Instructionally Relevant Assessment: Further Development of Brief Reading Diagnostic Tools

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Overview



- Introduction
- Purpose and Description of Measures
- Initial Research
- · Description of Current Study
- Results & Discussion
- Application & Future Research
- Questions and Answers

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Acknowledgments



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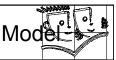
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DIBELS® in an Outcomes Driven Model



A sequence of decision-making steps designed to answer specific questions for specific purposes.

Identify long term *outcomes* and benchmarks to achieve outcomes.

System Level

- 1. Identify need for support.
- 2. Validate need for support.
- 3. Plan and implement support.
- 4. Evaluate and modify support.
- 5. Review outcomes.

Individual Student Level

- 1. Identify need for support.
- 2. Validate need for support.
- 3. Plan and implement support.
- 4. Evaluate and modify support.
- Review outcomes.

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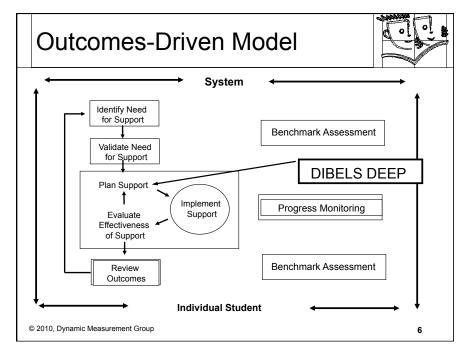
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Outcomes-Driven Model



ODM Step	Question(s)	Data
Identify Need for Support	System: How many students may need support? What grade levels/literacy skills? Individual Student: Which students may need support?	Benchmark data: Histograms, Box Plots, Summary Reports, Class List Reports
Validate Need for Support	System: Are we confident in the accuracy of our data overall? Individual Student: Are we confident in the accuracy of our data for each student?	enchmark data and additional information
Plan and Implement Support	System: What are our system goals? What curricula and program(s) will we use (Curriculum Map)? What system-level strategies will be employed to provide support? (e.g., resource allocation, scheduling) Individual Student: Which students get what support? How will students be grouped for instruction? What are the goals for each student? What specific skills will be taught? What instructional strategies will be used?	Benchmark data and additional information: Individual student booklets additional diagnostic information, knowledge of/information about student
Evaluate and Modify Support	System: Are the majority of students making adequate progress? Are we making progress toward system goals? Individual Student: Is the support effective for individual students?	Progress Monitoring data: Individual student progress graphs
5. Review Outcomes	System: How effective is our overall system of support? Are we making progress from one year to the next? Individual Student: Which students have met goals?	Benchmark data: Histograms, Box Plots, Summary Reports, Cross-Year Box Plots, Summary of Effectiveness Reports, Classroom progress graphs, Class List Reports



DIBELS® Deep Purpose & Specifications



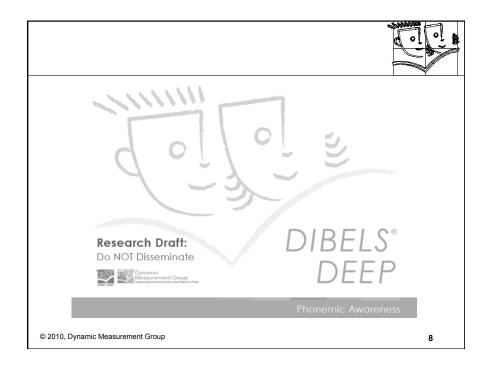
Purpose

 to provide a set of time & cost efficient brief diagnostic assessments designed to provide specific information for targeting instruction corresponding to the 5 essential components of effective reading programs.

Specifications

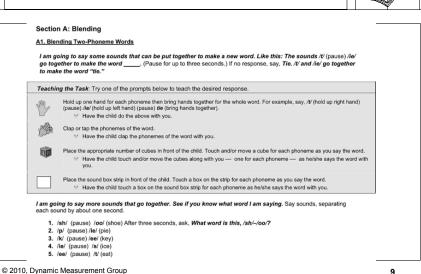
- Skill sequence corresponds to recognized sequences of instruction (c.f., Carnine, et. al., 2006; Jennings, Caldwell, & Lerner, 2006; National Research Council, 1998; Nippold, 2007; Simmons & Kame'enui, 1999; Wagner, Muse, & Tannenbaum, 2007).
- Identify specific needs; assist in differentiating instruction
- User-friendly, cost-effective, & linked to DIBELS

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Sample Task: Deep PA Probe





Sample Tasks: Deep WRD Probe 5



Section A: Reading Compound Words

A1. Real Words

Here are some words. Read each word the best you can. Begin here (point) and read down the list (demonstrate by pointing). If you come to a word you do not know, make your best guess. Put your finger on the first word. Begin. (Pause for up to three seconds.) If no response, score the item as incorrect and try using the prompting procedures and/or teaching sequence below.

Prompting a Response:

Point to the word and say, Do you know what this word is? If "yes" then ask the child to tell you the word. If "no" then say, Try
sounding it out. If no response or incorrect, say, What is the first sound in this word (point)? If no response or incorrect, say, Do you
know any of the sounds in the word? If no response or incorrect, ty teaching the task.

Teaching the Task:

Point to the word "waterfall" and say, This word is "waterfall." Listen to me as I read the word (pause) /w/ /a/ /t/ /er/ ft/ /a/ /l/, waterfall. Now your turn to read this word (point to "waterfall", by yourself, what word? (Pause.) Proceed with the remaining test items by saying, Let's try some more words. (Point to "brickyard.")

*NOTE: Examiners/teachers should use the language of the instructional curriculum in prompting and teaching. Prompts may be given to the child and examiners may use their inventiveness to teach the desired response in the first two items only.

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Development of the Measures and Pilot Study/Field Testing



- Who: 35 students in grades 1-4
- What: Students assessed in materials at grade level as well as above and/or below depending upon skill level
- When: Fall. 2006
- Findings: Scope and sequence accurate, reordering of items within measures, changes in wording

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Further Development: Phase 1 Validation Study



Research Questions

- 1. What is the relationship between the various DIBELS Deep measures?
- 2. What is the relationship between performance on DIBELS Deep and the DIBELS benchmark measures?
- 3. What is the relationship of sections within probes?
- 4. Are the items and sections sequenced appropriately?
- 5. To what extent do teachers find the measures useful?
- 6. To what extent are examiners satisfied with the measures?

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DIBELS® Deep Phase 1 Research



- Participants
 - Sites (n = 11 schools across 4 states)
 - School size ranged from 182 674
 - Student/Teacher ratio ranged from 11:1 to 19:1
 - · 9 Title 1 schools
 - Free/reduced price lunch ranged from 11% 53%
 - Ethnicity ranged from 0 2% Native American, 0 3% Asian, 0 27% Black, 2 - 11% Hispanic, 56% - 99% White students
 - Students (n = 245)
 - Random stratified sample of 15-30 students in each grade K-4 from each school.
 - Teachers (n = 31)
 - Examiners (n = 16)

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Summary of Phase 1 Results



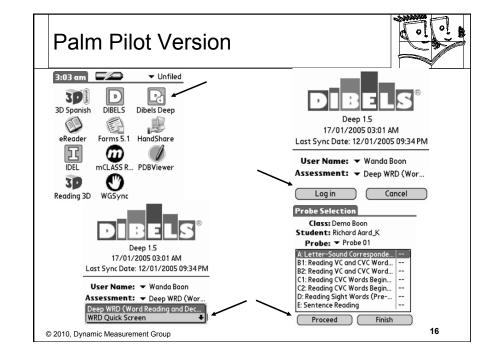
- Scope and sequence was generally accurate for grade level
- Strong correlations between measures of the same skill (.7 .9)
- Moderate to strong correlations between measures of different skills (.4 - .7)
- Moderate to strong correlations between Deep measures and DIBELS measures of the same skill (.4 - .7)
- Ordering of items was generally accurate; some adjustments made post-phase 1
- · Overall teachers agreed that the measures are useful
- Overall examiners were satisfied with the usability of the measures

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DIBELS Deep PA & WRD Phase 2 Study



DIBELS® Deep PA & WRD Phase 2



Research Questions

- 1. What is the relation between performance on DIBELS Deep PA and ISF and PSF benchmark scores?
- 2. What is the relation between performance on DIBELS Deep WRD probes and NWF and ORF benchmark scores?
- 3. What is the factor structure of DIBELS Deep PA?
- 4. What is the factor structure of the DIBELS Deep WRD Probes?
- 5. What is the procedural reliability of examiners on DIBELS Deep?

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DIBELS® Deep PA & WRD Phase 2



- Participants
 - Sites (n = 7 schools in 4 states)
 - Students (n = 460 total)
 - Random sample of 115 students in each grade K-3.
 - Teachers (n = 100)
 - Examiners (n = 25)

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Participating School Demographics



Table 1	
School Demographic Characteristics	

				School Number			
	1	2	3	4	5	6	7
Locale	Rural	Town	Suburb	Town	Rural	City	Rural
	Distant	Distant	Midsize	Remote	Fringe	Small	Distant
Grades Taught	PK - 3	PK - 6	KG - 5	KG - 5	PK - 8	K - 6	PK - 8
Total Students	302	611	708	355	334	409	321
Student/Teacher Ratio	14.5	19.9	17.7	13.4	15.2	24.1	16.7
Title 1 Eligible	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Free/Reduced Lunch	72%		39%	32%	64%		79%
Percent Female	46%	49%	47%	48%	50%	43%	49%
Student Ethnicity							
Am. Indian	27%	0%	0%	0%	32%	0%	19%
Asian	0%	<1%	2%	1%	<1%	0%	<1%
Black	7%	0%	1%	<1%	3%	16%	<1%
Hispanic	19%	0%	5%	<1%	<1%	<1%	<1%
White	60%	99%	91%	98%	64%	72%	79%

Overview of Study Procedures



- General Procedures
- Testing Procedures
- Data Collection & Procedural Integrity
- Re-test Data Collected
- · Data Uploaded to WGen
- Examiners Complete Usability Survey
- Teachers Review Deep Materials & Complete Usability Survey

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General Notes: Administration & Scoring



- · Materials needed: Test books and palm pilot
- All tasks were individually administered and were not timed.
- Testing was completed in one or two sittings.
- No discontinue rules were used in this study for PA and WRD 1 - 5 probes--all items were attempted.
- Modified discontinue rule was used for WRD Quick Screen

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Word Reading & Decoding Quick Screen (WRD-QS)



- Discontinue Rules
 - Testing continued until the student had <u>five consecutive</u> incorrect items above the item set for their grade.
 - If the student received a score of incorrect on the <u>last</u> five items at their grade level, then discontinue testing.
- · Grade Level WRD-QS Item Sets

- Kindergarten: Items 1 - 6

- First Grade: Items 1 - 38

- Second Grade: Items 1 - 50

- Third Grade: Items 1 - 70 (third grade receives all

items)

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Data Collection Schedule



Grade	DIBELS Deep Measures Given (Winter 2009)
Kindergarten	PA, WRD1, WRD QS items 1 - 6*
First Grade	WRD2 & WRD3, WRD QS items 1 - 38*
Second Grade	WRD4, WRD QS items 1 - 50*
Third Grade	WRD5, WRD QS items 1 - 70

* If student receives a score of incorrect on the last five items at their grade level then testing will discontinue. Otherwise, testing will continue until the student has five consecutive incorrect items above the item set designated in this chart.

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Overview of Results



- Descriptive Statistics
- Correlations with DIBELS Measures
- Correlations within DIBELS Deep
- Factor Structure of DIBELS Deep
- Procedural Reliability

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Descriptive Statistics for DIB	ELS Measures: Kindergart	en Students Adm	inistered Deep		
Measure	N	Min	Max	Mean	SD
ISF BOY	104	0	56	18.82	12.79
ISF MOY	102	0	87	30.75	18.42
ISF EOY	27	0	80	22.81	15.70
LNF BOY	119	0	77	26.59	19.07
LNF MOY	118	0	93	38.08	20.26
LNF EOY	115	1	100	45.60	19.52
PSF BOY	28	0	69	37.57	19.45
PSF MOY	102	0	69	35.24	18.30
PSF EOY	107	0	75	44.40	17.25
NWF BOY	28	11	59	30.21	12.41
NWF MOY	102	0	141	30.27	21.66
NWF EOY	107	0	145	37.06	25.90
WUF BOY	74	0	90	18.66	16.87
WUF MOY	73	0	70	35.84	17.26
WUF EOY	73	0	74	42.62	17.95

Descriptive Statistics for					
z coe qui e omnone je	DIBELS Med	asures: Fir	st Grade Stu	dents Administe	ered Deep
Measure	N	Min	Max	Mean	SD
LNF BOY	66	5	86	43.67	14.43
LNF MOY	7	19	52	38.00	11.05
LNF EOY	17	12	77	44.47	15.41
PSF BOY	96	0	75	43.64	14.29
PSF MOY	96	13	77	50.74	13.04
PSF EOY	90	17	74	48.94	10.07
NWF BOY	96	0	139	43.21	24.60
NWF MOY	96	12	140	61.90	26.30
NWF EOY	90	0	140	68.19	32.04
ORF BOY	30	7	128	44.23	30.90
ORF MOY	89	0	123	47.40	30.71
ORF EOY	73	8	132	58.16	31.26
RTF BOY	15	4	63	28.80	17.93
RTF MOY	56	0	105	30.27	20.74
RTF EOY	51	2	110	31.96	21.78
WUF BOY	55	5	176	43.93	30.09
WUF MOY	54	3	89	51.59	15.30
WUF EOY	52	12	83	51.46	15.95

Descriptive Statistics for DIE	BELS Measure: Second Gra	ade Students Ad	ministered Deep		
Measure	N	Min	Max	Mean	SD
NWF BOY	83	14	142	75.93	32.61
NWF MOY	23	30	126	56.22	23.91
NWF EOY	8	32	140	91.00	39.12
ORF BOY	118	11	191	71.69	38.34
ORF MOY	118	6	209	86.60	41.79
ORF EOY	114	23	230	100.72	40.08
RTF BOY	89	2	95	35.25	16.98
RTF MOY	88	2	116	45.18	22.78
RTF EOY	87	14	120	52.18	22.33
WUF BOY	74	13	142	46.97	23.01
WUF MOY	75	12	154	54.81	22.83
WUF EOY	73	26	125	63.90	19.06

Descriptive Statistics for DI	BELS Measure: Third Grad	le Students Adm	inistered Deep		
Measure	N	Min	Max	Mean	SD
ORF BOY	112	23	180	89.51	33.87
ORF MOY	111	20	245	104.59	37.27
ORF EOY	108	35	205	115.12	33.84
RTF BOY	85	5	126	47.28	24.03
RTF MOY	85	9	133	58.46	26.27
RTF EOY	83	11	130	51.22	21.96
WUF BOY	70	0	143	50.29	22.35
WUF MOY	70	14	132	55.73	21.08
WUF EOY	68	0	117	47.96	22.14

Note. ORF = Oral Reading Fluency; RTF = Retell Fluency; WUF = Word Use Fluency; BOY = Beginning of Year; MOY = Middle of Year; EOY = End of Year.

Table 11
Descriptive Statistics for DIBELS Deep Phonemic Awareness Measure Subscales

Ch1-	N	M:-		M	CD.
Subscale	N	Min	Max	Mean	SD
Blending Compound Words	115	0	5	4.48	1.07
Blending Syllables	115	0	5	4.54	0.87
Segmenting Compound Words	115	0	5	3.82	1.75
Segmenting Syllables	115	0	5	3.43	1.69
Blending 2-Phoneme Words	115	0	5	4.66	0.88
Blending 3-Phoneme Words	115	0	5	4.53	1.13
Producing Initial Sounds	115	0	10	9.53	1.63
Producing Final Sounds	113	0	10	7.88	2.71
Segmenting 2-Phoneme Words	113	0	5	4.47	1.09
Segmenting 3-Phoneme Words	113	0	5	4.53	1.23
Segmenting 4-Phoneme Words w/blends	113	0	5	1.89	1.72

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N	Min	Max	Mean	SD
02	0	70	48.68	18.21
19	8	26	22.78	3.98
14	0	15	10.00	5.26
13	0	15	8.73	5.10
11	0	9	6.23	2.99
06	0	9	5.35	3.27
03	0	32	18.09	9.40
	102 119 114 113 111 006	002 0 119 8 114 0 113 0 111 0 006 0	002 0 70 119 8 26 114 0 15 113 0 15 111 0 9 006 0 9	102 0 70 48.68 119 8 26 22.78 114 0 15 10.00 113 0 15 8.73 111 0 9 6.23 106 0 9 5.35

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Descriptive Statistics for DIBELS Deep WRD2 Subscales					
Subscale	N	Min	Max	Mean	SD
VCC & CVCC Real Words Beginning w/Continuous Sounds	93	1	12	8.71	2.83
VCC & CVCC Nonsense Words Beginning w/Continuous Sounds	93	0	12	7.73	3.35
CVCC Real Words Beginning w/Stop Sounds	94	0	12	9.13	2.87
CVCC Nonsense Words Beginning w/Stop Sounds	94	0	12	8.73	3.30
Real Words w/Double Final Consonant	94	0	5	4.30	1.04
Nonsense Words w/Double Final Consonant	94	1	5	4.01	1.16
CCVC Real Words	94	0	10	7.74	2.44
CCVC Nonsense Words	93	0	10	6.98	2.82
CCVCC, CCCVC, & CCCVCC Real Words	93	0	10	7.24	2.87
CCVCC, CCCVC, & CCCVCC Nonsense Words	93	0	10	5.94	3.20
Words with Y Vowel	92	1	10	7.17	2.46
Primer Dolch Words	92	5	44	38.97	7.81

Descriptive Statistics for DIBELS Deep WRD3 Subscales										
Subscale	N	Min	Max	Mean	SD					
Real Words w/Consonant Digraphs	95	0	5	4.17	1.28					
Nonsense Words w/Consonant Digraphs	95	0	5	3.51	1.49					
Words w/Contractions	95	1	5	4.33	1.03					
Words w/Suffixes, Plurals	94	1	5	3.51	1.24					
One-Syllable Real Words w/R- Controlled Vowels	94	0	5	3.23	1.63					
One-Syllable Nonsense Words w/R-Controlled Vowels	94	0	5	2.34	1.72					
VCe & CVCe Real Words	90	0	5	3.89	1.28					
VCe & CVCe Nonsense Words	90	0	5	3.10	1.94					
One-Syllable Real Words w/L- Controlled Vowels	90	0	5	1.96	1.66					
One-Syllable Nonsense Words w/L-Controlled Vowels	90	0	5	2.22	1.56					

Descriptive Statistics for DI	BELS Deep	WRD3 Subs	cales		
Subscale	N	Min	Max	Mean	SD
Words w/Hard & Soft C	88	1	8	4.56	2.21
Words w/Hard & Soft G	88	0	8	4.52	2.01
Real Words Beginning w/ "qu"	88	0	5	3.34	1.73
Nonsense Words Beginning w/ "qu"	88	0	5	2.60	1.69
Real Compound Words	88	0	5	3.81	1.41
Nonsense Compound Words	87	0	5	3.48	1.53
One-Syllable Words w/Vowel Digraphs	87	0	11	8.01	3.13
One-Syllable Words w/Vowel Diphthongs	87	0	9	5.82	2.46
First Grade Dolch Words	87	1	36	30.48	7.57

Descriptive Statistics for DIBELS	S Deep WR	D4 Subscale	es		
Subscale	N	Min	Max	Mean	SD
Words w/Medial Double Consonants	124	0	5	4.15	1.26
Words w/Possessives	124	2	5	4.90	0.41
Words w/Contractions	124	0	5	4.58	0.95
Real Compound Words	123	0	5	4.67	0.88
Nonsense Compound Words	123	0	5	4.36	1.19
Two-Syllable Real Words w/R-Controlled Vowels	123	0	5	4.25	1.21
Two-Syllable Nonsense Words w/R-Controlled Vowels	123	0	5	3.37	1.83
Words w/Consonant Digraphs (ck, gh, ph, & wr)	120	0	7	5.78	1.82
Two-Syllable Words w/Short & Long Vowel Patterns & Inflections	120	0	5	4.06	1.37
Two-Syllable Words w/Vowel Digraphs & Inflections	119	0	5	3.87	1.33

Table 15 (continued)					
Descriptive Statistics for DIBELS Deep WRD4 Su	ıbscales				
Subscale	N	Min	Max	Mean	SD
Words w/Common Prefixes & Suffixes	119	1	5	4.34	1.12
Multisyllabic Words	118	0	5	4.01	1.17
Second Grade Dolch Words	118	18	44	41.85	4.20
Note. WRD4 = Word Reading and Decoding Form	m 4				

Table 16					
Descriptive Statistics for DIBEL	S Deep WRI	D5 Subscale	5		
Subscale	N	Min	Max	Mean	SD
Real Compound Words	120	0	5	4.61	1.01
Nonsense Compound Words	120	1	5	4.72	0.84
Words w/Possessives	120	1	5	4.73	0.67
Words w/Contractions	120	0	5	4.49	0.86
Words w/Silent Letters	118	1	5	4.74	0.74
Words w/Variant Plurals	118	2	5	4.65	0.65
Multisyllabic Words	118	0	5	4.44	1.07
Words w/Common Prefixes & Suffixes	118	0	5	4.19	1.26
Words w/Consonant Trigraphs	118	0	5	3.92	1.21
Two-Syllable Words w/Diphthongs	117	2	9	8.20	1.57
Words w/Irregular Vowel Patterns (ou, er, ie, ei)	116	1	8	6.28	1.61
CCCVC, CCCVCC, & CCCVCCC Words w/Inflections	116	0	5	3.81	1.26
Words w/"ch" pronounced as /k/	116	0	5	3.10	1.73
Words w/"ive," "ous,", & "ious" Endings	114	1	5	3.98	1.17
Words w/Irregular Vowel Patterns (ea, eau)	114	0	7	3.31	1.37
Third Grade Dolch Words	114	26	35	34.12	1.80

Questions 1 and 2



- What is the relation between performance on DIBELS Deep PA and ISF and PSF benchmark scores?
- What is the relation between performance on DIBELS Deep WRD probes and NWF and ORF benchmark scores?

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Correlations Among DIBELS Measures and PA Subscales										
Subscale	ISF BOY	ISF MOY	ISF EOY	LNF BOY	LNF MOY	LNF EOY	PSF BOY			
Blending Compound Words	0.32**(98)	0.38***(98)	0.16(25)	0.21*(113)	0.30**(112)	0.24*(109)	0.02(27)			
Blending Syllables	0.16(98)	0.24*(98)	-0.01(25)	0.10(113)	0.33***(112)	0.20*(109)	0.38(27)			
Segmenting Compound Words	0.31**(98)	0.39***(98)	0.28(25)	0.18(113)	0.39***(112)	0.39***(109)	0.60***(27)			
Segmenting Syllables	0.14(98)	0.33***(98)	0.25(25)	0.13(113)	0.29**(112)	0.32***(109)	0.43*(27)			
Blending 2-Phoneme Words	0.23*(98)	0.19(98)	0.19(25)	0.29**(113)	0.28**(112)	0.25*(109)	0.26(27)			
Blending 3-Phoneme Words	0.15(98)	0.15(98)	0.27(25)	0.19*(113)	0.29**(112)	0.20*(109)	0.39*(27)			
Producing Initial Sounds	0.01(98)	0.20*(98)	0.07(25)	0.11(113)	0.28**(112)	0.15(109)	0.12(27)			
Producing Final Sounds	0.28**(97)	0.37***(97)	0.20(23)	0.13(111)	0.39***(110)	0.38***(107)	0.38(26)			
Segmenting 2-Phoneme Words	0.08(97)	0.19(96)	0.39(24)	0.19*(111)	0.26**(110)	0.31**(107)	0.43*(26)			
Segmenting 3-Phoneme Words	0.10(97)	0.23*(96)	0.36(24)	0.26**(111)	0.28**(110)	0.24*(107)	0.48*(26)			
Segmenting 4-Phoneme Words w/Blends	0.34***(97)	0.31**(96)	0.66***(24)	0.32***(111)	0.50***(110)	0.52***(107)	0.46*(26)			

Note: PA = Phonemic Awareness; ISF = Initial Sound Fluency; LNF = Letter Naming Fluency; PSF = Phoneme Segmentation Fluency; NWF = Nonsense Word Fluency; WUF = Word Use Fluency; BOY = Beginning of Year; MOY = Middle of Year; EOY = End of Year; *=p < .05; **=p < .01; ***=p < .001.

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Correlations Among DIBELS	Measures and PA	Subscales						
Subscale	PSF MOY	PSF EOY	NWF BOY	NWF MOY	NWF EOY	WUF BOY	WUF MOY	WUF EO
Blending Compound Words	0.40***(96)	0.39***(102)	0.11(27)	0.26*(97)	0.28**(102)	0.10(70)	0.24*(69)	0.28*(69)
Blending Syllables	0.22*(96)	0.41***(102)	-0.02(27)	0.25*(97)	0.18(102)	-0.11(70)	0.36**(69)	0.19(69)
Segmenting Compound Words	0.22*(96)	0.34***(102)	0.43*(27)	0.27**(97)	0.29**(102)	-0.02(70)	0.22(69)	0.19(69)
Segmenting Syllables	0.15(96)	0.27**(102)	0.11(27)	0.16(97)	0.24*(102)	0.06(70)	-0.03(69)	0.26*(69)
Blending 2-Phoneme Words	0.41***(96)	0.50***(102)	0.23(27)	0.28**(97)	0.29**(102)	0.13(70)	0.31**(69)	0.21(69)
Blending 3-Phoneme Words	0.36***(96)	0.56***(102)	0.35(27)	0.21*(97)	0.34***(102)	0.17(70)	0.24*(69)	0.17(69)
Producing Initial Sounds	0.34***(96)	0.42***(102)	0.31(27)	0.24*(97)	0.26**(102)	-0.02(70)	0.25*(69)	0.07(69)
Producing Final Sounds	0.36***(95)	0.52***(100)	0.41*(26)	0.31**(96)	0.37***(100)	-0.05(70)	0.16(69)	0.20(69)
Segmenting 2-Phoneme Words	0.34***(95)	0.55***(100)	0.36(26)	0.15(96)	0.29**(100)	0.07(70)	0.21(69)	0.18(69)
Segmenting 3-Phoneme Words	0.47***(95)	0.61***(100)	0.30(26)	0.26*(96)	0.29**(100)	0.09(70)	0.22(96)	0.13(69)
Segmenting 4-Phoneme Words w/Blends	0.50***(95)	0.60***(100)	0.44*(26)	0.53***(96)	0.55***(100)	-0.06(70)	0.42***(69)	0.28*(69)

Table 18		
Correlations Among WRQ and DIBELS Meass	res	
DIBELS Measure	WRQ	
ISF BOY	0.27(25)	
ISF MOY	0.55**(24)	
ISF EOY	0.32(17)	
LNF BOY	0.32**(69)	
LNF MOY	0.45**(36)	
LNF EOY	0.36*(45)	
PSF BOY	-0.05(67)	
PSF MOY	-0.13(77)	
PSF EOY	0.11(77)	
NWF BOY	0.57***(141)	
NWF MOY	0.59***(98)	
NWF EOY	0.68***(84)	
ORF BOY	0.58***(232)	
ORF MOY	0.66***(264)	
ORF EOY	0.68***(248)	
RTF BOY	0.31***(170)	
RTF MOY	0.31***(188)	
RTF EOY	0.31***(180)	
WUF BOY	0.19**(179)	
WUF MOY	0.28***(179)	
WUF EOY	0.33***(176)	
PSF = Phoneme Segmentation Fluency; NWF = No	nitial Sound Fluency; LNF = Letter Naming Fluency; nnsense Word Fluency; WUF = Word Use Fluency; r; EOY = End of Year; * = p < .05; ** = p < .01; *** =	40

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Table 19

Correlations Among DIBELS Mea	sures and WRD	1 Subscales						
Subscale	ISF BOY	ISF MOY	ISF EOY	LNF BOY	LNF MOY	LNF EOY	PSF BOY	
Letter-Sound Correspondence	0.34***(99)	0.32**(97)	0.10(27)	0.50***(115)	0.54***(114)	0.54***(110)	0.42*(30)	
VC & CVC Real Words Beginning w/Continuous Sounds	0.48***(96)	0.44***(96)	0.44*(26)	0.44***(111)	0.56***(110)	0.55***(108)	0.64*(27)	
VC & CVC Nonsense Words Beginning w/Continuous Sounds	0.40***(95)	0.41***(95)	0.48*(26)	0.40***(110)	0.49***(109)	0.52***(107)	0.45*(27)	
CVC Real Words Beginning w/Stop Sounds	0.36***(93)	0.45***(94)	0.42*(26)	0.47***(108)	0.49***(107)	0.50***(106)	0.42*(26)	
CVC Nonsense Words Beginning w/Stop Sounds	0.35***(88)	0.33**(91)	0.48*(25)	0.38***(103)	0.48***(102)	0.47***(102)	0.50*(25)	
Pre-Primer Dolch Words	0.46***(85)	0.27*(88)	0.59**(25)	0.62***(100)	0.67***(99)	0.67***(99)	0.53*(25)	
Subscale	PSF MOY	PSF EOY	NWF BOY	NWF MOY	NWF EOY	WUF BOY	WUF MOY	WUF EOY
Letter-Sound Correspondence	0.47***(99)	0.51***(104)	0.42*(31)	0.48***(100)	0.45***(104)	0.04(71)	0.29*(70)	0.24(70)
VC & CVC Real Words Beginning w/Continuous Sounds	0.51***(94)	0.55***(100)	0.52**(28)	0.51***(95)	0.49***(100)	0.10(69)	0.40***(68)	0.33**(68
VC & CVC Nonsense Words Beginning w/Continuous Sounds	0.51***(93)	0.56***(99)	0.37(28)	0.47***(94)	0.46***(99)	-0.05(68)	0.40***(67)	0.32**(67

Note. WRD1 = Word Reading & Decoding Form 1; V = Vowel; C = Consonant; ISF = Initial Sound Fluency; LNF = Letter Naming Fluency; PSF = Phoneme Segmentation Fluency; NWF = Nonsense Word Fluency; WUF = Word Use Fluency; BOY = Beginning of Year; MOY = Middle of Year; EOY = End of Year; *= p < 0.01; **= p < 0.01;

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Table 20

Correlations Among DIBELS Measures and WRD2 Subscales

Subscale	LNF BOY	LNF MOY	LNF EOY	PSF BOY	PSF MOY	PSF EOY
VCC & CVCC Real Words Beginning w/Continuous Sounds	0.48***(63)	0.06(7)	0.31(18)	0.26*(91)	-0.08(92)	0.02(86)
VCC & CVCC Nonsense Words Beginning w/Continuous Sounds	0.55***(63)	-0.35(6)	0.32(17)	0.20(92)	-0.20(92)	0.01(86)
CVCC Real Words Beginning w/Stop Sounds	0.42***(64)	0.80(6)	0.59*(17)	0.17(93)	-0.19(93)	-0.06(87)
CVCC Nonsense Words Beginning w/Stop Sounds	0.46***(64)	-0.05(6)	0.35(17)	0.09(93)	-0.15(93)	-0.08(87)
Real Words w/Double Final Consonant	0.29*(64)	0.29(6)	0.39(17)	0.13(93)	-0.20(93)	-0.12(87)
Nonsense Words w/Double Final Consonant	0.21(64)	0.74(6)	0.38(17)	-0.04(93)	-0.18(93)	-0.04(87)
CCVC Real Words	0.32**(64)	0.77(6)	0.15(17)	0.09(93)	-0.20(93)	-0.11(87)
CCVC Nonsense Words	0.31*(64)	-0.18(6)	0.28(17)	0.06(92)	-0.21(92)	-0.08(87)
CCVCC, CCCVC, & CCCVCC Real Words	0.32*(64)	0.83*(6)	0.28(17)	0.14(92)	-0.09(92)	-0.02(87)
CCVCC, CCCVC, & CCCVCC Nonsense Words	0.42***(64)	0.10(6)	0.35(17)	0.11(92)	-0.20(92)	-0.12(87)
Words with Y Vowel	0.45***(63)	0.81*(6)	0.54*(17)	0.18(91)	-0.05(91)	-0.01(86)
Primer Dolch Words	0.49***(63)	0.88*(6)	0.59*(17)	0.22*(91)	-0.20(91)	-0.07(86)

Note. WRD2 = Word Reading & Decoding Form 2; V = Vowel; C = Consonant; LISF = Initial Sound Fluency; LNF = Letter Naming Fluency;

PSF = Phoneme Segmentation Fluency; NWF = Nonsense Word Fluency; ORF = Oral Reading Fluency; RTF = Retell Fluency; WUF = Word Use Fluency; BOY = Beginning of Year; MOY = Middle of Year; EOY = End of Year; *=p < .05; **=p < .01; ***=p < .001.

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Table 19 (continued)

Correlations Among DIBELS Measures and WRD1 Subscales

Subscale	PSF	PSF	NWF	NWF	NWF	WUF	WUF	WUF
	MOY	EOY	BOY	MOY	EOY	BOY	MOY	EOY
CVC Real Words Beginning w/Stop Sounds	0.52** *(91)	0.51***	0.47*(0.44***	0.44***	0.09(69)	0.35**(0.33**
CVC Nonsense Words Beginning w/Stop Sounds	0.52** *(86)	0.54*** (94)	0.48*(0.44*** (87)	0.47*** (94)	0.08(69)	0.31*(6	0.17(6
Pre-Primer Dolch	0.61**	0.56***	0.58**	0.64***	0.64***	0.09(68)	0.30*(6	0.13(6
Words	*(83)	(91)	(26)	(84)	(91)		7)	7)

Note. WRD1 = Word Reading & Decoding Form 1; V = Vowel; C = Consonant; ISF = Initial Sound Fluency; LNF = Letter Naming Fluency; PSF = Phoneme Segmentation Fluency; NWF = Nonsense Word Fluency; WUF = Word Use Fluency; BOY = Beginning of Year; MOY = Middle of Year; EOY = End of Year; *= p < .05; **= p < .01; ***= p < .01.

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Table 20 (continued)

Correlations Among DIBELS Measures and WRD2 Subscales

Subscale	NWF BOY	NWF MOY	NWF EOY	ORF BOY	ORF MOY	ORF EOY
VCC & CVCC Real Words Beginning w/Continuous Sounds	0.46***(91)	0.37***(93)	0.48***(86)	0.54**(30)	0.48***(86)	0.52***(69)
VCC & CVCC Nonsense Words Beginning w/Continuous Sounds	0.39***(92)	0.32**(93)	0.37***(86)	0.25(30)	0.37***(87)	0.49***(70)
CVCC Real Words Beginning w/Stop Sounds	0.40***(93)	0.28**(94)	0.42***(87)	0.48**(30)	0.40***(88)	0.52***(71)
CVCC Nonsense Words Beginning w/Stop Sounds	0.28**(93)	0.31**(94)	0.43***(87)	0.36(30)	0.29**(88)	0.43***(71)
Real Words w/Double Final Consonant	0.33**(93)	0.32**(94)	0.31**(87)	0.55**(30)	0.32**(88)	0.36**(71)
Nonsense Words w/Double Final Consonant	0.26*(93)	0.30**(94)	0.33**(87)	0.59***(30)	0.28**(88)	0.41***(71)
CCVC Real Words	0.24*(93)	0.22*(94)	0.36***(87)	0.47**(30)	0.26*(88)	0.41***(71)
CCVC Nonsense Words	0.26*(92)	0.19(93)	0.43***(87)	0.29(29)	0.22*(87)	0.43***(71)
CCVCC, CCCVC, & CCCVCC Real Words	0.40***(92)	0.31**(93)	0.42***(87)	0.56**(29)	0.45***(87)	0.56***(71)
CCVCC, CCCVC, & CCCVCC Nonsense Words	0.38***(92)	0.24*(93)	0.46***(87)	0.39*(29)	0.37***(87)	0.51***(71)
Words with Y Vowel	0.39***(91)	0.41***(92)	0.50(86)	0.69***(29)	0.57***(86)	0.72***(70)
Primer Dolch Words	0.42***(91)	0.35***(92)	0.40***(86)	0.45*(29)	0.52***(86)	0.60***(70)

Note, WRD2 = Word Reading & Decoding Form 2; V = Vowel; C = Consonant; LISF = Initial Sound Fluency; LNF = Letter Naming Fluency; PSF = Phoneme Segmentation Fluency; NWF = Nonsense Word Fluency; ORF = Oral Reading Fluency; RTF = Retel Fluency; WUF = Word Use Fluency; BOY = Beginning of Year; MOY = Moddle of Year; EOY = End of Year; EO

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Table 20 (continued)

Correlations Among DIBELS Measures and WRD2 Subscales

Correlations Among DIDDLO Measures and WID2 Subsetti						
Subscale	RTF BOY	RTF MOY	RTF EOY	WUF BOY	WUF MOY	WUF EOY
VCC & CVCC Real Words Beginning w/Continuous Sounds	-0.09(16)	0.32*(55)	0.37**(50)	0.29*(55)	0.36**(54)	-0.03(52)
VCC & CVCC Nonsense Words Beginning w/Continuous Sounds	-0.13(16)	0.23(56)	0.33*(51)	0.20(55)	0.43**(54)	0.09(52)
CVCC Real Words Beginning w/Stop Sounds	0.05(16)	0.28*(56)	0.39**(51)	0.22(55)	0.43**(54)	0.06(52)
CVCC Nonsense Words Beginning w/Stop Sounds	0.03(16)	0.25(56)	0.35*(51)	0.25(55)	0.36**(54)	0.07(52)
Real Words w/Double Final Consonant	0.29(16)	0.16(56)	0.22(51)	0.25(55)	0.33*(54)	0.20(52)
Nonsense Words w/Double Final Consonant	0.35(16)	0.18(56)	0.26(51)	0.14(55)	0.37**(54)	0.21(52)
CCVC Real Words	0.07(16)	0.14(56)	0.27(51)	0.24(55)	0.26(54)	0.00(52)
CCVC Nonsense Words	-0.11(16)	0.12(56)	0.37**(51)	0.15(55)	0.26(54)	0.11(52)
CCVCC, CCCVC, & CCCVCC Real Words	0.26(16)	0.18(56)	0.37**(51)	0.24(55)	0.31*(54)	-0.13(52)
CCVCC, CCCVC, & CCCVCC Nonsense Words	-0.08(16)	0.19(56)	0.38**(51)	0.14(55)	0.27*(54)	0.00(52)
Words with Y Vowel	0.49(16)	0.21(56)	0.42**(51)	0.14(55)	0.34*(54)	0.01(52)
Primer Dolch Words	0.15(16)	0.33*(56)	0.32*(51)	0.18(55)	0.32*(54)	0.11(52)

Note. WRD2 = Word Reading & Decoding Form 2; V = Vowel; C = Consonant; LISF = Initial Sound Fluency; LNF = Letter Naming Fluency; PSF = Phoneme Segmentation Fluency; NWF = Nonsense Word Fluency; ORF = Oral Reading Fluency; RTF = Retell Fluency; WUF = Word Use Fluency; BOY = Beginning of Year; MOY = Middle of Year; EOY = End of Year; * = p < .05; ** = p < .01; *** = p < .01.

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Questions 3 & 4



- What is the factor structure of DIBELS Deep PA?
- What is the factor structure of DIBELS Deep WRD Probes?

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Subscale	1	2	3	4	5	6
1. WRQ						
2. Blending Compound Words	0.36*(115)					
3. Blending Syllables	0.14(115)	0.55***(115)				
4. Segmenting Compound Words	0.38*(115)	0.53***(115)	0.41***(115)			
5. Segmenting Syllables	0.42*(115)	0.37***(115)	0.29**(115)	0.63***(115)		
6. Blending 2-Phoneme Words	0.31(115)	0.64***(115)	0.55***(115)	0.37***(115)	0.32***(115)	
7. Blending 3-Phoneme Words	0.27(115)	0.41***(115)	0.48***(115)	0.31***(115)	0.32***(115)	0.72***(115
8. Producing Initial Sounds	0.22(115)	0.39***(115)	0.50***(115)	0.31***(115)	0.30**(115)	0.62***(115
9. Producing Final Sounds	0.50**(113)	0.50***(113)	0.51***(113)	0.52***(113)	0.47***(113)	0.59***(113
10. Segmenting 2-Phoneme Words	0.39*(113)	0.49***(113)	0.40***(113)	0.31***(113)	0.29**(113)	0.66***(113
11. Segmenting 3-Phoneme Words	0.26(113)	0.36***(113)	0.40***(113)	0.22*(113)	0.25**(113)	0.59***(113
12. Segmenting 4-Phoneme Words w/Blends	0.66***(113)	0.38***(113)	0.36***(113)	0.41***(113)	0.25**(113)	0.39***(113
	7	8	9	10	11	
8. Producing Initial Sounds	0.66***(115)					
9. Producing Final Sounds	0.55***(113)	0.54***(113)				

Table 24 (continued)						
Correlations Among DIBELS Deep Phonemic Av	wareness (PA) Subsc	ales & Word Read	ing Quick Screen	(WRQ)		
	7	8	9	10	11	
10. Segmenting 2-Phoneme Words	0.69***(113)	0.57***(113)	0.53***(112)			
11. Segmenting 3-Phoneme Words	0.65***(113)	0.52***(113)	0.51***(112)	0.72***(113)		
12. Segmenting 4-Phoneme Words w/Blends	0.35***(113)	0.24*(113)	0.48***(112)	0.32***(113)	0.40***(113)	
Note. $* = p < .05; ** = p < .01; *** = p < .001$						

Model for DIBELS Deep PA



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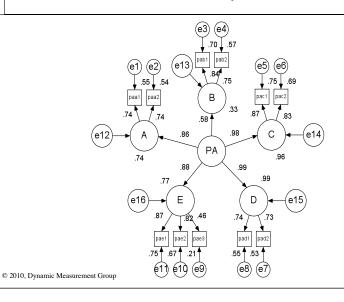
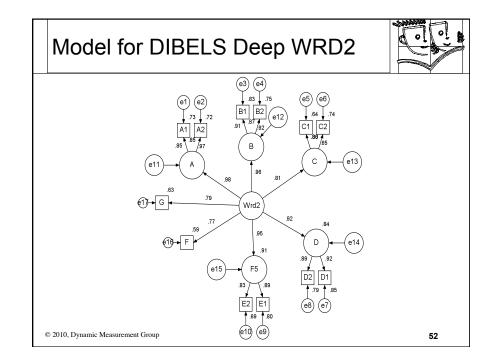


Table 26 Correlations Among DIBELS Deep WRD2 Subscales and WRQ 1. WRQ 2. VCC & CVCC Real Words Beginning w/Continuous Sounds 0.69(51) 3. VCC & CVCC Nonsense Words Beginning w/Continuous 0.76(51)0.71(92) 4. CVCC Real Words Beginning w/Stop Sounds 0.75(51)0.72(92)0.77(93)5. CVCC Nonsense Words Beginning w/Stop Sounds 0.80(51)0.66(92)0.75(93)0.79(94)6. Real Words w/Double Final Consonant 0.57(92) 0.51(94) 0.48(51)0.50(93)0.49(94)7. Nonsense Words w/Double Final Consonant 0.68(51)0.58(92) 0.55(93) 0.59(94) 0.54(94) 8. CCVC Real Words 0.61(51) 0.69(92) 0.70(93) 0.73(94) 9. CCVC Nonsense Words 0.72(51) 0.60(91) 0.72(92)0.76(93) 0.79(93) 0.50(93) 10. CCVCC, CCCVC, & CCCVCC Real Words 0.54(93) 0.75(51) 0.72(91)0.67(92) 0.74(93)0.65(93) 11. CCVCC, CCCVC, & CCCVCC Nonsense Words 0.66(51) 0.66(91) 0.71(92) 0.71(93) 0.70(93) 0.50(93) 12. Words with Y Vowel 0.73(51) 0.62(91) 0.46(92) 13. Primer Dolch Words 0.61(51)0.68(90) 0.60(91)0.67(92)0.67(92) Note. WRD2 = Word Reading & Decoding Form 2; WRQ = Word Reading Quick Screen; V = Vowel; C = Consonant; p < .001 for all

Table 26 (continued) Correlations Among DIBELS Deep WRD2 Subscales and WRQ 10 11 12 Subscale 8. CCVC Real Words 0.63(94)CCVC Nonsense Words 0.48(93) 0.81(93) 10. CCVCC, CCCVC, & CCCVCC Real Words 0.57(93) 0.74(93) 0.73(93) 11. CCVCC, CCCVC, & CCCVCC Nonsense Words 0.53(93) 0.71(93) 0.66(93) 0.74(93) 12. Words with Y Vowel 0.55(92) 0.54(92) 0.51(92) 0.72(92) 0.56(92) 13. Primer Dolch Words 0.63(92) 0.64(92) 0.55(92) 0.68(92) 0.50(92) 0.77(92)Note. WRD2 = Word Reading & Decoding Form 2; WRQ = Word Reading Quick Screen; V = Vowel; C = Consonant; p < .001 for all correlations. 51



Question 5



 What is the procedural reliability of examiners on DIBELS Deep?

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Sample Procedural Integrity Checklist



ne	Needs Practice	Element to Check
	Fractice	Gives general directions verbatim: We are going to do a reading activity.
		Glees specific directions verbalini: Here are some words. Some of them are make-believe words. Read each word he beat that you can. Begin here (c)crit) and read down the flat (demanated by pointing). Hyou come to a word you do not know, make your best guess. Put your finger on the first word. Begin.
		Uses prompting procedure: If the child does not respond within 3 seconds on any item, mark the item as incorrect, point to the next word and say, <i>Try reading this</i> word.
		Holds Palm Pilot so student cannot see what examiner records.
		Angles test book appropriately: student cannot see examiner side, is not a barrier between student and examiner, examiner can point to items on student side.
		Records all student responses on the palm pilot.
		Records correct or incorrect by tapping the appropriate button.
		Administers all designated items in the order given
		Continues testing until the student has five (5) consecutive incorrect items above the item set for their grade*.
		Discontinues testing if the student receives a score of incorrect on the <u>last</u> five (5) items at their grade level*.
Valid	Invalid	Overall judgment about administration of DIBELS Deep WRD-QS

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Procedural Integrity Results



- · Word Reading QS
 - 125 observations using 11 item checklist
 - Mean percent procedural reliability = 96% (range 90-99%)
- WRD Measures 1 5
 - 123 observations using 26 item checklist
 - Mean percent procedural reliability was 58% (range 25-95%)
- PA Measure
 - 33 Observations using 98 item checklist
 - Mean percent procedural reliability was 93% (range 79-100%)

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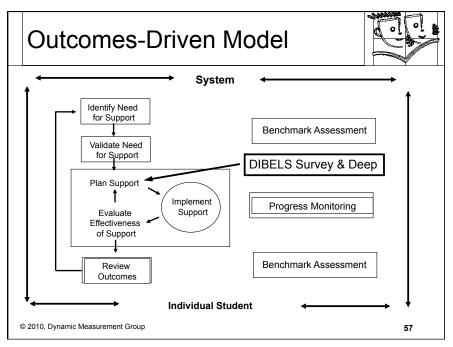
Discussion

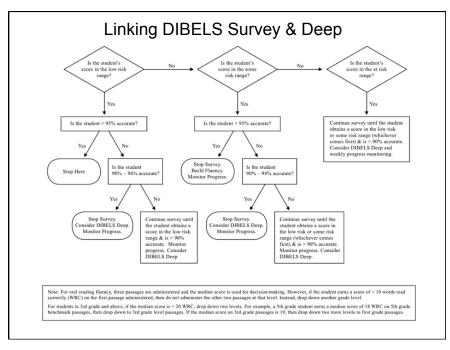
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- Next steps in DIBELS Deep Research & Development
 - Revise current measures (empirical & expert review)
 - Answer additional research questions?
 - Linkage to DIBELS Survey
 - Expansion of domains (CFOL)

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Discussion: What about Rtl?



- Putting greater emphasis on the "I" in Rtl!
 - Utility for Teachers
 - Use the information to better differentiate instruction both within and across instructional tiers.
 - Utility for School Psychologists
 - Use the information in consultation with teachers about where and how to make adjustments to instruction for students, in particular, students in Tiers 2 and 3.
 - Could assist in the identification of appropriately targeted materials to be used by parent or peer tutors.

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Questions... © 2010, Dynamic Measurement Group 60

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