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# DELIVERING LEARNING OUTCOMES WITH ILIT

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*A SUMMARY OF RESEARCH*



## ABOUT PEARSON

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Pearson is the world's leading learning company.

Our education business combines 150 years of experience in publishing with the latest learning technology and online support.

We serve learners of all ages around the globe, employing 45,000 people in more than 70 countries, helping people to learn whatever, whenever and however they choose.

Whether it's designing qualifications in the UK, supporting colleges in the US, training school leaders in the Middle East or helping students in China learn English, we aim to help people make progress in their lives through learning.

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*The Need to Read: How new digital literacy solutions can reduce high school dropout rates*

Center for Digital Education

*Bridging the Gap: How Digital Literacy Tools Help English Learners Succeed*

iLit Instructional Research Reference Report

# INTRODUCTION

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Literacy proficiency is fundamental to school and workplace success in the twenty-first century. Yet, according to the Nation's Report Card (published by the National Assessment of Educational Progress (NAEP)), the majority of US fourth grade students fall below the "proficient" level in the area of reading, and a large percentage of those students do not perform at even the 'basic' level of literacy proficiency (NAEP 2013). This last group of students (whose ranks may include English Language Learners) often continues to fall behind as their education progresses so that, by the time they reach high school, they are reading significantly below grade level. This gap (that is documented by NAEP in fourth grade) widens as students move through the grades and becomes a leading indicator of the risk of dropout.

Pearson's Inspire Literacy, or "iLit," is a digital core reading intervention program for grades four through ten which is designed to help students who are two or more years below grade level accelerate their reading growth so that, within a year or two, they can be placed in grade-level appropriate ELA classes. It is aligned to ELA standards of college and career readiness and has been shown to significantly help English Learners as well as struggling readers. iLit offers students personalized learning support based on their own instructional needs, as well as engaging interactivities, and built-in reward systems that motivate students and track their progress.

## **The purpose of this paper is to**

- share the third party research which shows the effectiveness of the program in helping students achieve accelerated literacy growth;
- to highlight the success stories of school districts around the country who have experienced significant reading growth with iLit;
- and to illustrate the research design that supports the key instructional features of the iLit program:
  - **Motivation**
  - **Explicit Instruction and Modeling**
  - **Vocabulary**
  - **Authentic Reading and Writing**
  - **Differentiated Monitoring and Instruction.**

Through the inclusion of these research-based features, as well as through an engaging digital design which appeals to twenty-first-century learners, iLit positively impacts student achievement.

## THE RESEARCH SAYS...

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“Students must be equipped with both reading comprehension skills and the motivation to read in order to make satisfactory academic progress.”  
(Alvermann & Earle, 2003; Stipek, 2002)

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“...iLit is effective at significantly increasing student literacy achievement”

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“...an, engaged reader is intrinsically motivated, builds knowledge, uses cognitive strategies, and interacts socially to learn from text.”  
-(Guthrie & Wigfield, 2000; Paris, Wasik, & Turner, 1991; Turner, 1995; Wigfield & Guthrie, 1997)

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“73% of students reported they preferred iLit to their previous English class.”

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“Reading frequently, and reading a broad range of texts, is highly correlated with reading achievement in middle school students.”  
(Kirsch, LaFontaine, McQueen, Mendelovits, & Monseur, 2002).

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“7th grade students using iLit made greater gains than their peers using other reading programs.”

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## THE TEACHERS SAY...

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“The iLit teacher reported that iLit was a very impressive program and also very engaging for students. Additionally the iLit teacher reported that they would definitely recommend the iLit program to a colleague.”

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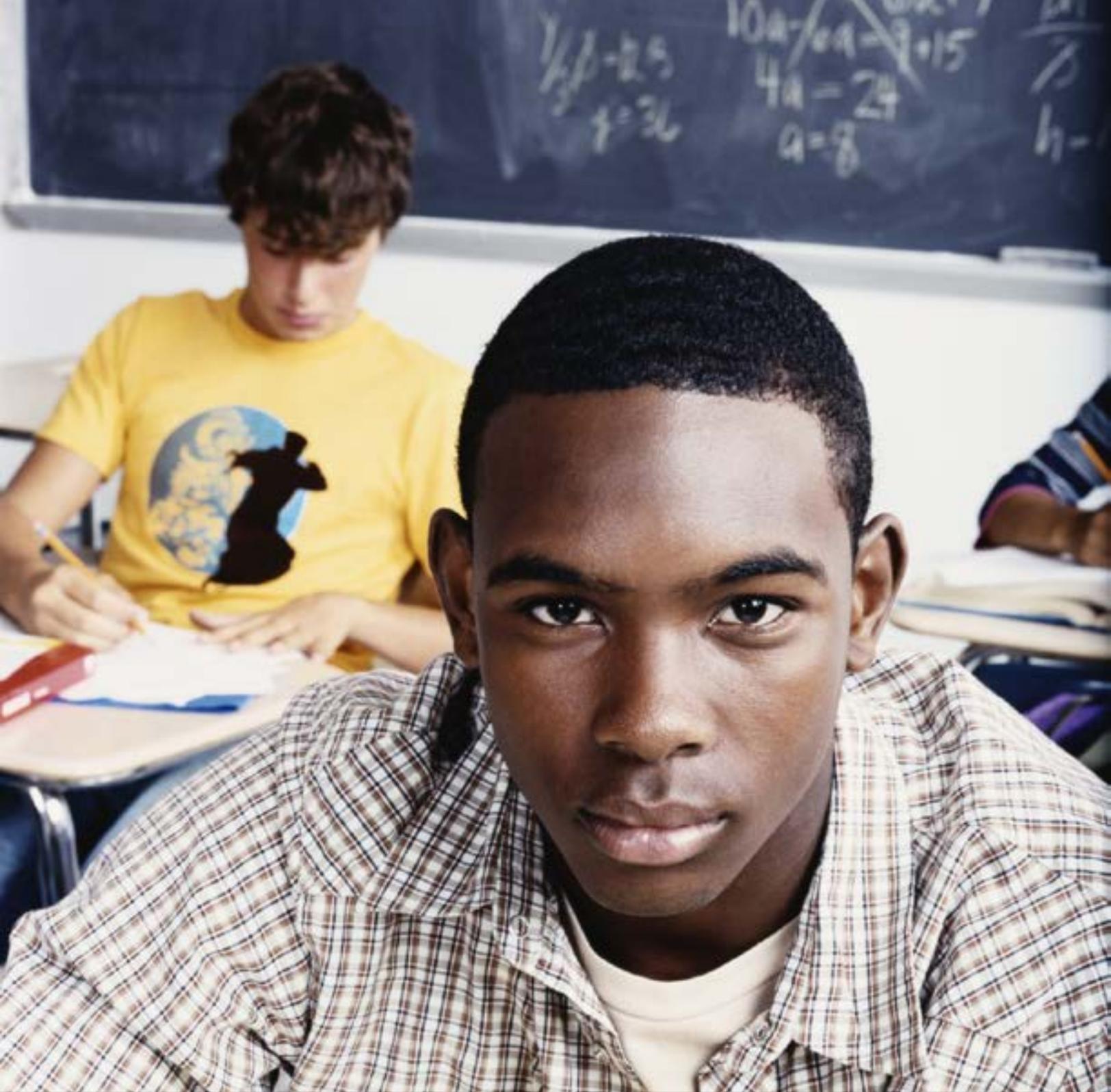
“I really enjoy teaching the iLit program. More importantly, my students love learning language arts using the app. They think it is so cool that we don't use paper!”

“The engagement of students and teachers is not like anything else the students have been involved with. It gives an opportunity for the kids to be engaged in speaking and listening and reading, all at the same time.”

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“The iLit teacher reported that all iLit lesson features were well worth the time including Time to Read, Vocabulary, Read Aloud/Think Aloud, Classroom Conversations, Whole Group Instruction, and Work Time. (see p. 23)



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# INDEPENDENT RESEARCH

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# *iLit*

## Evidence of Effectiveness

### A Summary of the Interim Results of the Longitudinal Randomized, Control Trial

#### *First Year Results from California*

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#### *Pearson iLit Summative Research*

Pearson strongly believes that its programs should be proven through scientific research to increase student achievement. As such, it contracted with the independent research group Gatti Evaluation to conduct a longitudinal randomized, control trial of its *iLit* literacy program. This study was conducted in 7<sup>th</sup> grade classrooms over the 2013-14 school year and will continue with 8<sup>th</sup> grade classrooms during the 2014-15 school year. This report summary presents an excerpt of findings from the interim report, including: the evaluation design and methods, a description of program usage and implementation, student performance results, and a discussion of the findings for the first year of results from the California site. The full results of the report, *iLit 2013-15 Longitudinal Efficacy Study*, can be found on the Pearson Ed ([www.pearsoned.com](http://www.pearsoned.com)) website.

#### *Study Design and Research Questions*

The purpose of this study is to assess the longitudinal effectiveness of the *iLit* literacy program in helping students attain critical literacy skills and to document usage and implementation of the *iLit* program. The study employed an experimental randomized, control trial research design. That is, students within each research school were *randomly assigned* to either use the *iLit* program with their students (also referred to as the “treatment” group) or to continue using their current school literacy program (also referred to as the “comparison” condition).

The study addressed the following overarching evaluation questions:

1. Do middle school students receiving core literacy instruction from the *iLit* program over the course of the initial and second school year of implementation demonstrate a significant improvement in achievement?
2. Do middle school students receiving core literacy

instruction from the *iLit* program over the course of the initial and second school year of implementation demonstrate a significant improvement in achievement over otherwise similar students in classrooms using their current literacy programs and methods (i.e., not fully digital)?

3. Do students receiving *iLit* instruction demonstrate positive attitudes toward reading and literacy instruction?
4. How are teachers implementing the *iLit* program and how can this information inform program revisions and best practice?
5. How did teachers and students react to the *iLit* program?

### Participants and Setting

Gatti Evaluation recruited six schools to participate in the study, including schools in AZ, CA, CO, MI, NJ and NY. The CA site included two teachers and 27 students. The study schools were members of public school districts located in suburban and urban areas. The study sample from CA demonstrated considerable variation in ethnicity and socioeconomic status as evidenced by eligibility for free or reduced lunch status. Figure 1 presents the CA school sample demographics broken out by *iLit* and comparison students.

**Figure 1. California Site Demographics**

	iLit		Comparison	
	Count	Percent	Count	Percent
Caucasian	3	18%	1	10%
African-American	1	6%	1	10%
Hispanic	8	47%	6	60%
Other	5	29%	2	20%
ELL	1	6%	0	0%
Free/Reduced Lunch	11	65%	6	60%
Total	17	100%	10	100%

### Measures

Multiple measures were used to assess student achievement, program implementation, and student attitudes.

Evaluators selected the Group Reading Assessment and Diagnostic Evaluation (GRADE) to measure changes in student literacy skills because of its broad visibility and acceptance in the field and high technical merit. The GRADE is a standardized, norm-referenced assessment that is group-administered. It offers parallel forms, with Form A administered within one month of the start of school and Form B administered within one month of the conclusion of school. The GRADE is not a timed test, but generally takes 50 – 90 minutes to

complete. The GRADE offers an overall Literacy score, as well as four subtests: Vocabulary, Sentence Comprehension, Passage Comprehension, and Listening Comprehension. The GRADE was administered three times during the school year. Form A was administered in the fall and spring and Form B was administered mid-year.

In order to measure program implementation and teacher perceptions, evaluators collected data through observations, surveys, and interviews with literacy teachers. Literacy teachers (treatment and comparison) also completed weekly implementation logs. This information provided researchers with a detailed data source on what was occurring in treatment and comparison classrooms in terms of literacy instruction, and allowed researchers to identify areas of overlap in terms of content taught and activities. The biannual classroom observations and interviews or focus groups with classroom teachers provided critical insight into the nature of use and the effectiveness of the literacy materials used with treatment and comparison students.

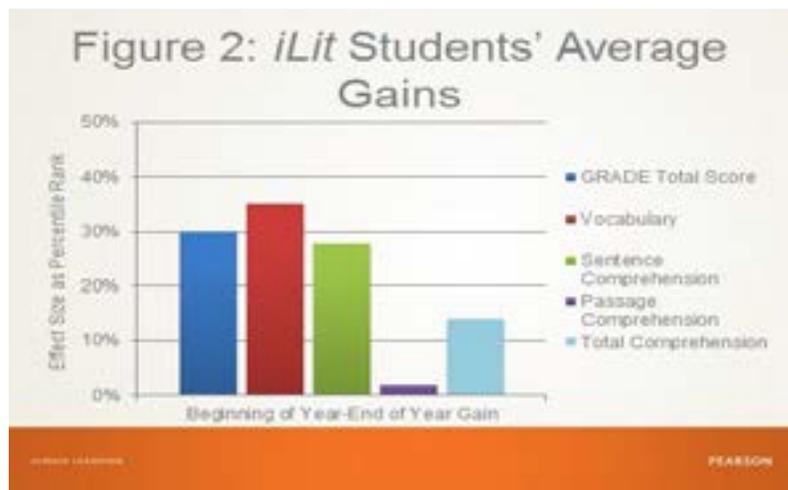
Additionally, student academic attitude surveys were administered in the fall and spring of the study year. The survey was developed by Gatti Evaluation, and included questions related to general literacy attitude, confidence, motivation, and self-perceived aptitude.

## Student Performance Results

### *Results for iLit Students*

Students using *iLit* achieved gains in reading achievement after one year of program implementation. All *iLit* students in grade 7 experienced gains on the GRADE Total, the four subtests (i.e., Vocabulary, Sentence Comprehension, Listening Comprehension and Passage Comprehension), and on Total Comprehension. *Statistically significant* gains were seen for GRADE Overall Score (which combines reading comprehension and vocabulary, Vocabulary and Sentence Comprehension. (See Figure 2.)

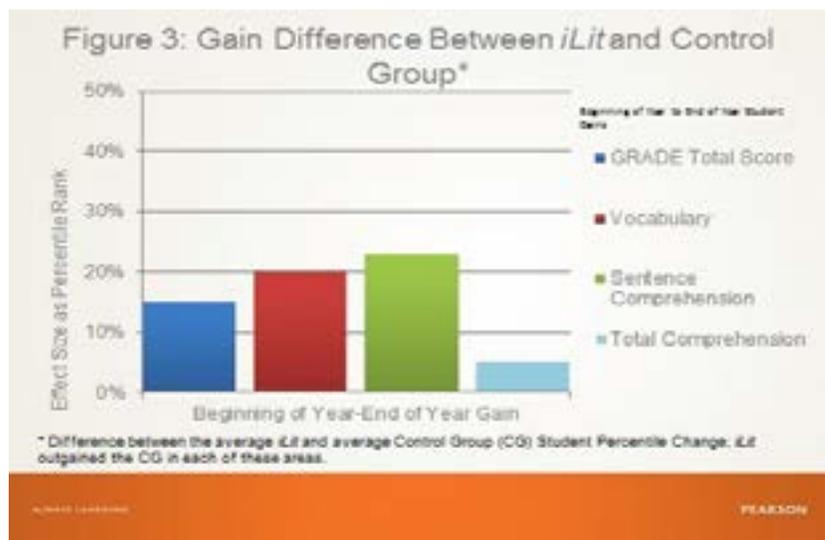
Gains are represented as percentile ranks for an *iLit* student scoring *above* the average baseline score. *iLit* students gained 30 percentiles on the GRADE Total Score and 35 percentiles on Vocabulary test after one year of using *iLit*. Additionally, *iLit* students gained 14 percentiles on the Total Comprehension test, 28 percentiles on the Sentence Comprehension subtest and 2 percentiles on the Passage Comprehension subtest.



***Results for iLit as Compared to Other Reading Programs***

Evaluators conducted analyses to examine how *iLit* students performed in comparison to students using other reading programs. Results showed that 7<sup>th</sup> grade students using *iLit* made greater gains than their peers using other reading programs on the GRADE Overall Score and Vocabulary, Sentence Comprehension and Total Comprehension subtests. On the Sentence Comprehension subtest, *iLit* students *statistically significantly* outgained their comparison peers by the end of the year. (See Figure 3).

The average *iLit* student gained 15 percentiles more than the average comparison student on the GRADE Overall Score and gained 20 percentiles more than the average comparison student on the Vocabulary test. Additionally, the average *iLit* student gained 23 percentiles more than the average comparison student on the Sentence Comprehension subtest and gained 5 percentiles more than the average comparison student on their overall Comprehension scores.



### *iLit* Implementation

The *iLit* teacher implemented the *iLit* program with high fidelity. The average daily implementation time of *iLit* was 87 minutes, and 73 full lessons were completed over the course of the school year.

## Participant feedback

### *Student Attitudes*

In addition to providing evidence of efficacy, Gatti Evaluation investigated other outcomes associated with use of the *iLit* program.

When *iLit* students were surveyed as to their opinions of the program, the majority demonstrated an overall positive attitude toward the *iLit* program. Several notable themes emerged, including; 76% of students preferred *iLit* to their previous English class, 65% reported English class was more interesting, and 71% wanted to continue using *iLit* next year.

### *Teacher Attitudes*

The teacher response to the *iLit* program was overall positive. Specifically the teacher reported, *“I really enjoy teaching the iLit program. More importantly, my students love learning language arts using the app. They think it is so cool that we don’t use paper!”*

The *iLit* teacher reported that *iLit* was a very impressive program and also very engaging for students. Additionally the *iLit* teacher reported that they would definitely recommend the *iLit* program to a colleague.

## Conclusion

This study indicates that *iLit* is effective at significantly increasing student literacy achievement. The *iLit* teacher and students using *iLit* reported satisfaction with the program. In particular, the teacher found the program very engaging for students and would recommend *iLit* to colleagues. In sum, scientific research indicates that the *iLit* program is an effective and useful program for both teachers and students.

### About Gatti Evaluation, Inc.

Gatti Evaluation was founded in 2003 to provide assistance in researching current topics in education and biomed. Gatti has extensive experience managing and consulting on large research projects for Fortune 500 companies and major academic institutions. Gatti researchers hold advanced degrees in Research Methods and Education. They also collaborate with numerous hand-picked, world-renowned researchers, practitioners, and academic research centers. Learn more at [www.GattiEval.com](http://www.GattiEval.com).

# *iLit*

## Evidence of Effectiveness

### A Summary of the Interim Results of the Longitudinal Randomized, Control Trial

#### *First Year Results from New Jersey*

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Pearson strongly believes that its programs should be proven through scientific research to increase student achievement. As such, it contracted with the independent research group Gatti Evaluation to conduct a longitudinal randomized, control trial of its *iLit* literacy program. This study was conducted in 7<sup>th</sup> grade classrooms over the 2013-14 school year and will continue with 8<sup>th</sup> grade classrooms during the 2014-15 school year. This report summary presents an excerpt of findings from the interim report, including: the evaluation design and methods, a description of program usage and implementation, student performance results, and a discussion of the findings for the first year of results from the New Jersey site. The full results of the report, *iLit 2013-15 Longitudinal Efficacy Study*, can be found on the Pearson Ed ([www.pearsoned.com](http://www.pearsoned.com)) website.

#### *Study Design and Research Questions*

The purpose of this study is to assess the longitudinal effectiveness of the *iLit* literacy program in helping students attain critical literacy skills and to document usage and implementation of the *iLit* program. The study employed an experimental randomized, control trial research design. That is, students within each research school were *randomly assigned* to either use the *iLit* program with their students (also referred to as the “treatment” group) or to continue using their current school literacy program (also referred to as the “comparison” condition).

The study addressed the following overarching evaluation questions:

1. Do middle school students receiving core literacy instruction from the *iLit* program over the course of the initial and second school year of implementation demonstrate a significant improvement in achievement?
2. Do middle school students receiving core literacy instruction from the *iLit* program over the course of

the initial and second school year of implementation demonstrate a significant improvement in achievement over otherwise similar students in classrooms using their current literacy programs and methods (i.e., not fully digital)?

3. Do students receiving *iLit* instruction demonstrate positive attitudes toward reading and literacy instruction?
4. How are teachers implementing the *iLit* program and how can this information inform program revisions and best practice?
5. How did teachers and students react to the *iLit* program?

### Participants and Setting

Gatti Evaluation recruited six schools to participate in the study, including schools in AZ, CA, CO, MI, NJ and NY. The study schools were members of public school districts located in suburban and urban areas. The NJ site included three teachers and 22 students. The study sample from NJ demonstrated considerable variation in ethnicity and socioeconomic status as evidenced by eligibility for free or reduced lunch status. Figure 1 presents the NJ school sample demographics broken out by *iLit* and comparison students.

**Figure 1. New Jersey Site Demographics**

	<b>iLit</b>		<b>Comparison</b>	
	Count	Percent	Count	Percent
Caucasian	1	9%	0	0%
African-American	6	55%	6	55%
Hispanic	3	27%	4	36%
Other	1	9%	1	9%
ELL	0	0%	0	0%
Free/Reduced Lunch	8	73%	11	100%

### Measures

Multiple measures were used to assess student achievement, program implementation, and student attitudes.

Evaluators selected the Group Reading Assessment and Diagnostic Evaluation (GRADE) to measure changes in student literacy skills because of its broad visibility and acceptance in the field and high technical merit. The GRADE is a standardized, norm-referenced assessment that is group-administered. It offers parallel forms, with Form A administered within one month of the start of school and Form B administered within one month of the conclusion of school. The GRADE is not a timed test, but generally takes 50 – 90 minutes to complete. The GRADE offers an overall Literacy score, as well as four subtests; Vocabulary, Sentence Comprehension, Passage Comprehension, and Listening Comprehension. The GRADE was

administered three times during the school year. Form A was administered in the fall and spring and Form B was administered mid-year.

In order to measure program implementation and teacher perceptions, evaluators collected data through observations, surveys, and interviews with literacy teachers. Literacy teachers (treatment and comparison) also completed weekly implementation logs. This information provided researchers with a detailed data source on what was occurring in treatment and comparison classrooms in terms of literacy instruction, and allowed researchers to identify areas of overlap in terms of content taught and activities. The biannual classroom observations and interviews or focus groups with classroom teachers provided critical insight into the nature of use and the effectiveness of the literacy materials used with treatment and comparison students.

Additionally, student academic attitude surveys were administered in the fall and spring of the study year. The survey was developed by Gatti Evaluation, and included questions related to general literacy attitude, confidence, motivation, and self-perceived aptitude.

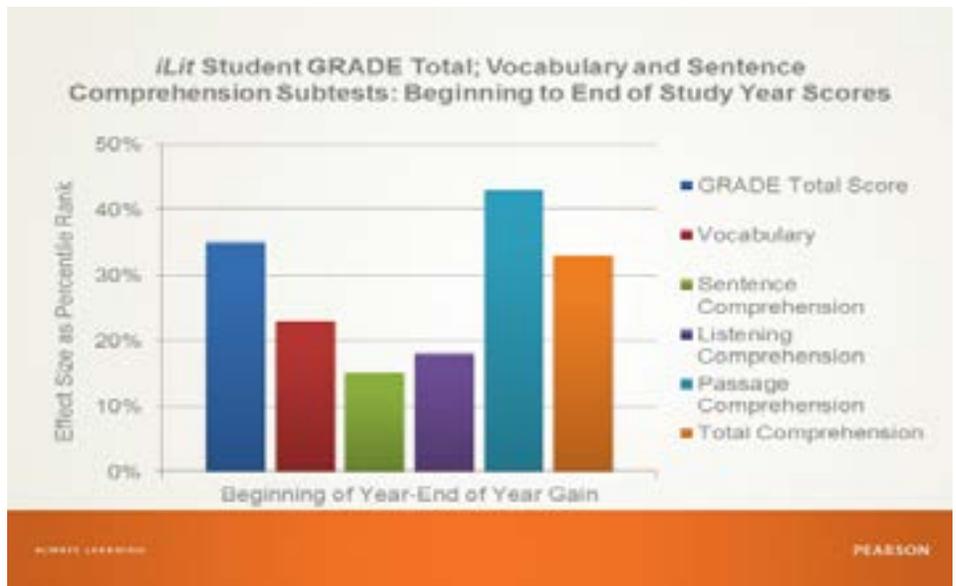
## Student Performance Results

### *Results for iLit Students*

Students using *iLit* achieved gains in reading achievement after one year of program implementation. All *iLit* students in grade 7 experienced gains on the GRADE Total, the four subtests (i.e., Vocabulary, Sentence Comprehension, Listening Comprehension and Passage Comprehension), and on Total Comprehension. *Statistically significant* gains were seen for GRADE Total Score (which combines reading comprehension and vocabulary), Passage Comprehension and Total Comprehension. (See Figure 2.)

Gains are represented as percentile ranks for an *iLit* student scoring *above* the average baseline score. *iLit* students gained 35 percentiles on the GRADE Total Score and 23 percentiles on Vocabulary test after one year of using *iLit*. Additionally, *iLit* students gained 33 percentiles on the Total Comprehension test, 15 percentiles on the Sentence Comprehension, 18 percentiles on the Listening Comprehension subtest and 43 percentiles on the Passage Comprehension subtest.

**Figure 2: NJ iLit Student Performance Results**

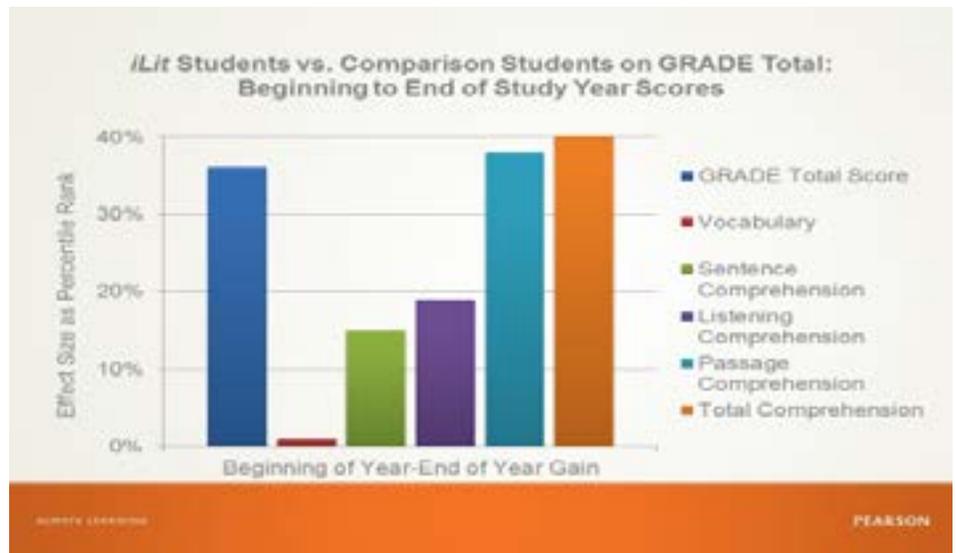


***Results for iLit as Compared to Other Reading Programs***

Evaluators conducted analyses to examine how *iLit* students performed in comparison to students using other reading programs. Results showed that 7<sup>th</sup> grade students using *iLit* made greater gains than their peers using other reading programs on the GRADE Total, the four subtests (i.e., Vocabulary, Sentence Comprehension, Listening Comprehension, and Passage Comprehension) and on Total Comprehension. On the Passage Comprehension and Total Comprehension subtests, *iLit* students *statistically significantly* outgained their comparison peers by the end of the year. (See Figure 3).

The average *iLit* student gained 36 percentiles more than the average comparison student on the GRADE Total Score and gained 1 percentile more than the average comparison student on the Vocabulary test. Additionally, the average *iLit* student gained 15 percentiles more than the average comparison student on the Sentence Comprehension subtest, 19 percentiles on Listening Comprehension, 38 percentiles on Passage Comprehension, and gained 44 percentiles more than the average comparison student on their Total Comprehension scores.

**Figure 3: NJ iLit Student Performance versus Comparison Students**



### ***iLit* Implementation**

The *iLit* teacher implemented the *iLit* program with fidelity. Implementation of *iLit* started at the middle of the school year. The average daily implementation time of *iLit* was 110 minutes, and 46 full lessons were completed over the course of the second half of the school year.

### **Participant feedback**

#### ***Student Attitudes***

In addition to providing evidence of efficacy, Gatti Evaluation investigated other outcomes associated with use of the *iLit* program. Students were not assessed for feedback, as they only used the program for half a year. Students will complete surveys during Year 2 of the study.

#### ***Teacher Attitudes***

The teacher response to the *iLit* program was overall positive. The *iLit* teacher reported that almost all *iLit* lesson features were well worth the time, including: Time to Read (Conferencing), Vocabulary, Read Aloud/Think Aloud, Classroom Conversations, Whole Group Instruction, and Work Time. The only feature receiving a lower rating was Time To Read – Journals which was reported somewhat worth the time.

The *iLit* teacher reported that *iLit* has increased interest in reading in students and that they would definitely recommend the *iLit* program to a colleague.

### **Conclusion**

This study indicates that *iLit* is effective at significantly increasing student

literacy achievement. The *iLit* teacher and students using *iLit* reported satisfaction with the program. In particular, the teacher found the program very engaging for students and would recommend *iLit* to colleagues. In sum, scientific research indicates that the *iLit* program is an effective and useful program for both teachers and students.

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# *iLit*

## Evidence of Effectiveness

### A Summary of the Interim Results of the Longitudinal Randomized, Control Trial

#### *First Year Results from Colorado*

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- current literacy programs and methods (i.e., not fully digital)?
3. Do students receiving *iLit* instruction demonstrate positive attitudes toward reading and literacy instruction?
  4. How are teachers implementing the *iLit* program and how can this information inform program revisions and best practice?
  5. How did teachers and students react to the *iLit* program?

### Participants and Setting

Gatti Evaluation recruited six schools to participate in the study, including schools in AZ, CA, CO, MI, NJ and NY. The study schools were members of public school districts located in suburban and urban areas. The CO site included two teachers and 20 students. Figure 1 presents the CO school sample demographics broken out by *iLit* and comparison students.

**Figure 1. Colorado Site Demographics**

	iLit		Comparison	
	Count	Percent	Count	Percent
Caucasian	10	91%	8	89%
African-American	1	9%	0	0%
Hispanic	0	0%	1	11%
ELL	0	0%	1	11%
Free/Reduced Lunch	1	9%	1	11%

### Measures

Multiple measures were used to assess student achievement, program implementation, and student attitudes.

Evaluators selected the Group Reading Assessment and Diagnostic Evaluation (GRADE) to measure changes in student literacy skills because of its broad visibility and acceptance in the field and high technical merit. The GRADE is a standardized, norm-referenced assessment that is group-administered. It offers parallel forms, with Form A administered within one month of the start of school and Form B administered within one month of the conclusion of school. The GRADE is not a timed test, but generally takes 50 – 90 minutes to complete. The GRADE offers an overall Literacy score, as well as four subtests: Vocabulary, Sentence Comprehension, Passage Comprehension, and Listening Comprehension. The GRADE was administered three times during the school year. Form A was administered in the fall and spring and Form B was administered mid-year.

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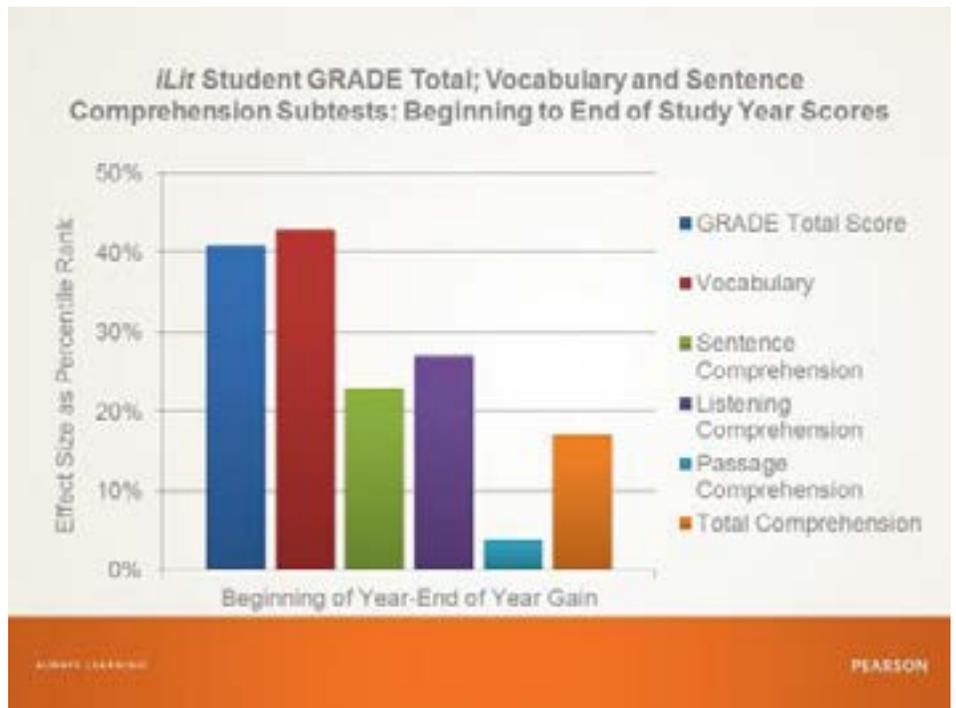
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Gains are represented as percentile ranks for an *iLit* student scoring *above* the average baseline score. *iLit* students gained 41 percentiles on the GRADE Total Score and 43 percentiles on Vocabulary test after one year of using *iLit*. Additionally, *iLit* students gained 17 percentiles on the Total Comprehension test, 23 percentiles on the Sentence Comprehension, 27 percentiles on the Listening Comprehension subtest and 4 percentiles on the Passage Comprehension subtest.

**Figure 2: CO iLit Student Performance Results**

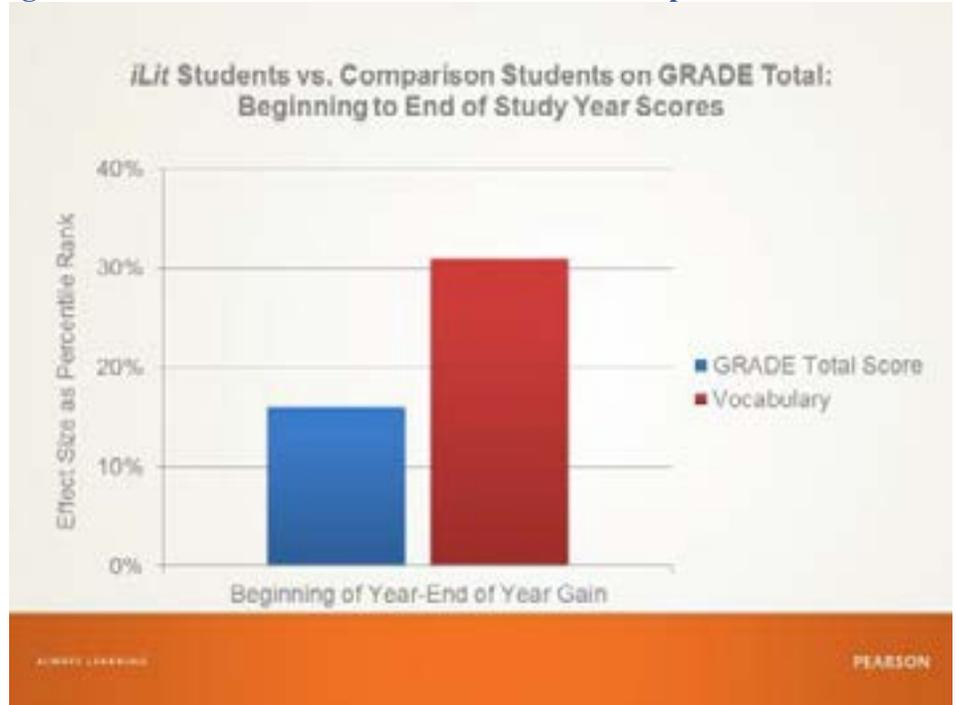


***Results for iLit as Compared to Other Reading Programs***

Evaluators conducted analyses to examine how *iLit* students performed in comparison to students using other reading programs. Results showed that 7<sup>th</sup> grade students using *iLit* made greater gains than their peers using other reading programs on the GRADE Total and Vocabulary tests. (See Figure 3).

The average *iLit* student gained 16 percentiles more than the average comparison student on the GRADE Total Score and gained 31 percentiles more than the average comparison student on the Vocabulary test.

**Figure 3: CO iLit Student Performance versus Comparison Students**



### ***iLit Implementation***

The *iLit* teacher implemented the *iLit* program with fidelity. The average daily implementation time of *iLit* was 90 minutes, and 66 full lessons were completed over the course of the school year.

### **Participant feedback**

#### ***Student Attitudes***

In addition to providing evidence of efficacy, Gatti Evaluation investigated other outcomes associated with use of the *iLit* program.

When *iLit* students were surveyed as to their opinions of the program, the majority demonstrated a mixed attitude toward the *iLit* program.

Several notable themes emerged, including; 82% of students “sometimes” or “definitely” reported their *iLit* class was more interesting and 73% of students reported “sometimes” they preferred *iLit* to their previous English class.

#### ***Teacher Attitudes***

The teacher response to the *iLit* program was overall positive. The *iLit* teacher reported that all *iLit* lesson features were well worth the time, including: Time to Read (Journals and Conferencing), Vocabulary, Read Aloud/Think Aloud, Classroom Conversations, Whole Group Instruction, and Work Time.

The *iLit* teacher reported that they would definitely recommend the *iLit* program to a colleague.

## Conclusion

This study indicates that *iLit* is effective at significantly increasing student literacy achievement. The *iLit* teacher and students using *iLit* reported satisfaction with the program. In particular, the teacher found all program features valuable and would recommend *iLit* to colleagues. In sum, scientific research indicates that the *iLit* program is an effective and useful program for both teachers and students.

## About Gatti Evaluation, Inc.

Gatti Evaluation was founded in 2003 to provide assistance in researching current topics in education and biomed. Gatti has extensive experience managing and consulting on large research projects for Fortune 500 companies and major academic institutions. Gatti researchers hold advanced degrees in Research Methods and Education. They also collaborate with numerous hand-picked, world-renowned researchers, practitioners, and academic research centers. Learn more at [www.GattiEval.com](http://www.GattiEval.com).

# *iLit*

## Evidence of Effectiveness

### A Summary of the Interim Results of the Longitudinal Randomized, Control Trial

#### *First Year Results from New York*

Overview . . . . .	1
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<i>Student Attitudes</i> . . . . .	5
<i>Teacher Attitudes</i> . . . . .	5
Conclusion . . . . .	6

#### *Pearson iLit Summative Research*

Pearson strongly believes that its programs should be proven through scientific research to increase student achievement. As such, it contracted with the independent research group Gatti Evaluation to conduct a longitudinal randomized, control trial of its *iLit* literacy program. This study was conducted in 7<sup>th</sup> grade classrooms over the 2013-14 school year and will continue with 8<sup>th</sup> grade classrooms during the 2014-15 school year. This report summary presents an excerpt of findings from the interim report, including the evaluation design and methods, a description of program usage and implementation, student performance results, and a discussion of the findings for the first year of results from the New York site. The full results of the report, *iLit 2013-15 Longitudinal Efficacy Study*, can be found on the Pearson Ed ([www.pearsoned.com](http://www.pearsoned.com)) website.

#### *Study Design and Research Questions*

The purpose of this study is to assess the longitudinal effectiveness of the *iLit* literacy program in helping students attain critical literacy skills and to document usage and implementation of the *iLit* program. The study employed an experimental randomized, control trial research design. That is, students within each research school were *randomly assigned* to either use the *iLit* program (also referred to as the “treatment” group) or to continue using their current school literacy program (also referred to as the “comparison” condition).

The study addressed the following overarching evaluation questions:

1. Do middle school students receiving core literacy instruction from the *iLit* program over the course of the initial and second school year of implementation demonstrate a significant improvement in achievement?
2. Do middle school students receiving core literacy instruction from the *iLit* program over the course of the initial and second school year of implementation

demonstrate a significant improvement in achievement over otherwise similar students in classrooms using their current literacy programs and methods (i.e., not fully digital)?

3. Do students receiving *iLit* instruction demonstrate positive attitudes toward reading and literacy instruction?
4. How are teachers implementing the *iLit* program and how can this information inform program revisions and best practices?
5. How did teachers and students react to the *iLit* program?

### Participants and Setting

Gatti Evaluation recruited six schools to participate in the study, including schools in AZ, CA, CO, MI, NJ and NY. The study schools were members of public school districts located in suburban and urban areas. The NY site included four teachers and 89 students. The study sample from NY demonstrated considerable variation in ethnicity and socioeconomic status as evidenced by eligibility for free or reduced lunch status. Figure 1 presents the NY school sample demographics broken out by *iLit* and comparison students.

**Figure 1. New York Site Demographics**

	iLit		Comparison	
	Count	Percent	Count	Percent
Caucasian	0	0%	0	0%
African-American	12	27%	10	22%
Hispanic	32	73%	33	73%
Other	0	0%	2	5%
ELL	19	43%	25	56%
Free/Reduced Lunch	40	91%	39	87%

### Measures

Multiple measures were used to assess student achievement, program implementation, and student attitudes.

Evaluators selected the Group Reading Assessment and Diagnostic Evaluation (GRADE) to measure changes in student literacy skills because of its broad visibility and acceptance in the field and high technical merit. The GRADE is a standardized, norm-referenced assessment that is group-administered. It offers parallel forms, with Form A administered within one month of the start of school and Form B administered within one month of the conclusion of school. The GRADE is not a timed test, but generally takes 50 – 90 minutes to complete. The GRADE offers an overall Literacy score, as well as four subtests: Vocabulary, Sentence Comprehension, Passage Comprehension, and Listening Comprehension. The GRADE was

administered three times during the school year. Form A was administered in the fall and spring and Form B was administered mid-year.

In order to measure program implementation and teacher perceptions, evaluators collected data through observations, surveys, and interviews with literacy teachers. Literacy teachers (treatment and comparison) also completed weekly implementation logs. This information provided researchers with a detailed data source on what was occurring in treatment and comparison classrooms in terms of literacy instruction, and allowed researchers to identify areas of overlap in terms of content taught and activities. The biannual classroom observations and interviews or focus groups with classroom teachers provided critical insight into the nature of use and the effectiveness of the literacy materials used with treatment and comparison students.

Additionally, student academic attitude surveys were administered in the fall and spring of the study year. The survey was developed by Gatti Evaluation, and included questions related to general literacy attitude, confidence, motivation, and self-perceived aptitude.

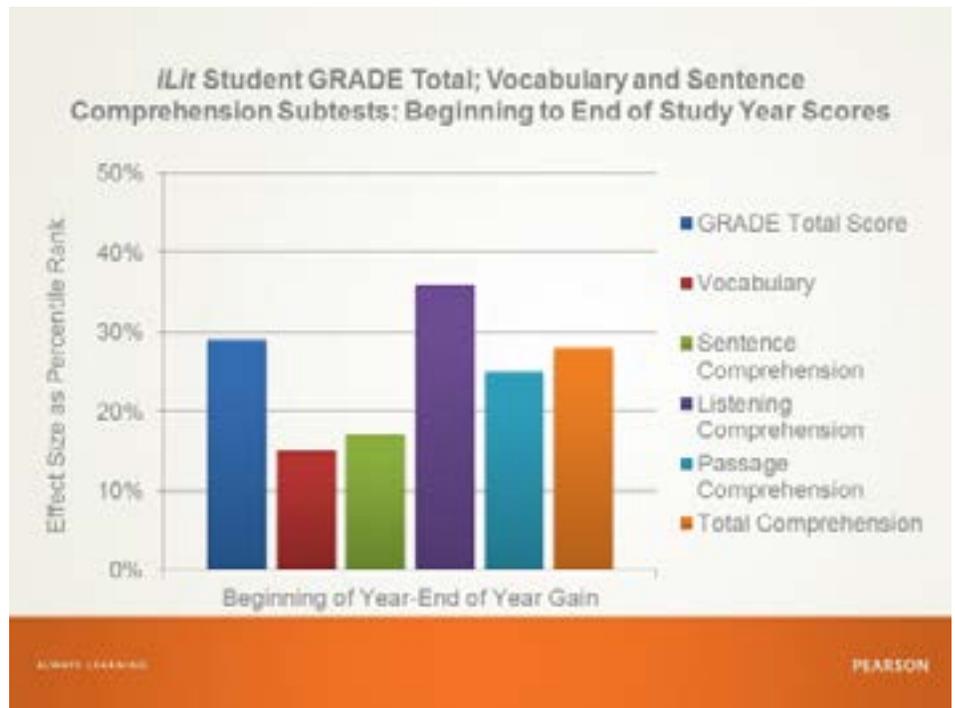
## Student Performance Results

### *Results for iLit Students*

Students using *iLit* achieved gains in reading achievement after one year of program implementation. All *iLit* students in grade 7 experienced *statistically significant* gains on the GRADE Total, the four subtests (i.e., Vocabulary, Sentence Comprehension, Listening Comprehension, and Passage Comprehension) and on Total Comprehension.

Gains are represented as percentile ranks for an *iLit* student scoring *above* the average baseline score. *iLit* students gained 29 percentiles on the GRADE Total Score and 15 percentiles on Vocabulary test after one year of using *iLit*. Additionally, *iLit* students gained 28 percentiles on the Total Comprehension test, 17 percentiles on the Sentence Comprehension, 36 percentiles on the Listening Comprehension subtest and 25 percentiles on the Passage Comprehension subtest.

**Figure 2: NY iLit Student Performance Results**

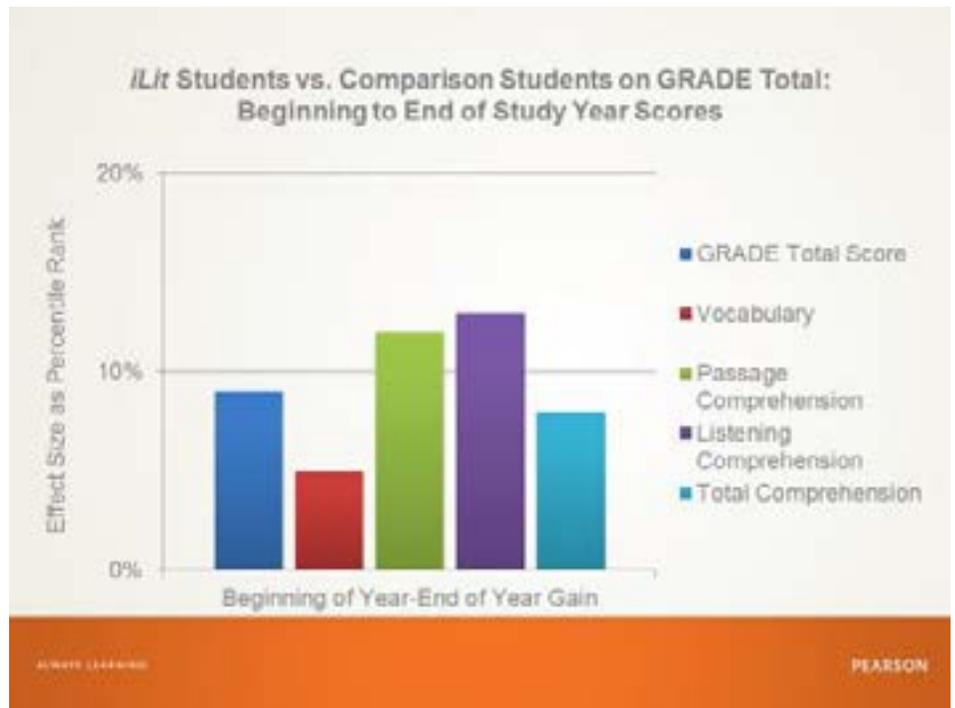


***Results for iLit as Compared to Other Reading Programs***

Evaluators conducted analyses to examine how *iLit* students performed in comparison to students using other reading programs. Results showed that 7<sup>th</sup> grade students using *iLit* made greater gains than their peers using other reading programs on the GRADE Total, three subtests (i.e., Vocabulary, Listening Comprehension, and Passage Comprehension) and on Total Comprehension (See Figure 3).

The average *iLit* student gained 9 percentiles more than the average comparison student on the GRADE Total Score and gained 5 percentiles more than the average comparison student on the Vocabulary test. Additionally, the average *iLit* student gained 13 percentiles on Listening Comprehension, 12 percentiles on Passage Comprehension, and gained 8 percentiles more than the average comparison student on their Total Comprehension scores.

**Figure 3: NY iLit Student Performance versus Comparison Students**



### ***iLit* Implementation**

The *iLit* teachers implemented the *iLit* program with fidelity. The average daily implementation time of *iLit* was 86 minutes. On average, 65 full lessons were completed over the course of the school year by *iLit* teachers.

### **Participant feedback**

#### ***Student Attitudes***

In addition to providing evidence of efficacy, Gatti Evaluation investigated other outcomes associated with use of the *iLit* program.

When *iLit* students were surveyed as to their opinions of the program, the majority demonstrated an overall positive attitude toward the *iLit* program. Several notable themes emerged, including; 91% of students reported they “definitely” or “sometimes” preferred *iLit* to their previous English class, 89% reported *iLit* was “definitely” or “sometimes” more interesting, and 59% wanted to continue using *iLit* next year.

#### ***Teacher Attitudes***

The teacher response to the *iLit* program was also positive. The *iLit* teachers reported that almost all *iLit* lesson features were well worth the

time, including: Vocabulary, Read Aloud/Think Aloud, Classroom Conversations, Whole Group Instruction, and Work Time. The only feature receiving a lower rating was Time To Read (Journals and Conferencing) which was reported somewhat worth the time. Additionally one teacher reported that students were taking their Interactive Reader assignments more seriously.

### Conclusion

This study indicates that *iLit* is effective at significantly increasing student literacy achievement. The *iLit* teachers and students using *iLit* reported satisfaction with the program. In particular, the majority of students reported they preferred *iLit* to their previous English program and wanted to continue using *iLit* next year. In sum, scientific research indicates that the *iLit* program is an effective and useful program for both teachers and students.

### About Gatti Evaluation, Inc.

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# SUCCESS STORIES

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# Achievement improves after students use mobile reading intervention program

## School Profile

**City/State:**  
City of Pembroke Pines,  
Florida

**School Type:**  
Charter

**District Enrollment:**  
Broward County  
Public Schools:  
262,587 students

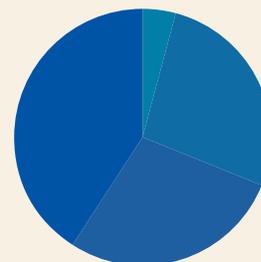
**City of Pembroke Pines  
Charter School System:**  
5,600 students

**School Enrollment:**  
643 students

**Grades:**  
6-8

**Ethnicity:**

- 41% Hispanic/Latino
- 28% Caucasian
- 27% African American
- 4% Asian



## » Overview

Pembroke Pines Charter Middle School is a high performing public charter school whose overall test scores are among the top in the state. Principal Devarn Flowers wants to ensure that all students meet or exceed the proficiency standards set by the Florida Department of Education (FLDOE), and more importantly, make annual learning gains. During classroom visits, she considered innovative ways to meet the unique needs of diverse populations in Intensive Reading.

## » Challenge

Each year the City of Pembroke Pines Charter Middle School (PPCMS) undertakes a thorough analysis of their data to inform their decisions about how they can improve student achievement. The trend data and observations of the Intensive Reading classes in the spring of 2013 indicated a need to increase student engagement, improve delivery of differentiated instruction, and foster student love of reading through the utilization of various instructional tools. Reading was taught in a 90 minute traditional classroom setting and students made marginal learning gains; however, administrators and teachers believed students could improve if exposed to alternate learning modalities.

Pembroke Pines Charter  
Middle School (West Campus)  
**SUCCESS STORY »**

*“iLit is student centered and directed toward each student’s learning goals.”*

– Michael Castellano,  
Assistant Principal

*“iLit structures the learning so that it can be delivered in an effective and strategic format”*

– Devarn Flowers,  
Principal

## » Solution

Since today’s students are digital learners and enjoy using digital devices, the school’s leadership team researched technology-based developmental reading programs. After comparing four programs, they chose iLit, a tablet based program from Pearson, because it was not only comprehensive but also user-friendly for teachers and students. “I love the fact that it focuses on individualized instruction, and has a comprehensive approach to learning,” says Flowers. “The program incorporates the different components of reading in a format that engages students.”

PPCMS began implementing the program in the fall of 2013. The implementation process involved updates to the school’s infrastructure and the purchase of additional iPads. The Intensive Reading teacher participated in a professional development session which explained classroom set up, app navigation, the instructional day, student management, progress monitoring and general iPad use.

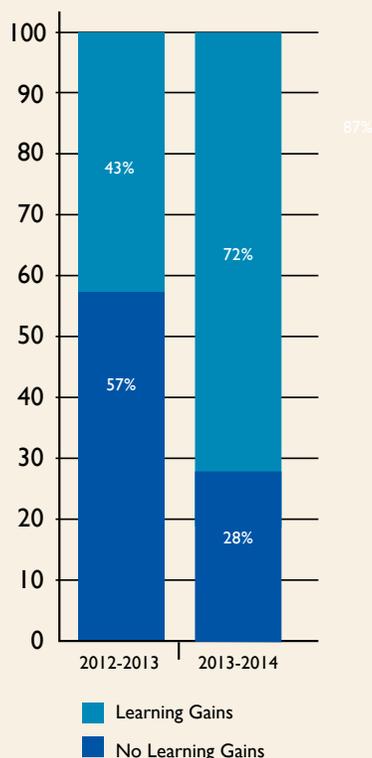
## » Results

After a year of implementation, the program has yielded positive results. Seventy-two percent of the students using the iLit program made Learning Gains in reading as measured by the 2014 Florida Comprehensive Assessment Test (FCAT 2.0) (see Figure 1). Prior to the iLit implementation, only 43% of this same group of students made Learning Gains. The program has been instrumental in differentiating instruction and in providing instructional delivery in an innovative format. Assistant Principal Michael Castellano observed that in the traditional classroom the academic needs of students were so widespread that differentiated instruction was a challenge. In contrast, “iLit is a customized learning approach that meets each student at their academic level, thereby making it easier to focus on individual needs,” explained Castellano.

Flowers has observed an increased excitement towards learning and greater engagement since the tablet program was implemented. “iLit has made for a richer classroom experience and has helped teachers improve capacity. As a result, there is an increase in student engagement, collaborative group work, and the use of guided questions throughout the lesson,” she reported.

Based on the success of the program, Pembroke Pines continues to use iLit in its Intensive Reading classes and Principal Flowers has agreed to share her implementation experience and insights as a participant on the iLit Advisory Panel.

FIGURE 1:  
FCAT Learning Gains in Reading



Developmental Reading Classes, Grades 6-8  
(n=47)

To learn more about  
digital literacy solutions, visit  
[PearsonSchool.com/iLit](http://PearsonSchool.com/iLit)



Mobile intervention app  
engages students; reading  
skills improve.

York City  
School District  
SUCCESS STORY »

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## School Profile

### City/State:

York, PA

### School Type:

Public

### District Enrollment:

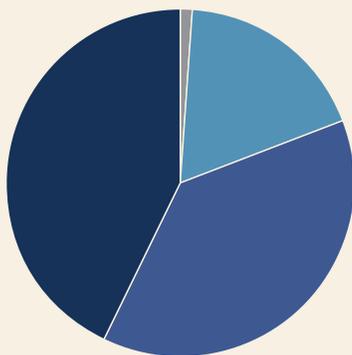
7,902 students

### Grades:

K–12

### Ethnicity:

- 43% Hispanic
- 38% African American
- 18% Caucasian
- 1% Asian



## » York City School District Overview

York City School District, located in a small, urban community in south central Pennsylvania, faces many challenges. In its diverse student body, 26 percent of the students have limited English proficiency and 80 percent qualify for free and reduced lunch. The district entered Corrective Action II status in 2012 after not making Adequate Yearly Progress (AYP) for five years and has been operating under a state-run Financial Recovery Plan since May 2013. To address these challenges, the district is committed to providing an engaging and challenging learning environment for all its students, including those who need academic or behavioral intervention. Using School Improvement Grant (SIG) and Title III funds, the district has implemented an intervention solution, and the data suggests that it is having a positive impact on reading growth.

## » Challenge

William Penn High School failed to make AYP in 2012 based on its Pennsylvania System of School Assessment (PSSA) scores. Assistant Principal Sue Long Moyer thought that a good literacy intervention program would help increase achievement. She explained, “We were looking for something because kids were historically coming to us reading below grade level. We were finding that because kids were not on grade level, they were struggling with the core content classes because it was just too difficult for them to read.”

English teacher Troy Sowers wanted to make sure the new program had a strong vocabulary-building component. “As an urban school, we always face challenges that the county schools don’t face as far as vocabulary and reading comprehension. A lot of our kids don’t use the language that is presented in the tests, and if you don’t know the words, you don’t even know what the questions mean.”

## » Solution

Moyer heard about iLit, a digital literacy intervention program that runs on iPads and other mobile devices, from the district's federal program coordinator. The hands-on nature of the iLit curriculum, its research-based approach, the variety of texts, and the student appeal of a digital program piqued Moyer's interest, so she conducted more research and eventually included the program in a SIG proposal. The proposal was accepted, and William Penn High School introduced the program into three 9th-grade and three 10th-grade reading intervention classes in the fall of 2012.

Prior to the beginning of the 2012 school year, Moyer hand-selected students based on their PSSA scores, benchmark assessments, report card grades, and teacher recommendations to participate in the six classes. She capped class enrollment at twenty students to ensure that the program would be implemented with fidelity, and she arranged for professional development over the summer to help teachers become comfortable with the technology as well as the curriculum.

---

*"I've seen and the data show that our kids are moving up multiple levels. Their comprehension is growing in both reading and science. The kids are taking the skills they learn in iLit and applying them in other subject areas."*

*– Sue Long Moyer, Principal  
Jackson School*

---

*"The iLit program helps me reach my goals because of the variety of books it has to offer. I have read books about the different things I plan to do when I graduate from high school. I plan to attend a good college after I graduate and become a homicide detective or a nurse."*

*– 9th-grade female student  
William Penn High School*

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## » Results

iLit has been popular with students. Classes begin with fifteen minutes of independent, student-choice reading on iPads. Students enjoy this time so much that they come to school even when they are sick to avoid missing their reading time. They also started visiting the library to find books that they can take home since York keeps the iPads in classrooms. As one 9th-grade student explained, "There are tons of books to choose from for independent reading. There are books of all lengths and genres, so I have plenty of interesting books to read. Also, I like the notebook because I can keep my vocabulary there, and it saves me time when I have to edit or add words to my list."

Teachers are also pleased with the program, which seems to have increased vocabulary and reading confidence. Sowers noted, "There have been a few more kids that will take a chance to volunteer to orally read. I think now that the kids understand the reading strategies we're talking about, they can infer, visualize, retell, and synthesize information."

## » Results (continued)

Moyer has also seen increased student time on task, engagement, and transfer of knowledge. She highlighted the impact of the program on a student with a history of behavioral issues. After he was in the reading intervention class for several weeks, she observed him actively engaged in a science class, using the reading skills he had learned to help fellow students find the answer to a question in their textbook.

Moyer was so impressed with the program that when she was promoted to principal of Jackson School in December 2012, she implemented iLit in her 6th- through 8th-grade English language learner (ELL) classes using Title III funds. During the 2013–2014 school year, 53 percent of 6th graders, 80 percent of 7th graders, and 71 percent of 8th graders showed scale score growth on the PSSA (see Figure 1). In addition, 41 percent of students in the program moved up an ELL level for the 2014–2015 school year.

Students at William Penn High School also showed growth. Over the 2013–2014 school year, 9th graders averaged 2.02 years of growth and 10th graders averaged 1.76 years of growth as measured by the Group Reading Assessment and Diagnostic Evaluation (GRADE) (see Figure 2).

Given these positive results, both Jackson School and William Penn High School continue to use the iLit program, and Jackson School is considering adding iLit to its 5th-grade ELL classes. Principal Moyer is so pleased with the program that she has agreed to share her implementation experience and insights as a participant on the iLit Advisory Panel.

FIGURE 1: Percent of ELLs Showing Scale Score Growth on PSSA, Jackson School, 2013–2014

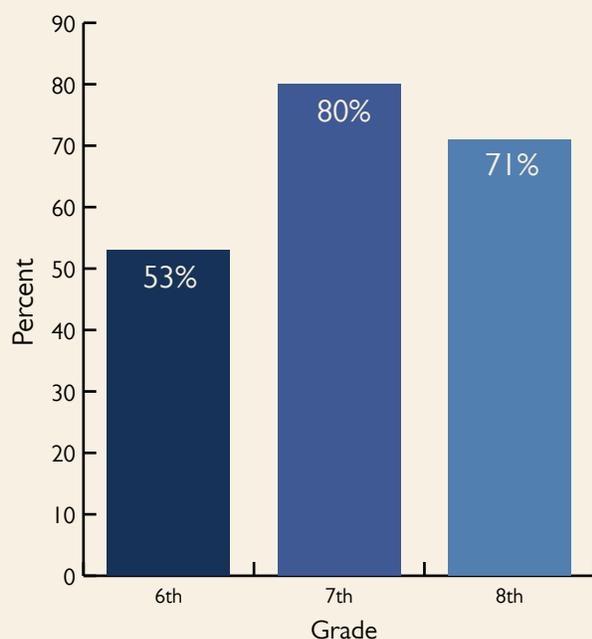
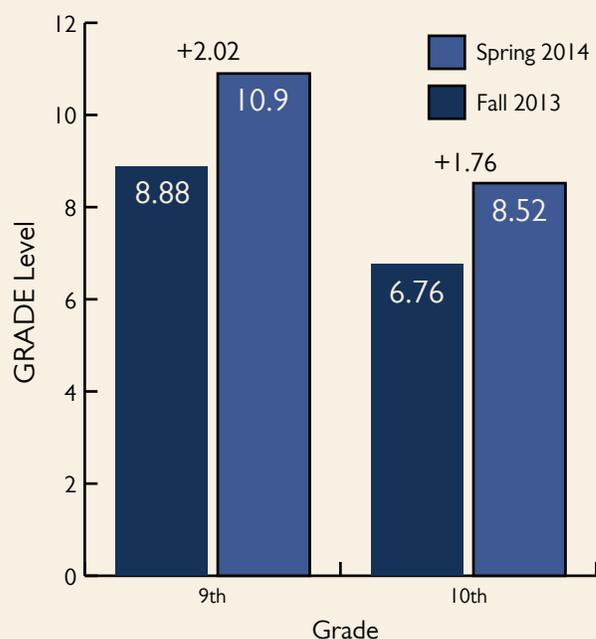


FIGURE 2: Growth in GRADE Level, William Penn High School, 2013–2014



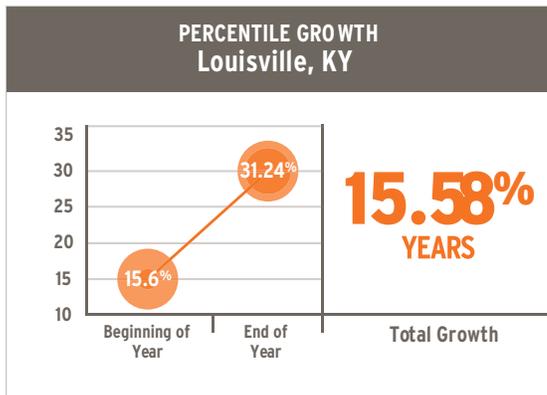
To learn more about digital literacy solutions, visit  
[pearsonschool.com/iLit](http://pearsonschool.com/iLit)



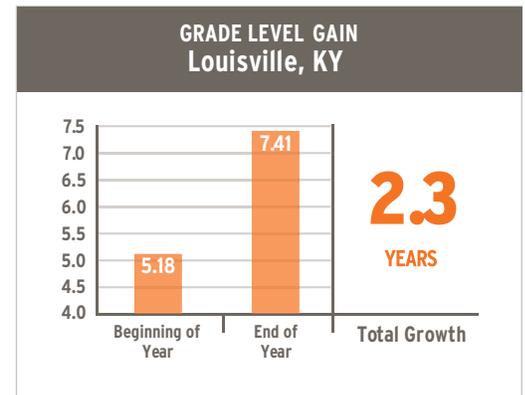
PERFORMANCE  
**SNAPSHOTS**

**CHALLENGE**

With many students in their high school reading well below grade level, administrators at Southern High School resolved to improve the literacy rate of their learners and increase students' engagement. After forming a Literacy Goal Team and researching different reading interventions, they discovered iLit to be the right solution to support their struggling readers.



**BASED ON  
90 MINS  
DAILY USE**



**IMPLEMENTATION**

In the 2013-2014 school year, iLit was implemented by Southern High School across all 9th grade English classes and all 10th grade English Special Education Resource classes.

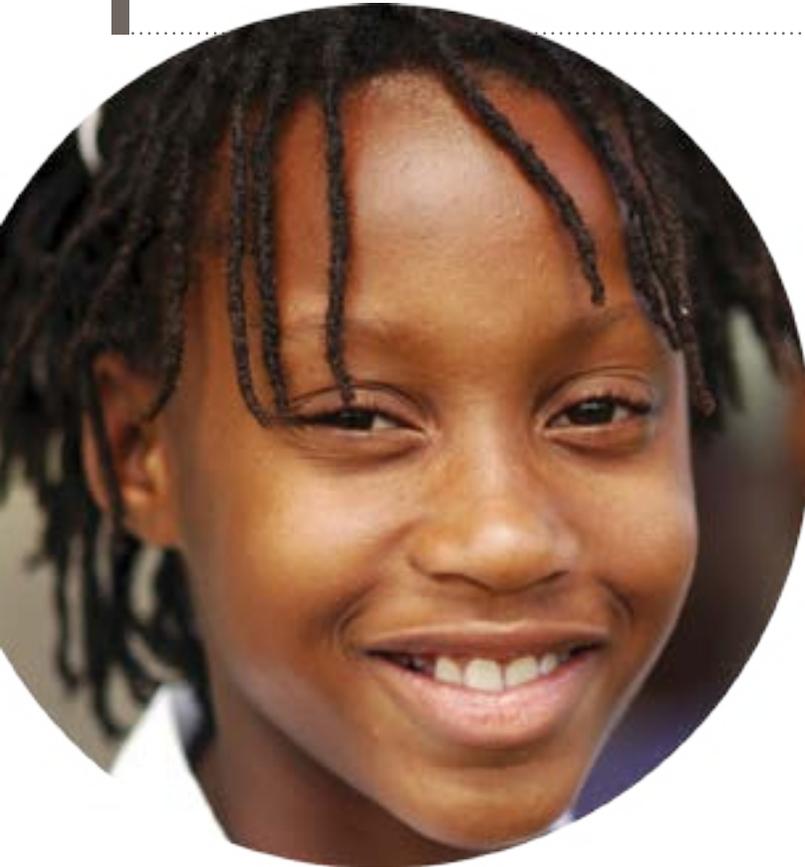
*“Since the iLit Program, I read a lot more. And I was at a 5th grade level. Now I’m at a 9th Grade [level].”*

*9th Grade Student  
Southern High School,  
Jefferson County Public Schools*



### AMAZING GAINS IN 2ND YEAR OF ILIT USE

Ninth graders at Southern High School who used iLit for 90 minutes a day achieved an average grade level of 2.3 years of reading growth measured by the GRADE™ assessment from the beginning to the end of the 2013-2014 school year.



### DEMOGRAPHICS

- Large urban school district
- 101K student enrollment
- 59% free and reduced lunch
- 79% graduation rate
- 2.8% dropout rate
- 36.3% African-American
- 50.8% Caucasian
- 5.4% Hispanic/Latino
- 2.8% Asian

### TESTIMONIAL

*“I know that ILIT is working because slowly overtime I see the confidence level in my students rise. When starting the program most of my students will not participate in reading aloud, or even open a book without prompts or cues. Slowly overtime that changes and I have multiple students wanting to read aloud, and opening a book willingly. When you are a teacher and you’re trying to help students become better readers your first goal is to always change their attitudes about reading, and give them the confidence they need in order to become better readers. iLIT is a program that helps me do that as a teacher.”*

Kelly Dearmond  
Teacher, Southern High School, Jefferson County Public Schools

## CHALLENGE

Many students at Highland Middle School, just outside Indianapolis, were 2 or more years below grade level in reading and with special needs. Teachers had become frustrated with conventional reading instruction and were not getting the results they so desperately needed. After trying several different approaches, teachers decided it was time for a change. They chose iLit as the best reading intervention to engage and motivate students to read so that those students would view themselves as readers.

**90 MINS**  
**DAILY USE**

SPOTLIGHT ON

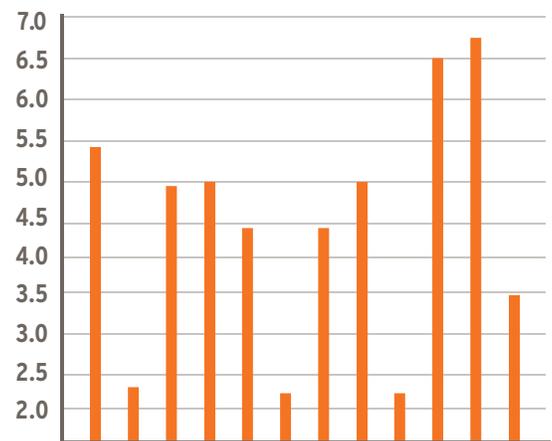
### STUDENT ACHIEVED MULTIPLE YEARS OF GAINS

*“Reading programs such as iLit engage the children so that they’re doing active reading... actually doing more reading and getting excited about it. That’s probably the best piece about this.”*

Glenda Ritz

Indiana Superintendent of Public Instruction  
“New reading program helps ACS students improve literacy skills” from The Herald Bulletin

INDIVIDUAL STUDENT READING GAINS  
Anderson, IN



READING GROWTH IN YEARS (PER STUDENT)



*“...A large majority of my students are now readers and can find something that engages them in reading which by proxy creates better reading and writing skills.”*

- Melissa Crum  
Highland Middle school, teacher

## TESTIMONIAL

*One of the best areas that I see the use of [data] is the making of small groups and small group lessons. It is so helpful to have the small groups made and the lessons aligned.*

Melissa Crum, Teacher  
Highland Middle School  
Anderson Community Schools  
Anderson, IN



## DEMOGRAPHICS

- Large urban school district
- 9K student enrollment
- 74% free and reduced lunch
- 81% graduation rate
- 2.9% dropout rate
- 21% African-American
- 70% Caucasian
- 4% Hispanic/Latino
- 4% Multi-racial

## IMPLEMENTATION

In the 2013-2014 school year, iLit was implemented by Anderson Community Schools across grades 6, 7 and 8 and is in use by nearly 360 students.



# DATA TELLS THE iLit STORY!

Students gain 2+ years of reading growth in a single year

**Southern High School**  
Louisville, KY



Grade Level Gain

**North Pitt High School**  
Greenville, NC



Grade Level Gain

**KIPP Charter Schools**  
Houston, TX



Grade Level Gain

**Highland Middle School**  
Anderson, IN



Average Individual Student Growth

**Wagar Middle School**  
Airport, MI



Grade Level Gain

**York City School District**  
York, PA



\*Based on grade-level equivalent scores representing a combination of vocabulary, comprehension and reading as measured by GRADE™. GRADE™ is NCRTI approved.

# GAIN 2+ YEARS OF READING GROWTH IN A SINGLE YEAR

English Language Learners reading and vocabulary growth

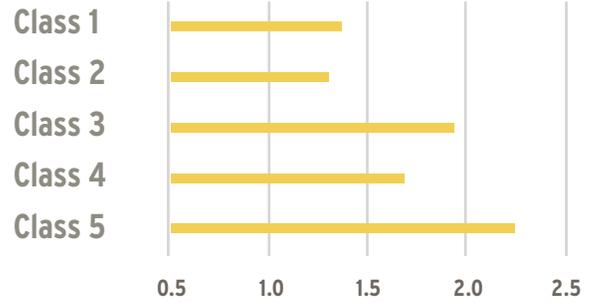
Significant reading growth in just a half year of implementation

York City School District  
York, PA



% iLit students who improved their ELL Level 2014-15

Raines High School  
Jacksonville, FL



Grade Level Gain (in Years) - Representative Student Gains

## Use of iLit improves results on state tests

York City School District  
York, PA



GRADE 6



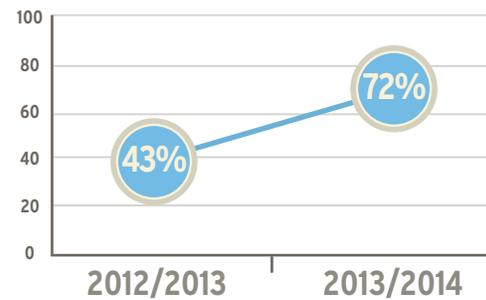
GRADE 7



GRADE 8

% iLit students showing Scale Score Growth on PSSA

Pembroke Pines Charter High School  
Fort Lauderdale, FL



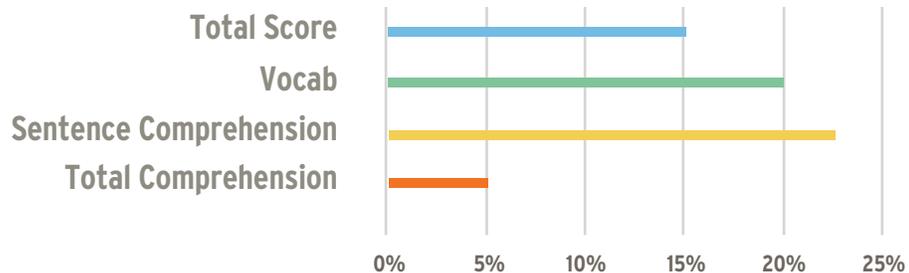
INCREASE OF  
**29%**

% iLit students who made learning gains on FCAT

## Results from Independent Research Study

DIFFERENCE IN PERCENTILE GROWTH | iLit vs. Control Group

SOUTHERN CALIFORNIA  
MIDDLE SCHOOL  
8TH GRADE  
90 MINS./DAY



FOUNDATIONAL  
**RESEARCH**



# iLIT INSTRUCTIONAL MODEL RESEARCH BASIS

## Background

Without question, educators know a great deal about how to develop reading ability in young children. As a result of scientifically based research in reading, the classroom teaching of this subject has changed significantly in the primary grades. Even so, many students still struggle by grade 3, and approximately 75 percent of those students remain struggling readers in grade 9 (Joftus, 2002).

The need for effective instruction in this area is underscored by current statistics the National Assessment of Education Program. In 2013, the percentage of 4th-grade students performing at or above the Basic achievement level (68 percent) was not measurably different from the percentage in 2011 but was higher than the percentage in 1992 (62 percent). A higher percentage of 4th-grade students performed at or above the Proficient achievement level in 2013 (35 percent) than in 2011 (34 percent) and 1992 (29 percent). Among 8th-grade students, the percentage performing at or above Basic in 2013 (78 percent) was higher than in 2011 (76 percent) and 1992 (69 percent). A higher percentage of 8th-grade students performed at or above Proficient in 2013 (36 percent) than in 2011 (34 percent) and 1992 (29 percent). Among 12th-grade students, the percentage performing at or above Basic (74 percent) in 2009 was not significantly different from the percentage in 2005 but was lower than the percentage in 1992 (80 percent). The percentage of 12th-graders performing at or above Proficient was higher in 2009 (38 percent) than in 2005 (35 percent) but was not significantly different from the percentage in 1992.

While there are remedial programs designed to help struggling readers, the majority of these programs focus only on the most low-level skills (Joftus, 2002). However, a study done by researchers at Johns Hopkins University suggests that only a very small percentage of students (five to 10 percent) enter 9th grade testing at the 2nd- or 3rd-grade level, and, hence, still need to learn elementary reading skills (Joftus, 2002).

## Introduction to iLit Instructional Model

iLit is a core intervention reading course designed for students who are two or more years below grade level in reading, grades 4 - 10. The instructional needs of English language learners are also directly addressed through this course. The program is designed to build and strengthen the overall reading proficiency of these students by immersing them in a series of double- period courses that emphasize effective, research-based strategies shown to improve overall reading abilities. Additionally, iLit provides students with transferable skills that can be used and applied beyond the classroom. Students do enough work and receive enough solid instruction to earn graduation credit for the course.

iLit is aligned with the spirit and intention of the College and Career Readiness Anchor Standards. The instruction closes the gaps in order to place students in the grade-level appropriate English Language Arts classroom. In addition, the iLit curriculum is aligned with the report, Reading Next: A Vision for Action and Research in Middle and High School Literacy (Snow & Biancarosa, 2004; see appendix A). Reading Next, a report from the Carnegie Corporation that introduces guidelines for improving literacy among middle and high school students, is a nationally recognized compendium of research for adolescent literacy instruction.

Although comprehension is a complex and multi-faceted cognitive process, the RAND Reading Study Group distilled its essence by stating that it is, “the process of simultaneously extracting and constructing meaning through interaction and involvement with written language,” (RAND Reading Study Group, 2002, p. 11). Based on the construction-integration model (Kintsch, 1994, p. 321), students must be able to create appropriate mental images of the texts they have read. These images should not be merely literal interpretations, but should be formed using active inferencing, prior knowledge, and other higher-level comprehension processes. All iLit course components are designed to work together to build and strengthen students’ implicit and explicit comprehension. In addition, reading comprehension instruction is integrated with content learning, including reading and writing for both fiction and nonfiction texts.

iLit is designed to produce self-regulated readers who are able to take an active role in recognizing and resolving issues that arise while reading a text (Almasi, 1996; Gourgey, 2001). Research has shown that this type of self-monitoring can be promoted through peer discussions, peer tutoring, and cooperative activities in which students grapple with the uses and meanings of different reading strategies (Klinger & Vaughn, 1996; Klinger, Vaughn, & Schumm, 1998; Palinscar & Brown, 1984). In addition, peer interaction has shown to provide opportunities for metacognitive interactions and modeling (Palinscar, David, Winn, & Steven, 1991).

iLit follows the research-based perspective that effective reading comprehension relies on a combination of motivation, the ability to capably apply comprehension strategies, conceptual knowledge, and social interaction among learners (Guthrie & Wigfield, 2000). The program provides an instructional approach that effectively addresses these motivational, cognitive, conceptual, and social issues for each student.

For strategy instruction, iLit incorporates the six reading strategies identified by the National Reading Panel report (2000) as crucial for developing comprehension skills. These strategies are: (1) activating background knowledge, (2) student questioning, (3) searching for information, (4) summarizing, (5) organizing graphically, and (6) learning story structure for literary materials. Considering the aforementioned and other relevant research, the iLit course was designed around five main premises (below) that are supported by this research: active engagement and motivation, explicit modeling, vocabulary instruction, authentic reading and writing experiences, and differentiated instruction.

## **iLit—Introduction to the Five Main Premises** .....

### **1. Motivation:**

Based on a survey of research, Guthrie, Wigfield, Barbosa, Perencevich, Taboada, et al. (2004, p. 404), concluded that an, “engaged reader is intrinsically motivated, builds knowledge, uses cognitive strategies, and interacts socially to learn from text.” The effectiveness of reading instruction will be compromised unless students are motivated to read and engaged in the learning process (Guthrie & Wigfield, 2000; Paris, Wasik, & Turner, 1991; Turner, 1995; Wigfield & Guthrie, 1997).

***For English language learners:*** Studies have shown that motivation to learn a new language and communicate with others is a strong predictor of success with a second language (Skehan, 1989 in

Gass & Selinker, 2001). iLit is designed to increase ELL motivation by utilizing students' background knowledge, language, and culture to shape instruction in order to help students understand and connect with the ideas, concepts, and language presented in class (Wong Fillmore, 1991; Nieto, 2003; Perez & Torres-Guzman, 1996).

## 2. Explicit Instruction and Modeling:

Teacher modeling is identified as an important component of comprehension instruction in the Reading Next report. The authors of this report describe modeling as, “the teacher reading texts aloud, making her own use of strategies and practices apparent to her students,” (Snow & Biancarosa, 2004, p. 14). Gersten, Fuchs, Williams, & Baker (2001) found that extensive teacher modeling was an important element in successful comprehension instruction. Likewise, Duke (2004) found that readers who struggle with comprehension benefit significantly from think-alouds.

**For English language learners:** Studies have shown that authentic, comprehensible instruction and scaffolding are necessary components for effective second language instruction (Krashen, 1982).

## 3. Vocabulary Instruction:

Research shows that direct vocabulary instruction significantly improves comprehension (Biancarosa & Snow, 2004; Stahl & Fairbanks, 1986; LaFlamme, 1997) and writing (Tompkins, 2003). iLit incorporates research-based instructional components that promote vocabulary development. These include: (a) repeated and varied transactions with new words (Dole, Sloan, and Trathen, 1995; Rosenbaum, 2001; NICHD, 2001); (b) direct instruction: definitional and contextual (Stahl & Fairbanks, 1986; Stahl, 1999; Irvin, 1998; NICHD, 2001); and (c) morphological analysis (e.g., prefixes, suffixes, roots) (Biemiller, 2003; Irvin, 1998; Sousa, 2005).

**For English language learners:** Due to varied background experiences, English language learners often do not have a typical knowledge base (or life experience) to draw from when they are trying to attach meaning to new words. Such students need instructional programs that help them make connections between their language and experiences, and the ideas and concepts represented by the new language (Delpit, 1995; Wong Fillmore, 1991; Nieto, 2003; Perez & Torres-Guzman, 1998). iLit provides instructional support to help English language learners bridge this gap.

## 4. Authentic Reading & Writing Experiences:

Authentic reading experiences consist of interactions with actual books (e.g., stories, informational books, and poetry) in contrast to the reading of literature-based basal texts, which contain excerpts or abridged versions of actual books. Likewise, authentic writing experiences allow students to write in ways that are relevant and meaningful to their own lives, and for the purposes of a real audience. Research shows that reading and writing are mutually reinforcing (Fearn & Farnan, 2001), and the iLit program is designed to use each to strengthen the other.

**For English language learners:** English language learners need reading and writing experiences to allow them to express their own ideas, and to show them how to use language in ways that are meaningful and relevant to their lives (Rubin & Carlan, 2005). These students also need a program

that helps them learn the grammatical, morphological, and phonological aspects of the English language (VanPatten, 1993). iLit gives English language learners opportunities to read and write while also attending to the technical aspects of language.

## 5. Differentiated Monitoring & Instruction:

Differentiated classrooms are beneficial to a diverse group of students because they are, “responsive to students’ varying readiness levels, varying interests, and varying learning profiles,” (Tomlinson & Kalbfleisch, 1998, p. 54). A position statement of the International Reading Association, “Making a Difference Means Making It Different,” also highlights the importance of differentiated instruction. This position statement, which provides a review of current research, concludes that effective reading programs must provide differentiated instruction. Likewise, Allington (2005, p. 3) states that, “Because children differ, no single text nor any single task can be appropriate for all children in a classroom—much less a grade level.”

**For English language learners:** Typical learning differences are compounded for English language learners, who also differ by country of origin, language, ethnicity, culture, family SES, access to prior formal schooling experiences, and consequent levels of proficiency in their first language and English (Corson, 1999; Peregoy & Boyle, 2000; Rubinstein-Avila, 2001). Because of the variety of variables that each English language learner brings to the classroom, these students must be taught in programs that attend to their individual differences (O’Byrne, 2001; Lucas & Wagner, 1999). iLit is designed to provide individualized instruction to meet the needs of every learner.

## Research Details—Five Main Premises

### 1. Motivation:

**What the research says:** Motivation has a significant effect on the interest, purpose, and persistence with which a reader engages in a text (Butcher & Kintsch, 2003; Schallert & Martin, 2003). Research shows that students who are intrinsically motivated spend more time reading independently than those who are not (Guthrie, Wigfield, Metsala, & Cox, 1999; Wigfield & Guthrie, 1997). Likewise, the amount of time spent reading is a significant predictor of reading comprehension achievement (Anderson, Wilson, & Fielding, 1998; Stanovich & Cunningham, 1993). Students must be equipped with both reading comprehension skills and the motivation to read in order to make satisfactory academic progress (Alvermann & Earle, 2003; Stipek, 2002).

Research has shown that certain instructional practices can significantly influence student motivation for reading (Eccles & Midgley, 1989; Eccles, Wigfield, & Schiefele, 1998; Gottfried, Fleming, & Gottfried, 2001; Wigfield, 1998; Maehr & Midgley, 1996; Stipek, 1996 & 2002). Also, reading frequently, and reading a broad range of texts (fiction and nonfiction), is highly correlated with reading achievement in middle school students (Kirsch, LaFontaine, McQueen, Mendelovits, & Monseur, 2002).

Research indicates that instructional programs can include components that measurably increase students’ motivation to read (Guthrie, Wigfield, Barbosa, Perencevich, Taboada, et al., 2004; Guthrie & Wigfield, 2000). In one study, students who were given a choice in text selection performed higher

on several reading tasks than those who were not given a choice (Reynolds & Symons, 2001). Social and environmental instructional components shown to increase student motivation are: (1) opportunities for student choice, (2) collaboration and connection with other students, (3) opportunities for student-initiated questioning and self-direction, (4) acknowledgement of feelings, (5) the need to experience competence and success (6) learning goals, and (7) interesting texts (Deci & Ryan, 1985; Deci, Nezlek, & Sheinman, 1981; Flink, Boggiano, & Barrett, 1990; Ryan & Grolnick, 1986; Guthrie, Wigfield, et al., 2004).

### ***What iLit does:***

iLit addresses the idea of both **independent** and **shared** motivation. Aspects of the course that foster motivation within these categories are listed below:

#### ***Independent Motivation***

- Independent reading (choice)
- Classroom library via e-texts (availability, choice)

#### ***Shared Motivation***

- Classroom conversation
- Work period (choice)

#### ***Independent Engagement and Motivation***

Literacy instruction should include time to read independently every day. Reading becomes better with practice and, consequently, comprehending becomes better with more reading practice (Pressley, 2003; Rasinski, 2003). Research shows that adolescents need opportunities for sustained reading in order to improve their literacy skills and vocabulary (Brozo & Hargis, 2003). The leveled e-library provides a wide selection of texts chosen to appeal to the diverse needs and interests of iLit students. Books are also selected to complement the units of study in the iLit program. Research has documented that effective literacy instruction includes a wide variety of reading and writing activities and materials (Carbonaro & Gamoran, 2002; Langer, 2001, New Jersey Reading Association, 2003; Ostrowski, 2000). Therefore, the iLit e-library is an integral component of iLit's systematic and thorough approach to learning.

#### ***Shared Motivation***

**Classroom conversations** allow students to engage in mutual, thoughtful collaboration, exchanges, or construction of information and ideas. In addition, several studies by Webb (1989, 1991) found that verbalizing one's thoughts is critical to the process of learning. Slavin (1996) stated that appropriate group/learner collaboration includes interactions such as: (a) working jointly on problems, (b) critically (re)examining assumptions, (c) elaborating material for each other, and (d) engaging in mutual feedback and debate. Additionally, research has shown that social collaboration promotes deep conceptual insights and shifts in perspective, which lead to increases in student understanding and retention of concepts (Damon & Phelps, 1989; Slavin, 1996; Webb, 1989). One reason for this is that peer interactions often include more thoughtful questioning and problem solving, as well as more active student engagement (Lederman & Druger, 1985). iLit provides relevant opportunities for students to reap the benefits of peer-group conversations and

interactions. The iLit work period is designed to allow students the opportunity to work either individually or in small groups. Individual work may consist of personalized study plans in all aspects of language performance areas, independent reading strategy practice in a leveled text, listening to audio support, reading independently, revising or editing writing work through automated feedback and coaching tools, conferencing with the teacher, etc. Small-group instruction involves guided reading, guided writing, strategy lessons, and reading/writing conferences. Studies have shown that highly effective literacy teaching repertoires at the secondary level must contain a wide variety of differentiated reading and writing activities (Applebee & Langer, 2003; Carbonaro & Gamoran, 2002; Langer, 2001; Ostrowski, 2000). iLit work periods were designed to offer teachers a varied and flexible program of learning experiences that can be used to meet the individual and changing needs of students.

## 2. Explicit Instruction & Modeling:

### *What the research says:*

One of the key instructional elements identified in the Reading Next report as critical to adolescent reading success is direct, explicit comprehension instruction. Research shows that reading strategies, and the ability to apply them in meaningful situations, can be acquired through instruction (Dole, Duffy, Roehler, & Pearson, 1991; Pressley, 2000; Pressley, Johnson, Symons, McGoldrick, & Kurita, 1989). Effective instruction is explicit and direct in explaining these strategies and the reasons to use them (Duffy, 2002; Pressley & McCormick, 1995).

Comprehension instruction should give students the skills to become proficient in transforming the surface code of text (exact wording) into idea units that contain meaning. As readers integrate their own knowledge and interpretation to the text base (which includes all meaning-making components of the text such as vocabulary, semantics, syntax, and genre), they should be able to “construct” mental representations of the text that are consistent with the author’s intent (Kintsch, 1988, 1992, 2005; Kinsch & Bowles, 2002). The iLit curriculum provides targeted instruction and learning opportunities to build proficiency in these crucial comprehension processes.

Direct training of strategies can increase students’ competence in employing the strategy, their awareness of the strategy, and their comprehension of text for which the strategy was intended (National Reading Panel, 2000). Teacher modeling and monitoring of strategy use has been shown to have positive effects on comprehension (Gersten, Fuchs, Williams, and Baker, 2001). Strategy training, which has been known to increase students’ accomplishments in the reading process, has led to increased self-efficacy and motivation to do more reading (Bandura, 1997; Schunk & Zimmerman, 1997).

One of the main components of explicit instruction is modeling. According to Reading Next, teacher modeling involves reading texts aloud and using strategies to illustrate the “practice of reading” to students. When students have vicariously experienced good reading techniques, they can more easily envision the ultimate goal of the skills they are learning.

In Beers’ (1990) study of alliterate seventh graders (students who could read but chose not to), students selected having a teacher read aloud in an exciting voice as one of the few activities they

found to be motivating. More recently, Albright (2002) showed how read-alouds in a seventh grade social studies class fostered engagement and learning. In a survey of 1,700 sixth graders, teacher read-alouds were named one of the two most preferred reading activities in school. Students saw the read-alouds as, “scaffolds to understanding because the teacher helped to make the text more comprehensible or more interesting to them,” (Ivey & Broaddus, 2001, p. 367).

### **What iLit does:**

- Directed instruction/strategies
- Modeling
- Read-alouds/think-alouds

### **Directed Instruction/Strategies**

The iLit program directly teaches effective, research-based comprehension strategies. Fielding & Pearson (1994) identified four components that are included in successful comprehension instruction: (1) large amounts of time for reading, (2) teacher-directed instruction in comprehension strategies, (3) opportunities for peer and collaborative learning, and (4) occasions for students to talk to a teacher and one another about their responses to reading. These components were also found to be key elements of comprehension instruction in the Reading Next report (Snow & Biancarosa, 2004). iLit provides direct instruction for reading strategies such as monitoring, predicting, inferring, questioning, connecting, summarizing, visualizing, and organizing, which have all shown to help students become successful readers (Keene & Zimmerman, 1997; Miller, 2002; Pardo, 2002).

iLit incorporates teacher **modeling** of reading and strategy use into its daily class time. Reading aloud and think-alouds are two of the ways that modeling is used in the program.

**Reading aloud** a variety of materials has been shown to increase students’ understanding of content, and promote their engagement and inquiry into the ideas they encounter (Albright, 2002; Roser & Keehn, 2002). Reading aloud is an excellent way to model good reading and fluency. Research indicates that motivation, interest, and engagement are often enhanced when teachers read aloud to middle school students. In addition, educators claim that reading aloud to middle school students can introduce them to books they might not locate on their own (Lesesne, 2001). The research suggests that teacher read-alouds in middle grades can have positive outcomes for both motivation and learning. But, students are typically exposed to read-alouds less frequently as they move from primary to secondary grades (Jacobs, Morrison, & Swinyard, 2000). iLit ensures that secondary students will continue to have reading aloud as part of their literacy instructional experiences.

Through **think-alouds**, teachers verbalize their own thinking processes and use of reading strategies as they read aloud to students. This allows students to assess their own metacognitive thinking processes and compare it with that of a proficient reader. Through think alouds, teachers demonstrate each strategy: what it is, how it is applied, and when and why it should be used (Duffy et al., 1988; Paris et al., 1991). This gives students a benchmark or a goal. Vaidya (1999) found that while proficient readers often create their own learning strategies for various tasks, struggling readers are often not able to do this because they lack an awareness of their own learning needs.

Think-alouds allow students to see ways to effectively improve their own reading in a

non-threatening way. “If strategy training is carried out in a metacognitive, self-regulative context, in connection with specific content rather than generalized skills...positive results are much more likely,” (Hattie, Biggs, & Purdue, 1996, p. 101). iLit provides students with frequent exposure to think-alouds.

### **3. Vocabulary Instruction (Word Study)**

#### ***What the research says:***

Extensive research shows that vocabulary and comprehension are closely correlated (Anderson & Freebody, 1981; Stahl & Fairbanks, 1986; NRC, 2001; Yovanoff, et al., 2005; Biancaros & Snow, 2004). Students who read widely and deeply often have large vocabularies, are fluent readers, and have a high degree of comprehension. In *Reading Next* (Biancarosa & Snow, 2004), the ability to figure out the meanings of unfamiliar words is listed as a key component of reading comprehension.

#### ***What iLit does:***

- Explicit (direct) vocabulary instruction
- Indirect vocabulary instruction

#### **Direct Vocabulary Instruction**

The iLit program incorporates explicit vocabulary instruction that research studies have shown to be effective. In iLit classes, students learn words in rich contexts—with a deep understanding of multiple denotations, connotations, and nuances (Irvin, 1998; NICHD, 2001). They learn to use morphological analysis (prefixes, suffixes, and roots) to gain meaning from words (Biemiller, 2003; Irvin, 1998; Sousa, 2005). Additionally, students learn how to use context clues (frequent and capable use of prior knowledge, knowledge of syntax [how words are put together in a sentence] and semantics [what makes sense in context]) (Irvin, 1998; Sousa, 2005). The ability to take abstract words (e.g., liberty, justice) and generate clear mental images of these concepts is also a valuable skill for word understanding (Sousa, 2005; Swaab, Baynes, & Knight, 2002). All of these methods are used in the iLit program and have shown to increase students’ ability to understand and gain meaning from words.

#### **Indirect Vocabulary Instruction**

Vocabulary growth can come in a number of ways, including direct-word study, but if it occurs in a vacuum, instruction may not be effective. Linking direct instructional approaches with indirect instruction that includes wide reading is the key to effective vocabulary growth and improvement in reading comprehension and fluency. Indirect instruction occurs during independent reading, read-aloud/ think-aloud, in small-group reading and discussion, in reading conferences, and during small-group reading instruction. Once students have the skills to infer word meaning (through direct instruction), they need opportunities to engage in independent reading to allow them to encounter a substantial number of unfamiliar words, and to use these skills to derive word meaning independently. Independent reading is the major source of vocabulary growth once students have learned the skills they need (Armbruster, Lehr, & Osborn, 2001; Anderson, Wilson, & Fielding, 1988; Cunningham & Stanovich, 1988; Beck, McKeown, & Kucan, 2002; and Nagy, 1988).

## 4. Authentic Reading & Writing Experiences

### *What the research says:*

Authentic texts provide a wide variety of reading experiences. This range of text is important because adolescents who see literacy as useful and fulfilling are more likely to identify themselves as readers, and consequently, read more often (Hinchman, Alvermann, Boyd, Brozo, & Vacca, 2004; Wilhelm, 2001). Independent reading is lauded as an important aspect of any strong literacy program (Fountas & Pinnell, 2001; McLaughlin, 2003). iLit provides consistent opportunities for students to read independently, thus helping them build proficiency and fluency, and develop the confidence to try increasingly advanced books (Clay, 1991; Fielding, Wilson, & Anderson, 1986; Taylor, Graves, & Van den Broek, 2000; Torgesen, Rashotte, & Alexander, 2001). Encouraging reading in school is particularly important for adolescents because research shows that these students read less on their own than students in the elementary grades (Goodman, 1996; Tunnell, Calder, & Phaup, 1991).

The Reading Next report states that, “effective adolescent literacy programs must include an element that helps students improve their writing skills.” In the iLit program, students read and write using multiple texts within each genre (narrative, informational, and sub-genres, such as texts, using argument or reasoning). Working with a depth and variety of genres significantly and positively affects both reading and writing skills (Bereiter & Scardamalia, 1984).

### *What iLit does:*

- Authentic reading
- Authentic writing
- Writing Practice with Instantaneous Feedback

The iLit program is designed to provide **authentic reading** experiences with supportive, scaffolded instruction that builds confidence in students, yet also challenges them to grow. Authentic reading materials are real-world publications that have not been altered in form or content (e.g., original publications of young adult literature, newspapers, etc.) (Harris & Hodges, 1995). Research shows that students who only encounter texts that are read easily have no reason to practice and apply strategies. Through encounters with a variety of challenging texts, students are required to put strategies to use (Kucer, 2001). iLit provides students with ample reading and writing practice with both literature and expository texts.

iLit provides authentic writing experiences using a variety of formats that are relevant to students. **Authentic writing**, writing for multiple audiences, and writing for real-world purposes (rather than only for the teacher) have shown to increase the motivation to write in adolescents (Bruning & Horn, 2000; Tompkins, 2002). Because competent teacher feedback is highly correlated with writing improvement (see Ferris, 1997, for a review and empirical findings grounded in a large sample), iLit prepares teachers to provide effective and meaningful support for student writers. Feedback is structured to provide students with the knowledge and opportunity to cultivate, shape, and refine their ideas through multiple drafts of their work (Patthey-Chavez & Ferris, 1997; Sternglass, 1998; Zellermayer, 1989). Students in the iLit program are assessed using rubrics (a set of guidelines for student work that list the criteria needed to meet certain levels of quality from excellent to poor [Goodrich, 1997; Popham, 1997]), which give them a detailed and objective way to understand

what is required for each writing assignment. Using rubrics for assessments gives students usable feedback that they can draw on to improve their writing skills (Andrade, 2005). iLit uses a combination of direct writing instruction and appropriate feedback to allow students to gradually develop the skills necessary to view their own work critically, revise it, and become better writers.

iLit focuses on writing for content knowledge expression across a variety of academic subjects, such as science, social studies, and history. It also contains essay prompts similar to those used for state writing assessment and college entrance exams.

Thanks to iLit's state-of-the-art automated essay scoring, powered by Pearson Knowledge Technologies, **students are able to practice writing frequently in iLit**, and to receive instant feedback on the quality, traits, and mechanics of the work that they submit.

iLit feedback encourages students to incorporate revision into their writing process by providing:

- **For essays** - An overall holistic essay score; scores and feedback on six traits (ideas, organization, conventions, sentence fluency, word choice, voice); and feedback on spelling, grammar, and repeated information
- **For summaries** - Section-by-section coverage and feedback on appropriate length, unimportant and redundant content, and copying from the text along with revision hints. The average student revises an assignment six times; practice and more practice leads to proficiency.

Each essay prompt is scored by Pearson Knowledge Technologies (PKT) using scores assigned by human raters to several hundred representative student essays all written in response to a particular essay prompt or question for a particular grade level.

By using computational modeling, PKT mimics the way in which human readers score. In study after study comparing the performance of PKT to that of skilled human graders, the quality of PKT's assessment equals or surpasses that of the humans. *(For more information about PKT's assessment engine, see the Appendix.)*

For summaries across diverse content areas, the feedback captures how well the student has covered the content of each major section of the document that the student has read. The read, write, and revise cycle encourages the students to reread and re-express those parts of the text that they have not as well understood.

Teachers play an indispensable role when using iLit—they can add the extras that the software cannot address, such as suggesting ways to reorganize an essay, examples that might amplify the main point, and so forth. By contrast, with a traditional classroom-assigned essay, the teacher can assign only a few essays per year, limited by the hours that need to be devoted to reading and commenting on each student draft. iLit students submitted an average of six revisions for each essay assignment. Luckily, a teacher can be the recipient of the students' best efforts and have the leisure to add the personalized human insights and comments that can bring students and teachers together in the quest for competency and excellence.

A primary reason why iLit works is that it motivates students to spend more time reading, writing, and revising.

One frequently heard comment is that students engage in the task better and more willingly when they are using iLit. The engagement comes from instantaneous feedback. Students see immediate progress and understand that they can control the learning outcome. It is also game-like in its iterative feedback.

## 5. Differentiated Monitoring and Instruction

### *What the research says:*

There is no one-size-fits-all approach to struggling readers in middle and high school. iLit is uniquely designed to meet both individual and whole-group needs. While the importance of regularly scheduled, formal assessments is necessary to gauge student progress, studies have also documented that the practice of frequent, informal monitoring (formative assessment) can produce significant learning gains, especially with low achievers (Black & William, 1998; Black, Harrison, Lee, Marshall, & William, 2004).

### *What iLit does:*

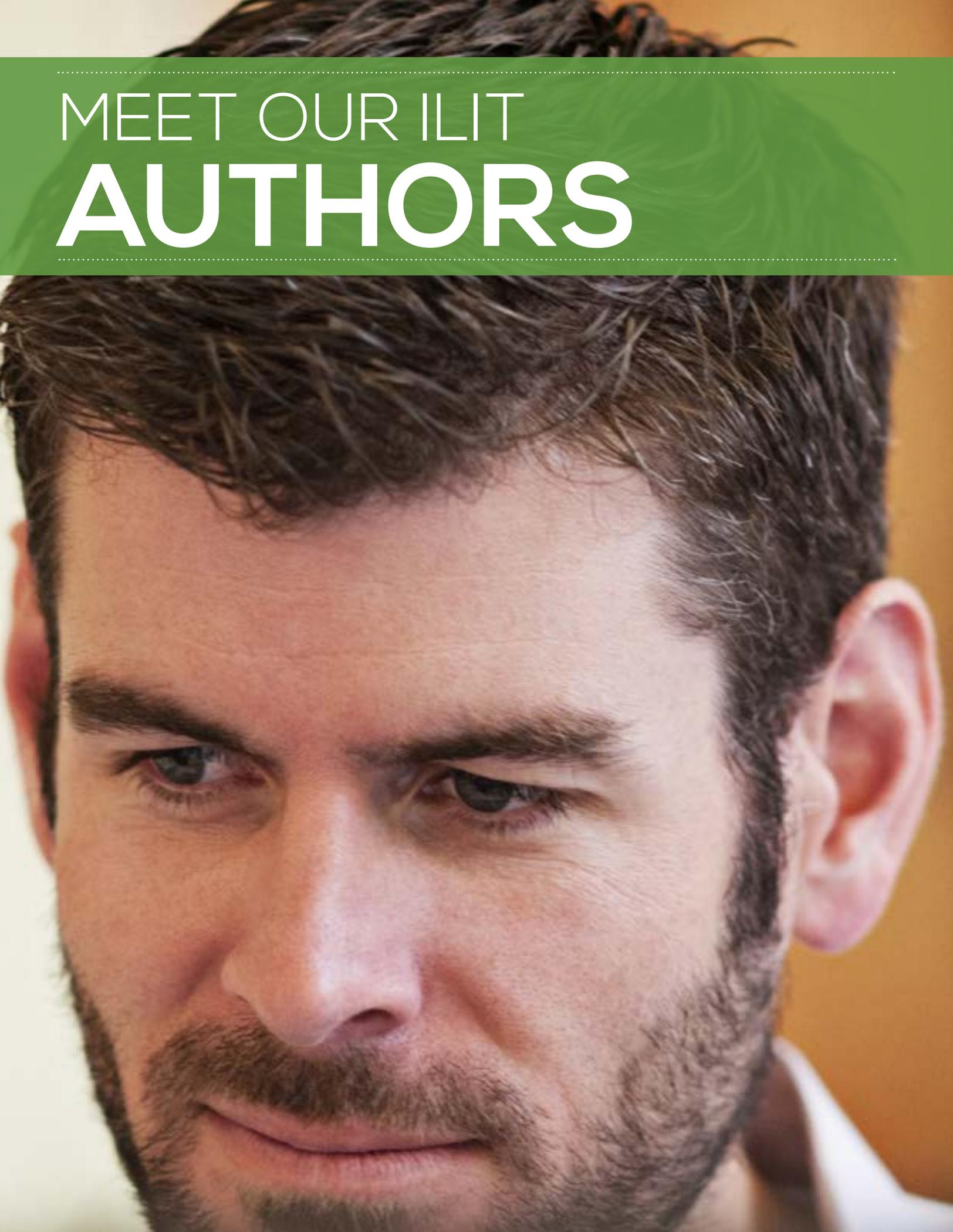
- **Ongoing monitoring**—The iLit program provides continual monitoring of student performance through formative assessment combined with targeted, differentiated instruction for each student through a robust proprietary progress monitoring technology.
- **Targeted instruction**—based on formative assessment

### **Ongoing Monitoring**

iLit teachers continually monitor student progress through observation, conferencing, inquiry, and other methods in order to provide targeted and differentiated instruction in a timely manner. These frequent and informed interactions between student and teacher also help students learn to self-assess their progress. Thus, both teachers and students in the iLit program remain informed participants who can adapt instruction and focus on the skills that are most relevant to each student's needs at any given point along the learning continuum (Black & William, 1998). Ongoing, automatic feedback allows iLit students and teachers real-time data across multiple performance areas from multiple data points.

### **Targeted Instruction**

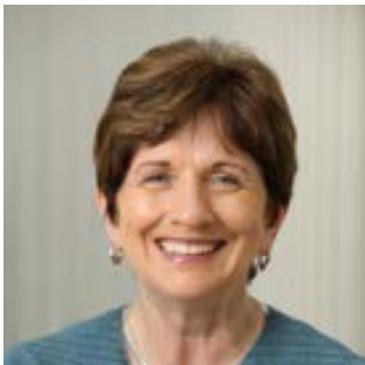
iLit uses assessment paired with progress monitoring to target instruction and set goals for students based on their ongoing instructional needs. Students are periodically assessed to monitor their progress in comprehension, vocabulary, reading fluency, and writing. Targeted instruction is truly personalized for each student in a Personalized Study Plan that includes leveled comprehension, vocabulary, reading and writing practice. iLit is designed to meet the four criteria essential for effectively targeting instruction to meet student needs: It is timely, specific, understandable to the student, and allows for appropriate self-adjustment on the student's part (Wiggins, 1998). Additionally, the iLit assessment protocol addresses the three factors that influence student motivation to learn. Students are more likely to put forth effort when (1) they clearly understand the learning goal and know how teachers will evaluate their learning, (2) when they think the learning goals and assessments are meaningful and worth learning, and (3) when they believe they can successfully learn and meet the evaluative expectations.



MEET OUR ILIT  
**AUTHORS**

## THE EXPERTS

# MEET OUR AUTHORS



### Elfrieda H. Hiebert

Elfrieda “Freddy” Hiebert (Ph.D., University of Wisconsin) has had a long career as a literacy educator, first as a teacher’s aide and teacher of primary-level students in California and, subsequently, as a teacher educator and researcher at the universities of Kentucky, Colorado-Boulder, Michigan, and California-Berkeley. Her research, which addresses how fluency, vocabulary, and knowledge can be fostered through appropriate texts, has been published in numerous scholarly journals and books.



### Sharroky Hollie

Sharroky Hollie is a tenured assistant professor at California State University, Dominguez Hills in the teacher education department. Professor Hollie teaches reading for secondary teachers, classroom management, and methodology. From 2007-2009, he was a visiting professor in diversity for Webster University in St. Louis in the School of Education. In spring 2011, Sharroky was a guest lecturer at Stanford University.



### Jim Cummins, Ph.D.

Jim Cummins is the Canada Research Chair in the Department of Curriculum, Teaching, and Learning of the Ontario Institute for Studies in Education at the University of Toronto. His research focuses on literacy development in multilingual school contexts, as well as on the potential roles of technology in promoting language and literacy development. His recent publications include: *The International Handbook of English Language Teaching* (coedited with Chris Davison), and *Literacy, Technology, and Diversity: Teaching for Success in Changing Times* (with Kristin Brown and Dennis Sayers).

## THE EXPERTS

# MEET OUR AUTHORS



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### Kelly Gallagher

is a full-time English teacher at Magnolia High School in Anaheim California, where he has also served as the English Coordinator. He is the former co-director of the South Basin Writing Project at California State University, Long Beach, and an adjunct professor at California State University Fullerton.



### Sharon Vaughn

has been working in education for more than 30 years. She has held positions as a teacher, teacher-educator, researcher, and Pearson author. Currently, she is an author for Pearson, and working on the literacy augmentation tool iLit.



### William G. Brozo

is a professor of Literacy in the Graduate School of Education at George Mason University in Fairfax, Virginia. He earned his bachelor's degree from the University of North Carolina and his master's and doctorate from the University of South Carolina. He has taught reading and language arts in both North and South Carolina. He is the author of numerous articles on literacy development for children and young adults. He is currently completing Graphic Novels in the Disciplines.

# APPENDIX



# ABOUT PEARSON KNOWLEDGE TECHNOLOGIES INTELLIGENT ESSAY SCORING

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Pearson Knowledge Technology writing software is powered by the Intelligent Essay Assessor using scores assigned by human raters to several hundred representative student essays all written in response to a particular essay prompt or question for a particular grade level. By using computational modeling, IEA mimics the way in which human readers score. In study after study comparing the performance of IEA to that of skilled human graders, the quality of IEA's assessment equals or surpasses that of the humans.

First, a set of representative student essays are collected and scored independently by two or more human graders. Usually 200 to 250 doubly scored human papers are sufficient. A regression model with about 50 content and computational linguistic variables is used to predict the average human score. A separate regression model is calculated for each essay prompt.

By far the most important variable for matching human scores turns out to be the essay's content. This variable uses Latent Semantic Analysis (LSA). Latent Semantic Analysis is a computer model that was invented and patented by several Knowledge Technologies employees in the late 1980s and is now in wide use around the world. LSA automatically constructs a semantic space (a number representing the meaning of each word) by analyzing large volumes of text that an average student would encounter and read through high school. The text corpus for this includes all the paragraphs from about 12 million running words of text. LSA uses as input a co-occurrence matrix of words and their frequency in paragraph units. This input matrix is reduced to one of much smaller rank, using Singular Value Decomposition (SVD), a matrix algebra technique similar to factor analysis. SVD is a least squares approximation of the original matrix. It usually uses 300 independent vectors to represent each word and each paragraph in the text collection. In the end, the analysis assures that every paragraph is the sum of the 300 element vectors for its words, and every word is the average of all the vectors standing for the paragraph that uses the same vocabulary corpus, not just those already in the corpus. A variety of analyses and applications have found that LSA usually agrees with the human judgments of the similarity of two paragraphs or words 90 percent as well as two humans agree with each other.

For scoring an essay, the 200 to 250 training essays are each given a 300-dimensional score by averaging the word vectors occurring in each essay. That is, each word is represented by a vector with 300 real numbers corresponding to each of the dimensions — the separately measured quantities describing the essay. New essays to be graded are given a 300 dimensional score using the words that occur in them and averaged over each of the 300 dimensions.

Next, the new essay is compared to each of the training essays in terms of similarity (cosine of the angle between the two essays or Euclidean distance between the two). The closest neighbors to the new essay and training essays determine the content score. Essays with high scores will tend to cluster. So, a new essay close to high scoring training essays will receive a high score. Off-topic essays can be flagged automatically because they have insufficient content similarity to the training papers.

Many other automatically (thus consistently) used variables are also used to score each essay to insure that factors not captured by LSA are not ignored. Virtually all the separate characteristics of student essays on which teachers base grades, comments and corrections influence PKT scores to approximately the same extent that they do for human scorers. This is also true of the characteristics described in the rubrics that human graders seek to follow. Measures based on the raw length of essays, sentences or paragraphs are never used. Similarly, keywords, such as ones that signal an essay's organization (e.g. "first," "in conclusion," "thus," etc.) are not given special weight. These types of variables are too highly coachable. If it were known that using them increased scores, beating an automatic essay grader would be quite simple. A separate regression model is calculated for each essay prompt.

**A prompt independent grading model** has also been developed that will score an arbitrary essay based only on the grade level of the student. Because the scoring engine is not trained on essays responding to a particular prompt, the scoring is based on stylistic, grammar, usage, and mechanics variables. The scoring engine has no way of factoring in the content of the essay. However, it is easier and less expensive to use the prompt independent model.

While a bit of accuracy is sacrificed — a decrease of ~0.1 in the reliability coefficient — it is easy for teachers to customize the prompts to their lesson plans. The downside of the prompt independent method is that the score uses only linguistic, stylistic, vocabulary, and mechanics variables.

A STRATEGY PAPER FROM

CENTER FOR  
**DIGITAL**  
EDUCATION

# The Need to Read

How new digital literacy solutions  
can reduce high school dropout rates



# The Need to Read

How new digital literacy solutions can reduce high school dropout rates

## Introduction

Students today are entering into a more competitive workforce than ever before. A study conducted by Georgetown University found that 63 percent of all new job openings by 2018 will require workers to have at least some college education. Just 12 percent of jobs will be open to those without a high school diploma.<sup>1</sup> Yet education retention rates continue to be unacceptably low across the U.S. In some areas, such as Nevada and the District of Columbia, about 40 percent of freshmen students don't graduate.<sup>2</sup> And each year, three million high-schoolers drop out.<sup>3</sup>

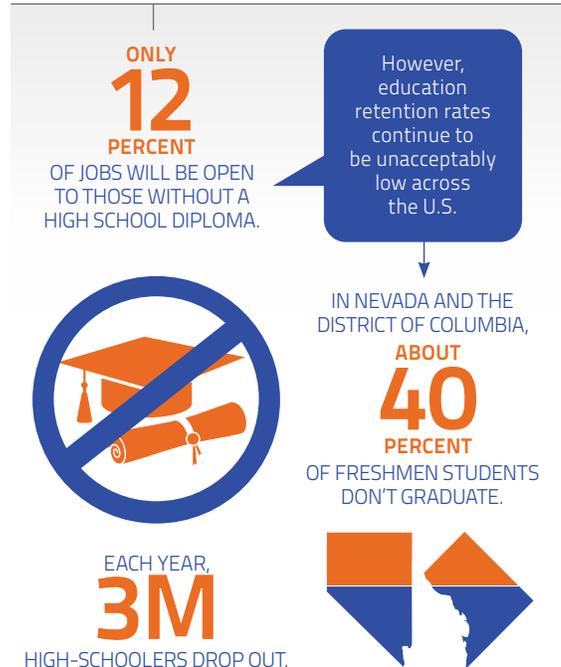
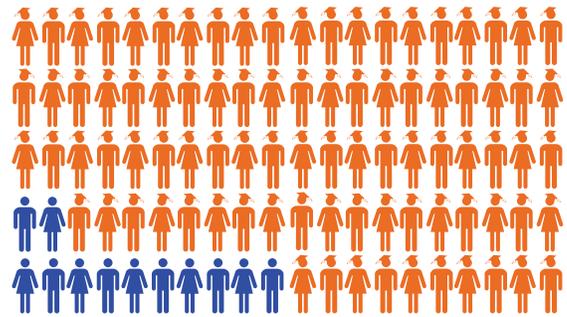
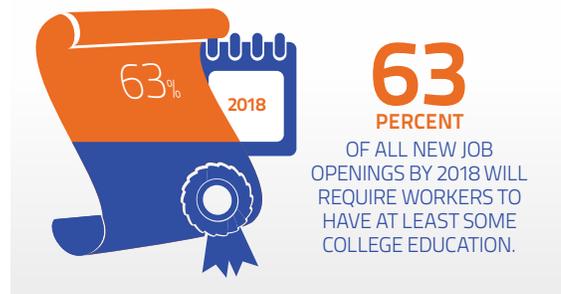
Literacy is the foundation to a student's educational — and workforce — success, but it is also a challenge for many students in today's educational system. The National Assessment of Educational Progress (NAEP) found that 64 percent of eighth graders scored below proficient on NAEP reading assessments in 2013.<sup>4</sup> About 20 percent of Americans 15 and older lack basic functional literacy skills, according to an assessment by the United Nations.<sup>5</sup> Unfortunately, students who are unable to read at their grade level are at least twice as likely to drop out of school.<sup>6</sup>

To improve the futures of our students — and the economy — it is critical to improve literacy rates and student retention. But how? Too often, reading intervention programs require specialized staff or training and can be difficult to implement widely. However, new technology is emerging that makes literacy intervention in the classroom on a broad basis much more achievable. This Center for Digital Education (CDE) white paper discusses how you can bridge the reading gap, significantly improve literacy in your school or district with new online instructional solutions, and reduce student dropout rates.

## The Lowdown on the Literacy Challenge

Mike is entering eighth grade at an overcrowded, underfunded public middle school. He is already dreading it, particularly the load of textbooks he will be assigned and expected to read. He finds the textbooks boring, full of charts he can't interpret and words he doesn't know. They don't seem to have anything to do with his real life, and he

## The Real Problem with Student Retention



can't imagine how they ever will. In addition, he's a digital native, has grown up with digital tools like his smartphone and tablet, and wishes he could use these at school. He has trouble paying attention, and already knows he won't pass his classes.

Mike is fictional, but typical of all too many students who, by middle or high school, are frustrated and feeling defeated within a traditional educational system, where they quickly take on an identity for themselves as failures who can't read.

The so-called "factory model" of education has been predominant in American public school districts for decades. It's a largely one-size-fits-all approach to instruction that teaches all students the same things at the same time, often in the same ways. Too often, this model leaves students with differing learning styles or challenges on the outside looking in.

Some students may have learning disabilities, speak English as a second language, come from disruptive or impoverished home environments with little access to reading materials, or have other needs that aren't met by a traditional curriculum. Some may simply learn at a different pace — either faster or slower than average. Some may need to move around and touch things in order to make intellectual connections: endless sitting in class and passive learning doesn't work for them. Some respond best to multimedia — visual stimulation — as opposed to printed texts. For these and other students, a traditional curriculum that isn't tailored to their individual needs can make it difficult to learn.

Districts have tried focusing attention on students in the primary grades as a way to improve literacy. However, studies have found that some students who are able to read at grade level in earlier grades may struggle when they get to middle and high school, where they must master more complicated texts, such as academic texts replete with charts, graphs and unfamiliar terms.<sup>7</sup> Indeed, at the secondary level, many students continue to have difficulty with basic literacy. One study found that 25 percent couldn't identify the main idea in a passage or understand informational text.<sup>8</sup>

Another challenge is lack of engagement. Students who continually experience failure and who simply don't understand what is being taught become disengaged. A traditional curriculum with texts that don't connect

with their lives or their interests also contributes to a lack of motivation. And when students aren't motivated or engaged, they are much less likely to learn to read effectively.<sup>9</sup> Disengaged students are also much more likely to drop out of school.<sup>10</sup>

## How New Technology-Based Reading Solutions Can Help

Literacy experts know from decades of research what approaches and strategies best foster reading and writing, such as personalized lessons that enable achievement-based learning. The problem is these are often difficult to implement in the real world of overcrowded, under-resourced schools with teachers who haven't been trained in literacy techniques and a scarcity of literacy specialists available to step in. Using technology-based literacy tools can help bridge this gap. Digital reading curriculum delivered via

**When students aren't motivated or engaged, they are much less likely to learn to read effectively. Disengaged students are also much more likely to drop out of school.**

mobile devices provides an interactive, personalized medium for reading that keeps students engaged and improves retention. Following are some additional ways technology-based literacy programs can help improve literacy.

**Phonics Instruction.** Phonics and phonemic awareness are key features of successful reading instruction, especially for students in early grades, according to the National Reading Panel.<sup>11</sup> Many engaging, game-like educational software programs are now available that target these skills, allowing teachers to set students up one on one with software programs while they move about their classrooms; this frees teachers to interact directly with students on a rotating basis, while the rest of the class stays busy working with personalized software that can identify their weak areas and adapt instruction accordingly.

**"Leveled" texts.** Researchers have found that when students can choose what they want to read, their



Flickr/SHARESKI

**“The engagement of students and teachers is not like anything else the students have been involved with. It gives an opportunity for the kids to be engaged in speaking and listening and reading, all at the same time.”**

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motivation to read increases.<sup>12</sup> Independent reading time can be spent on texts that students not only like and find interesting, but are at their particular reading level, so that they won't be overwhelmed. Some literacy software programs have extensive libraries of authentic, non-adapted texts chosen to appeal to students at a wide range of interest and ability levels.

**Reading practice.** Teens need time for sustained reading to improve their literacy skills and vocabularies.<sup>13</sup> Practice, done independently as well as with the class, is a key element in becoming a successful reader. With literacy software, students can read in or out of class, and work on individualized exercises. Students can listen as their texts are read to them while also reading the words on the page. Some programs are equipped with foreign language translators that are especially helpful for English language learners.

**Teacher modeling.** If you want to be a good baseball hitter, you can study major-leaguers on TV — watching their stance and swing, perhaps in slow motion. But it's hard to develop reading abilities just by watching someone else read. Teachers need to be able to share with students the

kinds of thought processes and questions that go through their minds as they read.

The Reading Next report identifies teacher modeling as an important component of comprehension instruction. Studies have shown that readers who struggle benefit significantly from experiencing the way teachers think aloud as they read — not only from hearing their intonations and expressions, but also from learning about the thought processes successful readers undergo in order to decode and interpret text.<sup>14</sup>

Unfortunately, having teachers read out loud to students becomes less common in secondary grades. Software-based programs with text-to-speech capability or equipped with multimedia texts can “read” to students, replicating this teacher function but on a student's time (perhaps at home or on the school bus, for example). Some instructional programs also feature on-screen explanations (sometimes in video form) of learning techniques and strategies, much as a teacher might explain in class. These enforce a gradual-release model of learning, where first a student observes a teacher perform an action, then does this action with the whole class, then feels confident enough to tackle it independently.

**Vocabulary instruction.** Learning vocabulary is one of the keys to developing reading comprehension. Students need to know what specific words mean, but more importantly, how to infer the meanings of words from context, morphology or other clues.<sup>15</sup> Some technology-based reading programs include exercises, games and text passages designed to help students do just this — understand the context the words appear in,

## Real-World Reading Success Story

A large U.S. school district began piloting a tablet-based literacy program for its English as a second language (ESL) students in early 2013, using federal grant funding.

The district distributed tablets loaded with literacy software to nearly 500 students at middle and high schools throughout the district to use in school-based programs.

Students include 8<sup>th</sup>, 9<sup>th</sup> and 10<sup>th</sup> graders from schools with very high ESL populations and a high immigrant population, many living in poverty. "This is a group of students who — if we don't do something quickly — we lose them," says a district representative.<sup>16</sup> "To give them a program like this, where they can customize their learning, as well as give them opportunities for speaking, listening and writing in English — it was easy for us to make that decision."

Before the teaching began, both teachers and students received training. Students were pulled out of classes for a one-day session to learn how to use their tablets and the new learning software. Some of the teachers involved in the pilot had no prior experience with touchscreen devices. Many of the veteran teachers also had to learn new ways of thinking about their teaching.

It wasn't easy for some teachers to give up the model they had used for years. Instead of relying on basal readers and textbooks, teachers turned to their tablets — which also provided individualized lessons for students, meaning the teachers had to relinquish some control.

However, says the district representative, "As they saw the positive results — as they saw their students reading better and speaking better — it became a little easier for them to understand the dynamics of the program."

Students in 8<sup>th</sup>, 9<sup>th</sup> and 10<sup>th</sup> grades used the devices in their developmental language arts programs 90 minutes every other day. The

program had an immediate impact. The students came to class early, were eager to be there and were engaged.

The new tablet-based literacy program is unlike previous computer-based reading and writing software the district has used, due to its peer and teacher participation features. Teachers can be involved — they can read books out loud with the class (projecting the digital text on a whiteboard) and work through other classroom activities using the tablets, such as vocabulary lessons and discussions, which sometimes involve student "polling" with real-time results showing up on the whiteboard.

"The engagement of students and teachers is not like anything else the students have been involved with," says the district representative. "It gives an opportunity for the kids to be engaged in speaking and listening and reading, all at the same time."

Teachers can see students' daily writing and send comments back to them. This type of instantaneous feedback is more helpful than collecting papers, grading them and returning them days later.

The literacy program includes many novels aimed at different reading levels. Teachers like students being able to read longer texts, rather than the "chunked" short material in their basal readers and textbooks. It helped students develop the endurance they needed in order to become successful readers.

Another key feature: personalization. The program tracks a constant stream of data based on student answers to questions. If students keep getting an answer wrong, the program won't advance them, but makes sure a student understands a lesson before progressing.

The district wants to have a full year of implementation piloting completed before expanding the program further, but teachers are already eager to begin the school year with the tablet program. "The teachers are saying, 'Can we hurry up and start? I don't want to do anything else but this,'" says the district representative.

as well as provide definitions, morphological analysis and images of words.

**Frequent writing practice.** Literacy involves not just reading, but writing as well. Teachers don't always have time to read long passages written by their students or to mark up every mistake. Software-based writing programs, however, can let a student practice writing repeatedly, using machine scoring to help guide a student until he or she has revised a writing sample for a teacher's review.

**Formative assessment.** Formative assessment — or continuous feedback — is critical during the learning process, so teachers can see where students are struggling and intervene while the lesson is still fresh. Software-based literacy programs can constantly monitor students' work and report findings to teachers in easy-to-read dashboards. This helps teachers provide more targeted or personalized instruction. Many software-based literacy programs use formative assessment to recommend specific instruction to different students.

**Interactive lessons.** Mobile devices such as tablets equipped with literacy software enable teachers and students to move more freely around the room. What's on the student's or teacher's screen can be projected on a whiteboard for all to see. Teachers can use quick-response polls or questions sent digitally to some or all students during class discussions to keep the class engaged, and to gather data to adapt instruction. All of these are engaging steps that keep students attentive.

**Personalized learning.** According to the Nation's Report Card concerning fourth-grade reading: "In a class of students, few if any teachers can find even five minutes of time in a day to devote to reading with each student."<sup>17</sup> This makes it difficult for teachers to provide personal attention to each student's needs. Targeted or differentiated instruction is often provided in software-based learning programs through personalized study plans that diagnose knowledge gaps and provide remediation. Assignments are individualized, with the program keeping track of how a student has performed on previous lessons in order to place him or her at the most appropriate level of exercise to maximize learning.

**Working with other students.** Collaborating with other students, either in pairs or small groups, is another key to successful, engaging learning. Technology-based reading



**Digital reading curriculum delivered via mobile devices provides an interactive, personalized medium for reading that keeps students engaged and improves retention.**

programs can be used by students to work in this fashion, especially when students have mobile technology that they can take with them to learning centers within a classroom. Students can meet in small groups for group reading, discussions or other types of projects, using their devices as resources.

### **The Benefits to Retention and Beyond**

Some digital learning solutions have been proven to raise reading levels two grades in one year. And research has found that students who read more frequently tend to have higher levels of education achievement than students who rarely read.<sup>18</sup> These students are more likely to find school motivating, rewarding and engaging. They are less likely to drop out and more likely to go to college, as well as to become lifelong learners.

But there are benefits to using technology-based learning programs that go beyond retention rates. The Common Core State Standards, approved by 45 states and the District of Columbia, and now beginning to be implemented in school districts, have a variety of literacy goals. Students are expected to read more informational

and non-fiction texts in all core classes, not just English. They must learn to understand more difficult, complex texts. Students will also be expected to read at grade level.

Early implementation of Common Core assessments has shown that students are finding the material more challenging. The state of New York, for example, found that fewer of its students in grades three through eight were considered proficient in English language arts under the Common Core standards than under its previous standard testing — dropping from 55.1 percent proficient in 2012 to only 31.1 percent for 2012-13.<sup>19</sup>

As reading and writing standards become more rigorous, it becomes even more imperative for districts to find learning solutions that can help students meet these goals without becoming discouraged and disengaged. Technology-based learning programs, in conjunction with teachers who are trained to use them, can help overburdened public school systems meet these challenges. Software-based reading programs

often include embedded tools that support students in reading, with prompts that further explain concepts and guide students in reviewing material until it is mastered. Performance-based tasks — such as writing challenges and other text-based assignments — allow for a more nuanced, sophisticated measuring of reading comprehension that goes beyond multiple-choice exams.

### Conclusion: Bridging the Reading Gap

Technology-based learning and literacy programs provide a way for school districts to raise literacy levels for students, using computers or mobile devices as coaching tools and teaching aides. They are not meant to replace a full-time teacher or literacy specialist, but to help provide additional personalized services to students. Teachers can use these cost-effective tools to engage and motivate students to find enjoyment — and achieve proficiency — in reading and writing in order to close the literacy gap in our society and graduate prepared students that move on to college or the workforce.

## Endnotes

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A WHITE PAPER FROM

CENTER FOR  
**DIGITAL**  
EDUCATION

# Bridging the Gap

How Digital Literacy Tools Help English Language Learners Succeed



# Bridging the Gap: How Digital Literacy Tools Help English Language Learners Succeed

The number of English language learners (ELLs) in the U.S. has risen 10 percent in the last decade, representing about 4.5 million public K–12 students in 2011–12.<sup>1</sup> Overall, about 10 percent of U.S. students today are ELLs, but in some states, this number is much higher. In California, for example, almost a quarter of public school students are classified as ELLs.<sup>2</sup> Experts estimate that by 2025, 1 in 4 students in the U.S. will be an ELL.<sup>3</sup>

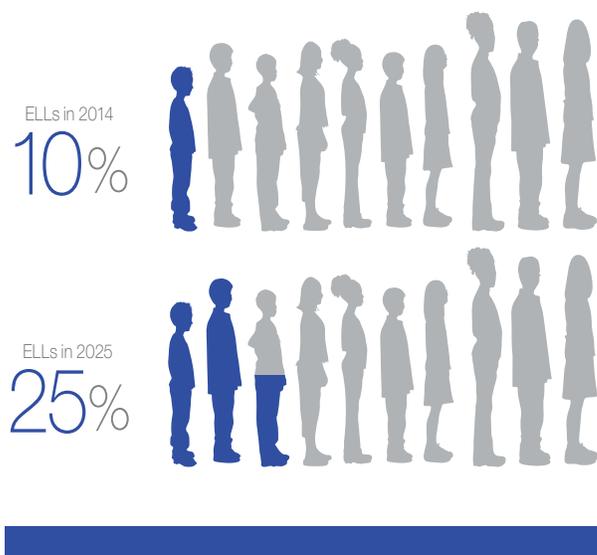
This growth trend presents a difficult challenge for school districts. ELLs need to be brought to grade level as quickly as possible, but often struggle in both special and mainstream classes, causing them to fall behind in key subjects.

Increasingly, ELLs are entering public school at the secondary level, when intervention can be more difficult. Dropout rates are higher for ELLs, with potentially lifelong consequences, ranging from subsequent unemployment or underemployment to incarceration. Meanwhile, cash-crunched school districts lack resources to help, with a shortage of teachers trained to teach ELLs.

New tablet-based literacy programs provide one potential solution to help increase the chances of ELL success. Research shows these tools are helping students reach grade level in less than two years. What are the advantages of these programs over traditional ELL approaches? How can school districts use them to support their ELL students? This Center for Digital Education white paper explores the answers to these questions.

## The U.S. ELL Population

About 10 percent of U.S. students today are ELLs. Experts estimate that by 2025, 1 in 4 students in the U.S. will be an ELL.



## Scoping Out the ELL Situation in the U.S.

The rise in ELLs is affecting some regions of the U.S. more than others. Recent statistics show that of the eight states with the highest ELL percentages, seven are in the West (California, at 23.2 percent, has the most ELLs in the U.S. — about 1.5 million students<sup>4</sup> — and Nevada has the highest percentage, at 31 percent<sup>5</sup>).

Other regions, such as the Midwest and Southeast, may not have high overall percentages of ELLs, but in recent years have witnessed dramatic increases. In Ohio, for example, the number of ELLs increased 11,000 percent between 1999 and 2009–10 (from 322 to 37,478).<sup>6</sup> South Carolina saw a jump of 926 percent (from 3,379 to 34,685) during the same time period.<sup>7</sup>

ELLs are also concentrated more heavily in urban areas of the U.S. than in rural areas. The U.S. Department of Education found that in 2011–12, ELLs comprised 16.7 percent of public school enrollment in big cities.<sup>8</sup> Overall, ELLs are more likely to live in poverty and to attend schools that are underperforming.<sup>9</sup> Most ELLs — 80 percent — speak Spanish as their first language. The other 20 percent of ELLs are divided among more than 400 different languages.<sup>10</sup>

These factors all contribute to an alarmingly high dropout rate in many states. Nationally, the graduation rate for students of limited English proficiency in 2011–12 was 59 percent, according to the U.S. Department of Education. In Arizona, only 24 percent of ELLs graduate; in Nevada, it's just 23 percent. California, the state with the most ELLs, graduates 62 percent — more than a third (38 percent) don't earn diplomas.<sup>11</sup>

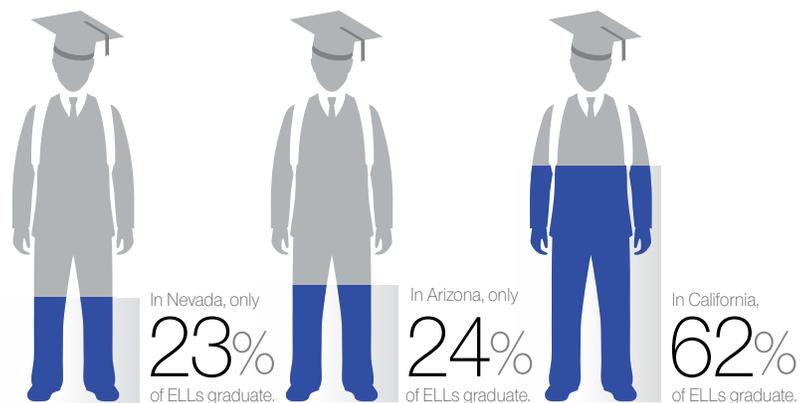
Dropping out of school is correlated with a host of long-term negative outcomes — unemployment and poverty, as well as a higher likelihood of incarceration.<sup>12</sup> Additionally, long-term illiteracy leads to a lack of participation as U.S. citizens on many levels — social, cultural, political, and of course, economical.

## Limitations of Traditional ELL Learning

Traditional ELL programs share common limitations. Teachers struggle to find meaningful texts geared to the age, interest and ability level of students — many are designed for children in younger grade levels, although they may still meet the aptitude of an older student. Texts may also contain allusions to U.S. culture and history with which recent immigrants may not be familiar, requiring more teacher scaffolding and previewing before reading — which is not always possible for busy teachers in often overcrowded classrooms. In addition, ELL students may need audio support to hear the correct pronunciation of English words during independent reading time, but this may not always be available.

## ELL Graduation Rates

Nationally, the graduation rate for students of limited English proficiency in 2011–12 was 59 percent.



Personalized lessons adapted to a student's individual needs can be difficult for teachers to provide within a traditional classroom using a standard textbook and workbook. ELL student needs and abilities can vary widely, yet students may find themselves in mainstream classrooms where teachers do not have the expertise or time to address these unique needs through one-on-one assessment and instruction. Only 1 percent of U.S. public school teachers are ELL instructors, according to the U.S. Department of Education, meaning on average there is only one ELL specialist teacher available for every 150 ELL students.<sup>13</sup>

All of this comes at a time when many school districts must meet new, more rigorous Common Core State Standards that call for mastery of increasingly complex texts, and which soon will begin measuring this fluency and literacy on critical standardized tests, used as benchmarks for school progress. Districts may see overall test scores decline if ELL students fall further behind, but often will not have the funding or resources to improve ELL programs.



Research shows that tablet-based literacy programs are helping students reach grade level in less than two years.

## Delivering Success with Digital Literacy Programs

In contrast with traditional, paper-and-pencil methods, today's digital literacy programs make use of new interactive technologies — including touchscreen tablets, embedded video and text-to-speech — to help ELLs in the classroom. Here is an overview of key features in tablet- and computer-based programs and apps.



### Technology-enhanced vocabulary acquisition

Learning vocabulary is key to mastering a language. Digital programs and apps can help ELLs acquire essential new words in ways that are more engaging and effective than traditional printed flashcards or worksheets. For example, students

can play vocabulary-themed adventure games where they must learn new words to advance in the game. Or they can create their own comic strip characters or avatars and write dialogue for them, using prompts provided by the software. Some programs also make use of music, allowing students to learn words as parts of songs or rhythmic chants.

Words appear in contexts that are meaningful and engaging such as in a story, poem, song, article or even a joke, rather than isolated on a list. The student can click individual words or phrases to have them read aloud — either in English or translated into the student's native language in some programs — or click to see pictures or videos illustrating the word's meaning. Students are also able to record themselves pronouncing a word or set of words, then play back the recording to compare it to the correct pronunciation, practicing this process until they are confident of fluency.

Some apps allow students to write and publish their own mini-books and post these online in electronic journals. Younger students, or those with extremely limited reading skills, can engage in activities like digital phonics song charts or online letter formation exercises to help begin the process of language acquisition.



### Instruction guided by multimedia

To reinforce proper pronunciation and fluency, students can use their device's text-to-speech capabilities to have blocks of text read aloud to them, highlighting each word as it is read so they can follow along. Students can also digitally annotate within the texts they read — highlighting in different colors, inserting notes or questions, and copying text for later review. Important concepts that are too complex for a short definition can be explored more deeply in videos. Similarly, historical figures, cultural terms or idiomatic phrases that are unfamiliar to ELLs can be explained with multimedia features like images, sounds and videos.

During whole-class lessons, texts and images can be displayed on interactive whiteboards for

sharing. Teachers can also easily send new material to students' digital devices for personalized or small-group instruction.



### Writing exercises

Digital literacy programs with writing engines can provide exercises and immediate feedback for students, whether the writing is in the form of short passages or long essays. Students see example texts first in order to understand what the desired types of writing look like before composing their own work. Some programs have built-in feedback that critiques their work and helps them practice revising it before submitting a final draft to the teacher.

Digital programs may also offer other types of writing exercises like composing emails, creating song lyrics or writing short books to be published online.



### Customization capabilities

Digital literacy programs can assist teachers with personalization and differentiation in the classroom by offering personalized tasks and leveled texts — material that is matched to a student's Lexile level (a measure of reading ability). A teacher can assign a common classroom text for the entire class to read and discuss, as well as additional texts or tasks to students that suit their reading levels. Some digital programs come with large libraries of scaffolded texts, both fiction and nonfiction, that have been written for various capabilities, ages and interests.

Teachers are also able to create their own customized activities, including word games, puzzles and quizzes that are personalized for students while including academic or content-area words they are likely to encounter in other courses.



### Assessments and student data

Software-based adaptive quizzes and activities track and evaluate a student's strengths and weaknesses. This

information is given to the instructor to help fine-tune a student's instruction. These formative assessments also help the teacher decide placement of students in appropriate small groups for more focused work.



### Teacher resources

Some digital learning programs also provide teachers with lesson plans, discussion prompts, suggestions for scaffolding texts, activity recommendations, evaluation rubrics, planning calendars and other tools. For example, teachers can model reading fluency by reading aloud to students while viewing prompts available on their own mobile devices that suggest possible questions or talking points for their students, helping to deepen a student's engagement in and understanding of the material.



### Engagement

Recent studies have shown that tablets in particular have the ability to increase student engagement and learning. For example, a study of British secondary schools from 2011–13 found that one-to-one tablet learning produced not only greater engagement by students but also by teachers and parents, and was found to improve student motivation.<sup>14</sup> Another study of Maine kindergartners in 2012 found that tablets improved literacy among students, with educators reporting high levels of student motivation and engagement.<sup>15</sup>



### Student Success

Studies indicate tablet-based digital literacy programs can be quite effective in the instruction of ELLs. For example, a small, urban district in Texas used a digital curriculum with ninth-grade ELLs and saw significant improvement, from just 37 percent of students passing initial assessments to 62 percent by the end of the program not only passing, but scoring at least 80 percent.<sup>16</sup>

## Digital Literacy Program in Action

Starting in fall 2013, language arts teacher Krysten Robinson began using an all-digital English Language Arts (ELA) curriculum with a class of 17 struggling seventh-grade readers — including three ELLs — at Dr. Augustine Ramirez Intermediate School in the Corona-Norco Unified School District in southern California.<sup>17</sup> The intervention class was taught in two back-to-back 45-minute periods each school day, so students received 90 minutes of instruction using a tablet-based ELA program of instruction.

At the beginning of the school year, students were tested for proficiency, with most coming in around a fourth-grade level. By the end of the school year, Robinson's students finished at an overall 6.5 level — sixth grade, fifth month — representing more than a two-year jump in proficiency in just nine months.

From the beginning, engagement was high, says Robinson, who also teaches traditional ELA courses. "It was super exciting for the students," says Robinson. "They kept saying, 'This is so great! We're not using paper!' That carried on for some time — that eagerness and engagement." Compared to a traditional ELA class, Robinson believes, "The engagement is really high with the [digital curriculum] because it's different and because it is so interactive."

The ELL students benefited from the video and audio components of the program, as well as its built-in scaffolding, says Robinson, including tools to gain vocabulary comprehension.

Using a digital program also made it easier for Robinson to differentiate and target her instruction for the ELLs. In a traditional ELA class with mainstreamed ELLs, this can be tough to achieve, she says. "I have to tailor my curriculum and instruction

so the English learners are as successful as the other students in the class. That is really difficult."

The tablet-based program she used, however, has formative assessment tools to help determine at which pace a student needs to work. The program then provides individualized learning activities and leveled readers for the students.

"If the kids do well with certain things, it will push them forward, and if they don't, it will backtrack a little," says Robinson. "It is very specific to the individual learner, which is extremely beneficial for ELLs."

The software also told Robinson which students had similar needs, helping her better set up small group instruction. "It made it very easy to notice which kids were lacking vocabulary and which kids were doing really well," Robinson says. "Programs like this make it a lot easier for the teacher to identify needs, and students are getting what they need in a more engaging and targeted way."

ELLs were able to use the text-to-speech and translation options to help master the text, says Robinson, "Giving them that option is really important." Another component that her students found helpful was the modeling of reading fluency, either from the audio within the program or by Robinson reading text aloud. Additionally, activities such as text notation could be completed individually or Robinson could send annotated slides to all the students to view on their tablets or via interactive whiteboard in the classroom.

The program that Robinson's class used followed the same routine each day, starting with 15 minutes of independent reading and transitioning to modeled classroom reading and discussion, as well as small group activities. While the literacy program was scripted for teachers, says Robinson, it also allowed her to deviate from the script if she chose to introduce other learning strategies, videos or

lesson materials. This became especially important when some students grew less engaged as summer break approached; Robinson had the freedom to include videos to help reignite their interest.

Students were able to pick their own independent reading selections from hundreds of leveled texts included in the program. Robinson especially appreciated the many nonfiction selections targeted to her students' interests.

"I thought it was going to be torture, making kids that don't like reading to read for 15 minutes every day, but actually it wasn't," says Robinson. "The kids thought it was so cool that they could choose their own titles." Students also shared their reading choices with classmates, raising the general excitement. Given the emphasis in the Common Core State Standards on nonfiction,

says Robinson, it was good to have a resource for nonfiction texts that students enjoyed. She appreciated that lessons were aligned with Common Core.

The ease of access to student data has helped Robinson in conferences with parents, enabling her to pull up concrete numbers for a particular student rather than having to rely on general impressions. "For years, we were trying to teach intervention classes with no systematic approach. We had no way to monitor the progress students were making. Now we have that critical data."

Robinson says the digital literacy program she is using is "one of the coolest things I've seen in 16 years of teaching. I definitely think that it makes it easier for teachers to teach ELLs with this program and students are more engaged because it is paced at their level."

## Conclusion

It is more critical than ever for school districts to meet the needs of ELLs now and into the future. By making use of technology-based solutions, such as digital literacy tools and curricula, districts can provide much-needed assistance to teachers.

These engaging, interactive platforms improve student learning and help teachers provide personalized instruction. Digital literacy programs don't replace teachers, but can be key to helping ELLs achieve fluency in English — and success in school and beyond.

## Endnotes

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# APPENDIX A

## How Ramp-Up is Aligned with Reading Next The Fifteen Key Elements of Effective Adolescent Literacy Programs

### PART A

#### Reading Next: Instructional Improvements

	Instructional Improvements		Ramp-Up component(s)
1	Direct, explicit comprehension instruction	✓	Standards-based instruction, teacher modeling, small-group & whole group reading strategy instruction, daily word study
2	Effective instructional principles embedded in content	✓	Author/genre & content-area studies, authentic reading/writing experiences
3	Motivation and self-directed learning	✓	Independent reading, classroom library, student assessment notebook, cross-age tutoring
4	Text-based collaborative learning	✓	Small-group instruction, classroom conversation, work period
5	Strategic tutoring	✓	
6	Diverse texts	✓	Classroom library, independent reading
7	Intensive writing	✓	Responses to literature, direct writing instruction, authentic writing experiences, writing with partners
8	Technology component	✓	
9	Ongoing formative assessment of students	✓	Reading & writing conferences, status of class progress checks, running records, quizzes, work stations, end-of-unit assessments

**PART B**  
**Reading Next: Infrastructure Improvements**

	<b>Infrastructure Improvements</b>		<b>Ramp-Up alignment</b>
10	Extended time for literacy	✓	Daily, double-period sessions
11	Professional development	✓	Teacher training & ongoing support
12	Ongoing summative assessment of students and programs	✓	Continual monitoring of student work, standardized pre- and post-tests, diagnostic reports, ACER, progress maps, feedback/reports
13	Teacher teams	✓	Teacher collaboration with shared planning time for ramp-up teachers
14	Leadership	✓	Principal/assistant principal training
15	A comprehensive and coordinated literacy program	✓	



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