is reported as the number of correctly read words. Form A of the Sight Word Efficiency subtest was used for this study.

Data Preparation and Analysis

Before data were analyzed, missing scores were coded to several categories: Absent, Moved, No Scores, Invalid, Teacher Refused, Student Refused, and Not Tested (see Table 4 for the frequencies of missing students in the Kindergarten sample and Table 5 for the frequencies of missing data for the Grade 1 sample).

Table 4
Frequencies of Missing Scores by Reason – Grade K

Measure	Absent	Moved	No Scores	Invalid	Teacher Refused	Student Refused	Not Tested	Total	
								<i>n</i>	%
easyCBM® Phoneme Segmenting	7	9	-	-	2	4	24	46	16.85
easyCBM® Letter Names	7	9	-	-	2	3	24	45	16.48
easyCBM® Letter Sounds	7	9	-	-	2	4	24	46	16.85
DIBELS Initial Sound Fluency	7	9	1	1	2	2	24	46	16.85
DIBELS Phoneme Segmenting Fluency	7	9	-	-	2	2	24	44	16.12
DIBELS Letter Naming Fluency	7	9	-	-	2	4	24	46	16.85
easyCBM® Word Reading Fluency	7	9	-	-	2	4	24	46	16.85
TOWRE	7	9	37	-	2	6	24	85	31.14
CTOPP	7	9	-	4	2	4	24	50	18.32

Note. Absent – Student was absent. Moved – Student moved. No Scores – Testing was discontinued. Invalid – Invalid test administration. Teacher Refused – Student’s teacher did not allow student to participate in study, Student Refused – Student did not want to participate in the study , and Not Tested – Students did not get tested within the study’s timeline.

Table 5

Frequencies of Missing Scores by Reason – Grade 1

Measure	Absent	Moved	No Score	Invalid Score	Teacher Refused	Student Refused	Not Tested	Total	
								<i>n</i>	<i>%</i>
DIBELS Phoneme Segmenting Fluency	-	5	-	-	1	1	10	17	7.36
DIBELS Letter Naming Fluency	-	5	-	-	1	1	10	17	7.36
DIBELS Nonsense Word Fluency	-	5	-	-	1	1	10	17	7.36
easyCBM® Phoneme Segmenting	-	5	-	-	1	1	10	17	7.36
easyCBM® Letter Names	-	5	-	-	1	1	10	17	7.36
easyCBM® Letter Sounds	-	5	-	-	1	1	10	17	7.36
easyCBM® Word Reading Fluency	-	5	-	-	1	1	10	17	7.36
TOWRE	-	5	4	-	1	1	10	17	9.09

CTOPP	-	5	-	-	1	1	10	17	7.36
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Note. Absent – Student was absent. Moved – Student moved. No Scores – Testing was discontinued. Invalid – Invalid test administration. Teacher Refused – Student’s teacher did not allow student to participate in study, Student Refused – Student did not want to participate in the study , and Not Tested – Students did not get tested within the study’s timeline.

To gather criterion-related validity evidence for the easyCBM® reading measures, we conducted correlation analyses using the comparator measures listed in Table 6.

Table 6
Measures Used in this Study

Grade	easyCBM®	Comparator
K	Letter Names	DIBELS Letter Naming Fluency
	Letter Sounds	DIBELS Initial Sound Fluency
	Phoneme Segmenting	DIBELS Phoneme Segmenting Fluency & CTOPP Elision
	Word Reading Fluency	DIBELS Oral Reading Fluency & TOWRE Sight Word Efficiency
1	Letter Names	DIBELS Letter Naming Fluency
	Letter Sounds	DIBELS Initial Sound Fluency
	Phoneme Segmenting	DIBELS Phoneme Segmenting Fluency & CTOPP Elision
	Word Reading Fluency	DIBELS Oral Reading Fluency & TOWRE Sight Word Efficiency

Prior to conducting the analyses, we checked assumptions of linearity and normality of distribution, both of which should be met to justify using a Pearson's correlation. For most of the measures, these assumptions were not met; therefore, we used the Spearman's rank correlation, a non-parametric statistic. The Pearson's coefficient (r), measures the strength and direction of the linear relationship between two measures: r can range from -1 to +1, with -1 indicating a perfect negative correlation, +1 indicating a perfect positive correlation, and 0 indicating no correlation at all. Similar to the Pearson's coefficient, the Spearman's correlation coefficient (r_s) also indicates the strength of a pair of measures, but specifically the monotonic relation between paired data. A monotonic function is one that either never increases or never decreases as its

independent variable increases. Interpretation of r_s is similar to interpretation of Pearson's correlation coefficient, with the closer r_s is to ± 1 , the stronger the monotonic relationship.

Results

Descriptive statistics for the Kindergarten sample are presented in Table 7. Within the Kindergarten sample, only 188 students were administered the TOWRE due to scheduling conflicts during our three weeks of data collection. Sample sizes for the other measures ranged from a low of 223 for the CTOPP to a high of 229 for the DIBELS Phoneme Segmenting Fluency measure.

Table 7
Descriptive Statistics, Kindergarten Sample

Measure	<i>n</i>	Min	Max	<i>M</i>	<i>SD</i>
easyCBM® Phoneme Segmenting	227	0	91	37.94	16.88
easyCBM® Letter Names	228	2	76	34.72	14.94
easyCBM® Letter Sounds	227	0	59	22.48	11.87
CTOPP	223	0	19	4.56	3.51
DIBELS Phoneme Segmenting Fluency	229	0	72	35.45	14.59
DIBELS Letter Naming Fluency	227	0	73	29.38	16.42
DIBELS Initial Sound Fluency	227	0	51	18.85	8.95
easyCBM® Word Reading Fluency	227	0	70	7.18	11.15
TOWRE	188	0	59	7.43	11.29

Within the Grade 1 sample, we administered all measures to 214 students, with the exception of the CTOPP, which was only administered to 210 students due to absences on the days we collected data (See Table 8 for descriptive statistics).

Table 8
Descriptive Statistics, Grade 1 Sample

Measure	<i>n</i>	Min	Max	<i>M</i>	<i>SD</i>
easyCBM® Phoneme Segmenting	214	29	93	55.78	12.71
easyCBM® Letter Names	214	11	94	61.25	15.32
easyCBM® Letter Sounds	214	19	85	48.41	13.76
CTOPP	214	0	19	8.32	5.07
DIBELS Phoneme Segmenting Fluency	214	16	95	53.63	13.46
DIBELS Letter Naming Fluency	214	9	93	56.08	15.84
DIBELS Nonsense Word Fluency	214	3	154	55.81	28.10
easyCBM® Word Reading Fluency	214	0	101	32.16	21.30
TOWRE	210	1	67	28.61	15.60

Overall, the correlation between the easyCBM® PS and the DIBELS PSF was moderate to high, with $r_s = .85$ for Kindergarten and $r_s = .75$ for Grade 1. When easyCBM® PS was compared to the CTOPP Elision subtest, the correlation was low for Kindergarten ($r_s = .39$) and statistically non-significant for Grade 1 ($r_s = .05$; $p > .05$).

The correlation between the easyCBM® LN and the DIBELS LNF measure was high, with $r_s = .86$ for Kindergarten and $r_s = .80$ for Grade 1. The Kindergarten and Grade 1 easyCBM® LS measures showed moderate correlations with the DIBELS ISF and NWF measures, with $r_s = .55$ and $.58$, respectively. Finally, the correlation between the TOWRE Sight Word Efficiency subtest and the easyCBM® WRF measure was moderately high ($r_s = .79$) for Kindergarten and very high ($r_s = .95$) for Grade 1. See Tables 9 and 10 for correlation results.

Table 9

Spearman's Rho Rank Correlation Results – Kindergarten

easyCBM® Measures		Comparator Measures				
		DIBELS Phoneme Segmenting Fluency	DIBELS Letter Naming Fluency	DIBELS Initial Sound Fluency	CTOPP Elision	TOWRE Sight Word Efficiency
Phoneme Segmenting	r_s	.85**	-	-	.39**	-
	n	227	-	-	222	-
Letter Names	r_s	-	.86**	-	-	-
	n	-	227	-	-	-
Letter Sounds	r_s	-	-	.55**	-	-
	n	-	-	225	-	-
Word Reading Fluency	r_s	-	-	-	-	.79**
	n	-	-	-	-	188

Note. ISF = Initial Sound Fluency, PSF = Phoneme Segmenting Fluency, LNF = Letter Naming Fluency, PS = phoneme segmenting, LN = Letter names, LS = Letter sounds, WRF = Word reading fluency; **. Correlation is significant at the 0.01 level (2-tailed).

Table 10
Spearman's Rho Rank Correlation Results – Grade 1

easyCBM® Measures		Comparator Measures				
		DIBELS Phoneme Segmenting Fluency	DIBELS Letter Naming Fluency	DIBELS Nonsense Word Fluency	CTOPP Elision	TOWRE Sight Word Efficiency
Phoneme Segmenting	r_s	.75**	-	-	0.05	-
	n	214	-	-	214	-
Letter Names	r_s	-	.80**	-	-	-
	n	-	214	-	-	-
Letter Sounds	r_s	-	-	.58**	-	-
	n	-	-	214	-	-
Word Reading Fluency	r_s	-	-	-	-	.95**
	n	-	-	-	-	210

** . Correlation is significant at the 0.01 level (2-tailed).

Note. PSF = Phoneme Segmenting Fluency, LNF = Letter Naming Fluency, NWF = Nonsense Word Fluency, PS = phoneme segmenting, LN = Letter names, LS = Letter sounds, WRF = Word reading fluency; **. Correlation is significant at the 0.01 level (2-tailed).

Discussion

The easyCBM® measures showed a wide range of correlations with the comparator measures. As anticipated, the easyCBM® PS and LN measures had the highest correlations with comparator measures DIBELS LNF and PSF measures. The high correlations could be the result of the highly similar content, formatting, and test administration procedures between these measures. When compared to the second comparator measure, the CTOPP Elision subtest, the easyCBM® PS measures displayed low and non-significant correlations for Grades K and 1,

respectively. This low correlation was unexpected and could be due to the fact that only one CTOPP subtest was used in the current study. To fully capture phonological awareness, the CTOPP developers recommended using the Phonological Awareness Composite Score (PACS), which is computed from a combination of the Elision, Blending Words, and Sound Matching subtests for 5- and 6-year-olds and the Elision and Blending Words for 7- through 24-year-olds. Due to logistical constraints, this study only used the Elision subtest of the CTOPP as part of the comparator measures. Future criterion validity studies should consider the addition of the Blending Words and Sound Matching measures to utilize the PACS and conducting factor analyses to identify the underlying factor structure of these measures.

The easyCBM® LS measures for both grades showed moderate correlations with DIBELS ISF and NWF measures. The moderate correlations between the easyCBM® LS and DIBELS ISF was moderate. This finding provides evidence that the measures are assessing the same or similar constructs, yet may reflect differences due to formatting or specific skill being assessed. On the easyCBM® LS measures, students are shown a series of letters organized in a chart. On the DIBELS ISF, students are presented pictures and required to identify the picture that begins with the sound produced by the examiner. Similarly, the DIBELS NWF measures are formatted quite differently, and they also assess children's ability to decode unfamiliar strings of letters, which may not be fully aligned with the construct of interest that easyCBM® LS aim to measure (direct letter/sound correspondence in isolation).

Finally, as expected, the easyCBM® WRF measures displayed relatively high correlations with the TOWRE. Overall, results from this study suggest high criterion validity for the easyCBM® PS and LN measures with the DIBELS comparator measures, and the easyCBM® WRF measure with the TOWRE. Moderate level of criterion validity evidence was found for the easyCBM® LS with DIBELS ISF and NWF measures. Findings from this study

suggest a weak or non-existent relation between the easyCBM® PSF and the Elision subtest of the CTOPP. Additional research is needed to determine if this finding would be different had we administered all the subtests recommended by the CTOPP's publishers for assessing phonological awareness.

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