

# Longitudinal replication of a Tier II intervention model for struggling readers across grades 1 - 12

### INTRODUCTION

The purpose of this study was to investigate the longitudinal efficacy of a Tier II intervention model (U Steps) for struggling readers in grades 1 through 12 in Title I schools. U Steps is based on several quasi-experiments published in the research literature nearly 20 years ago and implemented consistently since then. The model spans the course of reading development from "Learning About Print" (Early Steps [ES]), to "Breaking the Code" (Next Steps [NS]), to "Going For Fluency" (Higher Steps [HS]).

Instructional components include: assisted reading of new text, systematic, explicit word study, and repeated readings delivered in small groups or 1:1 tutorials for 45 minutes.

#### **METHODS**

- ❖ Participants: 2,955 ethnically and linguistically diverse struggling readers (as identified by screening instruments and teacher recommendation) from 80 Title I schools in grades 1 through 12. Approximately 1,400 educators from those schools provided intervention during a year-long clinical practicum provided by the UURC, funded by NCLB/ESSA funds.
- ❖ **Procedures**: From 2003 to 2017, students received year-long U Steps intervention from teachers and para-professionals (averaging 85 sessions for ES; 52 sessions for NS/HS). Each student was pretested in the fall and posttested in the spring by trained examiners; to ensure scoring fidelity all calculations were verified by a second examiner.
- Measures
  - Criterion-referenced tests
  - Passage Reading
  - o Reading Level Assessment (RLA)—grade level scores based on oral reading rate and accuracy.

  - Automatic Word Reading (Flash)—timed oral reading of graded word lists leveled by frequency and complexity; grade level scores based on accuracy in a 300 millisecond presentation.
- Norm-referenced tests
  - Passage Reading
  - DIBELS Oral Reading Fluency (ORF) & Maze (DAZE)—expected growth is met when raw score gain ≥ EOY Benchmark Goal – BOY Benchmark Goal.
  - Test of Silent Contextual Reading Fluency (TOSCRF)—timed reading based on identification of word boundaries within sentences; grade equivalent scores, standard scores, and percentile ranks
  - Word Reading
  - WRMT--Word Attack; *untimed* nonsense word reading; grade equivalent scores, standard scores, and percentile ranks
  - Test of Silent Word Reading Fluency (TOSWRF)—timed word reading based on identification of word boundaries; grade equivalent scores, standard scores, and percentile ranks

#### **RESULTS**

- → developmental reading levels ("Learning About Print"→"Going for Fluency")
- socio-economic status
- > ethnicities
- English language development
- special education status
- > schools
- instructor experience/certification (teacher/paraprofessionals)
- presentations)
- intervention is effective at improving contextual reading skills.
- ❖ **Word Reading**: Across all years and subgroups, results indicated that students' isolated word reading and nonsense word reading skills improved from pre to post. Overall graphophonemic relationships and identifying high frequency words with irregular

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2007-2008

2.08 - 3.33

**1.25** (0.89)

2010-2011

#### UURC Reading Level Assessment / Informal Reading Inventory (RLA)

U-	Steps (Tier II)	Students							
2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	All Years
179	94	61	245	180	175	290	32	26	2071
2.42 - 3.67	2.94 - 4.14	2.56 - 3.60	1.88 - 2.98	2.71 - 3.82	2.30 - 3.28	2.11 - 3.02	2.34 - 3.25	2.00 - 2.85	2.12 - 3.18
						i	_		

**1.25** (0.73) **1.20** (0.84) **1.04** (0.83) **1.09** (0.66) **1.11** (0.71) **0.98** (0.72) **0.91** (0.66) **0.91** (0.78) **0.85** (0.64)

UURC Reading Level Assessment (RLA)								
U Steps (Tier II) Students All Years								
Model	Early Steps	Next Steps	Higher Steps					
n	533	1329	177					
Ave. Base - Ave. Exit	1.55 – 2.42	2.08 – 3.18	4.00 – 5.13					
Ave. Gain (SD)	<b>0.87</b> (0.56)	<b>1.10</b> (0.84)	<b>1.13</b> (0.80)					

FLASH SCORING FORM

#### **LESSON PLAN FORMS**

2004-2005

2005-2006

1.76 - 2.80

2006-2007

2003-2004

1.73 - 2.61

School Year

Ave. Base - Ave. Exit

Ave. Gain (SD)

1.00 = 1 year's gain

School Year

Ave. Raw Base – Exit

[Grade Equivalents]

Ave. SS Base - Exit

[PR Equivalents]

Ave. SS Gain (SD)

[PR Equiv. Gain]

		Tutor	Next Steps Lesson	Plan Lesson #	Tutor	<u>H</u>	ligher Steps Lesson Pl	<u>an</u>
EARLY STEPS	LESSON PLAN	Student(s)	г	Date Grade Level	Student		Date	Student Grade Level Lesson #
t(s)	Grade Date Lesson #	(1:1 – 25 minutes) (Group – 22 minutes) □ <b>Word Bank</b>	Comments:	High frequency words that present difficulty	UWord Bank:	D. 4 ID. E. mondo.	Comments:	High frequency words that present difficulty  Repeated Reading:
16 minutes) (Group 13-16 minutes)  EADINGS Level	How to BUMP-UP in text?  1. Beginning in Level 7 mark a 50 word passage in yesterday's new book. Do not use first or last page.  2. Count errors in that section as student reads.  3. Double errors (self corrects are not errors in G1 text).  4. Goal is 95% or above accuracy and good fluency.	Assisted Reading Title	_	BUMP-UP in text  1. Mark a 100 word passage in the text you plan to use for assisted reading. Do not use echo pages.  2. Time how long it takes focus student to read that portion. Count errors. That the words of great pages of the property of the propert	(7 minutes)	p		Passage is the same one that was used in step # previous lesson.
Accuracy Check (50 words) (Taken on previous lesson's new book – beginning at LEVEL 7)	If the student meets this criteria 2 out of 3x in the hardest books from that level – bump to the next level.	Publisher Level  □Preview Text □Eche Read □Solo Read □Comprehension Work		3. Coloniate vogm. Total the number of errors made (degaining at 20-3d) deef corrections Do Count as errors.  (Regaining at 20-3d) deef corrections Do Count as errors.  7. To INIAPLY 19 songleton student, the student must meet this criteria 2 out of 2 triuls from stories at the end of the beast of 2 different trade books from the same end of the Post 11 student does not that student must socro 95% accuracy and within 5 wpn of the rate criterion for this level.  Ref Text Level  Ref Text Level  Ref (1-Mirch	(15 minutes)  Title  Publisher	ing of New Material:		How to BUMP UP in text level:  1. Mark a 100-word passage in the text you plant assisted reading today. Do not use the first page assisted reading today. Do not use the first page (Self-Corrections DC count as errors). Count (Count of Count as errors).  1. Calculate way mad accuracy.  1. Calculate way and accuracy.
Errors	Harvest words directly from any of the books, after the book has been read. (Refer to high frequency sight word list as a guide)	CRate & Accuracy Check (100 Words) p		G1-End. 93% at least 40 wpm G2-Mid. 93% at least 40 wpm G2-Mid. 93% at least 80 wpm G2-End. 93% at least 80 wpm G3-End. 93% at least 90 wpm G3-End. 93% at least 90 wpm G3-End. 93% at least 100 w	□Solo Reading □Rate & Accuracy ( (100 Words) Rate:min.			4D 93% at least 10 wpm 5E 95% at least 110 wpm 5M 95% at least 110 wpm 5D 95% at least 110 wpm 6E 95% at least 110 wpm 6E 95% at least 110 wpm 6D 95% at least 130 wpm 7E 95% at least 130 wpm 7M 95% at least 130 wpm 7M 95% at least 130 wpm 7D 95% at least 130 wpm
3 minutes) (Group 11-15 minutes.) <b>D STUDY</b> rt	To leave Mixed-Short Vowels do a Word Study V.  1. Randomize 40 words, sampling all current patterns.  2. Hold eard in one hand. Student reads off deck.  Tapping is ok. NOTIMER. Word Study V.  Mixed Shorts must be a cold read.  3. Sort words into 2 piles:	□Continue Solo Reading & Comprehension Work  (1:1 – 13 minutes) (Group – 13 minutes)  Word Study	Word Study √ Data # correct	4D	Accuracy:  □Continue Solo Res	% ading and Comprehension Work		SE. 55% at least 140 wpm SM. 55% at least 140 wpm SM. 55% at least 150 wpm SM. 55% at least 140 wpm SD. 55% at least 140 wpm 4. BUMP UP, student must meet the above criter 2 of 3 trials in 2 different trade books of the sa
sions in this Sort:	Yes — Automatic or Blend/Tap w.Consolidation No = Wrong, 55 Second Hesitation, or Don't Know 4. Criteria: 8 or fewer in the 'no pile?' BUMP UP to next Sequence of the ES Word Study Sequence. 5. More than 8 in 'no pile?' REVIEW!	Sort:   Anchors:   Intro lesson   Random Check   Memory   Spelling (8 words):	# CITOTS (Record the words missed below)	2. Word Shalpy 4 minst be cold to words, sampling all caurent patients of a least 40 words, sampling all caurent patients of a least 40 words, sampling all 4. Set time for 1 minute.  4. Set time for 1 minute.  5. Set into 2 pilot, clock:  6. Soft into 2 pilot, autoematic / line force or Hesitation  7. Critica: All least 35 words correct in 1 minute with no more time. In each 35 words correct in 1 minute with no more time. Set 30 words correct in 1 minute with no more time. Set 30 words correct in 1 minute with no words in 1 minute with no words.  5. When all statistics used the criteria BUMP UP ◊	□White Board W	Concept:  e: Repeat (choose appropriate activity)	# correct # errors (Record errors below)	Student must pass a Word Study J befor progressing from one module to the nex 1. Randomize a deck of at least 40 words, being sare all patterns you are currently weekers.  2. Set your time for 1 minute.  3. Be sure to have the student "and off the deck".  4. Set into 2 piles Automatic / Incorrect or Hesitati
nce  Ip sentence  ntime "cut-up" at Level 5)	(Refer to high frequency sentence stem sequence as a guide)	□ Say It – Match It – Check It □ Sentence Stem  (1:1 – 7 minutes) (Group – 10 minutes)			□Fluency Activit	rity		Sevaluate against criteria:  Que seguing criteria:  Que seyllable words: At least 35 words read corminute and no more than 3 errors.  Quality-syllable words: At least 30 words read on in timute and no more than 3 errors.  It student meets the criteriamove to the next more than 2 errors.
minutes) (Group 10-12 minutes) <b>BOOK</b> <u>Level</u>		(T1 - / minutes) Repeated Reading (at student's instructional level) Title		Repeated Reading: Count and 20 words in a story you have previously read. Focus student reads to you for 2 minutes; partners take turns. Count words read and errors made, Record on graph, All students reread passage twice. Retire passage after 4 timings. Use extra time with focus student in needed areas.	□Mark up words	x: Repeated Reading (2:00 ♥)		Repeated Reading: 1. Count out 250 words from recently read pass 2. Start timer at 2:00. Student reads orally. Cou (Self Corrections DO NOT count as errors.) 3. Record words read and errors on graph.

School Year

% at Benchmark

Base - Exit

% at Exit Benchmark

and/or Making

**Expected Growth** 

Woodcock Reading Mastery Test Word Attack (WRMT-R/NU WA)

UURC Automatic Word Reading (Flash)											
	U Steps (Tier II) Students										
School Year	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	All Years
n	125	110	24	92	34	180	61	72	41	30	769
Ave. Base - Ave. Exit	2.22 – 3.38	2.49 - 3.64	2.58 - 3.82	3.28 - 4.31	3.10 - 3.88	0.96 - 2.36	1.29 – 2.52	1.96 – 2.99	1.72 – 2.54	3.27 - 3.69	2.06 - 3.19
<b>Ave. Gain</b> (SD) 1.00 = 1 year's gain	<b>1.16</b> (0.76)	<b>1.15</b> (0.75)	<b>1.24</b> (0.83)	<b>1.04</b> (1.09)	<b>0.78</b> (1.14)	<b>1.39</b> (0.76)	<b>1.23</b> (0.53)	<b>1.03</b> (0.71)	<b>0.82</b> (0.89)	<b>0.42</b> (0.69)	<b>1.13</b> (0.84)

72.2%	% at Exit and/or Expecte
58.5% – 58.2%	% at Be
2543	
All Years	Scho

DIBELS Maze (DAZE)											
U Steps (Tier II) Students											
School Year	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	All Years				
n	3	12	308	152	794	581	1850				
% at Benchmark Base - Exit	0.0% - 0.0%	8.3% – 16.7%	32.8% – 48.1%	39.5% – 49.3%	59.6% – 47.5%	60.1% – 55.9%	53.2% – 50.1%				
t Exit Benchmark and/or Making xpected Growth	0.0%	41.7%	68.8%	67.8%	57.6%	64.2%	62.2%				

**	The results of this study suggest that the U Steps intervention model contributes to
	robust gains in the reading skills of Tier II students. Consistent gains were documented
	across

- > time (14 years)

- > assessment types (criterion and norm-referenced using timed and untimed
- ❖ Passage Reading: Across all years and subgroups, results indicated that students' passage reading skills improved from pre to post. Overall results suggest that the
- results suggest that the intervention is effective at improving students' understanding of graphophonemic patterns.

All U Steps (Tier II) Students									All U Steps (Tier II) Students			
2006-2007	2007-2008	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	All Years		School Year	2014-2015	2015-2016	All Years
126	107	90	33	183	61	70	670		n	12	30	42
16.4 – 22.7 [2.8 – 4.0]	17.8 – 23.9 [3.2 – 4.3]	21.6 – 28.0 [3.8 – 5.1]	20.0 – 24.4 [3.4 – 4.3]	9.6 – 19.1 [2.0 – 3.3]	11.5 – 18.2 [2.2 – 3.2]	16.7 – 22.7 [3.0 – 4.0]	15.2 – 22.3 [2.7 – 3.8]		Ave. Raw Base – Exit [Grade Equivalents]	10.1 – 13.2 [1.9 – 2.6]	10.4 – 13.9 [1.9 – 2.9]	10.3 – 13.7 [1.9 – 2.9]
<b>100.0 – 102.7</b> [50.0 – 57.1]	<b>99.6 – 102.1</b> [48.9 – 55.6]	<b>99.9 – 104.5</b> [49.7 – 61.8]	<b>96.4 – 97.9</b> [40.5 – 44.4]	<b>102.1 – 105.7</b> [55.6 – 64.8]	<b>99.3 – 100.7</b> [48.1 – 51.9]	<b>106.5 – 107.1</b> [66.8 – 68.2]	<b>100.9 – 103.7</b> [52.4 – 59.7]		Ave. SS Base – Exit [PR Equivalents]	<b>79.9 – 82.1</b> [9.0 – 11.6]	<b>84.9 – 89.6</b> [15.7 – 24.4]	<b>83.5 – 87.5</b> [13.6 – 20.2]
<b>2.7</b> (8.2) [7.1]	<b>2.5</b> (5.8) [6.7]	<b>4.6</b> (8.5) [12.1]	<b>1.5</b> (4.0) [3.9]	<b>3.6</b> (9.8) [9.2]	<b>1.4</b> (8.6) [3.8]	<b>0.6</b> (6.6) [1.4]	<b>2.8</b> (8.2) [7.3]		<b>Ave. SS Gain</b> (SD) [PR Equiv. Gain]	<b>2.2</b> (13.8) [2.6]	<b>4.7</b> (9.5) [8.7]	<b>4.0</b> (10.8) [6.6]

DIBELS Oral Reading Fluency (ORF)

U Steps (Tier II) Students

2013-2014

19.0% - 23.8% | 37.9% - 43.7% | 56.4% - 58.1% | 56.1% - 56.1% | 59.3% - 59.1% | 68.1% - 64.5%

2014-2015

67.1%

2015-2016

**75.5%** 

2016-2017

74.8%

WRMT Word Attack (WRMT-III-B WA)

2012-2013

2011-2012

### CONCLUSIONS

Aggregated and annual data from 2003 to 2017 suggest that the Tier II intervention model under investigation has consistent and measurable efficacy in helping struggling readers in grades 1 through 12 improve their reading abilities.

Moreover, students above G2 typically began intervention a grade level or more behind, yet, on average, in 45 U Steps sessions they made a year or more of growth, met or exceeded benchmarks and/or improved their standard scores on multiple norm-referenced and criterion-based measures.

The results also suggest that the Tier II model is robust in use by a large number of educators with a wide range of experience and abilities in variable school settings. A caveat is noted: all educators had received at least one year of intensive, ongoing professional development.

est of Silent Cor	ntextual Read	Test of Silent Word Reading		
All	U Steps (Tier I		Fluency (TOSWRF-2)	
School Year	2014-2015	2015-2016	All Years	All U Steps (Tier II) Students
n	382	25	407	School Year 2015-2016
 Ave. Raw Base – Exit		_		n 30
[Grade Equivalents]	45.6 – 66.1 [2.2 – 3.2]	39.8 – 59.4 [2.0 – 3.0]	45.3 – 65.6 [2.2 – 3.2]	Ave. Raw Base – Exit 67.2 – 81.9 [Grade Equivalents] [2.5 – 3.5]
ve. SS Base – Exit [PR Equivalents]	<b>88.0 – 99.6</b> [21.0 – 50.0]	<b>80.7 – 94.4</b> [10.0 – 35.0]	<b>87.5 – 99.3</b> [21.0 – 47.0]	Ave. SS Base – Exit 89.8 – 97.9 [25.0 – 45.0]
<b>ve. SS Gain</b> (SD) [PR Equiv. Gain]	<b>11.7</b> (8.2) [29.0]	<b>13.6</b> (11.3) [25.0]	<b>11.8</b> (8.4) [26.0]	Ave. SS Gain (SD)         8.1 (6.0)           [PR Equiv. Gain]         [20.0]

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