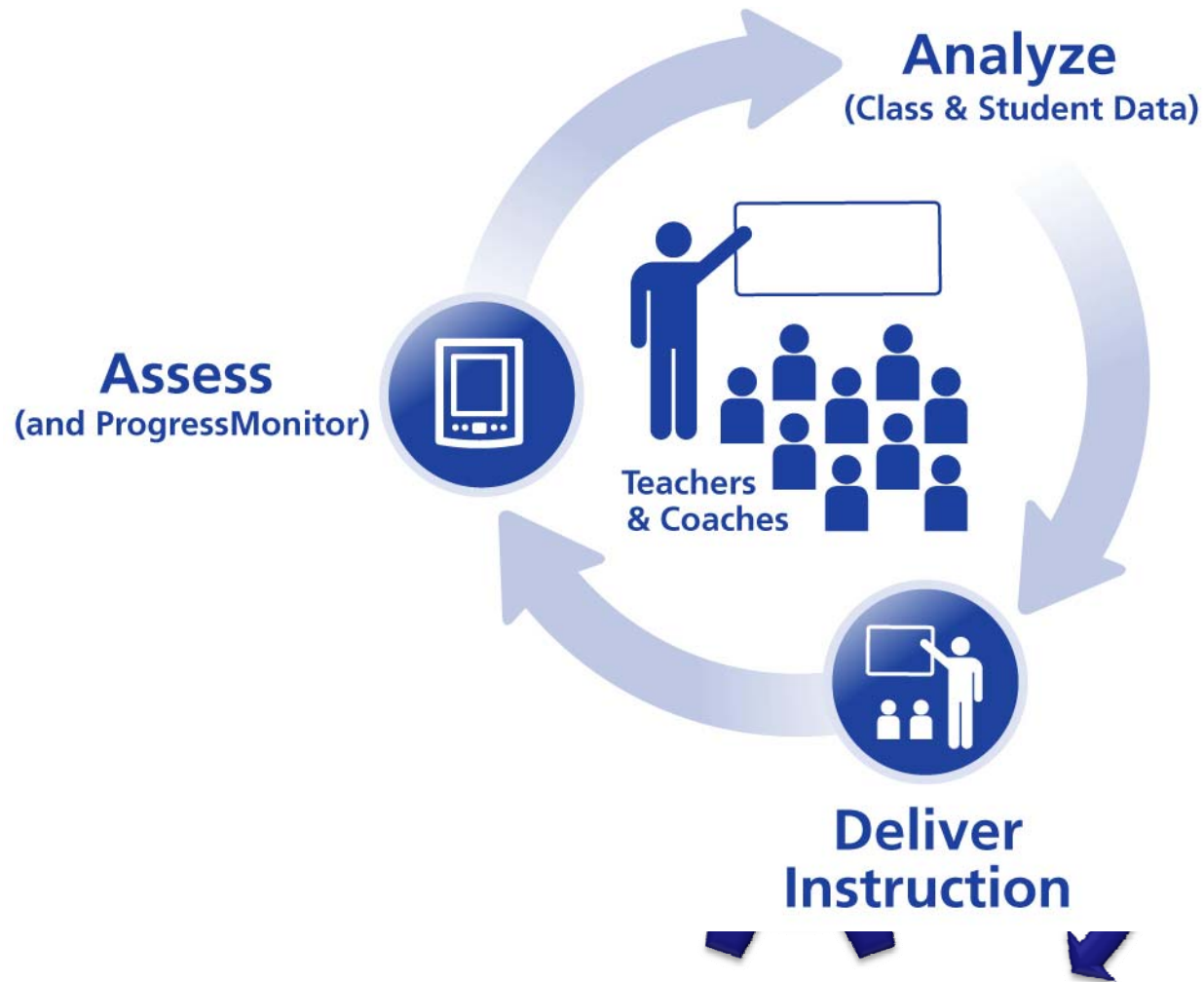


## Adaptive Algorithms: Aligning Instruction with DIBELS Assessment Results

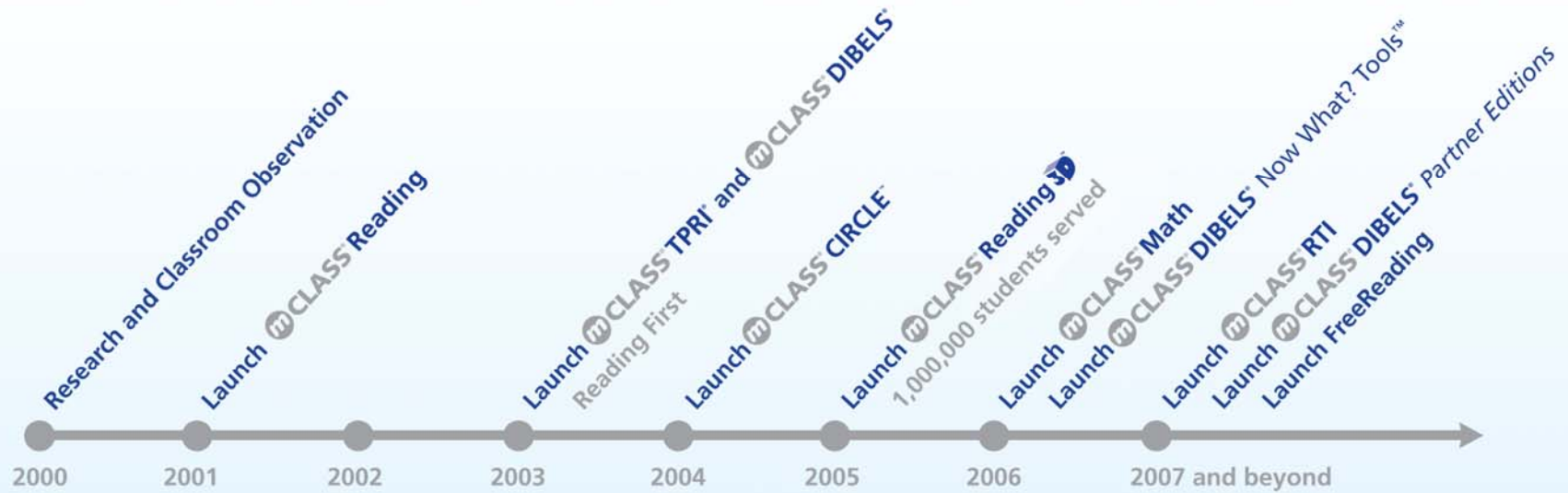
DIBELS Summit  
February 18, 2009

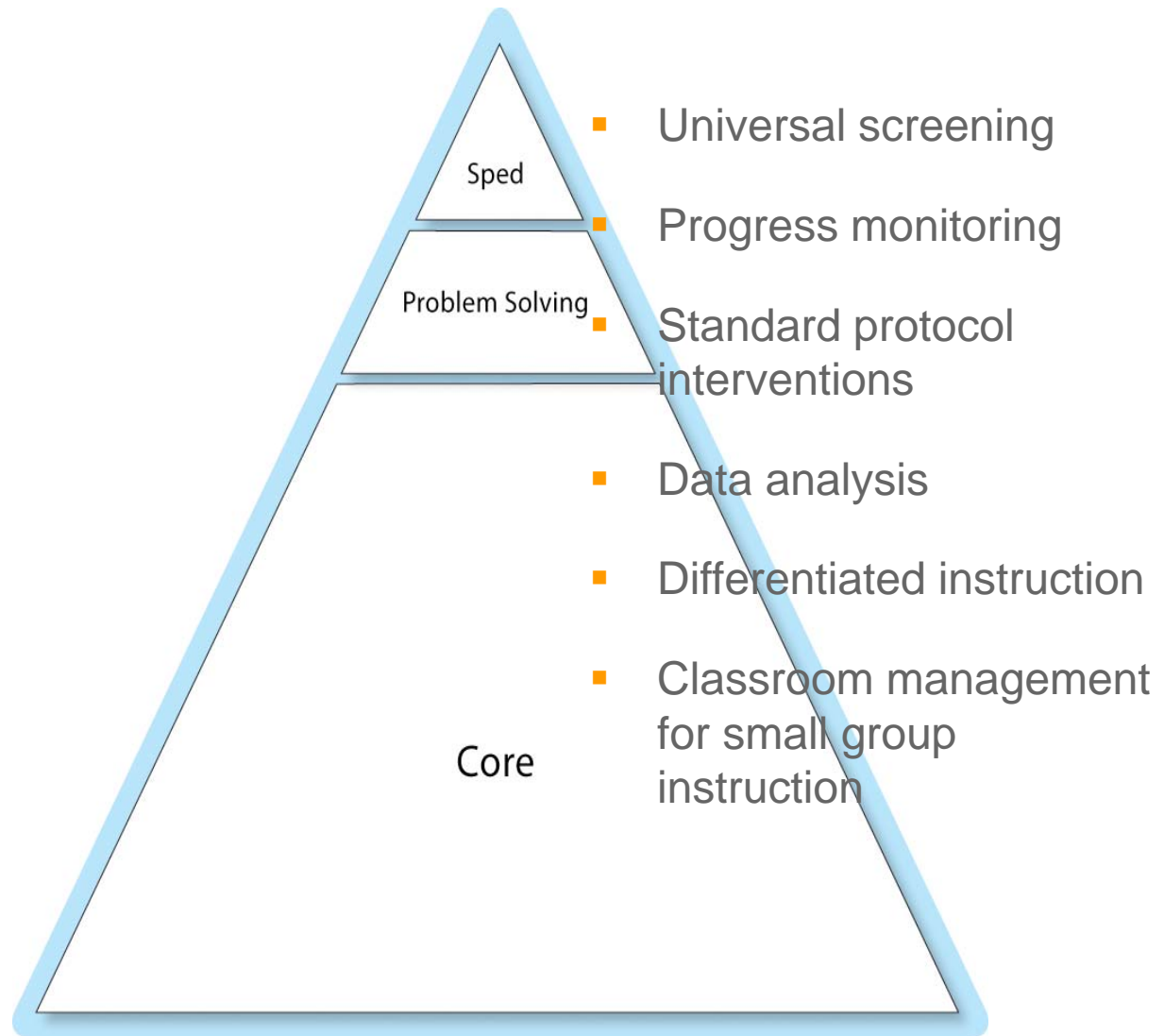
Ellen Edmonds & Michael Kasloff





- Share the evolutionary process of research and development that has led Wireless Generation to this point
- Describe a systematic approach, or algorithm, for moving from DIBELS benchmark and progress monitoring results to ready-to-teach differentiated instruction
- Examine what happens when *systematic approach* meets *actual classroom*
- Speculate on what the future may hold





## PERFORMANCE REPORTING : IDENTIFY CUSTOMERS IN NEED

PAGINATION :  YES  NO

### mCLASS DIBELS BENCHMARK RESULTS COMPARISON CHART - Customer Level

Current As Of: 10/17/2008

[mCLASS Home](#)

STATE: NY

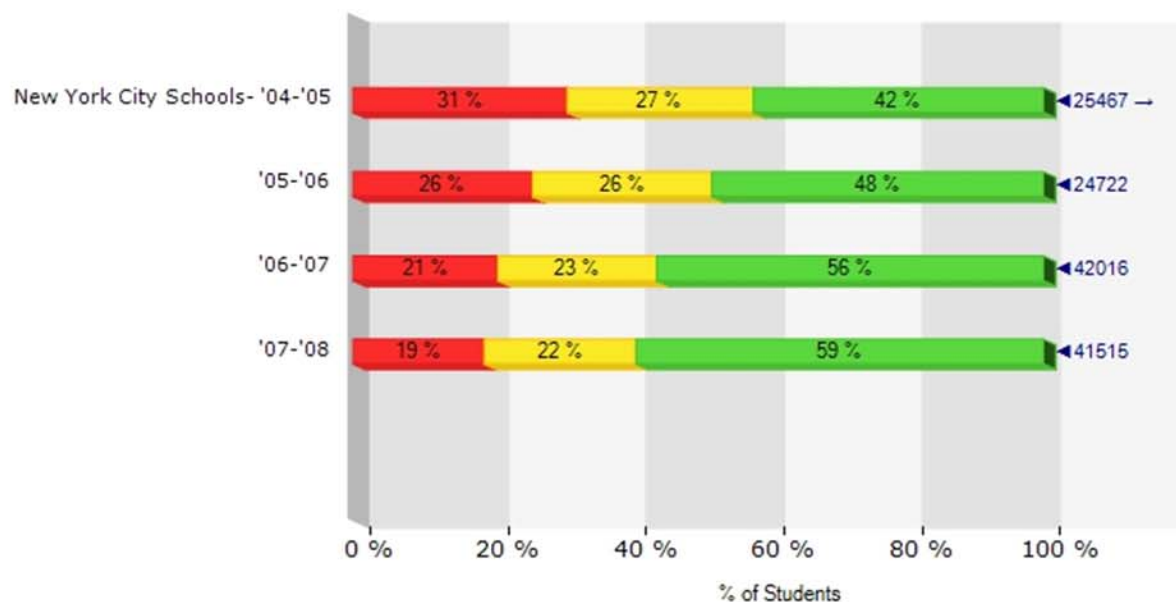
CUSTOMER: NEW YORK CITY SCHOOLS

GRADE: K-3

PERIOD: Multiple Years (EOY)

INCLUDES: READING FIRST AND NON-READI...

[View Measure Breakdown](#) →



Students in the institution at time of assessment

**LEGEND**

Total Students ↓

Red Yellow Green ←#%

[See Category Details](#)

Institutions with no data are not included

**TRACKING INFORMATION**

EOY

Instructional Recommendation

Grade :         
K 1 2 3 4 5 6

**VIEW RELATED REPORTS**

- [Benchmark Comparison Report](#) →
- [Measure Breakdown Report](#) →
- [Effectiveness \(DEF\) Report](#) →
- [Growth Comparison Report](#) →
- [Progress Monitoring Status Report](#) →

## Progress Monitoring : 11.20.2007

PSF Phoneme Segmentation Fluency		
STATUS	SCORE	PERCENTILE
<b>10 Phonemes/Min</b>		
<b>leaned</b>	<u>/l/</u> / ea / / n / / d /	1 / 4
<b>shine</b>	/ sh / / ie / / n /	1 / 3
<b>worm</b>	/ w / / ir / / m /	0 / 3
<b>smiled</b>	<u>/s/</u> / m / / ie / / l / / d /	1 / 5
<b>porch</b>	<u>/p/</u> / or / / ch /	1 / 3
<b>creek</b>	<u>/k/</u> / r / / ea / / k /	1 / 4
<b>grabbed</b>	<u>/g/</u> / r / / a / / b / / d /	1 / 5
<b>bags</b>	<u>/b/</u> / <u>a/</u> / <u>g/</u> / z /	3 / 4
<b>lit</b>	<u>/l/</u> / i / / t /	1 / 3
<b>kissed</b>	/ k / / i / / s / / t /	0 / 4
<b>get</b>	/ g / / e / / t /	0 / 3
<b>pouch</b>	/ p / / ow / / ch /	0 / 3

## Progress Monitoring : 11.20.2007

PSF Phoneme Segmentation Fluency		
STATUS	SCORE	PERCENTILE
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leaned	/ l / / ea / / n / / d /	1 / 4
shine	/ sh / / ie / / n /	1 / 3
worm	/ w / / ir / / m /	0 / 3
smiled	/ s / / m / / ie / / l / / d /	1 / 5
porch	/ p / / or / / ch /	1 / 3
creek	/ k / / r / / ea / / k /	1 / 4
grabbed	/ g / / r / / a / / b / / d /	1 / 5
bags	/ b / / a / / g / / z /	3 / 4
lit	/ l / / i / / t /	1 / 3
kissed	/ k / / i / / s / / t /	0 / 4
get	/ g / / e / / t /	0 / 3
pouch	/ p / / ow / / ch /	0 / 3

**ASSESSOR**  
Shreffler, Tara

**TEST NOTES**

**Observation #1 of 2** ✕

◀ Previous
Next ▶

Milda successfully isolated most initial sounds but was not able to segment words further.

Children develop phonemic awareness along a continuum of increasing complexity. Since this child appeared to be aware of initial sounds, he/she may benefit from reinforcement activities that focus on increasingly complex phonemic awareness skills such as segmenting syllables, identifying onset and rime, and eventually fully segmenting words.

Find out how you can help Milda by clicking the button below.

**Suggested Activities**

Frequent additions  
 Frequent omissions  
 Frequent self corrections

**MOTIVATION**

**AFFECT**

**INTEREST**

## Small Group Advisor



1st Grade - Middle Benchmark

### ALPHABETIC PRINCIPLE (Key Skill 1)

Step 5 of 5

< Previous    Finish

	HIGH RISK (NWF < 13)	SOME RISK (13 ≤ NWF < 24)	LOW RISK (NWF ≥ 24)
1	2	3	
4 Critters	5 Rascals	6	
7	8 Punky Brewsters	9	

\* **lpsm** = letter sounds per minute    Benchmark Students    ● Include    ⊖ Set-aside

\* **spm** = sounds per minute

Finally, you are able to adjust the groupings by dragging and dropping students into groupings of your choosing.

Click on the "Auto tidy" button to have the small group advisor automatically move students to eliminate groups containing only one group.

Auto-tidy groups

Click on the "View Instruction" button below for recommended instructional approaches designed to help you think about your groups and how you plan to work with them.

View Instruction

Students not assigned to groups

BFC

TAC

TUC

BRC

TOC

TTC

Restart Small Group Advisor

Print

OVERVIEW		GROUP SIZE (# STUDENTS)		
Class Size	# Groups	Average	Min	Max
11	6	2	1	3

Riddle Buly and Valencia (2002) administered a battery of assessments to 108 4<sup>th</sup> graders who were below WASL proficiency and performed a cluster analysis of the results

TABLE 4  
*Cluster Analysis*

Cluster	N	Word identification	Meaning	Fluency	WASL score	% Not Eng.	% Low SES	Writing score	% L1	% L2
1	10	.37	-.58	.79	374	60	90	49	50	50
2	9	.64	-.33	.48	378	67	89	47	44	56
3	16	-.07	-.34	.72	380	56	81	53	31	69
4	19	-.42	.49	-.27	384	16	42	49	32	68
5	11	.09	.75	-.40	388	09	36	58	09	90
6	15	.37	.48	-.31	380	27	67	60	47	53
7	12	.38	-.34	-.09	377	58	67	57	50	50
8	6	.34	-.13	-.55	372	50	67	46	50	50
9	2	-2.55	-1.68	-.92	359	50	100	25	100	0
10	8	-1.07	-.31	-.44	374	12	75	38	63	37

*Note.* WASL Score = scale score (400 = proficient).

% Not Eng. = percentage of students with home language reported to be other than English.

% Low SES = percentage of students eligible for free or reduced-price lunch.

Writing score = % of possible points on content, organization, and idea section of the state writing assessment (64% = state average for all students).

% L1 = percentage of students who scored in Level I (lowest level) on the reading section of the WASL.

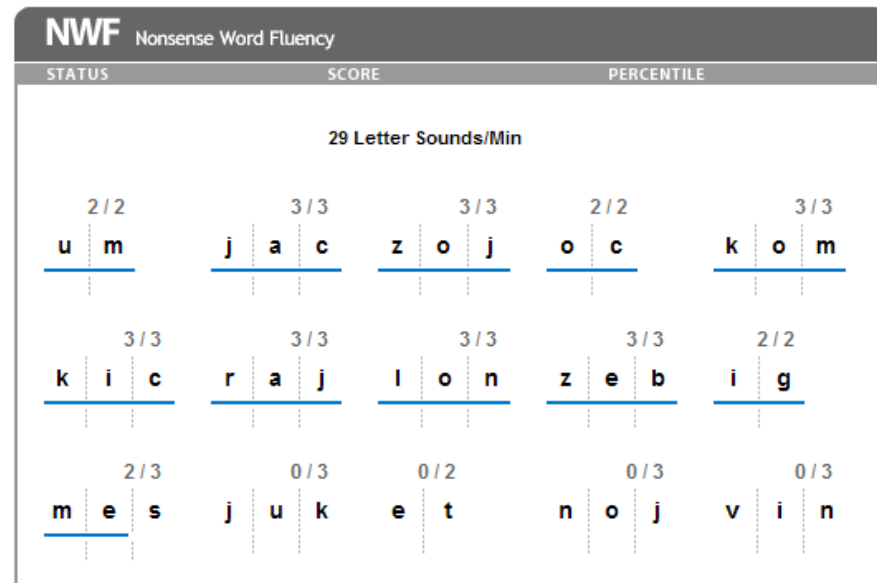
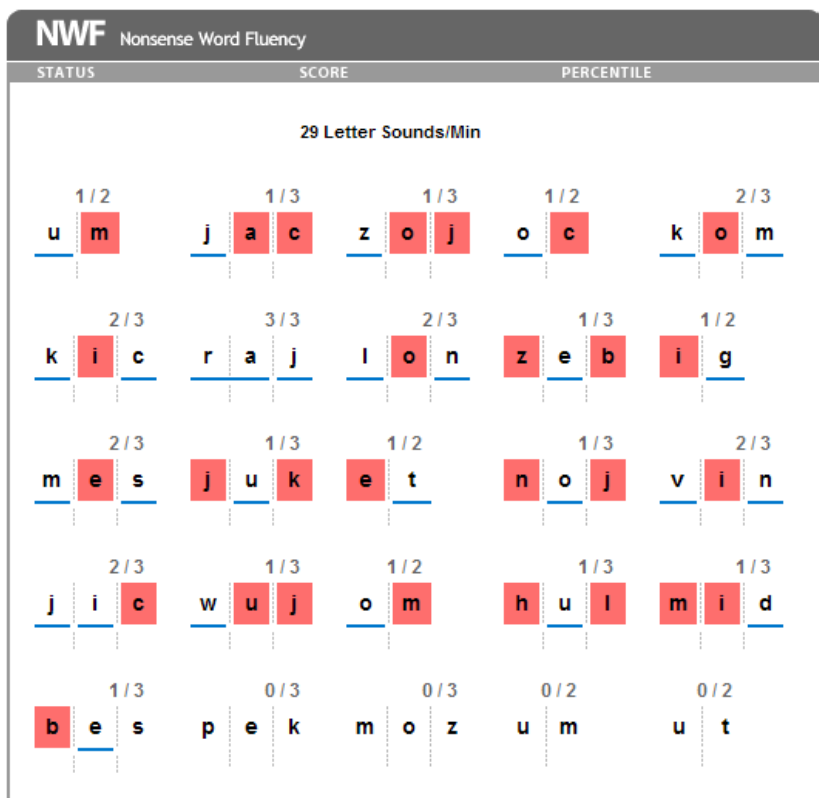
% L2 = percentage of students who scored in Level 2 on the reading section of the WASL.

# What would you teach?

PSF Phoneme Segmentation Fluency		
STATUS	SCORE	PERCENTILE
<div style="display: flex; align-items: center;"> <div style="margin-right: 5px;">DEFICIT</div> <div style="margin-right: 5px; border: 1px solid black; padding: 2px;">EMERG</div> <div style="margin-right: 5px; border: 1px solid black; padding: 2px;">ESTABLISHED</div> </div> <div style="display: flex; align-items: center; margin-top: 5px;"> <div style="margin-right: 10px;">10</div> <div style="margin-right: 10px;">35</div> </div>	31 Phonemes/Min	42
rich	<u>/r/</u> <u>/i/</u> <u>/ch/</u>	3 / 3
hawk	<u>/h/</u> <u>/o/</u> <u>/k/</u>	2 / 3
passed	<u>/p/</u> <u>/a/</u> <u>/s/</u> <u>/t/</u>	3 / 4
roof	<u>/r/</u> <u>/oo/</u> <u>/f/</u>	2 / 3
sea	<u>/s/</u> <u>/ea/</u>	2 / 2
shout	<u>/sh/</u> <u>/ow/</u> <u>/t/</u>	2 / 3
arms	<u>/ar/</u> <u>/m/</u> <u>/z/</u>	1 / 3
smile	<u>/s/</u> <u>/m/</u> <u>/ie/</u> <u>/l/</u>	3 / 4
fish	<u>/f/</u> <u>/i/</u> <u>/sh/</u>	3 / 3
woof	<u>/w/</u> <u>/oo/</u> <u>/f/</u>	2 / 3
his	<u>/h/</u> <u>/i/</u> <u>/z/</u>	3 / 3
ling	<u>/l/</u> <u>/i/</u> <u>/ng/</u>	2 / 3
life	<u>/l/</u> <u>/ie/</u> <u>/f/</u>	3 / 3

NWF Nonsense Word Fluency				
STATUS	SCORE	PERCENTILE		
<div style="display: flex; align-items: center;"> <div style="margin-right: 5px;">HIGH RISK</div> <div style="margin-right: 5px; border: 1px solid black; padding: 2px;">MID RISK</div> <div style="margin-right: 5px; border: 1px solid black; padding: 2px;">LOW RISK</div> </div> <div style="display: flex; align-items: center; margin-top: 5px;"> <div style="margin-right: 10px;">13</div> <div style="margin-right: 10px;">24</div> </div>	16 Letter Sounds/Min	35		
w u b	d o j	i k	v u s	n u k
u l	z e l	f e b	w u j	h i z

# Not all “twenty-nines” are the same



- Which one is in greater need of help?

Note: MOY 1<sup>st</sup> grade NWF, below 30 is deficit for this probe

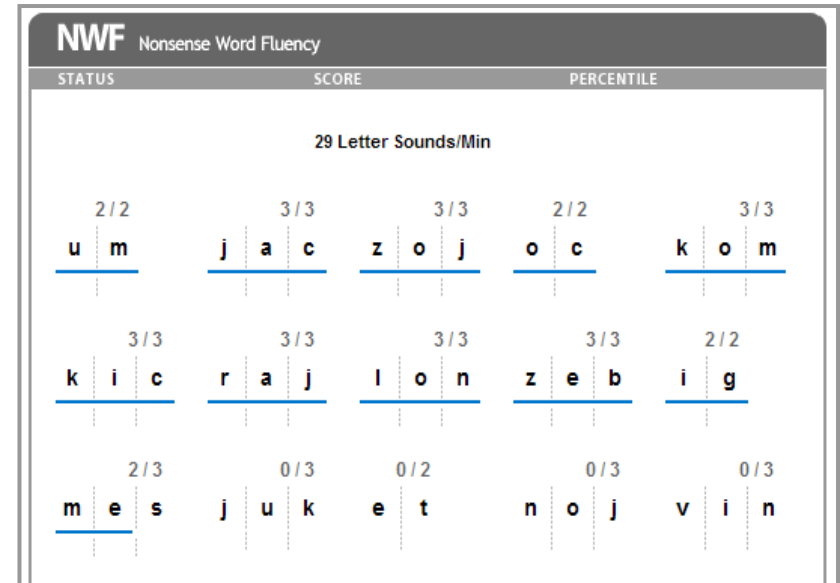
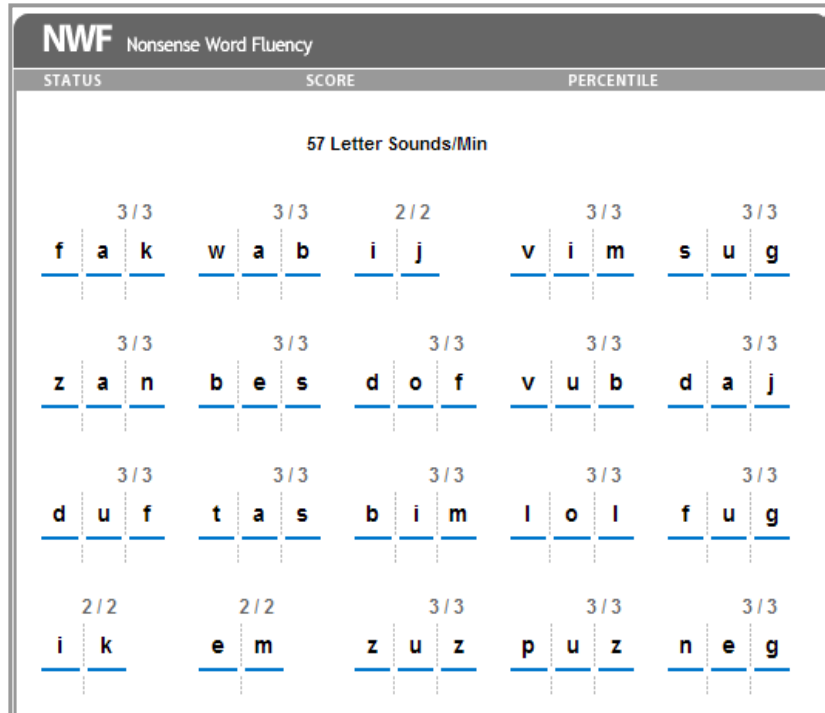
# Not all “Fifty-Seven’s” are the same

NWF Nonsense Word Fluency	
STATUS	SCORE
57 Letter Sounds/Min	
f a k	w a b
i j	v i m
s u g	z a n
b e s	d o f
v u b	d a j
d u f	t a s
b i m	l o l
f u g	i k
e m	z u z
p u z	n e g

NWF Nonsense Word Fluency	
STATUS	SCORE
57 Letter Sounds/Min	
f a k	w a b
i j	v i m
s u g	z a n
b e s	d o f
v u b	d a j
d u f	t a s
b i m	l o l
f u g	i k
e m	z u z
p u z	n e g

- Which student is in greater need of help?

Note: MOY 1<sup>st</sup> grade NWF, 50+ is established for this probe



- Which student is in greater need of help?

Note: MOY 1<sup>st</sup> grade NWF, below 30 is deficit and 50+ is established for this probe

NWF Nonsense Word Fluency	
STATUS	SCORE
57 Letter Sounds/Min	
f a k	w a b
i j	v i m
s u g	z a n
b e s	d o f
v u b	d a j
d u f	t a s
b i m	l o l
f u g	i k
e m	z u z
p u z	n e g

Blending



NWF Nonsense Word Fluency	
STATUS	SCORE
29 Letter Sounds/Min	
u m	j a c
z o j	o c
k o m	k i c
r a j	l o n
z e b	i g
m e s	j u k
e t	n o j
v i n	

Blending



Note: MOY 1<sup>st</sup> grade NWF, below 30 is deficit and 50+ is established for this probe

## 2nd Grade Middle Benchmark : 01.15.2009

### ORF Oral Reading Fluency

STATUS	SCORE	PERCENTILE
--------	-------	------------

	<b>43 Words/Min</b>	<b>20</b>

#### Moving Day - Passage 1

FLUENCY	
ACCURACY	
RTF SCORE	

Saturday is moving day. Our whole family is moving to a new house. My parents decided we were just too crowded in our apartment and we needed more room. At our new house my brother and I won't have to share a room anymore. The house has two bathrooms ] so we won't have to stand in line to use the bathroom anymore. We will have a garage for the car. We will even have a fenced yard with a swing set and room for a garden. Our apartment is full of boxes. I have to pack up my clothes and my toys. I'm helping my brother pack his things because he

## 2nd Grade Middle Benchmark : 01.22.2009

### ORF Oral Reading Fluency

STATUS	SCORE	PERCENTILE
--------	-------	------------

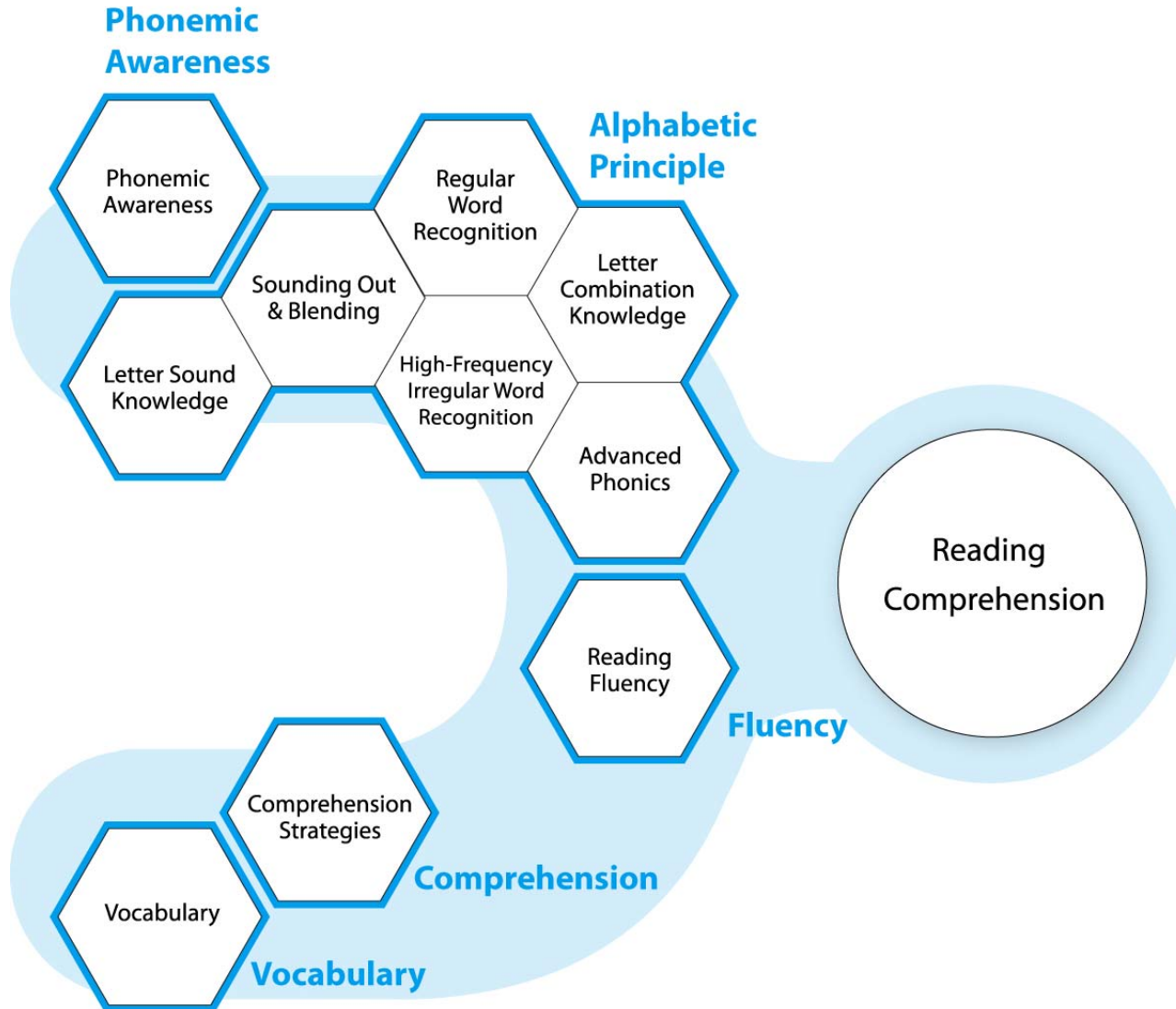
	<b>44 Words/Min</b>	<b>20</b>

#### Moving Day - Passage 1

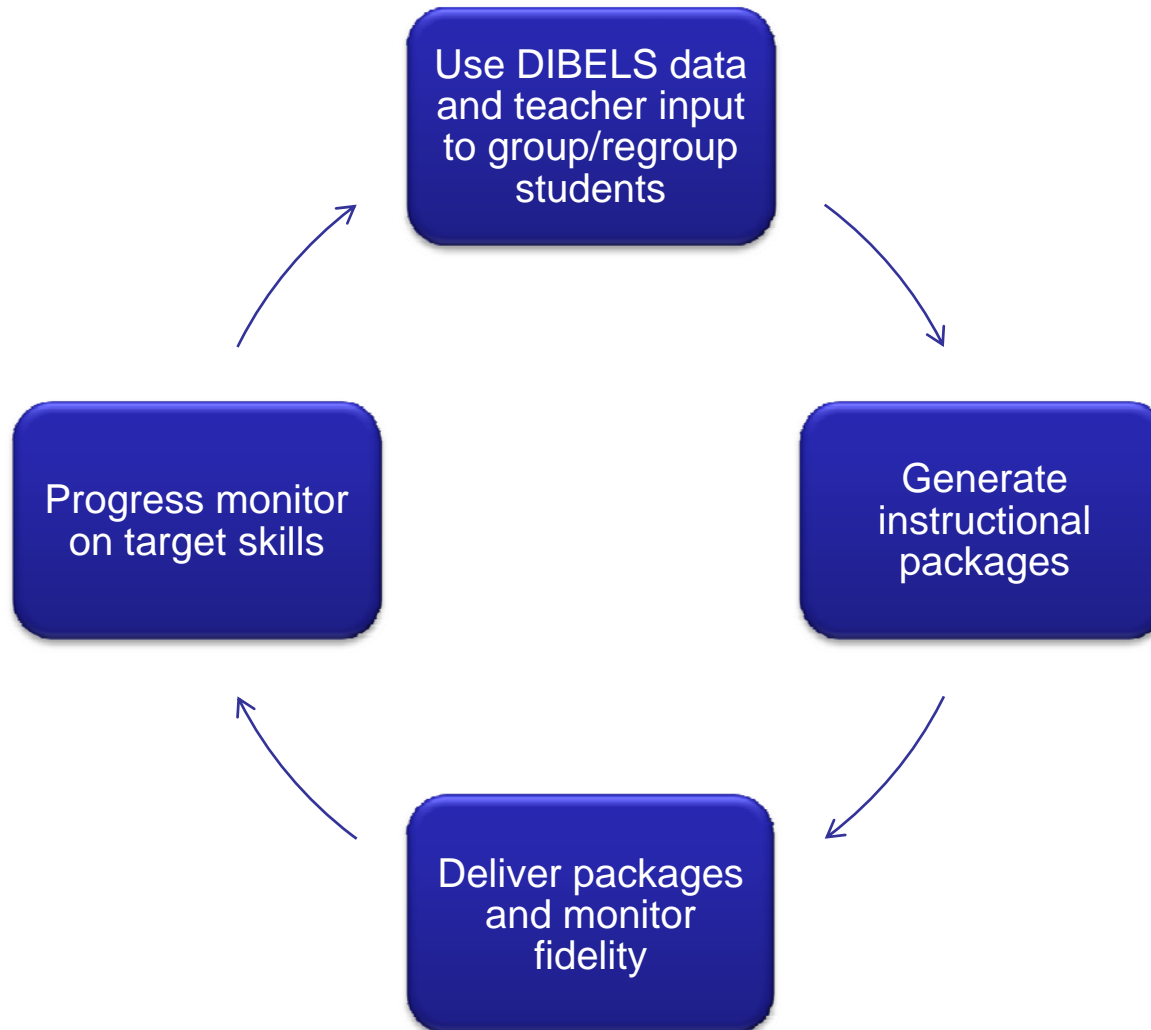
FLUENCY	44 wpm
ACCURACY	100 %
RTF SCORE	59 wpm

Saturday is moving day. Our whole family is moving to a new house. My parents decided we were just too crowded in our apartment and we needed more room. At our new house my brother and I won't have to share a room anymore. ] The house has two bathrooms so we won't have to stand in line to use the bathroom anymore. We will have a garage for the car. We will

# A skill-based model aligned with 5 Big Ideas



We combine this model with DIBELS data to create an intervention program for a small group of students in two-week cycles



# At each cycle, we use patterns in item response data to assign a levels for each macro skill – eg, blending

DEFICIT    GOING    ESTABLISHED    32 Letter Sounds/Min    16

30    50

f	o	j	h	o	n	t	u	m	l	e	n	a	j	
s	u	v	k	a	m	r	e	s	k	i	c	f	a	v
i	d	w	o	d	n	e	j	s	o	k	w	i	f	
b	i	s	w	e	m	a	v	j	a	j	a	c		

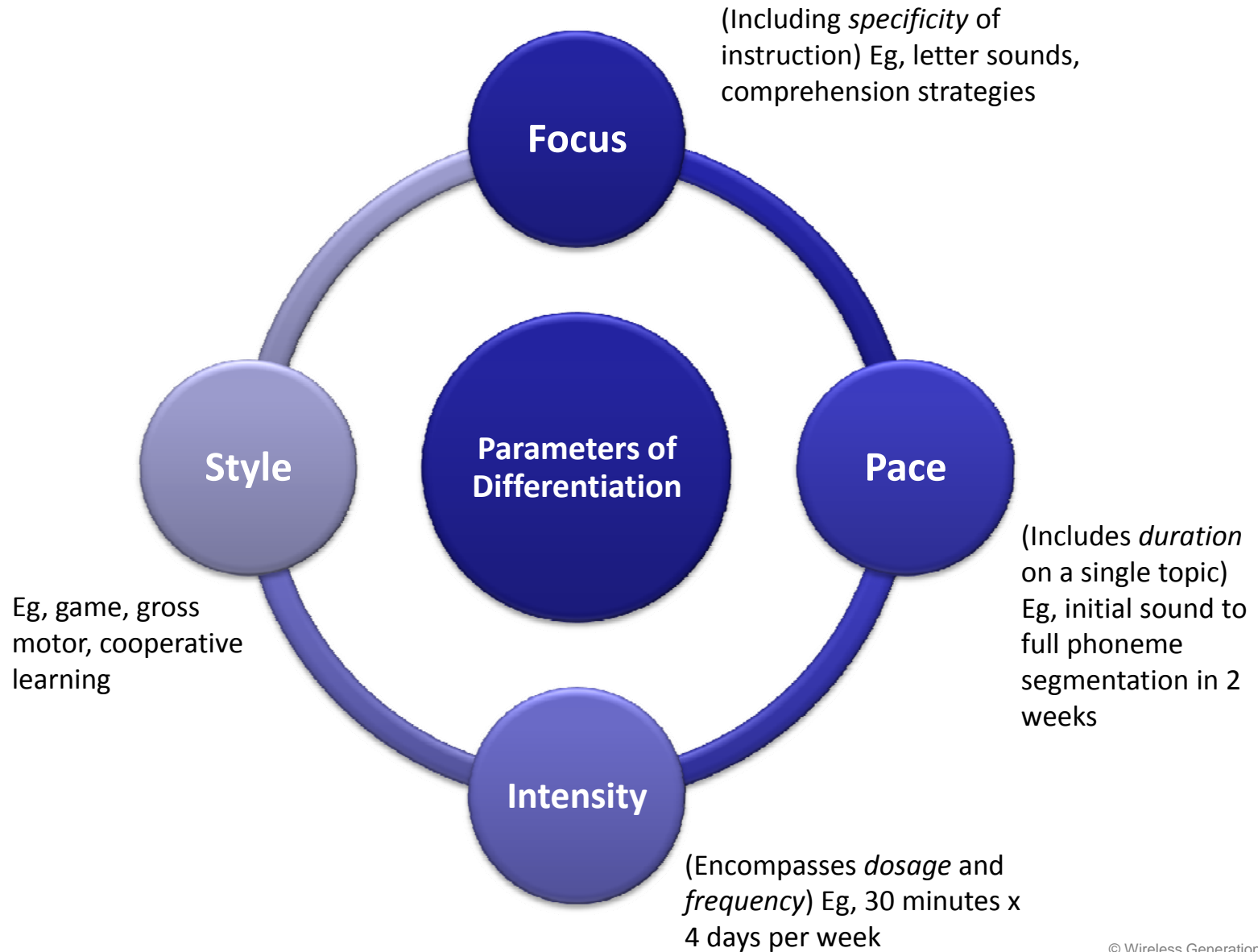
## 33 Letter Sounds/Min

a	l	n	a	k	l	e	j	v	a	v	m	a	b	
f	o	m	d	u	s	a	j	e	p	b	e	f		
w	a	k	u	v	z	e	m	r	e	k	f	a	c	
n	u	c	j	u	z	l	a	l	z	i	f	v	u	n

## 52 Letter Sounds/Min

a	l	n	a	k	l	e	j	v	a	v	m	a	b	
f	o	m	d	u	s	a	j	e	p	b	e	f		
w	a	k	u	v	z	e	m	r	e	k	f	a	c	
n	u	c	j	u	z	l	a	l	z	i	f	v	u	n

We created an expert system that uses PM data and teacher input to vary the parameters of differentiation



We used multiple methods to create version 1.0 of an intervention expert system for K-2 phonics and phonological awareness

Looked at common  
item-level patterns



Reviewed the  
research

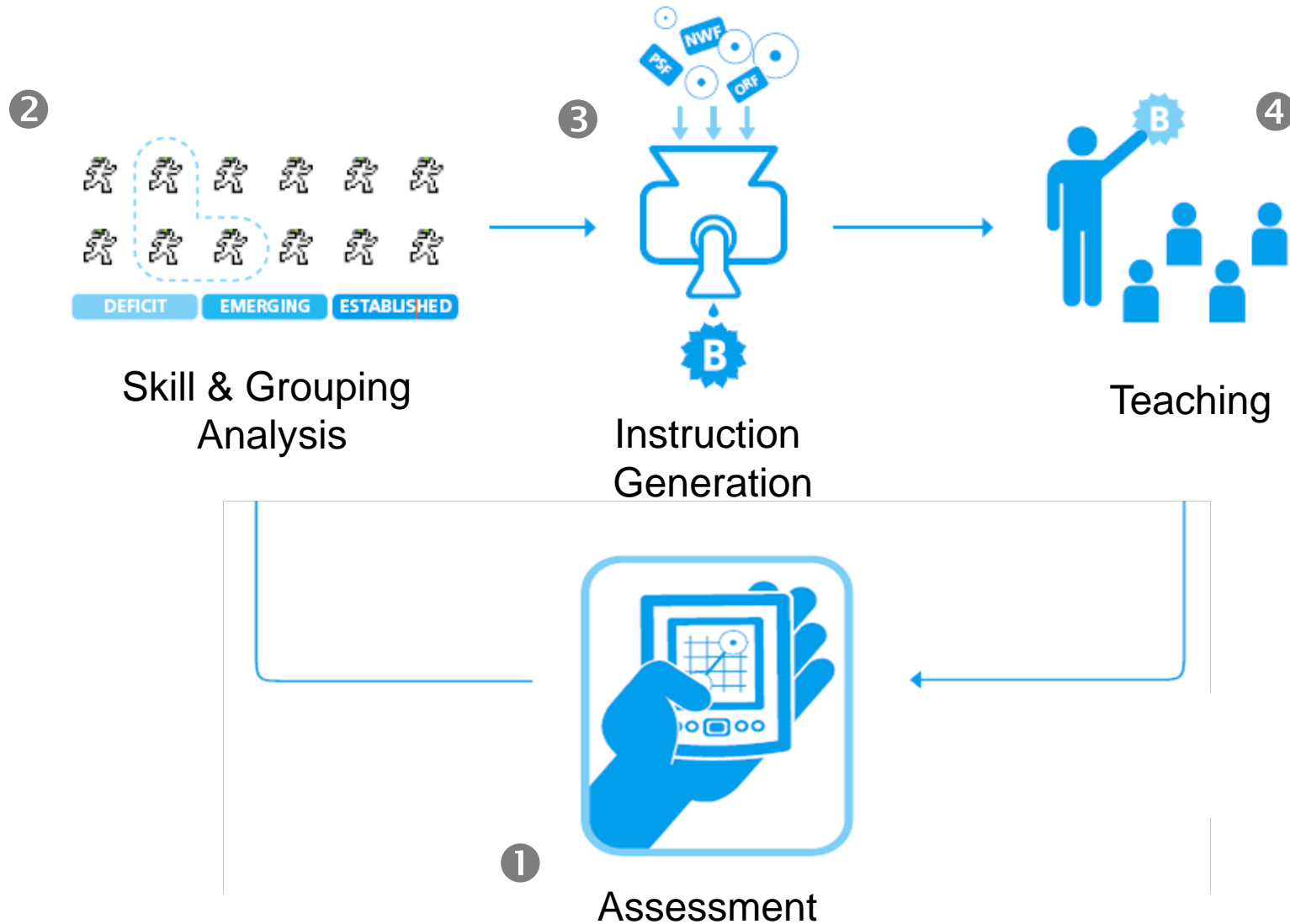


Interviewed  
experts



Ran analytics





- Two Case Studies
  - Statewide Reading First
  - District-wide (Large Urban District)

- Long-term use of DIBELS
- Established and followed protocols regarding benchmark assessment and progress monitoring
- Ongoing, in-depth professional development
- Sophisticated data analysis
- Heavy reliance on instructional recommendation levels for grouping and intervention
- Resistance to other grouping methodologies
- Independent matching of intervention instruction to students' instructional needs

- Recent implementation of DIBELS
- Established protocols for benchmark assessment and progress monitoring
  - District accountability standard for intensive students
- Assessment fidelity concerns
- Undertaking extensive professional development
- Limited experience in data analysis
- Limited experience with small group instruction and intervention
- Open to skills-focused grouping and instruction

- When assessment data drives grouping and instruction, teachers begin to value assessment and assessment fidelity.



